Multipole connectors for industrial purposes

ENGLISH

CN.16

The Company and the Product

I.L.M.E. SpA - INDUSTRIA LOMBARDA MATERIALE ELETTRICO - has been operating **in Milan since 1938,** in particular in the electrotechnical sector for the manufacturing of equipment for industrial installations.
ILME reflects the traditional **entrepreneurial spirit of Lombardy,** and has enjoyed continuous expansion for over half a century.
The company has carved an important role for itself in the main world markets, also operating directly in the countries that have assumed world leadership in the field of automation, including Germany and Japan.
In the **electrical connection** sector with applications in industrial automation, characterised by **top performance** and utmost **reliability needs,** ILME is today the acknowledged partner of many leading companies worldwide.
The company's fundamental values are:

product innovation, original solutions, excellent **price-quality ratio,** a customer-oriented **sense of service,** ethical behaviour and an environmentally-friendly approach.
To promote the continuing improvement of its **qualitative results,** ILME has always encouraged its collaborators to work with utmost **responsibility and participation.**
The company focuses on a series of benefits to the user, including research into the most suitable materials, high quality and safe cabling, a rapid turnaround and readily available services.

CE marking

As from 1 January 1997, in order to launch electrical products on the European market the manufacturer must ensure these bear the relevant CE marking, in line with the Low Voltage Directive 73/23/EEC * (implemented in Italy as law 18-10-1977 no. 791) and its modification 93/68/EEC * (implemented in Italy as L. D. 25-11-1996 no. 626/96, published in the supplement to the Gazzetta Ufficiale of 14-12-1996).
Said marking must be placed on the product - or, if this is not possible, on the packaging, the instructions for use or the warranty certificate - and acts as a declaration by the manufacturer that the product complies with all relevant EU directives.

ILME products bear the CE marking on the product or packaging.

Almost all ILME products fall under the Low Voltage Directive. A declaration of compliance is required before applying the CE marking. This document, to which the market is not directly entitled, must be made available to the control authorities (in Italy the Ministry for Industry, Commerce and Handicraft) at all times.
In it, the manufacturer declares the technical safety standard(s) followed to manufacture the product. These standards must be, in decreasing order of preference:

- a European standard (EN prefix)
- a European harmonisation document (HD prefix)
- an international IEC standard
- a national standard
- in the absence of reference standards, the manufacturer's internal specifications, guaranteeing compliance with the directive's basic safety requirements.

Compliance with harmonised technical standards (i.e. ratified by the CENELEC) constitutes presumed conformity to the directive's basic safety requirements.
The CE marking of ILME products results from said products' declaration of conformity to harmonised standards or international IEC standards.
Through the CE marking, ILME declares full compliance, not merely with the directive's basic safety requirements, but also with those international or national EU standards on which voluntary safety certification markings are based (e.g. IMQ and VDE).
In this way, ILME intends to award the CE marking the value of self-certification in terms of safety, given the loss in legal value of voluntary certifications issued by third parties, ratified by directive 93/68/EEC *.
Notwithstanding the above, practically all ILME products still bear voluntary conformity markings.

This EC declaration of conformity becomes null and void when the assembly of products includes one or more components not manufactured by us and without EC approval.

*** Note:**
The next legal reference for the Low Voltage Directive was 2006/95/EC, as consolidation of the original Directive 73/23/EEC + Directive 93/68/EEC.

On 29th March 2014, the Official Journal of the European Union published the new Low Voltage directive 2014/35/EU dd. 26th February 2014, a recast version of directive 2006/95/EC, which is in force since on 20th April 2016.

All information contained in this catalogue
is not binding and may be changed without notice.

UNI EN ISO 9001: 2015
Design, manufacture and distribution of industrial electrical equipment (IAF 19)
Certificate No. 50 100 11133

CLASS

Application fields

The heavy duty multipole connectors for industrial purposes are used in electric and electronic machinery, control units, electric panels, control equipment and wherever connections are required for power and signalling circuits (N.B. connectors must not be handled live).
They comply with the European standard EN 61984 (derived from the German standard DIN VDE 0627) and the European standard EN 175301-801 (derived from the German standard DIN 43652) where applicable.

NAVAL

OFFSHORE

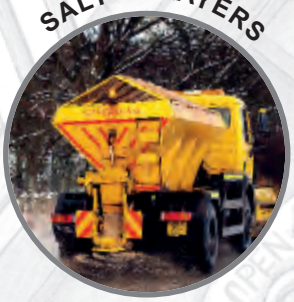
ROBOTICS

AUTOMATION

WIND ENERGY

TRANSPORTATION

SALT-SPRAYERS



POWER SUPPLIES

STAGE EQUIPMENT

MOULDING

ELECTRIC PANELS

REMOTE CONTROLS

SAFETY SYSTEMS

FOOD & BEVERAGE

Important Notes

ILME designs and manufactures complete solutions for Heavy Duty electrical power connections.
The connector (although offered to the user as a variety of elements, usually inserts and enclosures, to allow the selection of the ideal combination) has been **designed as a complete connector** and tested to be compliant with the essential safety requirements of the EU Low Voltage Directive 2006/95/EC (2014/35/EU from April 20, 2016) and in particular the EN 61984 standard.
The design of this "whole" system guarantees that every allowed combination of inserts, enclosures and accessories cannot result as improper.

The products in this catalogue alone cannot guarantee the best functionality upon installation, as this depends also on their correct **"putting into service"** which must be performed in compliance with the applicable system safety standards and according to the "rule of the art".
Therefore the effectiveness of the installation of the connector depends on the choices of the end user who must also take into account the following safety requirements.

Connectors must **not be connected or disconnected when live or under load.**

After wiring the inserts it is necessary to **verify the continuity of the protective earth connections.**

The correct coupling of the inserts is guaranteed only if they are installed (with the four fixing screws supplied) inside the corresponding enclosures or onto compatible accessories in this catalogue. I.L.M.E. SpA is not responsible for any different application.

Wiring of **screw-type terminal connections** must be carried out applying the correct tightening torque in order to avoid false contacts or damage to the conductor, the screw or the terminal.

Crimping tools and contacts used should preferably be supplied by the same manufacturer to avoid difficulties with the insertion and retention or damaging of the contacts themselves. of the contacts themselves.

Correct wiring of spring-clamp connection inserts is guaranteed only when the correct screwdriver indicated in the specific catalogue, or possibly on the insert, is used.

Avoid forcing the contacts during **connection and disconnection.**
Connectors must be coupled and uncoupled in the axial direction with respect to the contacts, without bending and pulling the attached conductor bundles or cables.

Installation of two **inserts side by side**, in enclosures with two bays, must respect the polarity drawing marked on the insert (or the contact side view, as shown in this catalogue) to avoid inverted coupling.

The installation of two or more identical connectors side by side is recommended only with the use of coding pins in order to avoid mismatched couplings.

In order to keep the declared degree of protection (IP code), enclosures must be completed with cable glands and/or other accessories with at least an equal protection rating.

Moreover, the IP protection rating (according to EN 60529) is guaranteed when the enclosures, complete with inserts, are coupled and locked with their locking levers (or devices).

Finally, Please note:
- ILME cannot be held responsible for individual components in uses other than those described in this catalogue.
- ILME cannot be held responsible for incorrect connector selection in relation to the environmental conditions of the application (e.g.: influence of ambient temperature, moisture, environmental pollution, etc.).

Connector inserts and their enclosures are generally compatible with similar/equivalent products from other manufacturers, according to the last samples tested.
Full compatibility cannot be guaranteed in the event of technical changes made by other manufacturers. In particular, maximum performance of IP68 enclosures (Series CG) cannot be guaranteed when coupled with other manufacturers' products.

I.L.M.E. SpA takes no responsibility in verifying whether the components herein contained comply with any specific regulations of fields of application.

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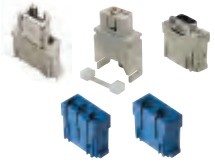

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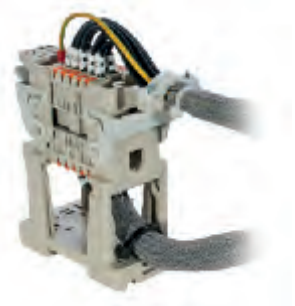

830V

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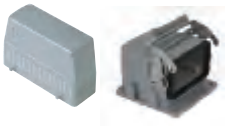

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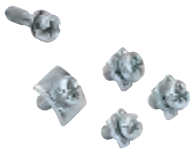

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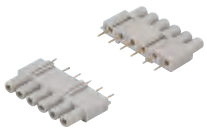

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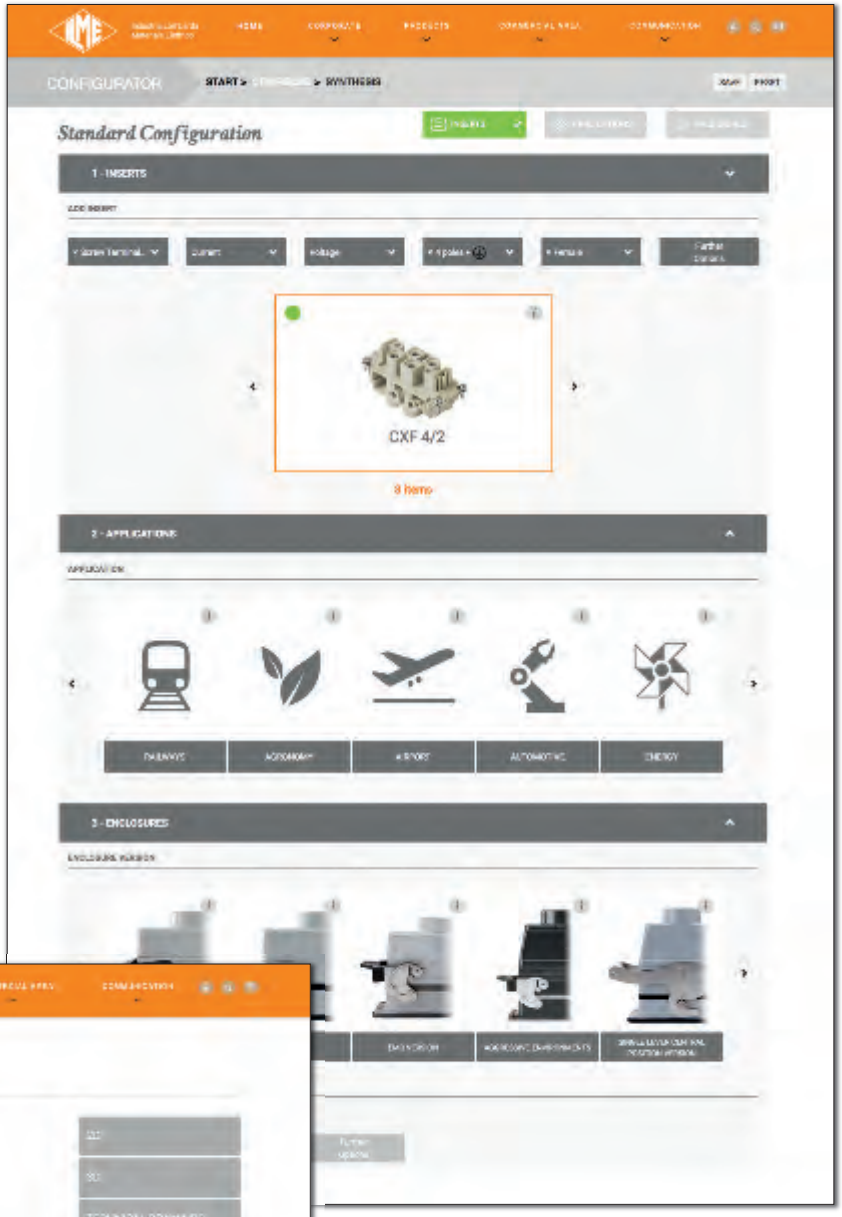
Web site

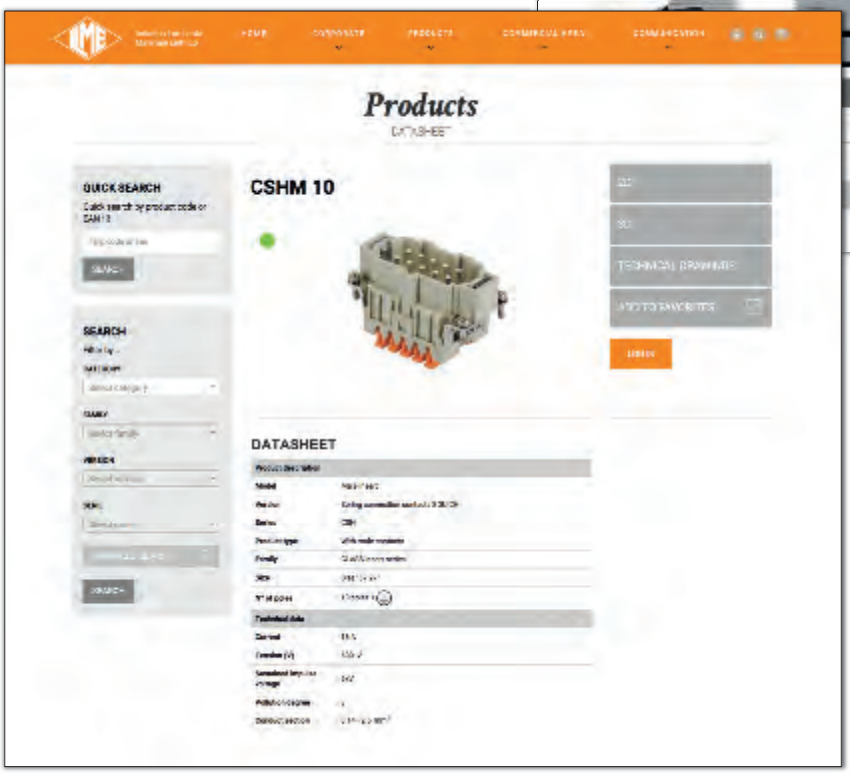
Technical features available on www.ilme.com

CHOOSE YOUR CONNECTOR

COMING SOON **2016**



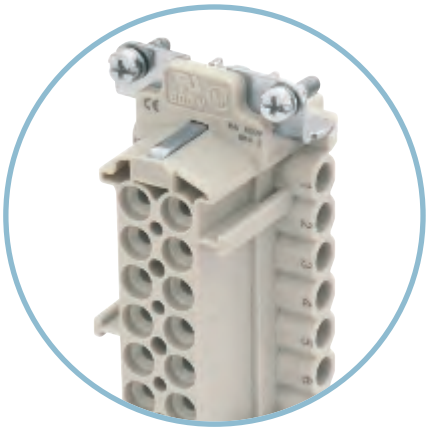
Starting from INSERTS through APPLICATIONS and ENCLOSURES



Starting from PART NUMBER or TECHNICAL DETAILS to find the DATASHEET

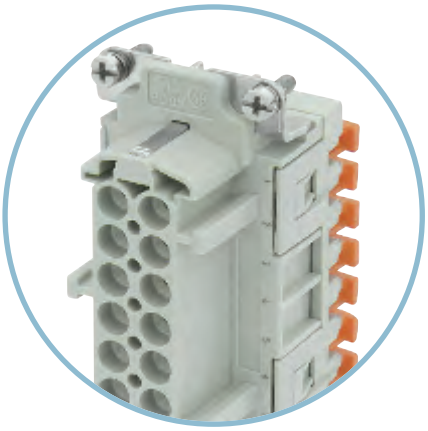
Inserts

Inserts are made of self-extinguishing thermoplastic resin UL 94V-0, normally used for applications in a maximum ambiente temperature of 125 °C. The special versions for use with a maximum ambiente temperature of 180 °C are made of PPS. Different conductor connection techniques are available: screw, crimp or spring connections. The contacts are in silver or gold plated brass. Inserts are numbered on both sides by laser printing or moulded. There is a large number of versions of inserts selected on the basis of the rated voltage (from 50V to 5000V), the rated current (from 5A to 200A max), the number of poles, the different load combinations required (power and signal poles within the same insert). Inserts are approved in accordance with the approval marks including UL, CSA, DNV-GL and EAC. For certifications of each model/series refer to the summary statement (pages 18 and 20) and the respective pages of this catalogue.



CNE
SCREW contacts

CD-CDD
CRIMP contacts



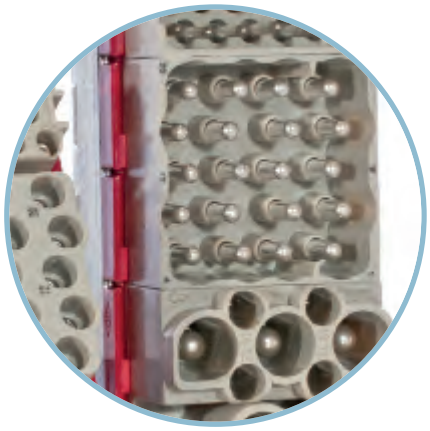
CSH - SQUICH®
SPRING contacts
with actuator

CSE
SPRING contacts

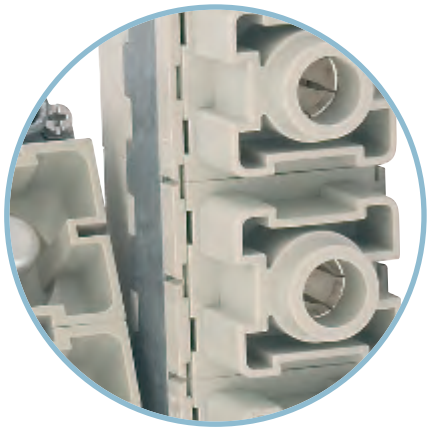
CDS
SPRING contacts
high density

MIXO series inserts

The MIXO series is a system composed of modular units to satisfy specific application needs using traditional enclosures.
Inside a single enclosure various types of connections can be housed, for example electrical signals, contacts for conducting compressed air with pressures of up to 8 bars, fibre optics, Ethernet, USB and coaxial networks.
Insert compartments are composed by placing multiple modules side by side to form a single compact block; this is inserted on metallic frames with predetermined slots.
Once the modules have been inserted on the frame and locked with special keys, the connector composed in this manner can be inserted into the enclosure.



MIXO
5A - 10A - 16A - 40A
CRIMP contacts
SPRING contacts
AXIAL SCREW contacts



MIXO
70A - 100A - 200A
CRIMP contacts

MIXO BUS
CRIMP contacts

MIXO POF/MOST®
CRIMP contacts
for fibre optics

MIXO COAX, HT, RJ45, USB, PNEUMATIC
CRIMP contacts for
coaxial cables
high voltage
connector adapters
RJ45 and USB
pneumatic

Enclosures

A large number of enclosure versions are available with different combinations of component materials, each one suitable for a specific installation: normal environmental conditions, high temperature environments, aggressive environments and environments that require electromagnetic compatibility. The principal parts are made in die cast aluminium alloy with a coating of epoxy-polyester powder or in self-extinguishing thermoplastic insulating. They are resistant to impacts and strong mechanical stress.
The coupling stability and protection against accidental opening are assured by single or double closing devices comprising levers, springs and pegs in stainless steel or entirely in plastic. Sealing is assured by special gaskets that protect the contact groups inside the enclosures against dust and aggressive agents. In general, the coupled enclosures with the appropriate user-selected connections guarantee IP44, IP65, IP66, IP67, IP68 and IP69 (IEC/EN 60529) protection rating.

Standard application

C-TYPE

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IL-BRID

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T-TYPE

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CK-CKA

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CQ

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COB

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Watertight

V-TYPE IP67

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IP68

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IP68 - CGK

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Enclosures

Aggressive environments

HYGIENIC

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T-TYPE / W

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W-TYPE

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Special enclosures

BIG - HOODS

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EMC

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180 °C

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LS-TYPE

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CENTRAL LEVER

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830V

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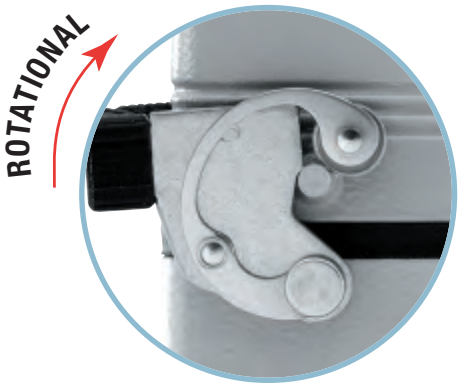
Enclosures

Different locking levers

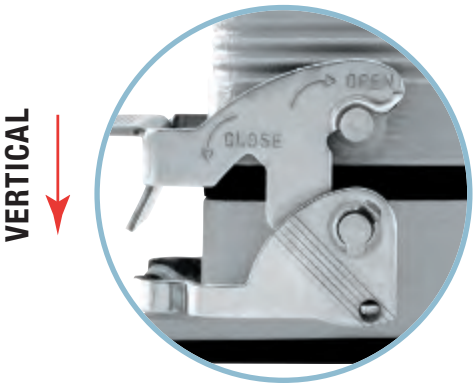
C-TYPE
"CLASSIC, FLEXIBLE"



USED FOR ENCLOSURES:

- **C-TYPE** (IP65 or IP66)
- **W-TYPE** (IP65 or IP66) for aggressive environments
- **180 °C** (IP65) for high temperatures with a completely metallic lever
- **EMC** (IP65 or IP66) for electromagnetic compatibility
- **INSULATED 830V** (IP65 or IP66) for CME 830V inserts

C7
"VERTICAL CLOSING UP TO IP67 PROTECTION DEGREE"



USED FOR ENCLOSURES:

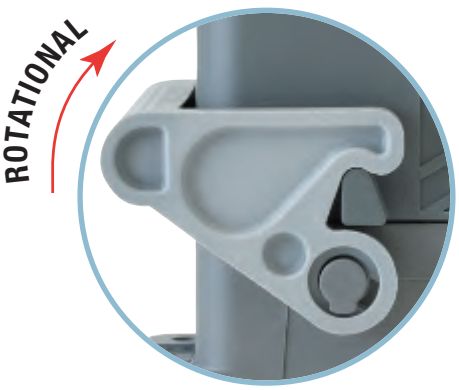
- **C7** (IP66/IP67) stainless steel levers
- **CV** (IP65 or IP66) stainless steel levers

IL-BRID LEVER
"THE COORDINATED EFFECTS OF TWO MATERIALS"

USED FOR ENCLOSURES:

- **IL-BRID** (IP66)

T-TYPE
"THERMOPLASTIC LEVER" OFFSHORE, FOOD AND BEVERAGE APPLICATIONS, LIGHT AND SOUNDS INSTALLATIONS



USED FOR ENCLOSURES:

- **T-TYPE** (IP65)
- **T-TYPE/W** (IP66)
- **HYGIENIC: T-TYPE/H, T-TYPE/C** (IP66/IP69)
- **LS-TYPE** (IP65)

Hinged cover

With two positions or self-closing

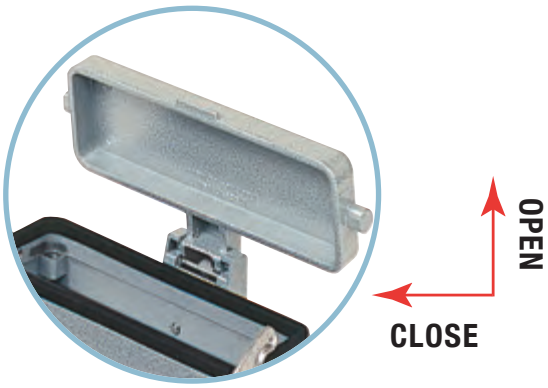
OPEN or CLOSE positions
"WHITE THERMOPLASTIC"
LP / CP

USED FOR ENCLOSURES:
- **C-TYPE** (housings with pegs)
- **CV** (housings with lever)

SELF-CLOSING
"BLACK THERMOPLASTIC"
LSP

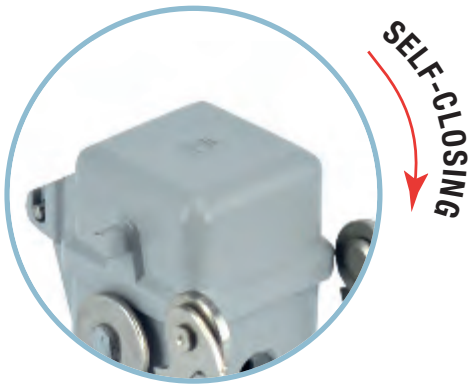
USED FOR ENCLOSURES:
- **CV** (housings with lever)

OPEN or CLOSE positions
"METAL VERSION"
LS / CS



USED FOR ENCLOSURES:
- **C-TYPE** (housings with pegs or lever)
- **CV** (housings with lever)

SELF-CLOSING
"METAL VERSION"
LS



USED FOR ENCLOSURES:
- **CKA** (housings with lever)
- **C-TYPE** size 104.62 (housings with lever)

Accessories and tools

For inserts and enclosures

Supports, adaptors and accessories

Provide the solution to the most diverse installation needs. The extensive range of articles comprises:
panel supports for inserts, special enclosures (housing with double outlet, wide housings, housings without outlets, to be punched out, housings for round cables, hoods), insert combination blocks, accessories for CT inserts, interface for printed circuits, kits for control equipment, plates for mounting D-Sub inserts onto enclosures, reducing plates and closure plates, protection lid for transportation, coding pins.

Tools

To guarantee the efficiency and safety of the connections a complete series of specific tools is available for contact crimping that assure the maximum quality required by the standards.
Manual or pneumatic or electric (battery operated) semi-automatic tools for light production or automatic electro-pneumatic tools for large-scale production are available, together with a complete series of complimentary tools for mounting and dismounting of the crimped contacts.

DESINA® and EUROMAP

Specification

Connectors compliant with DESINA® standard

DESINA® (which stands for **DE**centralised and Standardised **IN**st**A**llation technology) is an innovative installation concept behind a study headed by the German manufacturers of machine tools association (VDW), with the co-operation of users (including German automotive manufacturers) and component manufacturers, which has led to the introduction of a specification aimed to standardise electrical, hydraulic and pneumatic components and their interconnection on common platform for CNC controlled machine tools and manufacturing lines.
In the last few years, the DESINA® specification has been successfully enclosed in the ISO TC 184/SC 1 "Industrial automation systems and integration / Physical device control" as an ISO standard.
This work has been completed, and the following standards have now become available:

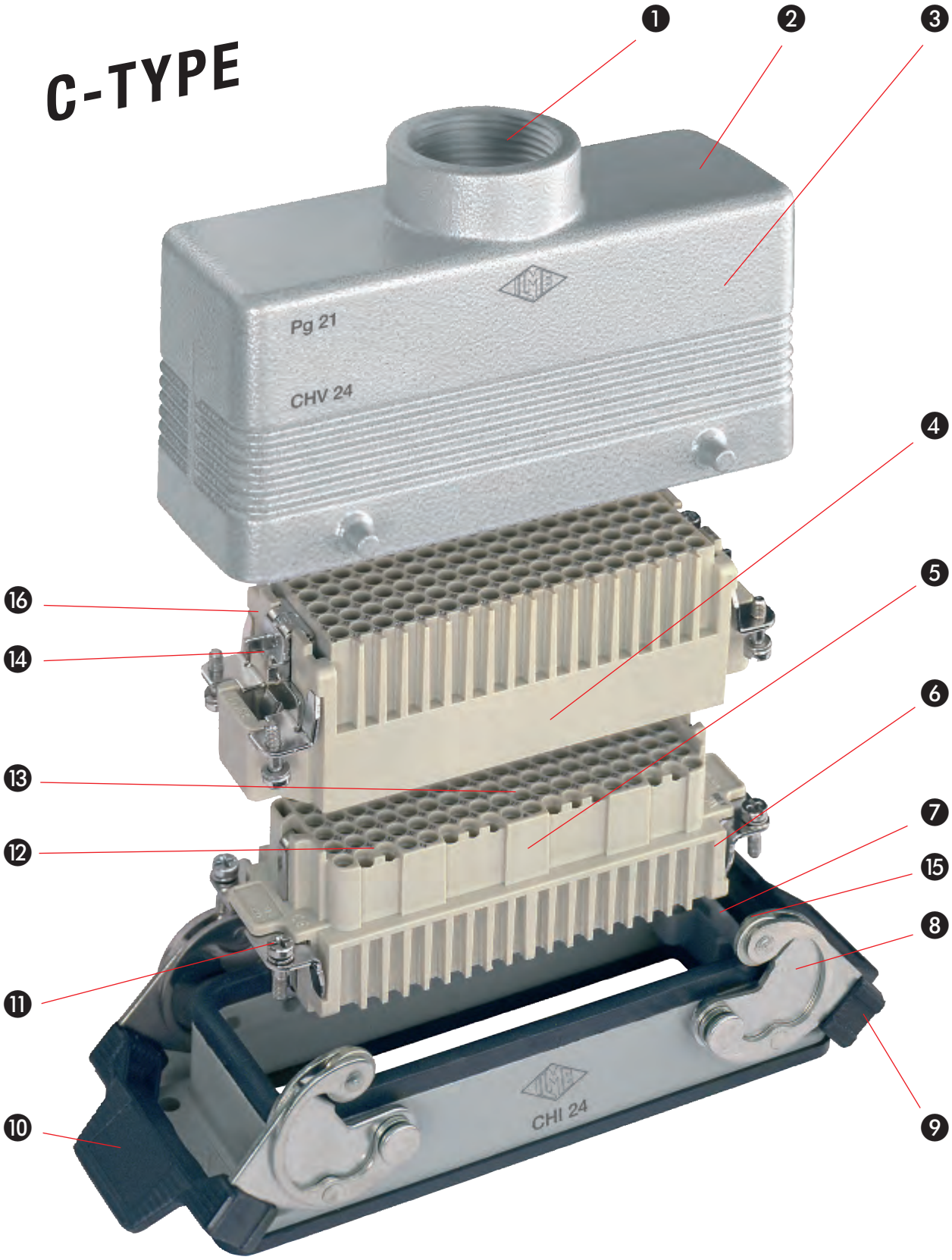
ISO 23570-1 Industrial automation systems and integration – Distributed installation in industrial applications: Part 1 – Sensors and actuators.
ISO 23570-2 Industrial automation systems and integration – Distributed installation in industrial applications: Part 2 – Hybrid communication bus.
ISO 23570-3 Industrial automation systems and integration – Distributed installation in industrial applications: Part 3 – Power distribution bus.

ISO 23570-3 standard and DESINA® specification compliant

EUROMAP (European Plastics and Rubber Machinery)

ILME connectors meet the Technical Recommendations:
- EUROMAP 12: CSAH / CDA / CDC inserts, 32 poles.
- EUROMAP 13: CSAH / CDA / CDC inserts, 16 poles.
- EUROMAP 14 – part 1: CSAH / CDA / CDC inserts, 16 poles (with CDC inserts the iron and constantan thermocouple crimp contacts may also be used).
- EUROMAP 14 – part 2: CSH / CNE / CCE / CSE inserts, 16 poles - CP inserts, 6 poles.
- EUROMAP 16: CD inserts, 8 poles, CSAH / CDA / CDC inserts, 10 poles.
- EUROMAP 27-1: MIXO inserts, CX 08 C and CX 04 B.
- EUROMAP 28: CSH / CSE inserts, 6 poles.
- EUROMAP 29: CSH / CSE inserts, 24 poles.
- EUROMAP 62: CSAH / CDA / CDC inserts, 32 poles.
- EUROMAP 67: CD inserts, 50 poles (CD 25 Z version).
- EUROMAP 67.1: CD inserts, 50 poles (CD 25 Z version).
- EUROMAP 70: MIXO inserts, CX 12 D.
- EUROMAP 71: CD inserts, 50 poles (CD 25 Z version).
- EUROMAP 73: MIXO inserts, CX 12 D.
- EUROMAP 74: MIXO inserts, CX 12 D.
- EUROMAP 78: MIXO inserts, CX 12 D.

General features of multipole connectors for industrial purposes



General features of multipole connectors for industrial purposes

❶ Threaded cable passage in various Pg diameters (types with pre-code “C”) or metric passage (types with pre-code “M”) in accordance with EN 60423, for cable entry devices in accordance with EN 50262 superseded from 2016-09-23 by EN 62444 (NPT threading on request), may be located vertically, horizontally or frontally.

❷ Rugged die-cast aluminum alloy or self-extinguishing thermoplastic enclosures (types CK, MK, CQ 08 and T-TYPE).
UL approved.
Surface-mounting bulkhead and hood versions are available, with or without fixed covers or with mobile protection covers.
The types of enclosures CH-CA (Pg cable entries) and MH-MA (metric cable entries) have a tab that prevents the insertion of inserts series CME (all) and CMCE (only 16+2 poles), while CM (Pg) enclosures series and MM (metric) do not have any tabs and contain supplementary insulating strips inside.

❸ Metallic enclosures with a coated finish of epoxy-polyester with high resistance tomechanical stress and external agents. Enclosures used with temperatures of up to 180 °C and in aggressive environments are treated with special coatings.
Where electromagnetic compatibility is necessary, EMC enclosures with high conductivity and high corrosion resistance surface treatment.

❹ Inserts are made of UL certified self-extinguishing fibreglass reinforced thermoplastics, and feature an operating temperature range between -40 °C and +125 °C.
The inserts CME (all) and CMCE (only 16+2 poles) for 830V have a key that prevents the insertion of inserts for use other than that prescribed (types CM - Pg and MM - metric).For some series, inserts in PPS (polyphenylene sulphide) may be requested for special uses with temperatures of up to 180 °C.

❺ Insert profiles polarised with asymmetrical guides to avoid incorrect matings.
Inserts have a mechanical life equal to or higher than 500 mating cycles.

❻ Inserts are manufactured in compliance with European standard EN 61984 (DIN VDE 0627), certified and identified with UL and CSA markings.

❼ Special seal gaskets in vinyl nitrile elastomer, polyurethane gasket or fluoro elastomer (on enclosures for use with maximum temperatures of 180 °C and for aggressive environments), in anti-aging, oil-resistant, fuel-resistant, together with the cable entry devices (not supplied) provide an IP degree of protection for coupled connectors. Special conductive gaskets for EMC enclosures.

❽ Stainless steel closure levers and springs guarantee a perfect closure and sealing.

❾ Locking device available in two versions, simple (with one lever), or double (with two levers). In metallic enclosures, ILME offers different types of levers: vertical or classic rotative closure.

❿ Various handle solutions are available: in self-extinguishing, thermoplastic material; in die-cast aluminium with stainless steel.

⓫ Captive insert fastening screws, with anti-slackening spring washer or under-head knurling.

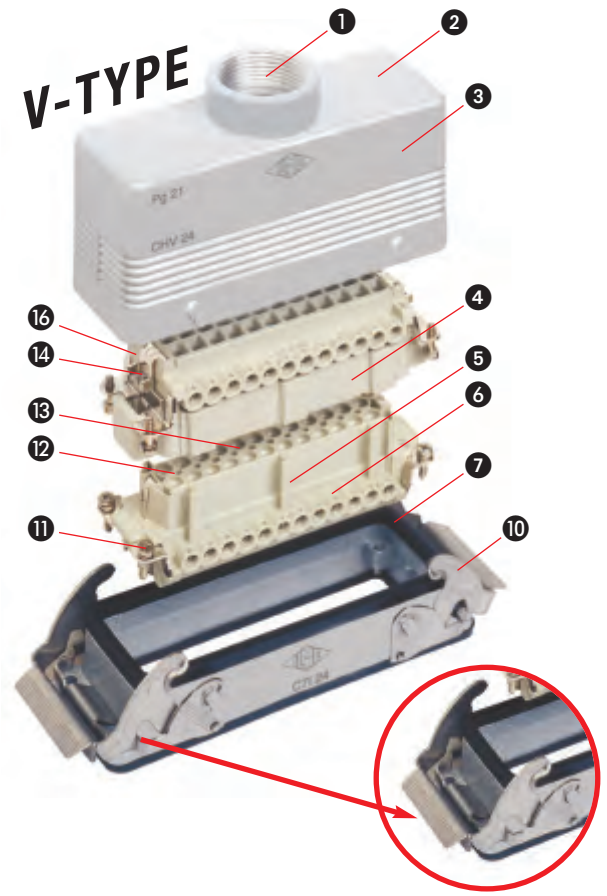
⓬ Contact position identified with numbers or codes on both sides of each insert and printed with a laser system or from a die.

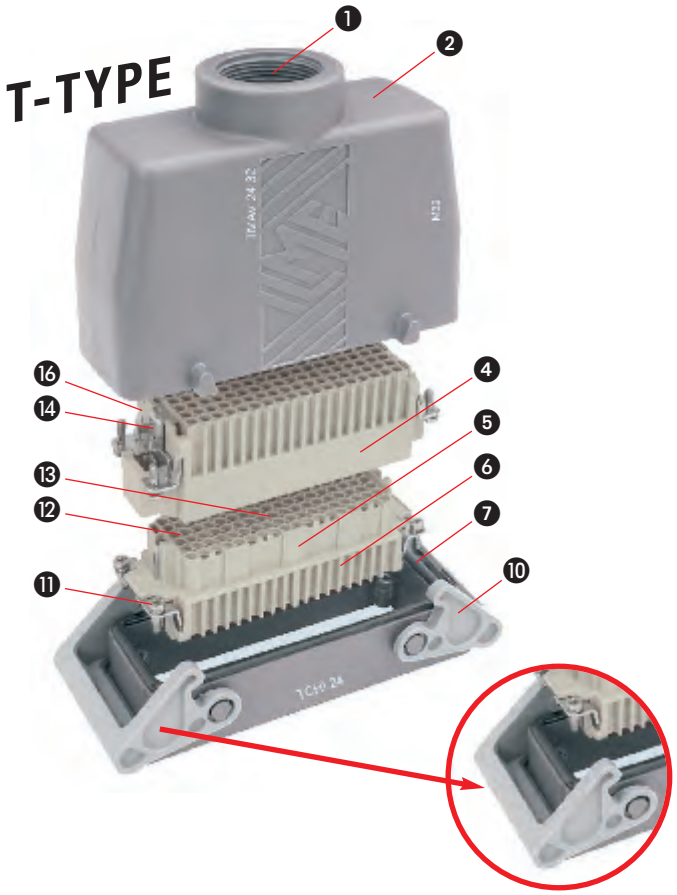
⓭ Silver or gold plated brass contacts connected to the wires by means of captive screws supplied already slackened, with spring terminal, by means of crimping (contacts available separately), or with a built-in 45° terminal block (in turn with screw or spring terminal).

⓮ Protective earth terminal with a wide contact surface.

⓯ Pins and levers supplied with anti-friction rings that facilitate closure and limit wear and tear.

⓰ CE marking attesting conformity to the requirements of the Low Voltage directive (2014/35/UE).





Dimensioning of clearances and creepage distances.

European standard EN 61984 (2009-06) is the reference standard for safety requirements for multipole connectors for industrial uses and for the relevant tests which incorporates without modification the corresponding international standard IEC 61984 Ed EN 2.0 (2008-10).
It is applicable to connectors with rated voltage values of over 50V, and up to 1000V, and rated currents values of up to 125A per pole, for which no dedicated standard exists, or to which the particular specifications or the manufacturer refer as regards the safety aspects. It can be used as a guide for connectors with rated voltage exceeding 125A per pole and those with a rated voltage less than 50V (the latter excluded from the scope of the Low Voltage Directive 2014/35/EU).
The last edition of the EN 61984 standard also introduced the definition of **connector without breaking capacity** (COC) to better distinguish this category of products from **connectors with breaking capacity** (CBC).
For terminal security and performance requirements, according to the connection technique adopted, the standard integrally refers to the corresponding standards (IEC/EN 60999 series and IEC/EN 60352 series).
For determining the minimum distances through-air and along the surface insulating, i.e. creepage distances, for connectors, this standard now refers, without any modifications to standard IEC 60664-1 Ed. 2.0 (2007-04) [1].
The following illustrates the method of EN 61984 standard, with reference to IEC 60664-1 standard, for determining the minimum insulation in connectors.
The rated characteristics for each ILME connector family are provided on pages 18 and 19. As in the first edition, the following are now obsolete: the insulation group concept and the distinction of rated voltage values into d.c. and a.c., voltage values 220V and 380V were adapted to standardised values 230V and 400V according to IEC 60038 [2] and some concepts were taken from the regulations for LV electrical systems of the IEC 60364 [3] series, such as:
- the overvoltage categories (I, II, III, IV), according to the use of the equipment [4]: these are correlated with the transient overvoltages taken as a basis for determining the rated impulse withstand voltage;
- the degrees of pollution;
- the classification of insulating materials according to their resistance to tracking;
- the conditions of the electrical field (homogenous or non-homogenous).

Overvoltage categories (or impulse withstand).

The overvoltage categories of a circuit or of an electrical system are identified by a conventional number (from I to IV) based on the limit or the control of the assumed transient overvoltage values obtained on a circuit or electrical system and depends on the means used to reduce the overvoltages.

TABLE F.1
The rated impulse voltage for equipment powered directly from the low-voltage mains (IEC 60664-1 Ed. 2.0 2008-10)

Nominal voltage according to IEC 60038 (CENELEC HD 472 S1, CEI 8-6)		Voltage line to neutral derived from nominal voltages a.c. or d.c.	Rated impulse voltage **b)** Overvoltage category			
V Three-phase **a)**	V Single phase	≤ V	V			
			I	II	III	IV
		50	330	500	800	1500
		100	500	800	1500	2500
	120-240	150	800	1500	2500	4000
230/400 } 277/480 }		300	1500	2500	4000	6000
400 / 690		600	2500	4000	6000	8000
1000		1000	4000	6000	8000	12000

a) The "/" symbol indicates a four-wire three phase distribution system (star distribution). The lower value is the voltage between phase and neutral (phase voltage), whereas the higher value is the voltage between the phases (mains voltage). Where only one value is indicated, it refers to three-wire, three-phase systems (delta distribution) and specifies the line-to-line value.
b) Equipment with these rated impulse values can be used in installations in accordance with standard IEC 60364-4-443 (Italian standard CEI 64-8/4 Section 443, German DIN VDE 0100-443).

Table F.1 provided the rated impulse voltage for equipment energised directly from the low voltage mains in function of the rated voltage of the power supply system, the relative voltage line-to-neutral and the overvoltage category.
Industrial machinery and installations with fixed connection to the low voltage supply system and consequently the relative components including multipole connectors, constitute an example of equipment belonging to overvoltage category III.
Examples of general equipment that comes under overvoltage category II are electrical household appliances, portable tools and other household or similar equipment.

For distribution networks with rated voltage **230/400V** (star distribution with neutral earthed), and overvoltage category III (category **III**: impulse withstanding), the demanded rated impulse withstand voltage is **4kV**.
For distribution networks with rated voltage **400** or **500V** (star distribution without neutral or with insulated neutral, or delta distribution, insulated or corner-earthed), and overvoltage category III (category III: impulse withstand), the demanded rated impulse withstand voltage is **6kV**.

Pollution degree.

Pollution indicates the presence of any kind of foreign matter, whether solid, liquid or gaseous (ionised gas) that can have a negative influence on the dielectric strength or on the surface resistivity of the insulating material.
The standard establishes four degrees of pollution. The categories are identified by conventional numbers based on the quantity of polluting agents or on the frequency of the phenomenon which determines the reduction of the dielectric strength and/or of the surface resistivity.

Pollution degree 1
No pollution or only dry, non-conductive pollution.
The pollution has no influence.
Pollution degree 2
Only non-conductive pollution except that occasionally a temporary conductivity caused by condensation may occur.
Pollution degree 3
Conductive pollution or dry, non-conductive pollution which becomes conductive due to condensation which may occur.
Pollution degree 4
The pollution generates persistent conductivity caused by conductive dust or by rain or snow.

Pollution degree 3 is typical of an industrial environment or similar, while pollution degree 2 is typical of a household environment or similar.

Standard EN 61984 permits the sizing of surface insulation distances (creepage distances) of connectors installed in enclosures in protection class ≥IP54 for the degree of pollution immediately below that of the application environment (e.g.: 2 instead of 3).

Abstract from standard EN 61984.

6.19.2.2 *For a connector in protection rating IP54 or higher, according to Publication IEC 60529, the insulating parts inside the enclosure may be sized for a lower degree of pollution.*
This applies also to coupled connectors, closure of which is ensured by the connector enclosure, and which may be uncoupled for test and maintenance purposes only.
One may therefore use connectors installed in enclosures or containers with degree of protection ≥ IP54, at the rated data referring to degree pollution 2 in industrial applications with degree of pollution 3, if, in compliance with the standard, the connector coupling is opened only occasionally for tests or maintenance. In the event of temporary or limited duration in uncoupled state, a closing cover is, however, necessary, guaranteeing at least degree of protection IP54.
However, this does not apply to connectors which remain uncoupled and exposed to an industrial atmosphere for an indefinite period.
It should be noted, however, that pollution could penetrate inside coupled connectors, also when it comes from remote parts of the electrical system (e.g. through conduits providing cable entry to the connectors enclosure).
Moreover, connector enclosures are usually supplied without cable entry devices, with the installer fitting such devices according to need. The degree of protection marked on the enclosures is guaranteed only for connectors coupled through the use of cable entry devices in equal or higher IP protection rating and expertly installed.

Examples of application for the selection of degree of pollution 2 for a connector.

- Connector on an electric motor controller, which is uncoupled only to replace a faulty motor, also in cases where degree of pollution 3 is instead specified for the system.
- Connector on a module-constructed machine, which is opened only for transport purposes and which is used only for faster installation and for safer putting into service.
  One must make sure that the connector has not been polluted during transport.
  To ensure this has not occurred, protective covers or adequate packing must be used.
- Connector inside a panel with degree of protection ≥ IP54.
  In this case one may even renounce equipping the connector with an IP54 enclosure.

1) Endorsed with modifications as European standard EN 60664-1:2007 and published by CENELEC member countries as a national standard: Italian standard CEI EN 60664-1 (class. CEI 109-1) (2008-04), German standard DIN EN 60664-1:2008-01 (VDE 0110-1).
2) Harmonisation Document CENELEC HD 472 S1, Italian standard CEI 8-6 (1989) + CEI 8-6;V1 (1997), German standard DIN IEC 60038:2002-11.
3) Italian standard CEI 64-8, German standard DIN VDE 0100.
4) EN 60664-1 modifies the definition to "impulse withstand category".

Insulating material group.

Insulating material influences the determination of the minimum creepage distance. It is characterised according to the damage it suffers from the concentrated release of energy during scintillations when a surface leakage current is interrupted due to the drying of the contaminated surface.
The CTI (comparative tracking index, index of resistance to surface currents) is assumed as index of the resistance to creep currents of the insulating materials in the presence of atmospheric contaminating agents (standard IEC/EN 60112).
The CTI constitutes the numeric value of the maximum voltage at which a material can resist against 50 drops of an electrolytic test solution without tracking, i.e. without a progressive formation of conductive paths on the surface of the solid insulating material (and permanent electric arc between the electrodes of the test equipment) due to the combined effect of electrical stress and electrolytic contamination.
Solid insulating materials are classified into four groups:

group I 600 ≤ CTI
group II 400 ≤ CTI < 600
group IIIa 175 ≤ CTI < 400
group IIIb 100 ≤ CTI < 175

The values for groups IIIa/IIIb (Tab. F.2, IEC 60664-1) are identical for the purpose of determining the creepage distance values.
The insulating materials used to manufacture the ILME multipole connectors belong to groups IIIa / IIIb.

Electric field conditions.

The insulation clearance is determined in Table F.2 of IEC 60664-1, bearing in mind the following influencing factors:
- Rated impulse withstand voltage.
- Electric field conditions.
- Altitude: the values specified in Table 2 are valid up to 2.000 m; for higher altitudes, the corrective factors specified in Table F.8 of IEC 60664-1.
- The micro-environment.

The shape and arrangement of the conductive parts influence the homogeneity of the electric field and consequently the clearance needed to withstand a given voltage. The clearances in Case A (non-homogeneous field) have the required impulse withstand voltage under all conditions: clearances not less than those specified in **Table F.2** - **Case A** can be used irrespective of the shape and arrangement of the conductive parts and without verification by an impulse withstand test.

Determination of clearances.

In accordance with standard IEC 60664-1, the following must be identified to determine it:
a) The rated voltage of the power supply (usually 230/400V and therefore a conventional voltage line-to-neutral of **300V,** in star distribution networks with earthed neutral, or 400V for star networks without neutral, or with insulated neutral, or in networks with the distribution transformer's secondary winding delta connected, insulated or corner-earthed and, therefore, with conventional phase voltage of 600V).
b) The overvoltage category (usually **III**).
c) The rated impulse withstand voltage determined from Table 1 of IEC 60664-1 (usually **4 kV** or **6 kV**).
d) The type of electric field to which the parts through which the current flows shall be subjected (worse case = **inhomogenous field**) and the degree of pollution (usually **3**).

The standard **EN 61984** requires that the **creepage distance** be dimensioned according to IEC 60664-1. For distances up to 2 mm of insulation, typically to connectors for printed circuits, the reference can be, alternatively, standard IEC 60664-5, to be read in conjunction with IEC 60664-1. The minimum through-air insulation distance is therefore given by Table F.2 of IEC 60664-1, according to the rated impulse derived from **Table B.2** of the same standard which is part of Annex B (informative) Rated voltages of power supply networks for different modes of overvoltage control. This table is attributable in particular to devices that do not provide any upstream overvoltage surge arrester and represents, therefore the "worst case" and replaces **Table 5** of the previous edition of EN 61984. The rated impulse withstand voltage must be chosen based on the nominal supply voltage and overvoltage category. The assignment of connectors to a particular overvoltage category (usually **III**) is effected according to the rules of IEC 60664-1.

Rated voltage.

Voltage value assigned by the manufacturer to the connector refers to the operating and performance characteristics.
NOTE – A connector may have more than one rated voltage value.
[IEC 60664-1:2007, definition 3.9, modified].

TABLE B.2.
Inherent control or control of equivalent protection [IEC 60664-1 Ed.2.0 (2007-04)].

Voltage line-to-neutral deived from nominal voltages a.c. or d.c. up to and including [1]	Nominal voltages presently used in the world				Rated impulse voltage for the device [1]			
	Three phase four wire systems with earthed neutral	Three-phase three-wire systems earthed or unearthed	Single-phase two-wire systems a.c. or d.c.	Single-phase three-wire systems a.c. or d.c.	Overvoltage category			
V	V	V	V	V	I	II	III	IV
50			12,5 24 25 30 42 48	30-60	330	500	800	1500
100	66/115	60	60		500	800	1500	2500
150	120/208 *) 127/220	115, 120, 127	100 **), 110, 120	100/-200 *) 110-220 120-240	800	1500	2500	4000
300	220/380, 230/400, 240/415, 260/440, 277/480	200 **), 220, 230, 240, 260, 277	220	220-440	1500	2500	4000	6000
600	347/600 380/660 400/690 417/720 480/830	347, 380, 400, 415, 440, 480, 500, 577, 600	480	480-960	2500	4000	6000	8000
1000		660 690, 720 830/1000	1000		4000	6000	8000	12000

1) These columns are taken from Table F.1 indicating the te rated impulse withstand voltages.
***)** Used in the United States and Canada.
****)** Used in Japan.

With the three values (b) (c) and (d) the minimum clearance is determined in Table F.2 IEC 60664-1 through-air insulation distance

In regard to the choice of the type of electric field, the (through-air insulation distances) through possible windows and openings in the clearances insulating material housing, must comply with the values of case A of Table F.2 of IEC 60664-1, i.e. for inhomogeneous field conditions.

TABLE F.2.

Clearances to withstand transient overvoltages
[IEC 60664-1 Ed. 2.0 (2007-04)].

Required impulse withstand voltage [1) 5)]	Minimum clearances in air up to 2.000 m. above sea level					
	Case A Inhomogeneous field (see 3.15) Pollution degree [6)]			Case B Homogeneous field (see 3.14) Pollution degree [6)]		
	1	2	3	1	2	3
kV	mm	mm	mm	mm	mm	mm
0,33 [2)]	0,01	0,2 [3) 4)]	0,8 [4)]	0,01	0,2 [3) 4)]	0,8 [4)]
0,40	0,02			0,02		
0,50 [2)]	0,04			0,04		
0,60	0,06			0,06		
0,80 [2)]	0,10			0,10		
1,0	0,15			0,15		
1,2	0,25	0,25		0,2		
1,5 [2)]	0,5	0,5		0,3	0,3	
2,0	1,0	1,0	1,0	0,45	0,45	
2,5 [2)]	1,5	1,5	1,5	0,60	0,60	
3,0	2,0	2,0	2,0	0,80	0,80	
4,0 [2)]	3,0	3,0	**3,0**	1,2	1,2	1,2
5,0	4,0	4,0	4,0	1,5	1,5	1,5
6,0 [2)]	5,5	5,5	**5,5**	2,0	2,0	2,0
8,0 [2)]	8,0	8,0	**8,0**	3,0	3,0	3,0
10	11	11	11	3,5	3,5	3,5
12 [2)]	14	14	**14**	4,5	4,5	4,5
15	18	18	18	5,5	5,5	5,5
20	25	25	25	8,0	8,0	8,0
25	33	33	33	10	10	10
30	40	40	40	12,5	12,5	12,5
40	60	60	60	17	17	17
50	75	75	75	22	22	22
60	90	90	90	27	27	27
80	130	130	130	35	35	35
100	170	170	170	45	45	45

1) This voltage is
— for functional insulation, at maximum impulse voltage expected to occur across the clearance (see 5.1.5),
— for basic insulation directly exposed or significantly influenced by transient overvoltages from the low-voltage mains (see 4.3.3.3, 4.3.3.4.1 and 5.1.6), the rated impulse voltage of the equipment,
— for other basic insulations (see 4.3.3.4.2), the highest impulse voltage that can occur in the circuit.
For reinforced insulation, see 5.1.6.
2) Preferred values as specified in 4.2.3.
3) For printed wiring material, the values for pollution degree 1 apply except that the value shall not be less than 0,04 mm, as specified in Table F.4.
4) The minimum clearances given for pollution degrees 2 and 3 are based on the reduced withstand characteristics of the associated creepage distance under humidity conditions (see IEC 60664-5).
5) For parts or circuits within uipment subjected to impulse voltages according to 4.3.3.4.2, interpolation of values is allowed. However, standardization is achieved by using the preferred series of impulse voltage values in 4.2.3.
6) The dimensions for pollution degree 4 are as specified for pollution degree 3, except that the minimum clearance is 1,6 mm.

When the clearance is less than the value indicated for Case A an impulse withstand voltage test is required.
Compared to the previous edition of IEC 60664-1 Table F.2 is has been changed (already with the Amendment 2). In particular, the columns referring to degree of pollution 4 have been removed. The definition of this pollution degree is varied in 6.2 to: “permanent conductivity occurs, due to conductive dust, rain or other humid conditions”. The clearances for degree of pollution 4 area as specified for degree of pollution 3, with the exception that the minimum clearance is 1,6 mm.
“In 6.3 it states that the size of the surface distances can not be specified in presence of permanent conductive pollution (pollution degree 4).
For temporarily conductive pollution (pollution degree 3) the insulation surface can be designed to avoid the formation of a continuous conductive pollution path, for example using ribs or grooves”.

The values in bold are the most common multipole connectors for industrial purposes.

If the component fulfils the minimum clearance prescribed for live parts of opposing polarities, it is exempted from the impulsed voltage withstand test. This test is run at sea level using increased voltage values in order to take into account rarefied air at high altitude (the prescribed values refer to 2000 m asl). However, if this distance is not respected, passing the test gives one the right to declare the relevant rated impulse withstand voltage. Declaration of the rated impulse withstand voltage is optional for standard EN 61984: if the manufacturer declares the rated impulse withstand voltage, the impulse withstand voltage test is, in any event, necessary as dielectric verification.
Alternatively, if the manufacturer does not declare this rated value, the dielectric voltage withstand test at mains frequencies of 50/60 Hz for 60 s (test 4a of IEC 60512) is necessary, but at reduced values compared to the peak values of the impulse test voltages of wave shape standardised at 1,2/50 µs.
For this purpose, standard EN 61984 provides the following cross-reference table:

TABLE 8.

Test voltages (EN 61984 Ed. 2.0 - 2009-06)

Rated impulse withstand voltage $\frac{U_{ipm}}{kV}$	Test voltages: Impulse withstand voltage * kV (1.2/50 µs) at 2000 above sea level	Impulse withstand voltage * kV (1.2/50 µs) at sea level	Withstand voltage (r.m.s. value) kV (50/60 Hz)
0,5	0,5	0,55	0,37
0,8	0,8	0,91	0,50
1,5	1,5	1,75	0,84
2,5	2,5	2,95	1,39
4	4	4,8	2,21
6	6	7,3	3,31
8	8	9,8	4,26
12	12	14,8	6,6

* If the test laboratory is situated between sea level and an altitude of 2000 m asl, interpolation of test impulsed voltage is allowed.

NOTE:
This table uses the characteristics of the inhomogeneous field, Case A of IEC 60664-1

Rated impulse withstand voltage.

The rated impulse withstand voltage assigned by the manufacturer to the connector, which refers to the withstanding capacity of its insulation with respect to transient overvoltages [IEC 60664-1:2007, definition 3.9.2, modified].

Impulse withstand voltage.

Maximum peak value of a voltage impulse of prescribed shape and polarity which does not cause insulation reduction under specified conditions.
NOTE - The impulse withstand voltage is greater than or equal to the rated impulse withstand voltage [IEC 60664-1:2007, definition 3.8.1, modified].

Determination of creepage distances.

For the **minimum surface insulation distance** (creepage distance), i.e. *"the shortest distance along the surface of the insulation material between two conducting parts"* (IEC 60664-1 definition 3.3) standard IEC 61984:2009 for connectors refers to that prescribed by standard **IEC 60664-1:2007** in **Table F.4**. It is determined according to rated voltage, degree of pollution and insulating material group.
The rated voltage providing access to Table 6 (rationalised voltage of the power supply system) is determined by Table 3a of IEC 60664-1 for single phase two or three wire a.c. or d.c. systems or Table 3b for three-phase three or four wire a.c. systems.
Usually for three-phase systems with 230V/400V rated voltage, the conventional line-to-line insulation voltage is 400V and the line-to-earth for TT or TN systems is 250V.
For three-phase systems with 400V or 500V rated voltage the conventional line-to-line insulation voltage is respectively 400V and 500V.
The degree of pollution must be specified according to standard IEC 60664-1.
This strongly influences the rated insulation voltage of a connector. Therefore, the rated insulation voltage of a connector should be reconsidered time by time for each degree of pollution.

Legend:

1) The phase-earth insulation for unearthed or impedance-earthed lines is equal to that between phases, because the operating voltage of any phase can, in practice, approach full voltage between the phases [line voltage]. This is because the actual voltage to earth is determined by the insulation resistance and by the capacitive reactance of each phase to earth. Consequently, a low (but acceptable) insulation resistance of a phase can, in effect, earth it and increase voltage to earth of the other two phases at full voltage between the phases [line voltage].
2) For equipment for use on both three-phase three-wire and three-phase four wire supplies, earthed or unearthed, use only the values for three-wire systems.

***)** It is assumed that the rated voltage of the equipment is not less than this value.
****)** These values correspond to the values given in Table F.1.

TABLE F.3a.

Single phase two or three wire a.c. or d.c. systems
(IEC 60664-1 Ed. 2.0 - 2007-04).

Rated supply voltage *)	Rationalised voltages for Table F.4	
	For insulation phase-phase 1)	For insulation phase-phase 1)
	All systems	Three-wire systems with intermediate earth point
V	V	V
12,5	12,5	-
24	25	-
25	25	-
30	32	-
42	50	-
48	50	-
50 **)	50	-
60	63	-
30-60	63	32
100 **)	100	-
110	125	-
120	125	-
150 **)	160	-
220	250	-
110-220	250	125
120-240	250	125
300 **)	320	-
220-440	500	250
600 **)	630	-
480-960	1000	500
1000 **)	1000	-

TABLE F.3b.

Three phase 4 or 3 wire a.c. systems
(IEC 60664-1 Ed. 2.0 - 2007-04).

Rated supply voltage *)	Rationalised voltages for Table F.4		
	For insulation phase-phase 2)	For insulation phase-phase 1)	
	All systems	Four-wire three-phase systems with earthed neutral	Four-wire three-phase systems unearthed 1) or with earthed phase
V	V	V	V
63	63	32	63
110	125	80	125
120	125	80	125
127	125	80	125
150 **)	160	-	160
208	200	125	200
220	250	160	250
230	250	160	250
240	250	160	250
300 **)	320	-	320
380	400	250	400
400	400	250	400
415	400	250	400
440	500	250	500
480	500	320	500
500	500	320	500
575	630	400	630
600 **)	630	-	630
660	630	400	630
690	630	400	630
720	800	500	800
830	800	500	800
960	1000	630	1000
1000 **)	1000	-	1000

With this voltage value, the pollution degree and the materials group the minimum creepage distance can be determined using **Table 6**.

TABLE F.4.

Creepage distances to avoid failure due to surface currents [IEC 60664-1 Ed.2.0 (2007-04)].

Effective voltage [1]	Minimum creepage distances								
	Materials for printed circuits		Pollution degree						
	1	2	1	2			3		
	All material groups mm	All material groups except IIIb mm	All material groups mm	Material group I mm	Material group II mm	Material group III mm	Material group I mm	Material group II mm	Material group III [2] mm
10	0,025	0,040	0,080	0,400	0,400	0,400	1,000	1,000	1,000
12.5	0,025	0,040	0,090	0,420	0,420	0,420	1,050	1,050	1,050
16	0,025	0,040	0,100	0,450	0,450	0,450	1,100	1,100	1,100
20	0,025	0,040	0,110	0,480	0,480	0,480	1,200	1,200	1,200
25	0,025	0,040	0,125	0,500	0,500	0,500	1,250	1,250	1,250
32	0,025	0,040	0,14	0,53	0,53	0,53	1,30	1,30	1,30
40	0,025	0,040	0,16	0,56	0,80	1,10	1,40	1,60	1,80
50	0,025	0,040	0,18	0,60	0,85	1,20	1,50	1,70	1,90
63	0,040	0,063	0,20	0,63	0,90	1,25	1,60	1,80	2,00
80	0,063	0,100	0,22	0,67	0,95	1,30	1,70	1,90	2,10
100	0,100	0,160	0,25	0,71	1,00	1,40	1,80	2,00	2,20
125	0,160	0,250	0,28	0,75	1,05	1,50	1,90	2,10	2,40
160	0,250	0,400	0,32	0,80	1,10	1,60	2,00	2,20	2,50
200	0,400	0,630	0,42	1,00	1,40	2,00	2,50	2,80	3,20
250	0,560	1,000	0,56	1,25	1,80	2,50	3,20	3,60	4,00
320	0,75	1,60	0,75	1,60	2,20	3,20	4,00	4,50	5,00
400	1,0	2,0	1,0	2,0	2,8	4,0	5,0	5,6	6,3
500	1,3	2,5	1,3	2,5	3,6	5,0	6,3	7,1	8,0 (7,9) [4]
630	1,8	3,2	1,8	3,2	4,5	6,3	8,0 (7,9) [4]	9,0 (8,4) [4]	10,0 (9,0) [4]
800	2,4	4,0	2,4	4,0	5,6	8,0	10,0 (9,0) [4]	11,0 (9,6) [4]	12,5 (10,2) [4]
1.000	3,2	5,0	3,2	5,0	7,1	10,0	12,5 (10,2) [4]	14,0 (11,2) [4]	16,0 (12,8) [4]
1.250			4,2	6,3	9,0	12,5	16.0 (12,8) [4]	18,0 (14,4) [4]	20,0 (16,0) [4]
1.600			5,6	8,0	11,0	16,0	20,0 (16,0) [4]	22,0 (17,6) [4]	25,0 (20,0) [4]
2.000			7,5	10,0	14,0	20,0	25,0 (20,0) [4]	28,0 (22,4) [4]	32,0 (25,6) [4]
2.500			10,0	12,5	18,0	25,0	32,0 (25,6) [4]	36,0 (28,8) [4]	40,0 (32,0) [4]
3.200			12,5	16,0	22,0	32,0	40,0 (32,0) [4]	45,0 (36,0) [4]	50,0 (40,0) [4]
4.000			16,0	20,0	28,0	40,0	50,0 (40,0) [4]	56,0 (44,8) [4]	63,0 (50,4) [4]
5.000			20,0	25,0	36,0	50,0	63,0 (50,4) [4]	71,0 (56,8) [4]	80,0 (64,0) [4]
6.300			25,0	32,0	45,0	63,0	80,0 (64,0) [4]	90,0 (72,0) [4]	100,0 (80,0) [4]
8.000			32,0	40,0	56,0	80,0	100,0 (80,0) [4]	110,0 (88,0) [4]	125,0 (100,0) [4]
10.000			40,0	50,0	71,0	100,0	125,0 (100,0) [4]	140,0 (112,0) [4]	160,0 (128,0) [4]
12.500			50,0 [3]	63,0 [3]	90,0 [3]	125,0 [3]			
16.000			63,0 [3]	80,0 [3]	110,0 [3]	160,0 [3]			
20.000			80,0 [3]	10,0 [3]	140,0 [3]	200,0 [3]			
25.000			10,0 [3]	125,0 [3]	180,0 [3]	250,0 [3]			
32.000			125,0 [3]	160,0 [3]	220,0 [3]	320,0 [3]			
40.000			160,0 [3]	200,0 [3]	280,0 [3]	400,0 [3]			
50.000			200,0 [3]	250,0 [3]	360,0 [3]	500,0 [3]			
63.000			250,0 [3]	320,0 [3]	450,0 [3]	600,0 [3]			

1) This voltage is
- — for insulation according to the working voltage,
- — for main and supplementary insulation of the circuit powered directly by the network (see 4.3.2.2.1), at the rationalized voltage of Table F.3a or Table F.3b, on the basis of the rated voltage of the equipment or rated insulation voltage,
- — for main and supplementary insulation of the system, device and internal circuits not powered directly by the network (see 4.3.2.2.2), the highest rms voltage which can occur in the system, in the device or in the internal circuit, powered at rated voltage and in the combination of the most onerous operating conditions foreseen by the rated characteristics of the device.

2) Materials group IIIb is not recommended for application with pollution degree 3 above 630V.
3) Provisional data based on extrapolations. Technical committees that have other information based on experience may use their dimensions.
4) The values shown in brackets may be applied to decrease the creepage distance in the presence of ribbing (see 5.2.5).

NOTE: The high precision used in indicating creepage distances in this table does not mean that the uncertainty of measurement should be of the same order of magnitude.

NOTE: In **boldface** the typical values for multipole rectangular connectors for industrial uses are shown.

Standards

The RoHS 2 (2011/65/EU) and WEEE 2 (2012/19/EU) Directives

- The **RoHS 2 2011/65/EU Directive** (recast) replaced on 2013-01-03 the original RoHS 2002/95/EC Directive (with its later amendment 2008/35/EC).

  This Directive introduced the ban of use of certain hazardous substances in new electrical and electronic equipment (finished products) placed on the market from 1st July 2006 (the exceptions for some applications were listed in Annex of the Directive and in a number of further Decisions of the EU Commission [1]). Indirectly – in the supply chain – the ban also applied to the electrical components of said electrical and electronic equipment.

  The banned and/or restricted substances are:

  Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent Chromium (Cr^{6+}), Poly-Brominated Biphenyls (PBB) and Poly-Brominated Diphenyl-Ethers (PBDE) (the latter two being families of flame retardants for thermoplastic materials).

  All I.L.M.E. finished products (industrial electrical equipment) as well as all I.L.M.E. components (for industrial electrical equipment) in the sense of the Directive are in conformity with the **RoHS 2 2011/65/EU Directive** within the terms of its scope and the starting dates (transitional periods) established for each category of EEE (electrical and electronic equipment) covered in Annex I of said Directive.

  For all components (connector inserts, removable crimp contacts, enclosures for connectors, and accessories related to connectors as far as they are in the scope) the products comply with the limit values for certain substances as set out in said RoHS 2 2011/65/EU Directive, including the permitted exemptions of Annexes III and IV.

  NOTE – Such products by themselves – as components – are not covered by the RoHS 2 Directive; therefore, for such products, there are no direct legal requirements. As no EU Declaration of Conformity can be issued, the above does not constitute a EU Declaration of Conformity to the RoHS 2 2011/65/EU Directive, and the CE marking – which may be applied either on the part or on the packaging label in compliance with other applicable EU Directives, e.g. the Low Voltage Directive 2014/35/EU (a recasting of the previous directive 2006/95/EC in force from 2016-04-20) – is not referred to said RoHS 2 Directive.

- The **WEEE 2 2012/19/EU Directive** (recast) replaced on 2014-02-15 the original WEEE 2002/96/EC Directive (and its later amendments 2003/108/EC and 2008/34/EC). This Directive aims to recycle and minimise Waste from Electrical and Electronic Equipment (also referred to as WEEE). It encourages recycling, reuse and other forms of recovery of such technological waste and sets ambitious targets for recovery rate, variable depending on the product categories.

  In this new Directive, a six-year **transitional period** was established up to 2018-08-14, during which the equipment included in its "open scope" still remain the same as former WEEE Directive. From 15th August 2018, the scope will become "open", subject to the exclusions for various categories of "equipment", which include the **large-scale fixed installations**. *These are defined as "a large-size combination of several types of apparatus and, where applicable, other devices, which: (i) are assembled, installed and uninstalled by professionals; (ii) are intended to be used permanently as part of a building or a structure at a pre-defined and dedicated location; and (iii) can only be replaced by the same specifically designed equipment" and large-scale stationary industrial tools defined as "a large size assembly of machines, equipment, and/or components, functioning together for a specific application, permanently installed and uninstalled by professionals at a given place, and used and maintained by professionals in an industrial manufacturing facility or research and development facility".*

  Connectors and their accessories that, as components, **are outside the scope of RoHS 2 Directive, do not fall in the scope of WEEE 2** even once "open scope"; moreover, they are primarily used in installations of industrial automation (large-scale stationary industrial tools) which are exempted from conformity to the WEEE 2 Directive.

  As required by the WEEE 2 Directive, I.L.M.E. will take care of any technical and administrative obligation for any I.L.M.E. product that might be involved.

  As a manufacturer of electrical equipment and components for industrial use, I.L.M.E. acknowledges the regulations introduced by these Directives. The above-mentioned Directives are already effective national law in all EU countries. Similar regional regulations aimed at the preservation of the environment are in force across the world outside Europe.

  For the products described in this Catalogue, although the restrictions of use of the above mentioned hazardous substances are not legally applicable, in that no product in this Catalogue belongs to any of the product categories described and illustrated in the above mentioned RoHS 2 and WEEE 2 Directives, the **"RoHS conformity"** is important, as it is required downstream in the supply chain. I.L.M.E. has therefore carried out the necessary corrective actions, which have led to the **"RoHS conformity"** of all products in this Catalogue, wherever required.

  I.L.M.E. products sold after 1st July 2006 do not contain any of the restricted substances in concentrations higher than those allowed by the RoHS 2 Directive and by the subsequent related Decisions taken by the EU Commission.

1) At the date of withdrawal of the old RoHS 2002/95/EC Directive – 2013-01-03 – the following Commission decisions were applicable:
M1 2005/618/EC of 18th August 2005, **M2** 2005/717/EC of 13th October 2005, **M3** 2005/747/EC of 21st October 2005, **M4** 2006/310/EC of 21st April 2006, **M5** 2006/690/EC, **M6** 2006/691/EC and **M7** 2006/692/EC of 12th October 2006, **M9** 2008/385/EC of 24th January 2008, **M10** 2009/428/EC of 4th June 2009, **M11** 2009/443/EC of 10th June 2009, **M12** 2010/122/EU of 25th February 2010, **M13** 2010/571/EU of 24th September 2010, **M14** 2011/534/EC of 8th September 2011.

Standards

Fire protection standards for railway applications

The new European standard **EN 45545** governing fire protection on railway vehicles was published in 2013. In Italy, the various parts are:

- **UNI CEI EN 45545-1**:2013-05 Railway Applications – Fire protection on railway vehicles – Part 1: General;
- **UNI CEI EN 45545-2**:2013-05 Railway Applications – Fire protection on railway vehicles – Part 2: Requirements for fire behaviour of materials and components;
- **UNI CEI EN 45545-3**:2013-05 Railway Applications – Fire protection on railway vehicles – Part 3: Fire resistance requirements for fire barriers;
- **UNI CEI EN 45545-4**:2013-05 Railway Applications – Fire protection on railway vehicles – Part 4: Fire safety requirements for rolling stock design;
- **UNI CEI EN 45545-5**:2013-05 Railway Applications – Fire protection on railway vehicles – Part 5: Fire safety requirements for electrical equipment, including that of trolley buses, track guided buses and magnetic levitation vehicles;
- **UNI CEI EN 45545-6**:2013-05 Railway Applications – Fire protection on railway vehicles – Part 6: Fire control and management systems;
- **UNI CEI EN 45545-7**:2013-05 Railway Applications – Fire protection on railway vehicles – Part 7: Fire safety requirements for flammable liquid and flammable gas installations.

The standard replaces the previous voluntary Technical Specification CEN/TS 45545:2009 and has formalised the withdrawal of all conflicting national standards as of 1st April 2016, the date on which the following parallel standards cease to be effective: in Italy **UNI CEI 11170-1**:2005, **UNI CEI 11170-2**:2005 and **UNI CEI 11170-3**:2005, in France, **NF F 16-101**:1988 and **NF F 16-102**:1992, in Germany, **DIN 5510-2**:2009, in Great Britain, **BS 6853**:1999. These, however, will remain applicable until 31st march 2016. All certificates covering materials issued in line with national standards will remain valid in Europe up until this date. As of 1st April 2016, the only reference standard will be EN 45545:2013.

EN 45545-2 specifies the requirements for the fire behaviour of materials and components of railway vehicles according to the different hazard levels defined by EN 45545-1:2013 (HL = Hazard Level). See Table 1 - Classification of hazard levels (EN 45545-2:2013).

Each hazard level provides for its own specific test procedures, test conditions, fire-fighting requirements and severity (min or max threshold), ranging from **R1** to **R26**. Small electrical and earthing components, such as electrical connectors, must have a nominal fire behaviour rating (self-extinguishing).

94V-0 (standard UL 94)

The thermoplastic insulating material used in ILME connectors complies with the requirements of UL 94V-0. There are no requirements applicable to products with a combustible mass < 10 g not in contact with other unclassified products, if they are installed adjacent to components for which no certificates are available. In this case, the requirements depend on the so-called grouping rules.

The connectors are products not listed in Table 2 of EN 45545-2:2013. As non-listed products, they must satisfy the requirements of Table 3, and as their exposed surface area is ≤ 0.2 m^2, the requirement set for interior installation in railway vehicles is **R22** while for exterior installation it is **R23** (Table 5 of EN 45545-2:2013).

The materials making up the connectors constitute the maximum applicable requirement sets.

These sets specify parameters, procedures and limit thresholds (min or max) for the tests. In particular, R22 and R23 specify tests and limit values for oxygen content (oxygen index OI), smoke density (D_S max) and toxicity (conventional toxicity index CIT_{NLP}). The polycarbonate used by ILME in its connectors satisfies the limit values specified in EN 45545-2.

See Table 2 - Requirements for unlisted products (including electrical connectors) - at following page.

Up until the publication of the previously mentioned new European standard, the most advanced fire safety standards for the railway industry were French:

– **NF F 16-101** Matériel roulant ferroviaire – Comportement au feu – Choix des matériaux;
– **NF F 16-102** Matériel roulant ferroviaire – Comportement au feu – Choix des équipements électriques;

which in turn referred to the test methods described in standards:

– **NF X 70 100** Analyse de gaz de pyrolyse et de combustion;
– **NF X 10 702** Détermination de l'opacité des fumées en atmosphère non renouvelée.

Table 1 – Classification of hazard levels (EN 45545-2:2013)

	Design category			
Operation category #)	A: Vehicles forming part of an automatic train having no emergency trained staff on board	D: Double decked vehicles	S: Sleeping and couchette vehicles	N: All other vehicles (standard vehicles)
OC 1	HL1	HL1	HL2	HL1
OC 2	HL2	HL2	HL2	HL2
OC 3	HL2	HL2	HL3	HL2
OC 4	HL3	HL3	HL3	HL3

#) Relationship between service, infrastructure and evacuation conditions for passengers and staff

Standards

Fire protection standards for railway applications

Table 2 - Requirements for unlisted products (including electrical connectors)

Test method	Standard	Parameter	Unit	Interior	Exterior	Threshold R22 (more severe than R23)	ILME (polycarbonate)
Oxygen index	EN ISO 4589-2	OI (min)	%	R22	R23	HL1: 28 HL2: 28 HL3: 32	better than R22-HL3
Smoke density	EN ISO 5659-2	D_S max 1)	---	R22	R23	HL1: 600 HL2: 300 HL3: 150	better than R22-HL3
Smoke toxicity	NF X70-100-1 NF X70-100-2	CIT_{NLP} (max) 2)	---	R22	R23	HL1: 1,2 HL2: 0,9 HL3: 0,75	better than R22-HL3

1) D_S max = specific optical density of smoke

2) CIT_{NLP} (max) = maximum conventional toxicity index of smoke

These latter were somewhat similar, in terms of methods, to the American standards:

– **ASTM E 662** Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials;
– **ASTM E 162** Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source.

Test methods referred to in the American reference standard specifying the performance criteria:

– **NFPA 130** Standard for Fixed Guideway Transit and Passenger Rail Systems.

Also widely used are the Bombardier Transportation smoke toxicity specifications:

– **SMP 800-C** Toxic Gas Generation.

In Italy, from 2006 to 31st March 2016, for installation on board railway vehicles, a certificate of conformity to the following Italian railway standards is required:

– **UNI CEI 11170-1:2005** Trains and trams – Fire safety guidelines for trains, trams and track guided vehicles – General principles;
– **UNI CEI 11170-2:2005** Trains and trams – Fire safety guidelines for trains, trams and track guided vehicles – Design recommendations – Fire containment measures – Indication, monitoring and evacuation systems;
– **UNI CEI 11170-3:2005** Trains and trams – Fire safety guidelines for trains, trams and track guided vehicles – Material fire behaviour assessment – Acceptance limits;

published jointly by UNI and CEI on 30/11/2005 with parallel effectiveness until 31st March 2016. In these standards, the requirements for materials relating to electrical connectors are contained in the 2nd schedule "Acceptability criteria for electrical and electronic materials and components" at the application "All other applications including flammable materials" (all applications other than electric cables). For these applications, four material tests are required:

– Exposure to a small flame according to EN ISO 11925-2 with, depending on the level of risk, a resistance to fire of the material of 15 s for LR1 and LR2 and a resistance of 30 s for LR3 and LR4.
– Smokiness in compliance with French standard NF F 16-101 with IF better or equal to F2 for all risk levels. The material we use is classified as F1 (better than F2) according to the tests carried out.
– Smoke optical density measurement, in compliance with French standard NF X 10-702 (from NF F 16-101) with values ≤ 100 for all risk levels LR1…4.
– Toxicity measurement, in compliance with Italian standard CEI 20-37/7, with T ≤ 2 for all risk levels LR1…4.

Tests

EU - The material tested in accordance with the European Norm **EN 45545-2**:2013 – showed an oxygen index (OI) of 38%, a Ds max (flaming) = 117 and a smoke toxicity index CIT_{NLP} = 0,16, **compliant with the requirements of EN 45545-2:2013 for all risk levels: HL1 – HL2 – HL3** and, consequently, for all the design categories (A, D, S, N) and operation categories (1, 2, 3, 4) defined in EN 45545-1:2013.

France - The material used in our connectors is certified by an accredited laboratory CERTIFER, according to the previously mentioned French standards **NF F 16-101** and **NF F 16-102,** and has a **classification F1** (Index Fumée I.F. = 15) and a smoke toxicity index (Index Toxicité Fumée) **I.T.C. = 18.**
Both values meet the requirements set out by the French standards and by the Italian standard UNI CEI 11170-3 schedule 2, which relates to electrical connectors.

Germany - The material used in our connectors also complies with the German standard **DIN 5510-2**:2009 with a **flammability class = S4, smoke spreading class = SR2** and **drip class = ST2**.

UK - The material was also tested according to British Standard **BS 6853**:1999, with an **R (max) index = 0,6**, consequently within the limits of Tables 7 and 8 of the standard for vehicle categories Ia, Ib and II.

USA - Tests compliant with American standards have also been carried out at a qualified North American laboratory, confirming compliance with the requirements set out by the US Federal Transit Administration "Recommended Fire Safety Practices for Rail Transit Material Selection" for methods ASTM E 662 (NFPA 258) (specific optical smoke density), ASTM E 162 (ASTM D3635) (surface flammability ⇒ flame propagation index) and Bombardier Transportation SMP 800-C (smoke and gas toxicity).

inserts series	No. of poles [1] main contacts + ⏚	auxiliary contacts	rated current [3]	EN 61984 (2008-10) pollution degree 3 rated voltage	rated impulse withstand voltage	pollution degree	EN 61984 (2008-10) pollution degree 2 rated voltage	rated impulse withstand voltage	pollution degree	UL/CSA certification rated voltage ~ or ⎓	certifications
CK	**3, 4**	—	10A	230/400V	4kV	3	400/690V	4kV	2	600V	UL, CSA, CCC, DNV-GL, EAC
CKS	**3, 4**	—	10A	400V	4kV	3	690V	4kV	2	600V	cUL[A], CSA, CCC, EAC
CD	**8** (without ⏚)	—	10A	50V	0,8kV	3				50V	UL, CSA, CCC, DNV-GL, EAC
CD	**7, 15, 25, 40, (50), 64, (80), (128)**	—	10A	250V [2]	4kV	3	230/400V [2]	4kV	2	600V	UL, CSA, CCC, DNV-GL, EAC
CT, CTS	**40, 64**	—	10A	250V	4kV	3	230/400V	4kV	2	600V	UL, CSA, CCC, DNV-GL, EAC
CDD	**24, 38, 42, 72, (76), 108, (144), (216)**	—	10A				250V	4kV	2	600V	UL, CSA, CCC, DNV-GL, EAC
CDS	**9, 18, 27, 42, (54), (84)**	—	10A	400V	6kV	3	400/690V	6kV	2	600V	cUL[A]
CSAH	**10, 16, (32)**	—	16A	250V	4kV	3	400V	4kV	2	600V	CCC
CDA, CDC	**10, 16, (32)**	—	16A	250V	4kV	3	230/400V	4kV	2	600V	cUL[A], CSA, CCC, DNV-GL, EAC
CQE	**10, 18, (20), 32, 46, (64), (92)**	—	16A	500V [2]	6kV	3	830V [2]	8kV	2	600V	cUL[A], CSA, DNV-GL, EAC
CQEE	**40, 64**	—	16A	500V	6kV	3				600V	cUL[A]
CCE	**6, 10, 16, 24, (32), (48)**	—	16A	500V	6kV	3	400/690V	6kV	2	600V	UL, CSA, DNV-GL, EAC
CNE	**6, 10, 16, 24, (32), (48)**	—	16A	500V	6kV	3	400/690V	6kV	2	600V	cUL[A], CSA, CCC, DNV-GL, EAC
CSE	**6, 10, 16, 24, (32), (48)**	—	16A	500V	6kV	3	400/690V	6kV	2	600V	UL, CSA, CCC, DNV-GL, EAC
CSH	**6, 10, 16, 24, (32), (48)**	—	16A	500V	6kV	3	400/690V	6kV	2	600V	cUL[A], CSA, CCC, EAC
CSS	**6, 10, 16, 24, (32), (48)**	—	16A	500V	6kV	3	400/690V	6kV	2	600V	UL, CSA, CCC, EAC
CT	**6, 10, 16, 24**	—	16A				400V	4kV	2	600V	UL, CSA, CCC, DNV-GL, EAC
CTSE	**6, 10, 16, 24**	—	16A	500V	6kV	3	400/690V	6kV	2	600V	UL, CSA, CCC, DNV-GL, EAC
CME	**3, 6, 10, (12), (20), (32)**	—	16A	830V	8kV	3	1000V	8kV	2	600V	UL, CSA, CCC, EAC
							720/1250V	8kV	2		
	16	—		400/690V	6kV	3					
		2, (4)		500V	6kV	3					
CMSH	**3, 6, 10, (12), (20)**	—	16A	830V	8kV	3	1000V	8kV	2	600V	
							720/1250V	8kV	2		
		2, (4)		500V	6kV	3					
CMCE	**3, 6, 10, (12), (20), (32)**	—	16A	830V	8kV	3	1000V	8kV	2	600V	UL, CSA, CCC, EAC
							720/1250V	8kV	2		
	16	—		400/690V	6kV	3					
		2, (4)		500V	6kV	3					
CP	**6, (12)**	—	35A	400/690V	6kV	3				600V	UL, CSA, CCC, EAC
CQ 12	**12**	—	10A	400V	6kV	3	400/690V	6kV	2	600V	cUL[A], CCC, DNV-GL, EAC
CQ 05	**5**	—	16A	230/400V	4kV	3	320/500V	4kV	2	600V	cUL[A], CSA, CCC, DNV-GL, EAC
CQ 04/2	**4**	—	40A	400/690V	6kV	3				600V	cUL[A], CSA, EAC
		2	10A	250V	4kV	3					
CQ 08	**8**	—	16A	500V	6kV	3	400/690V	6kV	2	600V	cUL[A], CSA, CCC, EAC
CX 8/24	**8**	—	16A	230/400V	4kV	3	400V	4kV	2	600V	UL, CSA, CCC, DNV-GL, EAC
		24	10A	160V	2,5kV	3	250V	4kV	2		
CX 6/36	**6**	—	40A	690V	8kV	3				600V	UL, CSA, CCC, DNV-GL, EAC
		36	10A	160V	2,5kV	3	250V	4kV	2		
CX 12/2	**12**	—	40A	690V	8kV	3				600V	UL, CSA, CCC, DNV-GL, EAC
		2	10A	250V	4kV	3					
CX 6/6	**6**	—	100A	690V	8kV	3				600V	cUL[A]
		6	16A	400V	6kV	3					
CX 4/0	**4**	**0**	80A	690V	8kV	3				600V	UL, CSA, CCC, DNV-GL, EAC
CX 4/2	**4**	—	80A	690V	8kV	3				600V	UL, CSA, CCC, DNV-GL, EAC
		2	16A	400V	6kV	3	400/690V	6kV	2		
CX 4/8	**4**	—	80A	400V	6kV	3	400/690V	6kV	2	600V	UL, CSA, CCC, DNV-GL, EAC
		8	16A	230/400V	4kV	3	400V	4kV	2		
CXL 2/4	**2**										
		4	10A	25V	0,8kV	3				600V	cUL[A], UL, EAC

N.B. All inserts have a mechanical life equal to or higher than 500 mating cycles.

1) Polarities shown in brackets may be achieved by using two inserts.
2) Contacts partially fitted inside an insert allow inserts to be used for applications requiring rated voltages higher than those shown.
See tables on page 52 (CD inserts), page 66 (CDD inserts) and page 137 (CQE inserts).
3) Please check the insert load curves to establish the actual maximum operating current according to the ambient temperature. See diagrams on pages 556 to 566.
A) UL for USA and Canada.

- UL - with protocol E115072
- CSA - with protocol LR 82270
- CCC - China Compulsory Certification mark (the CQC voluntary certification mark has been applied for, and it will replace the CCC mark in upon expiration)
- DNV-GL - Det Norske Veritas - Germanischer Lloyd - TAE 0000197
- EAC - Eur Asian Certification

inserts series	contact resistance ≤	insulation resistance ≥	ambient temperature limit [4] (°C) min	ambient temperature limit [4] (°C) max	protection rating without enclosures/ with enclosures	conductor connection: axial screw	conductor connection: screw	conductor connection: spring	conductor connection: connection block at 45°	conductor connection: crimp	from page
CK	≤ 1 mΩ	≥ 10 GΩ	-40	+100	IP20/IP68		✓				48
CKS	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68			✓			49
CD	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	54
CD [5]	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	53
CT, CTS	≤ 4 mΩ	≥ 10 GΩ	-40	+125	IP20/IP67		✓		✓		64
CDD	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	67
CDS	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68			✓			78
CSAH	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP66			✓		✓	87
CDA, CDC	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP66		✓				98, 99
CQE	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	138
CQEE	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	146
CCE	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	110
CNE	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68		✓				104
CSE	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68		✓				104
CSH	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68			✓			91
CSS	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68			✓			122
CT	≤ 4 mΩ	≥ 10 GΩ	-40	+125	IP20/IP67		✓		✓		130
CTSE	≤ 4 mΩ	≥ 10 GΩ	-40	+125	IP20/IP67			✓	✓		130
CME	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP66		✓				149
CMSH	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68			✓			149
CMCE	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	148
CP	≤ 0,5 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68		✓				162
CQ 12	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	165
CQ 05	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	166
CQ 04/2	≤ 0,3 mΩ ≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP67					✓	168
CQ 08	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP67					✓	167
CX 8/24	≤ 1 mΩ ≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	169
CX 6/36	≤ 0,3 mΩ ≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	170
CX 12/2	≤ 0,3 mΩ ≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68		✓			✓	171
CX 6/6	≤ 0,3 mΩ ≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	175
CX 4/0	≤ 0,3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68		✓				172
CX 4/2	≤ 0,3 mΩ ≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68		✓				172
CX 4/8	≤ 0,3 mΩ ≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68			✓			173
CXL 2/4	≤ 0,3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP67			✓			524

4) It may be used with ambient temperatures up to 180 °C by using the insert special version made of PPS (polyphenilene solfide).
5) CD 07: IP67 with thrmoplastic enclosures (cannot be used with metal enclosures).

inserts series	No. of poles [1] main contacts + ⏚	auxiliary contacts	rated current [3]	EN 61984 (2008-10) pollution degree 3 rated voltage	rated impulse withstand voltage	pollution degree	EN 61984 (2008-10) pollution degree 2 rated voltage	rated impulse withstand voltage	pollution degree	UL/CSA certification rated voltage ~ or ⎓	certifications
MIXO											
CX 01 Y	**1**	—	200A	1000V	8kV	3	920/1600V	8kV	2	(600V)	cUL[A], CCC, EAC
CX 01 YPE	**1 pole for ⏚ connection**	—	200A	—	—	3				(600V)	cUL[A], CCC, EAC
CX 02 G	**2**	—	100A	1000V	8kV	3	920/1600V	8kV	2	600V	cUL[A], CCC, DNV-GL, EAC
CX 02 7	**2**	—	70A	1000V	8kV	3	1600V	12kV	2	600V	cUL[A], EAC
CX 02 4A	**2** (2,5 - 8 mm²)	—	40A	1000V	8kV	3				600V	UL, CSA, EAC
CX 02 4B	**2** (6 - 10 mm²)	—	40A	1000V	8kV	3				600V	UL, CSA, EAC
CX 03/4 XD	**3** **4**		40A 10A	830V	8kV	3				(600V)	cUL[A], CCC, EAC
CX 03 4 [*]	**3**	—	40A	400/690V	6kV	3				600V	UL, CSA, EAC
CX 04 X	**4**	—	40A	830V	8kV	3	1000V	8kV	2	600V	cUL[A], EAC
CX 05 S	**5**	—	16A	400V	6kV	3	500V	6kV	2	600V	UL, CSA, CCC, DNV-GL, EAC
CX 06 C	**6**	—	16A	500V	6kV	3	400/690V	6kV	2	600V	UL, CSA, CCC, DNV-GL, EAC
CX 08 C	**8**	—	16A	400V	6kV	3	400/690V	6kV	2	600V	UL, CSA, CCC, EAC
CX 20 C	**20**	—	16A	500V	6kV	3	830V	8kV	2	600V	cUL[A],CSA, EAC
CX 12 D	**12**	—	10A	160V	2,5kV	3	250V	4kV	2	600V	UL, CSA, CCC, DNV-GL, EAC
CX 17 D	**17**	—	10A	160V	2,5kV	3	250V	4kV	2	600V	cUL[A],CCC, EAC
CX 02 H	**2**	—	16A	2900/5000V	15kV	3					
CX 25 I	**25**	—	4A	50V	0,8kV	3	160V	2,5kV	2	50V	cUL[A], EAC
CX P	**3**	—	—	pneumatic contacts for up to 8 bar compressed air							UL, CSA, CCC, DNV-GL, EAC
CX P	**2**	—	—	pneumatic contacts for up to 8 bar compressed air							UL, CSA, CCC, DNV-GL, EAC
CX 02 B	**2** [***]	—	—	50V	0,8kV	3				50V	UL, CSA, CCC, EAC
CX 01 B	**1** (+ shield)	—	10A	50V	0,8kV	3				50V	UL, CSA, CCC, EAC
CX 01 BC	**1** (+ shield)	—	16A	50V	0,8kV	3				(50V)	UL, CSA, CCC, EAC
CX 04 B	**4** (+ shield)	—	10A	50V	0,8kV	3				50V	UL, CSA, CCC, EAC
CX 08 B	**8** (+ shield)	—	5A	50V	0,8kV	3				(50V)	UL, CSA, CCC, EAC
CX 01 J	1 RJ45 insert CAT. 5 **4**		10A	— 250V	— 4kV	— 3					
CX 02 J	2 RJ45 inserts CAT. 5 **8**		1A	— 250V	— 4kV	— 3					
CX 01 J8	1 RJ45 insert CAT. 6	—	—	—	—	—					
CX 01 U	1 USB insert	—		50V	0,8kV	3					
CX 09 V	**9** (+ shield)	—	5A	50V	0,8kV	3					
CX 04 L	**4**	—	—	contacts POF/MOST®/coaxial DIN 41626							cUL[A], EAC

[*] = 500V version CX 03 4B (cUL[A], EAC).
[***] = CX 04 B (4P) multiaxial connectors or CX 01 B coaxial connector.

N.B. all inserts have a mechanical life equal to or higher than 500 mating cycles.

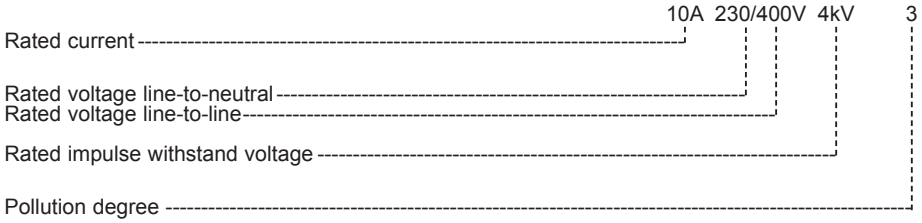
1) Polarities shown in brackets may be achieved by using two inserts.
3) Please check the insert load curves to establish the actual maximum operating current according to the ambient temperature. See diagrams on pages 556 to 566.
A) UL for USA and Canada.

- UL - with protocol E115072
- CSA - with protocol LR 82270
- CCC - China Compulsory Certification mark (the CQC voluntary certification mark has been applied for, and it will replace the CCC mark in upon expiration)
- DNV-GL - Det Norske Veritas - Germanischer Lloyd - TAE 0000197
- EAC - Eur Asian Certification

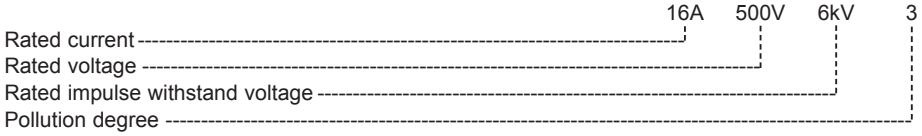
Rated data

Nominal data complies with requirements of EN 61984 standard.

Marking example to be applied only in a mains power supply with insulated neutral or with neutral to earth in a corner (see Table B.1, IEC 60664-1):



Marking example to be applied in any mains power supplies, including those with insulated neutral and the delta power supplies with earth in a corner (see Table B.2, IEC 60664-1):



inserts series	contact resistance ≤	insulation resistance ≥	ambient temperature limit [4] (°C) min	ambient temperature limit [4] (°C) max	protection rating without enclosures/ with enclosures	conductor connection: axial screw	conductor connection: screw	conductor connection: spring	conductor connection: connection block at 45°	conductor connection: crimp	from page
MIXO											
CX 01 Y	≤ 0,2 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	180
CX 01 YPE	≤ 0,2 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	181
CX 02 G	≤ 0,3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	182
CX 02 7	≤ 0,5 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	183
CX 02 4A	≤ 0,5 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68	✓					184
CX 02 4B	≤ 0,5 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68	✓					184
CX 03/4 XD	≤ 0,3 mΩ ≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	185
CX 03 4	≤ 0,3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	186-187
CX 04 X	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	188
CX 05 S	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68			✓			192
CX 06 C	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	189
CX 08 C	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	190
CX 20 C	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	191
CX 12 D	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	194
CX 17 D	≤ 3 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	195
CX 02 H	≤ 1 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	193
CX 25 I	≤ 4 mΩ	≥ 10 GΩ	-40	+125	IP20/IP68					✓	196
CX P	—	≥ 10 GΩ	-40	+125	IP20/IP68	coupling					211
CX P	—	≥ 10 GΩ	-40	+125	IP20/IP68	coupling					211
CX 02 B	—	≥ 10 GΩ	-40	+125	IP20/IP68	coupling					197
CX 01 B	≤ 3 mΩ	≥ 10 GΩ	-40	+70	IP20/IP68					✓	197
CX 01 BC	≤ 1 mΩ	≥ 10 GΩ	-40	+70	IP20/IP68					✓	199
CX 04 B	≤ 3 mΩ	≥ 10 GΩ	-40	+70	IP20/IP68					✓	197
CX 08 B	≤ 3 mΩ	≥ 10 GΩ	-40	+70	IP20/IP68					✓	198
CX 01 J	≤ 3 mΩ	≥ 10 GΩ	-20 -20	+120 +120	IP20/IP68 IP20/IP68					✓ ✓	202
CX 02 J	≤ 3 mΩ	≥ 10 GΩ	-20 -20	+120 +120	IP20/IP68 IP20/IP68					✓ ✓	203
CX 01 J8	—	≥ 10 GΩ	-40	+70	IP20/IP68					✓	200
CX 01 U	≤ 30 mΩ	≥ 1 GΩ	-25	+80	IP20/IP68						205
CX 01 9V	≤ 15 mΩ	≥ 5 GΩ	-40	+125	IP20/IP68					✓	206
CX 04 L	—	≥ 10 GΩ	-40	+85	IP20/IP68					✓	209

4) It may be used with ambient temperatures up to 180 °C by using the insert special version made of PPS (polyphenilene solfide).

description

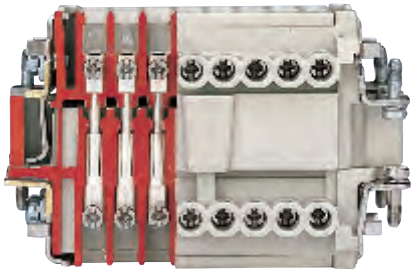
The different types of conductor connections to the male and female inserts are described on the right.
The types are summarised as follows:

- screw terminals
- spring connection terminals
- connectors with incorporated terminal block
- crimp terminals

N.B.:
for all inserts with screw terminals it is important that the right torsional torque is applied to the screws in order to prevent wrong contacts or damage to the conductor, the screw or the terminal (see data mentioned in the inserts pages).

The 10A and 16A crimp contacts are available either **silver** or **gold-plated**.
The gold-plated crimp contacts are recommended for applications with very low rated currents and rated voltages.
Thanks to the conduction characteristics of gold, the deterioration of signals is prevented and an excellent residence to the superficial oxidation of the contacts is obtained.
In particular, gold-plated contacts are recommended with signals with ≤ 5 mA current and ≤ 5V voltage.

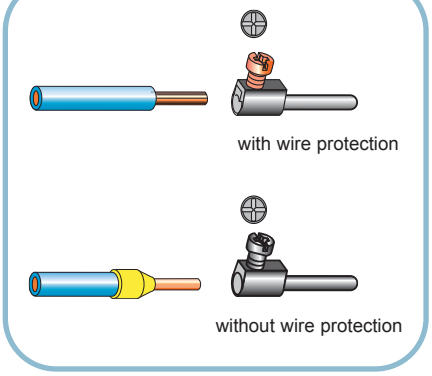
contacts with screw terminal connections with or without wire protection



description

inserts: CK - CDA - CNE - CME - CP - CX

The connections of the conductors to the female and male inserts is made via screws (in accordance with standard EN 60999-1).
Two different types of clamping are possible:
- with pressure plate for unprepared conductors
- without wire protection that requires the conductors to be prepared with bush terminals



inserts: CX..A / CX..B

The connections of the conductors to the female and male inserts is made via screws in accordance with standard.
Fully insert the wire in the back of the contact; insert a 2 mm hexagonal key in the front of the contact and tighten by holding down the cable (page 34).

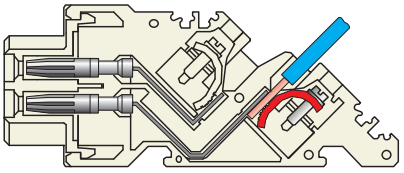
screw connected contacts in built-in terminal block

description

inserts: CT

In this layout the wires are connected to the socket and plug insert contacts by means of a screw for all CT inserts (in compliance with EN 60999-1).
The inserts contain:
- a terminal block at 45° for fixed installation on electrical panels or on built-in DIN EN 60715 rail, for easier wire cabling and identification operations
- screw connection with pressure plate which does not require the wires to be prepared (CT inserts).

CT insert connection

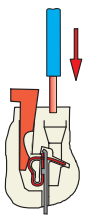


spring connected contacts with actuator button

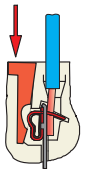
description

inserts: CSAH

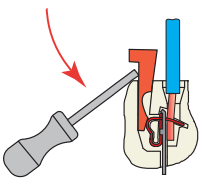
In this layout the wires are connected to the socket and plug insert contacts by means of a spring terminal with actuator button.
This type of connection offers the following advantages:
- no special wire preparation (**other than stripping**);
- no cabling tool is necessary;
- it offers an excellent fastening solution and a great resistance to strong vibrations;
- it allows the use of rigid and flexible wires with cross-section;
- between 0,14 and 2,5 mm² (26 - 14 AWG);
- for wires with crimped ferrule, usable section: up to 1,5 mm² (AWG 16);
- it greatly reduces insert preparation and cabling times;
- a screwdriver with a 0,5 x 3,5 mm blade is the only tool required to remove the wire from the contact.



step 1
deep insertion of the conductor (with its insulation removed) in its own round seat.



step 2
press the actuator button to close the terminal.



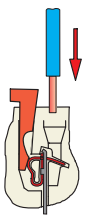
Reopening

spring connected contacts with actuator button

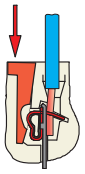
description

inserts: CSH - CMSH

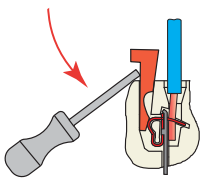
In this layout the wires are connected to the socket and plug insert contacts by means of a spring terminal with actuator button.
This type of connection offers the following advantages:
- no special wire preparation (**other than stripping**);
- no cabling tool is necessary;
- it offers an excellent fastening solution and a great resistance to strong vibrations;
- it allows rigid and flexible wires with sections between 0,14 and 2,5 mm² (26 - 14 AWG) to be used (both with non-prepared conductors and those prepared with ferrule);
- it greatly reduces insert preparation and cabling times;
- a screwdriver with a 0,5 x 3,5 mm blade is the only tool required to remove the wire from the contact.



step 1
deep insertion of the conductor (with its insulation removed) in its own round seat.



step 2
press the actuator button to close the terminal.



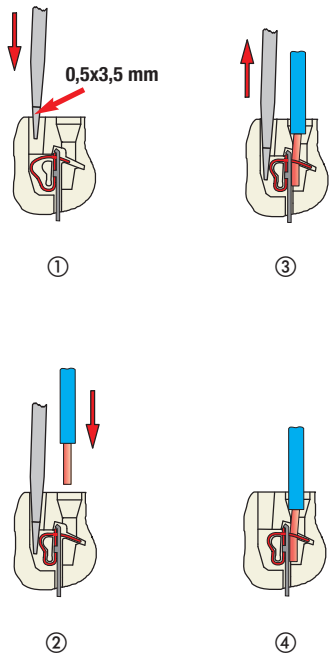
Reopening

contacts connected with spring terminal

description

inserts: CDS

In this layout the wires are connected to the female and male insert contacts by means of a spring terminal.
This type of connection offers the following advantages:
- no special wire preparation;
- a screwdriver with a 0,5 x 3,5 mm blade is the only tool required to insert the wire in the contact;
- it offers an excellent fastening solution and a great resistance to strong vibrations;
- it allows the use of rigid and flexible wires with cross-sections between 0,14 and 2,5 mm² (26 - 14 AWG);
- for wires with crimped ferrule, usable section: up to 1,5 mm² (AWG 16);
- it allows conductibility tests under load to be carried out through the screwdriver insertion section, without splitting the insert;
- it greatly reduces insert preparation and cabling times.



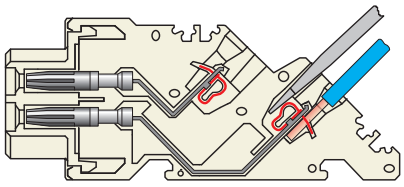
contacts connected with in built-in terminal block

description

inserts: CTSE - CTS

With terminal block at 45° built-in for fixed installation on electrical panels or on built-in DIN EN 60715 rail, for easier wire cabling and identification operations.
Spring terminal connection which does not require wire preparation (CTSE inserts).
A screwdriver with a 3,5 x 0,5 mm blade is the only tool required to insert the wire in the contact.

CTSE insert connection

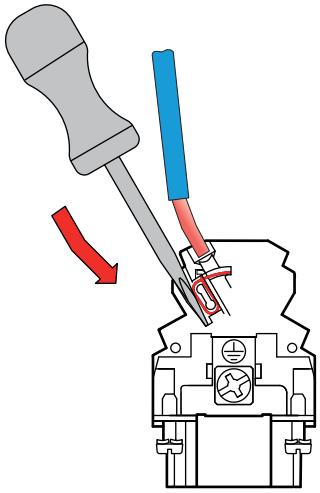


contacts connected with dual spring terminal

description

inserts: CSS

Equipped with two terminals per contact.
This type of connection allows a circuit to be branched off.
A screwdriver with a 3,5 x 0,5 mm blade is the only tool required to insert the wire in the contact.



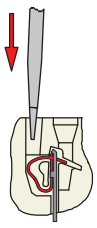
contacts connected with spring terminal

description

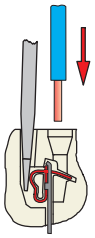
inserts: CSE

In this layout the wires are connected to the socket and plug insert contacts by means of a spring terminal.
This type of connection offers the following advantages:
- no special wire preparation;
- a screwdriver with a 3,5 x 0,5 mm blade is the only tool required to insert the wire in the contact;
- offers an excellent fastening solution and a great resistance to strong vibrations;
- allows rigid and flexible wires with sections between 0,14 and 2,5 mm^2 to be used (both with non-prepared conductors and those prepared with ferrule);
- allows conductibility tests under load to be carried out through the screwdriver insertion section, without splitting the insert;
- greatly reduces insert preparation and cabling times.

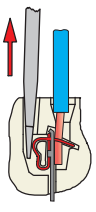
Spring terminal connection operating principles



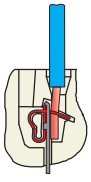
step 1
when the screwdriver is inserted in the square housing provided, the wire housing in the spring is opened.



step 2
the wire is pushed all the way in the round housing provided.



step 3
when the screwdriver is removed, the spring is held down on the inserted wire.



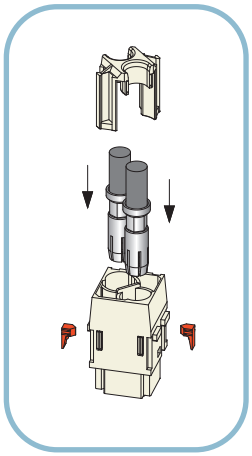
step 4
the connection is complete; pull on the wire to make sure that the spring firmly holds down the wire.

removable crimp contacts (with retainer device)

description

inserts: MIXO 70A - 100A - 200A

This layout enables the wires to be connected to the socket and plug insert removable contacts by crimping them with a crimp tool and its locating turret.
Connection is ensured and is **extremely resistant even to the most insidious** strains, such as vibrations.



70A / 100A max contacts

conductor section (mm^2)	AWG	identification
8 - 10	8 - 7	hole Ø 4,3 mm
16	6 - 5	hole Ø 5,5 mm
25	4 - 3	hole Ø 7,0 mm
35	2	hole Ø 7,9 / 8,2 mm

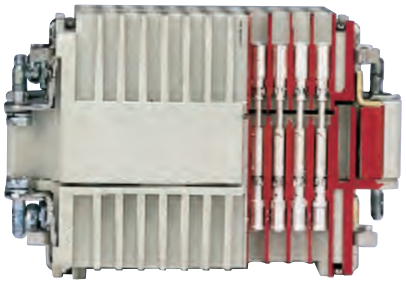
Contacts are supplied in the silver plated version only

200A max contacts

conductor section (mm^2)	AWG	identification
16	6	
25	4	
35	2	
50	1	
70	2/0	

Contacts are supplied in the silver plated version only

removable crimp contacts (with retainer device on contacts)



description

inserts: CD - CDD - CX - MIXO

This layout enables the wires to be connected to the socket and plug insert removable contacts by crimping them with a crimp tool and its locating turret.
The crimped connections are then inserted (with a fitting tool for sizes 1 and 2, without any tools for sizes ②, 3, 4 and 5) in the above mentioned sizes and are kept firmly in place by means of the flexible device fitted on the contacts.
The wire housing entry on the contact is tapered to facilitate wire insertion and to avoid any damages occurring after the crimping operation.
To remove connections, a special extractor tool must be used.

5A max contacts

conductor section (mm^2)	AWG	number identification
0,08 - 0,21	28 - 24	hole Ø 0,64 mm
0,13 - 0,33	26 - 22	hole Ø 0,90 mm
0,33 - 0,52	22 - 20	hole Ø 1,12 mm

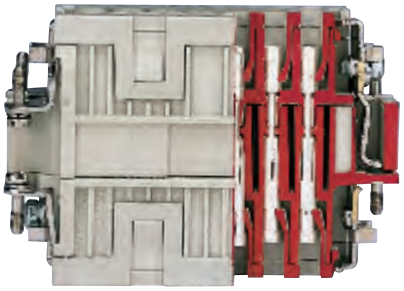
Contacts can be supplied in the silver or gold plated version

10A max contacts

conductor section (mm^2)	AWG	number identification
0.14 - 0.37	26 - 22	1
0.5	20	2
0.75	18	②
1	18	3
1.5	16	4
2.5	14	5

Contacts can be supplied in the silver or gold plated version

removable crimp contacts (with retainer device inside insert)



description

inserts: CQ - CQE - CCE - CDC - CMCE - CX - MIXO

The connections of the conductors to the removable contacts of the male and female inserts are made via crimping with a crimping tool and locator.
The crimped connections are then introduced in the inserts of the above mentioned series and are firmly held in place by means of a retainer device fitted on the insert which holds down the contact.
The contact can be removed by simply using a flat head 3 mm screwdriver through the openings provided in the inserts (CMCE 16+2, CX 8/24 series) or by means of special extractor tools, to unlock the retainer device and release the contact (CQ, CCE, CMCE, CQE, CX, CDC, MIXO series).
The wire housing entry on the contact is tapered to facilitate wire insertion and to avoid any damages occurring after the crimping operation.

16A max contacts

conductor section (mm^2)	AWG	throat identification
0,14 - 0,37	26 - 22	
0,5	20	
0,75	18	
1	18	
1,5	16	
2,5	14	
3,0	12	
4	12	

Contacts can be supplied in the silver or gold plated version.
Male contacts can also be supplied in the “advanced” version and iron/constantan contacts for thermocouples type J.

40A max contacts

conductor section (mm^2)	AWG	identification
1,5	16	hole Ø 1,75 mm
2,5	14	hole Ø 2,25 mm
4	12	hole Ø 2,85 mm
6	10	hole Ø 3,5 mm

Contacts are supplied in the silver plated version only

Insert features

for multipole connectors

Recommended tightening torque and size of screwdriver

size of screw	connector type	tightening torque (Nm)	tightening torque (lb.in)	recommended size of screwdriver (mm)
M2,5	CT 40, 64	0,4	3,5	0,5x3
M2,6	CT 06...24	0,4	3,5	0,5x3
Ø 2,9	CQ 04/2, CQ 08	0,7	6,2	Ph1
M3	screw of earthing terminal series CQ 05, CQ 12	0,5	4,4	0,5x3
M3	CDA	0,5	4,4	Ph0 or 0,6x3,5
M3	CK, CKS, CD 07, CD 08, CQ 05, CQ 12	0,5	4,4	0,5x3
M3	CX 4/2, CX 4/8 (16A)	0,5	4,4	0,6x3,5
M3	CX 4/8 Q (16A)	0,5	4,4	Ph0
M3	CNE, CME	0,5	4,4	Ph0 or 0,8x4
M3	screw of small earthing terminal, MIXO frames series	0,5	4,4	Ph1 or 1,0x5,5
M3	screw for fastening to enclosures, all series except T-TYPE	0,5 — 0,8	4,4 — 7,1	Ph1 or 0,8x4
M3	screw for fastening to T-TYPE enclosures	0,5	4,4	Ph1 or 0,8x4
M3,5	screw of earthing terminal series CDA, CDC, CSAH	0,8	7,1	Ph1 or 1,0x5,5
M4	screw of large earthing terminal, MIXO frames series	1,2	10,6	Ph1 or 1,0x5,5
M4	CP	1,2	10,6	Ph1 or 0,8x4
M4	screw of earthing terminal, all series except CDA, CDC, CSAH, MIXO	1,2	10,6	Ph2 or 1,0x5,5
M6	CX 4/... (80A)	2,5	22,1	1,0x5,5

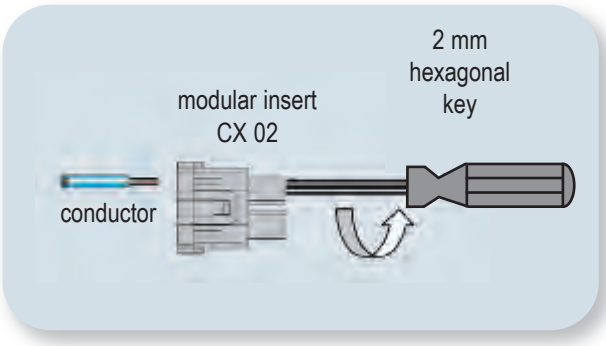
Increasing the tightening torque does not improve considerably the contacts resistances. The screw torques are selected according to standard EN 60999-1, to provide excellent mechanical, thermal and electric behaviour. The conductor or terminal may be damaged if the recommended values are significantly exceeded.

Tightening torque for insert series: CX..A / CX..B

The connections of the conductors to the female and male inserts is made via axial screws.
Fully insert the stripped wire in the back of the contact; insert a 2 mm hexagonal key in the front of the contact and tighten by holding down the wire.

After assembling the complete connector periodically check that the contact is screwed tight by applying the proper tightening torque.

— usable conductor cross-sections (EN 60228 Class 5):
  from 2,5 to 8 mm^2 (CX 02 4AF/M)
  from 6 to 10 mm^2 (CX 02 4BF/M)
  (extra-flexible EN 60228 class 6: 2,5... 6 mm^2)
— use only stranded flexible copper conductors
— do not twist the strands!
— tightening torque with 2 mm hexagonal Allen key:
  1,5 Nm max for conductors with section 2,5 ... 4 mm^2
  2 Nm max for conductors with section 6 ... 10 mm^2
— stripping length: 8^{+1} mm



Insert features

for multipole connectors

Stripping length			
connector inserts connection technique	conductor cross-section (mm^2)	(AWG)	stripping length (mm)
Screw			
CK	0,75-2,5	18-14	6
CX 4/2, CX 4/8 (poles 16A) [1)]	0,75-4 0,75-2,5	18-12 18-14	7
CNE [1)]	0,5-4	20-12	7
CNE..X	0,25-2,5	24-14	7
CDA[1)]	0,5-4	20-12	7
CDA..X	0,25-2,5	24-14	7
CT 06...24	0,75-2,5	18-14	12
CT 40 and 64	0,75-2,5	18-14	12
CME [1)]	0,5-4	20-12	7
CME..X	0,5-2,5	20-14	7
CP [1)]	1,5-6	16-10	10,5
CX 4/.. (80A poles)	4-16	12-5	14
Crimp			
MIXO (5A)	0,08-0,52	28-20	4
CDD, CD, MIXO (10A), CQ 12	0,14-2,5 *	26-14	8 (* 6 for 2,5 mm^2)
CCE, CDC, CMCE, CQ, CQE, CQEE, MIXO (16A)	0,14-4	26-12	7,5
CX, MIXO (40A)	1,5-2,5 4-6	16-14 12-10	9 9.6
MIXO (70A)	10-25	7-4	15
MIXO (100A), CX 6/6	10-35	7-2	15
MIXO (200A)	16-70	6-2/0	15
Spring			
CSE, CSH, CTSE 06...24, CMSH, MIXO (CX 05 S), CSS	0,14-2,5	26-14	9...11
CTS 40/64	0,14-2,5 unprepared 0,14-1 prepared	26-14 unprepared 26-18 prepared	9...11
CKS, CDS, CSAH	0,14-2,5 unprepared 0,14-1,5 prepared	26-14 unprepared 26-16 prepared	9...11

1) For CNE, CDA, CP, CME, "CX 4/8 – pole 16A" series connectors with screw terminal and conductor protection plate, the use of ferrules is not necessary (= unprepared conductor).

The use of ferrules (= prepared conductor) causes a reduction in maximum useful cross-section to the lower size (e.g. 4 mm^2 unprepared ➔ 2,5 mm^2 prepared).

Contacts features

The 10A and 16A crimp contacts are available either **silver** or **gold-plated**.
The gold-plated crimp contacts are recommended for applications with very low rated currents and rated voltages.
Thanks to the conduction characteristics of gold, the deterioration of signals is prevented and an excellent resistance to the surface oxidation of the contacts is achieved. In particular, gold-plated contacts are recommended with signals with less then ±5 mA current and ±5V voltage.

10A crimp contacts
silver plated

16A crimp contacts
normal and for advanced opening
silver plated

40A, 70A, 100A, 200A crimp contacts
silver plated

Standard ILME gold treatment is carried out in accordance with MIL-G-45204C Class 00, Type II, Grade C and ASTM B428-01 Class 0.5, Type II, Grade C.
The new basic or high thickness gold-plated contacts are in compliance with EN 61984: 2009, IEC 60512 and EN 60352-2:1994 (such as the standard version); see pages 480 - 481.

10A and 16A crimp contacts
standard gold plated

10A and 16A crimp contacts
high thickness gold plated

10A and 16A crimp contacts
basic gold plated

Iron/Constantan thermocouple contacts are also available according to DIN IEC 60584-1 type J.

CI 5A contacts can be used in 25 poles high density inserts.

MIXO series can also accommodate POF 1,0 mm and MOST 1/1,5 mm fibre optics.

Coaxial contacts from 50Ω to 75Ω are also applicable according to DIN 41626-2.

Constantan (Cu Ni) and
Iron (Fe) crimp contacts

CI 5A
crimp contacts

POF / MOST
crimp contacts

Coaxial contacts
to crimp/solder

C-TYPE standard version

description

This series has been developed for application in electric and electronic machinery, control units, electric panels, control equipment, industrial environments, and in general, wherever a sectional and reliable connection is required for power and signal circuits.
The inserts of the CMCE series (excepting the 16+2 poles) and of the CMSH series may use standard enclosures also for uses of up to 830V.

UL certified for USA and Canada for NEMA 4, NEMA 4X and NEMA 12 protection ratings, printed on the packaging.
IP65, IP66 and IP69 protection ratings (IP44 and IP67 for CK and MK series).

Characteristics of materials used:

CK, MK and CQ series

- in self-extinguishing grey RAL 7035 or black thermoplastic material for insulating (in the CQ version, only available in black) or metallic enclosures;
- with epoxy-polyester powder coating for metallic enclosures;
- gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer;
- monoblock locking device in stainless or galvanised steel for metallic enclosures;
- monoblock locking device in self-extinguishing thermoplastic material for insulating enclosures.

CH, CA and MH, MA, MF series

- made of die cast aluminium alloy;
- with epoxy-polyester powder coating;
- gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer;
- locking device with levers, springs and pins in stainless steel;
- lever handles in self-extinguishing thermoplastic material reinforced with glass fibres, UL approved (for CH, CA and MH, MA enclosures).

V-TYPE IP67 version

description

This original design locking lever, due to the **vertical closing movement, offers an IP66/IP67** protection rating (according to EN 60529) when fitted with a complete and coupled connector and used **with ILME standard aluminum hoods (without adaptor) with die cast pegs.**
The V-TYPE lever has also other interesting functional characteristics for several applications:

- **The friction on the pin is virtually zero** as the lever exerts its pressure vertically, thus significantly reducing wear in case of frequent use.
- **The lever can be used for applications with vibrations** because it has no springs and is therefore more rigid.
- **The lever occupies a very small space** during the closing phase.
- **It is recommended** in cases in which the **weight of the cable** tends to open elastic locking levers, like with vertically installed connectors and downwards cable exit.
- The absence of plastic parts provides better resistance in case of shocks and exposure to chemical contamination or risk of fire.

Characteristics of materials used:

C7, C7A and M7, M7A series

- locking device in stainless steel;
- made of die cast aluminium alloy;
- with epoxy-polyester powder coating;
- gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer.

IL-BRID version

description

The new IL-BRID locking lever.
Through its original design, the new lever combines the smoothness of the thermoplastic material with the sturdiness of the stainless steel spring.
The locking lever also has a linear design which favors a quick wash without retaining external elements.

Soft closing.
In the first phase, the thermoplastic lever comes into play: sliding the new lever on the pin reduces friction and wear.
It is suitable in all applications with frequent opening and closing.

Strong hold.
After the first closing phase involving the plastic component, the stainless steel hook intervenes to guarantee higher resistance to mechanical wire stress.

Characteristics of materials used:

CZ and MZ series

- made of die cast aluminium alloy;
- with epoxy-polyester powder coating;
- gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer;
- locking device with levers, springs and pins in stainless steel;
- lever handles in self-extinguishing thermoplastic material reinforced with glass fibres, UL approved (for CZ and MZ enclosures).

T-TYPE version

description

Alongside the wide range of traditional metallic enclosures for ILME multipole connectors, there is now available a **new series of enclosures in self-extinguishing** thermoplastic material in the most common sizes of “44.27”, “57.27”, “77.27” and “104.27”.

Valuable characteristics of these new enclosures:
- **pre-fastened gaskets** for easier installation.
- **external dimensions** of the bulkhead housing are **similar to those of the corresponding metal enclosures**; hole fixing centres **are unchanged**.
- **ample space** inside enclosures for cables, with mounted connectors, similar to the corresponding metal high construction versions.
- possibility of making completely **insulated constructions** (equivalent to Class II).
- **absence of powder paint** for environments in which these are not recommended.
- **non-electrostatic** thermoplastic material.
- manufactured from **insulating material**, **do not require special reinforced insulation as the metal versions do,** for use with series CME higher voltage connector inserts (screw-type terminals).

T-TYPE series
- **Enclosures** in **thermoplastic material, dark grey RAL 7012 colour**, with high thicknesses providing structural solidity and durability.
- Built-in **polyurethane gaskets**.
- **Locking levers** in **thermoplastic material colour grey RAL 7001**.
- **M25, M32 and M40** threaded cable entries.
- **IP65** degree of protection according to **EN 60529**.
- **UL TYPE 12** degree of protection according to **ANSI/UL50**.
- Each enclosure carries its own part number, thread/size, conformity **markings** and UL type rating.
- Ambient temperature range: **-40 °C / +90 °C**.

T-TYPE / W version

description

This series has been developed for industrial applications with particularly aggressive external agents (e.g. salt atmospheres or environments).

T-TYPE/W series
- **Enclosures** in **thermoplastic material, dark grey RAL 7012 colour**, with high thicknesses providing structural solidity and durability.
- Built-in **VITON® fluoroelastomer sealing gaskets**.
- **Locking levers** in **thermoplastic material colour grey RAL 7001**.
- **M25, M32 and M40** threaded cable entries.
- **IP66** degree of protection according to **EN 60529**.
- Each enclosure carries its own part number, thread size and conformity **markings**.
- Ambient temperature range: **-40 °C / +90 °C**.

NOTE:

As the characterizing element of the T-TYPE/W series is the **different sealing gasket** material, hoods and covers without sealing gaskets for these series are the same of T-TYPE Standard.

HYGIENIC version

description

The new Hygienic multipole connector enclosures version **(series T-TYPE/H and T-TYPE/C)** has been designed for installation on food industry machines and systems.
For this purpose, the following improvements to the T-TYPE series have been made in order to satisfy the requirements laid down by chapter 2.1 of **Machinery Directive 2006/42/EC** for the machines on which they are installed:
- material cleanability and resistance to the cleaning and sanitising agents normally used in the food industry;
- materials in terms of the requirements for accidental contact with food products.

T-TYPE/H series
- **Enclosures** in **thermoplastic material, dark grey RAL 7012 colour**, with high thicknesses providing structural solidity and durability.
- Sealing gaskets made by **HNBR rubber formulated in accordance with FDA Guideline 21 CFR §177.2600**.
- **Levers** in **thermoplastic material, blue RAL 5015 colour**.
- **M25, M32 and M40** threaded cable entries.
- **IP66 and IP69** degree of protection according to **EN 60529**.
- Each enclosure carries its own part number, thread/size and conformity **markings**.
- Ambient temperature range: **-40 °C / +70 °C**.

T-TYPE/C series
- **The Hygienic T-TYPE/C Series enclosures** have been **specifically designed** for food and beverage ambient temperature as low as -50 °C **(range: -50 °C / +70 °C)**.
- **Enclosures** in **thermoplastic material, dark grey RAL 7012 colour**, with high thicknesses providing structural solidity and durability.
- This version differs from the Hygienic T-TYPE/H one for the **sealing gaskets** made by in accordance with **FDA Guideline 21 CFR §177.2600**.
- ILME **T-TYPE/C** series enclosure materials have been selected according to **EU n. 10/2011** regulation requirements and each component has been tested according to **EU regulation n. 10/2011** and **EC regulation n. 1935/2004**.

NOTE: As the characterizing elements of the Hygienic Series are the different sealing gasket material and the different locking lever, hoods and covers without sealing gaskets and locking levers are the same of series T-TYPE Standard.

High protection IP68 version

description

For applications in the railway sector and whenever the following characteristics are demanded: high pressure, impact and corrosion resistance, in protection rating IP68.
They also ensure a good screening for electromagnetic compatibility.
The IP66 e IP68 protection ratings are ensured if the enclosures are correctly installed and the cable entry devices have equal or higher rating.

UL certified for USA and Canada for NEMA 4, NEMA 4X and NEMA 12 protection ratings, printed on the packaging.
IP69 protection rating for tightness to pressurized water jets.

Characteristics of materials used:

CG and MG series

- made of die cast aluminium alloy;
- with epoxy-polyester powder coating;
- locking device with screws or bayonets.

BIG version

description

The **large dimensions** of these innovative enclosures have been chosen to offer customers an **adequate space to store conductors**.
The **width** of the new enclosures is **greater than that of previous versions**: 66 mm compared to the 43 mm for standard enclosures. The **height** of BIG enclosures has also been **increased to 100 mm** for sizes “44.27” and “57.27” (standard versions for high models: 70 and 72 mm), **and to 110 mm** for sizes “77.27” and “104.27” (standard versions for high models: 76 mm).
The cable compartment is now fully accessible during assembly (the connector insert is fully inserted in the lower half of the enclosure), **offering three times the space compared to standard enclosures**.
This means it is possible to bend cables and pipes with greater bending radii.
Due to this important feature, the new BIG enclosures are **particularly suitable for MIXO modular inserts**, being versatile and customizable, for multiple cable entries.
Each insert, differentiated according to electric power or signal, pneumatic, optical fiber or Ethernet network current, **may thus have the specific branching. One single large connector can replace what previously required two connectors.**

Particular attention has been given to the number and dimensions of cable entries.
The threaded entry is available in several metric diameters in accordance with EN 60423, for input devices compliant with EN 50262, with vertical or horizontal orientation.

Characteristics of materials used:

CB and MB series

- made of die cast aluminium alloy;
- with epoxy-polyester powder coating;
- die cast pegs.

W version for aggressive environments

description

This series has been developed for industrial applications with particularly aggressive external agents (e.g. salt atmospheres or environments).
The enclosures do not have any internal tabs and also allow insertion of the CME inserts.
These enclosures have supplementary insulating strips inside.
This version is distinguished by the black colour of the enclosures.

UL certified for USA and Canada for NEMA 4, NEMA 4X and NEMA 12 protection ratings, printed on the packaging.
IP65, IP66 and IP69 protection ratings.

Characteristics of materials used:

CK..W and MK..W series

- chromate treated die cast;
- with epoxy-polyester powder coating;
- gaskets in anti-aging fluoro elastomer;
- monoblock locking device in stainless steel.

CZ..W, CH..W, CA..W series
and MZ..W, MH..W, MA..W series

- made of die cast aluminium alloy;
- chromate treated die cast;
- with epoxy-polyester powder coating;
- gaskets in anti-aging fluoro elastomer;
- locking device with levers, springs and pins in stainless steel;
- pegs with stainless steel coating;
- monoblock lever handles in stainless steel (for CZ...W and MZ..W enclosures);
- lever handles in self-extinguishing thermoplastic material reinforced with glass fibres, UL approved (CH..W, CA..W and MH..W, MA..W versions);
- supplementary insulation inside enclosures.

EMC version

description

This series has been developed for industrial applications that require electromagnetic compatibility (EMC, Electromagnetic Compatibility), in accordance with the European standards that regulate the emission and immunity of the equipment.

UL certified for USA and Canada for NEMA 4, NEMA 4X and NEMA 12 protection ratings, printed on the packaging.
IP65, IP66 and IP69 protection ratings.

Characteristics of materials used:

CK..S and MK..S series

- chromate treated die cast with high surface conductivity;
- special gaskets in highly conductive material;
- monoblock locking device in stainless steel.

CZ..S, CH..S, CA..S and MZ..S, MH..S, MA..S series

- made of die cast aluminium alloy;
- chromate treated die cast with high surface conductivity;
- special gaskets in highly conductive material;
- locking device with levers, springs and pins in stainless steel;
- lever handles in self-extinguishing thermoplastic material reinforced with glass fibres, UL approved.

180 °C version

description

Series specifically developed for industrial applications where the ambient temperatures are particularly harsh (from -40 °C to +180 °C).
For use with inserts in self-extinguishing thermoplastic material (PPS polyphenylene sulphide).
This version is distinguished by the red colour of the enclosures.

UL certified for USA and Canada for NEMA 4, NEMA 4X and NEMA 12 protection ratings, printed on the packaging.
IP65 and IP69 protection ratings.

Characteristics of materials used:

CK..R, CZ..R, CH..R, CA..R and MK..R, MZ..R, MH..R, MA..R series

- made of die cast aluminium alloy;
- chromate treated die cast;
- coated with special thermoset powder with high resistant to high temperatures;
- gaskets in anti-aging fluoro elastomer;
- locking device with levers, springs and pins in stainless steel;
- monoblock levers in stainless steel (for CZ..R, CH..R 48 and MZ..R, MH..R 48 versions);
- lever handles in aluminium with special die-cast coating (for CH..R 10, 16, 24 and MH..R 10, 16, 24 versions);
- supplementary insulation inside enclosures.

Single CENTRAL LEVER version

description

Series specifically designed for industrial applications with limited installation space. These enclosures can be installed, placed side-by-side and handled in a single operation. Furthermore, the lever's shape reduces the effort required to uncouple the inner fittings.

Characteristics of materials used:

CH..YC, CA..YC and MA..YC, CA..YX and MF..YX series

- made of die cast aluminium alloy;
- with epoxy-polyester powder coating;
- gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer;
- locking device with single stainless steel lever.

LS-TYPE version

description

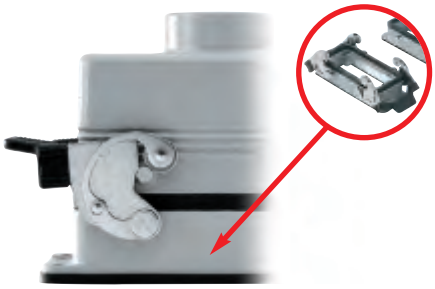
The new **LS-TYPE** enclosures are the ideal solution for the entertainment industry (lighting system power supply and related mixer and dimmer panels), including theatre stages, film sets, radio and TV studios, discos, trade fair booths, concert halls and night public events, both indoors and outdoors, etc.
All parts are in elegant RAL 9005 black to make them suitable for situations and locations where they should not be visible in the dark.

Characteristics of materials used:

CHIN and
MAPN, MFON, MFVN, MHON, MHVN series

- made of die cast aluminium alloy;
- with epoxy-polyester powder coating;
- gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer;
- lever handles in self-extinguishing thermoplastic material reinforced with glass fibres, UL approved.

Insulated C-TYPE 830V version



description

Applications as for the standard version.
The enclosures do not have tabs and allow the insertion of inserts with rated voltage up to 830V (series CME).
The inserts of CME series connectors (screw) have a lateral key encryption that prevents installation in metal housings without additional insulation.
These enclosures have supplementary insulating strips inside.

UL certified for USA and Canada for NEMA 4, NEMA 4X and NEMA 12 protection ratings, printed on the packaging.
IP65, IP66 and IP69 protection ratings.

Characteristics of materials used:

CM, CMA and MM, MMA, MMF series

- made of die cast aluminium alloy;
- with epoxy-polyester powder coating;
- gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer;
- locking device with levers, springs and pins in stainless steel;
- lever handles in self-extinguishing thermoplastic material reinforced with glass fibres, UL approved;
- supplementary insulation inside enclosures.

COB

description

The COB system makes it possible to use multipole connectors within electric panels without the traditional metallic enclosure as protection is assured by the electric panel itself or other container.

N.B.: connectors must not be handled live.

The COB system may be assembled in the three following ways:

- on panels with window snap fastening device * (**Figure 1** page 460);
- on DIN EN 60715 rails, both lengthways and crossways to the support (**Figure 2** page 461);
- on fixed panels using screws (**Figure 2** page 461).

The COB system offers the following advantages:

- reduction in cost and space with respect to metallic enclosures and traditional terminal boards;
- possibility of rewiring at the connector bench with connected devices;
- easy wiring inspection and tests with coupled connectors, thanks to rear access to the inserts via the turnover device;
- fast mounting in panels thanks to the snap fastening device on the DIN EN 60715 rails;
- sturdy support structure, specific to the size of each insert and does not require any preparation;
- broad passage for housing of conductor cables;
- mobile parts prearranged for the clamping of bundles of conductors of multipolar cables to prevent contact with the connector contacts.

Changeover from Pg threads to M metric threads

After 31st December 1999, the German safety standard DIN VDE 0619 (1987-09) and the standards it refers to - DIN 46319 for dimensions with metric threads and DIN 46320 (T1-T4), DIN 46255 and DIN 46259 for dimensions with Pg threads (Pg= Panzerrohr-Gewinde: literally “threads for armoured pipes”) - were withdrawn and European standard EN 50262 “Metric cable grippers for electrical installations” has been in force since 1st January 2000.
This standard defines the new sizes with metric threads for cable grippers according to EN 60423 and establishes the safety prescriptions.
Conversely, it does not specify the dimensions, such as the size of the tightening wrench, the diagonal dimension, or the dimensions of the tightness seals, as was the case in the withdrawn DIN for Pg cable grippers.
The standard came definitively into force on 1st April 2001, when the contrasting national standards were withdrawn.
It is valid in all member countries of CENELEC (European Electrical Standardisation Committee) and its publication has led to a broadening of the supply of enclosures for multi-pole connectors for industrial use, to include new enclosure versions with cable entry suitable for metric cable grippers.
Cable gripper producers have introduced the new metric series to add to the Pg size series, to gradually replace the latter type. The transition period indicated in the new standard should have ended on 1st March 2001, after which date the use of entry devices for Pg cables and, as a result, enclosures with Pg thread, should have ended in new installations. Nevertheless, both the cable entry devices and the relevant enclosures with Pg thread, may continue to be used as spare parts. For the CE marking of these items, observance of the safety conditions specified by the Low Voltage Directive is sufficient.
To distinguish hoods and surface-mounting housings with metric entries from the relevant Pg versions (marked with a C pre-code), the ILME metric types are marked with an M pre-code.The transposition table below indicates the correspondence rule adopted in most cases by ILME for creating the new metric versions.

Pg ➔ metric transposition

Pg	metric
Pg 11	M 20
Pg 13,5	M 20
Pg 16	M 20
Pg 21	M 25
Pg 29	M 32
Pg 36	M 40
Pg 42	M 50

Cable diameter for use with ILME cable glands (for more information ask for the technical catalogue)

Ø in mm			metric thread		
series	**20**	**25**	**32**	**40**	**50**
AS M..P	from 6 to 12,5	from 10 to 18	from 14 to 24	from 15 to 24	from 23 to 30
AS M..E	from 8 to 12,5	from 13,5 to 18	from 17 to 24		
AG M..T	6-8-10	11-14-17	19-21-24	26-29-32	35-38-41
AG M..I	from 5 to 12,5	from 9 to 18	from 14 to 25	from 18 to 32	from 24 to 38,5
AG M..R	6-8-10	11-14-17	19-21-24		

IP degree of protection and the EN 60529 standard

The minimum IP degree of protection is regulated in Italy by the CEI 64-8 installation standard (adoption of the CENELEC Harmonisation Documents HD 384 series derived from the IEC 60364 series publication) which, in Part 7, covers a number of special environments: construction and demolition sites, structures designed for agricultural or livestock breeding use, restricted conductor areas, caravans and caravan sites, environments with a greater risk in case of fire, public performance and entertainment areas, pools, fountains, marinas and harbour areas. The standard is applicable to enclosures for electrical equipment with a rated power not greater than 72,5 kW.
All the equipment must be installed according to the rule of art and must comply with any manufacturer’s assembly instructions. When components of different degrees of protection are assembled, the resulting system will assume the lowest degree of protection of the mounted components.
The range of ILME enclosures presented in this Catalogue offers the following range of protection and a combination of them as specified therein (the so-called multiple or versatile IP ratings e.g. IP66/IP67, IP66/IP68/IP69):

IP44 : protection against the *ingress of solid foreign objects* with a Ø 1,0 mm and greater and against *access to hazardous parts* with an access probe of Ø 1,0 mm (1st characteristic numeral), and protection against the *harmful effects of splashing water from any direction* (2nd characteristic numeral).
IP55 : protprotection against *dust* and protection against the *access to hazardous parts* with an access probe of Ø 1,0 mm (1st characteristic numeral), and protected against the *harmful effects of water jets* from any direction (2nd characteristic numeral).
IP66 : total protection against *dust* and access to *hazardous parts* with an accessibility probe of Ø 1,0 mm (1st characteristic numeral), and protected against *powerful water jets* from any direction, such as sea waves (2nd characteristic numeral).
IP67 : total protection against *dust*, and against the *access to hazardous parts* with access probe of Ø 1,0 mm (1st characteristic numeral), and protection against *the effects of temporary immersion* (30 min) in water at the maximum depth of 1 m (2nd characteristic numeral) [1].
IP68 : total protection against *dust*, and against the *access to hazardous parts* with access probe of Ø 1,0 mm (1st characteristic numeral), and protection against the effects of *continuous submersion in water* (duration ≥ 30 min upon agreement and water depth ≥ 1 m upon agreement) (2nd characteristic numeral).
IP69 [2]: total protection against *dust*, and against *access to hazardous parts* with access probe of Ø 1,0 mm (1st characteristic numeral), and protection against the effects of *high pressure and temperature water jets* (2nd characteristic numeral).

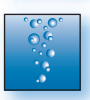
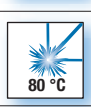
[1] The **IP66/IP67** degree of protection has been officially be introduced in Amendment 1 of IEC/EN 60309-1 and IEC/EN 60309-2 standards covering industrial plugs, socket-outlets, appliance inlets and couplers. It is already accounted for in the IP degree of protection standard EN 60529 as a ”multiple” form of protection, covering the fact that the temporary immersion resistance test (protection IPX7) does not automatically cover the two lower degrees of protection IPX6 and IPX5, tested with the respective jet tests. If the end user requires the equipment to resist both against temporary immersions and pressurized water jets, devices rated IP66/IP67 i.e. with multiple IP marking must be selected.
[2] Some connector enclosures, as specified in the relevant Section, have successfully passed also the tests specified for the **IPX9** degree of protection recently introduced in EN 60529 standard, derived from the IPX9K degree of protection described in ISO 20653 and former DIN 40050-9 automotive standards.
These series bear actually a “multiple” or a “versatile” rating per IEC/EN 60529, e.g. IP66/IP69 and IP66/IP68/IP69.

The following table shows the different levels of protection required by the IP standard

First characteristic numeral
Protection of people against access to hazardous parts
Protection of equipment against solid foreign objects

IP	Solid external objects	Protection
0		non-protected
1		protected against access to hazardous parts with the back of a hand protected against solid foreign objects of Ø 50 mm and greater
2		protected against access to hazardous parts with a finger - protected against solid foreign objects of Ø 12,5 mm and greater
3		protected against access to hazardous parts with a tool - protected against solid foreign objects of Ø 2,5 mm and greater
4		protected against access to hazardous parts with a wire - protected against solid foreign objects of Ø 1,0 mm and greater
5		protected against access to hazardous parts with a wire dust-protected (no harmful dust deposit)
6		protected against access to hazardous parts with a wire dust-tight (total protection against dust)

Second characteristic numeral
Protection of materials against harmful penetration of water

IP	Tests	Protection
0		non-protected
1		protected against vertically falling water drops
2		protected against vertically falling water drops when enclosure tilted up to 15° (on either side of the vertical)
3		protected against spraying water (at an angle up to 60° on either side of the vertical)
4		protected against splashing water from any direction
5		protected against water jets from any direction
6		protected against powerful water jets from any direction (similar to sea waves)
7		protected against the effects of temporary immersion in water at a maximum depth of 1 meter for 30 min
8		protected against the effects of continuous immersion in water at depth and/or duration upon agreement, more severe than for numeral 7
9		protected against high pressure and temperature water jets from any direction

cUL mark

Enclosures series

ILME enclosures have been certified by UL as Recognised Components for the USA and Canada (cUL mark) as accessories of our set of UL and CSA certified connector inserts (file UL E115072, file CSA 082270_0_000).
The certification has been achieved by successfully completing several tests carried out in compliance with standard **ANSI/UL 50** (Enclosures for Electrical Equipment) which is equivalent to the North American voluntary standard **NEMA 250** (NEMA = National Electrical Manufactures Association) and to the equivalent Canadian standard **CSA C22.2 No.94** (Special Purpose Enclosures) for safety levels used in North America and required by the local installation codes (e.g.: NFPA 70 National Electrical Code in the US, CSA system standards for Canada); more specifically:
- **Type 12** (= NEMA 12): for internal use, similar to IP54 protection rating according to IEC/EN 60529;
- **Type 4** (= NEMA 4): for internal and external use, similar to IP66;
- **Type 4X** (= NEMA 4X): for internal and external use, as Type 4 + corrosion resistance, similar to IP66 protection rating.

The certification includes the enclosure series with ISO, Pg and metric cable entry as well as NPT, all special versions similar to standard types.

*** NOTE: The Type 12 be covered the Type 1 and Type 2.**

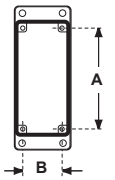
Type 4/4X/12

Type 12

Enclosure versions

Enclosures size	C-TYPE or IL-BRID from page	V-TYPE from page	180 °C from page	For aggressive environments from page	EMC from page	High protection IP68 from page	BIG hoods from page	Insulating T-TYPE from page	LS-TYPE from page
21.21	✔ 221	✗	✔ 397	✔ 369	✔ 387	✔ 416	✗	✗	✗
32.13	✔ 226	✗	✗	✗	✔ 388	✗	✗	✗	✗
49.16	✔ 230	✗	✎ on request	✔ 370	✔ 390	✗	✗	✗	✗
66.16	✔ 233	✗	✎ on request	✔ 371	✔ 391	✗	✗	✗	✗
66.40	✔ 237	✗	✗	✔ 372	✗	✗	✗	✗	✗
44.27	✔ 240	✔ 274, 284	✔ 398	✔ 373	✔ 392	✔ 420	✔ 304	✔ 326	✔ 450
57.27	✔ 244	✔ 275, 288	✔ 399	✔ 374	✔ 393	✔ 424	✔ 308	✔ 328	✔ 45
77.27	✔ 250	✔ 276, 292	✔ 400	✔ 375	✔ 394	✔ 428	✔ 312	✔ 330	✔ 454
104.27	✔ 258	✔ 277, 296	✔ 401	✔ 376	✔ 395	✔ 432	✔ 316	✔ 332	✔ 456
77.62	✔ 267	✗ see standard enclosures	✗	✔ 377	✗	✗	✗	✗	✗
104.62	✔ 271	✗ see standard enclosures	✔ 402	✔ 378	✗	✗	✗	✗	✗

✔ = normal production
✎ = may be supplied on request, contact our sales offices
✗ = currently unavailable



Rated current

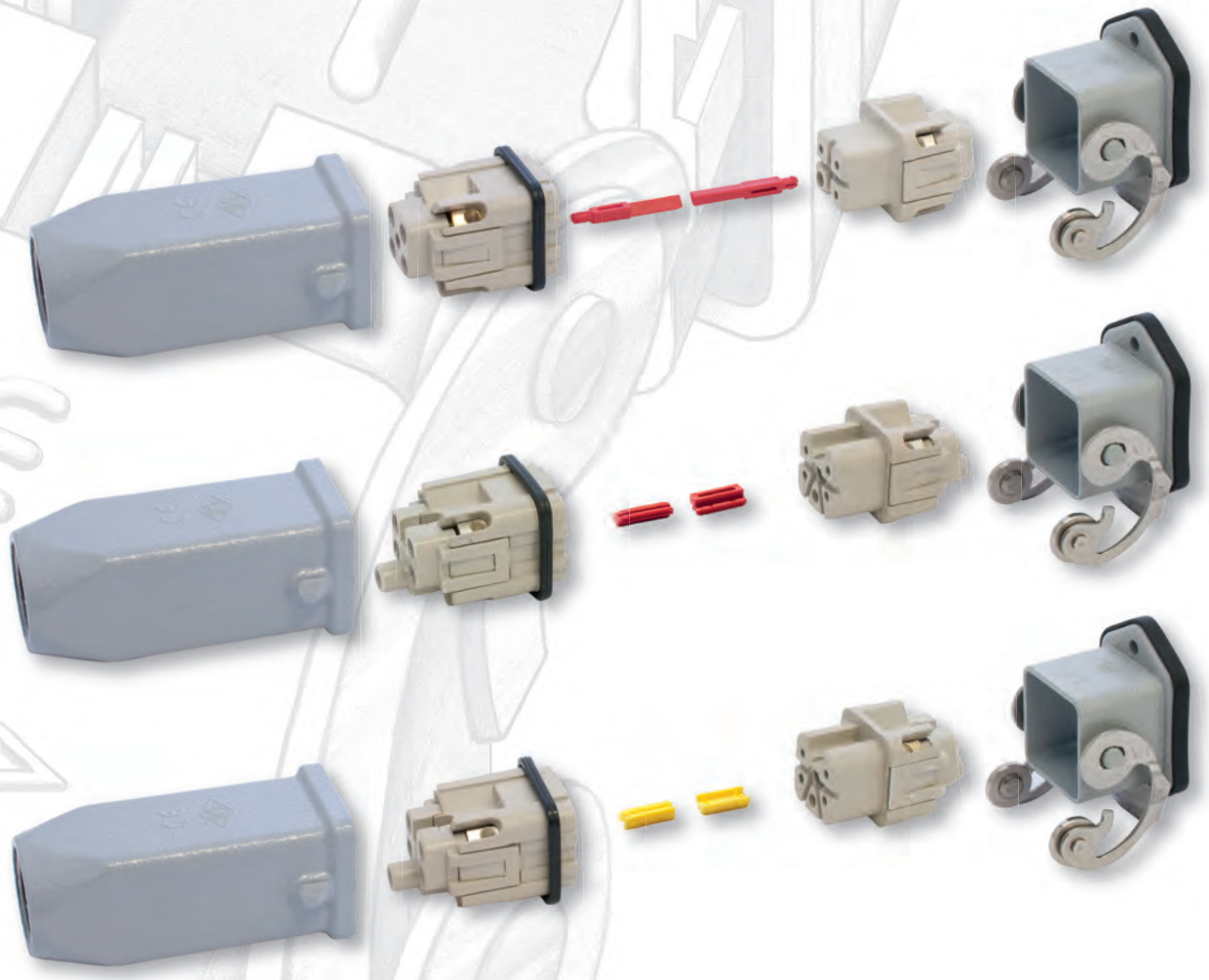
Enclosures size A.B	CK, CKS	CD	CT, CTS	CDD	CDS	CDA, CDC, CSAH	CCE	CNE	CSE, CSS, CSH	CT, CTS, CTSE	CME	CMSH, CMCE	CP	CQ, CQE, CQEE	CX	CX	CX	MIXO
	10A	10A	10A	10A	10A	16A	16A	16A	16A	16A	16A	16A	35A	40A 16A 10A	16A 10A	100A 40A 10A	80A 16A	200A 100A 70A 40A 16A 10A 5A
Insert series																		
Insert polarity + ⏚																		
21.21	3 4	7 8#												12 5				
32.13														8 4/2				
49.16		15				10												①*
66.16		25		38		16												
66.40		50		76		32												
44.27				24	9		6	6	6	6✻				10				②*
57.27				42	18		10	10	10	10✻	$3+^{2}$	$3+^{2}$		18	8/24			③*
77.27		40	40✻	72	27		16	16	16	16✻	$6+^{2}$	$6+^{2}$	6	32 40		6/36 12/2	4/0 4/2	④*
104.27		64	64✻	108	42		24	24	24	24✻	$10+^{2}$ $16+^{2}$	$10+^{2}$ $16+^{2}$★		46 64		6/6	4/8	⑥*
77.62		80		144	54		32	32	32	32✻	$12+^{4}$	$12+^{4}$	12	64				⑧*
104.62		128		216	84		48	48	48	48✻	$20+^{4}$ $32+^{4}$	$20+^{4}$ $32+^{4}$★		92				⑫*

= polarity without earth contact
✻ = can only be mounted in bulkhead housings (6/10/16/24 polarity, also usable with BIG series hoods)
◯* = number of modular inserts that may be inserted in the enclosures
★ = polarity not available in CMSH version

The polarity values in "**red**" are obtained using double inserts.
The polarity values in "**green**" must be mounted exclusively in insulated enclosures (CM - CMA and MM - MMA versions) or T-TYPE series.
The polarity values indicated as exponentials in the CME, CMCE and CMSH inserts identify the pilot contacts for advanced opening.

CK and CKS with coding pins

avoid incorrect connections



CK and CKS series

Avoid incorrect connections

The new CK/CKS series of inserts addresses the need for connector coding with the addition of coding pins CR K03, CR K04R and CR K04G.

Each connector is made in such a way as to make coupling of inserts from different series impossible.

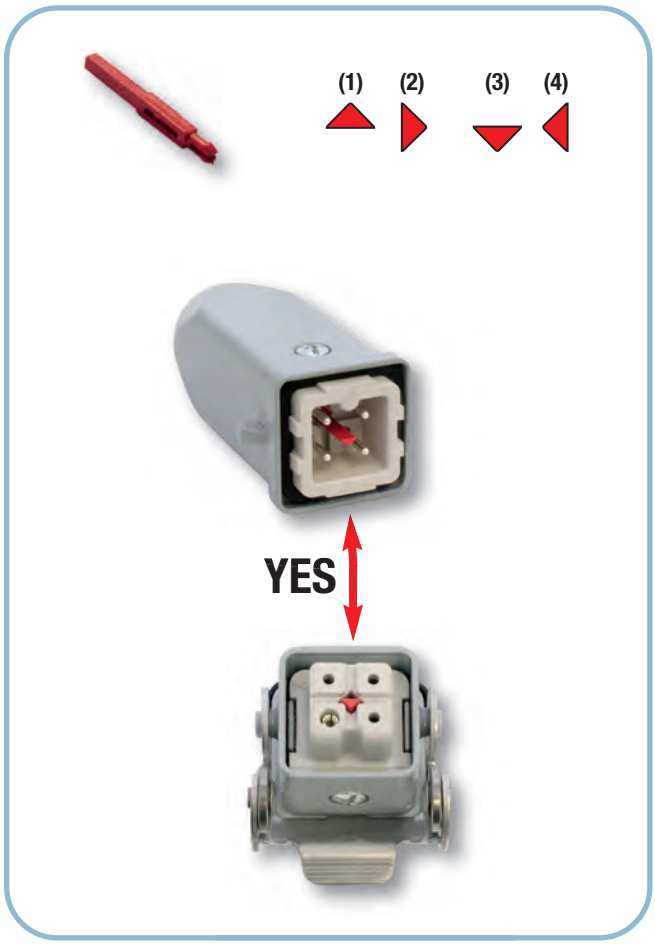
When a number of identical connectors with different functions are mounted close together, the coupling of a free part onto a non-corresponding fixed part must be prevented in order to avoid possible damage and breakdown.

The new coding pins allow the user to safely configure the male and female inserts to prevent the incorrect connection of identical connectors.

With various combinations of coding pins available, **it is possible to safely install up to 4 connectors of the same type but with different functions side-by-side.**

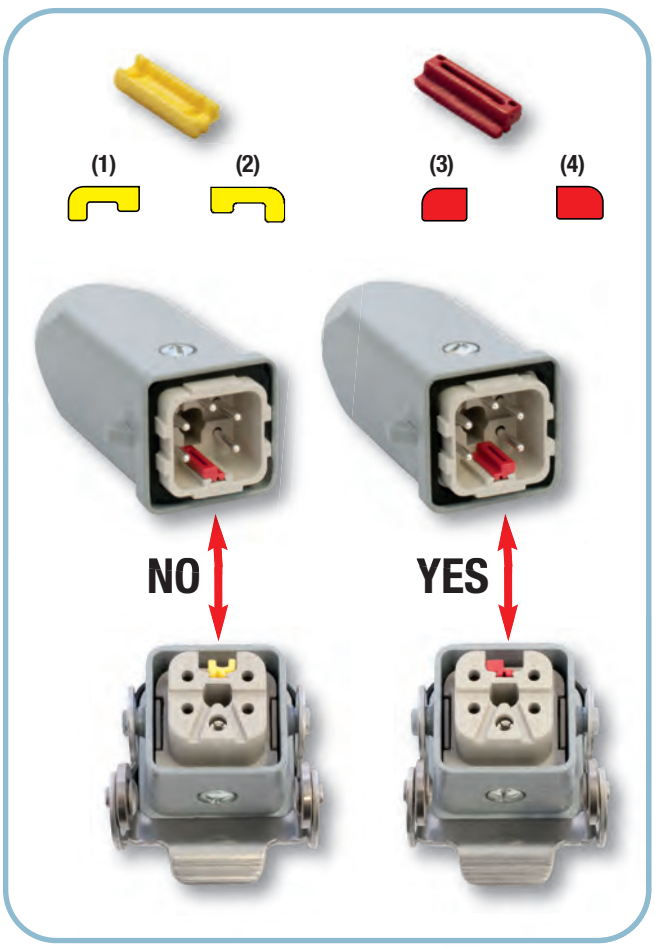
CR K03 version, for connectors 3P + ⏚.

Inserting the pin in the 4 possible positions by rotating through 90° allows 4 different insert codes to be obtained.



CR K04 version, for connectors 4P + ⏚.

There are 2 pin versions: Red and Yellow.
Each pin has 2 possible insertion positions specular.
Alternate use of the pins allows 4 combinations to be achieved.



CK 3 and 4 poles + ⏚ 10A - 230/400V

enclosures:
size "21.21" page:

insulating type ..... 221 - 222
metallic type ..... 223 - 225
W-TYPE for aggressive environments 369
EMC 387
IP68 ..... 416 - 418

- can be mated with CKS inserts

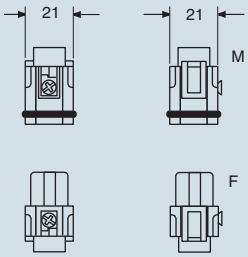
inserts, 3 poles + ⏚
screw terminal connections

silver plated contacts

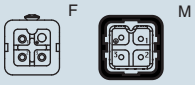
NEW

description	part No.	part No.
distinctive colour female inserts with female contacts [1] male inserts with male contacts	white **CKF 03** **CKM 03**	black **CKF 03 N** **CKM 03 N**

dimensions in mm

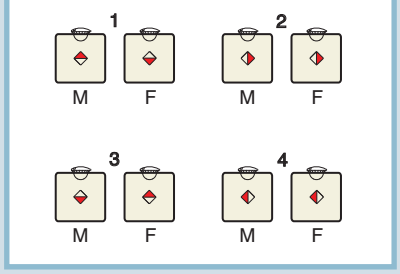


contacts side (front view)



- inserts for wires with the following cross sections: 0,75 - 2,5 mm² - AWG 18 - 14
- conductor stripping lenght: 6 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

coding pins:
CR K03 (page 490)



M = male insert
F = female insert

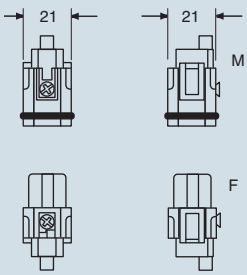
inserts, 4 poles + ⏚
screw terminal connections

silver plated contacts

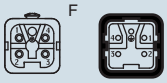
NEW

description	part No.	part No.
distinctive colour female inserts with female contacts [1] male inserts with male contacts	white **CKF 04** **CKM 04**	black **CKF 04 N** **CKM 04 N**

dimensions in mm

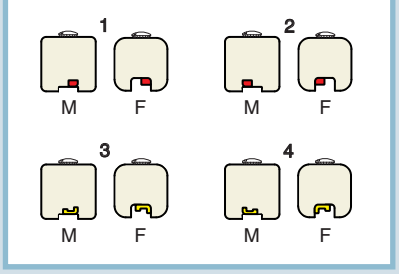


contacts side (front view)



- inserts for wires with the following cross sections: 0,75 - 2,5 mm² - AWG 18 - 14
- conductor stripping lenght: 6 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

coding pins:
CR K04R and CR K04G (page 490)



M = male insert
F = female insert

[1] the female inserts can be mounted into the straight bulkhead housings CK I from the rear

- characteristics according to EN 61984:
  10A 230/400V 4kV 3
  10A 400/690V 4kV 2
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +100 °C
- are made of self-extinguishing thermoplastic resin UL 94V-1
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 556

diagram CK 03 poles

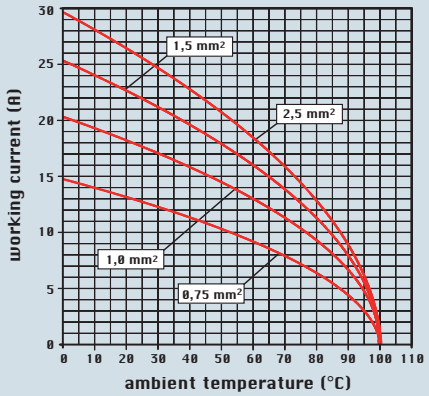
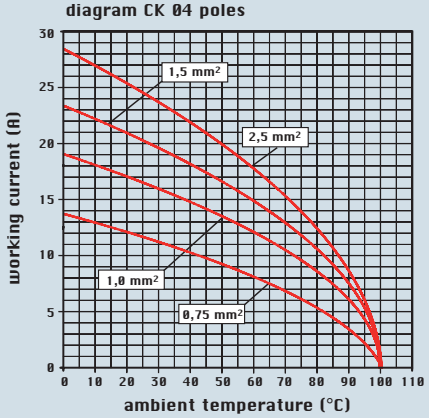


diagram CK 04 poles



dimensions shown are not binding
and may be changed without notice

CKS 3 and 4 poles + ⏚ 10A - 400V

enclosures:
size "21.21" page:

insulating type ..... 221 - 222
metallic type ..... 223 - 225
W-TYPE for aggressive environments 369
EMC 387
IP68 ..... 416 - 418

- can be mated with CK inserts
- inserts for application with temperatures up to 180 °C, available on request

inserts, 3 poles + ⏚
connection with spring terminal

silver plated contacts

NEW

inserts, 4 poles + ⏚
connection with spring terminal

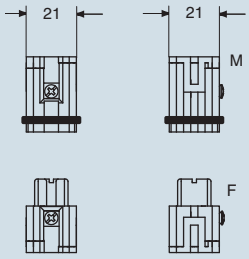
silver plated contacts

NEW

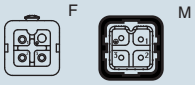
description	part No.	part No.
female inserts with female contacts male inserts with male contacts	**CKSF 03** **CKSM 03**	
female inserts with female contacts male inserts with male contacts		**CKSF 04** **CKSM 04**

- characteristics according to EN 61984:
  10A 400V 4kV 3
  10A 690V 4kV 2
- cUL (UL for USA and Canada), CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 556

dimensions in mm

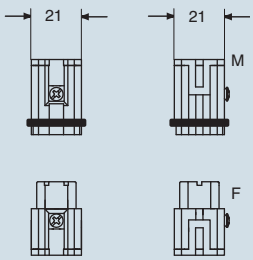


contacts side (front view)

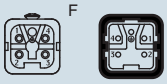


- inserts for wires with the following sections:
  0,14 - 2,5 mm² - AWG 26 - 14
  for prepared wires
  usable section: up to 1,5 mm² (AWG 16)
- conductor stripping lenght: 9...11 mm

dimensions in mm



contacts side (front view)



- inserts for wires with the following sections:
  0,14 - 2,5 mm² - AWG 26 - 14
  for prepared wires
  usable section: up to 1,5 mm² (AWG 16)
- conductor stripping lenght: 9...11 mm

diagram CKS 03 poles

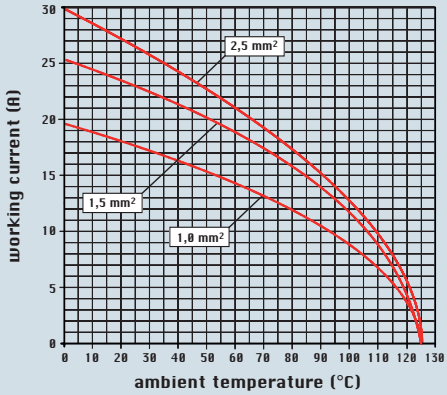
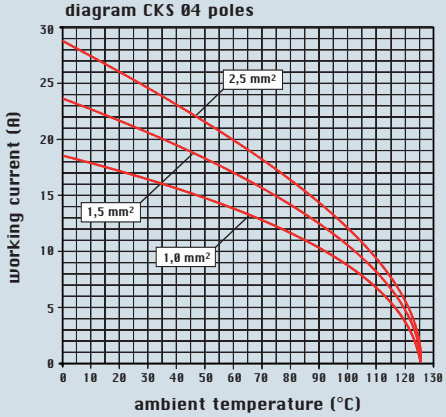


diagram CKS 04 poles

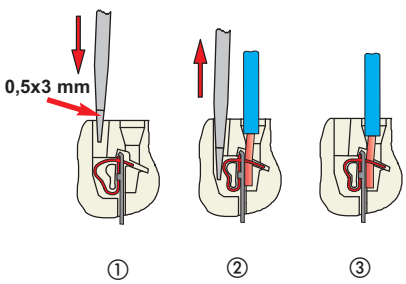


dimensions shown are not binding
and may be changed without notice

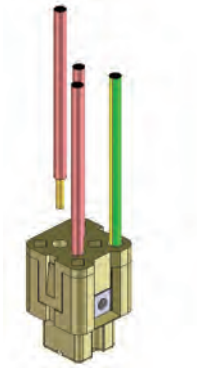
coding pins:
CR K03 (page 490)

coding pins:
CR K04R and CR K04G (page 490)

Connection with spring terminal



Rear top entry of wires for a more easier wiring



CKD 3 and 4 poles + ⏚ 10A - 230/400V

enclosures:
size "21.21" page:

insulating type ..... 221 - 222
metallic type ..... 223 - 225
W-TYPE for aggressive environments 369
EMC 387
IP68 ..... 416 - 418

inserts, 3 poles + ⏚
screw terminal connections

gold plated contacts

NEW

inserts, 4 poles + ⏚
screw terminal connections

gold plated contacts

NEW

description	part No.	part No.
female inserts with female contacts [1] male inserts with male contacts	**CKFD 03** **CKMD 03**	
female inserts with female contacts [1] male inserts with male contacts		**CKFD 04** **CKMD 04**

[1] the female inserts can be mounted into the straight bulkhead housings CK I from the rear

- characteristics according to EN 61984:
  10A 230/400V 4kV 3
  10A 400/690V 4kV 2
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +100 °C
- are made of self-extinguishing thermoplastic resin UL 94V-1
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 556

diagram CKD 03 poles

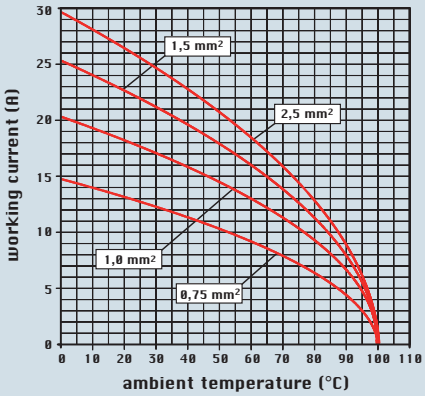
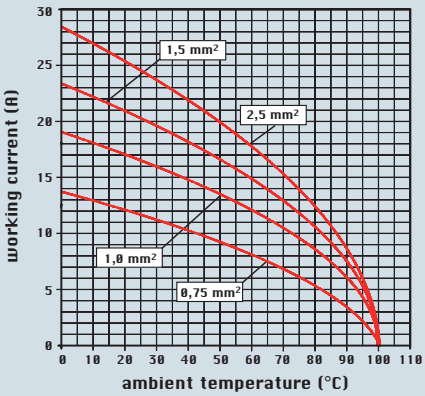
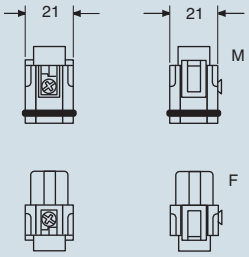


diagram CKD 04 poles

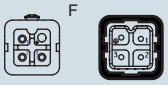


dimensions shown are not binding
and may be changed without notice

dimensions in mm

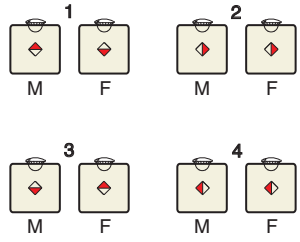


contacts side (front view)



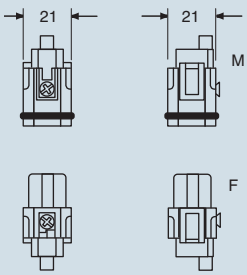
- inserts for connectors with the following sections: 0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping lenght: 6 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

coding pins:
CR K03 (page 490)

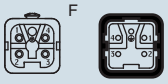


M = male insert
F = female insert

dimensions in mm

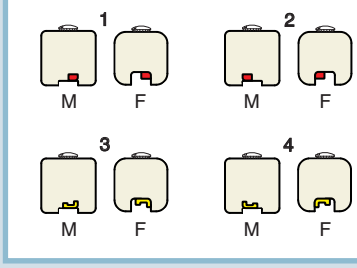


contacts side (front view)



- inserts for connectors with the following sections: 0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping lenght: 6 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

coding pins:
CR K04R and CR K04G (page 490)



M = male insert
F = female insert

CK...RY 3 and 4 poles + ⏚ 10A - 230/400V

enclosures:
size "21.21" page:

for 180 °C 397

inserts, 3 poles + ⏚
screw terminal connections

NEW

silver plated contacts

180 °C

inserts, 4 poles + ⏚
screw terminal connections

NEW

silver plated contacts

180 °C

description	part No.	part No.
use in temperatures up to 180 °C female inserts with female contacts [1], brown male inserts with male contacts, brown	**CKF 03 RY** **CKM 03 RY**	
use in temperatures up to 180 °C female inserts with female contacts [1], brown male inserts with male contacts, brown		**CKF 04 RY** **CKM 04 RY**

[1] the female inserts can be mounted into the straight bulkhead housings CK I from the rear

- characteristics according to EN 61984:
  10A 230/400V 4kV 3
  10A 400/690V 4kV 2
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +180 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 557

diagram CK...RY 03 poles

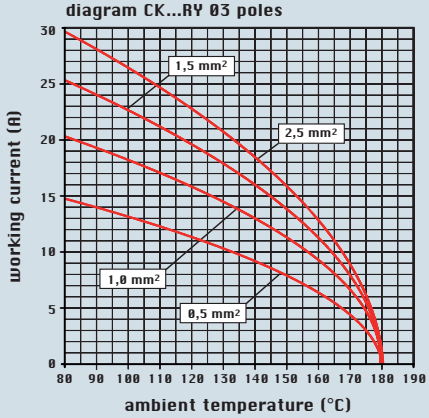
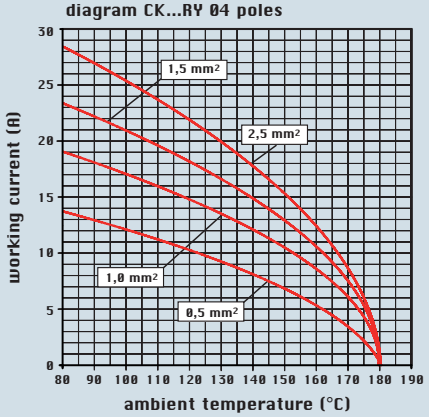
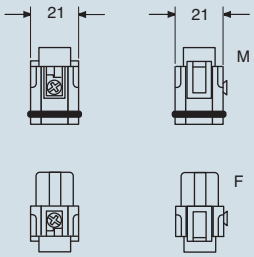


diagram CK...RY 04 poles

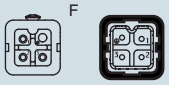


dimensions shown are not binding
and may be changed without notice

dimensions in mm

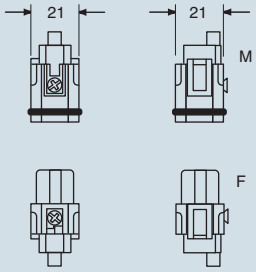


contacts side (front view)

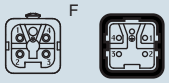


- inserts for connectors with the following sections: 0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping lenght: 6 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

dimensions in mm



contacts side (front view)



- inserts for connectors with the following sections: 0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping lenght: 6 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

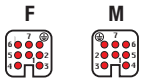
CD inserts

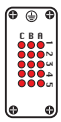
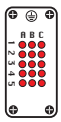
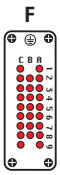
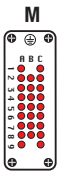
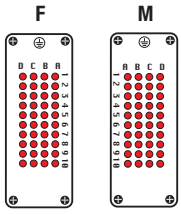
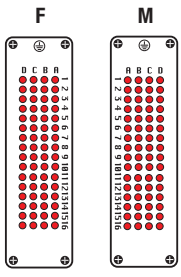
Special voltages

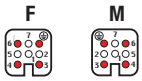
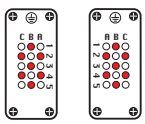
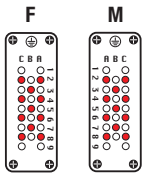
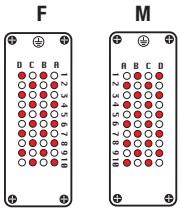
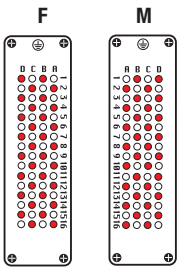
If all the contacts are used, the CD inserts series connectors may be used with voltage up to 250V (first column) pollution degree 3 in accordance with the standard EN 61984.
If the number of contacts is reduced and the contacts accordingly assigned, these connectors may be used at higher voltages.
This is possible because the decrease in the number of contacts leads to an increase in clearances (distances in air) and creepage distances (distances along the surface)
When the contacts are arranged as shown below, the inserts may be used at rated voltage of 500V (second column) pollution degree 3 in accordance with the standard EN 61984.

for use up to 250V pollution degree 3	for use up to 500V pollution degree 3
diagrams contacts side (front view)	diagrams contacts side (front view)
CD - 7 + ⏚	**CD - 3 +** ⏚
CD - 15 + ⏚	**CD - 7 +** ⏚
CD - 25 + ⏚	**CD - 11 +** ⏚
CD - 40 + ⏚	**CD - 20 +** ⏚
CD - 64 + ⏚	**CD - 32 +** ⏚

F M



Legend:

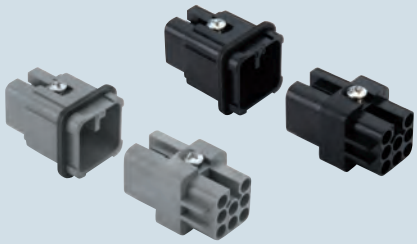
● working contact
○ without contact
M = male insert
F = female insert

CD 7 poles + ⏚ 10A - 250V

enclosures:
size "21.21" page:

insulating type ..... 221 - 222

inserts, crimp connections



10A crimp contacts
silver and gold plated

description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts, grey and black [1] male inserts for male contacts, grey and black	grey **CDF 07** **CDM 07**	black **CDF 07 N** **CDM 07 N**		
10A female contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5			**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5**	**CDFD 0.3** **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5**
10A male contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5			**CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5**	**CDMD 0.3** **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5**

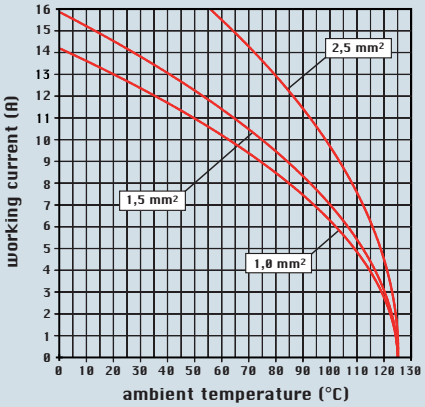
silver plated

gold plated 1)

[1] the female inserts can be mounted into the straight bulkhead housings CK I from the rear

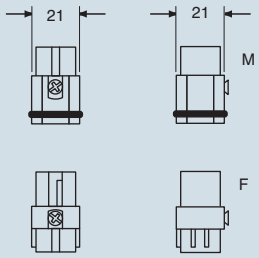
- characteristics according to EN 61984:
  10A 250V 4kV 3
  10A 230/400V 4kV 2
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 52
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 557

diagram CD 07 poles

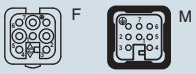


dimensions shown are not binding
and may be changed without notice

dimensions in mm

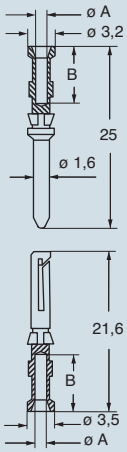


contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491

dimensions in mm



CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

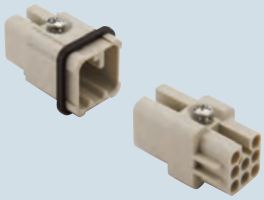
CD 8 poles 10A - 50V ac / 120V dc

enclosures:
size "21.21" page:

insulating type ..... 221 - 222
metallic type ..... 223 - 225
W-TYPE for aggressive environments 369
EMC 387
IP68 ..... 416 - 418

[1] the female inserts can be mounted into the straight bulkhead housings CK I from the rear

inserts, crimp connections



10A crimp contacts silver and gold plated

description	part No.	part No.	part No.
without contacts (to be ordered separately)			
female inserts for female contacts [1]	**CDF 08**		
male inserts for male contacts	**CDM 08**		

10A female contacts

0,14-0,37 mm²	AWG 26-22	identification No. 1	**CDFA 0.3**	**CDFD 0.3**
0,5 mm²	AWG 20	identification No. 2	**CDFA 0.5**	**CDFD 0.5**
0,75 mm²	AWG 18	identification No. ②	**CDFA 0.7**	**CDFD 0.7**
1 mm²	AWG 18	identification No. 3	**CDFA 1.0**	**CDFD 1.0**
1,5 mm²	AWG 16	identification No. 4	**CDFA 1.5**	**CDFD 1.5**
2,5 mm²	AWG 14	identification No. 5	**CDFA 2.5**	**CDFD 2.5**

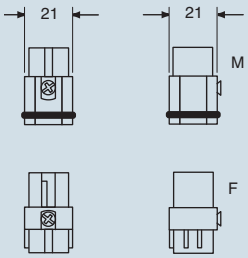
10A male contacts

0,14-0,37 mm²	AWG 26-22	identification No. 1	**CDMA 0.3**	**CDMD 0.3**
0,5 mm²	AWG 20	identification No. 2	**CDMA 0.5**	**CDMD 0.5**
0,75 mm²	AWG 18	identification No. ②	**CDMA 0.7**	**CDMD 0.7**
1 mm²	AWG 18	identification No. 3	**CDMA 1.0**	**CDMD 1.0**
1,5 mm²	AWG 16	identification No. 4	**CDMA 1.5**	**CDMD 1.5**
2,5 mm²	AWG 14	identification No. 5	**CDMA 2.5**	**CDMD 2.5**

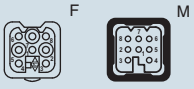
silver plated | **gold plated 1)**

- characteristics according to EN 61984:
  10A 50V ac / 120V dc 0,8kV 3
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 50V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 557

dimensions in mm



contacts side (front view)



dimensions in mm

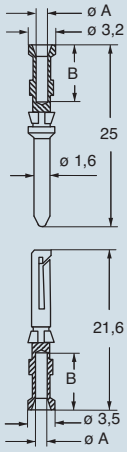
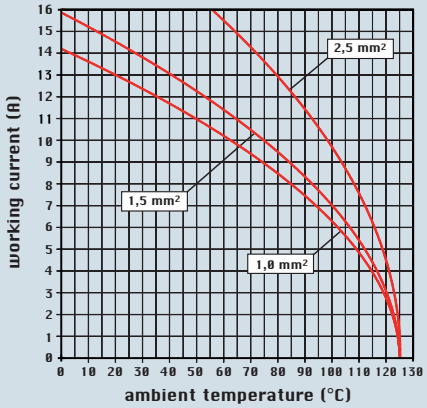


diagram CD 08 poles



coding pin **CR CP** with loss of one contact, page 491

CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

dimensions shown are not binding
and may be changed without notice

CD 15 poles + ⏚ 10A - 250V

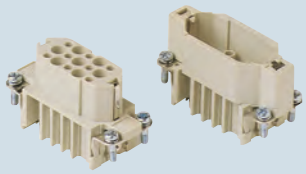
enclosures:
size "49.16" page:

IL-BRID ..... 230 - 232
W-TYPE for aggressive environments 370
EMC 390

panel supports: page:

COB + adaptor ..... 462 - 464

inserts, crimp connections



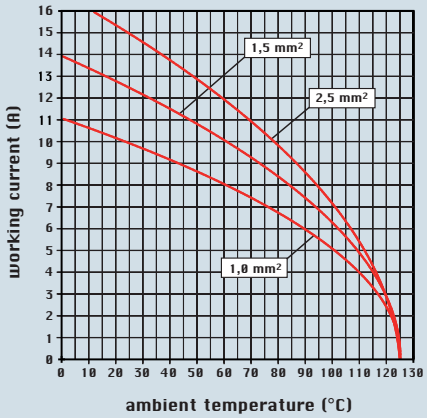
10A crimp contacts
silver and gold plated

description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CDF 15** **CDM 15**		
10A female contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5**	**CDFD 0.3** **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5**
10A male contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5**	**CDMD 0.3** **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5**

silver plated | **gold plated 1)**

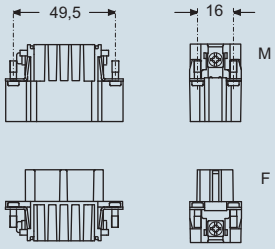
- characteristics according to EN 61984:
  10A 250V 4kV 3
  10A 230/400V 4kV 2
- compliant with DIN EC 175-301-801 standard
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 52
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 557

diagram CD 15 poles

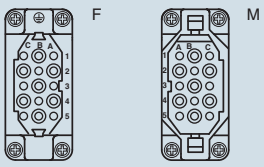


dimensions shown are not binding
and may be changed without notice

dimensions in mm

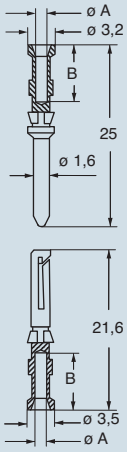


contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491

dimensions in mm



CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

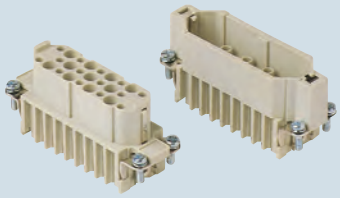
CD 25 poles + ⏚ 10A - 250V

enclosures:
size "66.16" page:

IL-BRID ..... 233 - 235
W-TYPE for aggressive environments 371
EMC 391

panel supports: page:
COB + adaptor ..... 462 - 464

inserts, crimp connections



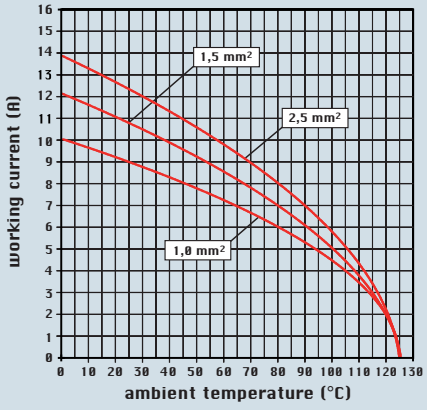
10A crimp contacts
silver and gold plated

description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CDF 25** **CDM 25**		
10A female contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5**	**CDFD 0.3** **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5**
10A male contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5**	**CDMD 0.3** **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5**

silver plated | **gold plated 1)**

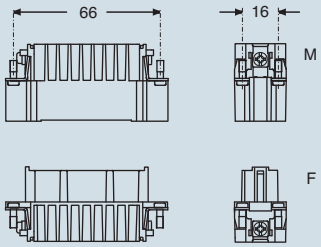
- characteristics according to EN 61984:
  10A 250V 4kV 3
  10A 230/400V 4kV 2
- compliant with DIN EC 175-301-801 standard
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 52
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 557

diagram CD 25 poles

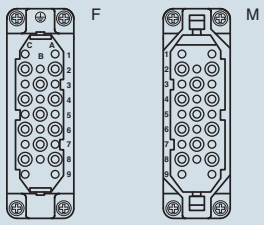


dimensions shown are not binding
and may be changed without notice

dimensions in mm

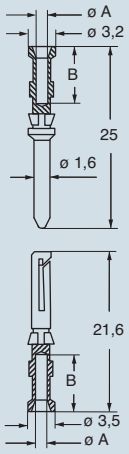


contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491

dimensions in mm



CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

CD 40 poles + ⏚ 10A - 250V

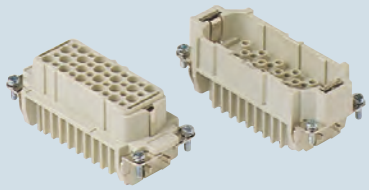
enclosures:
size "77.27" page:

C-TYPE IP65/IP66 ..... 250 - 256
C7 IP67, two levers 276
V-TYPE IP65/IP66, single lever 282/292 - 295
BIG hoods ..... 312 - 315
T-TYPE IP65 insulating ..... 330 - 331
T-TYPE / W IP66 insulating ..... 340 - 341
HYGIENIC T-TYPE / H IP66/IP69 ..... 354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
W-TYPE for aggressive environments 375
EMC 394
central lever ..... 408 - 409
IP68 ..... 428 - 431
LS-TYPE ..... 454 - 455

panel supports: page:

COB ..... 462 - 463

inserts, crimp connections



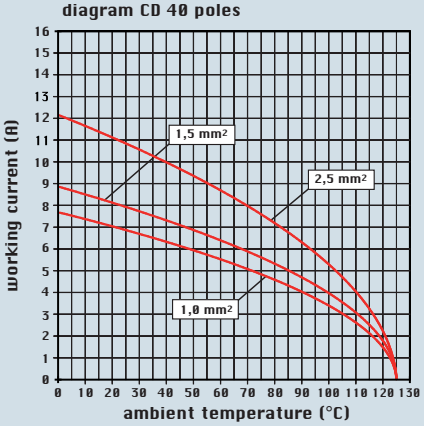
10A crimp contacts
silver and gold plated

description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CDF 40** **CDM 40**		
10A female contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5**	**CDFD 0.3** **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5**
10A male contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5**	**CDMD 0.3** **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5**

silver plated | **gold plated 1)**

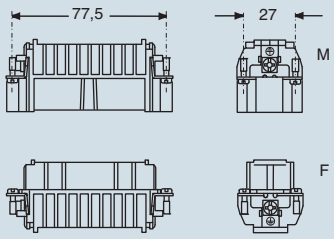
- characteristics according to EN 61984:
  10A 250V 4kV 3
  10A 230/400V 4kV 2
- compliant with DIN EC 175-301-801 standard
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 52
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 557

diagram CD 40 poles

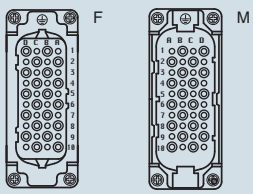


dimensions shown are not binding
and may be changed without notice

dimensions in mm

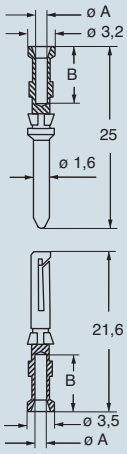


contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491

dimensions in mm



CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

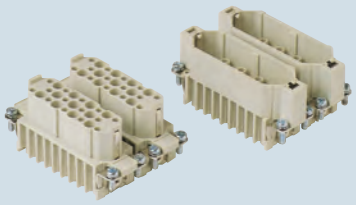
1) basic or high thickness gold plating page 480

CD 50 poles + ⏚ 10A - 250V

enclosures:
size "66.40" page:

C-TYPE IP65/IP66 ..... 237 - 239
W-TYPE for aggressive environments 372

inserts, crimp connections



10A crimp contacts silver and gold plated

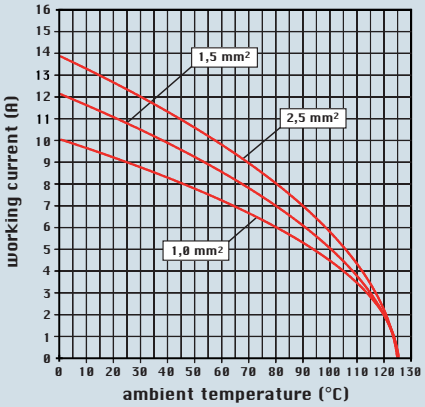
description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately)				
female inserts, No. (A1÷C9) and (ZA1÷ZC9) *	**CDF 25**	**CDF 25 Z** *		
male inserts, No. (A1÷C9) and (ZA1÷ZC9) *	**CDM 25**	**CDM 25 Z** *		
10A female contacts				
0,14-0,37 mm² AWG 26-22 identification No. 1			**CDFA 0.3**	**CDFD 0.3**
0,5 mm² AWG 20 identification No. 2			**CDFA 0.5**	**CDFD 0.5**
0,75 mm² AWG 18 identification No. ②			**CDFA 0.7**	**CDFD 0.7**
1 mm² AWG 18 identification No. 3			**CDFA 1.0**	**CDFD 1.0**
1,5 mm² AWG 16 identification No. 4			**CDFA 1.5**	**CDFD 1.5**
2,5 mm² AWG 14 identification No. 5			**CDFA 2.5**	**CDFD 2.5**
10A male contacts				
0,14-0,37 mm² AWG 26-22 identification No. 1			**CDMA 0.3**	**CDMD 0.3**
0,5 mm² AWG 20 identification No. 2			**CDMA 0.5**	**CDMD 0.5**
0,75 mm² AWG 18 identification No. ②			**CDMA 0.7**	**CDMD 0.7**
1 mm² AWG 18 identification No. 3			**CDMA 1.0**	**CDMD 1.0**
1,5 mm² AWG 16 identification No. 4			**CDMA 1.5**	**CDMD 1.5**
2,5 mm² AWG 14 identification No. 5			**CDMA 2.5**	**CDMD 2.5**

silver plated | **gold plated 1)**

* coding compliant with EUROMAP recommendations

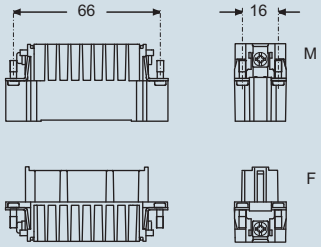
- characteristics according to EN 61984:
  10A 250V 4kV 3
  10A 230/400V 4kV 2
- compliant with DIN EC 175-301-801 standard
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 52
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 557

diagram CD 50 poles

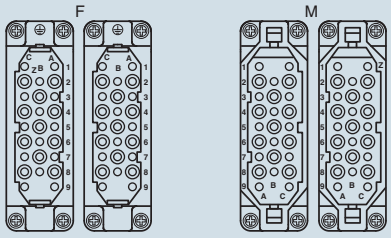


dimensions shown are not binding
and may be changed without notice

dimensions in mm

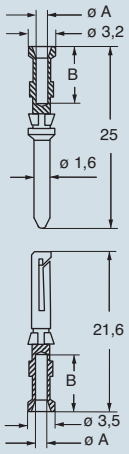


contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491

dimensions in mm



CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

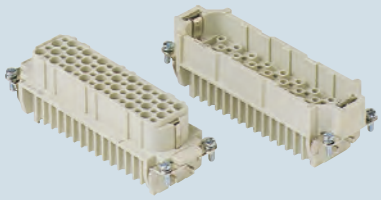
CD 64 poles + ⏚ 10A - 250V

enclosures:
size "104.27" page:

C-TYPE IP65/IP66 ..... 258 - 266
C7 IP67, two levers 277
V-TYPE IP65/IP66, single lever 283/296 - 299
BIG hoods ..... 316 - 319
T-TYPE IP65 insulating ..... 332 - 333
T-TYPE / W IP66 insulating ..... 342 - 343
HYGIENIC T-TYPE / H IP66/IP69 ..... 356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
W-TYPE for aggressive environments 376
EMC 395
central lever ..... 410 - 412
IP68 ..... 432 - 435
LS-TYPE ..... 456 - 457

panel supports: page:
COB ..... 462 - 463

inserts, crimp connections



10A crimp contacts silver and gold plated

description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CDF 64** **CDM 64**		

10A female contacts

0,14-0,37 mm²	AWG 26-22	identification No. 1	**CDFA 0.3**	**CDFD 0.3**	
0,5 mm²	AWG 20	identification No. 2	**CDFA 0.5**	**CDFD 0.5**	
0,75 mm²	AWG 18	identification No. ②	**CDFA 0.7**	**CDFD 0.7**	
1 mm²	AWG 18	identification No. 3	**CDFA 1.0**	**CDFD 1.0**	
1,5 mm²	AWG 16	identification No. 4	**CDFA 1.5**	**CDFD 1.5**	
2,5 mm²	AWG 14	identification No. 5	**CDFA 2.5**	**CDFD 2.5**	

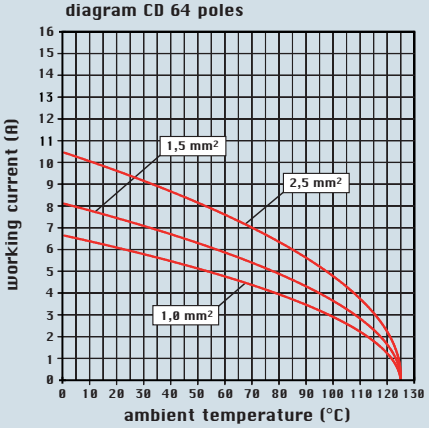
10A male contacts

0,14-0,37 mm²	AWG 26-22	identification No. 1	**CDMA 0.3**	**CDMD 0.3**	
0,5 mm²	AWG 20	identification No. 2	**CDMA 0.5**	**CDMD 0.5**	
0,75 mm²	AWG 18	identification No. ②	**CDMA 0.7**	**CDMD 0.7**	
1 mm²	AWG 18	identification No. 3	**CDMA 1.0**	**CDMD 1.0**	
1,5 mm²	AWG 16	identification No. 4	**CDMA 1.5**	**CDMD 1.5**	
2,5 mm²	AWG 14	identification No. 5	**CDMA 2.5**	**CDMD 2.5**	

silver plated | **gold plated 1)**

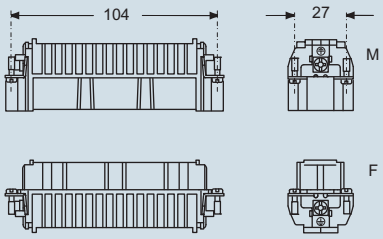
- characteristics according to EN 61984:
  10A 250V 4kV 3
  10A 230/400V 4kV 2
- compliant with DIN EC 175-301-801 standard
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 52
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 557

diagram CD 64 poles

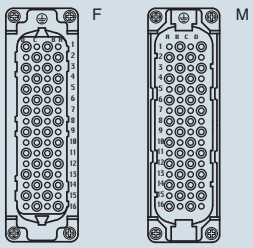


dimensions shown are not binding
and may be changed without notice

dimensions in mm

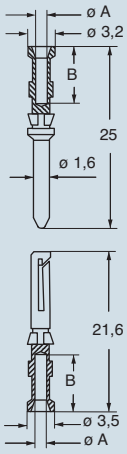


contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491

dimensions in mm



CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

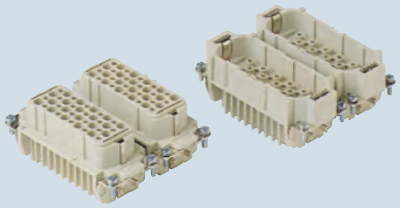
1) basic or high thickness gold plating page 480

CD 80 poles + ⏚ 10A - 250V

enclosures:
size "77.62" page:

C-TYPE IP65/IP66 ..... 267 - 270
W-TYPE for aggressive environments 377

inserts, crimp connections



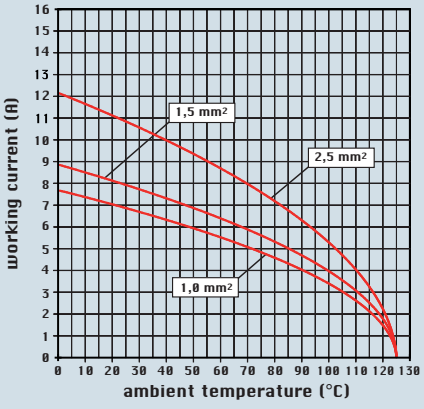
10A crimp contacts silver and gold plated

description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately)				
female inserts	**CDF 40**	**CDF 40**		
male inserts	**CDM 40**	**CDM 40**		
10A female contacts				
0,14-0,37 mm² AWG 26-22 identification No. 1			**CDFA 0.3**	**CDFD 0.3**
0,5 mm² AWG 20 identification No. 2			**CDFA 0.5**	**CDFD 0.5**
0,75 mm² AWG 18 identification No. ②			**CDFA 0.7**	**CDFD 0.7**
1 mm² AWG 18 identification No. 3			**CDFA 1.0**	**CDFD 1.0**
1,5 mm² AWG 16 identification No. 4			**CDFA 1.5**	**CDFD 1.5**
2,5 mm² AWG 14 identification No. 5			**CDFA 2.5**	**CDFD 2.5**
10A male contacts				
0,14-0,37 mm² AWG 26-22 identification No. 1			**CDMA 0.3**	**CDMD 0.3**
0,5 mm² AWG 20 identification No. 2			**CDMA 0.5**	**CDMD 0.5**
0,75 mm² AWG 18 identification No. ②			**CDMA 0.7**	**CDMD 0.7**
1 mm² AWG 18 identification No. 3			**CDMA 1.0**	**CDMD 1.0**
1,5 mm² AWG 16 identification No. 4			**CDMA 1.5**	**CDMD 1.5**
2,5 mm² AWG 14 identification No. 5			**CDMA 2.5**	**CDMD 2.5**

silver plated | **gold plated 1)**

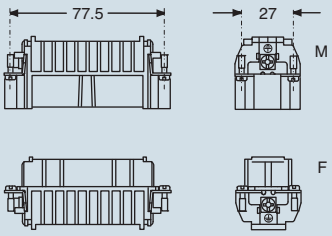
- characteristics according to EN 61984:
  10A 250V 4kV 3
  10A 230/400V 4kV 2
- compliant with DIN EC 175-301-801 standard
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 52
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 557

diagram CD 80 poles

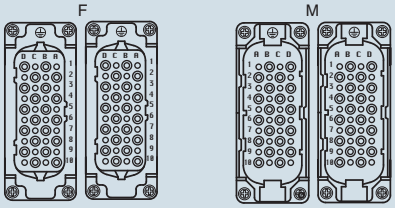


dimensions shown are not binding
and may be changed without notice

dimensions in mm

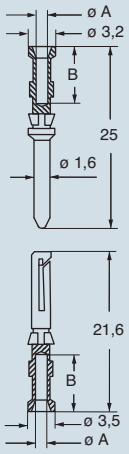


contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491

dimensions in mm



CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

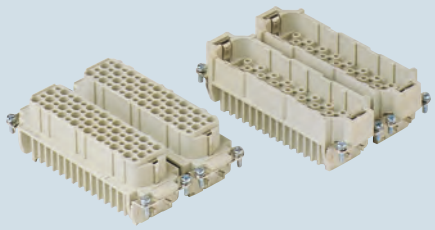
1) basic or high thickness gold plating page 480

CD 128 poles + ⏚ 10A - 250V

enclosures:
size "104.62" page:

C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments.. 378

inserts, crimp connections

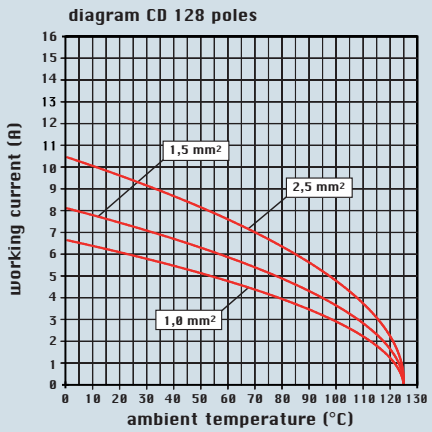


10A crimp contacts
silver and gold plated

description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately)				
female inserts	**CDF 64**	**CDF 64**		
male inserts	**CDM 64**	**CDM 64**		
10A female contacts				
0,14-0,37 mm² AWG 26-22 identification No. 1			**CDFA 0.3**	**CDFD 0.3**
0,5 mm² AWG 20 identification No. 2			**CDFA 0.5**	**CDFD 0.5**
0,75 mm² AWG 18 identification No. ②			**CDFA 0.7**	**CDFD 0.7**
1 mm² AWG 18 identification No. 3			**CDFA 1.0**	**CDFD 1.0**
1,5 mm² AWG 16 identification No. 4			**CDFA 1.5**	**CDFD 1.5**
2,5 mm² AWG 14 identification No. 5			**CDFA 2.5**	**CDFD 2.5**
10A male contacts				
0,14-0,37 mm² AWG 26-22 identification No. 1			**CDMA 0.3**	**CDMD 0.3**
0,5 mm² AWG 20 identification No. 2			**CDMA 0.5**	**CDMD 0.5**
0,75 mm² AWG 18 identification No. ②			**CDMA 0.7**	**CDMD 0.7**
1 mm² AWG 18 identification No. 3			**CDMA 1.0**	**CDMD 1.0**
1,5 mm² AWG 16 identification No. 4			**CDMA 1.5**	**CDMD 1.5**
2,5 mm² AWG 14 identification No. 5			**CDMA 2.5**	**CDMD 2.5**

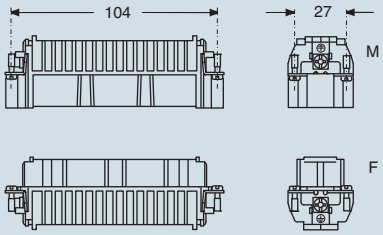
silver plated | **gold plated 1)**

- characteristics according to EN 61984:
  10A 250V 4kV 3
  10A 230/400V 4kV 2
- compliant with DIN EC 175-301-801 standard
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 52
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 557

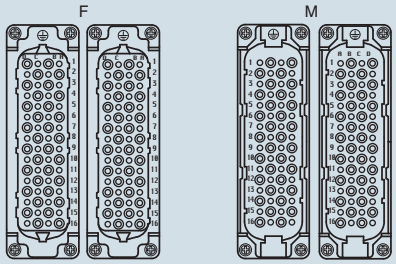


dimensions shown are not binding
and may be changed without notice

dimensions in mm

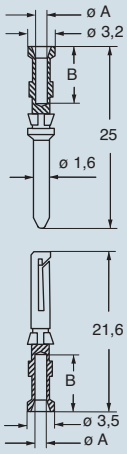


contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491

dimensions in mm



CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

CT - CTS series

Inserts with incorporated terminal block for multipole connectors (10A max versions)

Use.

The CT-series multipole connectors (with incorporated terminal block) are recommended for greater cost-saving and safety for use on machines and command and control panels.

For control panel mounting, bulkhead housings must be used.

The CT series inserts (10A max versions) are supplied in the plug or socket versions and must be mounted with insertion from the rear of the enclosure (**Figures 1** and **2**). The space occupied by the terminal block does not allow for the passage of the insert and insertion from the front of the enclosure.

As an alternative to the traditional terminal blocks, the inserts can be mounted inside the control panels on DIN EN 60715 rails (**Figure 5**) using suitable accessories providing the added advantage of easy sectioning.

The special structure of the CT inserts has all the conductor connections on the same side providing for easier wiring and a complete view of the work area.

The terminal block also has slots for housing the identification wire markers of each contact. Wire markers of different manufacturers may be used such as: Cabur, Grafoplast, Modernotecnica, Phoenix, Siemens, Wago, Weidmüller.

The CT series is available in the versions "left" and "right" for mounting on the left (**Figure 3**) or on the right (**Figure 4**) of the control panel walls.

This characteristic is determined by the position of contact "1" and the ground terminal in the upper part of the insert terminal block for both left and right mounting.

The installation of inserts on DIN rails (**Figure 5**) inside the control panels is usually made to facilitate the wiring in sectionable parts.

In this case the degree of protection for coupled connectors is IP20 (in accordance with EN 60529).

This type of mounting requires supports (CT APE) to be provided to the inserts suitable for mounting on DIN EN 60715 rail.

In addition, CRBF (female) and CRBM (male) coupling screws instead of normal screws are recommended for fixing the inserts to the enclosures (**Figure 5**) in order to guarantee a stable and safe coupling between the CT and CTS inserts installed on the DIN rails and corresponding CD inserts.

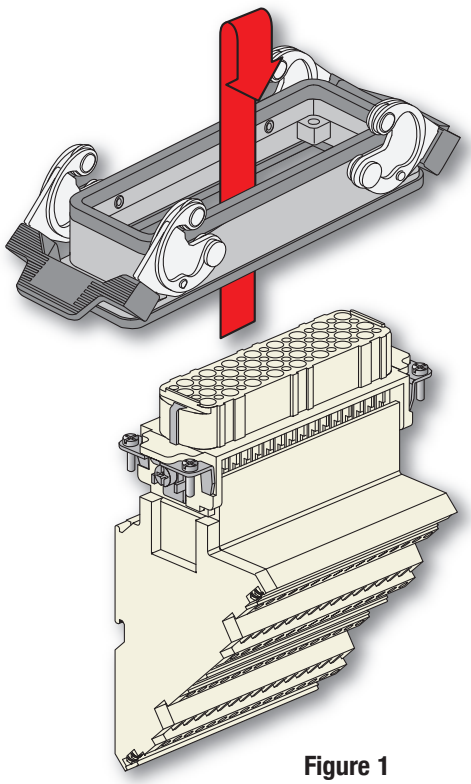


Figure 1

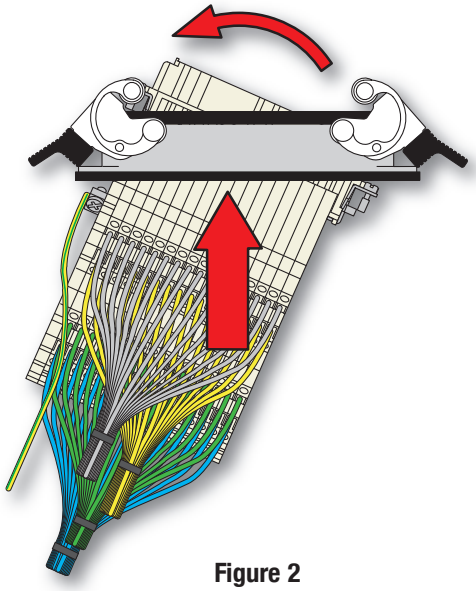


Figure 2

Figures 1 and 2 (rear mounting)

The insert is inserted into the bulkhead housing with pre-wired conductors connected at the opposite end.

CT - CTS series

Inserts with incorporated terminal block for multipole connectors

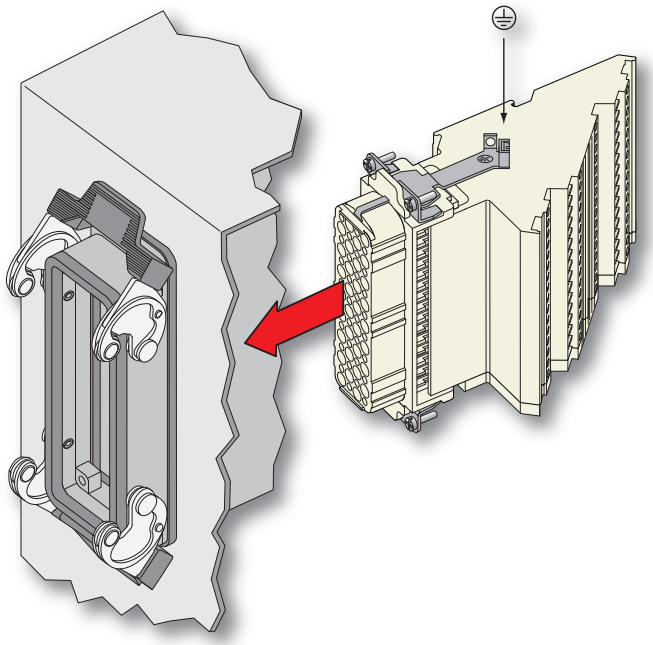


Figure 3 (left mounting)

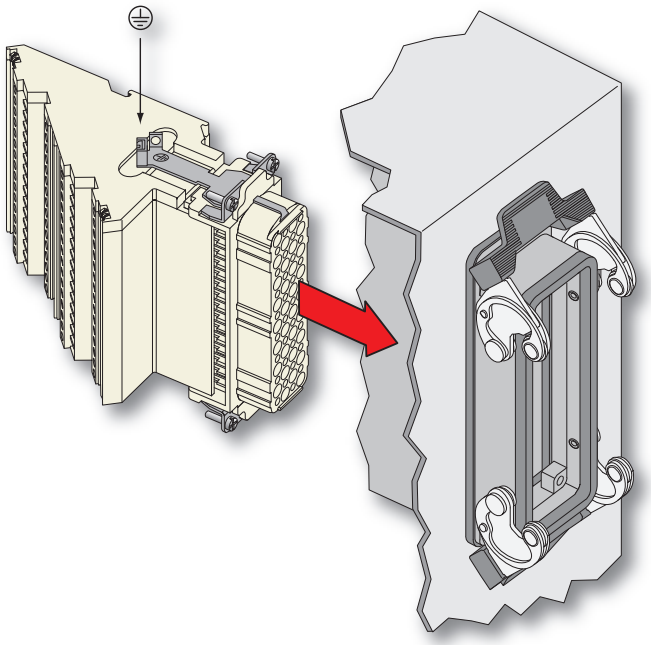


Figure 4 (right mounting)

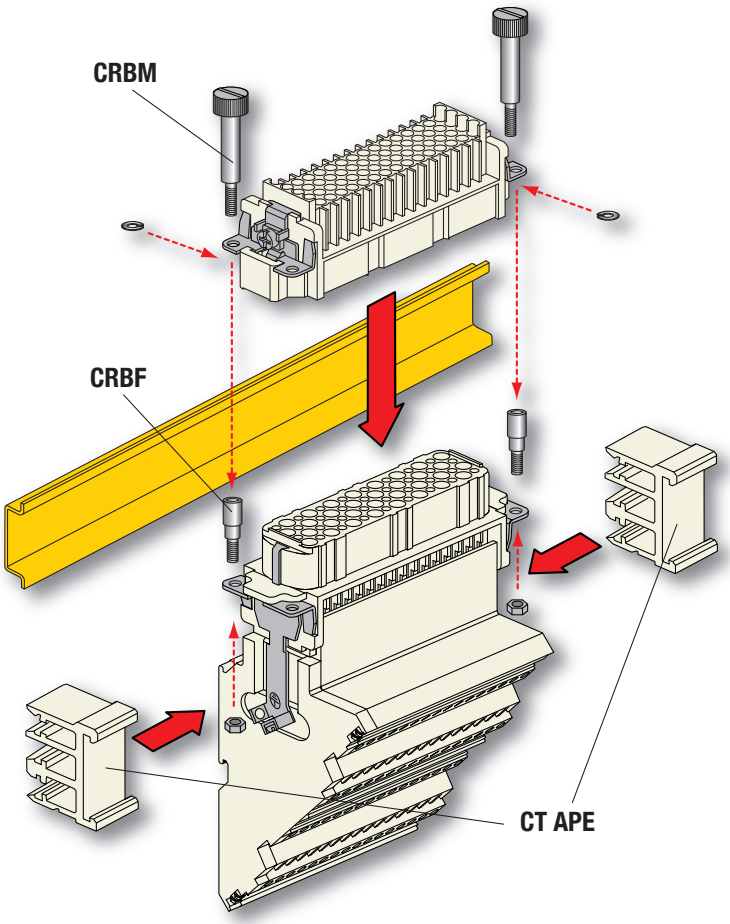
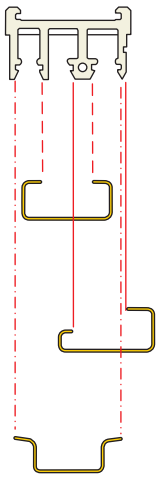


Figure 5 (mounting on DIN rail)



CT APE
possibility of coupling to DIN EN 60715 rail (for a greater stability of the CT inserts of 40 and 64 poles we recommend using the two CT APE supports)

EN 60715
C 30

EN 60715
G 32

EN 60715
TH 35-7,5 and **TH 35-15**

Accessories for CT inserts

- support for mounting on DIN rail (**CT APE** page 476)
- inserts coupling screws (**CRBM** and **CRBF** page 476)
- cable-clamping plates (**CRAD** and **CRAS** page 476)

CT - CTS 40 poles + ⏚ 10A - 250V

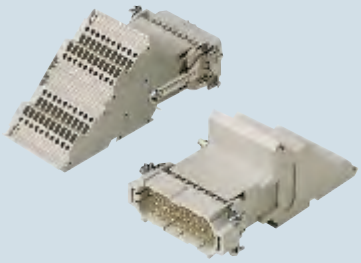
enclosures *):
size "77.27" page:

C-TYPE IP65/IP66 250
C7 IP67, two levers 276
V-TYPE IP65/IP66, single lever 282/292
W-TYPE for aggressive environments 375
EMC 394
central lever 408
LS-TYPE 454

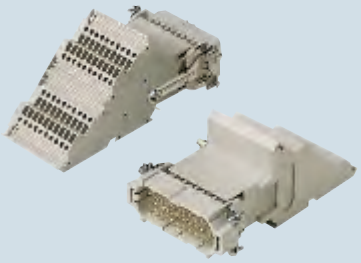
*) only bulkhead mounted housings

- can be mated with CD inserts
- rear-mounted inserts

terminal block inserts
screw terminal connection



terminal block inserts
spring terminal connection

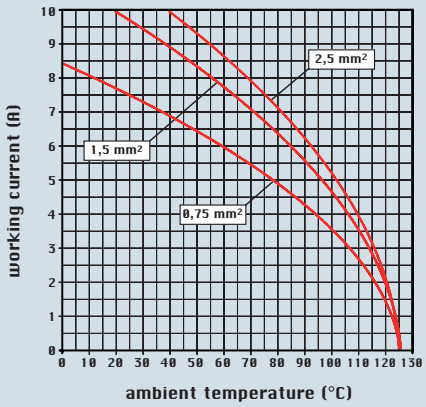


description	part No.	part No.	part No.	part No.
side-mounting (see page 63) female inserts with female contacts **1)** male inserts with male contacts **1)**	left **CTF 40 L** **CTM 40 L**	right **CTF 40 R** **CTM 40 R**		
side-mounting (see page 63) female inserts with female contacts male inserts with male contacts			left **CTSF 40 L** **CTSM 40 L**	right **CTSF 40 R** **CTSM 40 R**

1) for non-prepared conductors

- characteristics according to EN 61984:
  10A 250V 4kV 3
  10A 230/400V 4kV 2
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 4 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 557

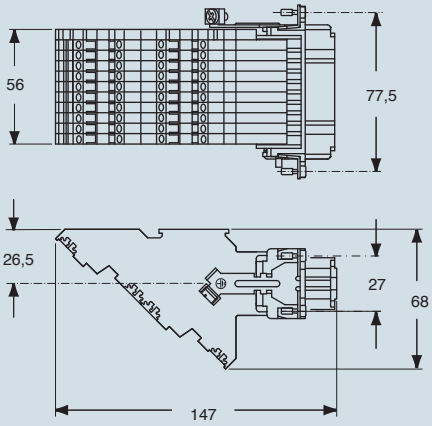
diagram CT and CTS 40 poles



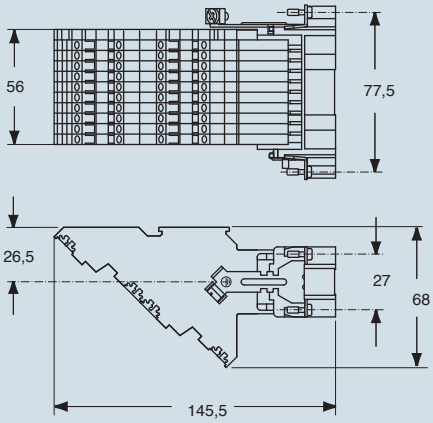
dimensions shown are not binding
and may be changed without notice

dimensions in mm

female inserts (CTF and CTSF)

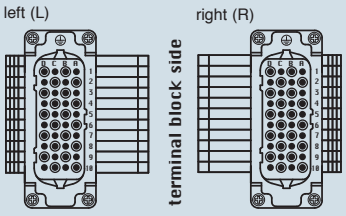


male inserts (CTM and CTSM)

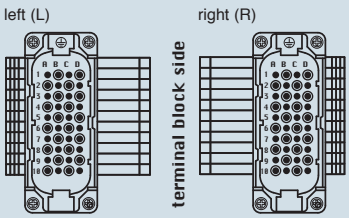


contacts side (front view)

female inserts (CTF and CTSF)



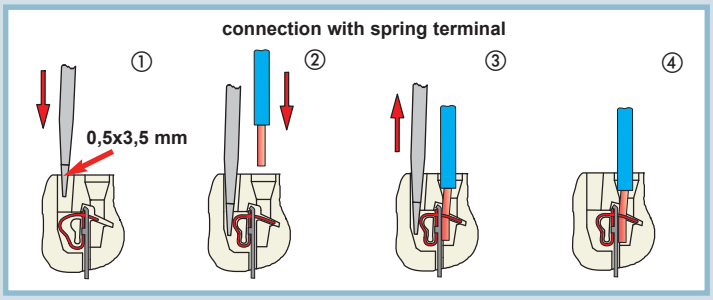
male inserts (CTM and CTSM)



- CT inserts with plate, for section conductors:
  0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping lenght: 12 mm
- terminal screw torque: 0,4 Nm (3,54 lb.in), for more information see page 34 and 35

- CTS spring inserts for section conductors:
  effective sections for non-prepared conductors
  0,14 - 2,5 mm² - AWG 26 - 14
  effective sections for prepared conductors
  0,14 - 1 mm² - AWG 26 - 18
- conductors stripping lenght: 9...11 mm

connection with spring terminal



CT - CTS 64 poles + ⏚ 10A - 250V

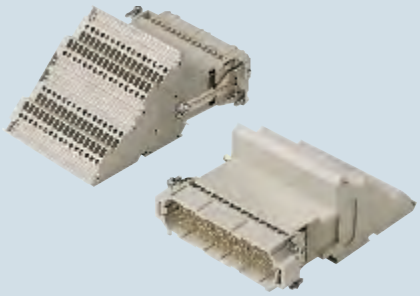
enclosures *):
size "104.27" page:

C-TYPE IP65/IP66 258
C7 IP67, two levers 277
V-TYPE IP65/IP66, single lever 283/296
W-TYPE for aggressive environments 376
EMC 395
central lever 410
LS-TYPE 456

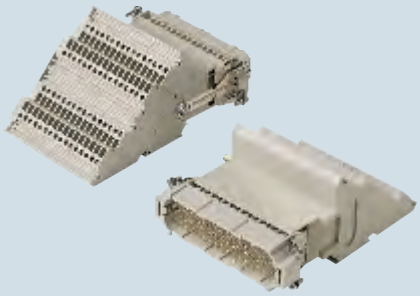
*) only bulkhead mounted housings

- can be mated with CD inserts
- rear-mounted inserts

terminal block inserts
screw terminal connection



terminal block inserts
spring terminal connection

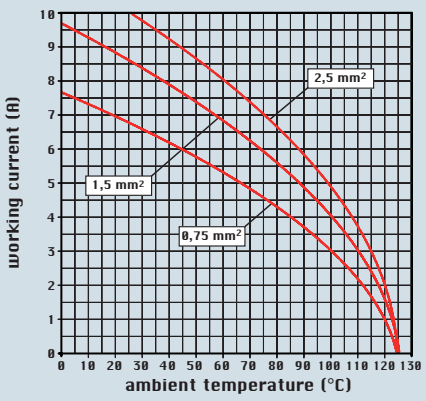


description	part No.	part No.	part No.	part No.
side-mounting (see page 63) female inserts with female contacts **1)** male inserts with male contacts **1)**	left **CTF 64 L** **CTM 64 L**	right **CTF 64 R** **CTM 64 R**		
side-mounting (see page 63) female inserts with female contacts male inserts with male contacts			left **CTSF 64 L** **CTSM 64 L**	right **CTSF 64 R** **CTSM 64 R**

1) for non-prepared conductors

- characteristics according to EN 61984:
  10A 250V 4kV 3
  10A 230/400V 4kV 2
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 4 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 557

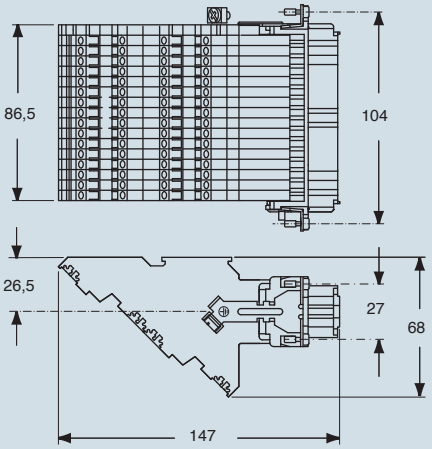
diagram CT and CTS 64 poles



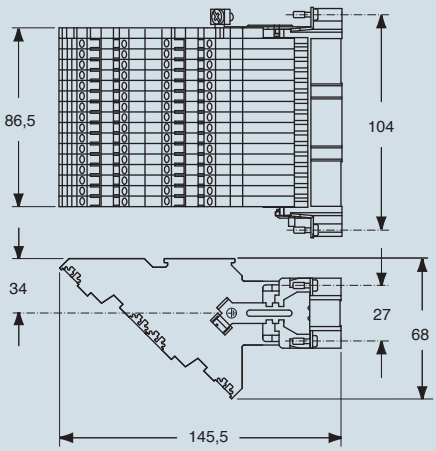
dimensions shown are not binding
and may be changed without notice

dimensions in mm

female inserts (CTF and CTSF)

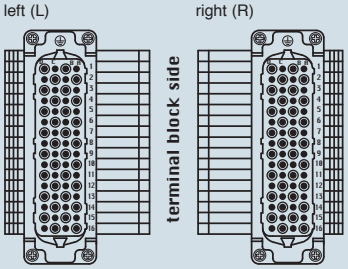


male inserts (CTM and CTSM)



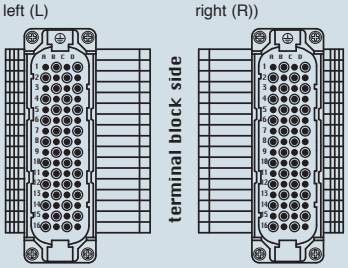
contacts side (front view)

female inserts (CTF and CTSF)



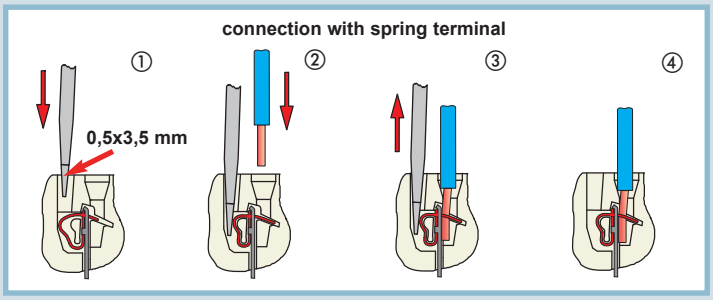
- CT inserts with plate, for section conductors:
  0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping lenght: 9...11 mm
- terminal screw torque: 0,4 Nm (3,54 lb.in), for more information see page 34 and 35

male inserts (CTM and CTSM)



- CTS spring inserts for section conductors:
  effective sections for non-prepared conductors
  0,14 - 2,5 mm² - AWG 26 - 14
  effective sections for prepared conductors
  0,14 - 1 mm² - AWG 26 - 18
- conductors stripping lenght: 9...11 mm

connection with spring terminal



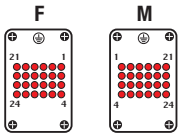
CDD inserts

Special voltages

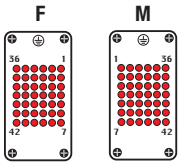
When all the contacts are used, the CDD inserts series connectors may be used with voltage up to 250V (first column); pollution degree 2, in accordance with the standard EN 61984.
If the number of contacts is reduced and the contacts accordingly assigned, these connectors may be used with higher voltages.
This is possible because the decrease in the number of contacts leads to an increase in the surface insulation distance in the air.
When the contacts are arranged as shown below, the inserts may be used at rated voltages of 400V (second column) and 500V (third column); pollution degree 2, in accordance with the standard EN 61984.

for use up to 250V pollution degree 2	for use up to 400V pollution degree 2	for use up to 500V pollution degree 2
diagrams contacts side (front view)	diagrams contacts side (front view)	diagrams contacts side (front view)

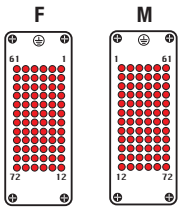
CDD - 24 + ⏚



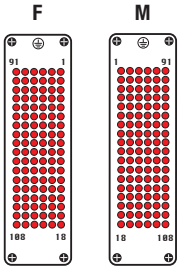
CDD - 42 + ⏚



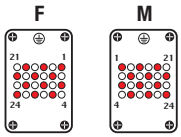
CDD - 72 + ⏚



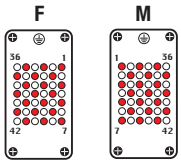
CDD - 108 + ⏚



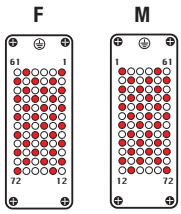
CDD - 12 + ⏚



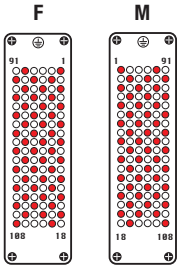
CDD - 21 + ⏚



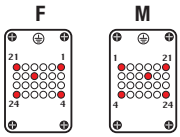
CDD - 34 + ⏚



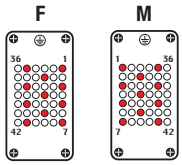
CDD - 52 + ⏚



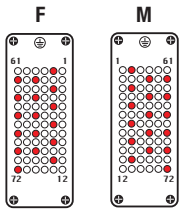
CDD - 5 + ⏚



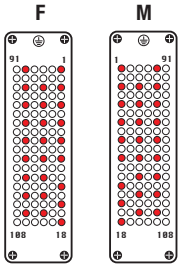
CDD - 11 + ⏚



CDD - 17 + ⏚



CDD - 26 + ⏚



Legend:

● working contact
○ without contact
M = male insert
F = female insert

CDD 24 poles + ⏚ 10A - 250V

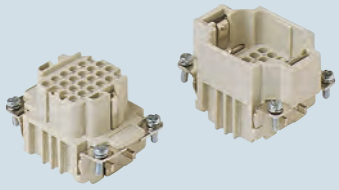
enclosures:
size "44.27" page:

C-TYPE IP65/IP66 ..... 240 - 243
C7 IP67, single lever 274
V-TYPE IP65/IP66, single lever 280/284 - 286
BIG hoods ..... 304 - 306
T-TYPE IP65 insulating ..... 326 - 327
T-TYPE / W IP66 insulating ..... 336 - 337
HYGIENIC T-TYPE / H IP66/IP69 ..... 350 - 351
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 358 - 359
W-TYPE for aggressive environments 373
EMC 392
central lever ..... 404 - 405
IP68 ..... 420 - 423
LS-TYPE ..... 450 - 451

panel supports: page:

COB ..... 462 - 463

inserts, crimp connections



10A crimp contacts
silver and gold plated

description	part No.	part No.	part No.
without contacts (to be ordered separately)			
female inserts for female contacts	**CDDF 24**		
male inserts for male contacts	**CDDM 24**		

10A female contacts

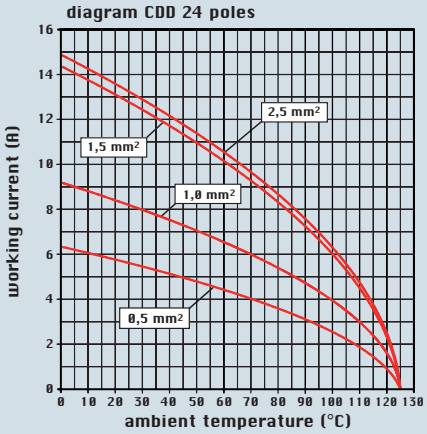
0,14-0,37 mm²	AWG 26-22	identification No. 1	**CDFA 0.3**	**CDFD 0.3**
0,5 mm²	AWG 20	identification No. 2	**CDFA 0.5**	**CDFD 0.5**
0,75 mm²	AWG 18	identification No. ②	**CDFA 0.7**	**CDFD 0.7**
1 mm²	AWG 18	identification No. 3	**CDFA 1.0**	**CDFD 1.0**
1,5 mm²	AWG 16	identification No. 4	**CDFA 1.5**	**CDFD 1.5**
2,5 mm²	AWG 14	identification No. 5	**CDFA 2.5**	**CDFD 2.5**

10A male contacts

0,14-0,37 mm²	AWG 26-22	identification No. 1	**CDMA 0.3**	**CDMD 0.3**
0,5 mm²	AWG 20	identification No. 2	**CDMA 0.5**	**CDMD 0.5**
0,75 mm²	AWG 18	identification No. ②	**CDMA 0.7**	**CDMD 0.7**
1 mm²	AWG 18	identification No. 3	**CDMA 1.0**	**CDMD 1.0**
1,5 mm²	AWG 16	identification No. 4	**CDMA 1.5**	**CDMD 1.5**
2,5 mm²	AWG 14	identification No. 5	**CDMA 2.5**	**CDMD 2.5**

silver plated | **gold plated 1)**

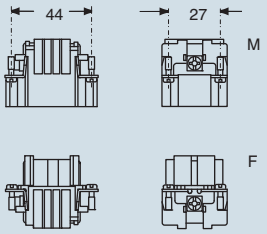
- characteristics according to EN 61984:
  10A 250V 4kV 2
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 66
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 558



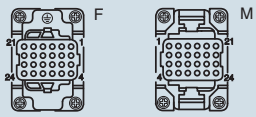
- PCBs interface, see article CIF 2.4

dimensions shown are not binding
and may be changed without notice

dimensions in mm

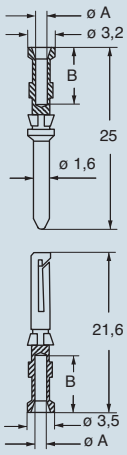


contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491

dimensions in mm



CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

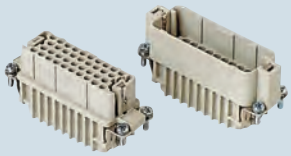
CDD 38 poles + ⏚ 10A - 250V

enclosures:
size "66.16" page:

IL-BRID ..... 233 - 235
W-TYPE for aggressive environments 371
EMC 391

panel supports: page:
COB + adaptor ..... 462 - 464

inserts, crimp connections



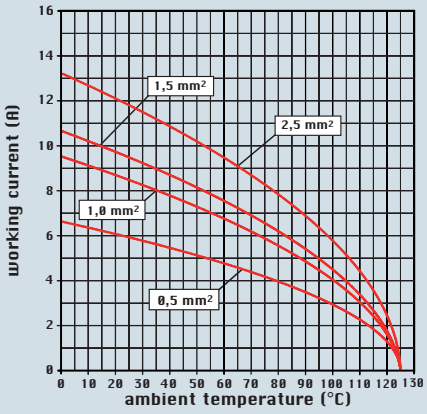
10A crimp contacts
silver and gold plated

description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CDDF 38** **CDDM 38**		
10A female contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5**	**CDFD 0.3** **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5**
10A male contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5**	**CDMD 0.3** **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5**

silver plated | **gold plated 1)**

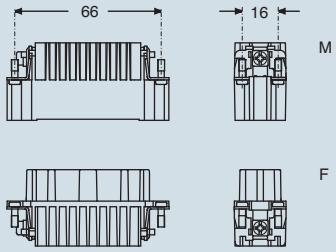
- characteristics according to EN 61984:
  10A 250V 4kV 2
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 558

diagram CDD 38 poles

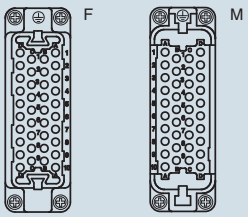


dimensions shown are not binding
and may be changed without notice

dimensions in mm

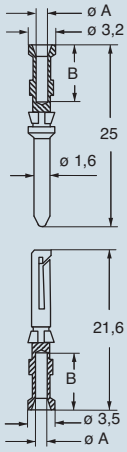


contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491

dimensions in mm



CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

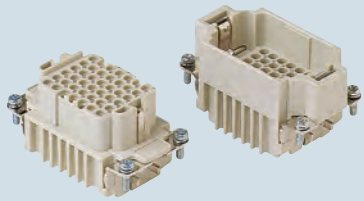
CDD 42 poles + ⏚ 10A - 250V

enclosures:
size "57.27" page:

C-TYPE IP65/IP66 ..... 244 - 249
C7 IP67, two levers 275
V-TYPE IP65/IP66, single lever 281/288 - 291
BIG hoods ..... 308 - 311
T-TYPE IP65 insulating ..... 328 - 329
T-TYPE / W IP66 insulating ..... 338 - 339
HYGIENIC T-TYPE / H IP66/IP69 ..... 352 - 353
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 360 - 361
W-TYPE for aggressive environments 374
EMC 393
central lever ..... 406 - 407
IP68 ..... 424 - 427
LS-TYPE ..... 452 - 453

panel supports: page:
COB ..... 462 - 463

inserts, crimp connections

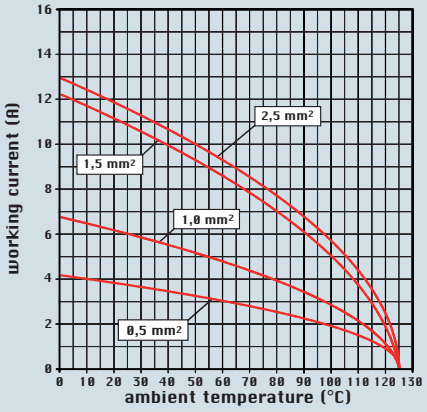


10A crimp contacts silver and gold plated

description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CDDF 42** **CDDM 42**		
10A female contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5** **silver plated**	**CDFD 0.3** **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5** **gold plated 1)**
10A male contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5**	**CDMD 0.3** **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5**

- characteristics according to EN 61984:
  10A 250V 4kV 2
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 66
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 558

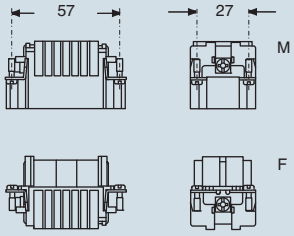
diagram CDD 42 poles



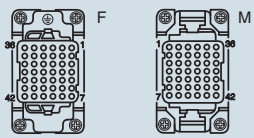
- PCBs interface, see article CIF 2.4

dimensions shown are not binding
and may be changed without notice

dimensions in mm

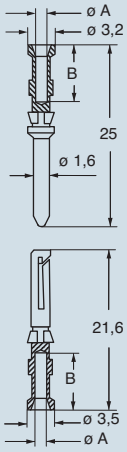


contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491

dimensions in mm



CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

CDD 72 poles + ⏚ 10A - 250V

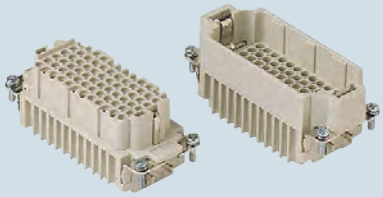
enclosures:
size "77.27" page:

C-TYPE IP65/IP66 ..... 250 - 256
C7 IP67, two levers 276
V-TYPE IP65/IP66, single lever 282/292 - 295
BIG hoods ..... 312 - 315
T-TYPE IP65 insulating ..... 330 - 331
T-TYPE / W IP66 insulating ..... 340 - 341
HYGIENIC T-TYPE / H IP66/IP69 ..... 354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
W-TYPE for aggressive environments 375
EMC 394
central lever ..... 408 - 409
IP68 ..... 428 - 431
LS-TYPE ..... 454 - 455

panel supports: page:

COB ..... 462 - 463

inserts, crimp connections



10A crimp contacts silver and gold plated

description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CDDF 72** **CDDM 72**		

10A female contacts

0,14-0,37 mm²	AWG 26-22	identification No. 1	**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5**	**CDFD 0.3** **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5**
0,5 mm²	AWG 20	identification No. 2		
0,75 mm²	AWG 18	identification No. ②		
1 mm²	AWG 18	identification No. 3		
1,5 mm²	AWG 16	identification No. 4		
2,5 mm²	AWG 14	identification No. 5		

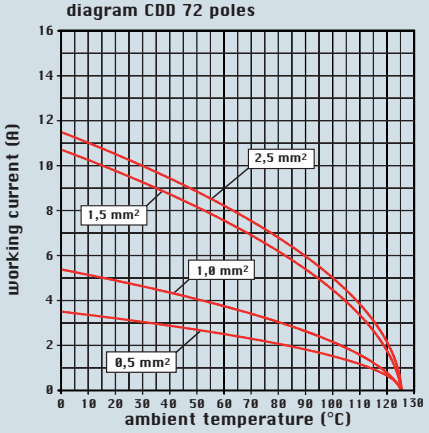
10A male contacts

0,14-0,37 mm²	AWG 26-22	identification No. 1	**CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5**	**CDMD 0.3** **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5**
0,5 mm²	AWG 20	identification No. 2		
0,75 mm²	AWG 18	identification No. ②		
1 mm²	AWG 18	identification No. 3		
1,5 mm²	AWG 16	identification No. 4		
2,5 mm²	AWG 14	identification No. 5		

silver plated | **gold plated 1)**

- characteristics according to EN 61984:
  10A 250V 4kV 2
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 66
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 558

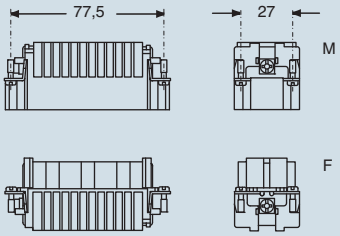
diagram CDD 72 poles



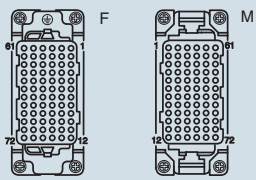
- PCBs interface, see article CIF 2.4

dimensions shown are not binding
and may be changed without notice

dimensions in mm

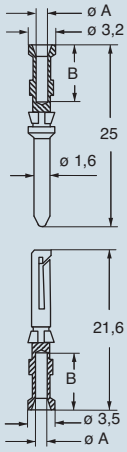


contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491

dimensions in mm



CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

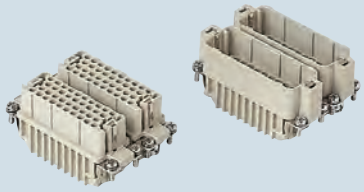
1) basic or high thickness gold plating page 480

CDD 76 poles + ⏚ 10A - 250V

enclosures:
size "66.40" page:

C-TYPE IP65/IP66 ..... 237 - 239
W-TYPE for aggressive environments 372

inserts, crimp connections



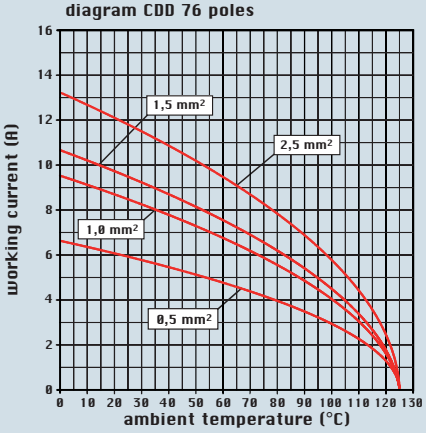
10A crimp contacts
silver and gold plated

description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts male inserts	**CDDF 38** **CDDM 38**	**CDDF 38** **CDDM 38**		
10A female contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5			**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5**	**CDFD 0.3** **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5**
10A male contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5			**CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5**	**CDMD 0.3** **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5**

silver plated | **gold plated 1)**

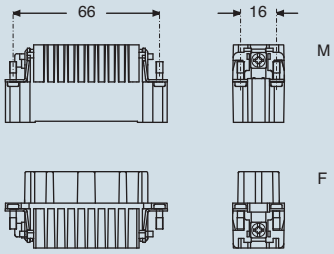
- characteristics according to EN 61984:
  10A 250V 4kV 2
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 558

diagram CDD 76 poles

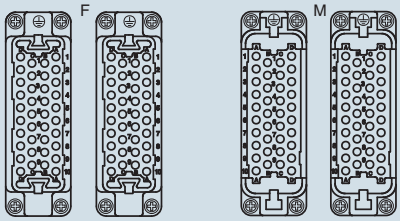


dimensions shown are not binding
and may be changed without notice

dimensions in mm

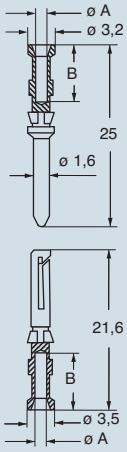


contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491

dimensions in mm



CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

CDD 108 poles + ⏚ 10A - 250V

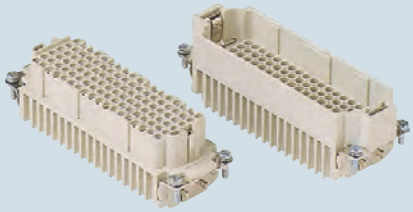
enclosures:
size "104.27" page:

C-TYPE IP65/IP66 ..... 258 - 266
C7 IP67, two levers 277
V-TYPE IP65/IP66, single lever 283/296 - 299
BIG hoods ..... 316 - 319
T-TYPE IP65 insulating ..... 332 - 333
T-TYPE / W IP66 insulating ..... 342 - 343
HYGIENIC T-TYPE / H IP66/IP69 ..... 356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
W-TYPE for aggressive environments 376
EMC 395
central lever ..... 410 - 412
IP68 ..... 432 - 435
LS-TYPE ..... 456 - 457

panel supports: page:

COB ..... 462 - 463

inserts, crimp connections



10A crimp contacts silver and gold plated

description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CDDF 108** **CDDM 108**		

10A female contacts

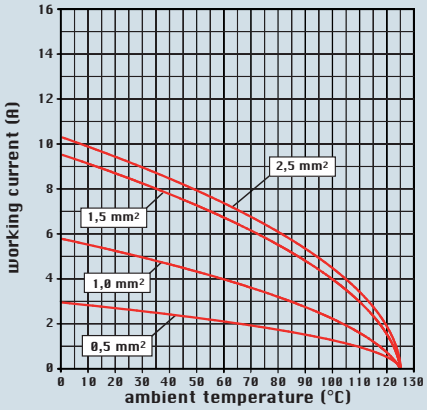
0,14-0,37 mm²	AWG 26-22	identification No. 1	**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5**	**silver plated**	**CDFD 0.3** **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5**
0,5 mm²	AWG 20	identification No. 2			
0,75 mm²	AWG 18	identification No. ②			
1 mm²	AWG 18	identification No. 3			
1,5 mm²	AWG 16	identification No. 4			
2,5 mm²	AWG 14	identification No. 5			

10A male contacts

0,14-0,37 mm²	AWG 26-22	identification No. 1	**CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5**	**gold plated 1)**	**CDMD 0.3** **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5**
0,5 mm²	AWG 20	identification No. 2			
0,75 mm²	AWG 18	identification No. ②			
1 mm²	AWG 18	identification No. 3			
1,5 mm²	AWG 16	identification No. 4			
2,5 mm²	AWG 14	identification No. 5			

- characteristics according to EN 61984:
  10A 250V 4kV 2
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 66
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 558

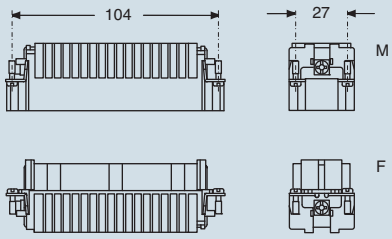
diagram CDD 108 poles



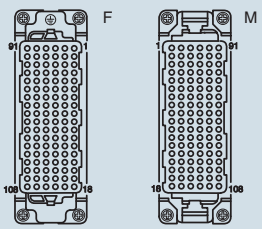
- PCBs interface, see article CIF 2.4

dimensions shown are not binding
and may be changed without notice

dimensions in mm

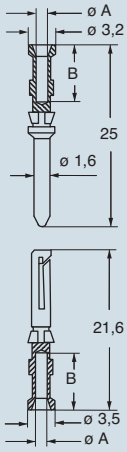


contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491

dimensions in mm



CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

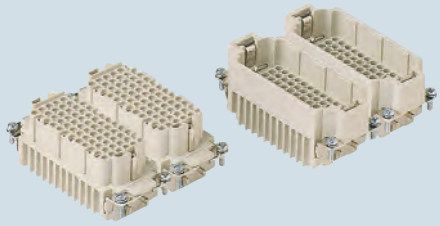
1) basic or high thickness gold plating page 480

CDD 144 poles + ⏚ 10A - 250V

enclosures:
size "77.62" page:

C-TYPE IP65/IP66 ..... 267 - 270
W-TYPE for aggressive environments 377

inserts, crimp connections



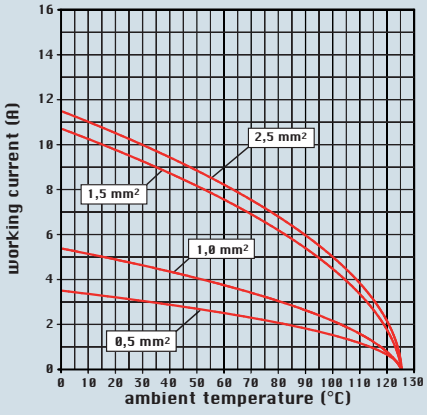
10A crimp contacts
silver and gold plated

description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts, No. (1-72) and (73-144) male inserts, No. (1-72) and (73-144)	**CDDF 72** **CDDM 72**	**CDDF 72 N** **CDDM 72 N**		
10A female contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5			**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5**	**CDFD 0.3** **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5**
10A male contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5			**CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5**	**CDMD 0.3** **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5**

silver plated | **gold plated 1)**

- characteristics according to EN 61984:
  10A 250V 4kV 2
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 66
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 558

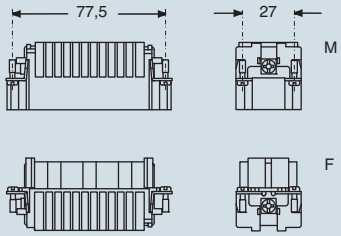
diagram CDD 144 poles



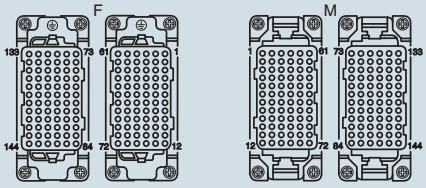
- PCBs interface, see article CIF 2.4

dimensions shown are not binding
and may be changed without notice

dimensions in mm

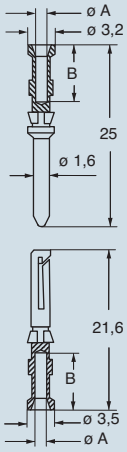


contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491

dimensions in mm



CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

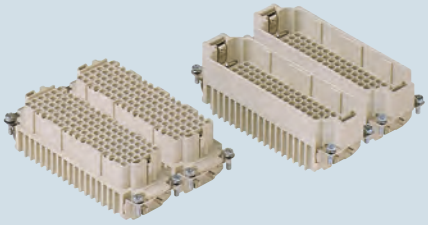
1) basic or high thickness gold plating page 480

CDD 216 poles + ⏚ 10A - 250V

enclosures:
size "104.62" page:

C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments 378

inserts, crimp connections



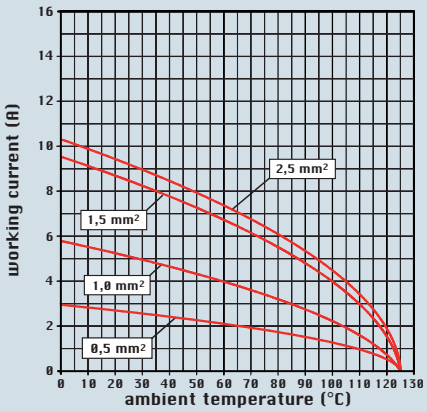
10A crimp contacts
silver and gold plated

description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts, No. (1-108) and (109-216) male inserts, No. (1-108) and (109-216)	**CDDF 108** **CDDM 108**	**CDDF 108 N** **CDDM 108 N**		
10A female contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5			**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5**	**CDFD 0.3** **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5**
10A male contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5			**CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5**	**CDMD 0.3** **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5**

silver plated | **gold plated 1)**

- characteristics according to EN 61984:
  10A 250V 4kV 2
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for applications requiring higher voltages, please see the special voltage application section on page 66
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 558

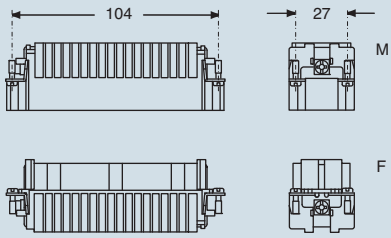
diagram CDD 216 poles



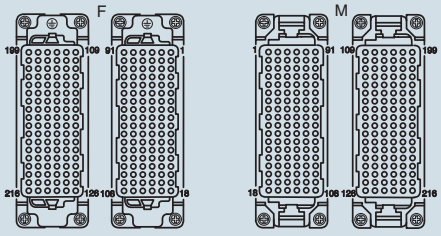
- PCBs interface, see article CIF 2.4

dimensions shown are not binding
and may be changed without notice

dimensions in mm

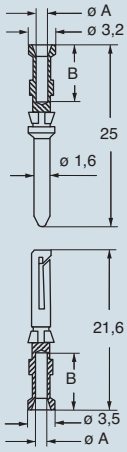


contacts side (front view)



coding pin **CR CP** with loss of one contact, page 491

dimensions in mm



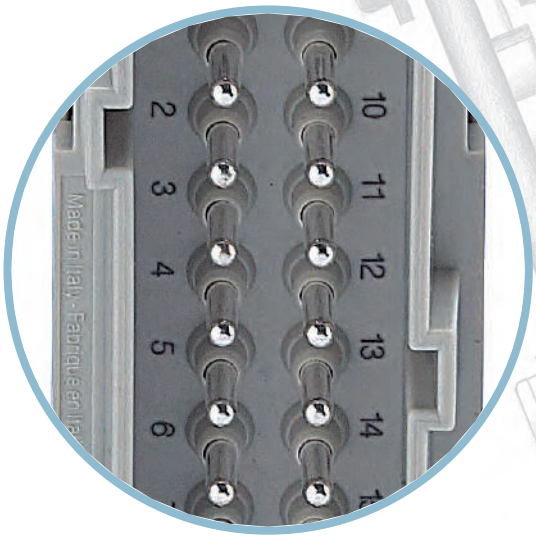
CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

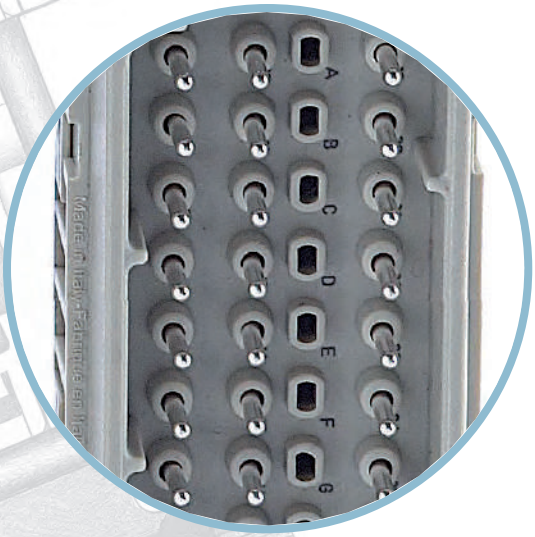
1) basic or high thickness gold plating page 480

HIGH DENSITY
spring connection

STANDARD
16A



CDS
10A



STANDARD 16A	CDS - HIGH DENSITY 10A	
06 poles	09 poles	+50%
10 poles	18 poles	+80%
16 poles	27 poles	+70%
24 poles	42 poles	+75%
32 poles	54 poles	+70%
48 poles	84 poles	+75%

CDS series

High density spring connection

The originality of multipole connectors represents one of the core values of ILME, a leading company in this segment.

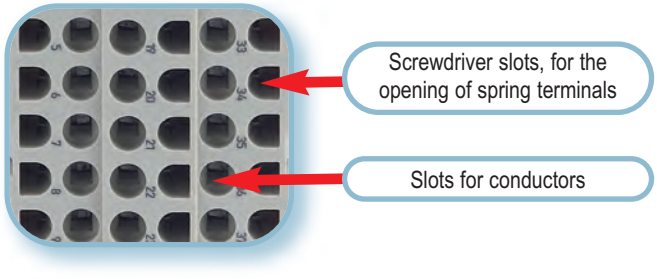
The continuous demand for a greater number of poles and of smaller dimensions has led to the design and manufacture of the new CDS series, which offers single connectors with a maximum number of 84 poles that occupy the same space of standard connectors with screw/spring connection.

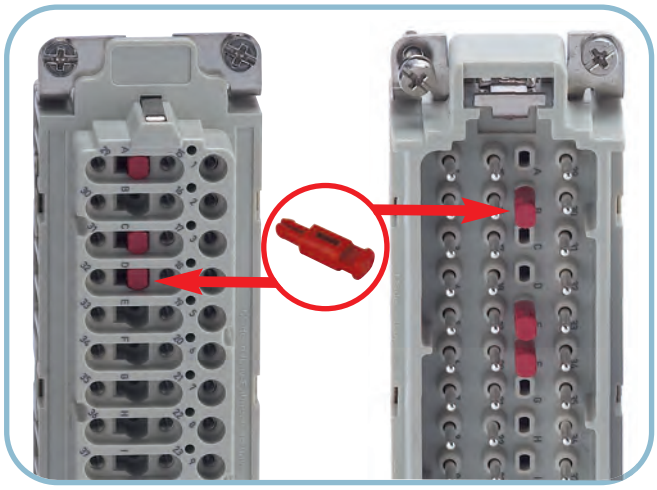
The compact spring connection enables the occupied space to be reduced and avoids using “CRIMP” solutions that require the use of special tools.

The new **CDS series**, which is an evolution as compared to the compact CKS series, offers the following advantages:

- **Greater pole density as compared to existing connectors with screw terminals for enclosures of the same size**
- **No special wire preparation other than stripping**
- **An excellent fastening solution and a great resistance to strong vibrations**

The insertion of the screwdriver is facilitated by the particular shape of the hole, which ensures that the operation is always performed correctly.





It is possible to insert in the front area the new CR CDS coding pin that enables the polarisation of inserts in a wide range of combinations.
This means that it is possible to install side by side identical connectors with different functions.
The new CR CDS coding pins can also be used in combination with other CR 20 / CRM / CRF / CR 72 metal pins instead of insert fixing screws in order to increase the number of possible combinations.

Each position of the coding pin used on the female insert must correspond to an unused position on the male insert.
The required number of coding pins, depending on the size of connectors, and the maximum number of possible codings is shown in the following table.

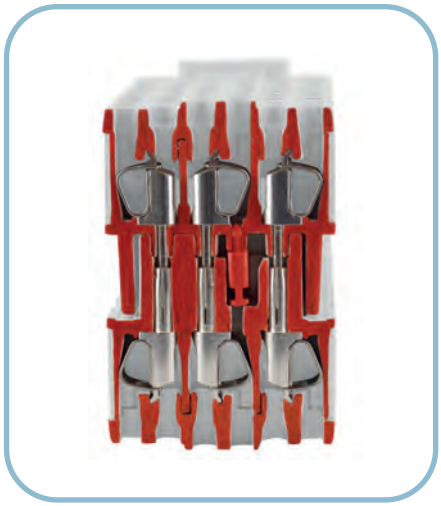
CDS series - Coding with CR CDS pins

Size of connectors	Slots for coding pins (M) = male insert (F) = female insert	Required coding pins for each coupling	Possible codings
9P+⏚	3 (M) + 3 (F)	3 2 (M) + 1 (F)	3
18P+⏚	6 (M) + 6 (F)	6 3 (M) + 3 (F)	20
27P+⏚	9 (M) + 9 (F)	9 5 (M) + 4 (F)	126
42P+⏚	14 (M) + 14 (F)	14 7 (M) + 7 (F)	3.432

CDS series

Contacts connected with spring terminal

Inserts series: CDS



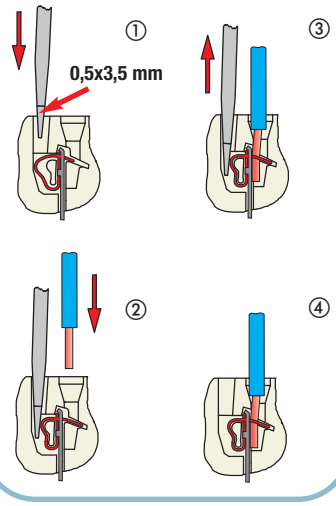
In this layout the wires are connected to the female and male insert contacts by means of a spring terminal.
This type of connection offers the following advantages:

- ❱ no special wire preparation;
- ❱ a screwdriver with a 0,5 x 3,5 mm blade is the only tool required to insert the wire in the contact;
- ❱ it offers an excellent fastening solution and a great resistance to strong vibrations;
- ❱ it allows the use of rigid and flexible wires with cross-sections between 0,14 and 2,5 mm² (26 - 14 AWG);
- ❱ for wires with crimped ferrule, useful cross-section: up to 1,5 mm² (AWG 16);
- ❱ allows conductivity tests under load to be carried out through the screwdriver insertion section, without splitting the insert;
- ❱ it greatly reduces insert preparation and cabling times.

Inserts series		**CDS**
No. of poles [1]	main contacts + ⏚	**9, 18, 27, 42, (54), (84)**
	auxiliary contacts	--
rated current [2]		10A
EN 61984 pollution degree 3	rated voltage	400V
	rated impulse withstand voltage	6kV
	pollution degree	3
EN 61984 pollution degree 2	rated voltage	400V/690V
	rated impulse withstand voltage	6kV
	pollution degree	2
contact resistance		≤ 1 mΩ
insulation resistance		≥ 10 GΩ
ambient temperature limit (°C)	min	-40
	max	+125
degree of protection	with enclosures	IP65, IP66, IP67, IP68, IP69 (according to type)
	without enclosures	IP20
conductor connections		spring
conductor cross-section	mm²	0,14 - 2,5 (for wires with crimped ferrule, usable section: up to 1,5 mm²)
	AWG	26 - 14 (AWG 16 with crimped ferrule)
mechanical endurance (mating cycles)		≥ 500

1) Polarities shown in brackets may be achieved by using two inserts in their own double housings.
2) Please check the insert load curves to establish the actual maximum operating current according to the ambient temperature.

Connection with spring terminal



CDS 9 poles + ⏚ 10A - 400V

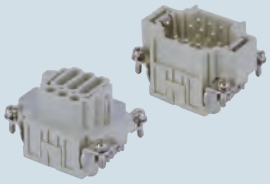
enclosures:
size “44.27” page:

C-TYPE IP65/IP66 ..... 240 - 243
C7 IP67, single lever 274
V-TYPE IP65/IP66, single lever 280/284 - 286
BIG hoods ..... 304 - 306
T-TYPE IP65 insulating ..... 326 - 327
T-TYPE / W IP66 insulating ..... 336 - 337
HYGIENIC T-TYPE / H IP66/IP69 ..... 350 - 351
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 358 - 359
W-TYPE for aggressive environments 373
EMC 392
central lever ..... 404 - 405
IP68 ..... 420 - 423
LS-TYPE ..... 450 - 451

panel supports: page:

COB ..... 462 - 463

inserts,
spring terminal connections



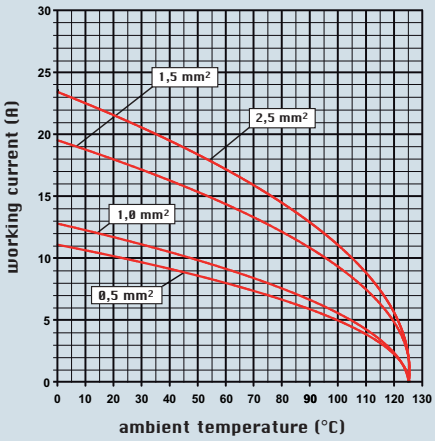
silver plated contacts

NEW

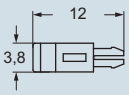
description	part No.
spring terminal female inserts with female contacts male inserts with male contacts	**CDSF 09** **CDSM 09**

- characteristics according to EN 61984:
  10A 400V 6kV 3
  10A 690V 6kV 2
- certifications: cUL (UL for USA and Canada)
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 558

diagram CDS 09 poles

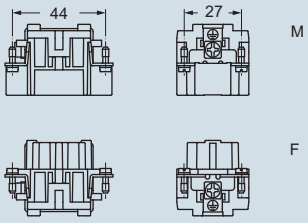


CR CDS coding pin

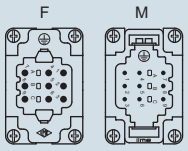


dimensions shown are not binding
and may be changed without notice

dimensions in mm

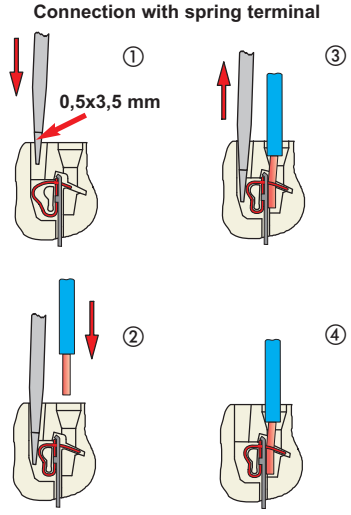


contacts side (front view)



- inserts for conductors section:
  0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section:
  up to 1,5 mm² (AWG 16)
- conductors stripping lenght: 9...11 mm

Connection with spring terminal

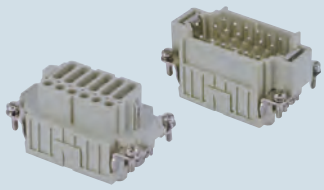


enclosures:
size "57.27" page:

C-TYPE IP65/IP66 ..... 244 - 249
C7 IP67, two levers 275
V-TYPE IP65/IP66, single lever 281/288 - 291
BIG hoods ..... 308 - 311
T-TYPE IP65 insulating ..... 328 - 329
T-TYPE / W IP66 insulating ..... 338 - 339
HYGIENIC T-TYPE / H IP66/IP69 ..... 352 - 353
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 360 - 361
W-TYPE for aggressive environments 374
EMC 393
central lever ..... 406 - 407
IP68 ..... 424 - 427
LS-TYPE ..... 452 - 453

panel supports: page:
COB ..... 462 - 463

inserts,
spring terminal connections



silver plated contacts

NEW

description	part No.
spring terminal female inserts with female contacts male inserts with male contacts	**CDSF 18** **CDSM 18**

- characteristics according to EN 61984:
  10A 400V 6kV 3
  10A 690V 6kV 2
- certifications: cUL (UL for USA and Canada)
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 558

dimensions in mm

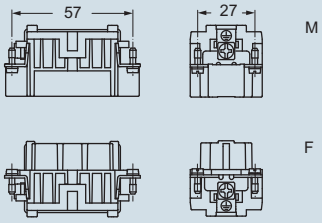
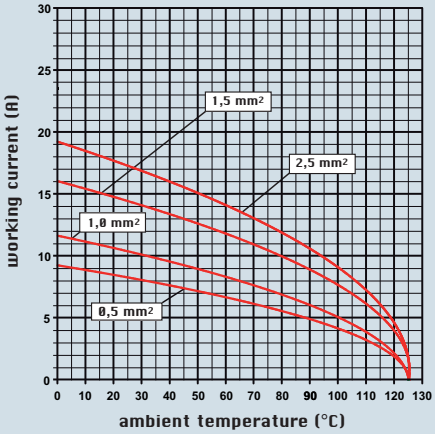
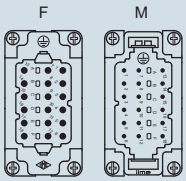


diagram CDS 18 poles

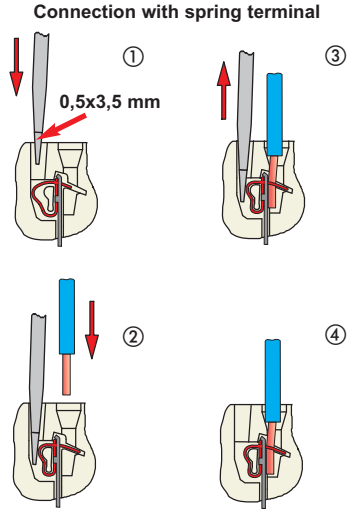


contacts side (front view)

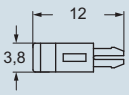


- inserts for conductors section:
  0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section:
  up to 1,5 mm² (AWG 16)
- conductors stripping lenght: 9...11 mm

Connection with spring terminal



CR CDS coding pin



dimensions shown are not binding
and may be changed without notice

CDS 27 poles + ⏚ 10A - 400V

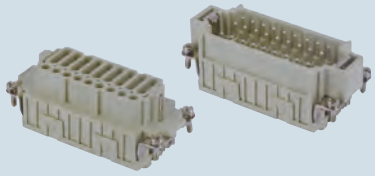
enclosures:
size "77.27" page:

C-TYPE IP65/IP66 ..... 250 - 256
C7 IP67, two levers 276
V-TYPE IP65/IP66, single lever 282/292 - 295
BIG hoods ..... 312 - 315
T-TYPE IP65 insulating ..... 330 - 331
T-TYPE / W IP66 insulating ..... 340 - 341
HYGIENIC T-TYPE / H IP66/IP69 ..... 354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
W-TYPE for aggressive environments 375
EMC 394
central lever ..... 408 - 409
IP68 ..... 428 - 431
LS-TYPE ..... 454 - 455

panel supports: page:

COB ..... 462 - 463

inserts,
spring terminal connections



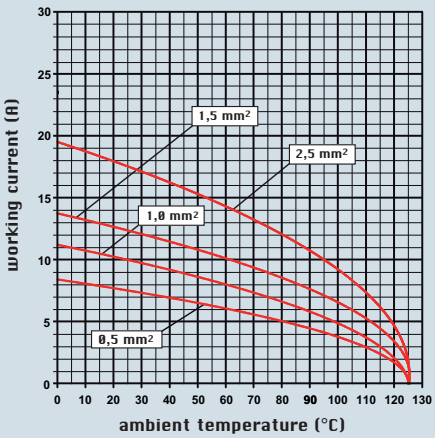
silver plated contacts

NEW

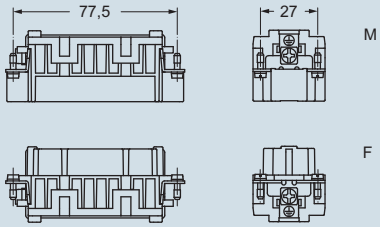
description	part No.
spring terminal female inserts with female contacts male inserts with male contacts	**CDSF 27** **CDSM 27**

- characteristics according to EN 61984:
  10A 400V 6kV 3
  10A 690V 6kV 2
- certifications: cUL (UL for USA and Canada)
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 558

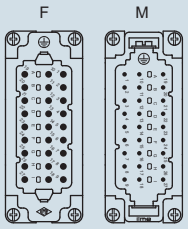
diagram CDS 27 poles



dimensions in mm

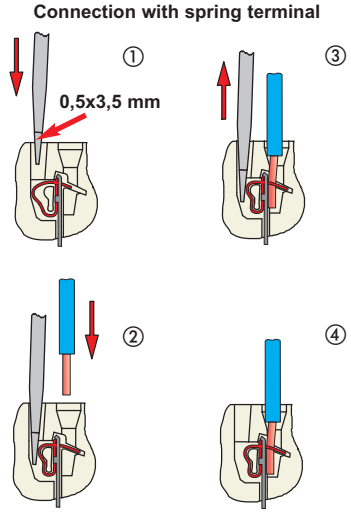


contacts side (front view)

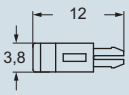


- inserts for conductors section:
  0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section:
  up to 1,5 mm² (AWG 16)
- conductors stripping lenght: 9...11 mm

Connection with spring terminal



CR CDS coding pin



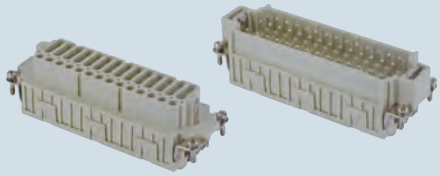
dimensions shown are not binding
and may be changed without notice

enclosures:
size "104.27" page:

C-TYPE IP65/IP66 ..... 258 - 266
C7 IP67, two levers 277
V-TYPE IP65/IP66, single lever 283/296 - 299
BIG hoods ..... 316 - 319
T-TYPE IP65 insulating ..... 332 - 333
T-TYPE / W IP66 insulating ..... 342 - 343
HYGIENIC T-TYPE / H IP66/IP69 ..... 356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
W-TYPE for aggressive environments 376
EMC 395
central lever ..... 410 - 412
IP68 ..... 432 - 435
LS-TYPE ..... 456 - 457

panel supports: page:
COB ..... 462 - 463

inserts,
spring terminal connections



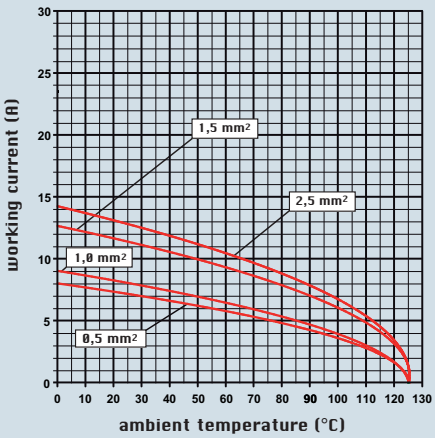
silver plated contacts

NEW

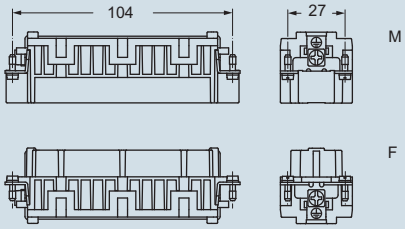
description	part No.
spring terminal female inserts with female contacts male inserts with male contacts	**CDSF 42** **CDSM 42**

- characteristics according to EN 61984:
  10A 400V 6kV 3
  10A 690V 6kV 2
- certifications: cUL (UL for USA and Canada)
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 558

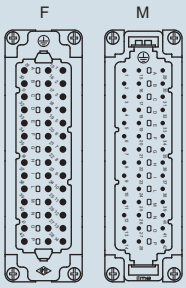
diagram CDS 42 poles



dimensions in mm

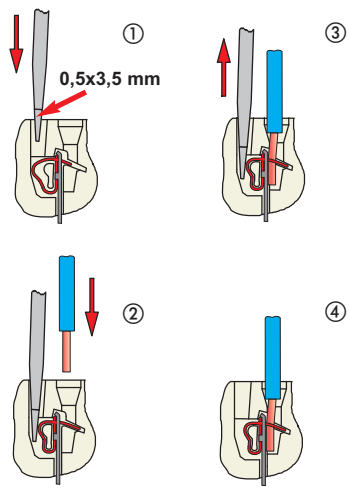


contacts side (front view)

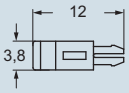


- inserts for conductors section:
  0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section:
  up to 1,5 mm² (AWG 16)
- conductors stripping lenght: 9...11 mm

Connection with spring terminal



CR CDS coding pin



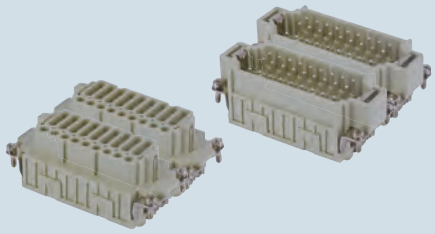
dimensions shown are not binding
and may be changed without notice

CDS 54 poles + ⏚ 10A - 400V

enclosures:
size "77.62" page:

C-TYPE IP65/IP66 ..... 267 - 270
W-TYPE for aggressive environments 377

inserts,
spring terminal connections



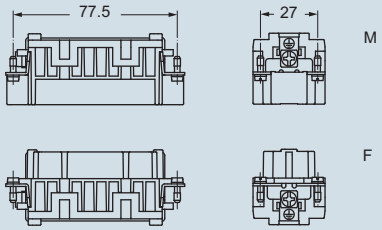
silver plated contacts

NEW

description	part No.	part No.
spring terminal female inserts with female contacts, No. (1-27) and (28-54) male inserts with male contacts, No. (1÷27) and (28-54)	**CDSF 27** **CDSM 27**	**CDSF 27 N** **CDSM 27 N**

- characteristics according to EN 61984:
  10A 400V 6kV 3
  10A 690V 6kV 2
- certifications: cUL (UL for USA and Canada)
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 558

dimensions in mm



contacts side (front view)

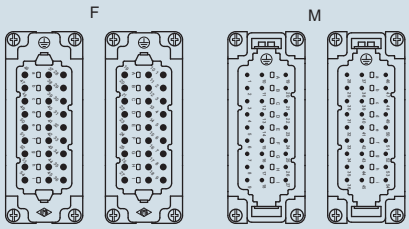
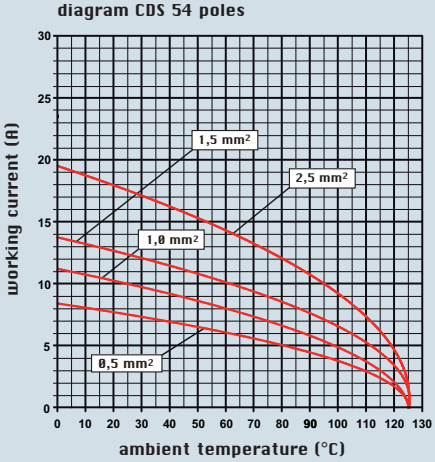
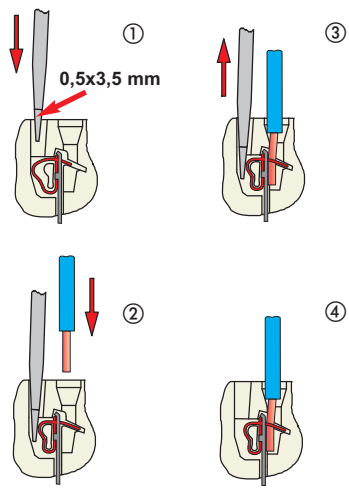


diagram CDS 54 poles

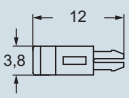


- inserts for conductors section:
  0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section:
  up to 1,5 mm² (AWG 16)
- conductors stripping lenght: 9...11 mm

Connection with spring terminal



CR CDS coding pin

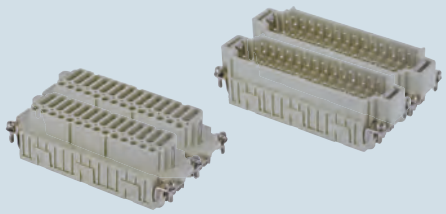


dimensions shown are not binding
and may be changed without notice

enclosures:
size "104.62" page:

C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments 378

inserts,
spring terminal connections



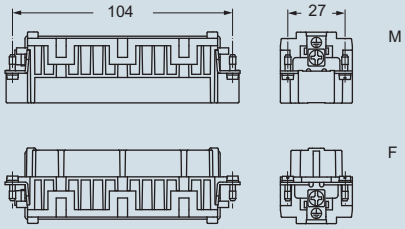
silver plated contacts

NEW

description	part No.	part No.
spring terminal female inserts with female contacts, No. (1-42) and (43-84) male inserts with male contacts, No.(1-42) and (43-84)	**CDSF 42** **CDSM 42**	**CDSF 42 N** **CDSM 42 N**

- characteristics according to EN 61984:
  10A 400V 6kV 3
  10A 690V 6kV 2
- certifications: cUL (UL for USA and Canada)
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 558

dimensions in mm



contacts side (front view)

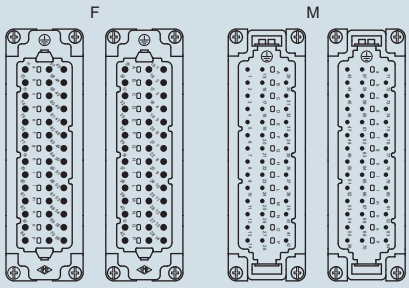
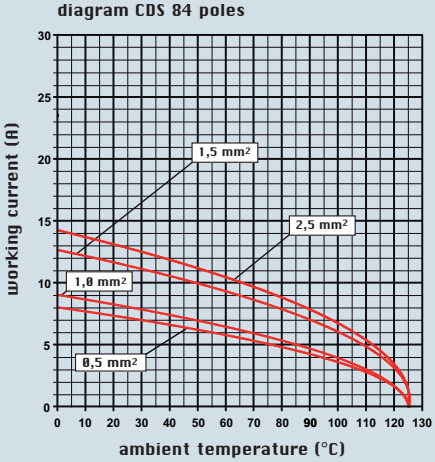
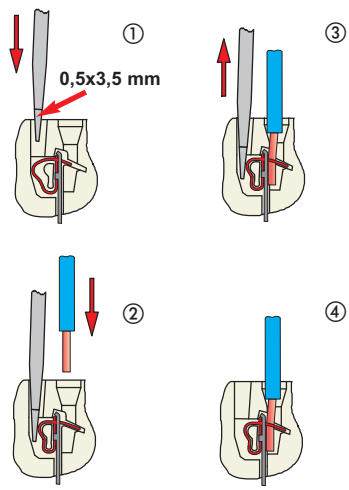


diagram CDS 84 poles

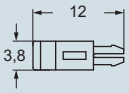


- inserts for conductors section:
  0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section:
  up to 1,5 mm² (AWG 16)
- conductors stripping lenght: 9...11 mm

Connection with spring terminal



CR CDS coding pin

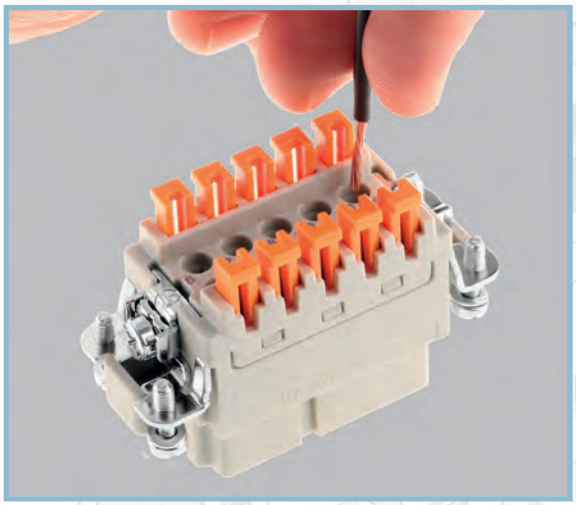


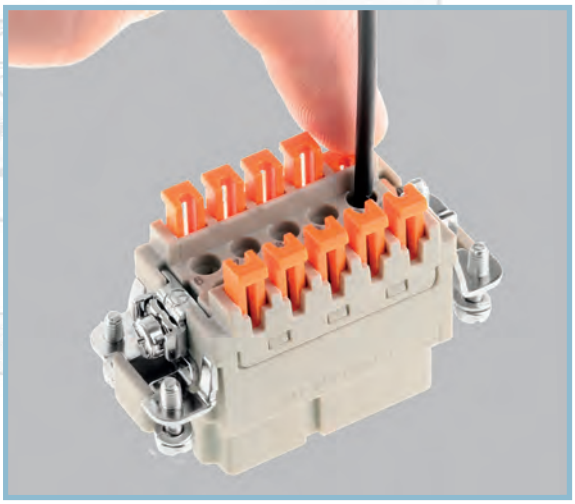
dimensions shown are not binding
and may be changed without notice

SQUICH®

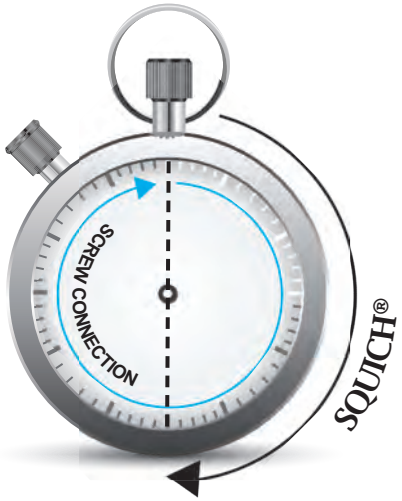
Connections without tools

Reduced space





A TIMESAVER



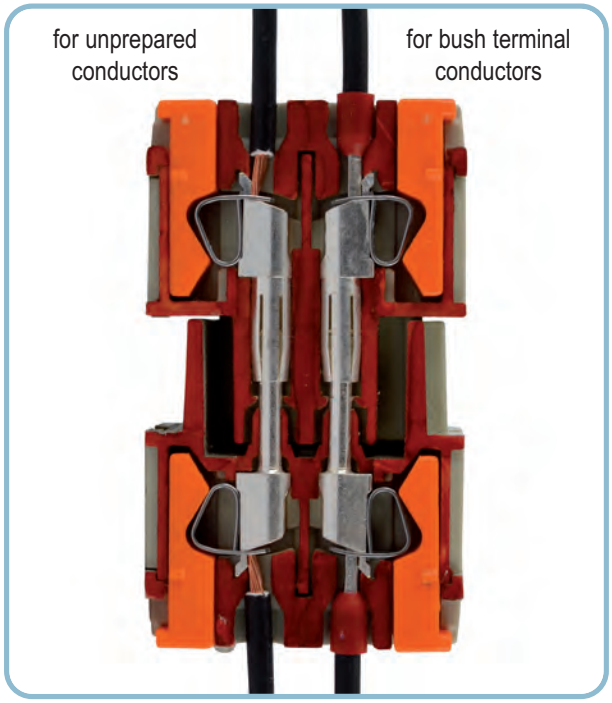
SQUICH® series

Connections without tools

To improve high performance industrial connections, ILME has developed and evolved its own spring clamp connectors to meet the market needs and make installation simpler.

The new **"SQUICH®" (with spring and actuator button)**, the logical evolution of the CSE series, is characterized by the following advantages:

- **Reduced space**
- **Reduced wiring times**
- **No need for tools**
- **Quick identification of wired and non-wired terminals**
- **Terminals already open and ready for conductor clamping.**



The SQUICH® inserts are adaptable to any type of rigid or flexible conductor, including unprepared conductors

Each of the spring terminals has an actuator button, suitably shaped and incorporated in the cavity.
When this button is pressed, it triggers the closure of the spring device of the corresponding terminal, safely and reliably connecting the conductor to its respective electric contact in the connector.
The actuator buttons are supplied lifted, in the "open terminal" position and are easily distinguisheable by the **orange colour which makes them stand out from the insulating body of the connector**.
The advantage of such an **exclusive solution** is that the **actuators disappear completely within the body of the connector**, making it easy to identify terminals not yet closed and eliminating possible obstacles to the movement of the conductors during installation and maintenance.
In this manner during the cabling phase the **need for a tool to activate the terminal is completely eliminated** and **a simple operation is all you need to make the connection**.

Shaped button for measuring instruments

The profile of the button used in the **"SQUICH®"** series inserts **allow a measuring probe to be inserted**.

This allows checks to be carried out to ensure that the wiring is correct.

Simple terminal reopening

To reopen the terminals, simply introduce the tip of a common 0,5 x 3,5 mm flat blade screwdriver in the shaped pocket on the head of the actuator, and slightly rotate the screwdriver downwards:
this will lift the actuator into its open terminal position.

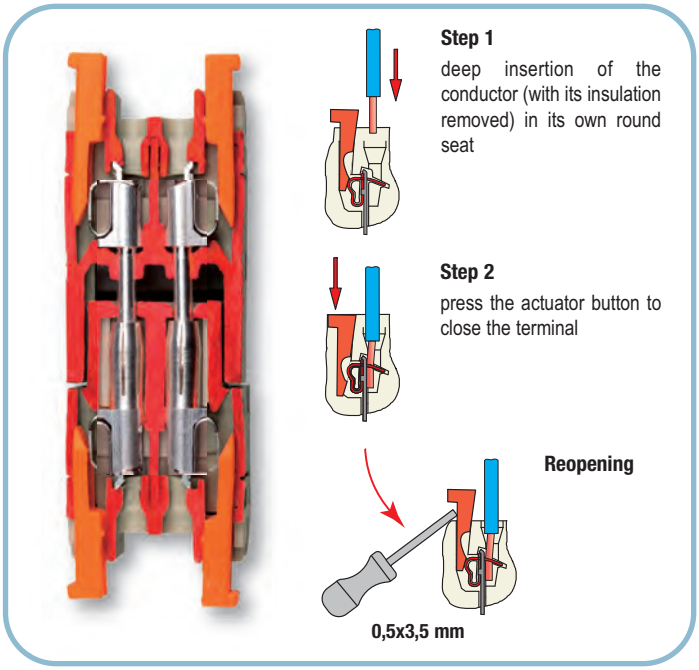
CSAH - SQUICH® series

Spring connection contacts with actuator button

Inserts series: CSAH

In this layout the wires are connected to the socket and plug insert contacts by means of a spring terminal with actuator button. This type of connection offers the following advantages:

- ❱ no special wire preparation (**other than stripping**);
- ❱ no cabling tool is necessary;
- ❱ it offers an excellent fastening solution and a great resistance to strong vibrations;
- ❱ it allows the use of rigid and flexible wires with cross-sections between 0,14 and 2,5 mm² (26 - 14 AWG);
- ❱ for wires with crimped ferrule, useful cross-section: up to 1,5 mm² (AWG 16);
- ❱ it greatly reduces insert preparation and cabling times;
- ❱ a screwdriver with a 0,5 x 3,5 mm blade is the only tool required to remove the wire from the contact.



Inserts series		CSAH
No. of poles [1]	main contacts + ⏚	**10, 16, (32)**
	auxiliary contacts	--
rated current [2]		16A
EN 61984 pollution degree 3	rated voltage	250V
	rated holding impulse withstand voltage	4kV
	pollution degree	3
EN 61984 pollution degree 2	rated voltage	230V/400V
	rated holding impulse withstand voltage	4kV
	pollution degree	2
contact resistance		≤ 3 mΩ
insulation resistance		≥ 10 GΩ
ambient temperature limit (°C)	min	-40 °C
	max	+125 °C
degree of protection	with enclosures	IP65, IP66, IP69 (according to type)
	without enclosures	IP20
conductor connections		spring with actuator button
conductor cross-section	mm²	0,14 - 2,5 (for wires with crimped ferrule, usable section: up to 1,5 mm²)
	AWG	26 - 14 (AWG 16 with crimped ferrule)
mechanical endurance (mating cycles)		≥ 500

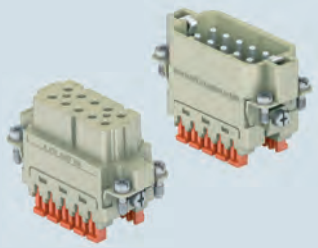
1) Polarities shown in brackets may be achieved by using two inserts in their own double housings.
2) Please check the insert load curves to establish the actual maximum operating current according to the ambient temperature.

enclosures:
size "49.16" page:

IL-BRID ..... 230 - 232
W-TYPE for aggressive environments 370
EMC 390

panel supports: page:
COB + adaptor ..... 462 - 464

inserts,
spring terminal connections

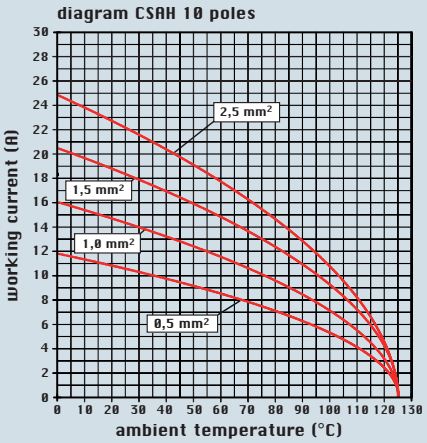


silver plated contacts

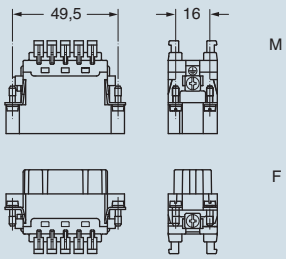
NEW

description	part No.
spring terminals with actuator button female inserts with female contacts male inserts with male contacts	**CSAHF 10** **CSAHM 10**

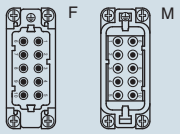
- characteristics according to EN 61984:
  16A 250V 4kV 3
  16A 400V 4kV 2
- certifications: CCC *
  * CQC certification being applied for
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 558



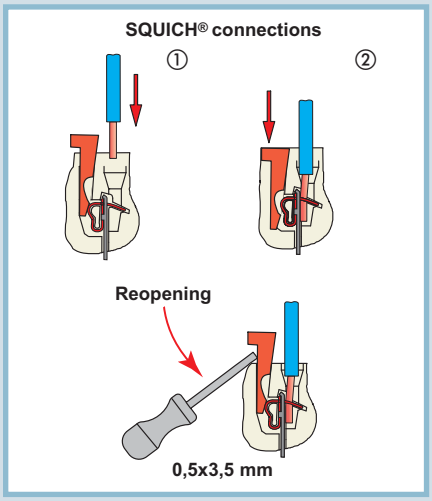
dimensions in mm



contacts side (front view)



- inserts for connectors with the following sections:
  0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section:
  up to 1,5 mm² (AWG 16)
- conductors stripping lenght: 9...11 mm



dimensions shown are not binding
and may be changed without notice

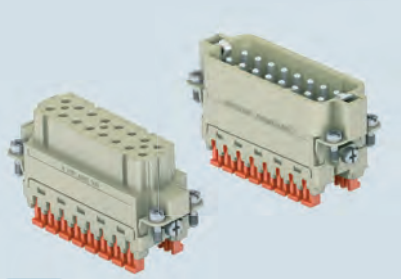
enclosures:
size "66.16" page:

IL-BRID ..... 233 - 235
W-TYPE for aggressive environments 371
EMC 391

panel supports: page:

COB + adaptor ..... 462 - 464

inserts,
spring terminal connections



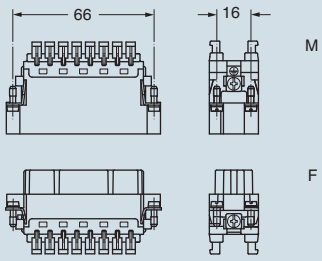
silver plated contacts

NEW

description	part No.
spring terminals with actuator button female inserts with female contacts male inserts with male contacts	**CSAHF 16** **CSAHM 16**

- characteristics according to EN 61984:
  16A 250V 4kV 3
  16A 400V 4kV 2
- certifications: CCC *
  * CQC certification being applied for
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 558

dimensions in mm



contacts side (front view)

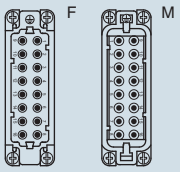
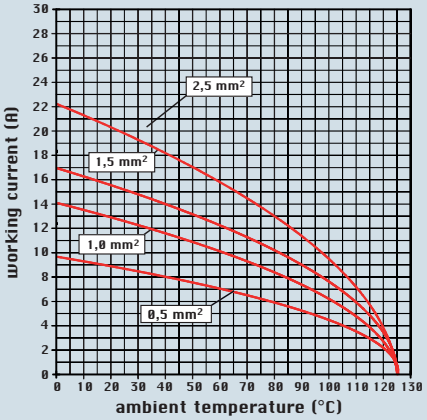
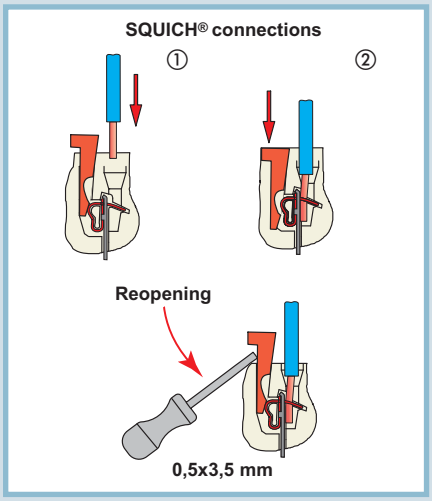


diagram CSAH 16 poles



- inserts for connectors with the following sections:
  0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section:
  up to 1,5 mm² (AWG 16)
- conductors stripping lenght: 9...11 mm

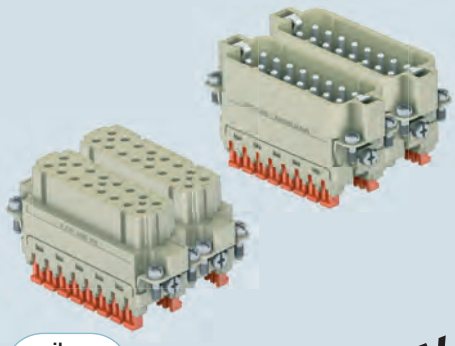


dimensions shown are not binding
and may be changed without notice

enclosures:
size "66.40" page:

C-TYPE IP65/IP66 ..... 237 - 239
W-TYPE for aggressive environments 372

inserts,
spring terminal connections



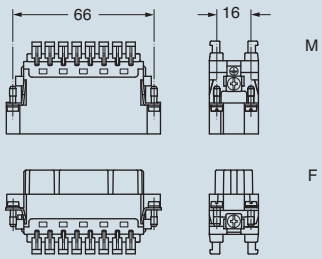
silver plated contacts

NEW

description	part No.	part No.
spring terminals with actuator button female inserts, No. (1-16) and (17-32) male inserts, No. (1-16) and (17-32)	**CSAHF 16** **CSAHM 16**	**CSAHF 16 N** **CSAHM 16 N**

- characteristics according to EN 61984:
  16A 250V 4kV 3
  16A 400V 4kV 2
- certifications: CCC *
  * CQC certification being applied for
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 558

dimensions in mm



contacts side (front view)

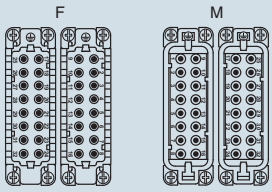
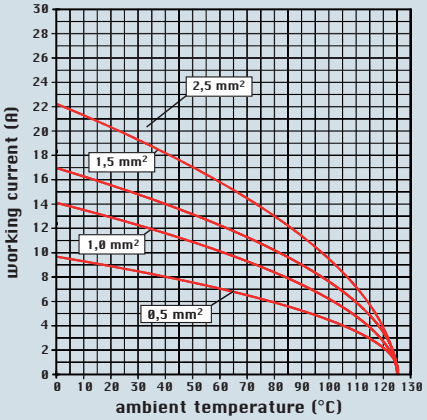
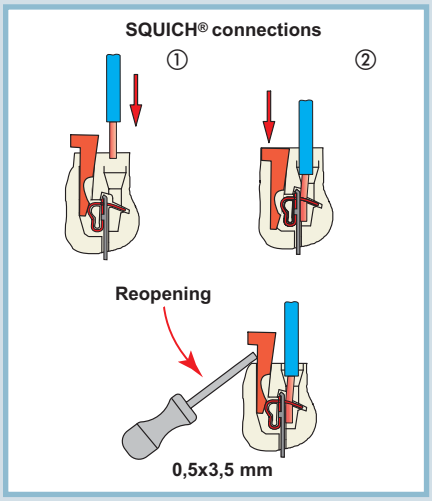


diagram CSAH 32 poles



- inserts for connectors with the following sections:
  0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section:
  up to 1,5 mm² (AWG 16)
- conductors stripping lenght: 9...11 mm



dimensions shown are not binding
and may be changed without notice

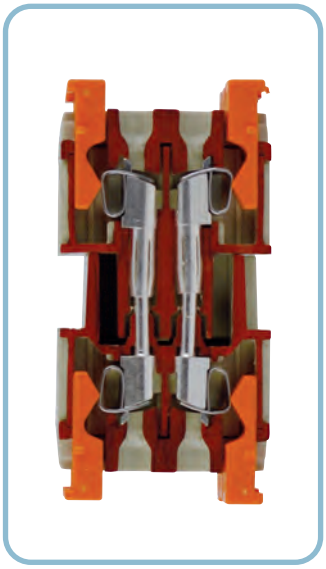
CSH - SQUICH® series

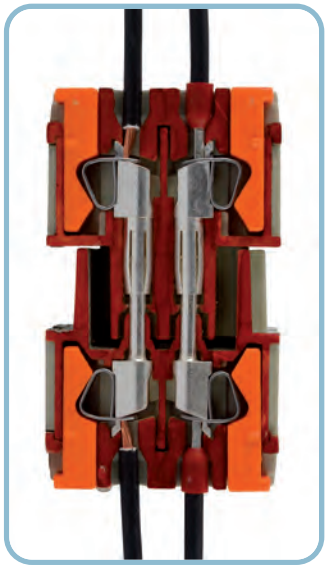
Spring connection contacts with actuator button

Inserts series: CSH

In this layout the wires are connected to the socket and plug insert contacts by means of a spring terminal with actuator button. This type of connection offers the following advantages:

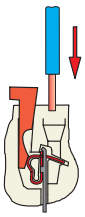
- ❱ no special wire preparation (**other than stripping**);
- ❱ no cabling tool is necessary;
- ❱ it offers an excellent fastening solution and a great resistance to strong vibrations;
- ❱ it allows the use of rigid and flexible wires with cross-sections between 0,14 and 2,5 mm² (26 - 14 AWG);
- ❱ it greatly reduces insert preparation and cabling times;
- ❱ a screwdriver with a 0,5 x 3,5 mm blade is the only tool required to remove the wire from the contact.



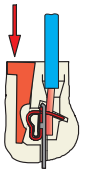


Inserts series		CSH
No. of poles [1]	main contacts + ⏚	**6, 10, 16, 24, (32), (48)**
	auxiliary contacts	--
rated current [2]		16A
EN 61984 pollution degree 3	rated voltage	500V
	rated holding impulse withstand voltage	6kV
	pollution degree	3
EN 61984 pollution degree 2	rated voltage	400V/690V
	rated holding impulse withstand voltage	6kV
	pollution degree	2
UL/CSA certification	rated voltage (a.c./d.c.)	600V
certifications		UL, CSA, CCC, EAC
contact resistance		≤ 3 mΩ
insulation resistance		≥ 10 GΩ
ambient temperature limit (°C)	min	-40 °C
	max	+125 °C
degree of protection	with enclosures	IP65, IP66, IP67, IP68, IP69 (according to type)
	without enclosures	IP20
conductor connections		spring and clamp with actuator button
conductor cross-section	mm²	0,14 - 2,5
	AWG	26 - 14
mechanical endurance (mating cycles)		≥ 500

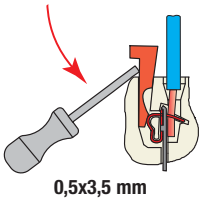
1) Polarities shown in brackets may be achieved by using two inserts in their own double housings.
2) Please check the insert load curves to establish the actual maximum operating current according to the ambient temperature.



Step 1
deep insertion of the conductor (with its insulation removed) in its own round seat



Step 2
press the actuator button to close the terminal

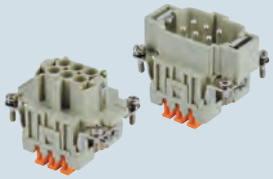


enclosures:
size "44.27" page:

C-TYPE IP65/IP66 ..... 240 - 243
C7 IP67, single lever 274
V-TYPE IP65/IP66, single lever 280/284 - 286
BIG hoods ..... 304 - 306
T-TYPE IP65 insulating ..... 326 - 327
T-TYPE / W IP66 insulating ..... 336 - 337
HYGIENIC T-TYPE / H IP66/IP69 ..... 350 - 351
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 358 - 359
W-TYPE for aggressive environments 373
EMC 392
central lever ..... 404 - 405
IP68 ..... 420 - 423
LS-TYPE ..... 450 - 451

panel supports: page:
COB ..... 462 - 463

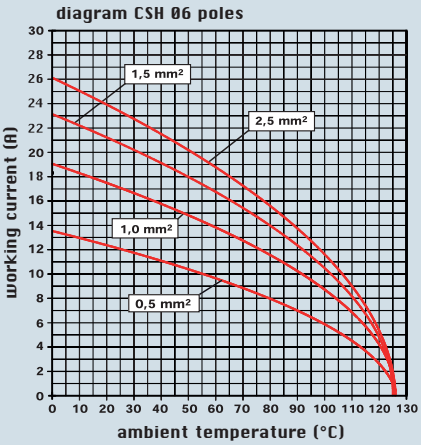
inserts,
spring terminal connections



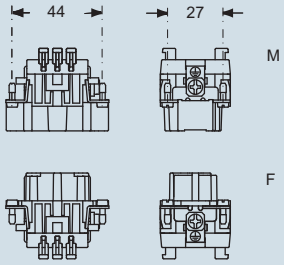
silver plated contacts

description	part No.
spring terminals with actuator button female inserts with female contacts male inserts with male contacts	**CSHF 06** **CSHM 06**

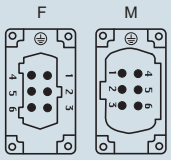
- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- cUL (UL for USA and Canada), CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 559



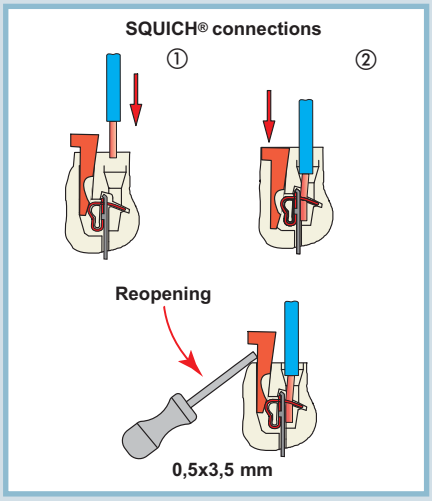
dimensions in mm



contacts side (front view)



- inserts for connectors with the following sections:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm



dimensions shown are not binding
and may be changed without notice

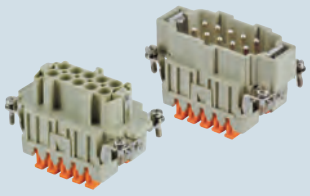
enclosures:
size "57.27" page:

C-TYPE IP65/IP66 ..... 244 - 249
C7 IP67, two levers 275
V-TYPE IP65/IP66, single lever 281/288 - 291
BIG hoods ..... 308 - 311
T-TYPE IP65 insulating ..... 328 - 329
T-TYPE / W IP66 insulating ..... 338 - 339
HYGIENIC T-TYPE / H IP66/IP69 ..... 352 - 353
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 360 - 361
W-TYPE for aggressive environments 374
EMC 393
central lever ..... 406 - 407
IP68 ..... 424 - 427
LS-TYPE ..... 452 - 453

panel supports: page:

COB ..... 462 - 463

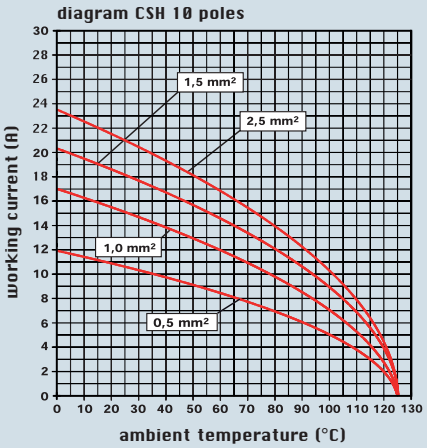
inserts,
spring terminal connections



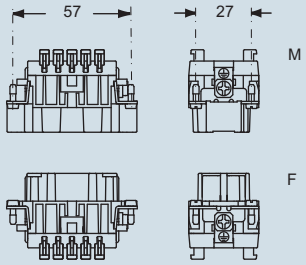
silver plated contacts

description	part No.
spring terminals with actuator button female inserts with female contacts male inserts with male contacts	**CSHF 10** **CSHM 10**

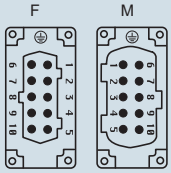
- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- cUL (UL for USA and Canada), CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 559



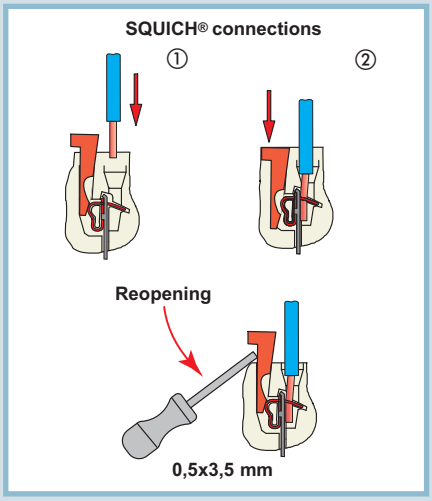
dimensions in mm



contacts side (front view)



- inserts for connectors with the following sections:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm



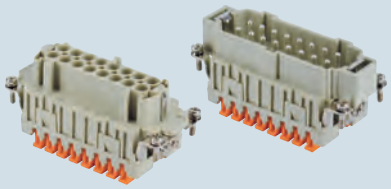
dimensions shown are not binding
and may be changed without notice

enclosures:
size "77.27" page:

C-TYPE IP65/IP66 ..... 250 - 256
C7 IP67, two levers 276
V-TYPE IP65/IP66, single lever 282/292 - 295
BIG hoods ..... 312 - 315
T-TYPE IP65 insulating ..... 330 - 331
T-TYPE / W IP66 insulating ..... 340 - 341
HYGIENIC T-TYPE / H IP66/IP69 ..... 354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
W-TYPE for aggressive environments 375
EMC 394
central lever ..... 408 - 409
IP68 ..... 428 - 431
LS-TYPE ..... 454 - 455

panel supports: page:
COB ..... 462 - 463

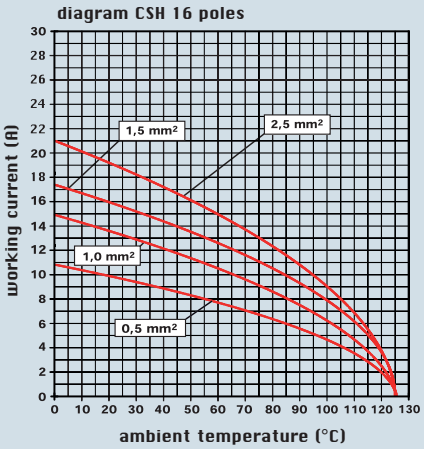
inserts,
spring terminal connections



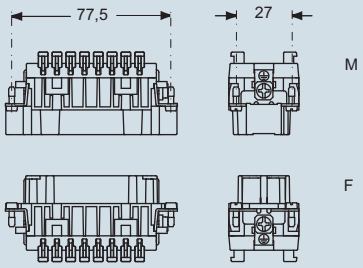
silver plated contacts

description	part No.
spring terminals with actuator button female inserts with female contacts male inserts with male contacts	**CSHF 16** **CSHM 16**

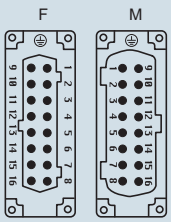
- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- cUL (UL for USA and Canada), CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 559



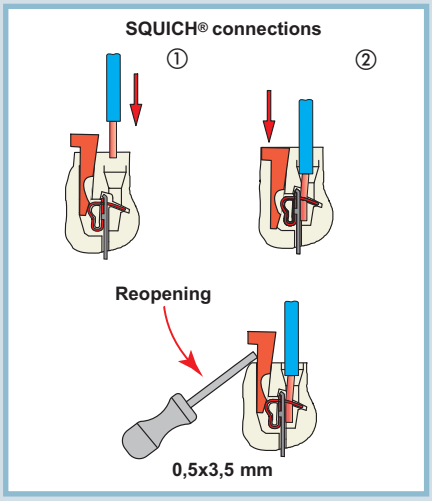
dimensions in mm



contacts side (front view)



- inserts for connectors with the following sections:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm



dimensions shown are not binding
and may be changed without notice

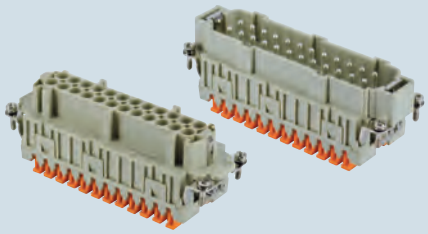
enclosures:
size "104.27" page:

C-TYPE IP65/IP66 ..... 258 - 266
C7 IP67, two levers 277
V-TYPE IP65/IP66, single lever 283/296 - 299
BIG hoods ..... 316 - 319
T-TYPE IP65 insulating ..... 332 - 333
T-TYPE / W IP66 insulating ..... 342 - 343
HYGIENIC T-TYPE / H IP66/IP69 ..... 356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
W-TYPE for aggressive environments 376
EMC 395
central lever ..... 410 - 412
IP68 ..... 432 - 435
LS-TYPE ..... 456 - 457

panel supports: page:

COB ..... 462 - 463

inserts,
spring terminal connections

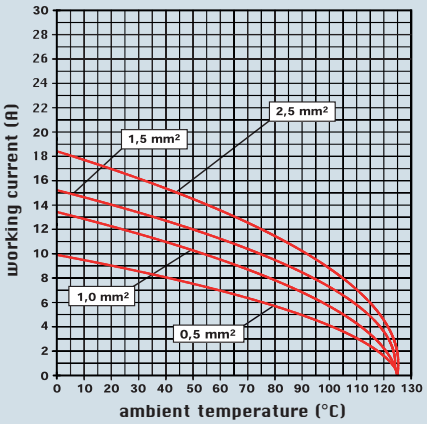


silver plated contacts

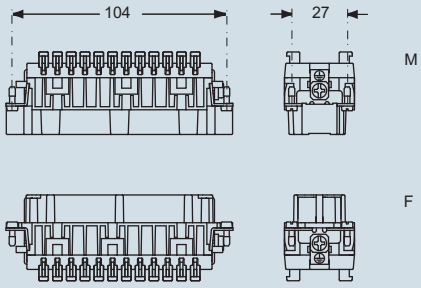
description	part No.
spring terminals with actuator button female inserts with female contacts male inserts with male contacts	**CSHF 24** **CSHM 24**

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- cUL (UL for USA and Canada), CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 559

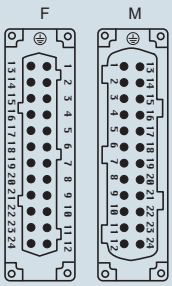
diagram CSH 24 poles



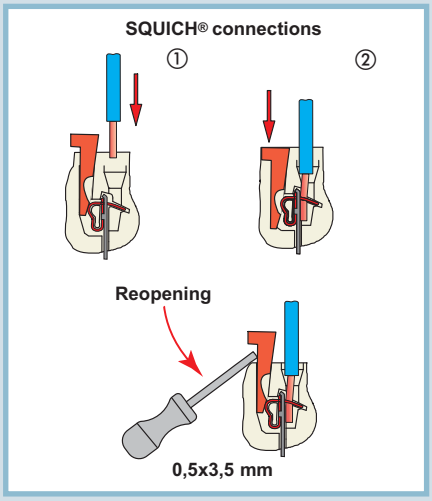
dimensions in mm



contacts side (front view)



- inserts for connectors with the following sections:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

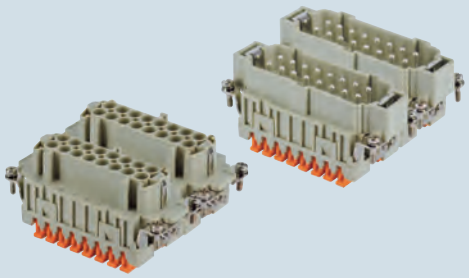


dimensions shown are not binding
and may be changed without notice

enclosures:
size "77.62" page:

C-TYPE IP65/IP66 ..... 267 - 270
W-TYPE for aggressive environments 377

inserts,
spring terminal connections

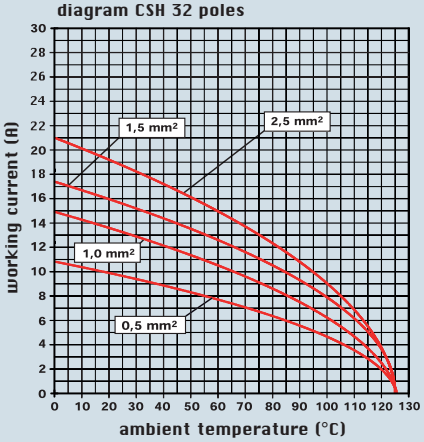


silver plated contacts

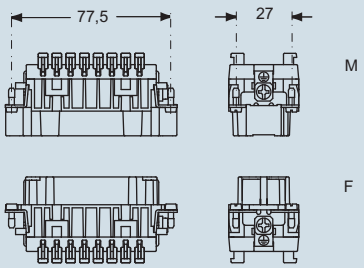
description	part No.	part No.
spring terminals with actuator button female inserts with female contacts, No. (1-16) and (17-32) male inserts with male contacts, No. (1-16) and (17-32)	**CSHF 16** **CSHM 16**	**CSHF 16 N** **CSHM 16 N**

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- cUL (UL for USA and Canada), CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 559

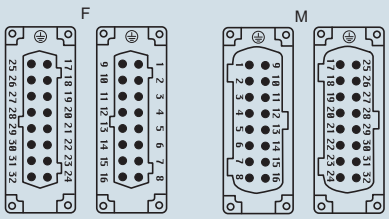
diagram CSH 32 poles



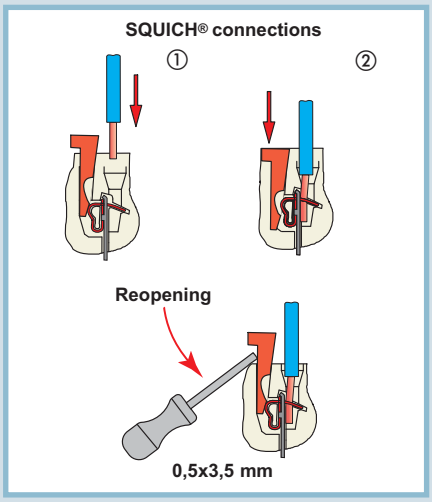
dimensions in mm



contacts side (front view)



- inserts for connectors with the following sections:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

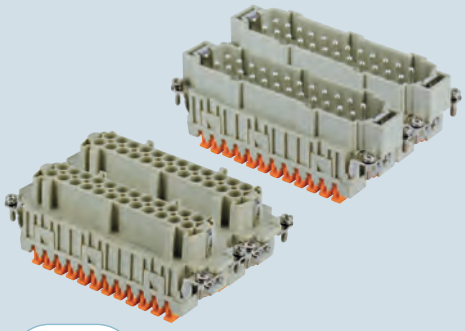


dimensions shown are not binding
and may be changed without notice

enclosures:
size "104.62" page:

C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments 378

inserts,
spring terminal connections

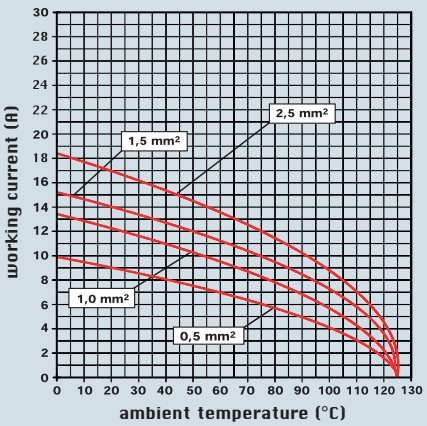


silver plated contacts

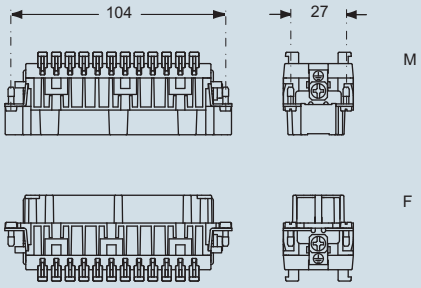
description	part No.	part No.
spring terminals with actuator button female inserts with female contacts, No. (1-24) and (25-48) male inserts with male contacts, No. (1-24) and (25-48)	**CSHF 24** **CSHM 24**	**CSHF 24 N** **CSHM 24 N**

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- cUL (UL for USA and Canada), CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 559

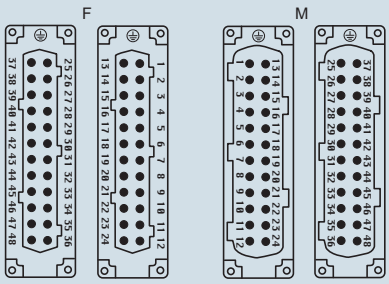
diagram CSH 48 poles



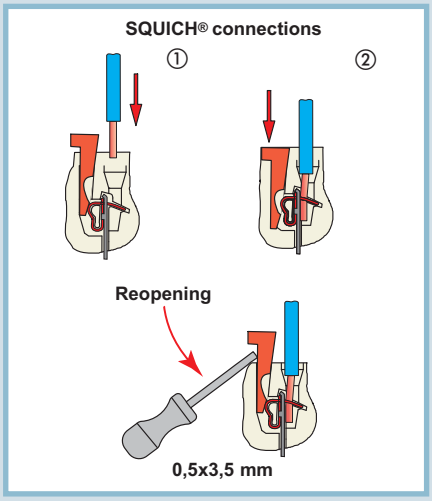
dimensions in mm



contacts side (front view)



- inserts for connectors with the following sections:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm



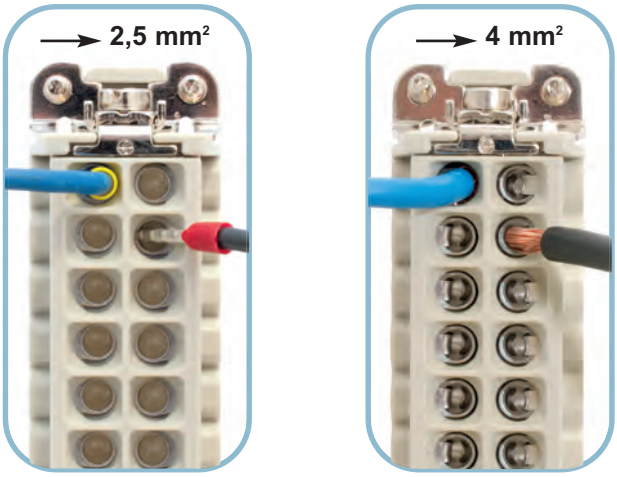
dimensions shown are not binding
and may be changed without notice

CDA - CDC series

Renewal of the compact inserts

The new CDA inserts with screw-type termination.

The renewed screw-type connector inserts (**CDA** series) with 10 and 16 poles + ⏚ are now made using screw-type terminals (CNE series) with a built-in wire protection pressure plate of proven reliability and practicality.
The wire protection pressure plate preserves the conductors in case of wiring with unprepared conductors (i.e. without wire end ferrules) up to a maximum wire cross-section of 4 mm² (12 AWG).
The variant without a wire protection pressure plate (code with suffix X) is also available, for use with prepared conductors featuring a wire end ferrule with a maximum usable wire cross-section of 2,5 mm² (14 AWG).



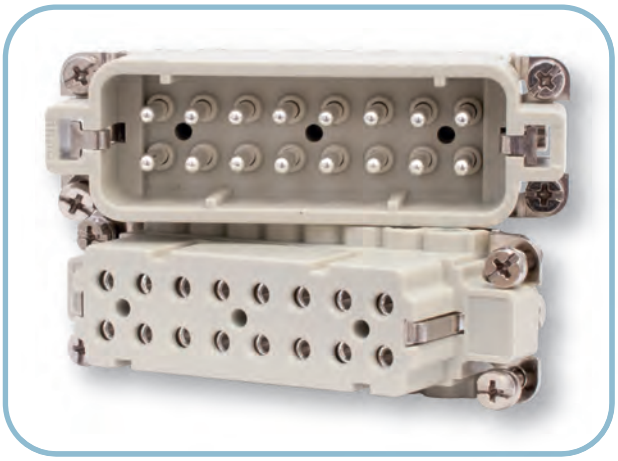
The new CDC inserts with crimp termination.

The renewed crimp termination **CDC** series of inserts with 10 and 16 poles + ⏚ now adopt the tried and tested contact retention technique of connector series CCE and CQE for removable crimp contacts (series CC, max 16A).

The characteristics of **CDA/CDC** inserts are:
- according to standard EN 61984:

  16A 250V 4kV 3

  16A 230/400V 4kV 2
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- construction material: UL 94 V-0 self-extinguishing thermoplastic resin
- mechanical life: ≥ 500 cycles.

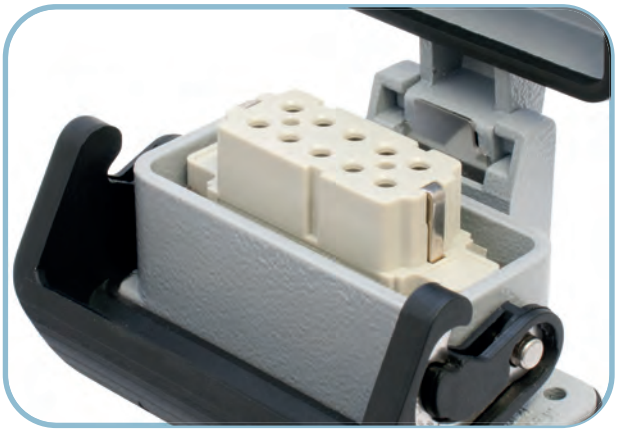


The applications.

Like those of the previous series, the new CDA and CDC inserts and their enclosures are used in accordance with the recommendations EUROMAP 12, EUROMAP 13, EUROMAP 14-1, EUROMAP 16 and EUROMAP 62 (European industry consortium for moulding machines and plastic processing).

The CDC inserts can also be used with CC series crimp contacts made of iron/constantan (Fe-CuNi) for the cabling of J type thermocouples in accordance with IEC/EN 60584-1 (Recommendation EUROMAP 14-1).

The CDA/CDC series inserts can also be coupled with previous insert versions.



CDA 10 poles + ⏚ 16A - 250V

enclosures:
size "49.16" page:

IL-BRID ..... 230 - 232
W-TYPE for aggressive environments 370
EMC 390

panel supports: page:

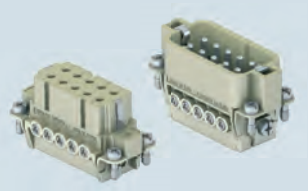
COB + adaptor ..... 462 - 464

inserts,
screw terminal connection

silver plated contacts

NEW

inserts,
screw terminal connection

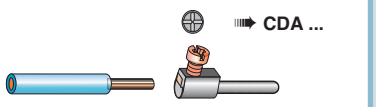


silver plated contacts

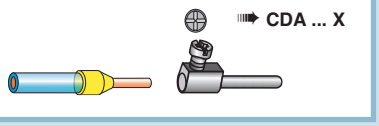
NEW

description	part No.	part No.
indirect, with pressure plate [1] female inserts with female contacts male inserts with male contacts	**CDAF 10** **CDAM 10**	
direct, without pressure plate [2] female inserts with female contacts male inserts with male contacts		**CDAF 10 X** **CDAM 10 X**

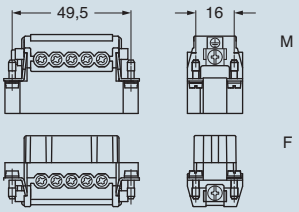
[1] for unprepared conductors



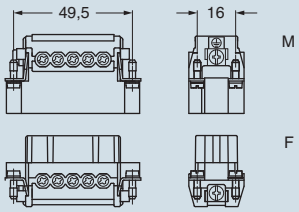
[2] for conductors with end sleeve ferrule



dimensions in mm

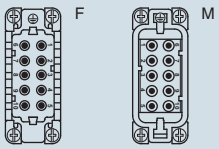


dimensions in mm



- characteristics according to EN 61984:
  16A 250V 4kV 3
  16A 230/400V 4kV 2
- cUL (UL for USA and Canada), CSA, CCC *, DNV-GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- according to recommendations EUROMAP N° 16
- for maximum current load, see the following inserts load curves, for more information see page 559

contacts side (front view)



contacts side (front view)

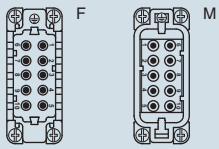
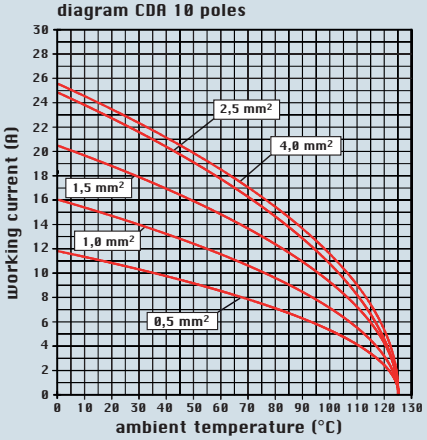


diagram CDA 10 poles



- inserts with pressure plate for conductors cross-sections: 0,5 - 4 mm² - AWG 20 - 12
- conductors stripping lenght: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

- inserts without pressure plate for prepared conductors with cross-sections: 0,25 - 2,5 mm² - AWG 24 - 14
- the stripping length for prepared wires with bush crimped depends on that of the bush itself
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

dimensions shown are not binding
and may be changed without notice

CDC 10 poles + ⏚ 16A - 250V

enclosures:
size "49.16" page:

IL-BRID ..... 230 - 232
W-TYPE for aggressive environments 370
EMC 390

panel supports: page:

COB + adaptor ..... 462 - 464

- according to recommendations EUROMAP N° 16
- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

inserts, crimp connections

NEW

16A crimp contacts
normal and for advanced opening
silver and gold plated

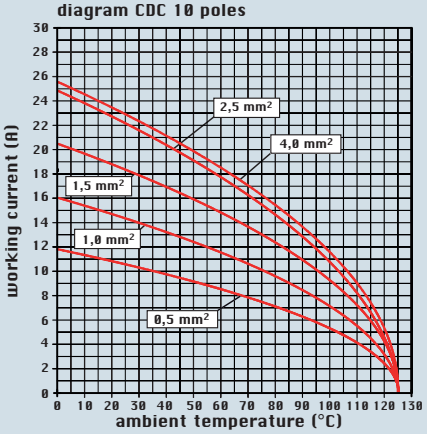
description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CDCF 10** **CDCM 10**		
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0**	**CCFD 0.3** **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0**
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	**CCMD 0.3** **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**
16A male crimp contacts for advanced opening 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves		**CC 0.5 AN** **CC 0.7 AN** **CC 1.0 AN** **CC 1.5 AN** **CC 2.5 AN**	

silver plated

gold plated 1)

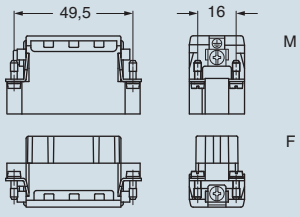
- characteristics according to EN 61984:
  16A 250V 4kV 3
  16A 230/400V 4kV 2
- cUL (UL for USA and Canada), CSA, CCC *, DNV-GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following inserts load curves, for more information see page 559

diagram CDC 10 poles

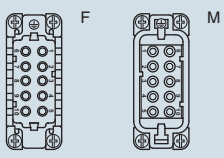


dimensions shown are not binding
and may be changed without notice

dimensions in mm

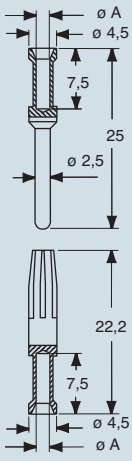


contacts side (front view)

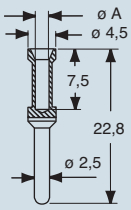


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

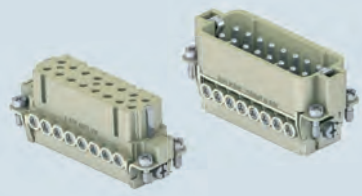
CDA 16 poles + ⏚ 16A - 250V

enclosures:
size "66.16" page:

IL-BRID ..... 233 - 235
W-TYPE for aggressive environments 371
EMC 391

panel supports: page:
COB + adaptor ..... 462 - 464

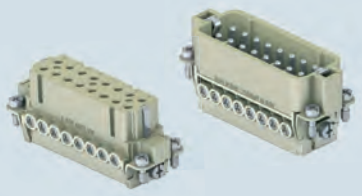
inserts,
screw terminal connection



silver plated contacts

NEW

inserts,
screw terminal connection

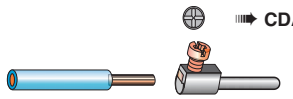


silver plated contacts

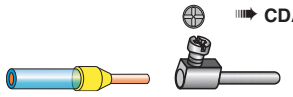
NEW

description	part No.	part No.
indirect, with pressure plate [1] female inserts with female contacts male inserts with male contacts	**CDAF 16** **CDAM 16**	
direct, without pressure plate [2] female inserts with female contacts male inserts with male contacts		**CDAF 16 X** **CDAM 16 X**

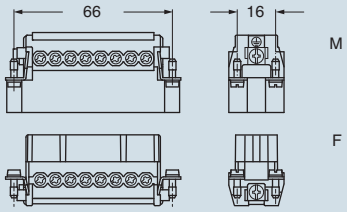
[1] for unprepared conductors



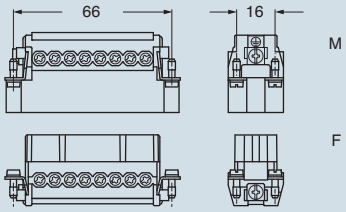
[2] for conductors with end sleeve ferrule



dimensions in mm

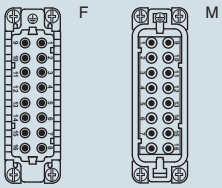


dimensions in mm



- characteristics according to EN 61984:
  16A 250V 4kV 3
  16A 230/400V 4kV 2
- cUL (UL for USA and Canada), CSA, CCC *, DNV-GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- according to recommendations EUROMAP N° 13/N° 14.1
- for maximum current load, see the following inserts load curves, for more information see page 559

contacts side (front view)



contacts side (front view)

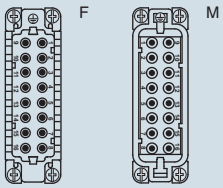
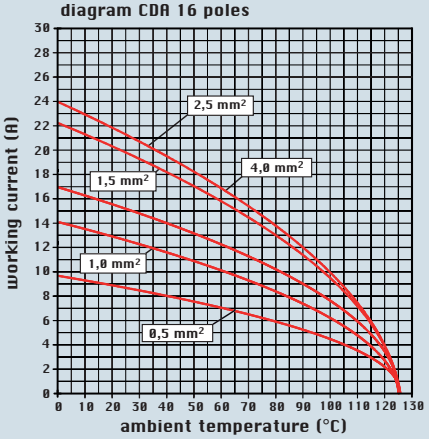


diagram CDA 16 poles



- inserts with pressure plate for conductors cross-sections: 0,5 - 4 mm² - AWG 20 - 12
- conductors stripping lenght: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

- inserts without pressure plate for prepared conductors with cross-sections: 0,25 - 2,5 mm² - AWG 24 - 14
- the stripping length for prepared wires with bush crimped depends on that of the bush itself
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

dimensions shown are not binding
and may be changed without notice

CDC 16 poles + ⏚ 16A - 250V

enclosures:
size "66.16" page:

IL-BRID ..... 233 - 235
W-TYPE for aggressive environments 371
EMC 391

panel supports: page:
COB + adaptor ..... 462 - 464

- according to recommendations EUROMAP N° 13/N° 14.1
- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

inserts, crimp connections

NEW

16A crimp contacts
normal and for advanced opening
silver and gold plated

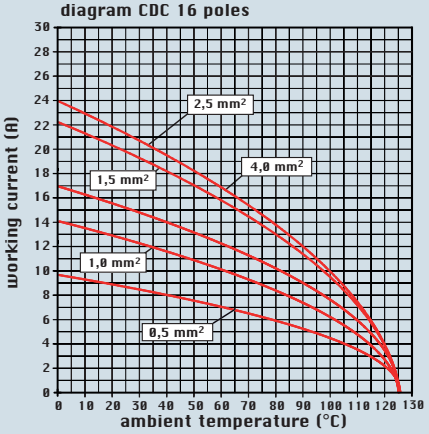
description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CDCF 16** **CDCM 16**		
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0**	**CCFD 0.3** **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0**
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	**CCMD 0.3** **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**
16A male crimp contacts for advanced opening 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves		**CC 0.5 AN** **CC 0.7 AN** **CC 1.0 AN** **CC 1.5 AN** **CC 2.5 AN**	

silver plated

gold plated 1)

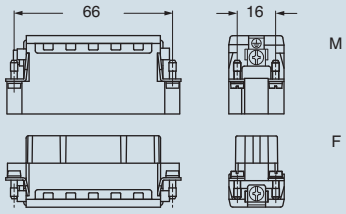
- characteristics according to EN 61984:
  16A 250V 4kV 3
  16A 230/400V 4kV 2
- cUL (UL for USA and Canada), CSA, CCC *, DNV-GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following inserts load curves, for more information see page 559

diagram CDC 16 poles

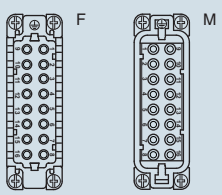


dimensions shown are not binding
and may be changed without notice

dimensions in mm

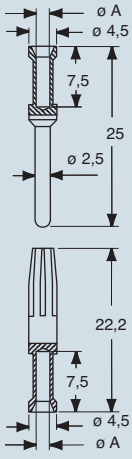


contacts side (front view)

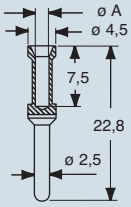


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

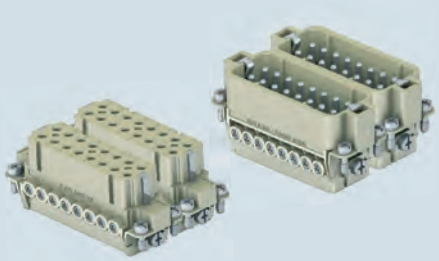
1) basic or high thickness gold plating page 481

CDA 32 poles + ⏚ 16A - 250V

enclosures:
size "66.40" page:

C-TYPE IP65/IP66 ..... 237 - 239
W-TYPE for aggressive environments 372

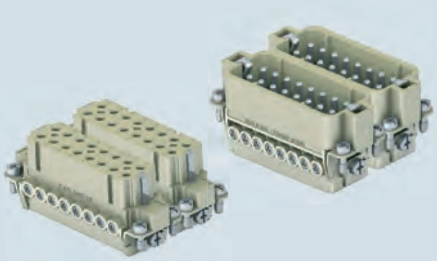
inserts,
screw terminal connection



silver plated contacts

NEW

inserts,
screw terminal connection

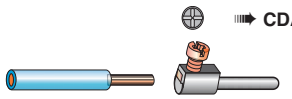


silver plated contacts

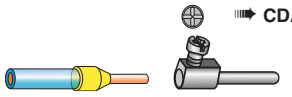
NEW

description	part No.	part No.	part No.	part No.
indirect, with pressure plate [1] female inserts, No. (1-16) and (17-32) male inserts, No. (1-16) and (17-32)	**CDAF 16** **CDAM 16**	**CDAF 16 N** **CDAM 16 N**		
direct, without pressure plate [2] female inserts, No. (1-16) and (17-32) male inserts, No. (1-16) and (17-32)			**CDAF 16 X** **CDAM 16 X**	**CDAF 16 XN** **CDAM 16 XN**

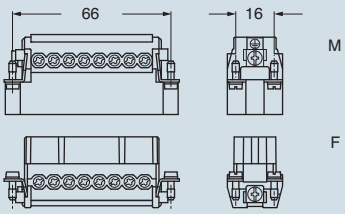
[1] for unprepared conductors



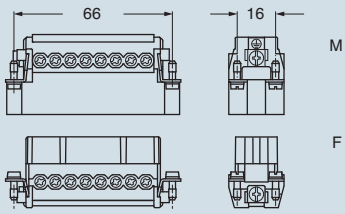
[2] for conductors with end sleeve ferrule



dimensions in mm

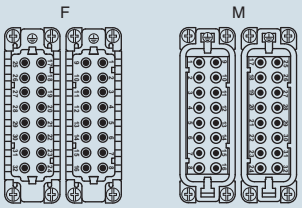


dimensions in mm



- characteristics according to EN 61984:
  16A 250V 4kV 3
  16A 230/400V 4kV 2
- cUL (UL for USA and Canada), CSA, CCC *, DNV-GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- according to recommendations EUROMAP N° 12/N° 62
- for maximum current load, see the following inserts load curves, for more information see page 559

contacts side (front view)



contacts side (front view)

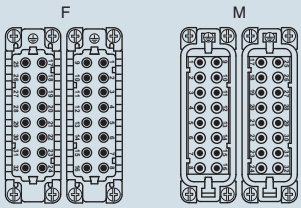
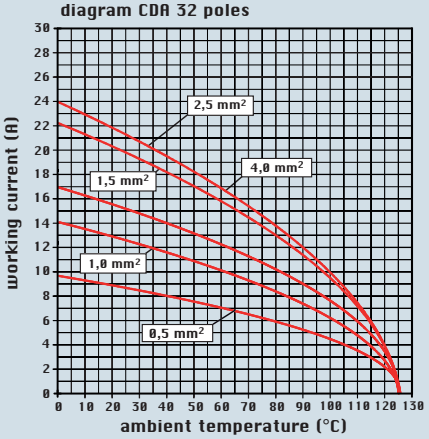


diagram CDA 32 poles



- inserts with pressure plate for conductors cross-sections: 0,5 - 4 mm² - AWG 20 - 12
- conductors stripping lenght: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

- inserts without pressure plate for prepared conductors with cross-sections: 0,25 - 2,5 mm² - AWG 24 - 14
- the stripping length for prepared wires with bush crimped depends on that of the bush itself
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

dimensions shown are not binding
and may be changed without notice

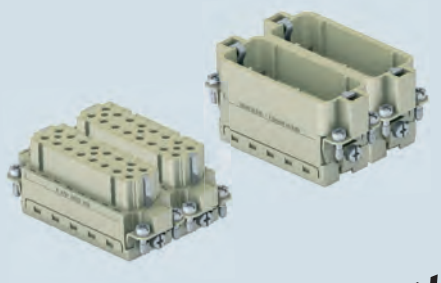
CDC 32 poles + ⏚ 16A - 250V

enclosures:
size "66.40" page:

C-TYPE IP65/IP66 ..... 237 - 239
W-TYPE for aggressive environments 372

- according to recommendations EUROMAP N° 12/N° 62
- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

inserts, crimp connections



NEW

16A crimp contacts
normal and for advanced opening
silver and gold plated

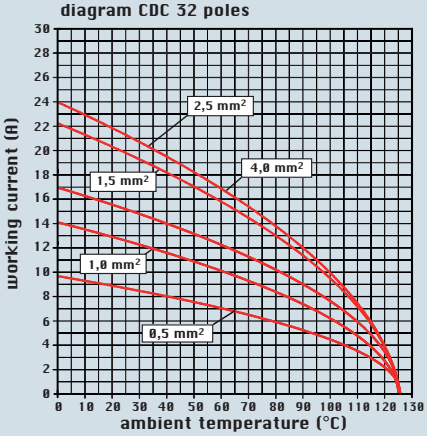
description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts, No. (1-16) and (17-32) male inserts, No. (1-16) and (17-32)	**CDCF 16** **CDCM 16**		**CDCF 16 N** **CDCM 16 N**	
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves			**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0**	**CCFD 0.3** **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0**
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves			**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	**CCMD 0.3** **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**
16A male crimp contacts for advanced opening 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves			**CC 0.5 AN** **CC 0.7 AN** **CC 1.0 AN** **CC 1.5 AN** **CC 2.5 AN**	

silver plated

gold plated 1)

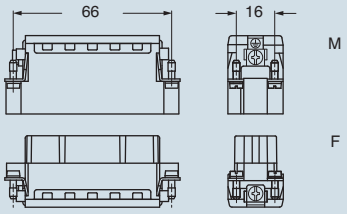
- characteristics according to EN 61984:
  16A 250V 4kV 3
  16A 230/400V 4kV 2
- cUL (UL for USA and Canada), CSA, CCC *, DNV-GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following inserts load curves, for more information see page 559

diagram CDC 32 poles

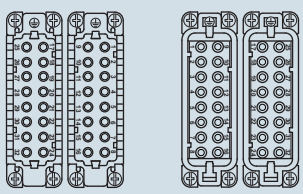


dimensions shown are not binding
and may be changed without notice

dimensions in mm

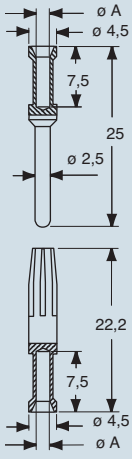


contacts side (front view)

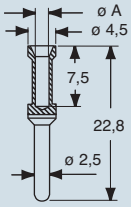


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

CNE - CSE 6 poles + ⏚ 16A - 500V

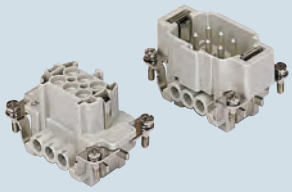
enclosures:
size "44.27" page:

C-TYPE IP65/IP66 ..... 240 - 243
C7 IP67, single lever 274
V-TYPE IP65/IP66, single lever 280/284 - 286
BIG hoods ..... 304 - 306
T-TYPE IP65 insulating ..... 326 - 327
T-TYPE / W IP66 insulating ..... 336 - 337
HYGIENIC T-TYPE / H IP66/IP69 ..... 350 - 351
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 358 - 359
W-TYPE for aggressive environments 373
EMC 392
central lever ..... 404 - 405
IP68 ..... 420 - 423
LS-TYPE ..... 450 - 451

panel supports: page:

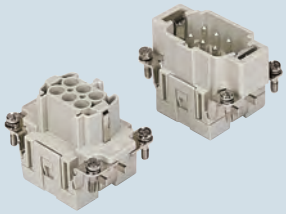
COB ..... 462 - 463

inserts,
screw terminal connections



silver plated contacts

inserts,
spring terminal connections



silver plated contacts

description	part No.	part No.
indirect, with plate **1)** female inserts with female contacts male inserts with male contacts	**CNEF 06 T** **CNEM 06 T**	
direct, without plate **2)** female inserts with female contacts male inserts with male contacts	**CNEF 06 TX** **CNEM 06 TX**	
spring terminal female inserts with female contacts male inserts with male contacts		**CSEF 06** **CSEM 06**

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- cUL (UL for USA and Canada - CNE), UL (CSE), CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ (CNE) - ≤ 3 mΩ (CSE)
- for maximum current load, see the following load curves inserts, for more information see page 559

diagram CNE 06 poles

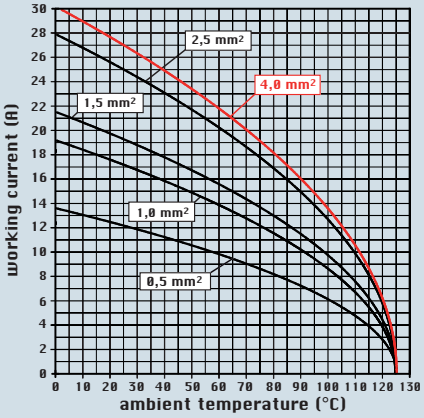
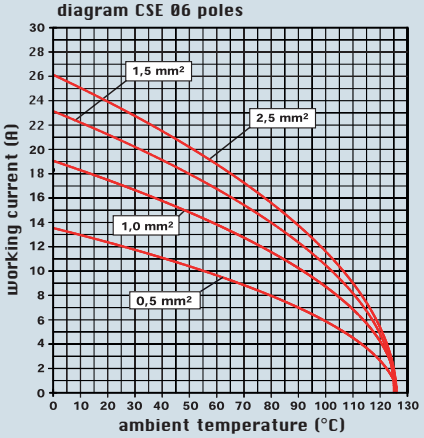
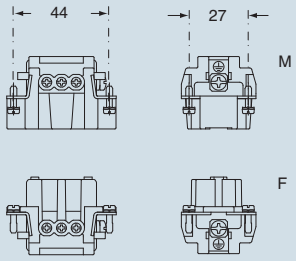


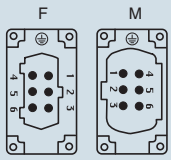
diagram CSE 06 poles



dimensions in mm

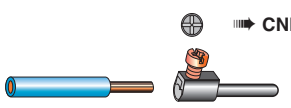


contacts side (front view)

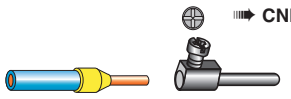


- inserts with plate for section conductors:
  0,5 - 4 mm² - AWG 20 - 12
- inserts without plate for section conductors:
  0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping lenght: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

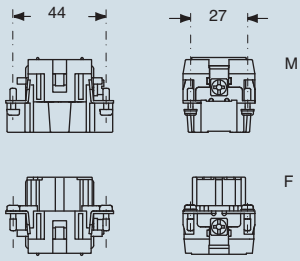
1) for unprepared conductors



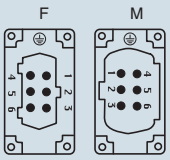
2) for bush terminal conductors



dimensions in mm

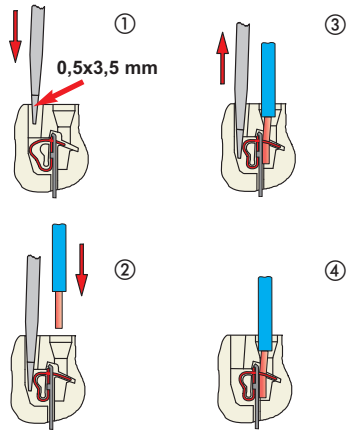


contacts side (front view)



- inserts for section conductors:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

connection with spring terminal



dimensions shown are not binding and may be changed without notice

CNE - CSE 10 poles + ⏚ 16A - 500V

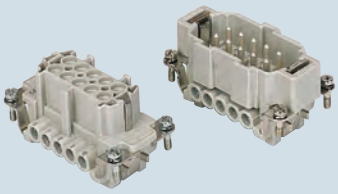
enclosures:
size "57.27" page:

C-TYPE IP65/IP66 ..... 244 - 249
C7 IP67, two levers 275
V-TYPE IP65/IP66, single lever 281/288 - 291
BIG hoods ..... 308 - 311
T-TYPE IP65 insulating ..... 328 - 329
T-TYPE / W IP66 insulating ..... 338 - 339
HYGIENIC T-TYPE / H IP66/IP69 ..... 352 - 353
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 360 - 361
W-TYPE for aggressive environments 374
EMC 393
central lever ..... 406 - 407
IP68 ..... 424 - 427
LS-TYPE ..... 452 - 453

panel supports: page:

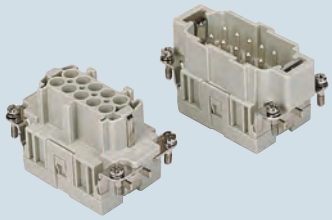
COB ..... 462 - 463

inserts,
screw terminal connections



silver plated contacts

inserts,
spring terminal connections



silver plated contacts

description	part No.	part No.
indirect, with plate **1)** female inserts with female contacts male inserts with male contacts	**CNEF 10 T** **CNEM 10 T**	
direct, without plate **2)** female inserts with female contacts male inserts with male contacts	**CNEF 10 TX** **CNEM 10 TX**	
spring terminal female inserts with female contacts male inserts with male contacts		**CSEF 10** **CSEM 10**

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- cUL (UL for USA and Canada - CNE), UL (CSE), CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ (CNE) - ≤ 3 mΩ (CSE)
- for maximum current load, see the following load curves inserts, for more information see page 559

diagram CNE 10 poles

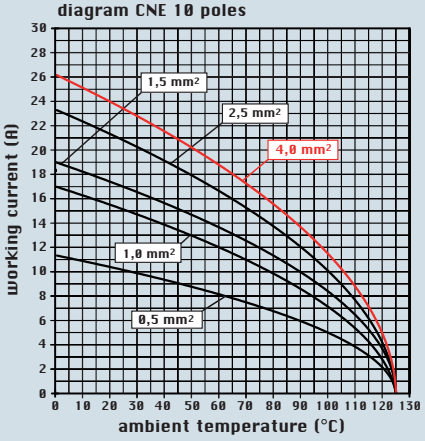
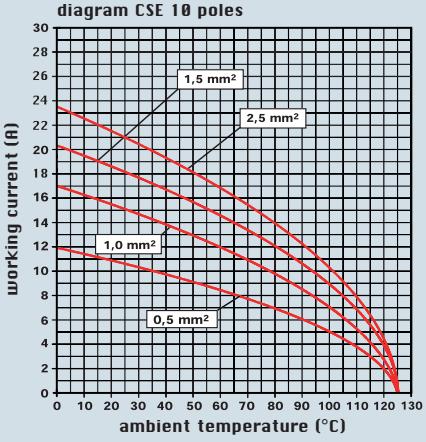
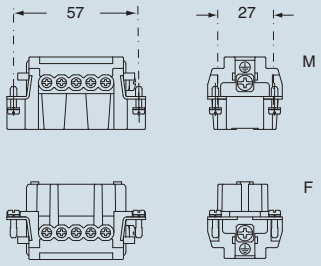


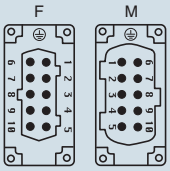
diagram CSE 10 poles



dimensions in mm

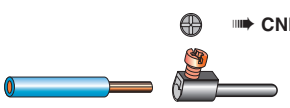


contacts side (front view)

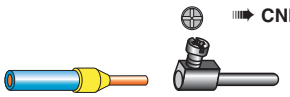


- inserts with plate for section conductors:
  0,5 - 4 mm² - AWG 20 - 12
- inserts without plate for section conductors:
  0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping lenght: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

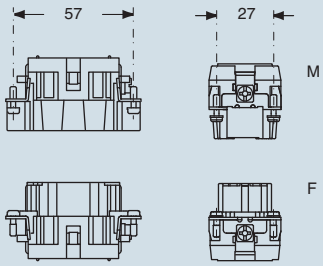
1) for unprepared conductors



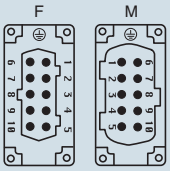
2) for bush terminal conductors



dimensions in mm

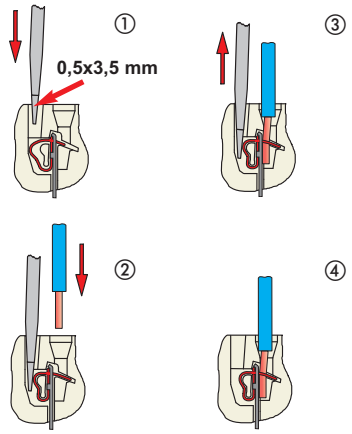


contacts side (front view)



- inserts for section conductors:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

connection with spring terminal



dimensions shown are not binding and may be changed without notice

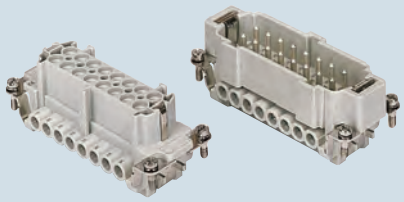
CNE - CSE 16 poles + ⏚ 16A - 500V

enclosures:
size "77.27" page:

C-TYPE IP65/IP66 ..... 250 - 256
C7 IP67, two levers 276
V-TYPE IP65/IP66, single lever 282/292 - 295
BIG hoods ..... 312 - 315
T-TYPE IP65 insulating ..... 330 - 331
T-TYPE / W IP66 insulating ..... 340 - 341
HYGIENIC T-TYPE / H IP66/IP69 ..... 354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
W-TYPE for aggressive environments 375
EMC 394
central lever ..... 408 - 409
IP68 ..... 428 - 431
LS-TYPE ..... 454 - 455

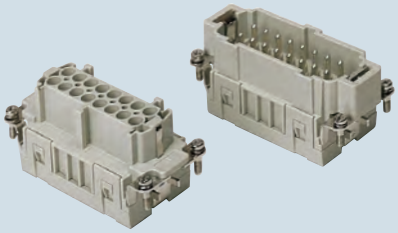
panel supports: page:
COB ..... 462 - 463

inserts,
screw terminal connections



silver plated contacts

inserts,
spring terminal connections



silver plated contacts

description	part No.	part No.
indirect, with plate **1)** female inserts with female contacts male inserts with male contacts	**CNEF 16 T** **CNEM 16 T**	
direct, without plate **2)** female inserts with female contacts male inserts with male contacts	**CNEF 16 TX** **CNEM 16 TX**	
spring terminal female inserts with female contacts male inserts with male contacts		**CSEF 16** **CSEM 16**

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- cUL (UL for USA and Canada - CNE), UL (CSE), CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ (CNE) - ≤ 3 mΩ (CSE)
- for maximum current load, see the following load curves inserts, for more information see page 559

diagram CNE 16 poles

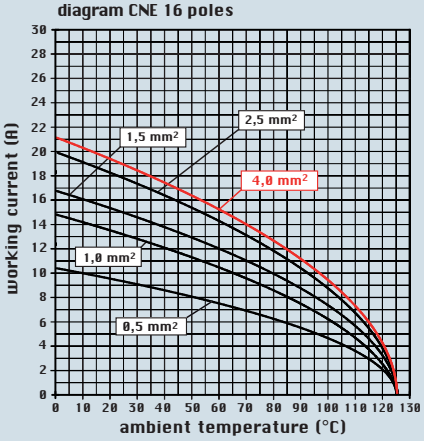
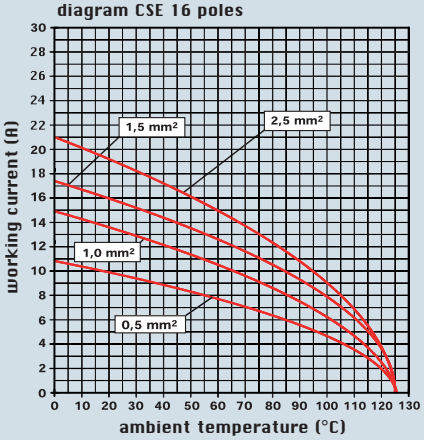
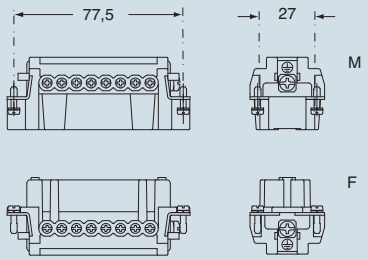


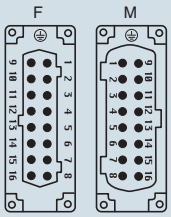
diagram CSE 16 poles



dimensions in mm

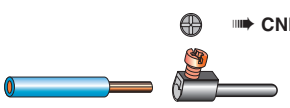


contacts side (front view)

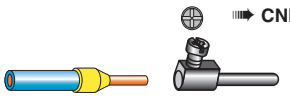


- inserts with plate for section conductors:
  0,5 - 4 mm² - AWG 20 - 12
- inserts without plate for section conductors:
  0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping lenght: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

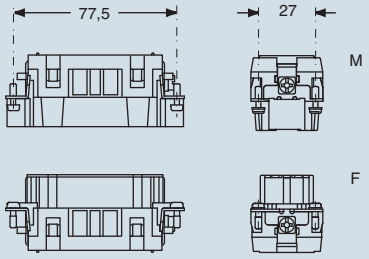
1) for unprepared conductors



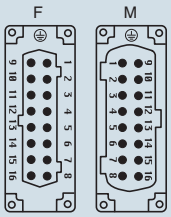
2) for bush terminal conductors



dimensions in mm

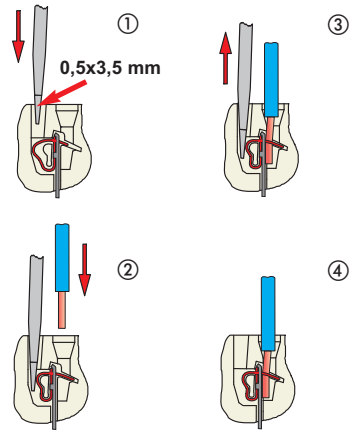


contacts side (front view)



- inserts for section conductors:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

connection with spring terminal



dimensions shown are not binding and may be changed without notice

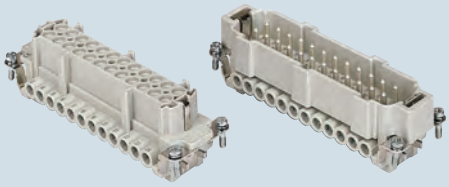
CNE - CSE 24 poles + ⏚ 16A - 500V

enclosures:
size "104.27" page:

C-TYPE IP65/IP66 ..... 258 - 266
C7 IP67, two levers 277
V-TYPE IP65/IP66, single lever 283/296 - 299
BIG hoods ..... 316 - 319
T-TYPE IP65 insulating ..... 332 - 333
T-TYPE / W IP66 insulating ..... 342 - 343
HYGIENIC T-TYPE / H IP66/IP69 ..... 356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
W-TYPE for aggressive environments 376
EMC 395
central lever ..... 410 - 412
IP68 ..... 432 - 435
LS-TYPE ..... 456 - 457

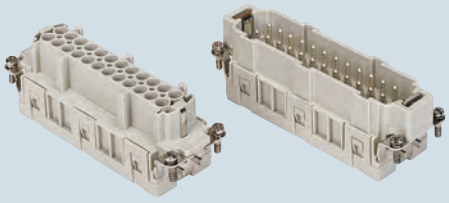
panel supports: page:
COB ..... 462 - 463

inserts,
screw terminal connections



silver plated contacts

inserts,
spring terminal connections



silver plated contacts

CNE - CSE

description	part No.	part No.
indirect, with plate **1)** female inserts with female contacts male inserts with male contacts	**CNEF 24 T** **CNEM 24 T**	
direct, without plate **2)** female inserts with female contacts male inserts with male contacts	**CNEF 24 TX** **CNEM 24 TX**	
spring terminal female inserts with female contacts male inserts with male contacts		**CSEF 24** **CSEM 24**

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- cUL (UL for USA and Canada - CNE), UL (CSE), CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ (CNE) - ≤ 3 mΩ (CSE)
- for maximum current load, see the following load curves inserts, for more information see page 559

diagram CNE 24 poles

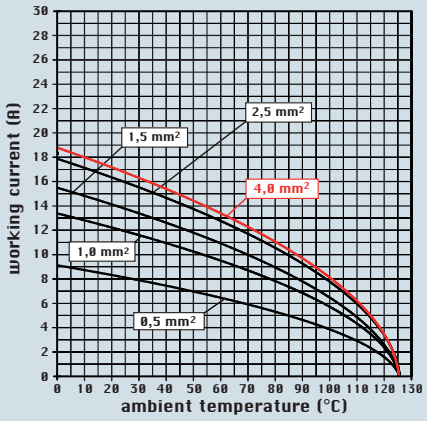
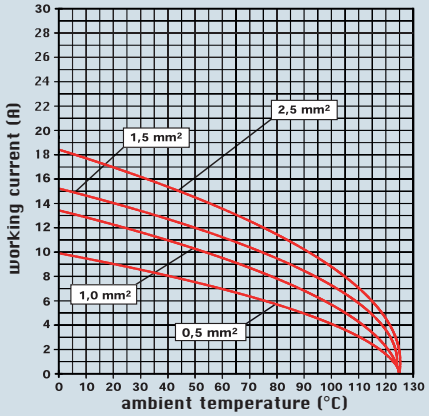
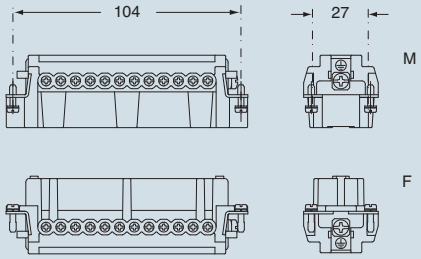


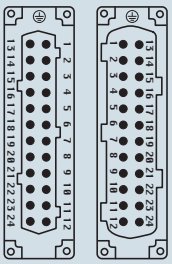
diagram CSE 24 poles



dimensions in mm

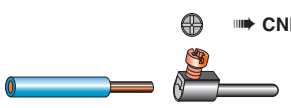


contacts side (front view)

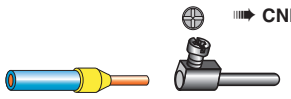


- inserts with plate for section conductors:
  0,5 - 4 mm² - AWG 20 - 12
- inserts without plate for section conductors:
  0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping lenght: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

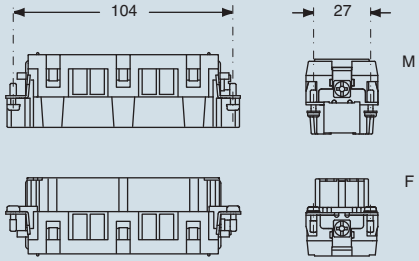
1) for unprepared conductors



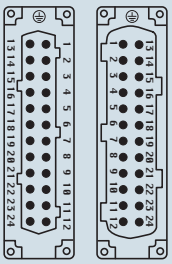
2) for bush terminal conductors



dimensions in mm

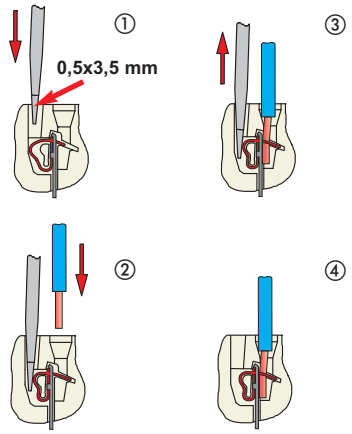


contacts side (front view)



- inserts for section conductors:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

connection with spring terminal



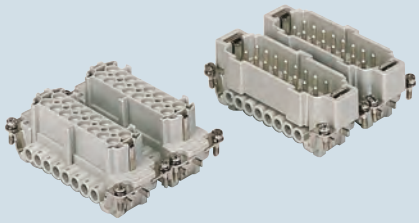
dimensions shown are not binding and may be changed without notice

CNE - CSE 32 poles + ⏚ 16A - 500V

enclosures:
size "77.62" page:

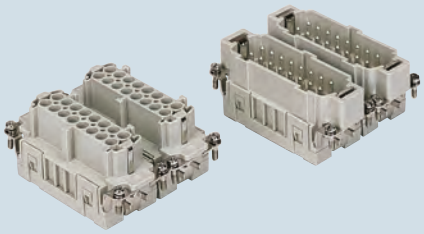
C-TYPE IP65/IP66 ..... 267 - 270
W-TYPE for aggressive environments 377

inserts,
screw terminal connections



silver plated contacts

inserts,
spring terminal connections



silver plated contacts

description	part No.	part No.	part No.	part No.
indirect, with plate **1)** female inserts, No. (1-16) and (17-32) male inserts, No. (1-16) and (17-32)	**CNEF 16 T** **CNEM 16 T**	**CNEF 16 TN** **CNEM 16 TN**		
direct, without plate **2)** female inserts, No. (1-16) and (17-32) male inserts, No. (1-16) and (17-32)	**CNEF 16 TX** **CNEM 16 TX**	**CNEF 16 TXN** **CNEM 16 TXN**		
spring terminal female inserts, No. (1-16) and (17-32) male inserts, No. (1-16) and (17-32)			**CSEF 16** **CSEM 16**	**CSEF 16 N** **CSEM 16 N**

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- cUL (UL for USA and Canada - CNE), UL (CSE), CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ (CNE) - ≤ 3 mΩ (CSE)
- for maximum current load, see the following load curves inserts, for more information see page 559

diagram CNE 32 poles

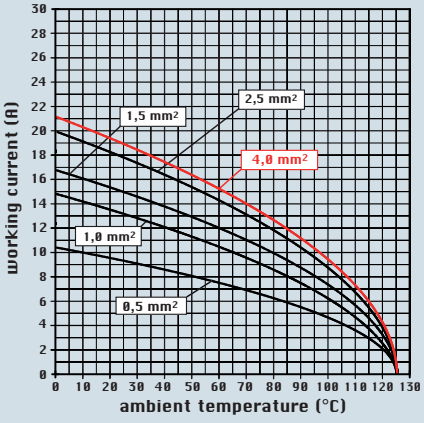
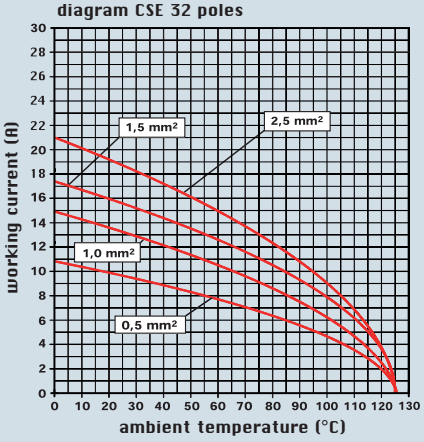
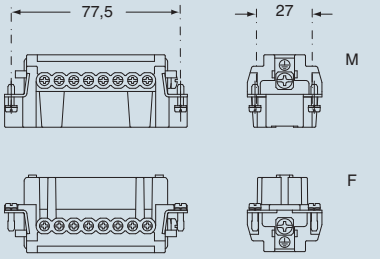


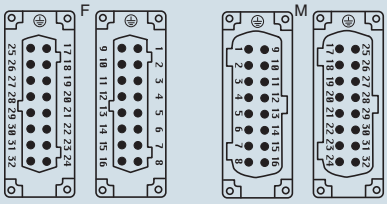
diagram CSE 32 poles



dimensions in mm

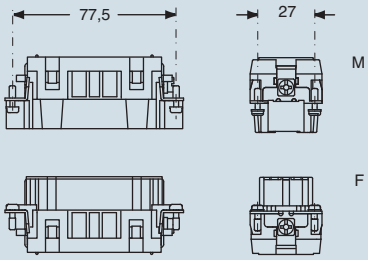


contacts side (front view)

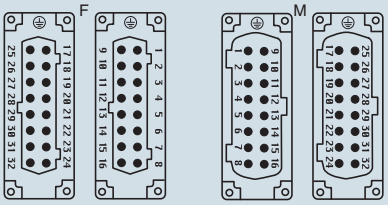


- inserts with plate for section conductors:
  0,5 - 4 mm² - AWG 20 - 12
- inserts without plate for section conductors:
  0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping lenght: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

dimensions in mm

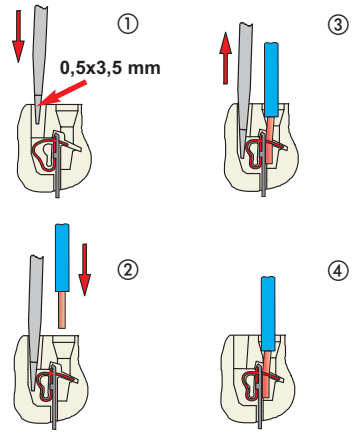


contacts side (front view)

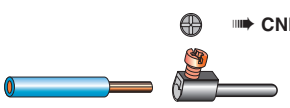


- inserts for section conductors:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

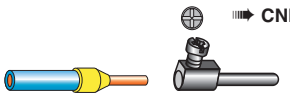
connection with spring terminal



1) for unprepared conductors



2) for bush terminal conductors



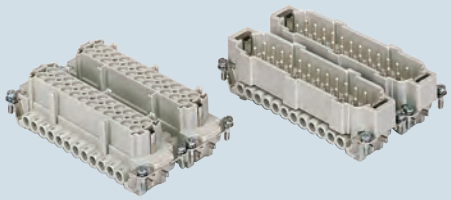
dimensions shown are not binding and may be changed without notice

CNE - CSE 48 poles + ⏚ 16A - 500V

enclosures:
size "104.62" page:

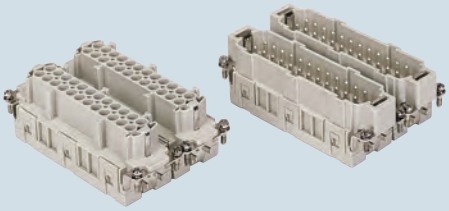
C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments 378

inserts,
screw terminal connections



silver plated contacts

inserts,
spring terminal connections



silver plated contacts

description	part No.	part No.	part No.	part No.
indirect, with plate **1)** female inserts, No. (1-24) and (25-48) male inserts, No. (1-24) and (25-48)	**CNEF 24 T** **CNEM 24 T**	**CNEF 24 TN** **CNEM 24 TN**		
direct, without plate **2)** female inserts, No. (1-24) and (25-48) male inserts, No. (1-24) and (25-48)	**CNEF 24 TX** **CNEM 24 TX**	**CNEF 24 TXN** **CNEM 24 TXN**		
spring terminal female inserts, No. (1-24) and (25-48) male inserts, No. (1-24) and (25-48)			**CSEF 24** **CSEM 24**	**CSEF 24 N** **CSEM 24 N**

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- cUL (UL for USA and Canada - CNE), UL (CSE), CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ (CNE) - ≤ 3 mΩ (CSE)
- for maximum current load, see the following load curves inserts, for more information see page 559

diagram CNE 48 poles

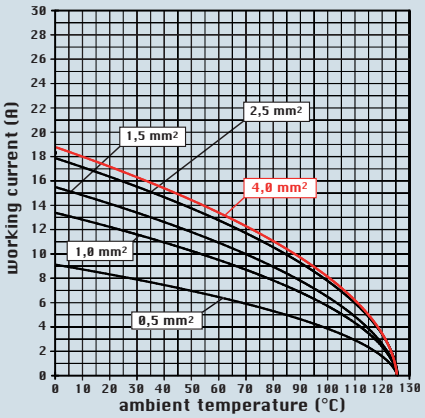
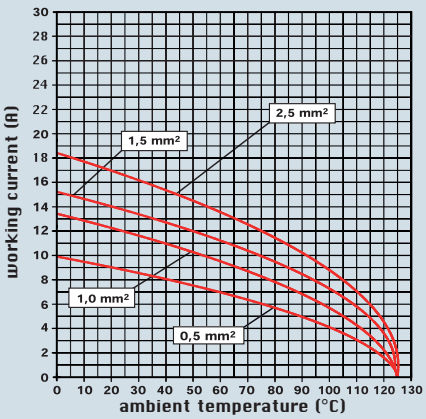
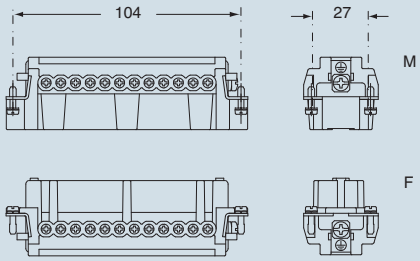


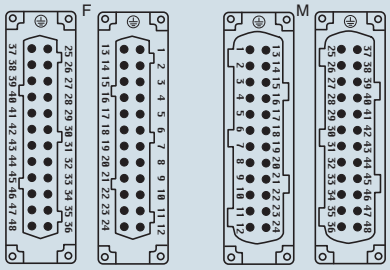
diagram CSE 48 poles



dimensions in mm

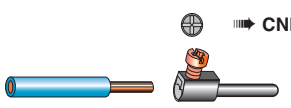


contacts side (front view)

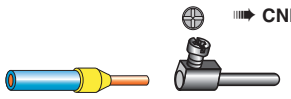


- inserts with plate for section conductors:
  0,5 - 4 mm² - AWG 20 - 12
- inserts without plate for section conductors:
  0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping lenght: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

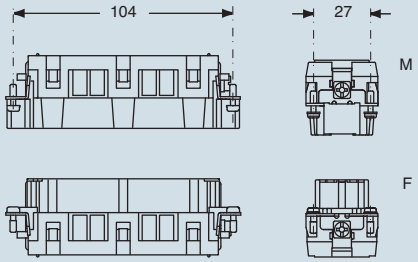
1) for unprepared conductors



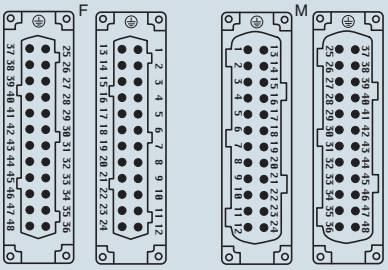
2) for bush terminal conductors



dimensions in mm

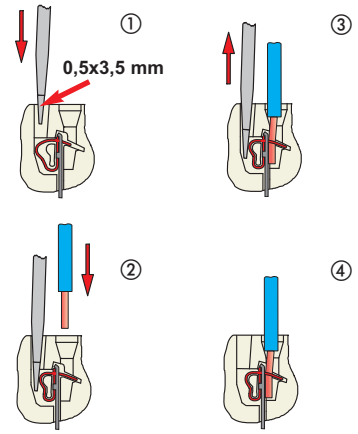


contacts side (front view)



- inserts for section conductors:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

connection with spring terminal



dimensions shown are not binding and may be changed without notice

CCE 6 poles + ⏚ 16A - 500V

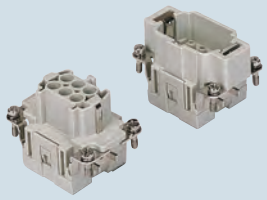
enclosures:
size "44.27" page:

C-TYPE IP65/IP66 ..... 240 - 243
C7 IP67, single lever 274
V-TYPE IP65/IP66, single lever 280/284 - 286
BIG hoods ..... 304 - 306
T-TYPE IP65 insulating ..... 326 - 327
T-TYPE / W IP66 insulating ..... 336 - 337
HYGIENIC T-TYPE / H IP66/IP69 ..... 350 - 351
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 358 - 359
W-TYPE for aggressive environments 373
EMC 392
central lever ..... 404 - 405
IP68 ..... 420 - 423
LS-TYPE ..... 450 - 451

panel supports: page:

COB ..... 462 - 463

inserts, crimp connections



16A crimp contacts
normal and for advanced opening
silver and gold plated

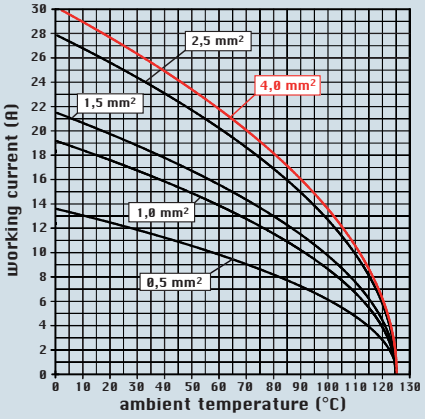
description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CCEF 06** **CCEM 06**		
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0**	**CCFD 0.3** **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0**
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	**CCMD 0.3** **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**
16A male crimp contacts for advanced opening 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves		**CC 0.5 AN** **CC 0.7 AN** **CC 1.0 AN** **CC 1.5 AN** **CC 2.5 AN**	

silver plated

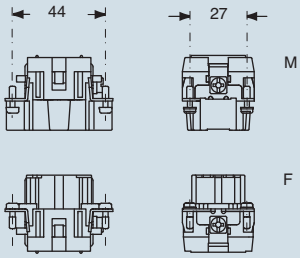
gold plated 1)

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- UL, CSA, DNV-GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 559

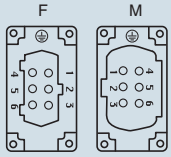
diagram CCE 06 poles



dimensions in mm

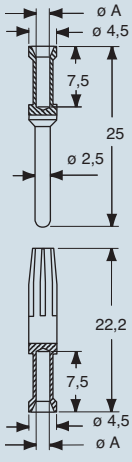


contacts side (front view)

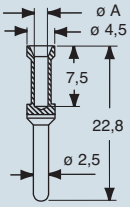


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section	conductor slot	conductors stripping length
mm²	ø A (mm)	mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

dimensions shown are not binding and may be changed without notice

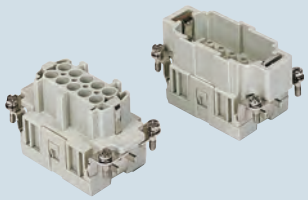
CCE 10 poles + ⏚ 16A - 500V

enclosures:
size "57.27" page:

C-TYPE IP65/IP66 ..... 244 - 249
C7 IP67, two levers 275
V-TYPE IP65/IP66, single lever 281/288 - 291
BIG hoods ..... 308 - 311
T-TYPE IP65 insulating ..... 328 - 329
T-TYPE / W IP66 insulating ..... 338 - 339
HYGIENIC T-TYPE / H IP66/IP69 ..... 352 - 353
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 360 - 361
W-TYPE for aggressive environments 374
EMC 393
central lever ..... 406 - 407
IP68 ..... 424 - 427
LS-TYPE ..... 452 - 453

panel supports: page:
COB ..... 462 - 463

inserts, crimp connections



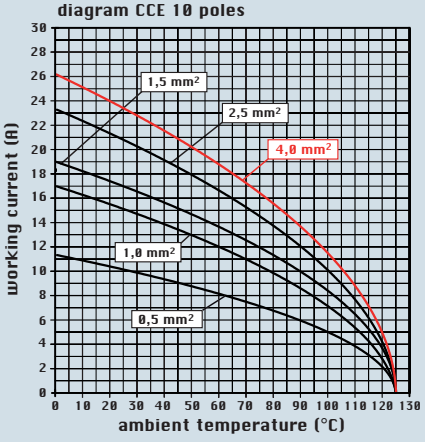
16A crimp contacts
normal and for advanced opening
silver and gold plated

description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CCEF 10** **CCEM 10**		
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0**	**CCFD 0.3** **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0**
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	**CCMD 0.3** **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**
16A male crimp contacts for advanced opening 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves		**CC 0.5 AN** **CC 0.7 AN** **CC 1.0 AN** **CC 1.5 AN** **CC 2.5 AN**	

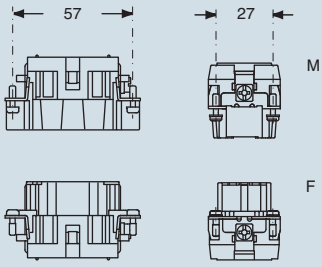
silver plated | **gold plated 1)**

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- UL, CSA, DNV-GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 559

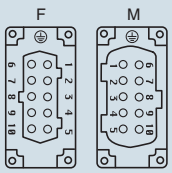
diagram CCE 10 poles



dimensions in mm

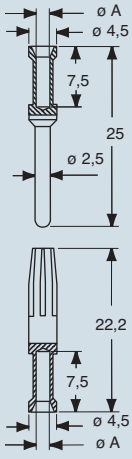


contacts side (front view)

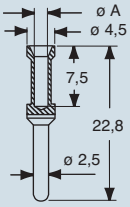


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

dimensions shown are not binding and may be changed without notice

CCE 16 poles + ⏚ 16A - 500V

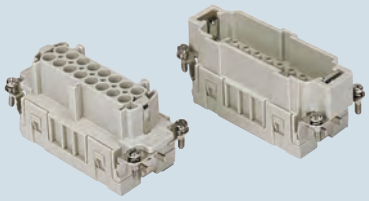
enclosures:
size "77.27" page:

C-TYPE IP65/IP66 ..... 250 - 256
C7 IP67, two levers 276
V-TYPE IP65/IP66, single lever 282/292 - 295
BIG hoods ..... 312 - 315
T-TYPE IP65 insulating ..... 330 - 331
T-TYPE / W IP66 insulating ..... 340 - 341
HYGIENIC T-TYPE / H IP66/IP69 ..... 354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
W-TYPE for aggressive environments 375
EMC 394
central lever ..... 408 - 409
IP68 ..... 428 - 431
LS-TYPE ..... 454 - 455

panel supports: page:

COB ..... 462 - 463

inserts, crimp connections



16A crimp contacts
normal and for advanced opening
silver and gold plated

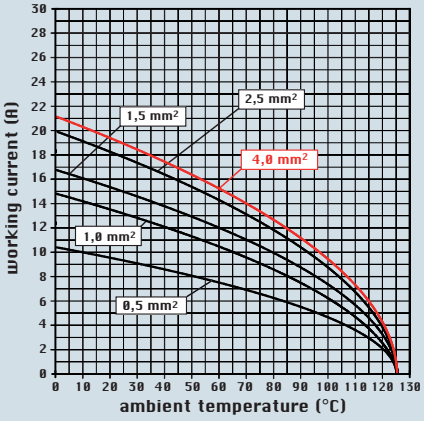
description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CCEF 16** **CCEM 16**		
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0**	**CCFD 0.3** **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0**
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	**CCMD 0.3** **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**
16A male crimp contacts for advanced opening 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves		**CC 0.5 AN** **CC 0.7 AN** **CC 1.0 AN** **CC 1.5 AN** **CC 2.5 AN**	

silver plated

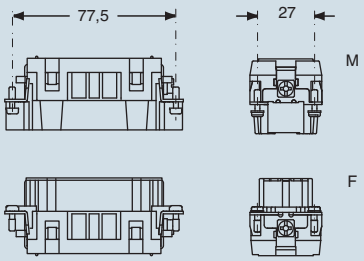
gold plated 1)

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- UL, CSA, DNV-GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 559

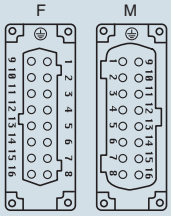
diagram CCE 16 poles



dimensions in mm

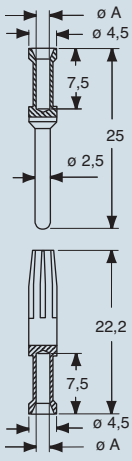


contacts side (front view)

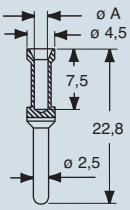


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

dimensions shown are not binding and may be changed without notice

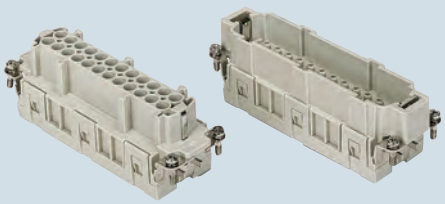
CCE 24 poles + ⏚ 16A - 500V

enclosures:
size "104.27" page:

C-TYPE IP65/IP66 ..... 258 - 266
C7 IP67, two levers 277
V-TYPE IP65/IP66, single lever 283/296 - 299
BIG hoods ..... 316 - 319
T-TYPE IP65 insulating ..... 332 - 333
T-TYPE / W IP66 insulating ..... 342 - 343
HYGIENIC T-TYPE / H IP66/IP69 ..... 356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
W-TYPE for aggressive environments 376
EMC 395
central lever ..... 410 - 412
IP68 ..... 432 - 435
LS-TYPE ..... 456 - 457

panel supports: page:
COB ..... 462 - 463

inserts, crimp connections



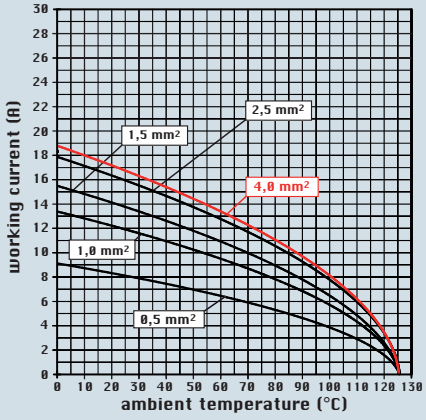
16A crimp contacts
normal and for advanced opening
silver and gold plated

description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CCEF 24** **CCEM 24**		
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0**	**CCFD 0.3** **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0**
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	**CCMD 0.3** **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**
16A male crimp contacts for advanced opening 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves		**CC 0.5 AN** **CC 0.7 AN** **CC 1.0 AN** **CC 1.5 AN** **CC 2.5 AN**	

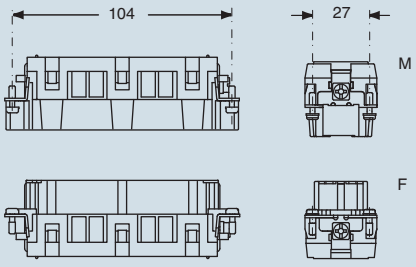
silver plated | **gold plated 1)**

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- UL, CSA, DNV-GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 559

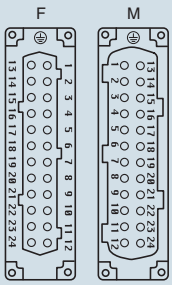
diagram CCE 24 poles



dimensions in mm

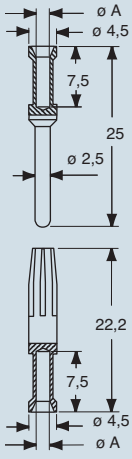


contacts side (front view)

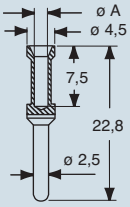


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

dimensions shown are not binding and may be changed without notice

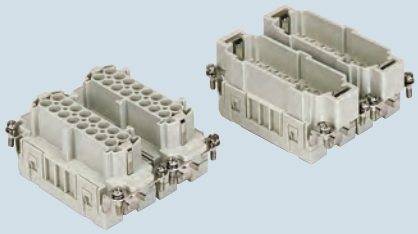
CCE 32 poles + ⏚ 16A - 500V

enclosures:
size "77.62" page:

C-TYPE IP65/IP66 ..... 267 - 270
W-TYPE for aggressive environments 377

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

inserts, crimp connections

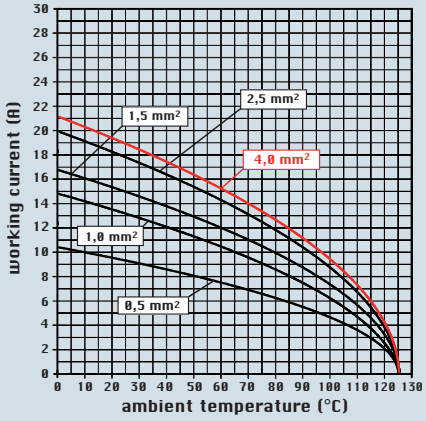


16A crimp contacts
normal and for advanced opening
silver and gold plated

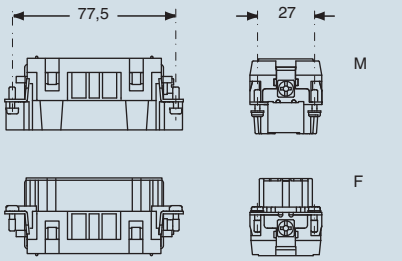
description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately)				
female inserts, No. (1-16) and (17-32)	**CCEF 16**	**CCEF 16 N**		
male inserts, No. (1-16) and (17-32)	**CCEM 16**	**CCEM 16 N**		
16A female contacts				
0,14-0,37 mm² AWG 26-22 one groove			**CCFA 0.3**	**CCFD 0.3**
0,5 mm² AWG 20 with no grooves			**CCFA 0.5**	**CCFD 0.5**
0,75 mm² AWG 18 one groove (back side)			**CCFA 0.7**	**CCFD 0.7**
1 mm² AWG 18 one groove			**CCFA 1.0**	**CCFD 1.0**
1,5 mm² AWG 16 two grooves			**CCFA 1.5**	**CCFD 1.5**
2,5 mm² AWG 14 three grooves			**CCFA 2.5**	**CCFD 2.5**
3 mm² AWG 12 one wide groove			**CCFA 3.0**	**CCFD 3.0**
4 mm² AWG 12 with no grooves			**CCFA 4.0**	**CCFD 4.0**
				silver plated / **gold plated 1)**
16A male contacts				
0,14-0,37 mm² AWG 26-22 one groove			**CCMA 0.3**	**CCMD 0.3**
0,5 mm² AWG 20 with no grooves			**CCMA 0.5**	**CCMD 0.5**
0,75 mm² AWG 18 one groove (back side)			**CCMA 0.7**	**CCMD 0.7**
1 mm² AWG 18 one groove			**CCMA 1.0**	**CCMD 1.0**
1,5 mm² AWG 16 two grooves			**CCMA 1.5**	**CCMD 1.5**
2,5 mm² AWG 14 three grooves			**CCMA 2.5**	**CCMD 2.5**
3 mm² AWG 12 one wide groove			**CCMA 3.0**	**CCMD 3.0**
4 mm² AWG 12 with no grooves			**CCMA 4.0**	**CCMD 4.0**
16A male crimp contacts for advanced opening				
0,5 mm² AWG 20 with no grooves			**CC 0.5 AN**	
0,75 mm² AWG 18 one groove (back side)			**CC 0.7 AN**	
1 mm² AWG 18 one groove			**CC 1.0 AN**	
1,5 mm² AWG 16 two grooves			**CC 1.5 AN**	
2,5 mm² AWG 14 three grooves			**CC 2.5 AN**	

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- UL, CSA, DNV-GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 559

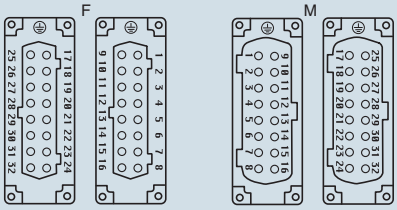
diagram CCE 32 poles



dimensions in mm

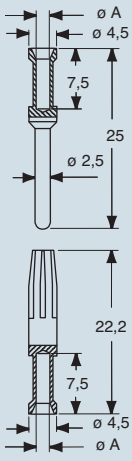


contacts side (front view)

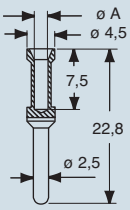


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section	conductor slot	conductors stripping length
mm²	ø A (mm)	mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

dimensions shown are not binding and may be changed without notice

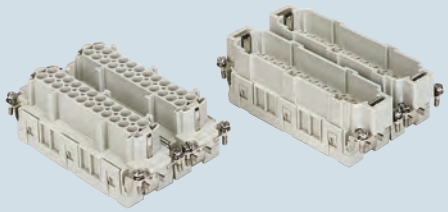
CCE 48 poles + ⏚ 16A - 500V

enclosures:
size "104.62" page:

C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments 378

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

inserts, crimp connections



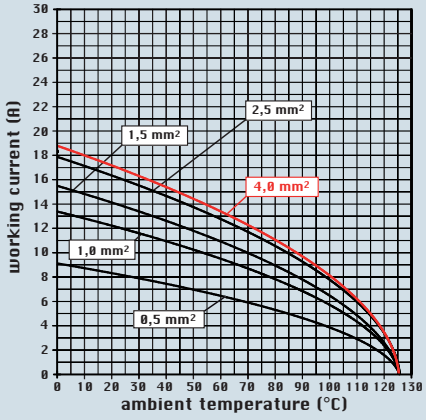
16A crimp contacts
normal and for advanced opening
silver and gold plated

description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately)				
female inserts, No. (1-24) and (25-48)	**CCEF 24**	**CCEF 24 N**		
male inserts, No. (1-24) and (25-48)	**CCEM 24**	**CCEM 24 N**		
16A female contacts				
0,14-0,37 mm² AWG 26-22 one groove			**CCFA 0.3**	**CCFD 0.3**
0,5 mm² AWG 20 with no grooves			**CCFA 0.5**	**CCFD 0.5**
0,75 mm² AWG 18 one groove (back side)			**CCFA 0.7**	**CCFD 0.7**
1 mm² AWG 18 one groove			**CCFA 1.0**	**CCFD 1.0**
1,5 mm² AWG 16 two grooves			**CCFA 1.5**	**CCFD 1.5**
2,5 mm² AWG 14 three grooves			**CCFA 2.5**	**CCFD 2.5**
3 mm² AWG 12 one wide groove			**CCFA 3.0**	**CCFD 3.0**
4 mm² AWG 12 with no grooves			**CCFA 4.0**	**CCFD 4.0**
16A male contacts				
0,14-0,37 mm² AWG 26-22 one groove			**CCMA 0.3**	**CCMD 0.3**
0,5 mm² AWG 20 with no grooves			**CCMA 0.5**	**CCMD 0.5**
0,75 mm² AWG 18 one groove (back side)			**CCMA 0.7**	**CCMD 0.7**
1 mm² AWG 18 one groove			**CCMA 1.0**	**CCMD 1.0**
1,5 mm² AWG 16 two grooves			**CCMA 1.5**	**CCMD 1.5**
2,5 mm² AWG 14 three grooves			**CCMA 2.5**	**CCMD 2.5**
3 mm² AWG 12 one wide groove			**CCMA 3.0**	**CCMD 3.0**
4 mm² AWG 12 with no grooves			**CCMA 4.0**	**CCMD 4.0**
16A male crimp contacts for advanced opening				
0,5 mm² AWG 20 with no grooves			**CC 0.5 AN**	
0,75 mm² AWG 18 one groove (back side)			**CC 0.7 AN**	
1 mm² AWG 18 one groove			**CC 1.0 AN**	
1,5 mm² AWG 16 two grooves			**CC 1.5 AN**	
2,5 mm² AWG 14 three grooves			**CC 2.5 AN**	

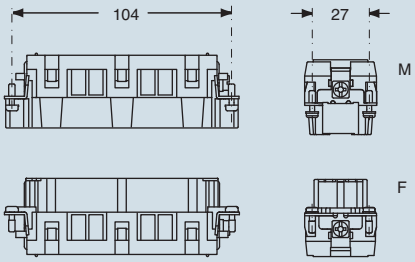
silver plated | **gold plated 1)**

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- UL, CSA, DNV-GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 559

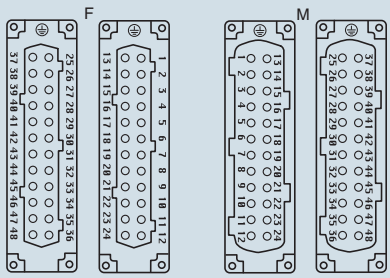
diagram CCE 48 poles



dimensions in mm

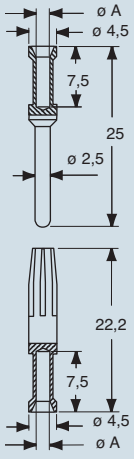


contacts side (front view)

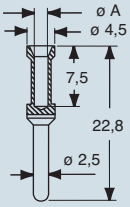


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section	conductor slot	conductors stripping length
mm²	ø A (mm)	mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

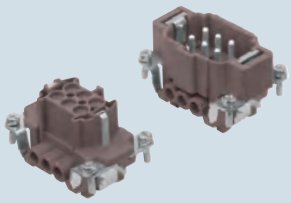
dimensions shown are not binding and may be changed without notice

CNE...RY 6 poles + ⏚ 16A - 500V

enclosures:
size “44.27” page:

for 180 °C 398

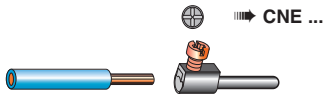
inserts,
screw terminal connections



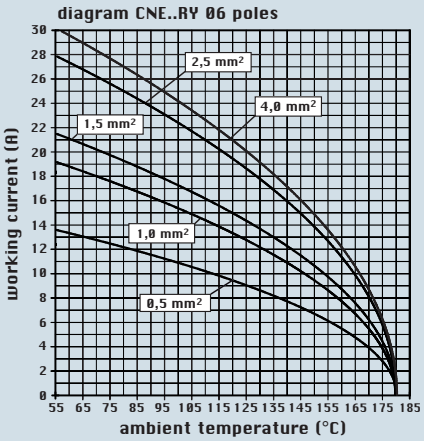
silver plated contacts

description	part No.
indirect, with plate **1)**, use in up to 180 °C female inserts with female contacts, brown male inserts with male contacts, brown	**CNEF 06 RY** **CNEM 06 RY**

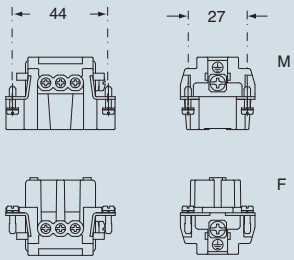
1) for unprepared conductors



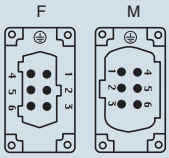
- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- cUL (UL for USA and Canada), CSA, CCC *, DNV-GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +180 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 560



dimensions in mm



contacts side (front view)



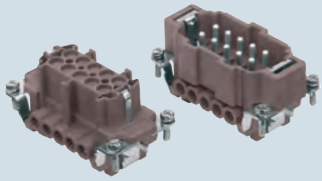
- inserts with plate for section conductors: 0,5 - 4 mm² - AWG 20 - 12
- conductors stripping lenght: 7 mm
- terminal screw torque: 0,5 Nm (4,4 lb.in), for more information see page 34 and 35

dimensions shown are not binding
and may be changed without notice

enclosures:
size "57.27" page:

for 180 °C 399

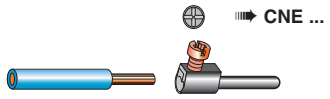
inserts,
screw terminal connections



silver plated contacts

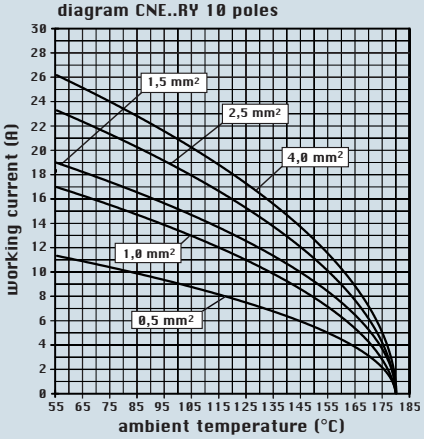
description	part No.
indirect, with plate **1)**, use in up to 180 °C female inserts with female contacts, brown male inserts with male contacts, brown	**CNEF 10 RY** **CNEM 10 RY**

1) for unprepared conductors

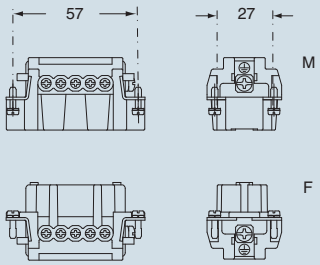


- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- cUL (UL for USA and Canada), CSA, CCC *, DNV-GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +180 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 560

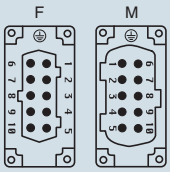
diagram CNE..RY 10 poles



dimensions in mm



contacts side (front view)



- inserts with plate for section conductors: 0,5 - 4 mm² - AWG 20 - 12
- conductors stripping lenght: 7 mm
- terminal screw torque: 0,5 Nm (4,4 lb.in), for more information see page 34 and 35

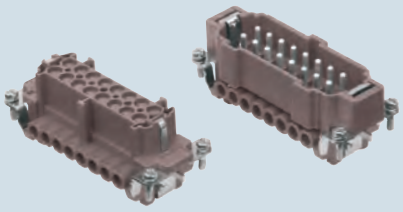
dimensions shown are not binding
and may be changed without notice

CNE...RY 16 poles + ⏚ 16A - 500V

enclosures:
size “77.27” page:

for 180 °C 400

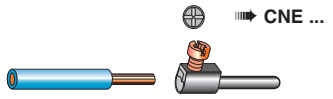
inserts,
screw terminal connections



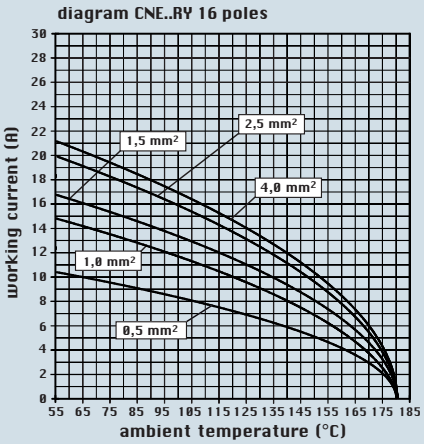
silver plated contacts

description	part No.
indirect, with plate **1)**, use in up to 180 °C female inserts with female contacts, brown male inserts with male contacts, brown	**CNEF 16 RY** **CNEM 16 RY**

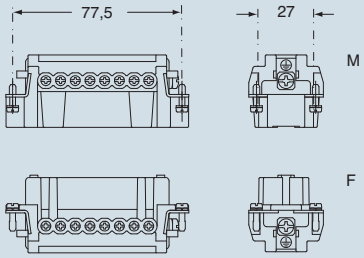
1) for unprepared conductors



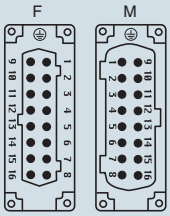
- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- cUL (UL for USA and Canada), CSA, CCC *, DNV-GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +180 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 560



dimensions in mm



contacts side (front view)



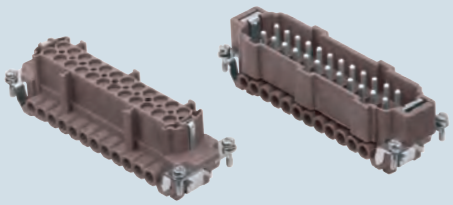
- inserts with plate for section conductors: 0,5 - 4 mm² - AWG 20 - 12
- conductors stripping lenght: 7 mm
- terminal screw torque: 0,5 Nm (4,4 lb.in), for more information see page 34 and 35

dimensions shown are not binding
and may be changed without notice

enclosures:
size "104.27" page:

for 180 °C 401

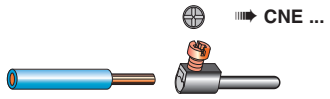
inserts,
screw terminal connections



silver plated contacts

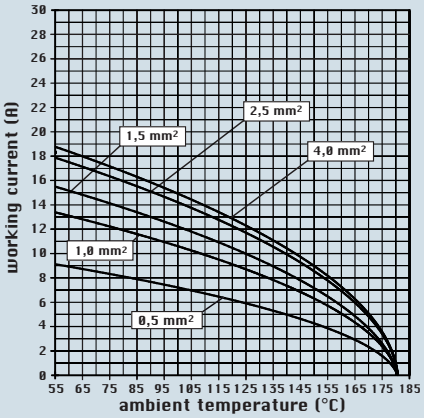
description	part No.
indirect, with plate **1)**, use in up to 180 °C female inserts with female contacts, brown male inserts with male contacts, brown	**CNEF 24 RY** **CNEM 24 RY**

1) for unprepared conductors

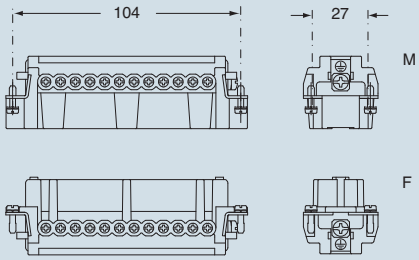


- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- cUL (UL for USA and Canada), CSA, CCC *, DNV-GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +180 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 560

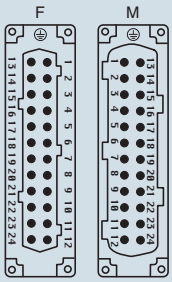
diagram CNE..RY 24 poles



dimensions in mm



contacts side (front view)



- inserts with plate for section conductors: 0,5 - 4 mm² - AWG 20 - 12
- conductors stripping lenght: 7 mm
- terminal screw torque: 0,5 Nm (4,4 lb.in), for more information see page 34 and 35

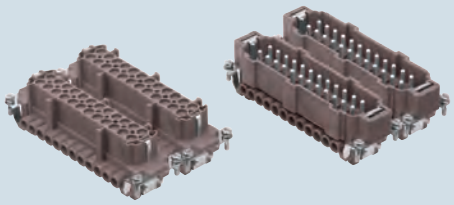
dimensions shown are not binding
and may be changed without notice

CNE...RY 48 poles + ⏚ 16A - 500V

enclosures:
size "104.62" page:

for 180 °C 402

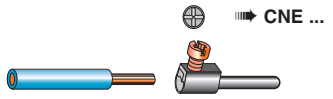
inserts,
screw terminal connections



silver plated contacts

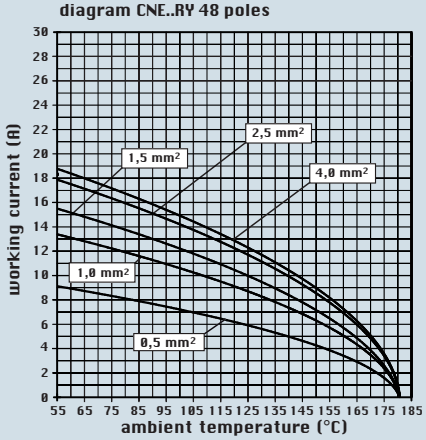
description	part No.	part No.
indirect, with plate **1)**, use in temperatures up to 180 °C		
female inserts, No.(1-24) and (25-48), brown	**CNEF 24 RY**	**CNEF 24 RYN**
male inserts, No. (1-24) and (25-48), brown	**CNEM 24 RY**	**CNEM 24 RYN**

1) for unprepared conductors

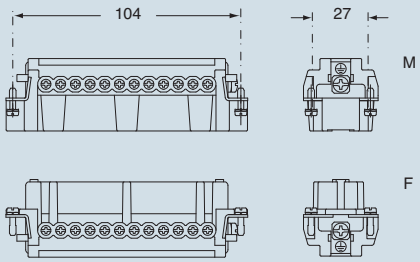


- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- cUL (UL for USA and Canada), CSA, CCC *, DNV-GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +180 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 560

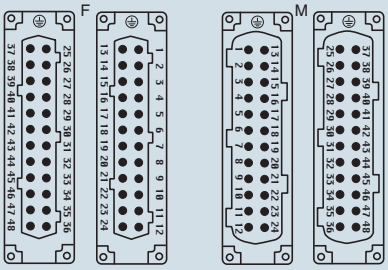
diagram CNE..RY 48 poles



dimensions in mm

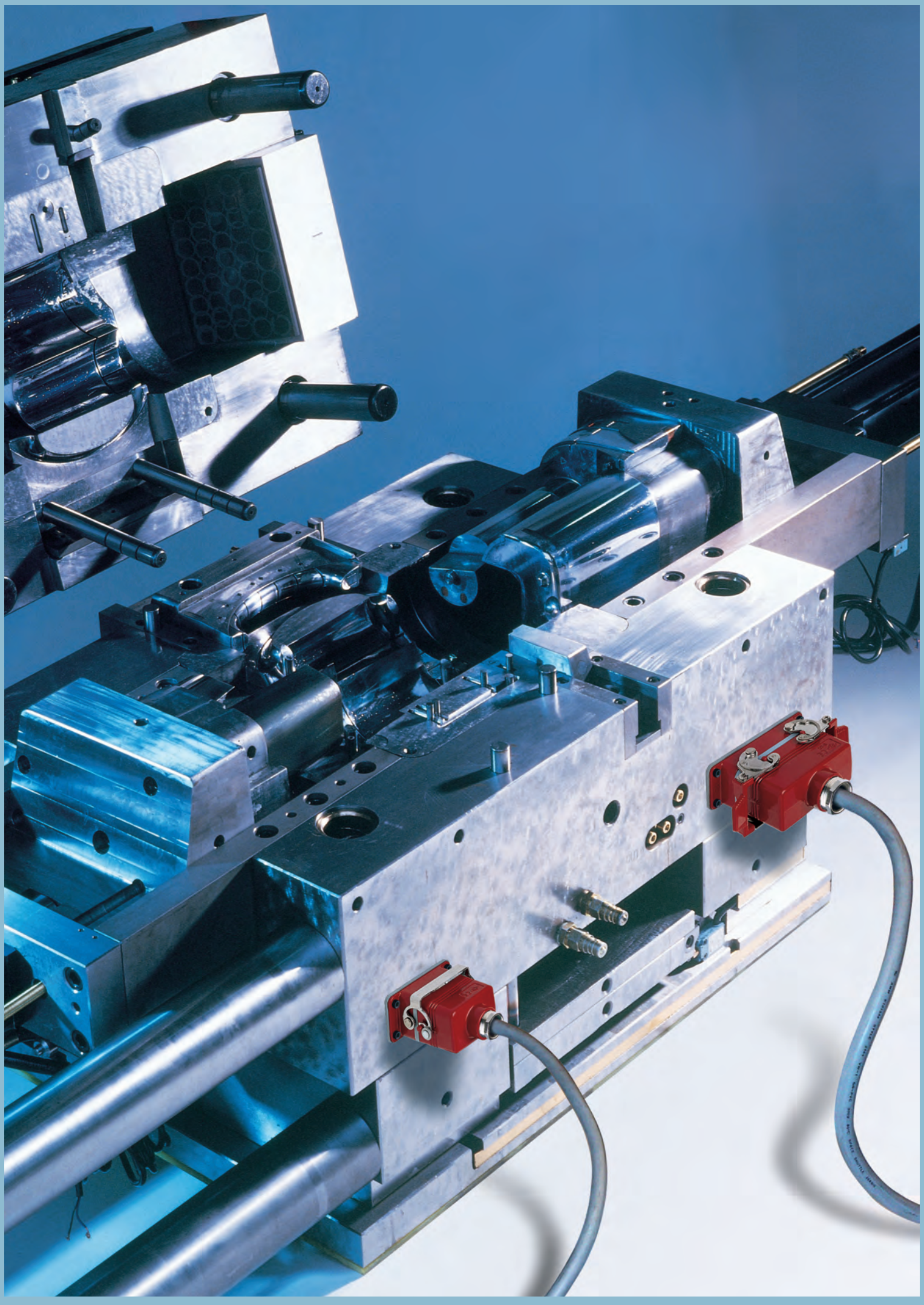


contacts side (front view)



- inserts with plate for section conductors: 0,5 - 4 mm² - AWG 20 - 12
- conductors stripping lenght: 7 mm
- terminal screw torque: 0,5 Nm (4,4 lb.in), for more information see page 34 and 35

dimensions shown are not binding
and may be changed without notice



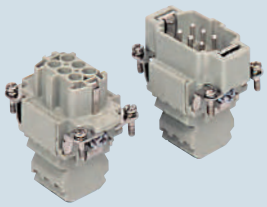
enclosures:
size "44.27" page:

C-TYPE IP65/IP66 ..... 240 - 243
C7 IP67, single lever 274
V-TYPE IP65/IP66, single lever 280/284 - 286
BIG hoods ..... 304 - 306
T-TYPE IP65 insulating ..... 326 - 327
T-TYPE / W IP66 insulating ..... 336 - 337
HYGIENIC T-TYPE / H IP66/IP69 ..... 350 - 351
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 358 - 359
W-TYPE for aggressive environments 373
EMC 392
central lever ..... 404 - 405
IP68 ..... 420 - 423
LS-TYPE ..... 450 - 451

panel supports: page:

COB ..... 462 - 463

inserts,
connection with dual spring terminal per pole



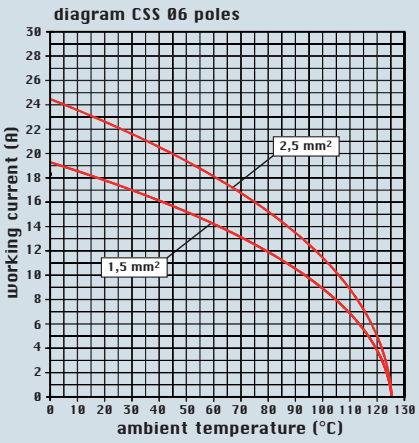
silver plated contacts

description	part No.
dual spring terminal per pole female inserts with female contacts male inserts with male contacts	**CSSF 06** **CSSM 06**

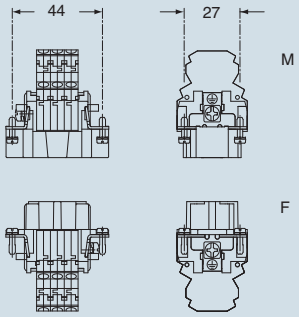
The CSS series inserts can be inserted in flush mounted enclosures or in fixed / portable high enclosures.

- can be mated with CNE, CSE, CCE, CTSE, CSH inserts

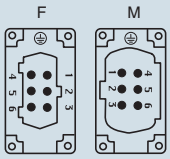
- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 560



dimensions in mm

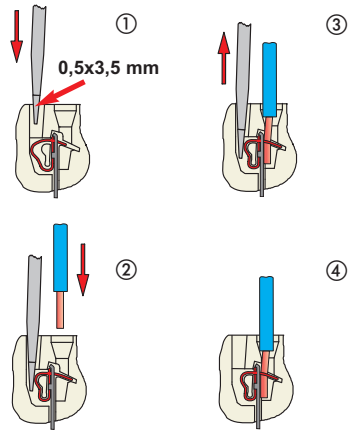


contacts side (front view)



- inserts with plate, for section conductors:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

connection with spring terminal



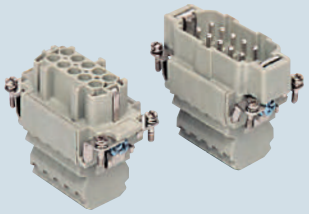
dimensions shown are not binding
and may be changed without notice

enclosures:
size "57.27" page:

C-TYPE IP65/IP66 ..... 244 - 249
C7 IP67, two levers 275
V-TYPE IP65/IP66, single lever 281/288 - 291
BIG hoods ..... 308 - 311
T-TYPE IP65 insulating ..... 328 - 329
T-TYPE / W IP66 insulating ..... 338 - 339
HYGIENIC T-TYPE / H IP66/IP69 ..... 352 - 353
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 360 - 361
W-TYPE for aggressive environments 374
EMC 393
central lever ..... 406 - 407
IP68 ..... 424 - 427
LS-TYPE ..... 452 - 453

panel supports: page:
COB ..... 462 - 463

inserts,
connection with dual spring terminal per pole



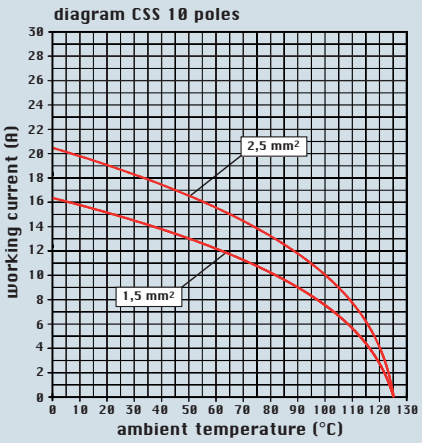
silver plated contacts

description	part No.
dual spring terminal per pole female inserts with female contacts male inserts with male contacts	**CSSF 10** **CSSM 10**

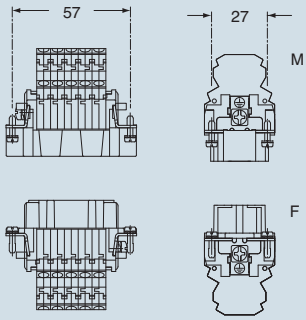
The CSS series inserts can be inserted in flush mounted enclosures or in fixed / portable high enclosures.

- can be mated with CNE, CSE, CCE, CTSE, CSH inserts

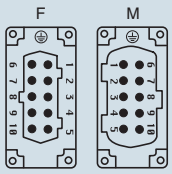
- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 560



dimensions in mm

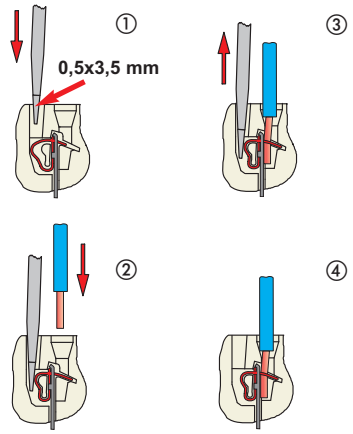


contacts side (front view)



- inserts with plate, for section conductors:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

connection with spring terminal



dimensions shown are not binding
and may be changed without notice

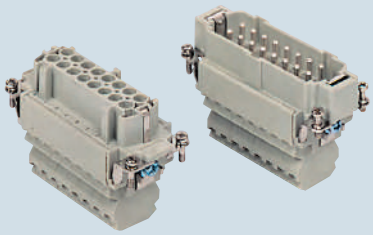
CSS 16 poles + ⏚ 16A - 500V

enclosures:
size “77.27” page:

C-TYPE IP65/IP66 ..... 250 - 256
C7 IP67, two levers 276
V-TYPE IP65/IP66, single lever 282/292 - 295
BIG hoods ..... 312 - 315
T-TYPE IP65 insulating ..... 330 - 331
T-TYPE / W IP66 insulating ..... 340 - 341
HYGIENIC T-TYPE / H IP66/IP69 ..... 354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
W-TYPE for aggressive environments 375
EMC 394
central lever ..... 408 - 409
IP68 ..... 428 - 431
LS-TYPE ..... 454 - 455

panel supports: page:
COB ..... 462 - 463

inserts,
connection with dual spring terminal per pole



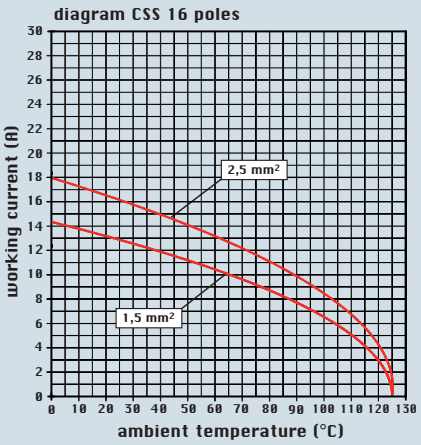
silver plated contacts

description	part No.
dual spring terminal per pole female inserts with female contacts male inserts with male contacts	**CSSF 16** **CSSM 16**

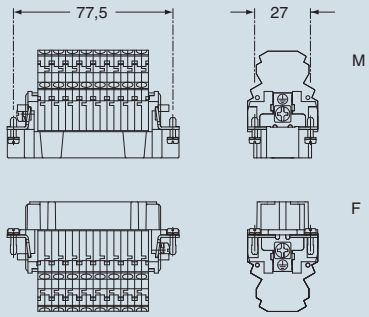
The CSS series inserts can be inserted in flush mounted enclosures or in fixed / portable high enclosures.

- can be mated with CNE, CSE, CCE, CTSE, CSH inserts

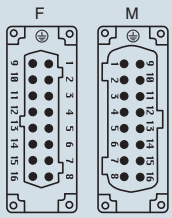
- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 560



dimensions in mm

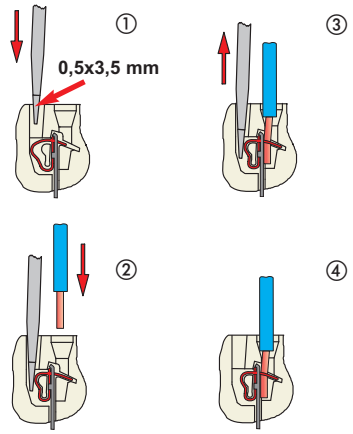


contacts side (front view)



- inserts with plate, for section conductors:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

connection with spring terminal



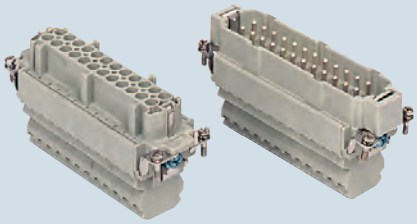
dimensions shown are not binding
and may be changed without notice

enclosures:
size "104.27" page:

C-TYPE IP65/IP66 ..... 258 - 266
C7 IP67, two levers 277
V-TYPE IP65/IP66, single lever 283/296 - 299
BIG hoods ..... 316 - 319
T-TYPE IP65 insulating ..... 332 - 333
T-TYPE / W IP66 insulating ..... 342 - 343
HYGIENIC T-TYPE / H IP66/IP69 ..... 356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
W-TYPE for aggressive environments 376
EMC 395
central lever ..... 410 - 412
IP68 ..... 432 - 435
LS-TYPE ..... 456 - 457

panel supports: page:
COB ..... 462 - 463

inserts,
connection with dual spring terminal per pole



silver plated contacts

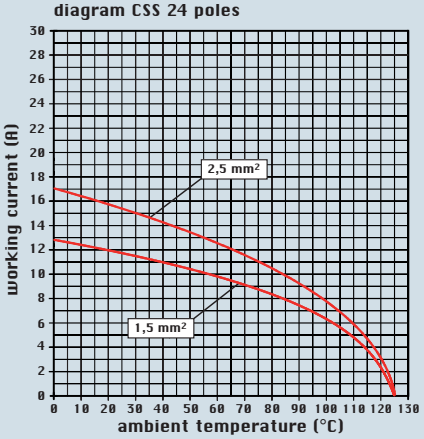
description	part No.
dual spring terminal per pole female inserts with female contacts male inserts with male contacts	**CSSF 24** **CSSM 24**

The CSS series inserts can be inserted in flush mounted enclosures or in fixed / portable high enclosures.

- can be mated with CNE, CSE, CCE, CTSE, CSH inserts

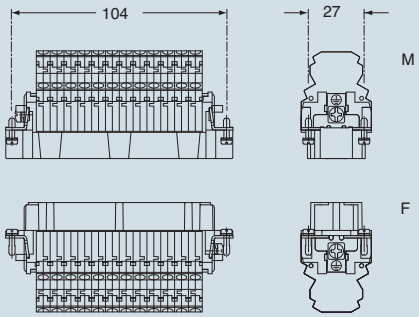
- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 560

diagram CSS 24 poles

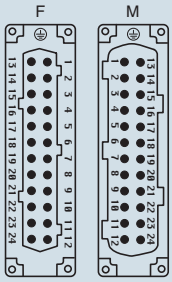


dimensions shown are not binding
and may be changed without notice

dimensions in mm

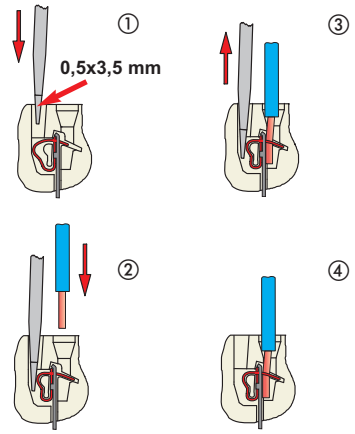


contacts side (front view)



- inserts with plate, for section conductors:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

connection with spring terminal



CSS 32 poles + ⏚ 16A - 500V

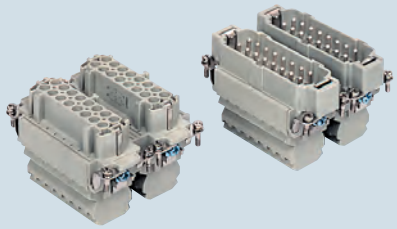
enclosures:
size "77.62" page:

C-TYPE IP65/IP66 ..... 267 - 270
W-TYPE for aggressive environments 377

The CSS series inserts can be inserted in flush mounted enclosures or in fixed / portable high enclosures.

- can be mated with CNE, CSE, CCE, CSH inserts

inserts, connection with dual spring terminal per pole

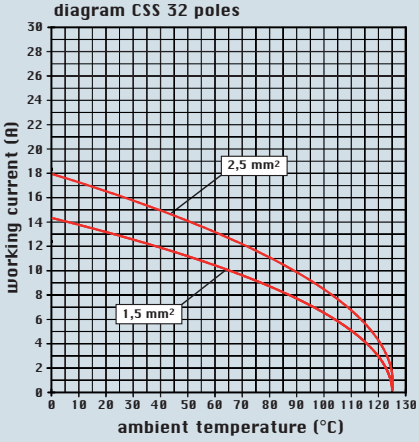


silver plated contacts

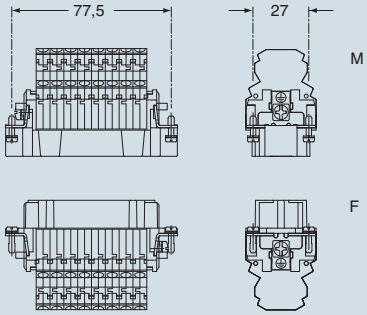
description	part No.	part No.
dual spring terminal per pole female inserts, No. (1-16) and (17-32) male inserts, No. (1-16) and (17-32)	**CSSF 16** **CSSM 16**	**CSSF 16 N** **CSSM 16 N**

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 560

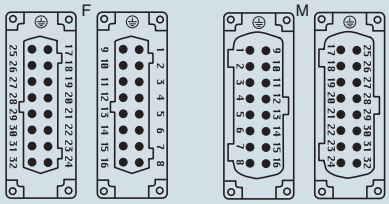
diagram CSS 32 poles



dimensions in mm

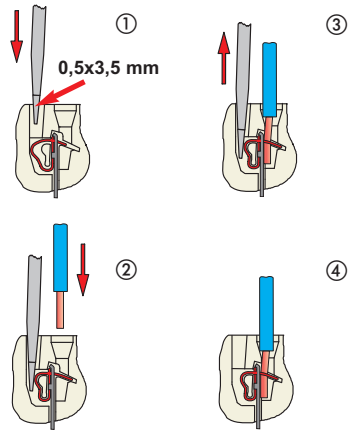


contacts side (front view)



- inserts with plate, for section conductors:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

connection with spring terminal



dimensions shown are not binding
and may be changed without notice

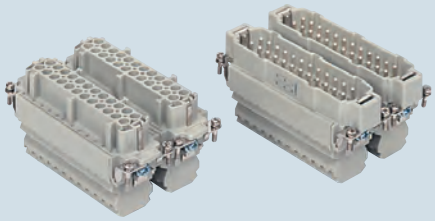
enclosures:
size "104.62" page:

C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments 378

The CSS series inserts can be inserted in flush mounted enclosures or in fixed / portable high enclosures.

- can be mated with CNE, CSE, CCE, CSH inserts

inserts,
connection with dual spring terminal per pole

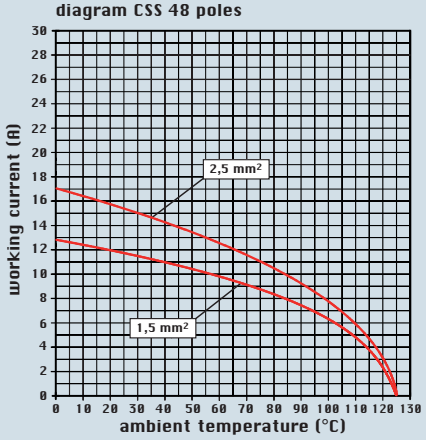


silver plated contacts

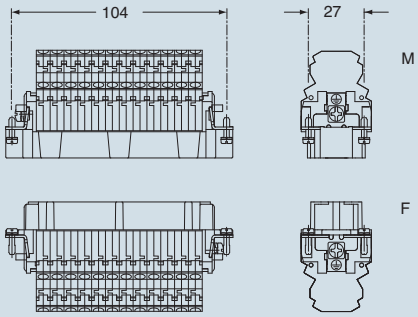
description	part No.	part No.
dual spring terminal per pole female inserts, No. (1-24) and (25-48) male inserts, No. (1-24) and (25-48)	**CSSF 24** **CSSM 24**	**CSSF 24 N** **CSSM 24 N**

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 560

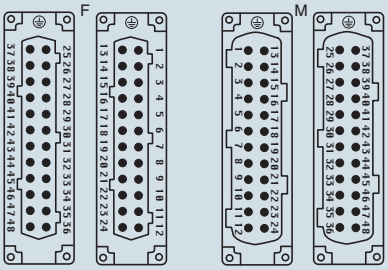
diagram CSS 48 poles



dimensions in mm

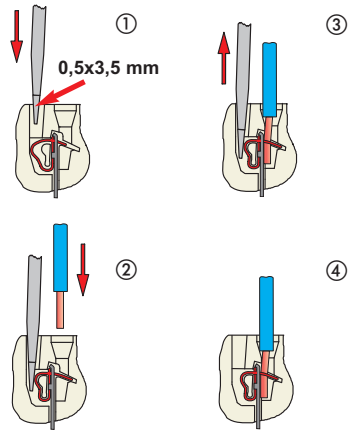


contacts side (front view)



- inserts with plate, for section conductors:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

connection with spring terminal



dimensions shown are not binding
and may be changed without notice

CT - CTSE series

Inserts with incorporated terminal block for multipole connectors (16A max versions)

Use.

The CT - CTSE series multipole connectors (with incorporated terminal block) are recommended for greater cost-saving and safety for use on machines and command and control panels.

The CT - CTSE series inserts (16A max versions) are supplied in the plug or socket versions and may be mounted with insertion from the front of the enclosure (**Figure 1** for all the polarities of the inserts) or with insertion from the rear of the enclosure (**Figure 2**, only for 16 and 24-pole inserts).

As an alternative to the traditional terminal blocks, the inserts can be mounted inside the control panels on DIN EN rails (**Figure 5**) using suitable accessories providing the added advantage of easy sectioning.

The special structure of the CT - CTSE inserts has all the conductor connections on the same side providing for easier wiring and a complete view of the work area.

The terminal block also has slots for housing the identification wire markers of each contact.
Wire markers of different manufacturers may be used such as: Cabur, Grafoplast, Modernotecnica, Phoenix, Siemens, Wago, Weidmüller.

The CT - CTSE series is available in the versions "left" and "right" for mounting on the left (**Figure 3**) or on the right (**Figure 4**) of the control panel walls.
This characteristic is determined by the position of contact "1" and the ground terminal in the upper part of the insert terminal block for both left and right mounting.

The installation of inserts on DIN rails (**Figure 5**) inside the control panels is usually made to facilitate the wiring into sectionable parts.
In this case the degree of protection for coupled connectors is IP20 (in accordance with EN 60529).

This type of mounting requires supports (CT APE) to be provided to the inserts suitable for mounting on DIN EN 60715 rails.

Furthermore, to ensure a stable and secure mating between the CT and CTSE inserts installed on DIN rails and counterparts CNE, CSE, CCE, CSH, CSS mating screws CRBF (female) and CRBM (male) are recommended, to replace the ordinary fastening screws to the enclosures (**Figure 5**).

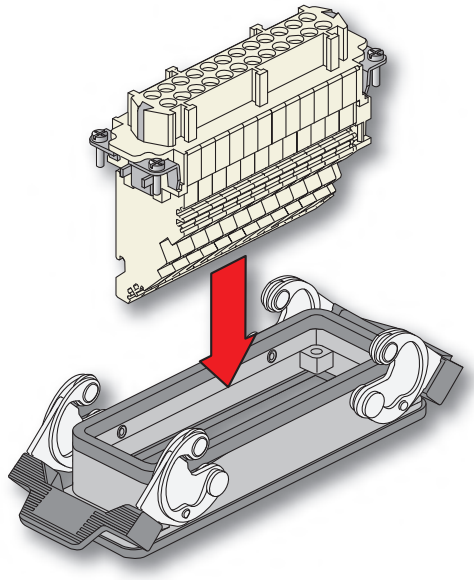


Figure 1 (front mounting)
The insert is inserted into the bulkhead housing without wired conductors or with pre-wired conductors that are not connected at the opposite end.

Mounting for inserts of 06, 10, 16 and 24 poles

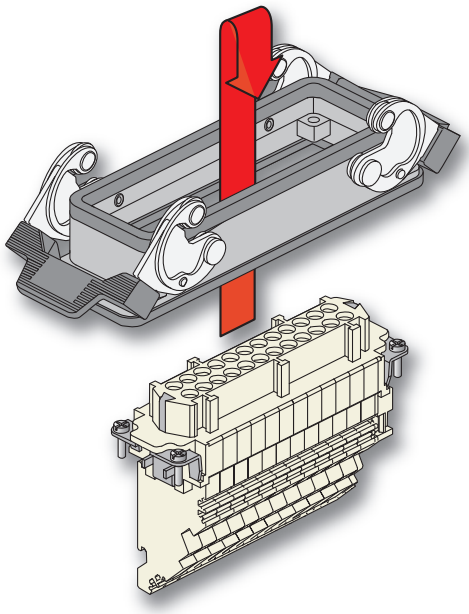


Figure 2 (rear mounting)
The insert is inserted into the bulkheadhousing with pre-wired conductors connected at the opposite end.

Mounting for inserts of 16 and 24 poles

Except version T-TYPE

CT - CTSE series

Inserts with incorporated terminal block for multipole connectors

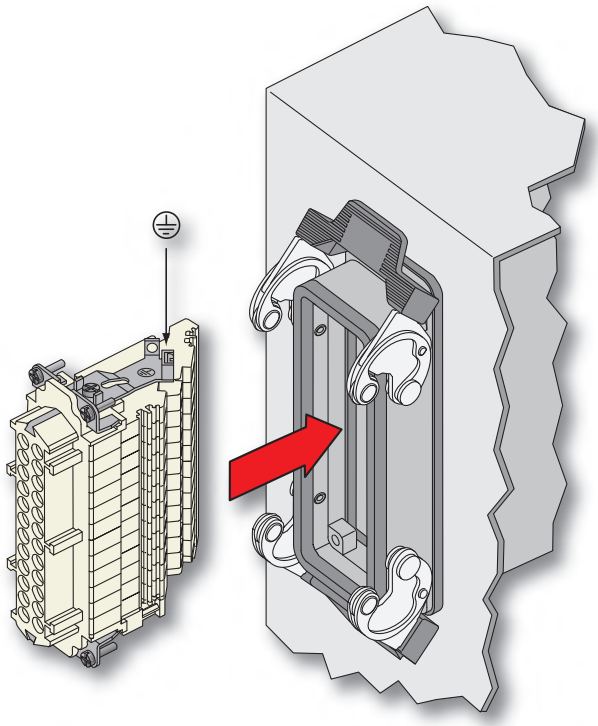


Figure 3 (left mounting)

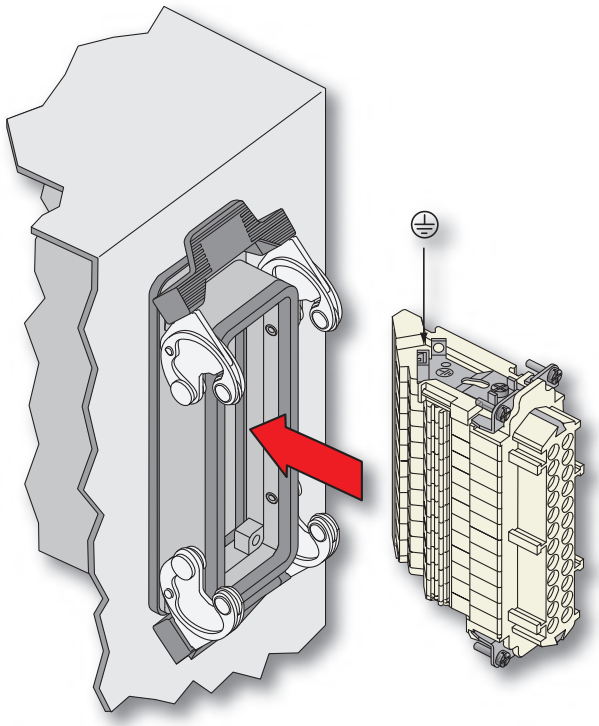


Figure 4 (right mounting)

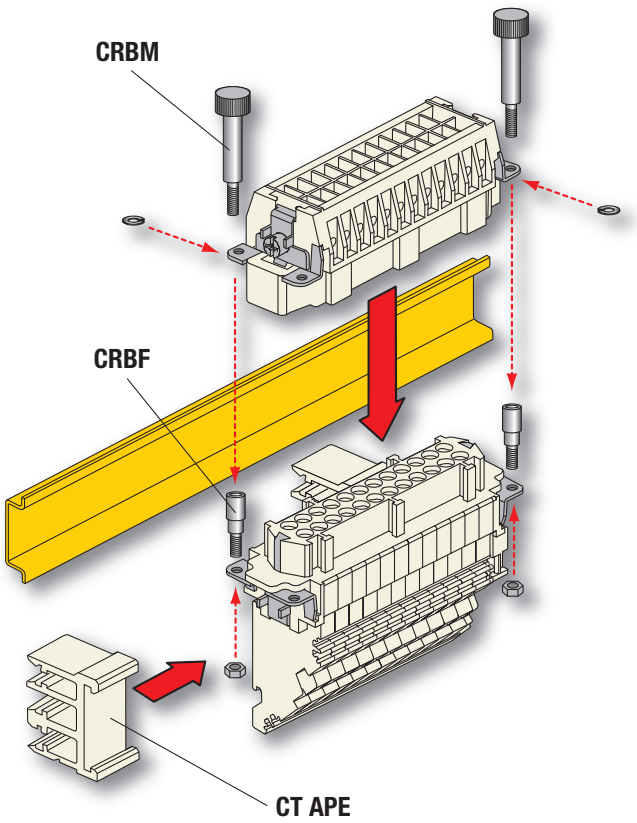
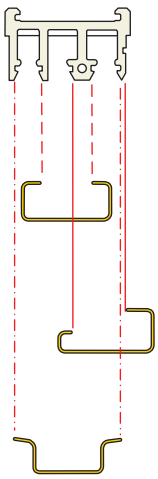


Figure 5 (mounting on DIN rail)



CT APE
possibility of coupling to DIN EN 60715 rail (for a greater stability of the CT, CTSE inserts of 16 and 24 poles we recommend using the two CT APE supports)

EN 60715
C 30

EN 60715
G 32

EN 60715
TH 35-7,5 and **TH 35-15**

Accessories for CT, CTSE inserts

- support for mounting on DIN rail (**CT APE** page 476)
- inserts coupling screws (**CRBM** and **CRBF** page 476)
- cable-clamping plates (**CRAD** and **CRAS** page 476)

CT 6 poles + ⏚ 16A - 400V CTSE 6 poles + ⏚ 16A - 500V

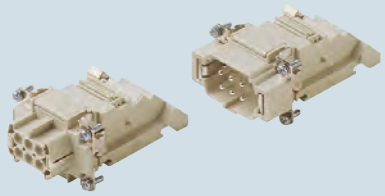
enclosures *):
size "44.27" page:

C-TYPE IP65/IP66 ..... 240 and 243
C7 IP67, single lever 274
V-TYPE IP65/IP66, single lever 280/284
BIG hoods ..... 304 - 306
T-TYPE IP65 insulating ..... 326 - 327
T-TYPE / W IP66 insulating ..... 336 - 337
HYGIENIC T-TYPE / H IP66/IP69 ..... 350 - 351
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 358 - 359
W-TYPE for aggressive environments 373
EMC 392
central lever 404
LS-TYPE 450

*) only bulkhead mounted housing and BIG hoods

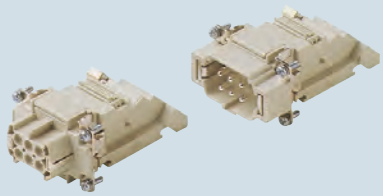
- can be mated with CNE, CCE, CSS, CSE, CSH inserts
- inserts may be fitted from front of enclosure

terminal block inserts
screw terminal connection



silver plated contacts

terminal block inserts
spring terminal connection



silver plated contacts

description	part No.	part No.	part No.	part No.
side mounting (see page 129) female inserts with female contacts **1)** male inserts with male contacts **1)**	left **CTF 06 L** **CTM 06 L**	right **CTF 06 R** **CTM 06 R**		
side mounting (see page 129) female inserts with female contacts male inserts with male contacts			left **CTSEF 06 L** **CTSEM 06 L**	right **CTSEF 06 R** **CTSEM 06 R**

1) for non-prepared conductors

- characteristics according to EN 61984:
  16A 230/400V 4kV 3 (CT)
  16A 400V 4kV 2 (CT)
  16A 500V 6kV 3 (CTSE)
  16A 400/690V 6kV 2 (CTSE)
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 4 mΩ
- for maximum current load, see the following load curves inserts, for more information see pages 560, 561

diagram CT 06 poles

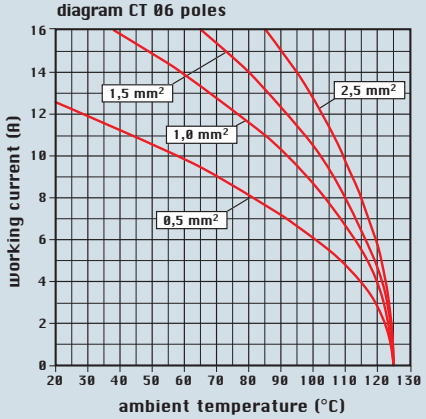
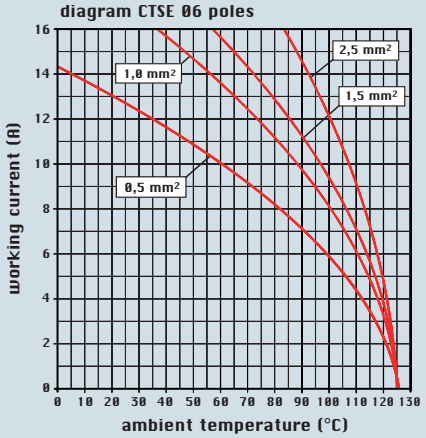


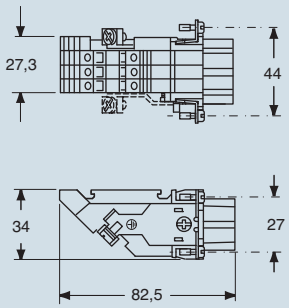
diagram CTSE 06 poles



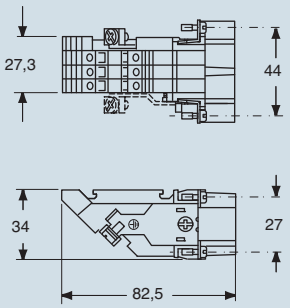
dimensions shown are not binding
and may be changed without notice

dimensions in mm

female inserts (CTF and CTSEF)

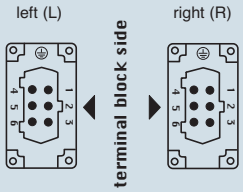


male inserts (CTM and CTSEM)

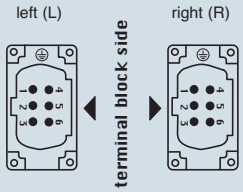


contacts side (front view)

female inserts (CTF and CTSEF)



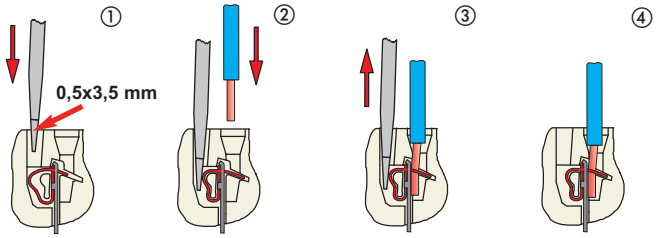
male inserts (CTM and CTSEM)



- CT inserts with plate, for section conductors:
  0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping lenght: 12 mm
- terminal screw torque: 0,4 Nm (3,54 lb.in), for more information see page 34 and 35

- CTSE spring inserts for section conductors:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

connection with spring terminal



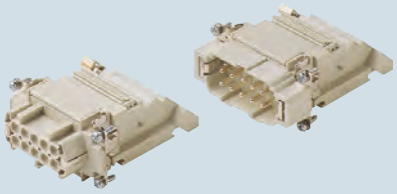
enclosures *):
size "57.27" page:

C-TYPE IP65/IP66 244
C7 IP67, two levers 275
V-TYPE IP65/IP66, single lever 281/288
BIG hoods ..... 308 - 311
T-TYPE IP65 insulating ..... 328 - 329
T-TYPE / W IP66 insulating ..... 338 - 339
HYGIENIC T-TYPE / H IP66/IP69 ..... 352 - 353
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 360 - 361
W-TYPE for aggressive environments 374
EMC 393
central lever 406
LS-TYPE 452

*) only bulkhead mounted housing and BIG hoods

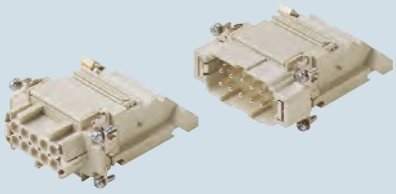
- can be mated with CNE, CCE, CSS, CSE, CSH inserts
- inserts may be fitted from front of enclosure

terminal block inserts
screw terminal connection



silver plated contacts

terminal block inserts
spring terminal connection



silver plated contacts

description	part No.	part No.	part No.	part No.
side mounting (see page 129) female inserts with female contacts **1)** male inserts with male contacts **1)**	left **CTF 10 L** **CTM 10 L**	right **CTF 10 R** **CTM 10 R**		
side mounting (see page 129) female inserts with female contacts male inserts with male contacts			left **CTSEF 10 L** **CTSEM 10 L**	right **CTSEF 10 R** **CTSEM 10 R**

1) for non-prepared conductors

- characteristics according to EN 61984:
  16A 230/400V 4kV 3 (CT)
  16A 400V 4kV 2 (CT)
  16A 500V 6kV 3 (CTSE)
  16A 400/690V 6kV 2 (CTSE)
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 4 mΩ
- for maximum current load, see the following load curves inserts, for more information see pages 560, 561

diagram CT 10 poles

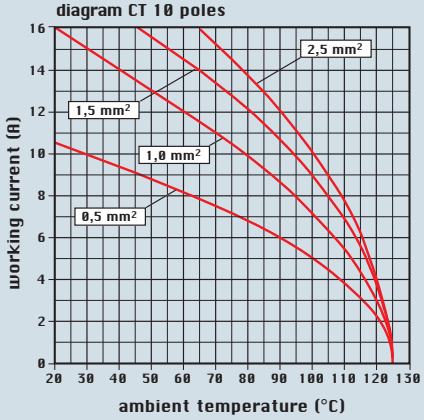
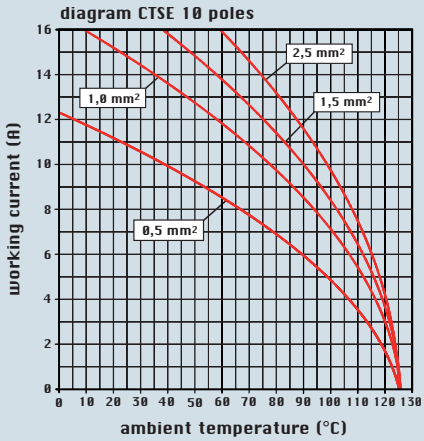


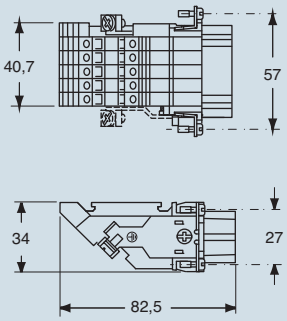
diagram CTSE 10 poles



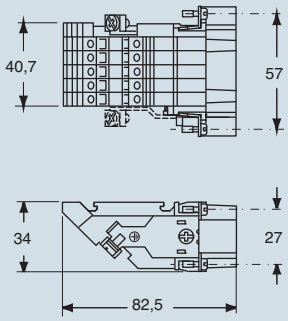
dimensions shown are not binding
and may be changed without notice

dimensions in mm

female inserts (CTF and CTSEF)

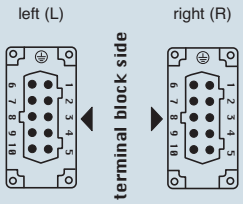


male inserts (CTM and CTSEM)

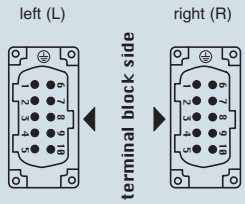


contacts side (front view)

female inserts (CTF and CTSEF)



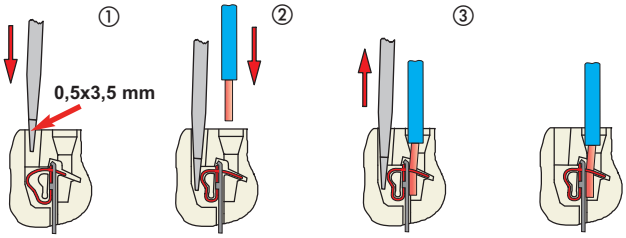
male inserts (CTM and CTSEM)



- CT inserts with plate, for section conductors:
  0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping lenght: 12 mm
- terminal screw torque: 0,4 Nm (3,54 lb.in), for more information see page 34 and 35

- CTSE spring inserts for section conductors:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

connection with spring terminal



CT 16 poles + ⏚ 16A - 400V CTSE 16 poles + ⏚ 16A - 500V

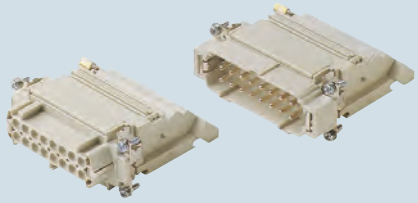
enclosures *):
size "77.27" page:

C-TYPE IP65/IP66 250
C7 IP67, two levers 276
V-TYPE IP65/IP66, single lever 282/292
BIG hoods ..... 312 - 315
T-TYPE IP65 insulating ..... 330 - 331
T-TYPE / W IP66 insulating ..... 340 - 341
HYGIENIC T-TYPE / H IP66/IP69 ..... 354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
W-TYPE for aggressive environments 375
EMC 394
central lever 408
LS-TYPE 454

*) only bulkhead mounted housing and BIG hoods

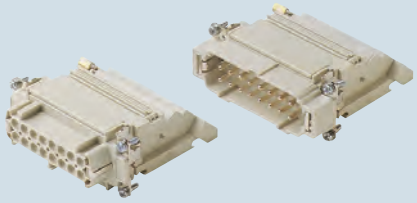
- can be mated with CNE, CCE, CSS, CSE, CSH inserts
- inserts may be fitted from front of enclosure

terminal block inserts
screw terminal connection



silver plated contacts

terminal block inserts
spring terminal connection



silver plated contacts

description	part No.	part No.	part No.	part No.
side mounting (see page 129) female inserts with female contacts **1)** male inserts with male contacts **1)**	left **CTF 16 L** **CTM 16 L**	right **CTF 16 R** **CTM 16 R**		
side mounting (see page 129) female inserts with female contacts male inserts with male contacts			left **CTSEF 16 L** **CTSEM 16 L**	right **CTSEF 16 R** **CTSEM 16 R**

1) for non-prepared conductors

- characteristics according to EN 61984:
  16A 230/400V 4kV 3 (CT)
  16A 400V 4kV 2 (CT)
  16A 500V 6kV 3 (CTSE)
  16A 400/690V 6kV 2 (CTSE)
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 4 mΩ
- for maximum current load, see the following load curves inserts, for more information see pages 560, 561

diagram CT 16 poles

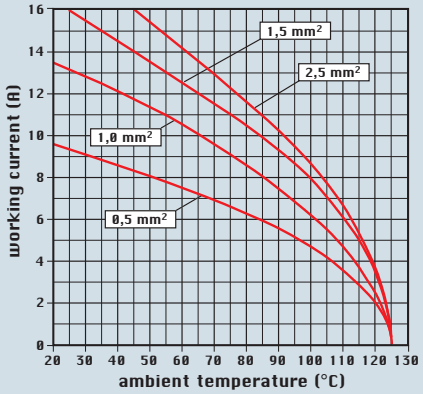
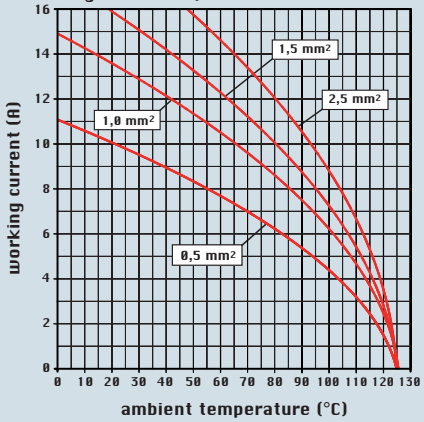


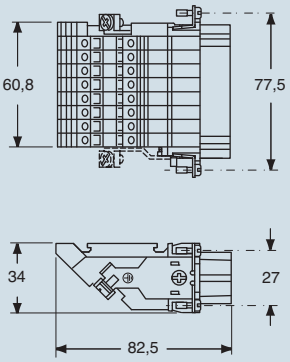
diagram CTSE 16 poles



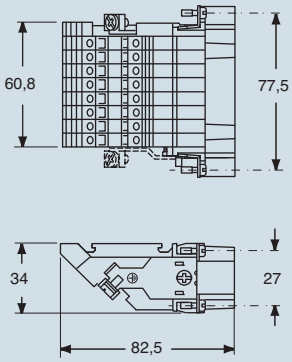
dimensions shown are not binding
and may be changed without notice

dimensions in mm

female inserts (CTF and CTSEF)

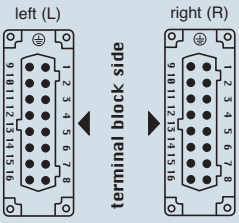


male inserts (CTM and CTSEM)

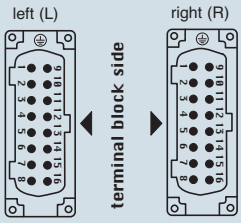


contacts side (front view)

female inserts (CTF and CTSEF)



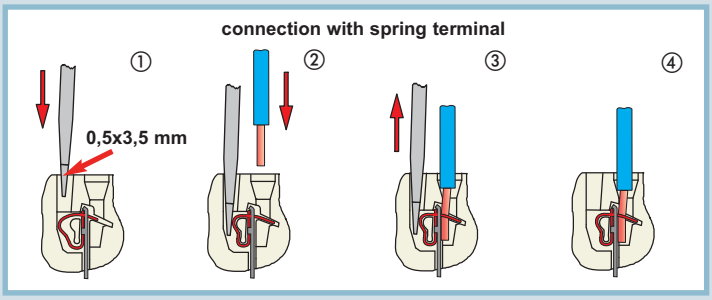
male inserts (CTM and CTSEM)



- CT inserts with plate, for section conductors: 0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping lenght: 12 mm
- terminal screw torque: 0,4 Nm (3,54 lb.in), for more information see page 34 and 35

- CTSE spring inserts for section conductors: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

connection with spring terminal



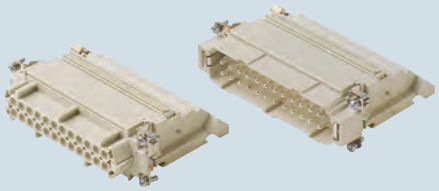
enclosures *):
size "104.27" page:

C-TYPE IP65/IP66 258
C7 IP67, two levers 277
V-TYPE IP65/IP66, single lever 283/296
BIG hoods ..... 316 - 319
T-TYPE IP65 insulating ..... 332 - 333
T-TYPE / W IP66 insulating ..... 342 - 343
HYGIENIC T-TYPE / H IP66/IP69 ..... 356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
W-TYPE for aggressive environments 376
EMC 395
central lever 410
LS-TYPE ..... 456 - 457

*) only bulkhead mounted housing and BIG hoods

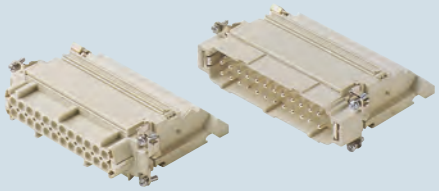
- can be mated with CNE, CCE, CSS, CSE, CSH inserts
- inserts may be fitted from front of enclosure

terminal block inserts
screw terminal connection



silver plated contacts

terminal block inserts
spring terminal connection



silver plated contacts

description	part No.	part No.	part No.	part No.
side mounting (see page 129) female inserts with female contacts **1)** male inserts with male contacts **1)**	left **CTF 24 L** **CTM 24 L**	right **CTF 24 R** **CTM 24 R**		
side mounting (see page 129) female inserts with female contacts male inserts with male contacts			left **CTSEF 24 L** **CTSEM 24 L**	right **CTSEF 24 R** **CTSEM 24 R**

1) for non-prepared conductors

- characteristics according to EN 61984:
  16A 230/400V 4kV 3 (CT)
  16A 400V 4kV 2 (CT)
  16A 500V 6kV 3 (CTSE)
  16A 400/690V 6kV 2 (CTSE)
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 4 mΩ
- for maximum current load, see the following load curves inserts, for more information see pages 560, 561

diagram CT 24 poles

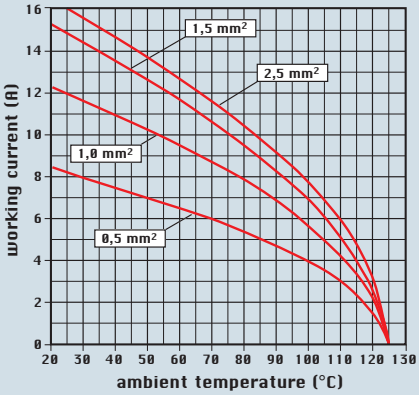
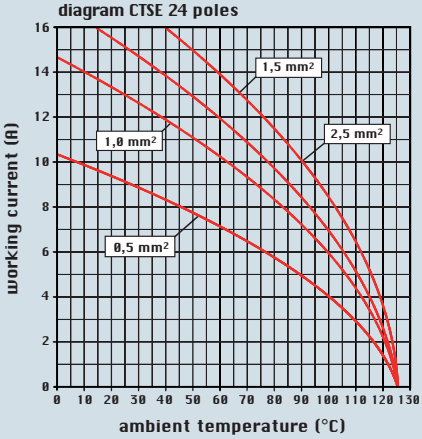


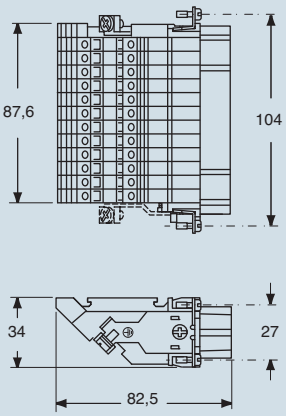
diagram CTSE 24 poles



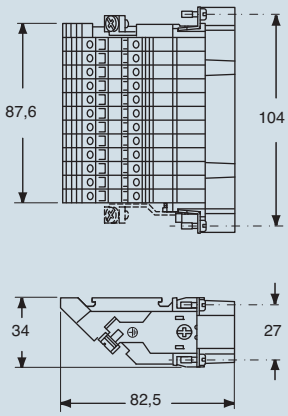
dimensions shown are not binding
and may be changed without notice

dimensions in mm

female inserts (CTF and CTSEF)

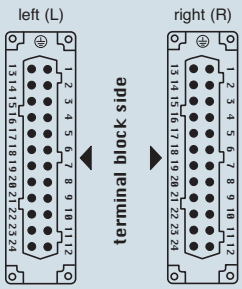


male inserts (CTM and CTSEM)

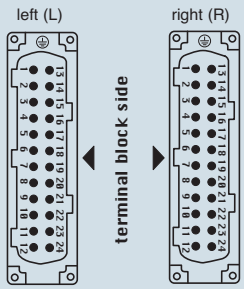


contacts side (front view)

female inserts (CTF and CTSEF)

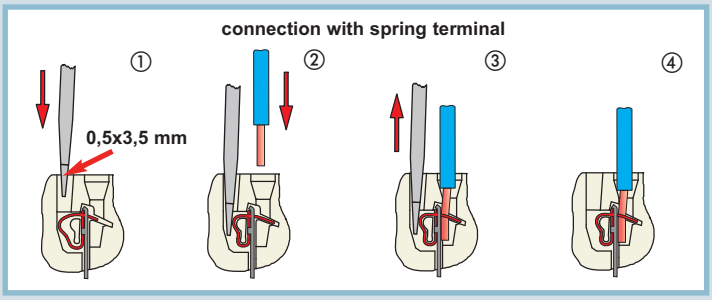


male inserts (CTM and CTSEM)



- CT inserts with plate, for section conductors: 0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping lenght: 12 mm
- terminal screw torque: 0,4 Nm (3,54 lb.in), for more information see page 34 and 35
- CTSE spring inserts for section conductors: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

connection with spring terminal



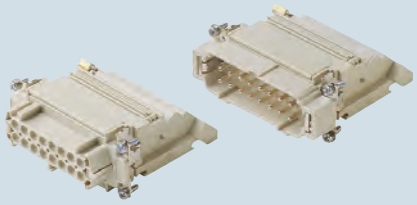
CTSE 32 poles + ⏚ 16A - 500V

enclosures *):
size "77.62" page:

C-TYPE IP65/IP66 267
W-TYPE for aggressive environments .. 377

*) only bulkhead mounted housing

terminal block inserts
spring terminal connection



- CT screw version: on request
- can be mated with CNE, CCE, CSS, CSE, CSH inserts
- inserts may be fitted from front of enclosure

silver plated contacts

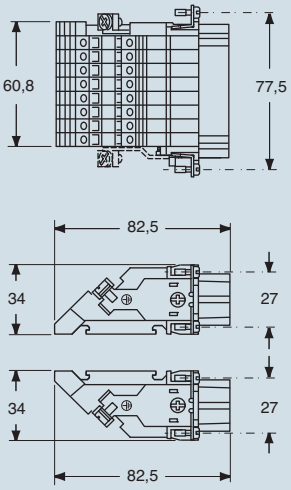
NEW

description	part No.	part No.	part No.	part No.
side mounting (see page 129)	left	right	left	right
female inserts with female contacts, No. (1-16) and (17-32) **1)**	**CTSEF 16 LN**	**CTSEF 16 R**	**CTSEF 16 L**	**CTSEF 16 RN**
male inserts with male contacts, No. (1-16) and (17-32) **1)**	**CTSEM 16 LN**	**CTSEM 16 R**	**CTSEM 16 L**	**CTSEM 16 RN**

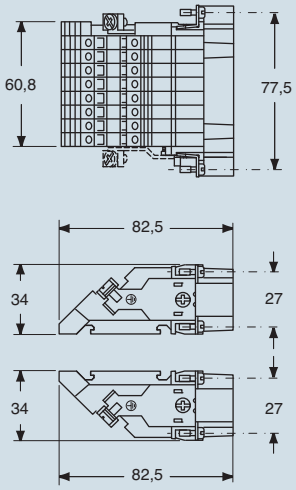
1) for non-prepared conductors

dimensions in mm

female inserts (CTSEF)

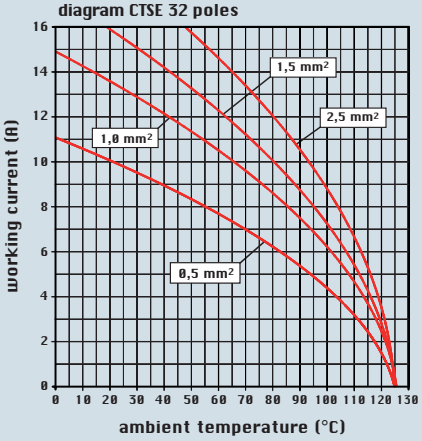


male inserts (CTSEM)



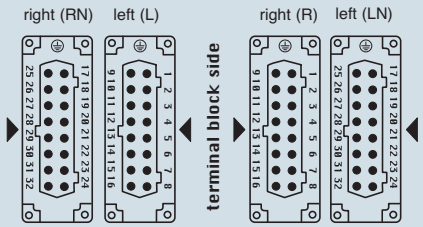
- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 4 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 561

diagram CTSE 32 poles

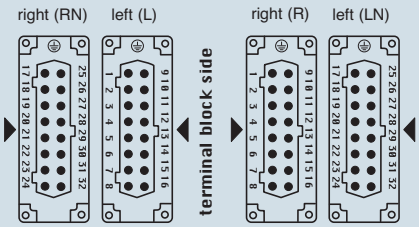


contacts side (front view)

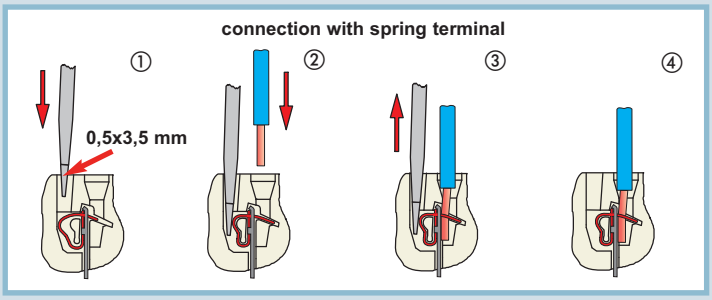
female inserts (CTSEF)



male inserts (CTSEM)



- CTSE spring inserts for section conductors: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm



dimensions shown are not binding
and may be changed without notice

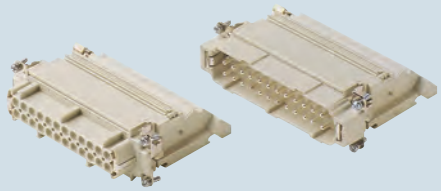
CTSE 48 poles + ⏚ 16A - 500V

enclosures *):
size "104.62" page:

C-TYPE IP65/IP66 271
W-TYPE for aggressive environments . 378

*) only bulkhead mounted housing

terminal block inserts
spring terminal connection



- CT screw version: on request
- can be mated with CNE, CCE, CSS, CSE, CSH inserts
- inserts may be fitted from front of enclosure

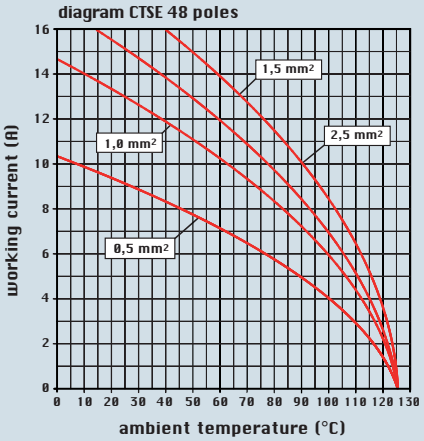
silver plated contacts

NEW

description	part No.	part No.	part No.	part No.
side mounting (see page 129)	left	right	left	right
female inserts with female contacts, No. (1-24) and (25-48) **1)**	**CTSEF 24 LN**	**CTSEF 24 R**	**CTSEF 24 L**	**CTSEF 24 RN**
male inserts with male contacts, No. (1-24) and (25-48) **1)**	**CTSEM 24 LN**	**CTSEM 24 R**	**CTSEM 24 L**	**CTSEM 24 RN**

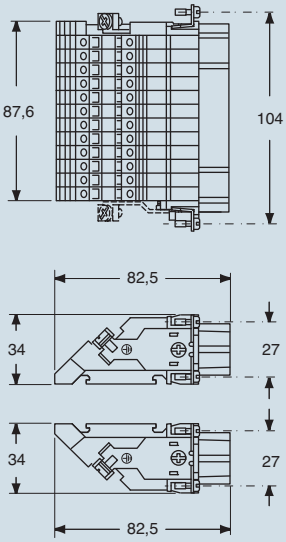
1) for non-prepared conductors

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 4 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 561

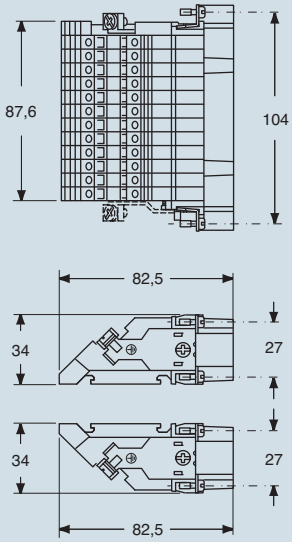


dimensions in mm

female inserts (CTSEF)

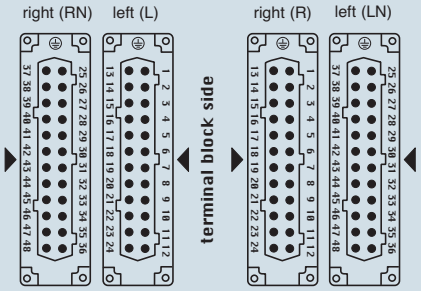


male inserts (CTSEM)

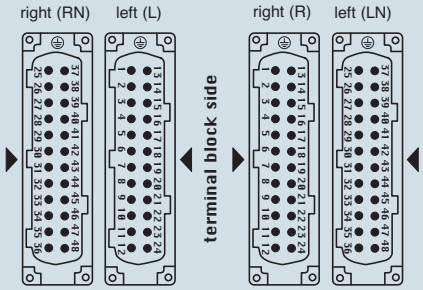


contacts side (front view)

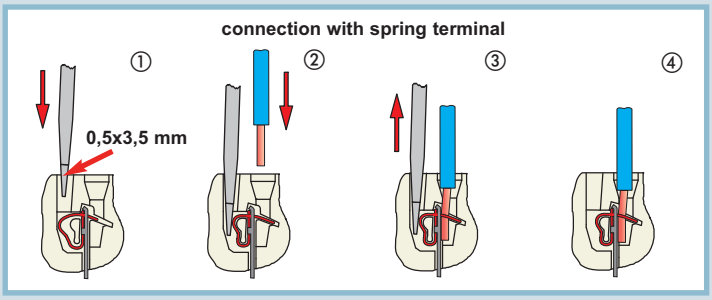
female inserts (CTSEF)



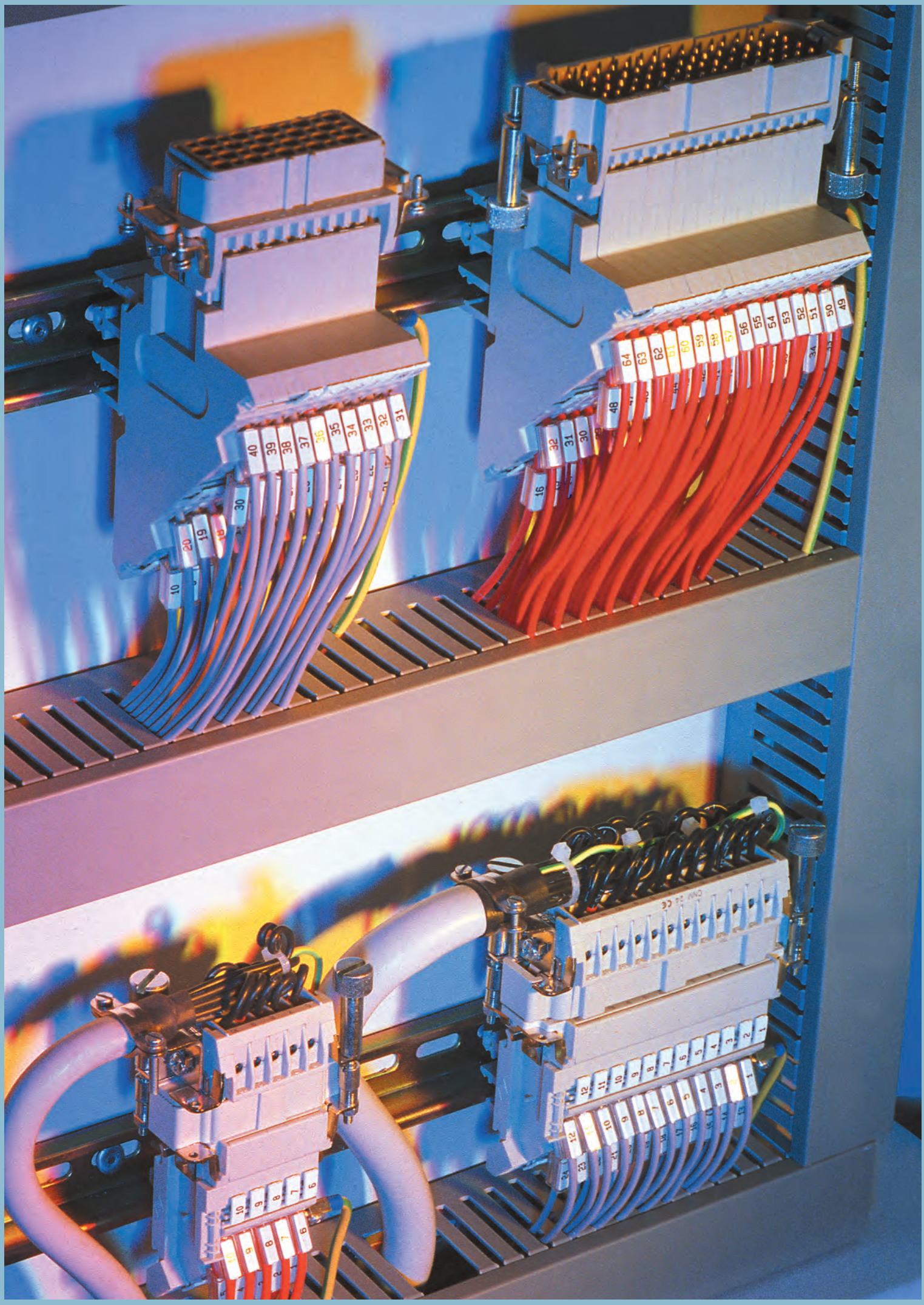
male inserts (CTSEM)



- CTSE spring inserts for section conductors: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm



dimensions shown are not binding
and may be changed without notice

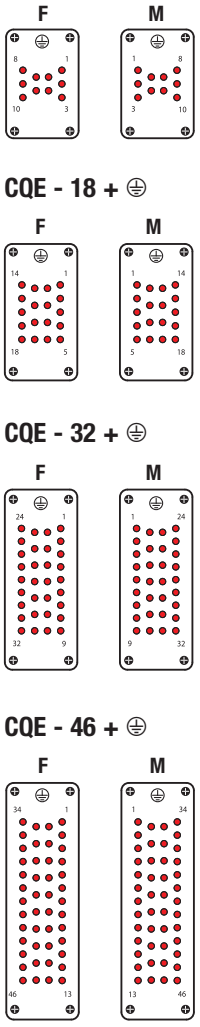


CQE inserts

Special voltages

When all the contacts are used, the CQE inserts series connectors may be used at rated voltage up to 500V (first column) pollution degree 3, in accordance with the standard EN 61984.
If the number of contacts is reduced and the contacts accordingly assigned, these connectors may be used with higher voltages.
This is possible because the decrease in the number of contacts leads to an increase in the surface insulation distance in the air.
When the contacts are arranged as shown below, the inserts may be used at rated voltages of 690V (second column) and 1000V (third column) pollution degree 3, in accordance with the standard EN 61984.

for use up to 500V pollution degree 3	for use up to 690V pollution degree 3	for use up to 1000V pollution degree 3
diagrams contacts side (front view)	diagrams contacts side (front view)	diagrams contacts side (front view)
CQE - 10 + ⏚	**CQE - 4 +** ⏚	**CQE - 2 +** ⏚
CQE - 18 + ⏚	**CQE - 8 +** ⏚	**CQE - 4 +** ⏚
CQE - 32 + ⏚	**CQE - 14 +** ⏚	**CQE - 8 +** ⏚
CQE - 46 + ⏚	**CQE - 20 +** ⏚	**CQE - 12 +** ⏚



Legend:

● working contact
○ without contact
M = male insert
F = female insert

CQE 10 poles + ⏚ 16A - 500V

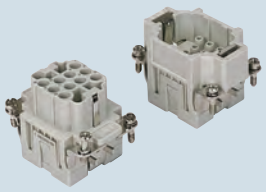
enclosures:
size "44.27" page:

C-TYPE IP65/IP66 ..... 240 - 243
C7 IP67, single lever 274
V-TYPE IP65/IP66, single lever 280/284 - 286
BIG hoods ..... 304 - 306
T-TYPE IP65 insulating ..... 326 - 327
T-TYPE / W IP66 insulating ..... 336 - 337
HYGIENIC T-TYPE / H IP66/IP69 ..... 350 - 351
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 358 - 359
W-TYPE for aggressive environments 373
EMC 392
central lever ..... 404 - 405
IP68 ..... 420 - 423
LS-TYPE ..... 450 - 451

panel supports: page:

COB ..... 462 - 463

inserts, crimp connections

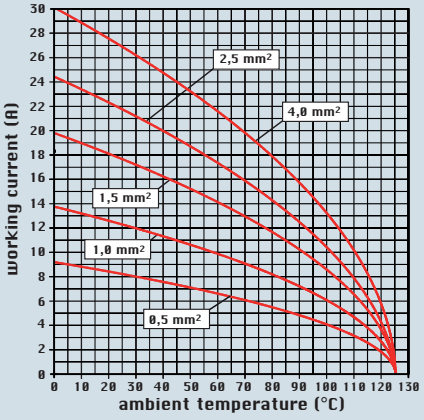


16A crimp contacts
normal and for advanced opening
silver and gold plated

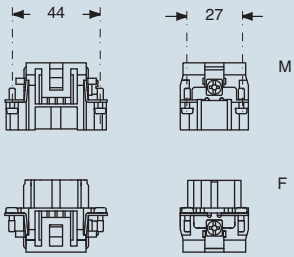
description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CQEF 10** **CQEM 10**		
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0** **silver plated**	**CCFD 0.3** **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0** **gold plated 1)**
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	**CCMD 0.3** **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**
16A male crimp contacts for advanced opening 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves		**CC 0.5 AN** **CC 0.7 AN** **CC 1.0 AN** **CC 1.5 AN** **CC 2.5 AN**	

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 830V 8kV 2
- cUL (UL for USA and Canada), CSA, DNV-GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 561

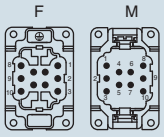
diagram CQE 10 poles



dimensions in mm

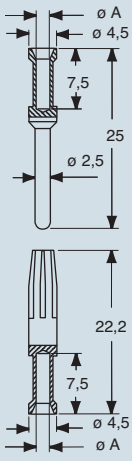


contacts side (front view)

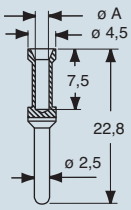


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

dimensions shown are not binding and may be changed without notice

CQE 18 poles + ⏚ 16A - 500V

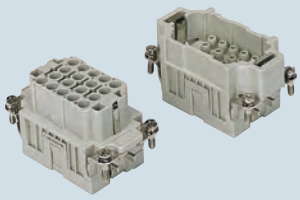
enclosures:
size "57.27" page:

C-TYPE IP65/IP66 ..... 244 - 249
C7 IP67, two levers 275
V-TYPE IP65/IP66, single lever 281/288 - 291
BIG hoods ..... 308 - 311
T-TYPE IP65 insulating ..... 328 - 329
T-TYPE / W IP66 insulating ..... 338 - 339
HYGIENIC T-TYPE / H IP66/IP69 ..... 352 - 353
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 360 - 361
W-TYPE for aggressive environments 374
EMC 393
central lever ..... 406 - 407
IP68 ..... 424 - 427
LS-TYPE ..... 452 - 453

panel supports: page:

COB ..... 462 - 463

inserts, crimp connections

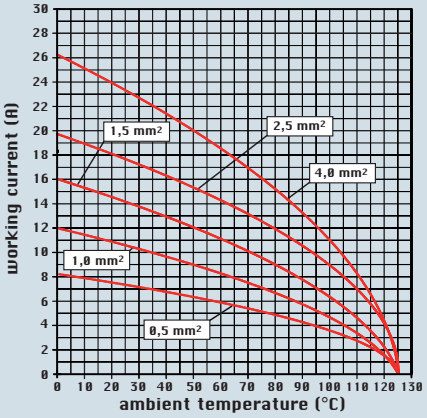


16A crimp contacts
normal and for advanced opening
silver and gold plated

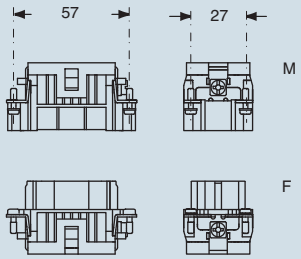
description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CQEF 18** **CQEM 18**		
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0** **silver plated**	**CCFD 0.3** **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0** **gold plated 1)**
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	**CCMD 0.3** **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**
16A male crimp contacts for advanced opening 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves		**CC 0.5 AN** **CC 0.7 AN** **CC 1.0 AN** **CC 1.5 AN** **CC 2.5 AN**	

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 830V 8kV 2
- cUL (UL for USA and Canada), CSA, DNV-GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 561

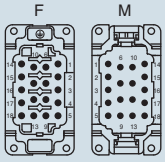
diagram CQE 18 poles



dimensions in mm

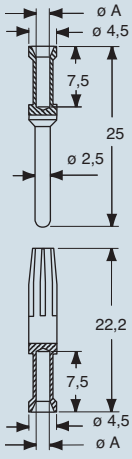


contacts side (front view)

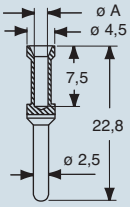


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

dimensions shown are not binding and may be changed without notice

CQE 32 poles + ⏚ 16A - 500V

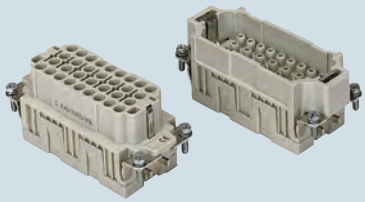
enclosures:
size "77.27" page:

C-TYPE IP65/IP66 ..... 250 - 256
C7 IP67, two levers 276
V-TYPE IP65/IP66, single lever 282/292 - 295
BIG hoods ..... 312 - 315
T-TYPE IP65 insulating ..... 330 - 331
T-TYPE / W IP66 insulating ..... 340 - 341
HYGIENIC T-TYPE / H IP66/IP69 ..... 354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
W-TYPE for aggressive environments 375
EMC 394
central lever ..... 408 - 409
IP68 ..... 428 - 431
LS-TYPE ..... 454 - 455

panel supports: page:

COB ..... 462 - 463

inserts, crimp connections

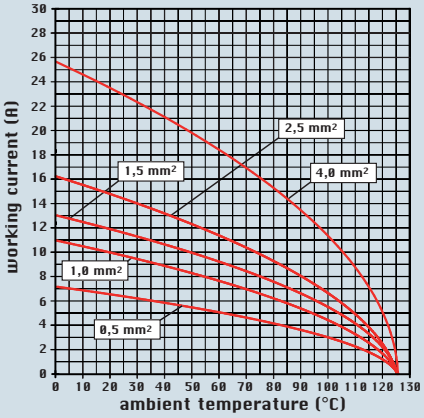


16A crimp contacts
normal and for advanced opening
silver and gold plated

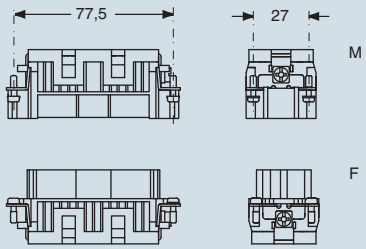
description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CQEF 32** **CQEM 32**		
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0** **silver plated**	**CCFD 0.3** **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0** **gold plated 1)**
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	**CCMD 0.3** **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**
16A male crimp contacts for advanced opening 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves		**CC 0.5 AN** **CC 0.7 AN** **CC 1.0 AN** **CC 1.5 AN** **CC 2.5 AN**	

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 830V 8kV 2
- cUL (UL for USA and Canada), CSA, DNV-GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 561

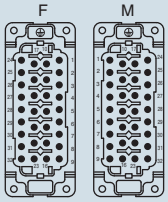
diagram CQE 32 poles



dimensions in mm

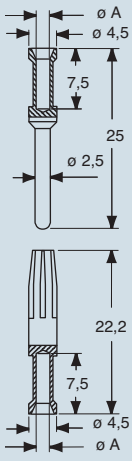


contacts side (front view)

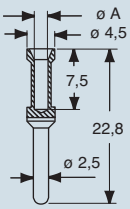


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

dimensions shown are not binding and may be changed without notice

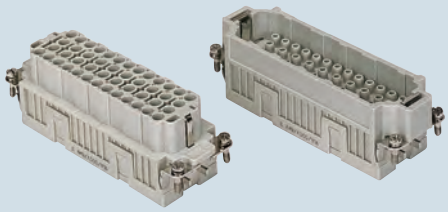
CQE 46 poles + ⏚ 16A - 500V

enclosures:
size "104.27" page:

C-TYPE IP65/IP66 ..... 258 - 266
C7 IP67, two levers 277
V-TYPE IP65/IP66, single lever 283/296 - 299
BIG hoods ..... 316 - 319
T-TYPE IP65 insulating ..... 332 - 333
T-TYPE / W IP66 insulating ..... 342 - 343
HYGIENIC T-TYPE / H IP66/IP69 ..... 356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
W-TYPE for aggressive environments 376
EMC 395
central lever ..... 410 - 412
IP68 ..... 432 - 435
LS-TYPE ..... 456 - 457

panel supports: page:
COB ..... 462 - 463

inserts, crimp connections



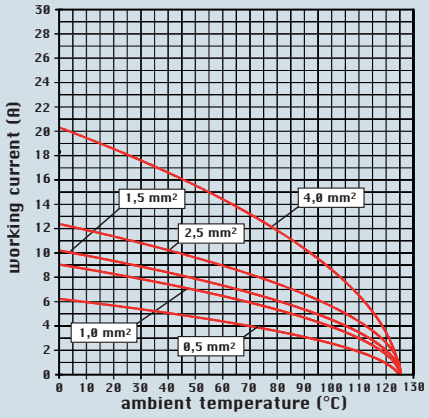
16A crimp contacts
normal and for advanced opening
silver and gold plated

description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CQEF 46** **CQEM 46**		
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0**	**CCFD 0.3** **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0**
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	**CCMD 0.3** **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**
16A male crimp contacts for advanced opening 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves		**CC 0.5 AN** **CC 0.7 AN** **CC 1.0 AN** **CC 1.5 AN** **CC 2.5 AN**	

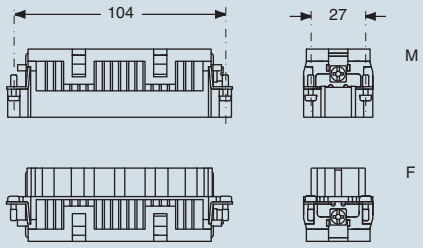
silver plated | **gold plated 1)**

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 830V 8kV 2
- cUL (UL for USA and Canada), CSA, DNV-GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 561

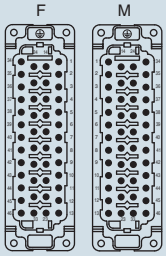
diagram CQE 46 poles



dimensions in mm

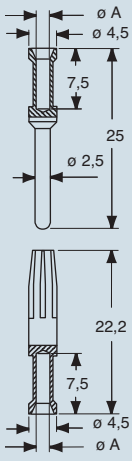


contacts side (front view)

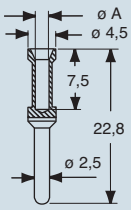


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

dimensions shown are not binding and may be changed without notice

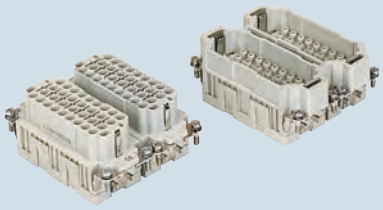
CQE 64 poles + ⏚ 16A - 500V

enclosures:
size "77.62" page:

C-TYPE IP65/IP66 ..... 267 - 270
W-TYPE for aggressive environments 377

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

inserts, crimp connections



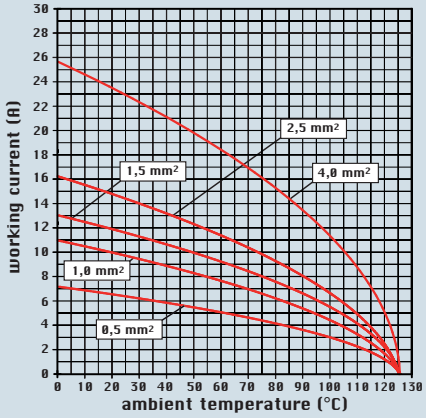
16A crimp contacts
normal and for advanced opening
silver and gold plated

description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts, No. (1-32) and (33-64) male inserts, No. (1-32) and (33-64)	**CQEF 32** **CQEM 32**	**CQEF 32 N** **CQEM 32 N**		
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves			**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0**	**CCFD 0.3** **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0**
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves			**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	**CCMD 0.3** **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**
16A male crimp contacts for advanced opening 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves			**CC 0.5 AN** **CC 0.7 AN** **CC 1.0 AN** **CC 1.5 AN** **CC 2.5 AN**	

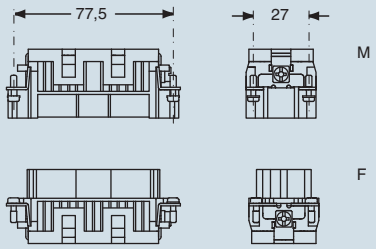
silver plated | **gold plated 1)**

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 830V 8kV 2
- cUL (UL for USA and Canada), CSA, DNV-GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 561

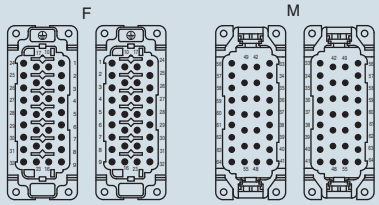
diagram CQE 64 poles



dimensions in mm

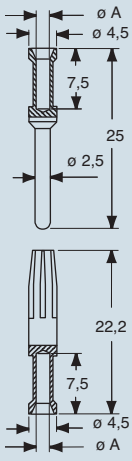


contacts side (front view)

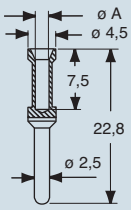


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

dimensions shown are not binding and may be changed without notice

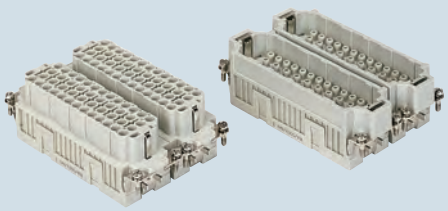
CQE 92 poles + ⏚ 16A - 500V

enclosures:
size "104.62" page:

C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments 378

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

inserts, crimp connections



16A crimp contacts
normal and for advanced opening
silver and gold plated

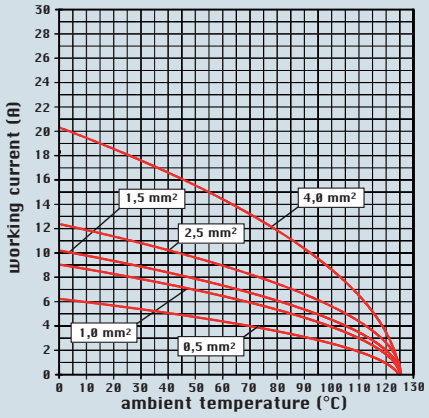
description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts, No. (1-46) and (47-92) male inserts, No. (1-46) and (47-92)	**CQEF 46** **CQEM 46**	**CQEF 46 N** **CQEM 46 N**		
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves			**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0**	**CCFD 0.3** **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0**
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves			**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	**CCMD 0.3** **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**
16A male crimp contacts for advanced opening 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves			**CC 0.5 AN** **CC 0.7 AN** **CC 1.0 AN** **CC 1.5 AN** **CC 2.5 AN**	

silver plated

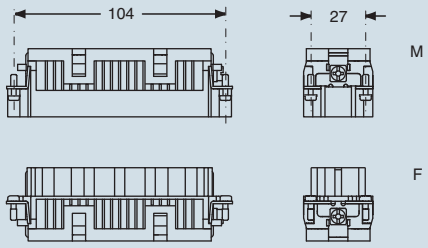
gold plated 1)

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 830V 8kV 2
- cUL (UL for USA and Canada), CSA, DNV-GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 561

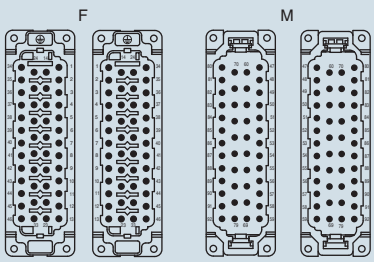
diagram CQE 92 poles



dimensions in mm

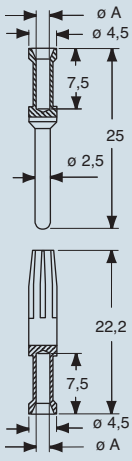


contacts side (front view)

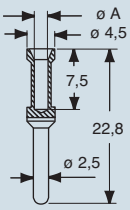


dimensions in mm

CCF and CCM



CC...AN

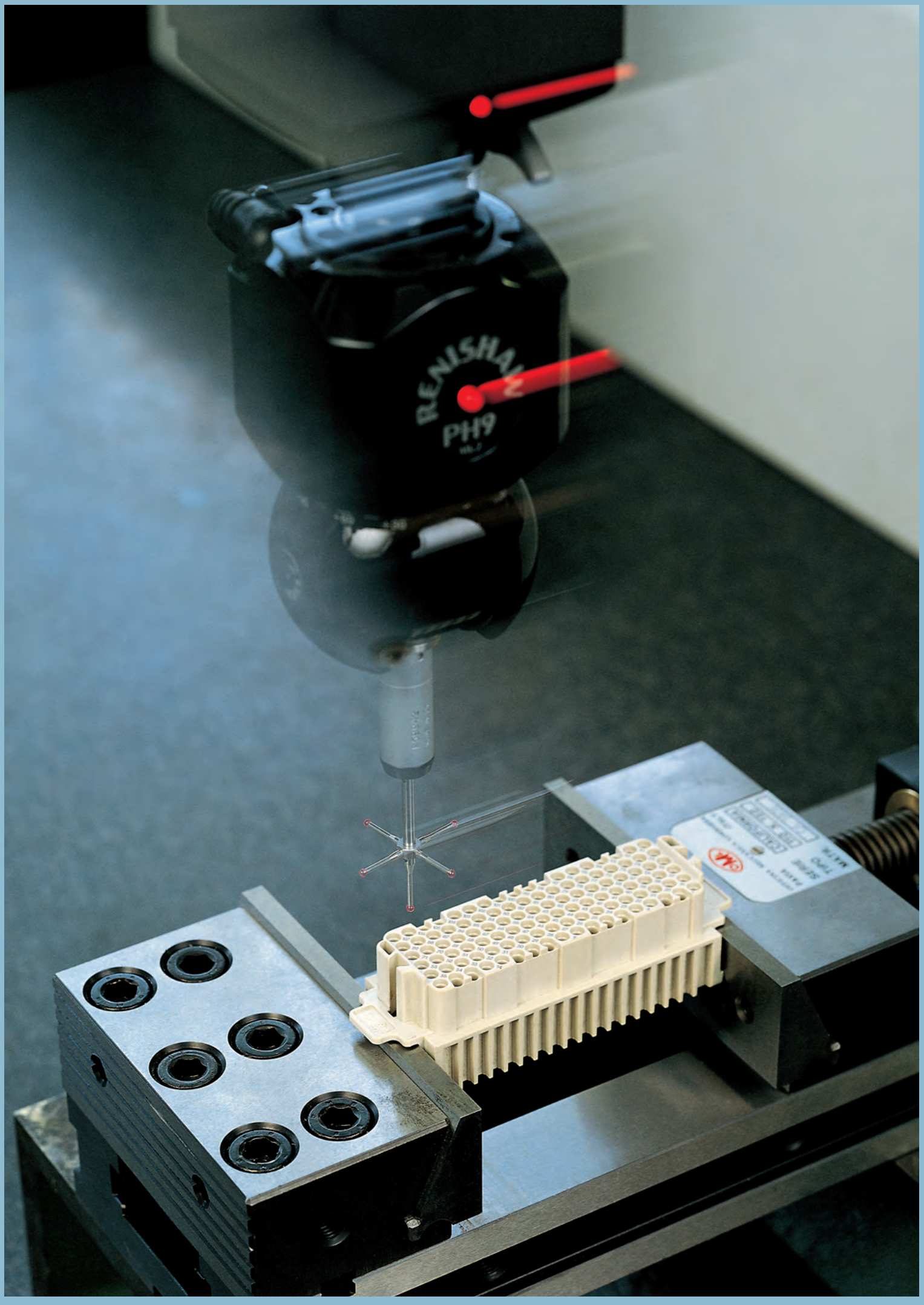


CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

dimensions shown are not binding and may be changed without notice


RENISHAW
PH9

CQEE series

Main features

The new connector inserts series **CQEE** are the logical extension of the existing series CQE for removable crimp contacts series CC (16A max, available both in gold plated and in silver plated version) that include the CC...AN pin contacts with anticipated opening (first-to-break) and delayed closing (last-to-make).

Compared with the connector inserts of the same size of series CQE, the new inserts series **CQEE** provide a sensibly higher number of contacts: 64P+⏚ instead of 46P+⏚ for size 104.27 (+39%), 40P+⏚ instead of 32P+⏚ for size 77.27 (+25%).
With the same number of circuits, it is conversely possible to reduce the size of the connector inserts and of the related hood and housing, thus reducing the overall cost.

The new connector inserts series **CQEE** may replace in the same size (77.27, 104.27) and with the same contact density (40P+⏚ and 64P+⏚) the corresponding inserts of series CD for removable crimp contacts series CD (10A max).

This may be particularly useful when, as a function of the intended use, it is required:

- to use the connector at a higher rated voltage: CQEE covers use at 500V / 6kV / 3 where CD stops at 250V / 4kV /3;
- to assign a larger current-carrying capacity, both due to the lower contact resistance (1 mΩ instead of 3 mΩ) and the larger wire size available for series CC compared with series CD contacts;
- to use wires with the larger cross-sectional area of 4 mm² / AWG 12, in order to contain the percent voltage drop [%] in circuits fed with extra-low voltage and with comparatively high currents, or in circuits of considerable length;
- to use crimp contacts with inherently higher mechanical robustness;
- to use anticipated pin contacts CC...AN (e.g. for the remote signal ling of the "OPEN" or "CLOSED" status of the connector).

Inserts series		**CQEE**
No. of poles	main contact	40 + ⏚; 64 + ⏚
rated current [1]		16A
EN 61984 pollution degree 3	rated voltage	500V
	rated impulse withstand voltage	6kV
	pollution degree	3
contact resistance		≤ 1 mΩ
insulation resistance		≥ 10 GΩ
ambient temperature limit (°C)	min	-40 °C
	max	+125 °C
degree of protection	with enclosures (according to version)	IP65, IP66, IP67, IP68, IP69
	without enclosures	IP20
conductor connections		crimp
conductor cross-section (CC contact series)	mm²	0,14 4,0
	AWG	26 - 12
stripping lenght	mm	7,5
mechanical endurance (mating cycles)		≥ 500

1) Please check the insert load curves to establish the actual maximum operating current according to the ambient temperature.

CQEE 40 poles + ⏚ 16A - 500V

enclosures:
size "77.27" page:

C-TYPE IP65/IP66 ..... 250 - 256
C7 IP67, two levers 276
V-TYPE IP65/IP66, single lever 282/292 - 295
BIG hoods ..... 312 - 315
T-TYPE IP65 insulating ..... 330 - 331
T-TYPE / W IP66 insulating ..... 340 - 341
HYGIENIC T-TYPE / H IP66/IP69 ..... 354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
W-TYPE for aggressive environments 375
EMC 394
central lever ..... 408 - 409
IP68 ..... 428 - 431
LS-TYPE ..... 454 - 455

panel supports: page:

COB ..... 462 - 463

inserts, crimp connections

NEW

16A crimp contacts
normal and for advanced opening
silver and gold plated

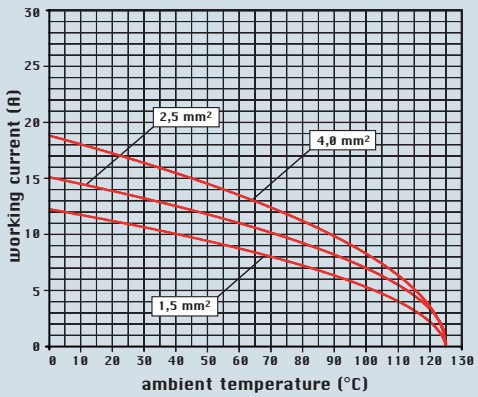
description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CQEEF 40** **CQEEM 40**		
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0**	**CCFD 0.3** **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0**
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	**CCMD 0.3** **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**
16A male crimp contacts for advanced opening 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves		**CC 0.5 AN** **CC 0.7 AN** **CC 1.0 AN** **CC 1.5 AN** **CC 2.5 AN**	

silver plated

gold plated 1)

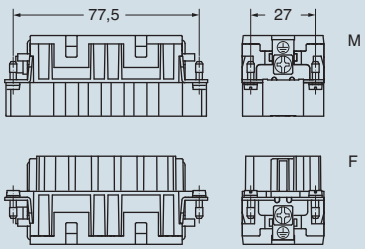
- characteristics according to EN 61984:
  16A 500V 6kV 3
- certifications: cUL (UL for USA and Canada)
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 561

diagram CQEE 40 poles

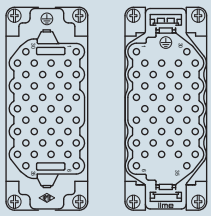


dimensions shown are not binding
and may be changed without notice

dimensions in mm



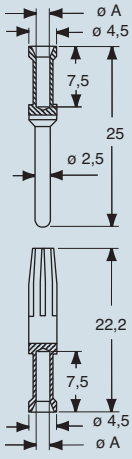
contacts side (front view)



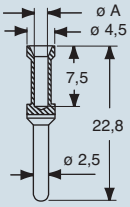
coding pins CR CPQ,
see page 491

dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section	conductor slot	conductors stripping length
mm²	ø A (mm)	mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

CQEE 64 poles + ⏚ 16A - 500V

enclosures:
size "104.27" page:

C-TYPE IP65/IP66 ..... 258 - 266
C7 IP67, two levers 277
V-TYPE IP65/IP66, single lever 283/296 - 299
BIG hoods ..... 316 - 319
T-TYPE IP65 insulating ..... 332 - 333
T-TYPE / W IP66 insulating ..... 342 - 343
HYGIENIC T-TYPE / H IP66/IP69 ..... 356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
W-TYPE for aggressive environments 376
EMC 395
central lever ..... 410 - 412
IP68 ..... 432 - 435
LS-TYPE ..... 456 - 457

panel supports: page:

COB ..... 462 - 463

inserts, crimp connections

NEW

16A crimp contacts
normal and for advanced opening
silver and gold plated

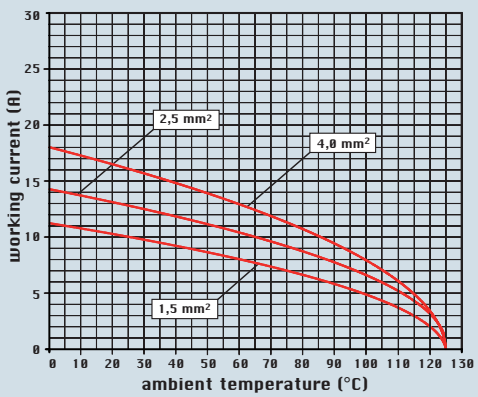
description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CQEEF 64** **CQEEM 64**		
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0**	**CCFD 0.3** **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0**
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	**CCMD 0.3** **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**
16A male crimp contacts for advanced opening 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves		**CC 0.5 AN** **CC 0.7 AN** **CC 1.0 AN** **CC 1.5 AN** **CC 2.5 AN**	

silver plated

gold plated 1)

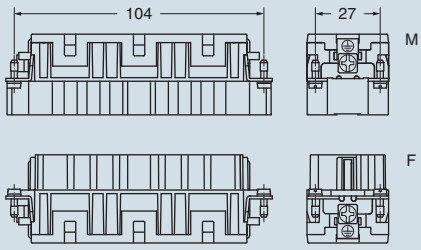
- characteristics according to EN 61984:
  16A 500V 6kV 3
- certifications: cUL (UL for USA and Canada)
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 561

diagram CQEE 64 poles

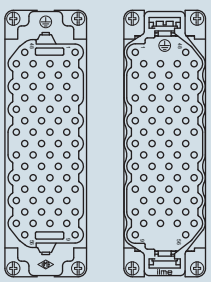


dimensions shown are not binding
and may be changed without notice

dimensions in mm



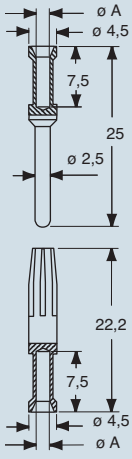
contacts side (front view)



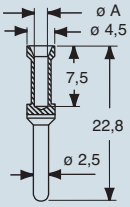
coding pins CR CPQ,
see page 491

dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating
page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

CMCE 3 + 2 (aux) poles + ⏚ 16A - 830V

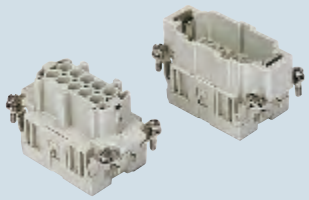
enclosures:
size "57.27" page:

C-TYPE IP65/IP66 ..... 244 - 249
C7 IP67, two levers 275
V-TYPE IP65/IP66, single lever 281/288 - 291
BIG hoods ..... 308 - 311
T-TYPE IP65 insulating ..... 328 - 329
T-TYPE / W IP66 insulating ..... 338 - 339
HYGIENIC T-TYPE / H IP66/IP69 ..... 352 - 353
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 360 - 361
W-TYPE for aggressive environments 374
EMC 393
central lever ..... 406 - 407
IP68 ..... 424 - 427
LS-TYPE ..... 452 - 453

panel supports: page:

COB ..... 462 - 463

inserts,
crimp connections

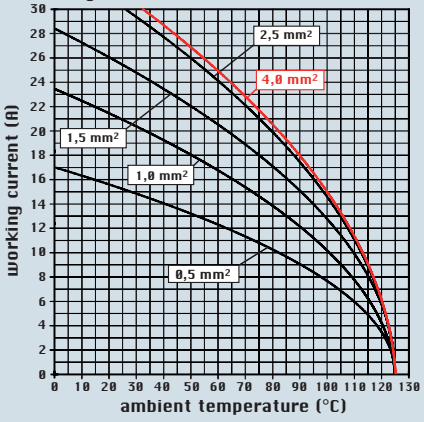


16A crimp contacts
normal and for advanced opening
silver and gold plated

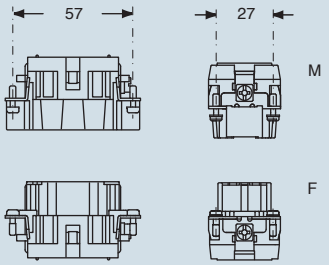
description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CMCEF 03** **CMCEM 03**		
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0** **silver plated**	**CCFD 0.3** **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0** **gold plated 1)**
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	**CCMD 0.3** **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**
16A male crimp contacts for advanced opening 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves		**CC 0.5 AN** **CC 0.7 AN** **CC 1.0 AN** **CC 1.5 AN** **CC 2.5 AN**	

- characteristics according to EN 61984:
  16A 830V 8kV 3
  16A 1000V 8kV 2
  16A 720/1250V 8kV 2
- auxiliary contacts: **16A 500V 6kV 3**
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 562

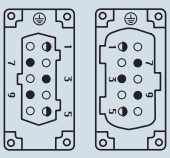
diagram CMCE 03 poles



dimensions in mm



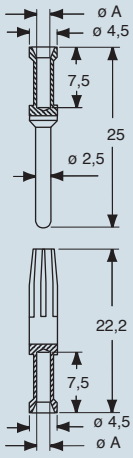
contacts side (front view)



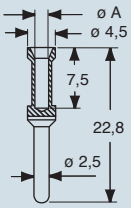
◑ the auxiliary contacts are in the forward position upon opening

dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

dimensions shown are not binding and may be changed without notice

CME - CMSH (SQUICH®) 3 + 2 (aux) poles + ⏚ 16A - 830V

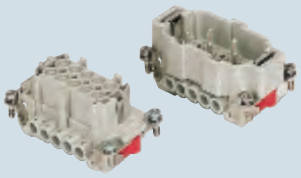
enclosures:
size "57.27" page:

C-TYPE IP65/IP66 * ..... 244 - 249
C7 IP67, two levers * 275
V-TYPE IP65/IP66, single lever * 281/288 - 291
BIG hoods * ..... 308 - 311
T-TYPE IP65 insulating ..... 328 - 329
T-TYPE / W IP66 insulating ..... 338 - 339
HYGIENIC T-TYPE / H IP66/IP69 ..... 352 - 353
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 360 - 361
W-TYPE for aggressive environments 374
EMC * 393
central lever * ..... 406 - 407
IP68 ..... 424 - 427
insulated 830V ..... 437 - 440
LS-TYPE * ..... 452 - 453

panel supports: **COB** ..... 462 - 463

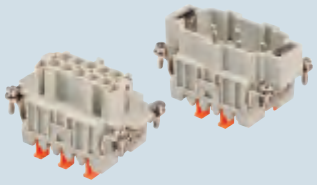
* cannot be used with CME series

inserts,
screw terminal connection



silver plated contacts

inserts,
spring terminal connection



silver plated contacts

NEW

description	part No.	part No.
indirect, with plate **1)** female inserts with female contacts male inserts with male contacts	**CMEF 03 T** **CMEM 03 T**	
direct, without plate **2)** female inserts with female contacts male inserts with male contacts	**CMEF 03 TX** **CMEM 03 TX**	
spring terminals with actuator button female inserts with female contacts male inserts with male contacts		**CMSHF 03** **CMSHM 03**

- characteristics according to EN 61984:
  16A 830V 8kV 3
  16A 1000V 8kV 2
  16A 720/1250V 8kV 2
- auxiliary contacts: **16A 500V 6kV 3**
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ (CME) - ≤ 3 mΩ (CMSH)
- for maximum current load, see the following load curves inserts, for more information see page 562

diagram CME 03 poles

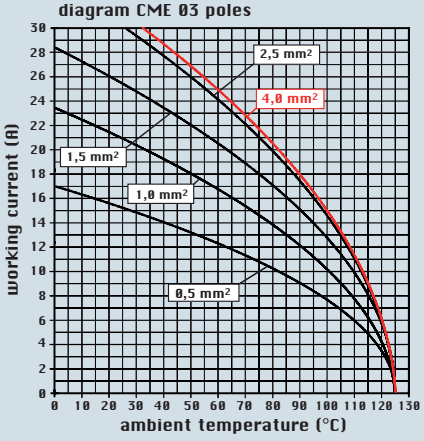
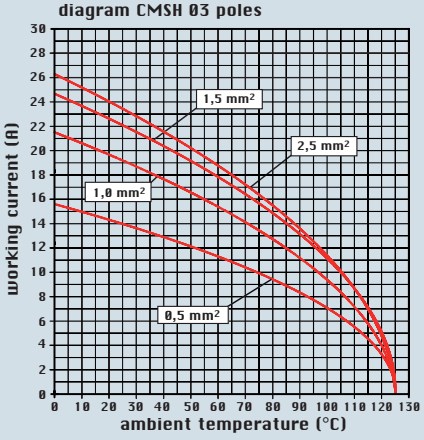
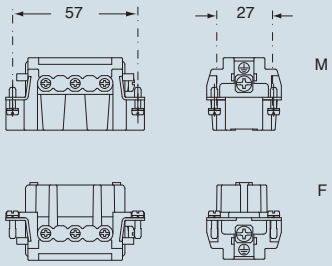


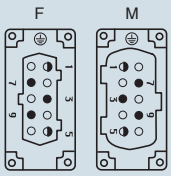
diagram CMSH 03 poles



dimensions in mm



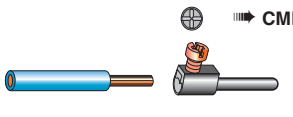
contacts side (front view)



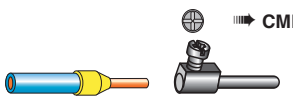
◑ the auxiliary contacts are in the forward position upon opening

- inserts with plate, for section conductors:
  0,5 - 4 mm² - AWG 20 - 12
- inserts without plate, for section conductors:
  0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping lenght: 7 mm
- terminal screw torque: 0.5 Nm (4.4 lb.in), for more information see page 34 and 35
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V

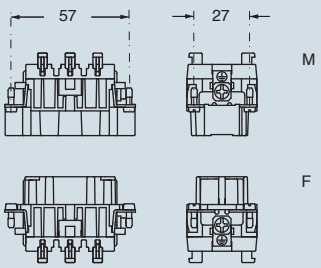
1) for non-prepared conductors



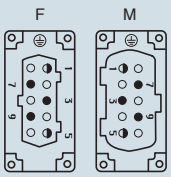
2) for bush terminal conductors



dimensions in mm



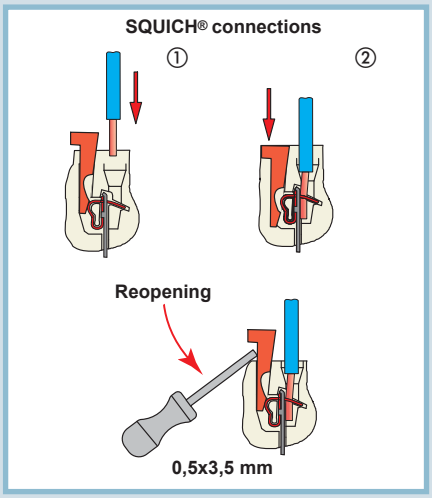
contacts side (front view)



◑ the auxiliary contacts are in the forward position upon opening

- inserts for section conductors:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

SQUICH® connections



dimensions shown are not binding and may be changed without notice

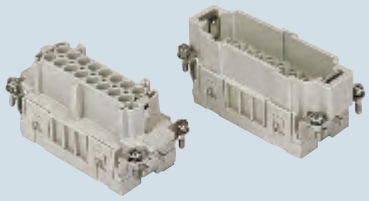
CMCE 6 + 2 (aux) poles + ⏚ 16A - 830V

enclosures:
size "77.27" page:

C-TYPE IP65/IP66 ..... 250 - 256
C7 IP67, two levers 276
V-TYPE IP65/IP66, single lever 282/292 - 295
BIG hoods ..... 312 - 315
T-TYPE IP65 insulating ..... 330 - 331
T-TYPE / W IP66 insulating ..... 340 - 341
HYGIENIC T-TYPE / H IP66/IP69 ..... 354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
W-TYPE for aggressive environments 375
EMC 394
central lever ..... 408 - 409
IP68 ..... 428 - 431
LS-TYPE ..... 454 - 455

panel supports: page:
COB ..... 462 - 463

inserts,
crimp connections



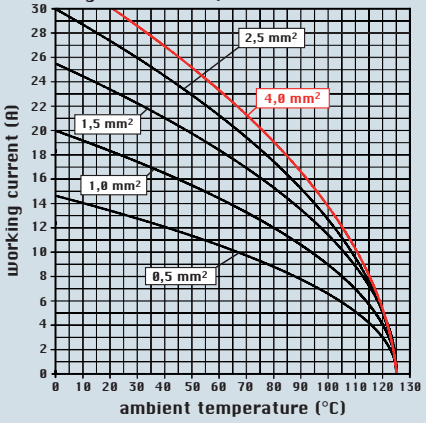
16A crimp contacts
normal and for advanced opening
silver and gold plated

description	part No.	part No.	part No.
female inserts with female contacts female inserts for female contacts male inserts for male contacts	**CMCEF 06** **CMCEM 06**		
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0**	**CCFD 0.3** **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0**
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	**CCMD 0.3** **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**
16A male crimp contacts for advanced opening 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves		**CC 0.5 AN** **CC 0.7 AN** **CC 1.0 AN** **CC 1.5 AN** **CC 2.5 AN**	

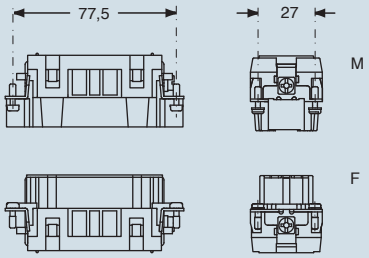
silver plated | **gold plated 1)**

- characteristics according to EN 61984:
  16A 830V 8kV 3
  16A 1000V 8kV 2
  16A 720/1250V 8kV 2
- auxiliary contacts: **16A 500V 6kV 3**
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 562

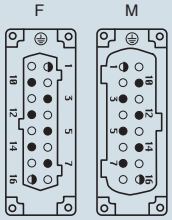
diagram CMCE 06 poles



dimensions in mm



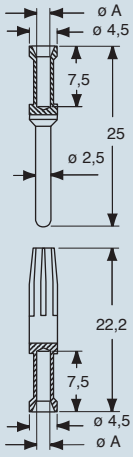
contacts side (front view)



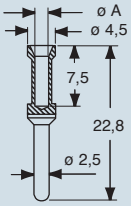
◑ the auxiliary contacts are in the forward position upon opening

dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

dimensions shown are not binding and may be changed without notice

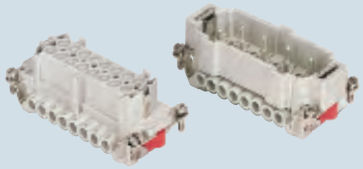
CME - CMSH (SQUICH®) 6 + 2 (aux) poles + ⏚ 16A - 830V

enclosures:
size "77.27" page:

C-TYPE IP65/IP66 * ..... 250 - 256
C7 IP67, two levers * 276
V-TYPE IP65/IP66, single lever * 282/292 - 295
BIG hoods * ..... 312 - 315
T-TYPE IP65 insulating ..... 330 - 331
T-TYPE / W IP66 insulating ..... 340 - 341
HYGIENIC T-TYPE / H IP66/IP69 ..... 354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
W-TYPE for aggressive environments 375
EMC * 394
central lever * ..... 408 - 409
IP68 ..... 428 - 431
insulated 830V ..... 441 - 444
LS-TYPE * ..... 454 - 455
panel supports: **COB** ..... 462 - 463

* cannot be used with CME series

inserts,
screw terminal connection



silver plated contacts

inserts,
spring terminal connection

silver plated contacts

NEW

description	part No.	part No.
indirect, with plate **1)** female inserts with female contacts male inserts with male contacts	**CMEF 06 T** **CMEM 06 T**	
direct, without plate **2)** female inserts with female contacts male inserts with male contacts	**CMEF 06 TX** **CMEM 06 TX**	
spring terminals with actuator button female inserts with female contacts male inserts with male contacts		**CMSHF 06** **CMSHM 06**

- characteristics according to EN 61984:
  16A 830V 8kV 3
  16A 1000V 8kV 2
  16A 720/1250V 8kV 2
- auxiliary contacts: **16A 500V 6kV 3**
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ (CME) - ≤ 3 mΩ (CMSH)
- for maximum current load, see the following load curves inserts, for more information see page 562

diagram CME 06 poles

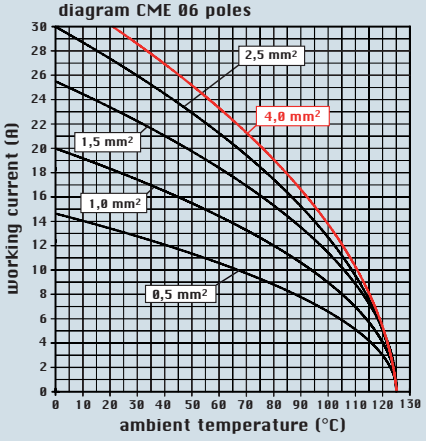
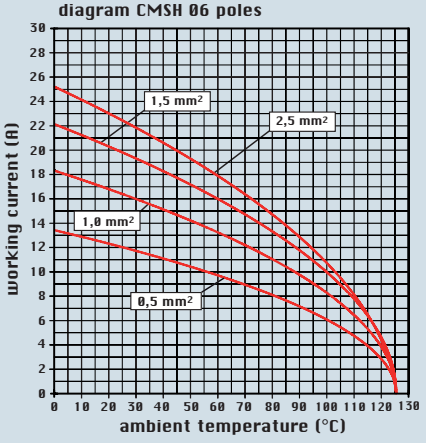
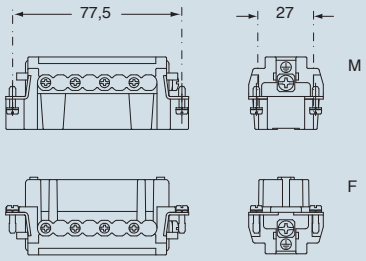


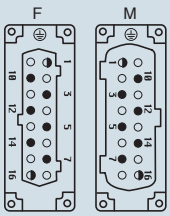
diagram CMSH 06 poles



dimensions in mm



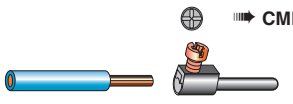
contacts side (front view)



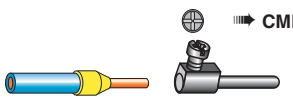
◑ the auxiliary contacts are in the forward position upon opening

- inserts with plate, for section conductors:
  0,5 - 4 mm² - AWG 20 - 12
- inserts without plate, for section conductors:
  0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping lenght: 7 mm
- terminal screw torque: 0.5 Nm (4.4 lb.in), for more information see page 34 and 35
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V

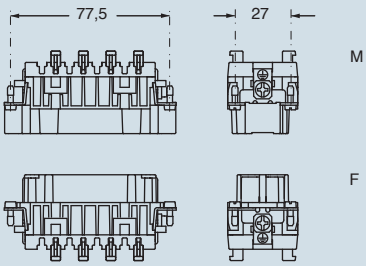
1) for non-prepared conductors



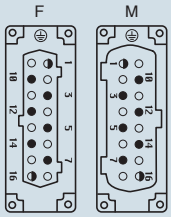
2) for bush terminal conductors



dimensions in mm



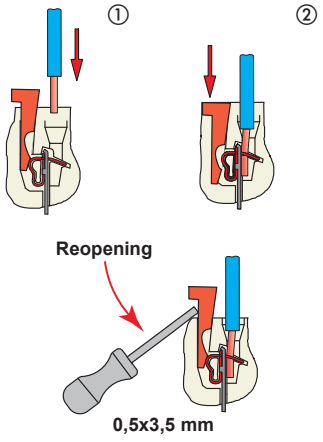
contacts side (front view)



◑ the auxiliary contacts are in the forward position upon opening

- inserts for section conductors:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

SQUICH® connections



dimensions shown are not binding and may be changed without notice

CMCE 10 + 2 (aux) poles + ⏚ 16A - 830V

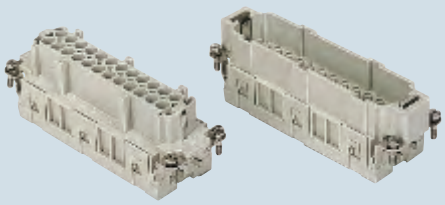
enclosures:
size "104.27" page:

C-TYPE IP65/IP66 ..... 258 - 266
C7 IP67, two levers 277
V-TYPE IP65/IP66, single lever 283/296 - 299
BIG hoods ..... 316 - 319
T-TYPE IP65 insulating ..... 332 - 333
T-TYPE / W IP66 insulating ..... 342 - 343
HYGIENIC T-TYPE / H IP66/IP69 ..... 356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
W-TYPE for aggressive environments 376
EMC 395
central lever ..... 410 - 412
IP68 ..... 432 - 435
LS-TYPE ..... 456 - 457

panel supports: page:

COB ..... 462 - 463

inserts,
crimp connections

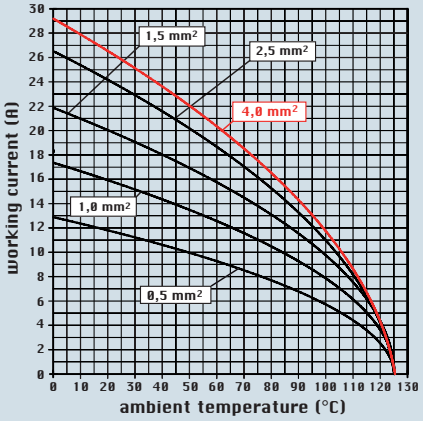


16A crimp contacts
normal and for advanced opening
silver and gold plated

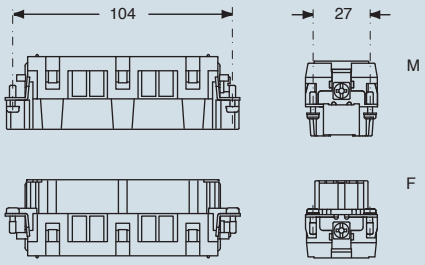
description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CMCEF 10** **CMCEM 10**		
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0** **silver plated**	**CCFD 0.3** **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0** **gold plated 1)**
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	**CCMD 0.3** **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**
16A male crimp contacts for advanced opening 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves		**CC 0.5 AN** **CC 0.7 AN** **CC 1.0 AN** **CC 1.5 AN** **CC 2.5 AN**	

- characteristics according to EN 61984:
  16A 830V 8kV 3
  16A 1000V 8kV 2
  16A 720/1250V 8kV 2
- auxiliary contacts: **16A 500V 6kV 3**
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 562

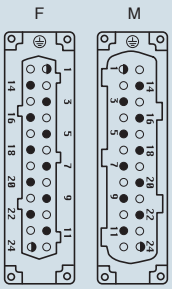
diagram CMCE 10 poles



dimensions in mm



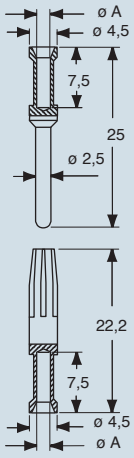
contacts side (front view)



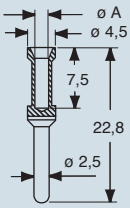
◑ the auxiliary contacts are in the forward position upon opening

dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

dimensions shown are not binding and may be changed without notice

CME - CMSH (SQUICH®) 10 + 2 (aux) poles + ⏚ 16A - 830V

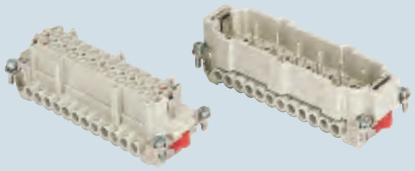
enclosures:
size "104.27" page:

C-TYPE IP65/IP66 * ..... 258 - 266
C7 IP67, two levers * 277
V-TYPE IP65/IP66, single lever * 283/296 - 299
BIG hoods * ..... 316 - 319
T-TYPE IP65 insulating ..... 332 - 333
T-TYPE / W IP66 insulating ..... 342 - 343
HYGIENIC T-TYPE / H IP66/IP69 ..... 356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
W-TYPE for aggressive environments 376
EMC * 395
central lever * ..... 410 - 412
IP68 ..... 432 - 435
insulated 830V ..... 445 - 448
LS-TYPE * ..... 456 - 457

panel supports: **COB** ..... 462 - 463

* cannot be used with CME series

inserts,
screw terminal connection



silver plated contacts

inserts,
spring terminal connection

silver plated contacts

NEW

description	part No.	part No.
indirect, with plate **1)** female inserts with female contacts male inserts with male contacts	**CMEF 10 T** **CMEM 10 T**	
direct, without plate **2)** female inserts with female contacts male inserts with male contacts	**CMEF 10 TX** **CMEM 10 TX**	
spring terminals with actuator button female inserts with female contacts male inserts with male contacts		**CMSHF 10** **CMSHM 10**

- characteristics according to EN 61984:
  16A 830V 8kV 3
  16A 1000V 8kV 2
  16A 720/1250V 8kV 2
- auxiliary contacts: **16A 500V 6kV 3**
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ (CME) - ≤ 3 mΩ (CMSH)
- for maximum current load, see the following load curves inserts, for more information see page 562

diagram CME 10 poles

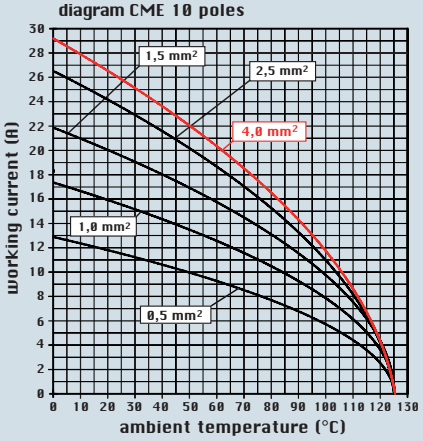
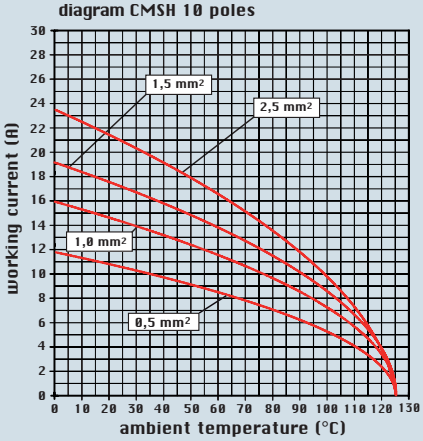
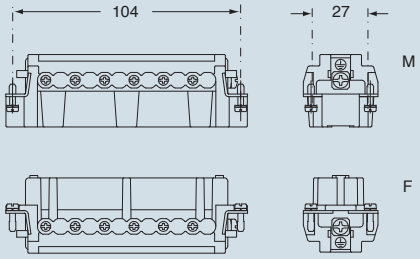


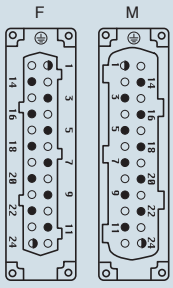
diagram CMSH 10 poles



dimensions in mm



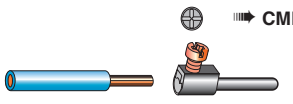
contacts side (front view)



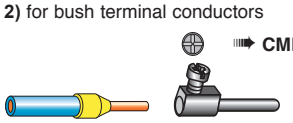
◑ the auxiliary contacts are in the forward position upon opening

- inserts with plate, for section conductors:
  0,5 - 4 mm² - AWG 20 - 12
- inserts without plate, for section conductors:
  0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping lenght: 7 mm
- terminal screw torque: 0.5 Nm (4.4 lb.in), for more information see page 34 and 35
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V

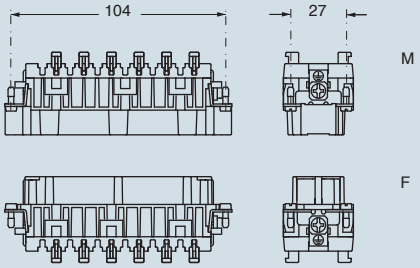
1) for non-prepared conductors



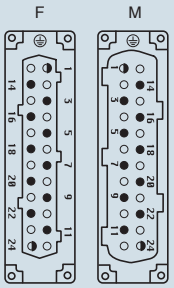
2) for bush terminal conductors



dimensions in mm



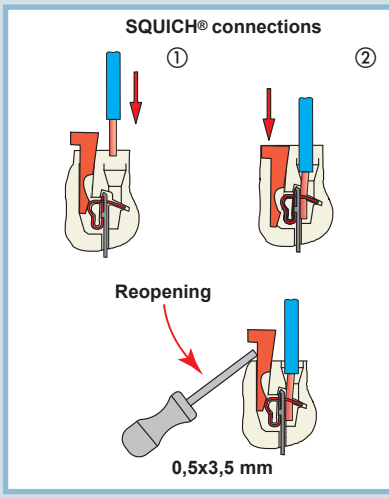
contacts side (front view)



◑ the auxiliary contacts are in the forward position upon opening

- inserts for section conductors:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght:
  9...11 mm

SQUICH® connections



dimensions shown are not binding and may be changed without notice

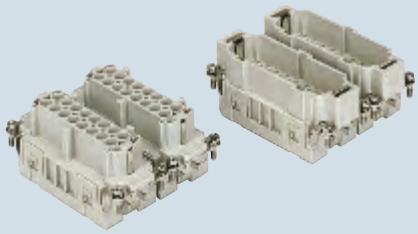
CMCE 12 + 4 (aux) poles + ⏚ 16A - 830V

enclosures:
size "77.62" page:

C-TYPE IP65/IP66 ..... 267 - 270
W-TYPE for aggressive environments 377

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

inserts,
crimp connections



16A crimp contacts
normal and for advanced opening
silver and gold plated

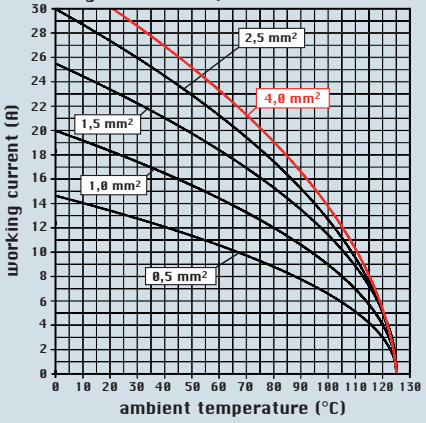
description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts, No. (1-16) and (17-32) male inserts, No. (1-16) and (17-32)	**CMCEF 06** **CMCEM 06**	**CMCEF 06 N** **CMCEM 06 N**		
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves			**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0**	**CCFD 0.3** **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0**
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves			**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	**CCMD 0.3** **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**
16A male crimp contacts for advanced opening 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves			**CC 0.5 AN** **CC 0.7 AN** **CC 1.0 AN** **CC 1.5 AN** **CC 2.5 AN**	

silver plated

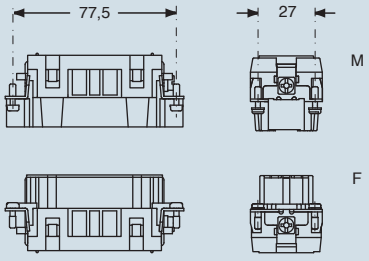
gold plated 1)

- characteristics according to EN 61984:
  16A 830V 8kV 3
  16A 1000V 8kV 2
  16A 720/1250V 8kV 2
- auxiliary contacts: **16A 500V 6kV 3**
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 562

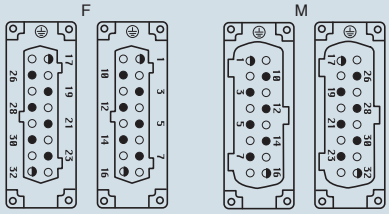
diagram CMCE 12 poles



dimensions in mm



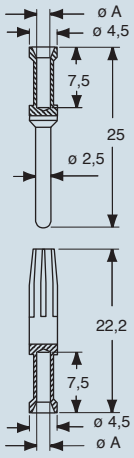
contacts side (front view)



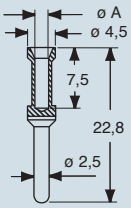
◑ the auxiliary contacts are in the forward position upon opening

dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section	conductor slot	conductors stripping length
mm²	ø A (mm)	mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

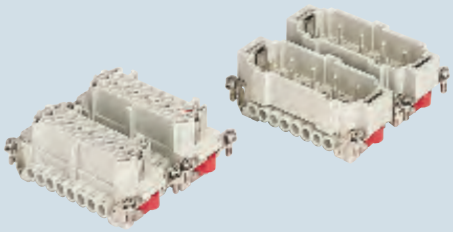
dimensions shown are not binding and may be changed without notice

CME - CMSH (SQUICH®) 12 + 4 (aux) poles + ⏚ 16A - 830V

enclosures:
size "77.62" page:

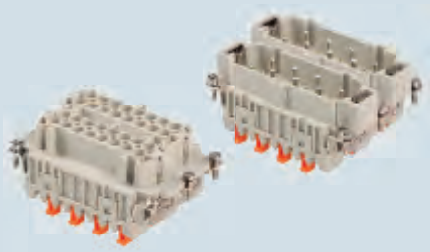
C-TYPE IP65/IP66 ..... 267 - 270
W-TYPE for aggressive environments 377

inserts,
screw terminal connection



silver plated contacts

inserts,
spring terminal connection



silver plated contacts

NEW

description	part No.	part No.	part No.	part No.
indirect, with plate **1)** female inserts, No. (1-16) and (17-32) male inserts, No. (1-16) and (17-32)	**CMEF 06 T** **CMEM 06 T**	**CMEF 06 TN** **CMEM 06 TN**		
direct, without plate **2)** female inserts, No. (1-16) and (17-32) male inserts, No. (1-16) and (17-32)	**CMEF 06 TX** **CMEM 06 TX**	**CMEF 06 TXN** **CMEM 06 TXN**		
spring terminals with actuator button female inserts, No. (1-16) and (17-32) male inserts, No. (1-16) and (17-32)			**CMSHF 06** **CMSHM 06**	**CMSHF 06 N** **CMSHM 06 N**

- characteristics according to EN 61984:
  16A 830V 8kV 3
  16A 1000V 8kV 2
  16A 720/1250V 8kV 2
- auxiliary contacts: **16A 500V 6kV 3**
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ (CME) - ≤ 3 mΩ (CMSH)
- for maximum current load, see the following load curves inserts, for more information see page 562

diagram CME 12 poles

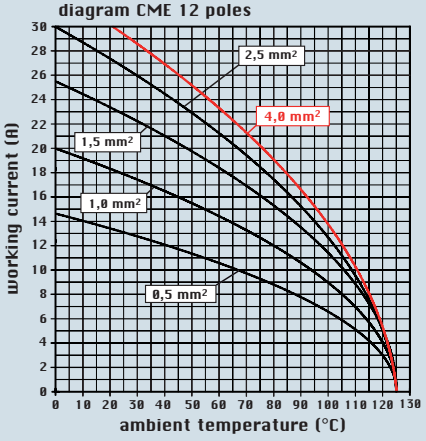
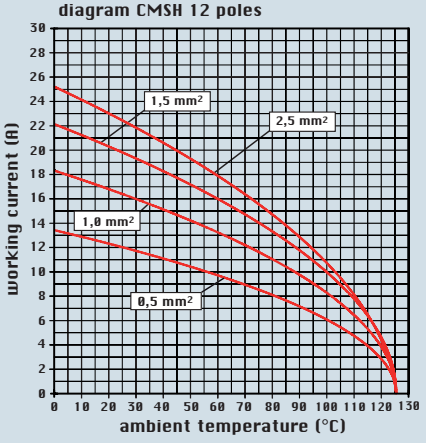
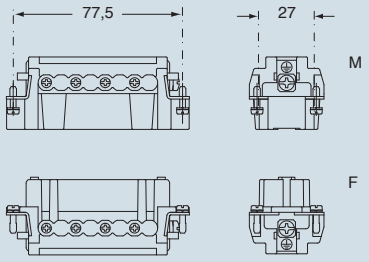


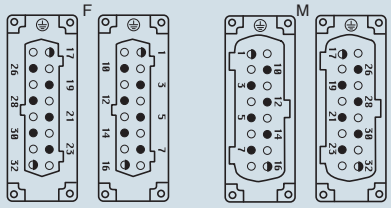
diagram CMSH 12 poles



dimensions in mm



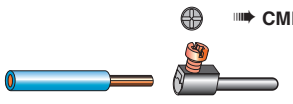
contacts side (front view)



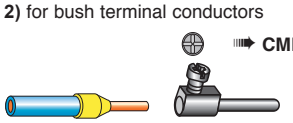
◑ the auxiliary contacts are in the forward position upon opening

- inserts with plate, for section conductors:
  0,5 - 4 mm² - AWG 20 - 12
- inserts without plate, for section conductors:
  0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping lenght: 7 mm
- terminal screw torque: 0.5 Nm (4.4 lb.in), for more information see page 34 and 35
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V

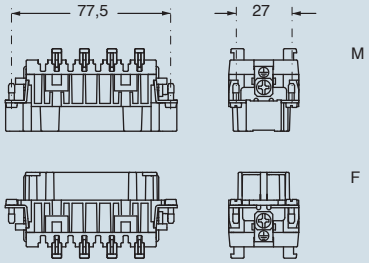
1) for non-prepared conductors



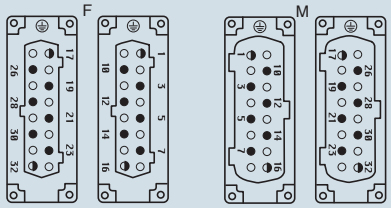
2) for bush terminal conductors



dimensions in mm



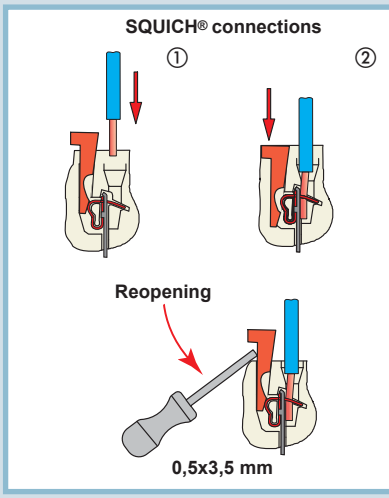
contacts side (front view)



◑ the auxiliary contacts are in the forward position upon opening

- inserts for section conductors:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

SQUICH® connections



dimensions shown are not binding and may be changed without notice

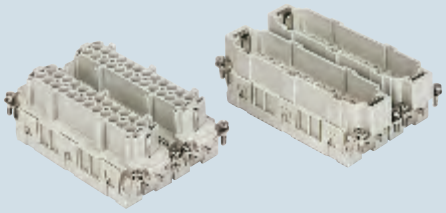
CMCE 20 + 4 (aux) poles + ⏚ 16A - 830V

enclosures:
size "104.62" page:

C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments 378

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

inserts,
crimp connections



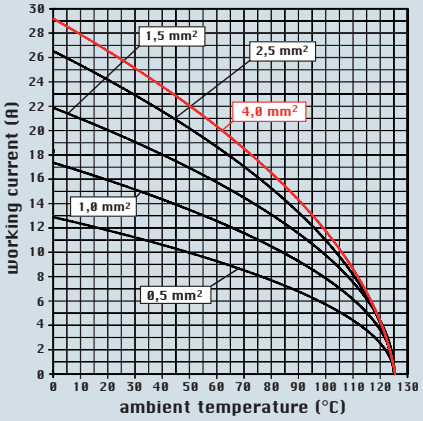
16A crimp contacts
normal and for advanced opening
silver and gold plated

description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts, No. (1-24) and (25-48) male inserts, No. (1-24) and (25-48)	**CMCEF 10** **CMCEM 10**	**CMCEF 10 N** **CMCEM 10 N**		
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves			**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0**	**CCFD 0.3** **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0**
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves			**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	**CCMD 0.3** **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**
16A male crimp contacts for advanced opening 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves			**CC 0.5 AN** **CC 0.7 AN** **CC 1.0 AN** **CC 1.5 AN** **CC 2.5 AN**	

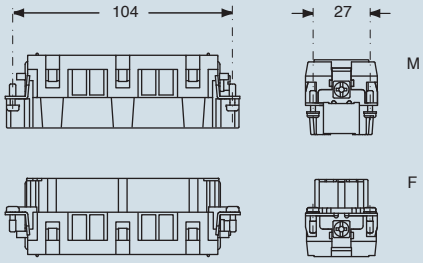
silver plated | **gold plated 1)**

- characteristics according to EN 61984:
  16A 830V 8kV 3
  16A 1000V 8kV 2
  16A 720/1250V 8kV 2
- auxiliary contacts: **16A 500V 6kV 3**
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 562

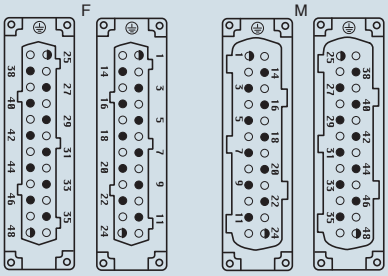
diagram CMCE 20 poles



dimensions in mm



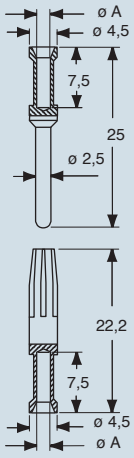
contacts side (front view)



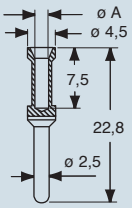
◑ the auxiliary contacts are in the forward position upon opening

dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

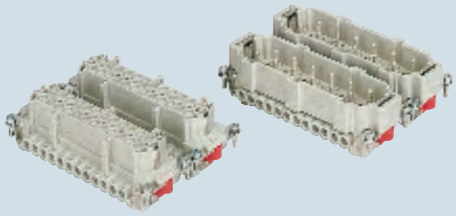
dimensions shown are not binding and may be changed without notice

CME - CMSH (SQUICH®) 20 + 4 (aux) poles + ⏚ 16A - 830V

enclosures:
size "104.62" page:

C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments 378

inserts,
screw terminal connection



silver plated contacts

inserts,
spring terminal connection

silver plated contacts

NEW

description	part No.	part No.	part No.	part No.
indirect, with plate **1)** female inserts, No. (1-24) and (25-48) male inserts, No. (1-24) and (25-48)	**CMEF 10 T** **CMEM 10 T**	**CMEF 10 TN** **CMEM 10 TN**		
direct, without plate **2)** female inserts, No. (1-24) and (25-48) male inserts, No. (1-24) and (25-48)	**CMEF 10 TX** **CMEM 10 TX**	**CMEF 10 TXN** **CMEM 10 TXN**		
spring terminals with actuator button female inserts, No. (1-24) and (25-48) male inserts, No. (1-24) and (25-48)			**CMSHF 10** **CMSHM 10**	**CMSHF 10 N** **CMSHM 10 N**

- characteristics according to EN 61984:
  16A 830V 8kV 3
  16A 1000V 8kV 2
  16A 720/1250V 8kV 2
- auxiliary contacts: **16A 500V 6kV 3**
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ (CME) - ≤ 3 mΩ (CMSH)
- for maximum current load, see the following load curves inserts, for more information see page 562

diagram CME 20 poles

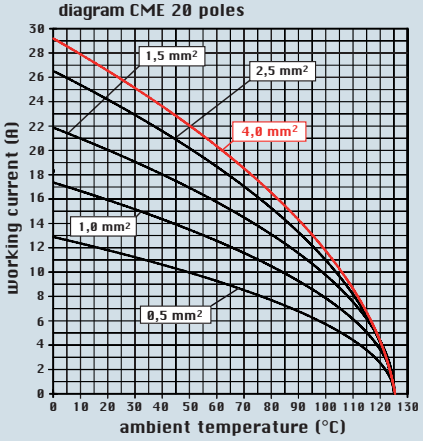
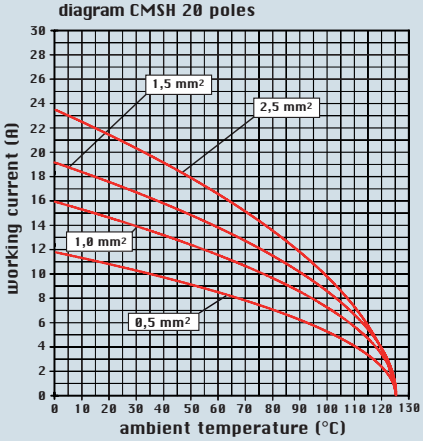
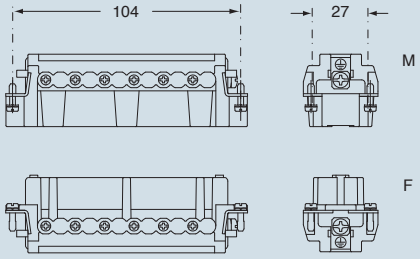


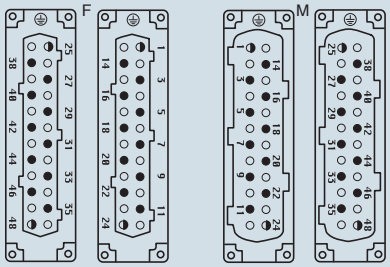
diagram CMSH 20 poles



dimensions in mm



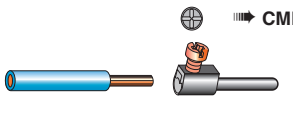
contacts side (front view)



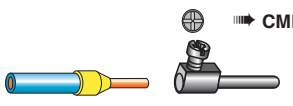
◑ the auxiliary contacts are in the forward position upon opening

- inserts with plate, for section conductors: 0,5 - 4 mm² - AWG 20 - 12
- inserts without plate, for section conductors: 0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping lenght: 7 mm
- terminal screw torque: 0.5 Nm (4.4 lb.in), for more information see page 34 and 35
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V

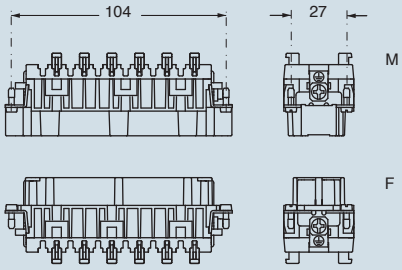
1) for non-prepared conductors



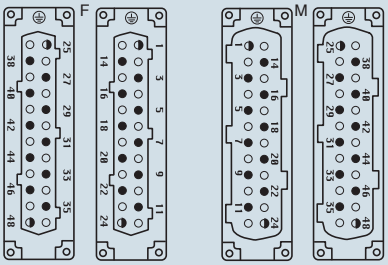
2) for bush terminal conductors



dimensions in mm



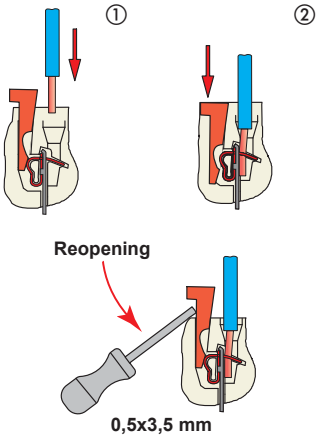
contacts side (front view)



◑ the auxiliary contacts are in the forward position upon opening

- inserts for section conductors: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm

SQUICH® connections



dimensions shown are not binding and may be changed without notice

CMCE 16 + 2 (aux) poles + ⏚ 16A - 400/690V

enclosures:
size "104.27" page:

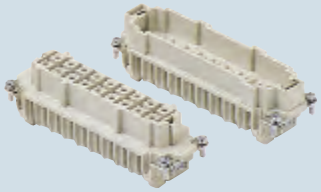
T-TYPE IP65 insulating ..... 332 - 333
T-TYPE / W IP66 insulating ..... 342 - 343
HYGIENIC T-TYPE / H IP66/IP69 ..... 356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
W-TYPE for aggressive environments 376
insulated 830V ..... 445 - 448

panel supports: page:

COB ..... 462 - 463

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF and CCM series) on pages 534, 538, 544, 546, 548

inserts,
crimp connections

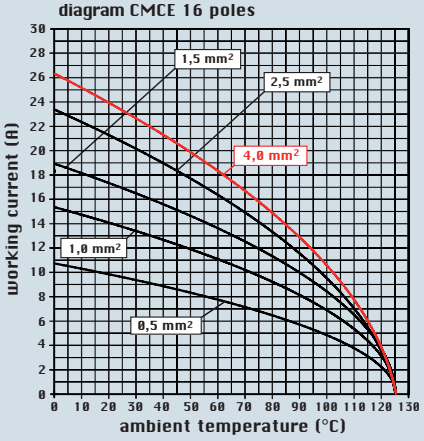


16A crimp contacts
silver and gold plated

description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CMCEF 16** **CMCEM 16**		
16A female contacts			
0,14-0,37 mm² AWG 26-22 one groove		**CCFA 0.3**	**CCFD 0.3**
0,5 mm² AWG 20 with no grooves		**CCFA 0.5**	**CCFD 0.5**
0,75 mm² AWG 18 one groove (back side)		**CCFA 0.7**	**CCFD 0.7**
1 mm² AWG 18 one groove		**CCFA 1.0**	**CCFD 1.0**
1,5 mm² AWG 16 two grooves		**CCFA 1.5**	**CCFD 1.5**
2,5 mm² AWG 14 three grooves		**CCFA 2.5**	**CCFD 2.5**
3 mm² AWG 12 one wide groove		**CCFA 3.0**	**CCFD 3.0**
4 mm² AWG 12 with no grooves		**CCFA 4.0**	**CCFD 4.0**
			silver plated / **gold plated 1)**
16A male contacts			
0,14-0,37 mm² AWG 26-22 one groove		**CCMA 0.3**	**CCMD 0.3**
0,5 mm² AWG 20 with no grooves		**CCMA 0.5**	**CCMD 0.5**
0,75 mm² AWG 18 one groove (back side)		**CCMA 0.7**	**CCMD 0.7**
1 mm² AWG 18 one groove		**CCMA 1.0**	**CCMD 1.0**
1,5 mm² AWG 16 two grooves		**CCMA 1.5**	**CCMD 1.5**
2,5 mm² AWG 14 three grooves		**CCMA 2.5**	**CCMD 2.5**
3 mm² AWG 12 one wide groove		**CCMA 3.0**	**CCMD 3.0**
4 mm² AWG 12 with no grooves		**CCMA 4.0**	**CCMD 4.0**

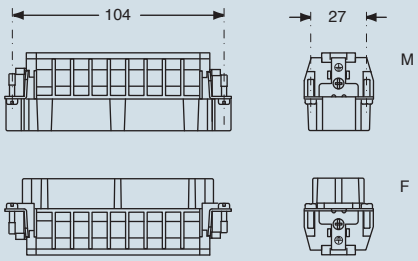
- characteristics according to EN 61984:
  16A 400/690V 6kV 3
  16A 1000V 8kV 2
  16A 720/1250V 8kV 2
- auxiliary contacts: **16A 500V 6kV 3**
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- inserts and enclosures for applications with temperatures up to 180 °C, available on request; enclosures on page 401
- for maximum current load, see the following load curves inserts, for more information see page 562

diagram CMCE 16 poles

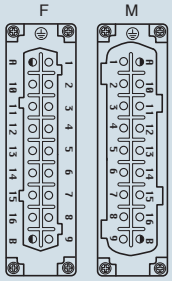


dimensions shown are not binding
and may be changed without notice

dimensions in mm



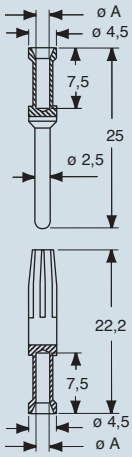
contacts side (front view)



◑ the auxiliary contacts are in the forward position upon opening

- the auxiliary contacts are the same as power contacts: early opening is obtained by drawing back the seats

dimensions in mm



CCF and CCM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

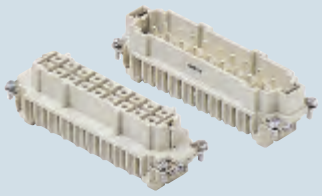
1) basic or high thickness gold plating page 481

enclosures:
size "104.27" page:

T-TYPE IP65 insulating ..... 332 - 333
T-TYPE / W IP66 insulating ..... 342 - 343
HYGIENIC T-TYPE / H IP66/IP69 ..... 356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
W-TYPE for aggressive environments 376
insulated 830V ..... 445 - 448

panel supports: page:
COB ..... 462 - 463

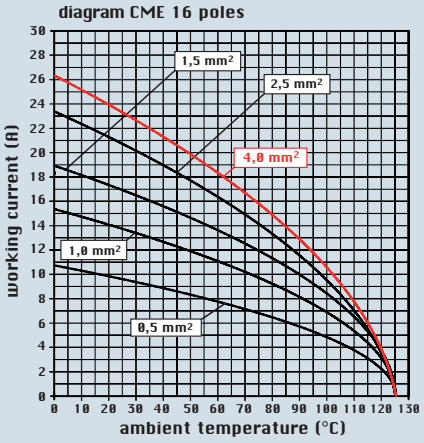
inserts,
screw terminal connection



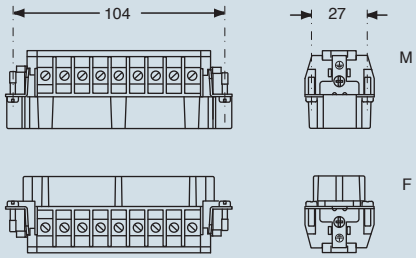
silver plated contacts

description	part No.
female inserts with female contacts male inserts with male contacts	**CMEF 16** **CMEM 16**

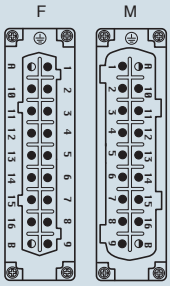
- characteristics according to EN 61984:
  16A 400/690V 6kV 3
  16A 1000V 8kV 2
  16A 720/1250V 8kV 2
- auxiliary contacts: **16A 500V 6kV 3**
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- inserts and enclosures for applications with temperatures up to 180 °C, available on request; enclosures on page 401
- for maximum current load, see the following load curves inserts, for more information see page 562



dimensions in mm



contacts side (front view)



◑ the auxiliary contacts are in the forward position upon opening

- inserts with plate, for section conductors: 0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping lenght: 7 mm
- terminal screw torque: 0,5 Nm (4,4 lb.in), for more information see page 34 and 35

dimensions shown are not binding
and may be changed without notice

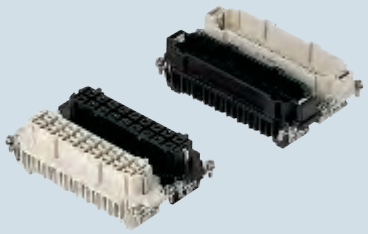
CMCE 32 + 4 (aux) poles + ⏚ 16A - 400/690V

enclosures:
size "104.62" page:

C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments 378

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF and CCM series) on pages 534, 538, 544, 546, 548

inserts, crimp connections

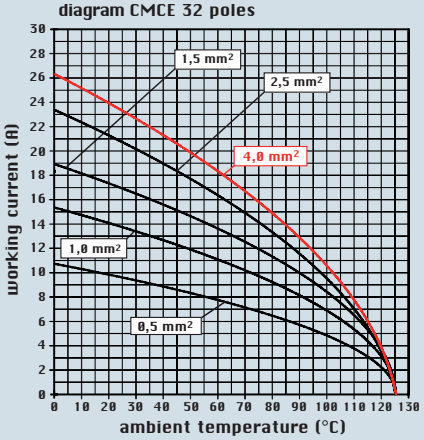


16A crimp contacts silver and gold plated

description	part No.	part No.	part No.	part No.
without contacts (to be ordered separately)				
female inserts, white and black	**CMCEF 16**	**CMCEF 16 N**		
male inserts, white and black	**CMCEM 16**	**CMCEM 16 N**		
16A female contacts				
0,14-0,37 mm² AWG 26-22 one groove			**CCFA 0.3**	**CCFD 0.3**
0,5 mm² AWG 20 with no grooves			**CCFA 0.5**	**CCFD 0.5**
0,75 mm² AWG 18 one groove (back side)			**CCFA 0.7**	**CCFD 0.7**
1 mm² AWG 18 one groove			**CCFA 1.0**	**CCFD 1.0**
1,5 mm² AWG 16 two grooves			**CCFA 1.5**	**CCFD 1.5**
2,5 mm² AWG 14 three grooves			**CCFA 2.5**	**CCFD 2.5**
3 mm² AWG 12 one wide groove			**CCFA 3.0**	**CCFD 3.0**
4 mm² AWG 12 with no grooves			**CCFA 4.0**	**CCFD 4.0**
				silver plated / **gold plated 1)**
16A male contacts				
0,14-0,37 mm² AWG 26-22 one groove			**CCMA 0.3**	**CCMD 0.3**
0,5 mm² AWG 20 with no grooves			**CCMA 0.5**	**CCMD 0.5**
0,75 mm² AWG 18 one groove (back side)			**CCMA 0.7**	**CCMD 0.7**
1 mm² AWG 18 one groove			**CCMA 1.0**	**CCMD 1.0**
1,5 mm² AWG 16 two grooves			**CCMA 1.5**	**CCMD 1.5**
2,5 mm² AWG 14 three grooves			**CCMA 2.5**	**CCMD 2.5**
3 mm² AWG 12 one wide groove			**CCMA 3.0**	**CCMD 3.0**
4 mm² AWG 12 with no grooves			**CCMA 4.0**	**CCMD 4.0**

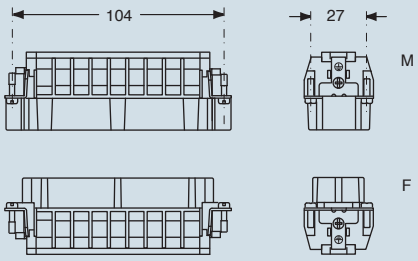
- characteristics according to EN 61984:
  16A 400/690V 6kV 3
  16A 1000V 8kV 2
  16A 720/1250V 8kV 2
- auxiliary contacts: **16A 500V 6kV 3**
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 562

diagram CMCE 32 poles

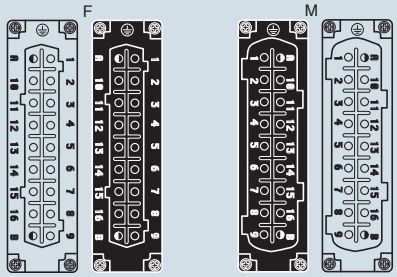


dimensions shown are not binding
and may be changed without notice

dimensions in mm



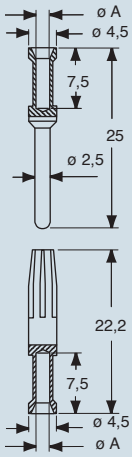
contacts side (front view)



◑ the auxiliary contacts are in the forward position upon opening

- the auxiliary contacts are the same as power contacts: early opening is obtained by drawing back the seats

dimensions in mm



CCF and CCM contacts

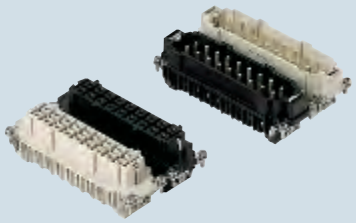
conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

enclosures:
size "104.62" page:

C-TYPE IP65/IP66..... 271
W-TYPE for aggressive environments 378

inserts,
screw terminal connection

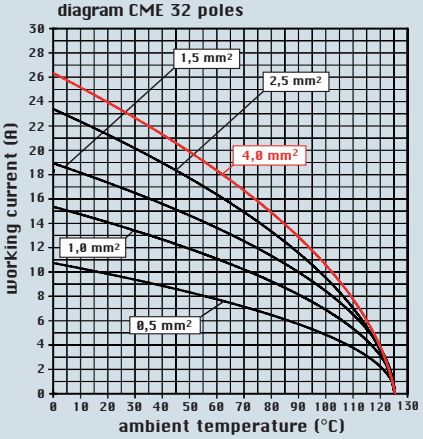


silver plated contacts

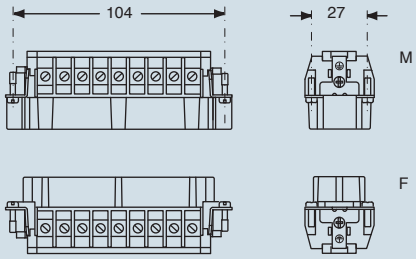
description	part No.	part No.
female inserts, white and black	**CMEF 16**	**CMEF 16 N**
male inserts, white and black	**CMEM 16**	**CMEM 16 N**

- characteristics according to EN 61984:
  16A 400/690V 6kV 3
  16A 1000V 8kV 2
  16A 720/1250V 8kV 2
- auxiliary contacts: **16A 500V 6kV 3**
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 562

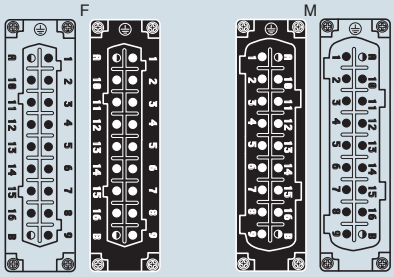
diagram CME 32 poles



dimensions in mm



contacts side (front view)



◑ the auxiliary contacts are in the forward position upon opening

- inserts with plate, for section conductors: 0.75 - 2.5 mm² - AWG 18 - 14
- conductors stripping lenght: 7 mm
- terminal screw torque: 0.5 Nm (4.4 lb.in), for more information see page 34 and 35

dimensions shown are not binding
and may be changed without notice

CP - CP...RY 6 poles + ⏚ 35A - 400/690V

enclosures:
size "77.27" page:

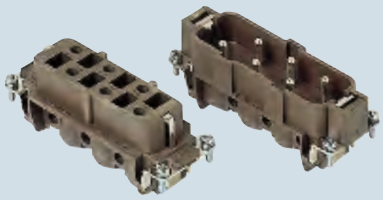
C-TYPE IP65/IP66 ..... 250 - 256
C7 IP67, two levers 276
V-TYPE IP65/IP66, single lever 282/292 - 295
BIG hoods ..... 312 - 315
T-TYPE IP65 insulating ..... 330 - 331
T-TYPE / W IP66 insulating ..... 340 - 341
HYGIENIC T-TYPE / H IP66/IP69 ..... 354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
W-TYPE for aggressive environments 375
EMC 394
for 180 °C 400
central lever ..... 408 - 409
IP68 ..... 428 - 431
LS-TYPE ..... 454 - 455

panel supports: page:
COB ..... 462 - 463

inserts,
screw terminal connection

silver plated contacts

inserts,
screw terminal connection



silver plated contacts

description	part No.	part No.
indirect, with plate female inserts with female contacts male inserts with male contacts	**CPF 06** **CPM 06**	
indirect, with plate, use in temperatures up to 180 °C female inserts with female contacts, brown male inserts with male contacts, brown		**CPF 06 RY** **CPM 06 RY**

- characteristics according to EN 61984:
  35A 400/690V 6kV 3
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
  (CP RY version up to 180 °C)
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0,5 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 562

diagram CP 06 poles

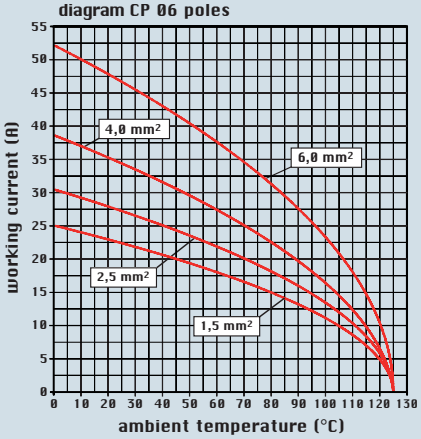
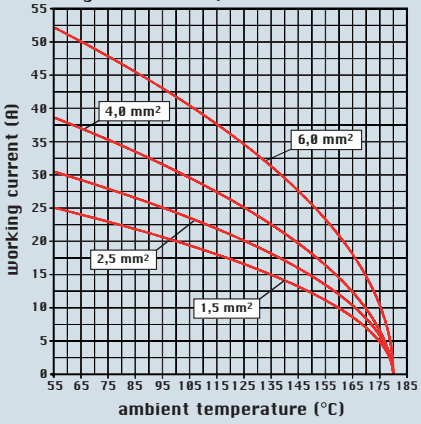
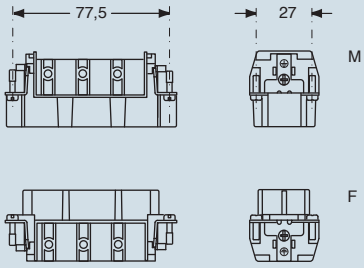


diagram CP..RY 06 poles

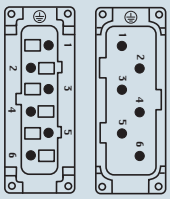


dimensions shown are not binding
and may be changed without notice

dimensions in mm

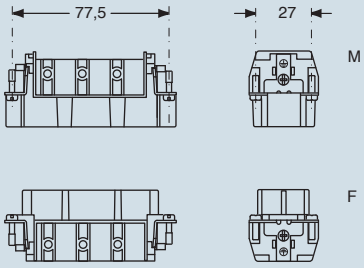


contacts side (front view)

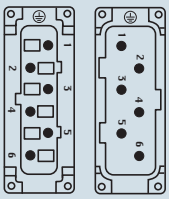


- inserts with plate, for section conductors:
  1,50 - 6 mm² - AWG 16 - 10
- conductors stripping lenght: 10,5 mm
- terminal screw torque: 1,2 Nm (10,7 lb.in), for more information see page 34 and 35

dimensions in mm



contacts side (front view)

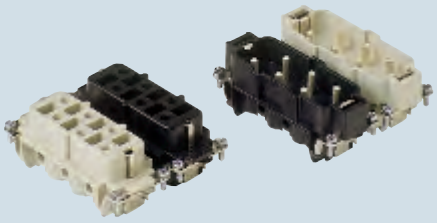


- inserts with plate, for section conductors:
  1,50 - 6 mm² - AWG 16 - 10
- conductors stripping lenght: 10,5 mm
- terminal screw torque: 1,2 Nm (10,7 lb.in), for more information see page 34 and 35

enclosures:
size "77.62" page:

C-TYPE IP65/IP66 ..... 267 - 270
W-TYPE for aggressive environments 377

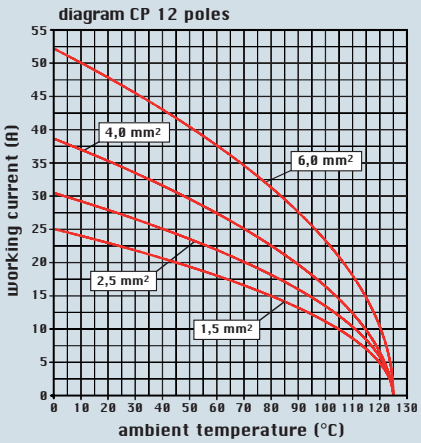
inserts,
screw terminal connection



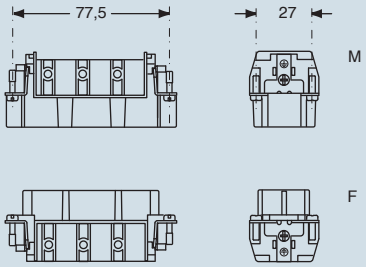
silver plated contacts

description	part No.	part No.
indirect, with plate female inserts No. (1-6), white and black male inserts No. (1-6), white and black	**CPF 06** **CPM 06**	**CPF 06 N** **CPM 06 N**

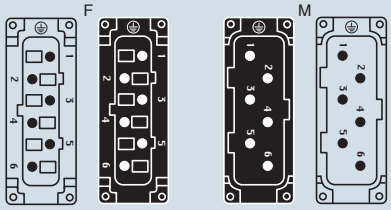
- characteristics according to EN 61984:
  35A 400/690V 6kV 3
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0,5 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 562



dimensions in mm



contacts side (front view)



- inserts with plate, for section conductors:
  1,50 - 6 mm² - AWG 16 - 10
- conductors stripping lenght: 10,5 mm
- terminal screw torque: 1,2 Nm (10,7 lb.in), for more information see page 34 and 35

dimensions shown are not binding
and may be changed without notice

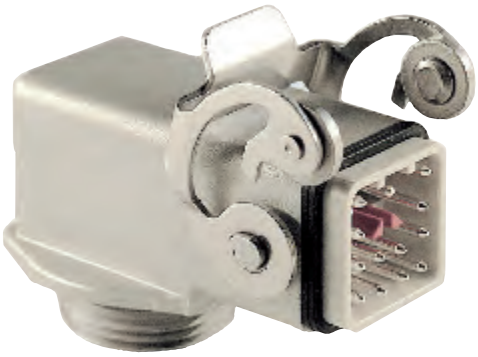
CQ series

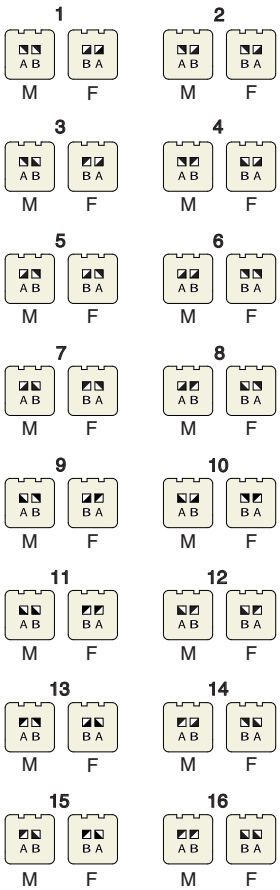
12 poles + ⏚

Bridges for delta or star connection

from page 493

Coding positions for CQ 12 connector





(A B) CQ 12 coding pin

M = male insert
F = female insert

page 165

CQ 12 poles + ⏚ 10A - 400V

enclosures:
size "21.21" page:

insulating type ..... 221 - 222
metallic type ..... 223 - 225
W-TYPE foraggressive environments 369
EMC 387
IP68 ..... 416 - 418

ISO 23570-3 standard and DESINA® specification compliant

inserts, crimp connections

10A crimp contacts silver and gold plated

description	part No.	part No.	part No.
without contacts (to be ordered separately)			
female inserts for female contacts	**CQF 12**		
male inserts for male contacts	**CQM 12**		

10A female contacts

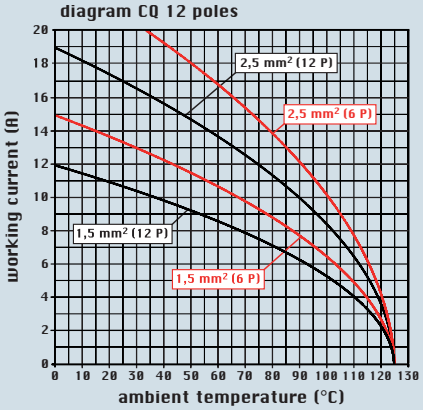
0,14-0,37 mm²	AWG 26-22	identification No. 1	**CDFA 0.3**	**CDFD 0.3**	
0,5 mm²	AWG 20	identification No. 2	**CDFA 0.5**	**CDFD 0.5**	
0,75 mm²	AWG 18	identification No. ②	**CDFA 0.7**	**CDFD 0.7**	
1 mm²	AWG 18	identification No. 3	**CDFA 1.0**	**CDFD 1.0**	
1,5 mm²	AWG 16	identification No. 4	**CDFA 1.5**	**CDFD 1.5**	
2,5 mm²	AWG 14	identification No. 5	**CDFA 2.5**	**CDFD 2.5**	

10A male contacts

0,14-0,37 mm²	AWG 26-22	identification No. 1	**CDMA 0.3**	**CDMD 0.3**	
0,5 mm²	AWG 20	identification No. 2	**CDMA 0.5**	**CDMD 0.5**	
0,75 mm²	AWG 18	identification No. ②	**CDMA 0.7**	**CDMD 0.7**	
1 mm²	AWG 18	identification No. 3	**CDMA 1.0**	**CDMD 1.0**	
1,5 mm²	AWG 16	identification No. 4	**CDMA 1.5**	**CDMD 1.5**	
2,5 mm²	AWG 14	identification No. 5	**CDMA 2.5**	**CDMD 2.5**	

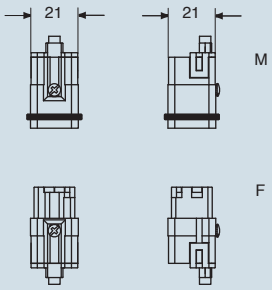
silver plated | **gold plated 1)**

- characteristics according to EN 61984:
  10A 400V 6kV 3
  10A 400/690V 6kV 2
- cUL (UL for USA and Canada), CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- the CQ 12 inserts are already supplied with a seal and a screw, which ensure IP66/IP67 protection rating
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 563



dimensions shown are not binding
and may be changed without notice

dimensions in mm

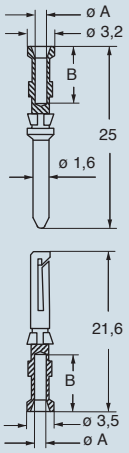


contacts side (front view)

Note:
PE screw connection for unprepared wires only

◪ the CR Q12 coding pins (to be ordered separately), allow the user to create 16 different combinations, according to the diagram shown on page 491

dimensions in mm



CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

CQ 5 poles + ⏚ 16A - 230/400V

enclosures:
size "21.21" page:

insulating type ..... 221 - 222
metallic type ..... 223 - 225
W-TYPE foraggressive environments 369
EMC 387
IP68 ..... 416 - 418

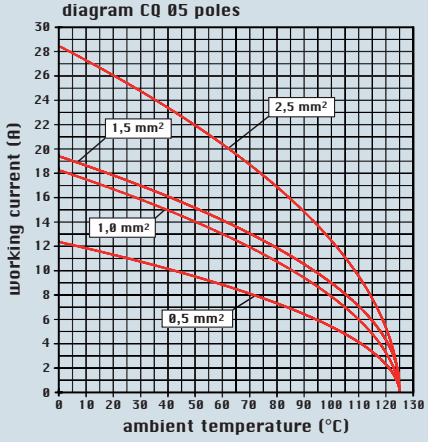
- inserts and enclosures for applications with temperatures up to 180 °C, available on request
- can also be used partially fitted with 4 mm² section contacts

inserts, crimp connections

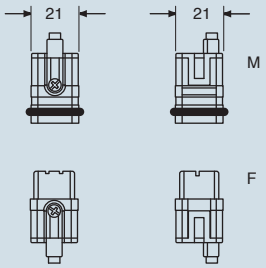
16A crimp contacts
normal and for advanced opening
silver and gold plated

description	part No.	part No.	part No.
without contacts (to be ordered separately)			
female inserts for female contacts	**CQF 05**		
male inserts for male contacts	**CQM 05**		
16A female contacts			
0,14-0,37 mm² AWG 26-22 one groove		**CCFA 0.3**	**CCFD 0.3**
0,5 mm² AWG 20 with no grooves		**CCFA 0.5**	**CCFD 0.5**
0,75 mm² AWG 18 one groove (back side)		**CCFA 0.7**	**CCFD 0.7**
1 mm² AWG 18 one groove		**CCFA 1.0**	**CCFD 1.0**
1,5 mm² AWG 16 two grooves		**CCFA 1.5**	**CCFD 1.5**
2,5 mm² AWG 14 three grooves		**CCFA 2.5**	**CCFD 2.5**
3 mm² AWG 12 one wide groove		**CCFA 3.0**	**CCFD 3.0**
4 mm² AWG 12 with no grooves		**CCFA 4.0**	**CCFD 4.0**
			silver plated / **gold plated 1)**
16A male contacts			
0,14-0,37 mm² AWG 26-22 one groove		**CCMA 0.3**	**CCMD 0.3**
0,5 mm² AWG 20 with no grooves		**CCMA 0.5**	**CCMD 0.5**
0,75 mm² AWG 18 one groove (back side)		**CCMA 0.7**	**CCMD 0.7**
1 mm² AWG 18 one groove		**CCMA 1.0**	**CCMD 1.0**
1,5 mm² AWG 16 two grooves		**CCMA 1.5**	**CCMD 1.5**
2,5 mm² AWG 14 three grooves		**CCMA 2.5**	**CCMD 2.5**
3 mm² AWG 12 one wide groove		**CCMA 3.0**	**CCMD 3.0**
4 mm² AWG 12 with no grooves		**CCMA 4.0**	**CCMD 4.0**
16A male crimp contacts for advanced opening			
0,5 mm² AWG 20 with no grooves		**CC 0.5 AN**	
0,75 mm² AWG 18 one groove (back side)		**CC 0.7 AN**	
1 mm² AWG 18 one groove		**CC 1.0 AN**	
1,5 mm² AWG 16 two grooves		**CC 1.5 AN**	
2,5 mm² AWG 14 three grooves		**CC 2.5 AN**	

- characteristics according to EN 61984:
  16A 230/400V 4kV 3
  16A 320/500V 4kV 2
- cUL (UL for USA and Canada), CSA, CCC *, DNV-GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 563



dimensions in mm



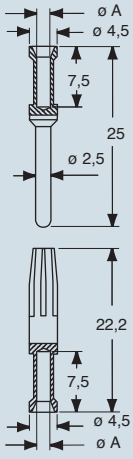
contacts side (front view)

Note:
PE screw connection for unprepared wires only

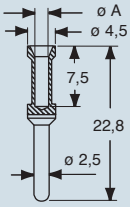
coding pins CR CPQ, see page 491

dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

dimensions shown are not binding and may be changed without notice

CQ 8 poles + ⏚ 16A - 500V

enclosures:
size "32.13" page:

insulating type ..... 226 - 227
EMC ..... 388 - 389

- can also be used partially fitted with 4 mm² section contacts

ISO 23570-3 standard and DESINA® specification compliant

inserts, crimp connections

16A crimp contacts
normal and for advanced opening
silver and gold plated

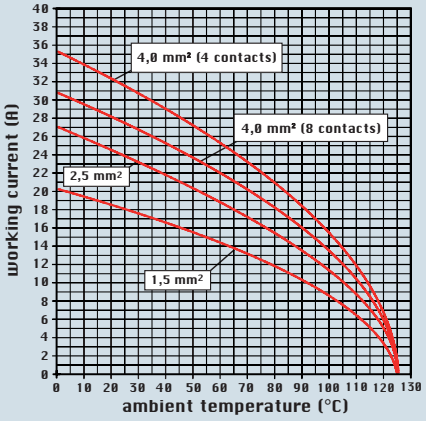
description	part No.	part No.	part No.
without contacts (to be ordered separately)			
female inserts for female contacts	**CQF 08**		
male inserts for male contacts	**CQM 08**		
16A female contacts			
0,14-0,37 mm² AWG 26-22 one groove		**CCFA 0.3**	**CCFD 0.3**
0,5 mm² AWG 20 with no grooves		**CCFA 0.5**	**CCFD 0.5**
0,75 mm² AWG 18 one groove (back side)		**CCFA 0.7**	**CCFD 0.7**
1 mm² AWG 18 one groove		**CCFA 1.0**	**CCFD 1.0**
1,5 mm² AWG 16 two grooves		**CCFA 1.5**	**CCFD 1.5**
2,5 mm² AWG 14 three grooves		**CCFA 2.5**	**CCFD 2.5**
3 mm² AWG 12 one wide groove		**CCFA 3.0**	**CCFD 3.0**
4 mm² AWG 12 with no grooves		**CCFA 4.0**	**CCFD 4.0**
16A male contacts			
0,14-0,37 mm² AWG 26-22 one groove		**CCMA 0.3**	**CCMD 0.3**
0,5 mm² AWG 20 with no grooves		**CCMA 0.5**	**CCMD 0.5**
0,75 mm² AWG 18 one groove (back side)		**CCMA 0.7**	**CCMD 0.7**
1 mm² AWG 18 one groove		**CCMA 1.0**	**CCMD 1.0**
1,5 mm² AWG 16 two grooves		**CCMA 1.5**	**CCMD 1.5**
2,5 mm² AWG 14 three grooves		**CCMA 2.5**	**CCMD 2.5**
3 mm² AWG 12 one wide groove		**CCMA 3.0**	**CCMD 3.0**
4 mm² AWG 12 with no grooves		**CCMA 4.0**	**CCMD 4.0**
16A male crimp contacts for advanced opening			
0,5 mm² AWG 20 with no grooves		**CC 0.5 AN**	
0,75 mm² AWG 18 one groove (back side)		**CC 0.7 AN**	
1 mm² AWG 18 one groove		**CC 1.0 AN**	
1,5 mm² AWG 16 two grooves		**CC 1.5 AN**	
2,5 mm² AWG 14 three grooves		**CC 2.5 AN**	

silver plated

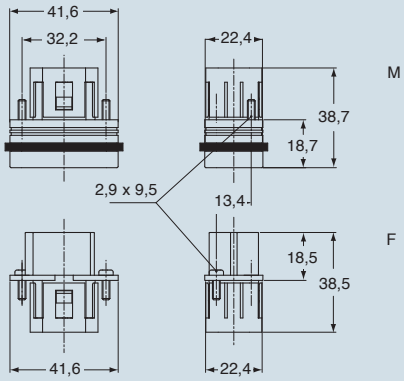
gold plated 1)

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- cUL (UL for USA and Canada), CSA, CCC *, EAC, certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 563

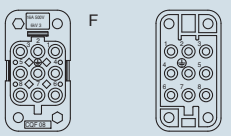
diagram CQ 08 poles



dimensions in mm

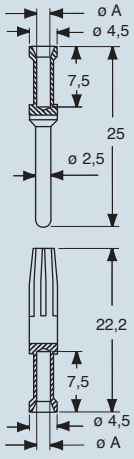


contacts side (front view)

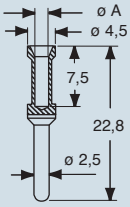


dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548

dimensions shown are not binding and may be changed without notice

CQ 4 poles (40A - 400/690V) + 2 poles (10A - 250V) + ⏚

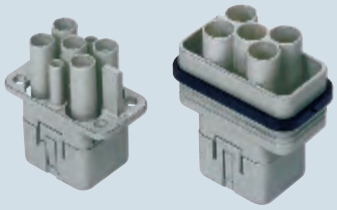
enclosures:
size "32.13" page:

insulating type ..... 226 - 227
EMC ..... 388 - 389

- for contact crimping instructions, please see the crimping tool section (40A contacts, CXF, CXM series and 10A contacts CDF, CDM series) on pages 534, 536, 538, 544, 546, 548

ISO 23570-3 standard and DESINA® specification compliant

inserts, crimp connections



10A and 40A crimp contacts silver and gold plated

40A

10A

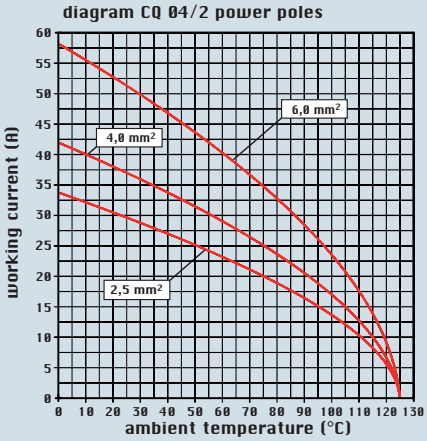
description	part No.	part No.	part No.
without contacts (to be ordered separately)			
female inserts for female contacts	**CQF 04/2**		
male inserts for male contacts	**CQM 04/2**		
40A female contacts			
1,5 mm² AWG 16		**CXFA 1.5**	
2,5 mm² AWG 14		**CXFA 2.5**	
4 mm² AWG 12		**CXFA 4.0**	
6 mm² AWG 10		**CXFA 6.0**	
40A male contacts			
1,5 mm² AWG 16		**CXMA 1.5**	
2,5 mm² AWG 14		**CXMA 2.5**	
4 mm² AWG 12		**CXMA 4.0**	
6 mm² AWG 10		**CXMA 6.0**	
10A female contacts			
0,14-0,37 mm² AWG 26-22 identification No. 1		**CDFA 0.3**	**CDFD 0.3**
0,5 mm² AWG 20 identification No. 2		**CDFA 0.5**	**CDFD 0.5**
0,75 mm² AWG 18 identification No. ②		**CDFA 0.7**	**CDFD 0.7**
1 mm² AWG 18 identification No. 3		**CDFA 1.0**	**CDFD 1.0**
1,5 mm² AWG 16 identification No. 4		**CDFA 1.5**	**CDFD 1.5**
2,5 mm² AWG 14 identification No. 5		**CDFA 2.5**	**CDFD 2.5**
10A male contacts			
0,14-0,37 mm² AWG 26-22 identification No. 1		**CDMA 0.3**	**CDMD 0.3**
0,5 mm² AWG 20 identification No. 2		**CDMA 0.5**	**CDMD 0.5**
0,75 mm² AWG 18 identification No. ②		**CDMA 0.7**	**CDMD 0.7**
1 mm² AWG 18 identification No. 3		**CDMA 1.0**	**CDMD 1.0**
1,5 mm² AWG 16 identification No. 4		**CDMA 1.5**	**CDMD 1.5**
2,5 mm² AWG 14 identification No. 5		**CDMA 2.5**	**CDMD 2.5**

silver plated (CXFA / CXMA / CDFA / CDMA)

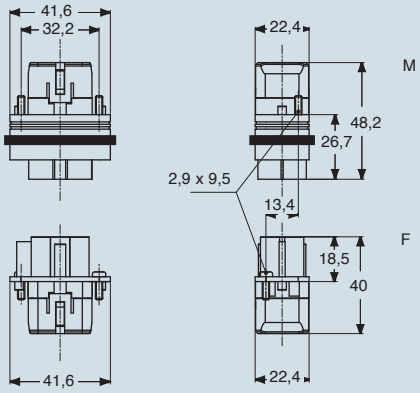
gold plated 1) (CDFD / CDMD)

- characteristics according to EN 61984:
  4 poles 40A 400/690V 6kV 3
  2 poles 10A 250V 4kV 3
- cUL (UL for USA and Canada), CSA, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0.3 mΩ (4 poles)
  ≤ 3 mΩ (2 poles)
- for maximum current load, see the following load curves inserts, for more information see page 563

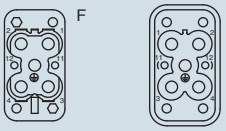
diagram CQ 04/2 power poles



dimensions in mm



contacts side (front view)

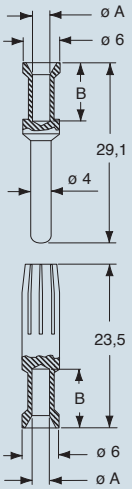


CXF and CXM contacts

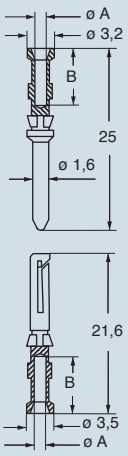
conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
1,5	1,75	9
2,5	2,25	9
4	2,85	9,6
6	3,5	9,6

dimensions in mm

CXF and CXM



CDF and CDM



CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

dimensions shown are not binding and may be changed without notice

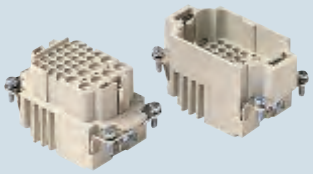
CX 8 poles (16A - 400V) + 24 poles (10A - 250V) + ⏚

enclosures:
size "57.27" page:

C-TYPE IP65/IP66 ..... 244 - 249
C7 IP67, two levers 275
V-TYPE IP65/IP66, single lever 281/288 - 291
BIG hoods ..... 308 - 311
T-TYPE IP65 insulating ..... 328 - 329
T-TYPE / W IP66 insulating ..... 338 - 339
HYGIENIC T-TYPE / H IP66/IP69 ..... 352 - 353
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 360 - 361
W-TYPE for aggressive environments 374
EMC 393
central lever ..... 406 - 407
IP68 ..... 424 - 427
LS-TYPE ..... 452 - 453

panel supports: page:
COB ..... 462 - 463

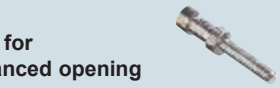
inserts,
crimp connections



16A and 10A crimp contacts
normal and for advanced opening
silver and gold plated

16A

16A for
advanced opening



10A

description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CXF 8/24** **CXM 8/24**		
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0**	**CCFD 0.3** **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0**
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	**CCMD 0.3** **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**
16A male crimp contacts for advanced opening 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves		**CC 0.5 AN** **CC 0.7 AN** **CC 1.0 AN** **CC 1.5 AN** **CC 2.5 AN**	
10A female contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5**	**CDFD 0.3** **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5**
10A male contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5**	**CDMD 0.3** **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5**

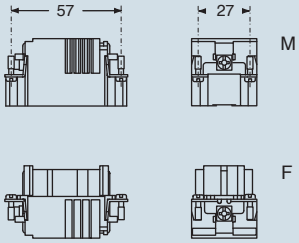
silver plated (CCFA / CCMA / CC AN / CDFA / CDMA)

gold plated (CCFD / CCMD / CDFD / CDMD)

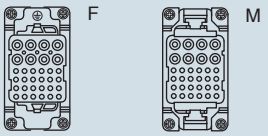
- characteristics according to EN 61984:
  16A 230/400V 4kV 3
  16A 400V 4kV 2
  10A 160V 2,5kV 3
  10A 250V 4kV 2
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ (8 poles)
  ≤ 3 mΩ (24 poles)
- for maximum current load, see the insert load curve section on page 563
- for contact crimping, see the crimp tool section (16A contacts CCF, CCM, CC....AN series and 10A contacts CDF, CDM series) on pages 534, 538, 544, 546, 548
- PCBs interface, see article CIF 2.4 (10A contacts)

dimensions shown are not binding
and may be changed without notice

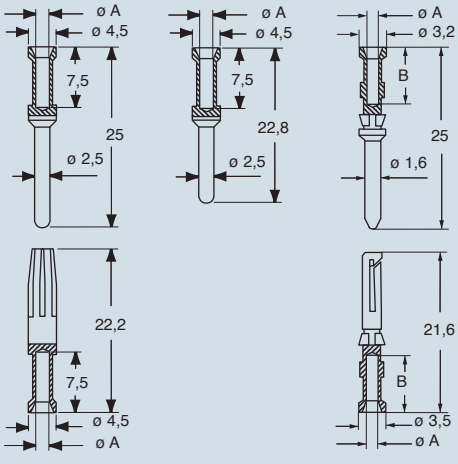
dimensions in mm



contacts side (front view)



dimensions in mm



- characteristics for contacts:
  CCF, **CCM** and **CC...AN** see page 167
  CDF and **CDM** see page 168

CX 6 poles (40A - 690V) + 36 poles (10A - 250V) + ⏚

enclosures:
size "77.27" page:

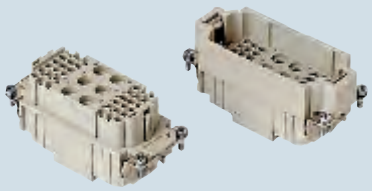
C-TYPE IP65/IP66 ..... 250 - 256
C7 IP67, two levers 276
V-TYPE IP65/IP66, single lever 282/292 - 295
BIG hoods ..... 312 - 315
T-TYPE IP65 insulating ..... 330 - 331
T-TYPE / W IP66 insulating ..... 340 - 341
HYGIENIC T-TYPE / H IP66/IP69 ..... 354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
W-TYPE for aggressive environments 375
EMC 394
central lever ..... 408 - 409
IP68 ..... 428 - 431
LS-TYPE ..... 454 - 455

panel supports: page:

COB ..... 462 - 463

- PCBs interface, see article CIF 2.4 (10A contacts)

inserts,
crimp connections



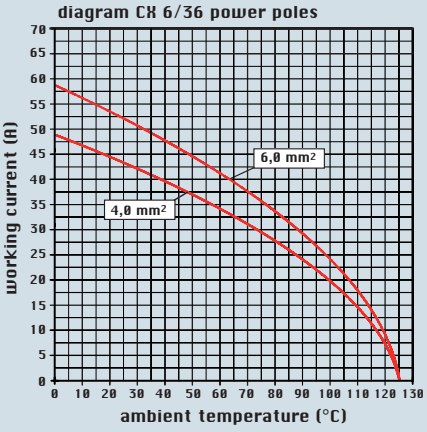
40A and 10A crimp contacts
silver and gold plated

40A

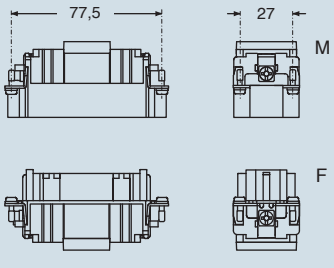
10A

description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CXF 6/36** **CXM 6/36**		
40A female contacts 1,5 mm² AWG 16 2,5 mm² AWG 14 4 mm² AWG 12 6 mm² AWG 10		**CXFA 1.5** **CXFA 2.5** **CXFA 4.0** **CXFA 6.0**	silver plated
40A male contacts 1,5 mm² AWG 16 2,5 mm² AWG 14 4 mm² AWG 12 6 mm² AWG 10		**CXMA 1.5** **CXMA 2.5** **CXMA 4.0** **CXMA 6.0**	silver plated
10A female contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5**	silver plated
		CDFD 0.3 **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5**	gold plated 1)
10A male contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5**	silver plated
		CDMD 0.3 **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5**	gold plated 1)

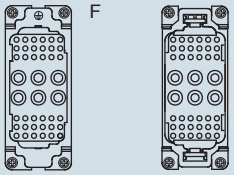
- characteristics according to EN 61984:
  40A 690V 8kV 3
  10A 160V 2,5kV 3
  10A 250V 4kV 2
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0,3 mΩ (6 poles)
  ≤ 1 mΩ (36 poles)
- for maximum current load, see the following load curves inserts, for more information see page 563



dimensions in mm



contacts side (front view)

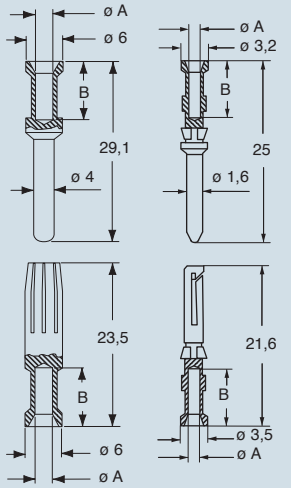


CXF and CXM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
1,5	1,75	9
2,5	2,25	9
4	2,85	9,6
6	3,5	9,6

dimensions in mm

CXF and CXM **CDF and CDM**



for contact crimping instructions, please see the crimping tool section (40A contacts CXF, CXM series and 10A contacts CDF, CDM series) on pages 534, 536, 538, 544, 546, 548

CDF and CDM contacts

conductor section (mm²)	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

dimensions shown are not binding and may be changed without notice

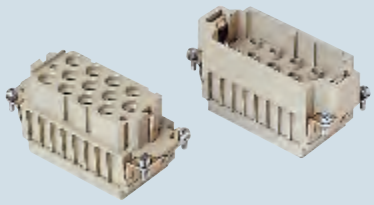
CX 12 poles (40A - 690V) + 2 poles (10A - 250V) + ⏚

enclosures:
size "77.27" page:

C-TYPE IP65/IP66 ..... 250 - 256
C7 IP67, two levers 276
V-TYPE IP65/IP66, single lever 282/292 - 295
BIG hoods ..... 312 - 315
T-TYPE IP65 insulating ..... 330 - 331
T-TYPE / W IP66 insulating ..... 340 - 341
HYGIENIC T-TYPE / H IP66/IP69 ..... 354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
W-TYPE for aggressive environments 375
EMC 394
central lever ..... 408 - 409
IP68 ..... 428 - 431
LS-TYPE ..... 454 - 455

panel supports: page:
COB ..... 462 - 463

inserts, crimp connections



40A and 10A crimp contacts silver and gold plated

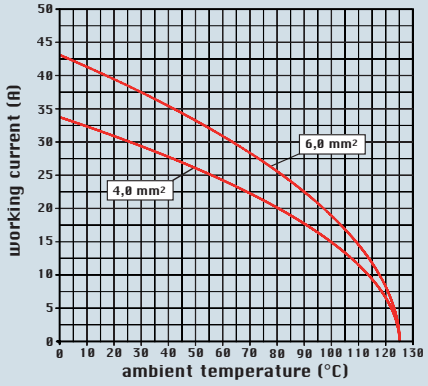
40A

10A

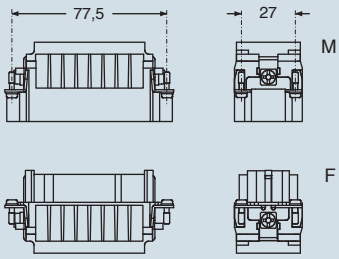
description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CXF 12/2** **CXM 12/2**		
40A female contacts 1,5 mm² AWG 16 2,5 mm² AWG 14 4 mm² AWG 12 6 mm² AWG 10		**CXFA 1.5** **CXFA 2.5** **CXFA 4.0** **CXFA 6.0**	silver plated
40A male contacts 1,5 mm² AWG 16 2,5 mm² AWG 14 4 mm² AWG 12 6 mm² AWG 10		**CXMA 1.5** **CXMA 2.5** **CXMA 4.0** **CXMA 6.0**	silver plated
10A female contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5**	silver plated
		CDFD 0.3 **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5**	gold plated 1)
10A male contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5**	silver plated
		CDMD 0.3 **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5**	gold plated 1)

- characteristics according to EN 61984:
  40A 690V 8kV 3
  10A 160V 2,5kV 3
  10A 250V 4kV 2
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0,3 mΩ (12 poles)
  ≤ 1 mΩ (2 poles)
- for maximum current load, see the following load curves inserts, for more information see page 563

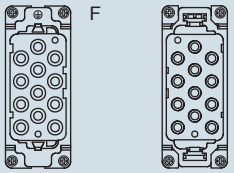
diagram CX 12/2 power poles



dimensions in mm



contacts side (front view)

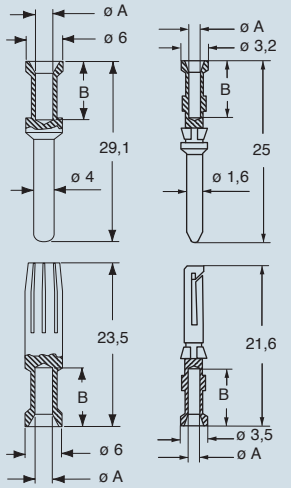


CXF and CXM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
1,5	1,75	9
2,5	2,25	9
4	2,85	9,6
6	3,5	9,6

dimensions in mm

CXF and CXM **CDF and CDM**



for contact crimping instructions, please see the crimping tool section (40A contacts CXF, CXM series and 10A contacts CDF, CDM series) on pages 534, 536, 538, 544, 546, 548

CDF and CDM contacts

conductor section (mm²)	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

dimensions shown are not binding and may be changed without notice

CX - CX...RY 4 poles (80A - 690V) + ⏚ / 4 poles (80A - 690V) + 2 poles (16A - 400V) + ⏚

enclosures:
size "77.27" page:

C-TYPE IP65/IP66 ..... 250 - 256
C7 IP67, two levers 276
V-TYPE IP65/IP66, single lever 282/292 - 295
BIG hoods ..... 312 - 315
T-TYPE IP65 insulating ..... 330 - 331
T-TYPE / W IP66 insulating ..... 340 - 341
HYGIENIC T-TYPE / H IP66/IP69 ..... 354 - 355
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 362 - 363
W-TYPE for aggressive environments 375
EMC 394
for 180 °C 400
central lever ..... 408 - 409
IP68 ..... 428 - 431
LS-TYPE ..... 454 - 455

panel supports: page:
COB ..... 462 - 463

inserts,
screw terminal connection

silver plated contacts

inserts,
screw terminal connection

silver plated contacts

description	part No.	part No.
female inserts with female contacts male inserts with male contacts	**CXF 4/0** **CXM 4/0**	**CXF 4/2** **CXM 4/2**
use in temperatures up to 180 °C female inserts with female contacts, brown male inserts with male contacts, brown	**CXF 4/0 RY** **CXM 4/0 RY**	**CXF 4/2 RY** **CXM 4/2 RY**

- characteristics according to EN 61984:
  80A 690V 8kV 3
  16A 400V 6kV 3
  16A 400/690V 6kV 2
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0,3 mΩ (4 poles)
  ≤ 1 mΩ (2 poles)
- for maximum current load, see the following load curves inserts, for more information see page 563 and 564

diagram CX 4/0 poles

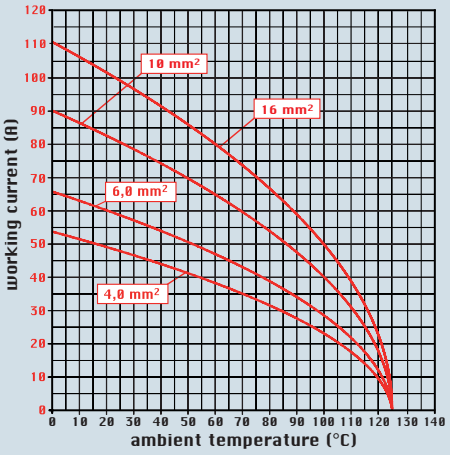
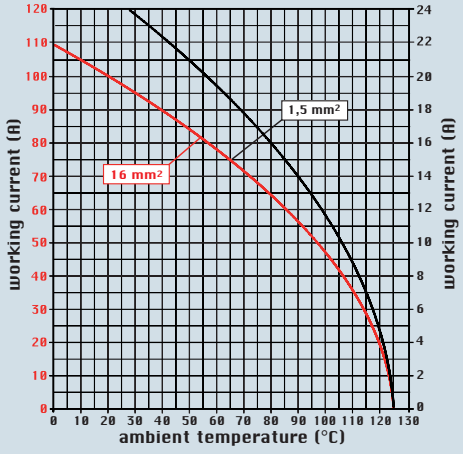
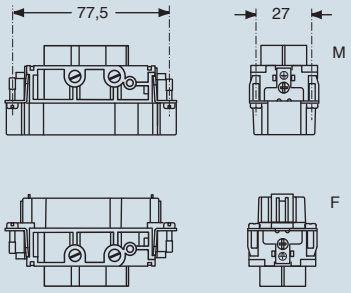


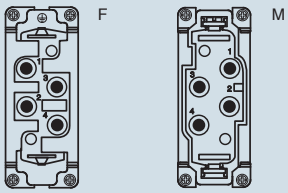
diagram CX 4/2 poles



dimensions in mm

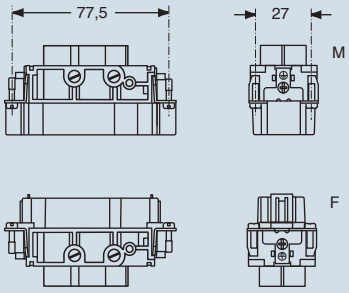


contacts side (front view)

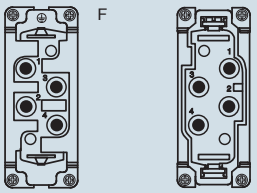


80A contacts
- without plate for section conductors:
  4 - 16 mm² - AWG 12 - 6
- conductors stripping lenght: 14 mm
- terminal screw torque: 2,5 Nm (22.1 lb.in), for more information see page 34 and 35

dimensions in mm



contacts side (front view)



80A contacts
- without plate for section conductors:
  4 - 16 mm² - AWG 12 - 6
- conductors stripping lenght: 14 mm
- terminal screw torque: 2,5 Nm (22.1 lb.in), for more information see page 34 and 35

16A contacts
- without plate for section conductors:
  0,25 - 2,5 mm² - AWG 24 - 14
- conductors stripping lenght: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 34 and 35

dimensions shown are not binding and may be changed without notice

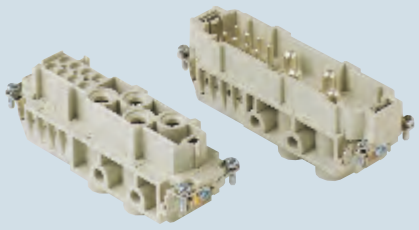
CX - CX...RY 4 poles (80A - 400V) + 8 poles (16A - 230/400V) + ⏚

enclosures:
size "104.27" page:

C-TYPE IP65/IP66 ..... 258 - 266
C7 IP67, two levers 277
V-TYPE IP65/IP66, single lever 283/296 - 299
BIG hoods ..... 316 - 319
T-TYPE IP65 insulating ..... 332 - 333
T-TYPE / W IP66 insulating ..... 342 - 343
HYGIENIC T-TYPE / H IP66/IP69 ..... 356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
W-TYPE for aggressive environments 376
EMC 395
for 180 °C 401
central lever ..... 410 - 412
IP68 ..... 432 - 435
LS-TYPE ..... 456 - 457

panel supports: page:
COB ..... 462 - 463

inserts,
screw terminal connection



silver plated contacts

description	part No.
female inserts with female contacts male inserts with male contacts	**CXF 4/8** **CXM 4/8**
use in temperatures up to 180 °C female inserts with female contacts, brown male inserts with male contacts, brown	

- characteristics according to EN 61984:
  80A 400V 6kV 3
  80A 400/690V 6kV 2
  16A 230/400V 4kV 3
  16A 400V 4kV 2
- UL, CSA, CCC *, DNV-GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0,3 mΩ (4 poles)
  ≤ 1 mΩ (8 poles)
- for maximum current load, see the following load curves inserts, for more information see page 564

diagram CX 4/8 poles

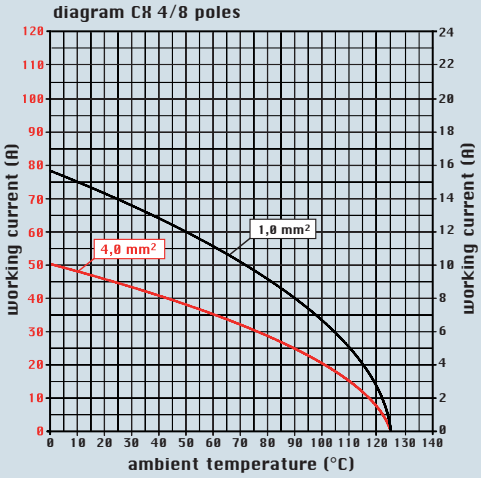
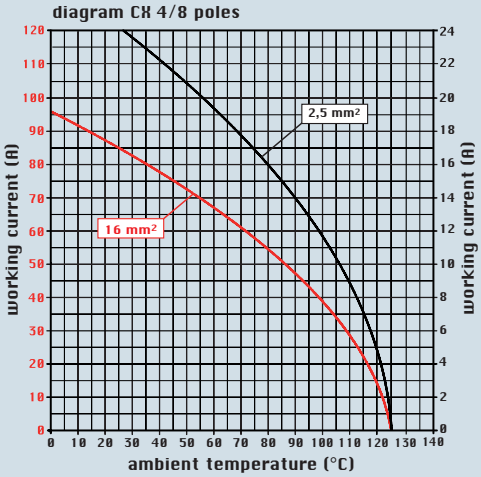
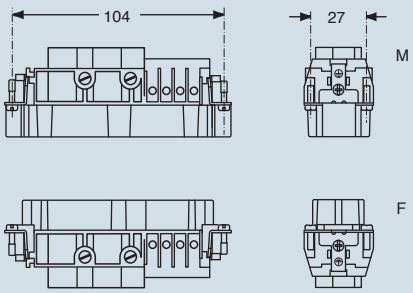


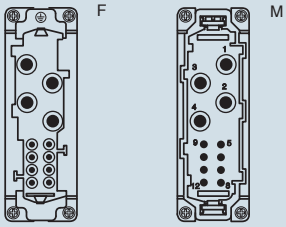
diagram CX 4/8 poles



dimensions in mm



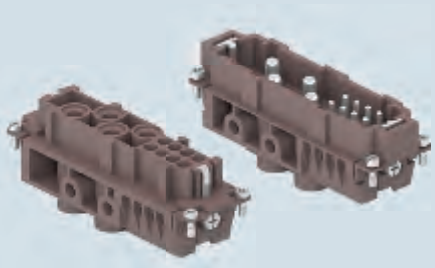
contacts side (front view)



80A contacts
- without plate for section conductors:
  4 - 16 mm² - AWG 12 - 6
- conductors stripping lenght: 14 mm
- terminal screw torque: 2,5 Nm (22.1 lb.in), for more information see page 34 and 35

16A contacts
- with plate for section conductors
  0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping lenght: 7 mm
- terminal screw torque: 0,5 Nm (4,4 lb.in), for more information see page 34 and 35

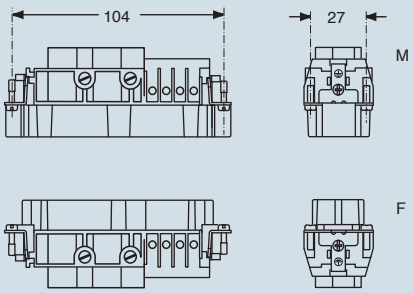
inserts,
screw terminal connection



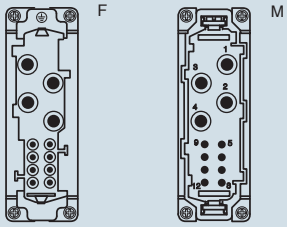
silver plated contacts

part No.
CXF 4/8 RY **CXM 4/8 RY**

dimensions in mm



contacts side (front view)



80A contacts
- without plate for section conductors:
  4 - 16 mm² - AWG 12 - 6
- conductors stripping lenght: 14 mm
- terminal screw torque: 2,5 Nm (22.1 lb.in), for more information see page 34 and 35

16A contacts
- with plate for section conductors
  0,75 - 2,5 mm² - AWG 18 - 14
- conductors stripping lenght: 7 mm
- terminal screw torque: 0,5 Nm (4,4 lb.in), for more information see page 34 and 35

dimensions shown are not binding and may be changed without notice

CX series

Main features

CX inserts 100A/16A version

The CX series of combined "power /auxiliaries" connector inserts has been enhanced with a **new insert, CX 6/6 suitable for currents up to 100A** in the power side and 16A on the auxiliaries side, for crimp contacts series CG (100A max) and series CC (16A max) several benefits over conventional screw or axial screw contacts:

- More **resistant to mechanical stresses** such as vibrations, shock and cable loads
- More **corrosion resistant** (gas tight)
- **Quicker to connect** and ensuring more **consistent results** (regardless of the operators "force")
- The connector is **electrically more efficient** (reduced voltage drop)

This innovative insert design, by following the same concepts of the MIXO 100A CX..G model, **patented by ILME**, ensures a quicker fitting and removal of crimped contacts.

The **provided locking keys** firmly fasten the contact holder.

The power contacts may be removed **without any special tool**, using a simple screwdriver (e.g.: 0,5 x 3 mm, 0,5 x 3,5 mm, 0,6 x 4 mm flat blade)
The removal of auxiliary contacts series CC requires the extraction tool CQES.

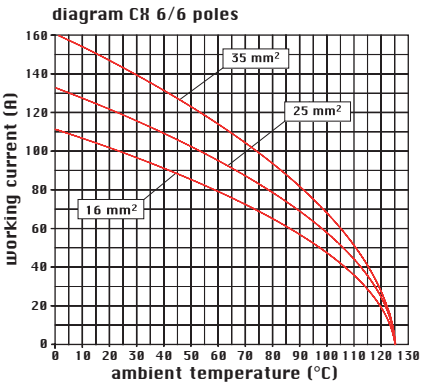
The crimping operation may be carried out quickly and efficiently with the **hand operated hydraulic pliers**, which is pre-fitted with the suitable locator. Suitable crimp dies are available on request.

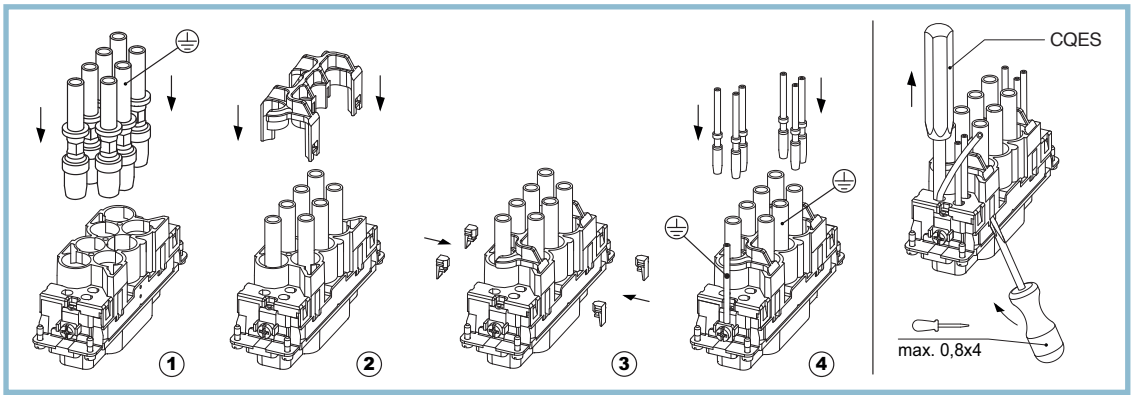
Inserts series		**CX**	
No. of poles	main contact	6 + ⏚ (100A) **	
	auxiliary contacts	6 (16A)	
rated current [1]		100A	16A
EN 61984 pollution degree 3	rated voltage	690V	400V
	rated impulse withstand voltage	8kV	6kV
	pollution degree	3	3
contact resistance		≤ 0,3 mΩ (100A) ≤ 1 mΩ (16A)	
insulation resistance		≥ 10 GΩ	
ambient temperature limit (°C)	min	-40 °C	
	max	+125 °C	
degree of protection	with enclosures (according to version)	IP65, IP66, IP67, IP68, IP69	
	without enclosures	IP20	
conductor connections *		crimp	
conductor cross-section (CG contact series)	mm²	16, 25, 35	
	AWG	6 - 5, 4 - 3, 2	
conductor cross-section (CC contact series)	mm²	0,14 4,0	
	AWG	26 ÷ 12	
CG/CC stripping lenght	mm	15 / 7,5	
mechanical endurance (mating cycles)		≥ 500	

1) Please check the insert load curves to establish the actual maximum operating current according to the ambient temperature.

* max external conductor Ø = 11,5 mm
** the power PE contact is not included and must be the same size as the power contacts used (for a total n° at contacts = 7)

- for maximum current load, see the following load curves inserts, for more information see page 565





CX 6 poles + ⏚ (100A - 690V) + 6 poles (16A - 400V) + ⏚

enclosures:
size "104.27" page:

C-TYPE IP65/IP66 ..... 258 - 266
C7 IP67, two levers 277
V-TYPE IP65/IP66, single lever 283/296 - 299
BIG hoods ..... 316 - 319
T-TYPE IP65 insulating ..... 332 - 333
T-TYPE / W IP66 insulating ..... 342 - 343
HYGIENIC T-TYPE / H IP66/IP69 ..... 356 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 364 - 365
W-TYPE for aggressive environments 376
EMC 395
central lever ..... 410 - 412
IP68 ..... 432 - 435
LS-TYPE ..... 456 - 457
panel supports: **COB** ..... 462 - 463

enclosures: bulkhead mounting housings, high construction housings or high construction hoods

inserts, crimp connections

NEW

100A and 16A crimp contacts silver and gold plated

100A

16A

description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CXF 6/6** **CXM 6/6**		
100A female contacts 8 - 10 mm² AWG 8 - 7 16 mm² AWG 6 - 5 25 mm² AWG 4 - 3 35 mm² AWG 2		**CGFA 10** **CGFA 16** **CGFA 25** **CGFA 35**	silver plated
100A male contacts 8 - 10 mm² AWG 8 - 7 16 mm² AWG 6 - 5 25 mm² AWG 4 - 3 35 mm² AWG 2		**CGMA 10** **CGMA 16** **CGMA 25** **CGMA 35**	
16A female contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCFA 0.3** **CCFA 0.5** **CCFA 0.7** **CCFA 1.0** **CCFA 1.5** **CCFA 2.5** **CCFA 3.0** **CCFA 4.0**	silver plated
		CCFD 0.3 **CCFD 0.5** **CCFD 0.7** **CCFD 1.0** **CCFD 1.5** **CCFD 2.5** **CCFD 3.0** **CCFD 4.0**	gold plated 1)
16A male contacts 0,14-0,37 mm² AWG 26-22 one groove 0,5 mm² AWG 20 with no grooves 0,75 mm² AWG 18 one groove (back side) 1 mm² AWG 18 one groove 1,5 mm² AWG 16 two grooves 2,5 mm² AWG 14 three grooves 3 mm² AWG 12 one wide groove 4 mm² AWG 12 with no grooves		**CCMA 0.3** **CCMA 0.5** **CCMA 0.7** **CCMA 1.0** **CCMA 1.5** **CCMA 2.5** **CCMA 3.0** **CCMA 4.0**	
		CCMD 0.3 **CCMD 0.5** **CCMD 0.7** **CCMD 1.0** **CCMD 1.5** **CCMD 2.5** **CCMD 3.0** **CCMD 4.0**	

- characteristics according to EN 61984:
  100A 690V 8kV 3
  16A 400V 6kV 3
- certifications: cUL (UL for USA and Canada)
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0,3 mΩ (100A)
  ≤ 1 mΩ (16A)
- for contact crimping, see the crimp tool section (100A contacts CG series, and 16A contacts CC series) on pages 534, 538, 542, 544, 546, 548

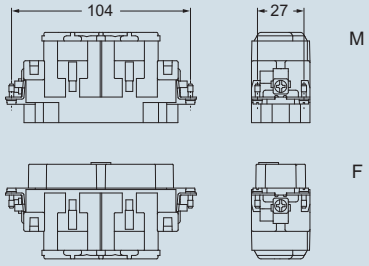
CCF and CCM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0.14-0.37	0.9	7.5
0.5	1.1	7.5
0.75	1.3	7.5
1.0	1.45	7.5
1.5	1.8	7.5
2.5	2.2	7.5
3.0	2.55	7.5
4.0	2.85	7.5

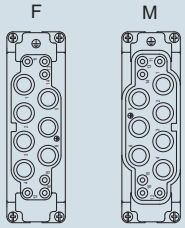
1) basic or high thickness gold plating page 481

dimensions shown are not binding
and may be changed without notice

dimensions in mm

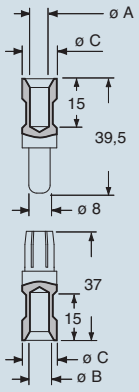


contacts side (front view)

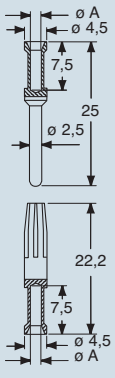


dimensions in mm

CGF and CGM



CCF and CCM



CGF and CGM contacts

conductor section (mm²)	conductor slot ø A (mm)	ø B (mm)	ø C (mm)	conductors stripping lenght (mm)
8-10	4,3	4,3	13	15
16	5,5	5,5	13	15
25	7,0	7,0	13	15
35	7,9	8,2	12,5	15

MIXO series

Modular units for multipole connectors

Application

The MIXO series is a system of modular units for special applications that uses the traditional ILME enclosures.

Each enclosure can house different types of connections such as, for example: electric signals and contacts for the conduction of compressed air with pressure values of up to 8 bars.

The inserts are arranged side by side to form a single compact block which is inserted into metallic frames with mandatory housings. Once the modules have been inserted and locked with the special tabs, the connector can then be inserted into the enclosure.

The modular structure system makes it easy to access a series of contacts inserted in the frame (e.g., for substitution, checks or the addition of signals with new inserts for needs not foreseen during the initial installation) without having to disassemble the entire connector.

The use of enclosures provides the possibility of innumerable applications.

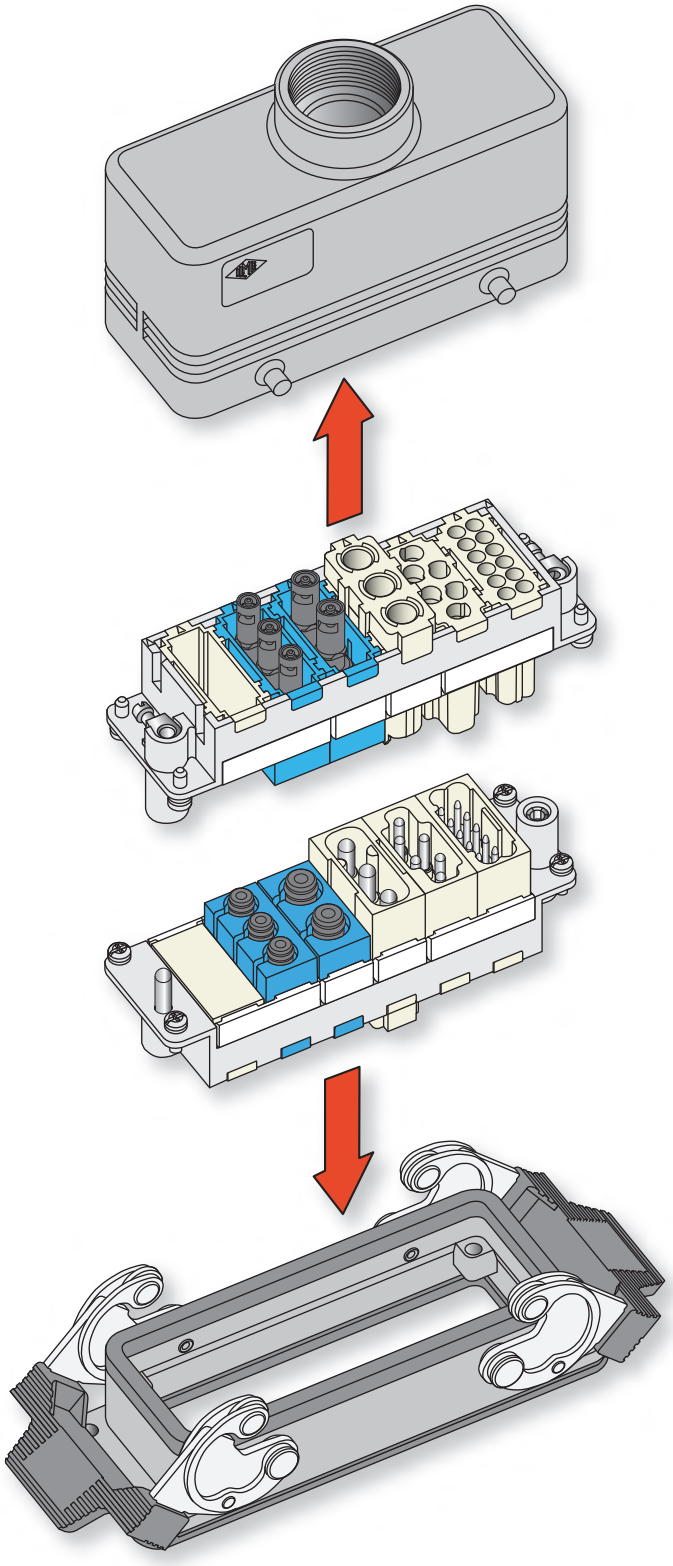
The MIXO series may be used with 5 different frame sizes. The following table lists the frames and the metallic enclosures that may be used.

frames	one or two-lever metallic enclosures
CX 01 T	size “49.16”
CX 02 TM/TF	size “44.27”
CX 03 TM/TF	size “57.27”
CX 04 TM/TF	size “77.27”
CX 06 TM/TF	size “104.27”
CX 04 TM/TF (x 2)	size “77.62”
CX 06 TM/TF (x 2)	size “104.62”

In addition, the MIXO series can be used with the COB series panel supports

frames	panel supports part No.	
CX 02 TM/TF	fixed:	**COB 06 BC** and **COB TCQ**
	mobile:	**COB TSF**, **COB TSFS** and **COB 06 CMS**
CX 03 TM/TF	fixed:	**COB 10 BC** and **COB TCQ**
	mobile:	**COB TSF**, **COB TSFS** and **COB 10 CMS**
CX 04 TM/TF	fixed:	**COB 16 BC** and **COB TCQ**
	mobile:	**COB TSF**, **COB TSFS** and **COB 16 CMS**
CX 06 TM/TF	fixed:	**COB 24 BC** and **COB TCQ**
	mobile:	**COB TSF**, **COB TSFS** and **COB 24 CMS**

The MIXO series currently includes 6 different types of inserts. The field of application is provided in the table at the bottom of the next page.



MIXO series

Modular units for multipole connectors

Characteristics

❶ Electric contacts in silver-plated or gold-plated brass with connections to the conductors via crimping, spring clamp or axial screw.

❷ Pneumatic contacts in plastic with insertion tube connection.

❸ Mdular inserts of identical size with insertion system for forming the complete module and frame lock tab.

❹ Inserts in self-extinguishing thermoplastic material, reinforced with glass fibre, UL 94V-0 approved, with a working temperature range of -40 °C to +125 °C.

❺ Inserts in conformance with the requirements of the EN 61984 standard and certified and marked with the UL, CSA, CCC, DNV-GL, EAC marks.

❻ Inserts with asymmetric guide rails to prevent incorrect coupling.

❼ Position of contacts identified with numbers or codes on both sides of every insert.

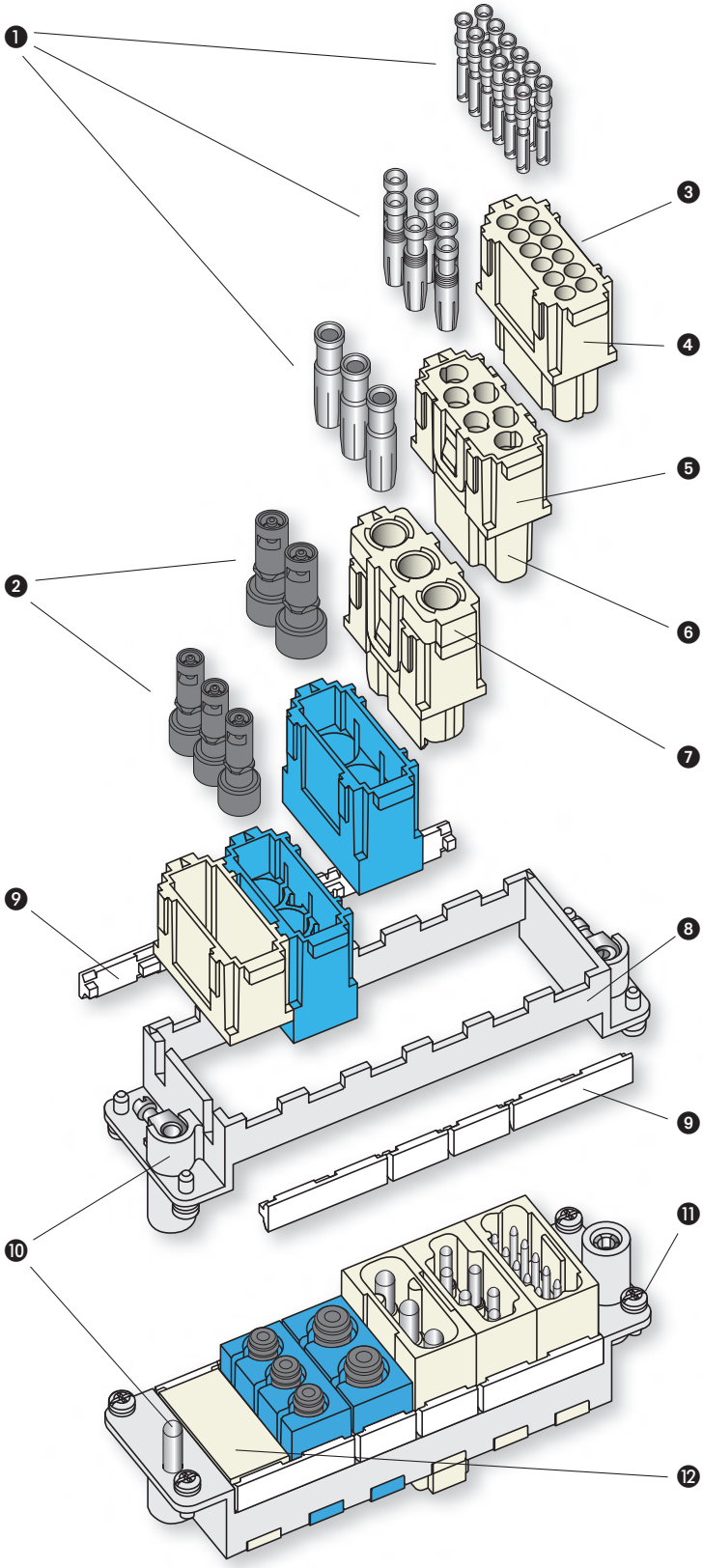
❽ Male/female module carrier frames with mandatory housings and polarity, in die-cast zinc alloy.

❾ Module lock tab, may be divided according to the number of modules used; guarantees a perfect stability of the modules during wiring and coupling/uncoupling of the connectors.

❿ Asymmetric earth contacts (two for frame) with wide contact surface to prevent incorrect coupling; when two or more identical connectors of the MIXO series are used, coded pins prevent incorrect coupling (see pages 486, 487 and 491).

⓫ Captive frame fastening screws, with flexible spring washer.

⓬ Dummy module for unused frame slots.



MIXO series

Modular units for multipole connectors

Inserts	Contact type	Signal type	Connectors and tubes connections	Rated current (A)	Rated voltage (V)	No. of frame slots
CX 01 YF/M	main	electric	crimp	200	1000	2
CX 01 YPEF/M	PE	---	crimp	200	---	2
CX 02 GF/M	main	electric	crimp	100	1000	2
CX 02 7F/M	main	electric	crimp	70	1000	1
CX 02 4AF/M	main	electric	axial screw	40	1000	1
CX 02 4BF/M	main	electric	axial screw	40	1000	1
CX 03 4F/M	main	electric	crimp	40	400/690	1
CX 03 4BF/BM	main	electric	crimp	40	500	1
CX 3/4 XDF/M	main	electric	crimp	40/10	830	1
CX 04 XF/M	main	electric	crimp	40	830	1
CX 05 SF/M	main	electric	spring	16	400	1
CX 06 CF/M	main	electric	crimp	16	500	1
CX 08 CF/M	main	electric	crimp	16	400	1
CX 20 CF/M	main	electric	crimp	16	500	2
CX 12 DF/M	main / auxiliary	electric	crimp	10	250	1
CX 17 DF/M	main / auxiliary	electric	crimp	10	160	1
CX 25 IF/M	main / auxiliary	electric	crimp	4	50	1
CX 02 HF/M	main	electric	crimp	16	2900/5000	2
CX 02 BF/M	seat for two shielded connectors (see CX 04 B, CX 01 B, CX 01 BC, CX 08 B)					2
CX 01 BCF/M	main / auxiliary + shield	electric	crimp	16	50	---
CX 01 BF/M	main / auxiliary + shield	electric	crimp	10	50	---
CX 04 BF/M	main / auxiliary + shield	electric	crimp	10	50	---
CX 08 BF/M	main / auxiliary + shield	electric	crimp	5	50	---
CX 03 P	pneumatic Ø 1,6 - 3,0 - 4,0 mm	gas **	push-in	---	---	1
CX 02 P	pneumatic Ø 6,0 mm	gas **	push-in	---	---	1
CX FM	none (dummy module)	---	---	---	---	1
CX 01 J8F/M/IM	RJ45	electric	crimp/IDC	---	---	1
CX 01 JF/M	RJ45 + auxiliary	electric	crimp	10	250	2
CX 02 JF/M	RJ45 + auxiliary	electric	crimp	10	250	3
CX 01 UF/M	USB	electric	---	---	---	1
CX 01 9VF/M	D-SUB	electric	crimp	5	50	1
CX 04 LF/M	POF / MOST / coaxial	optic / electric	crimp / solder	---	---	1

**** Warning:**

Tthe use of pneumatic contacts requires an appropriate filtering and dehydration system to prevent dangerous condensation.
Contacts may be used for pressure values of up to a maximum of 8 bars/116 psi.

MIXO series (100A - 200A)

Main features

MIXO CX..G 100A and CX..Y 200A version modular inserts

The MIXO series has been enhanced with a **new insert, suitable for currents up to 200A** and with **new**, series crimp contacts featuring several benefits over conventional screw or axial screw contacts:

- More **resistant to mechanical stresses** such as vibrations, shock and cable loads.
- More **corrosion resistant** (gas tight).
- **Quicker to connect** and ensuring more **consistent results** (regardless of the operators "force").
- The connector is **electrically more efficient** (reduced voltage drop).

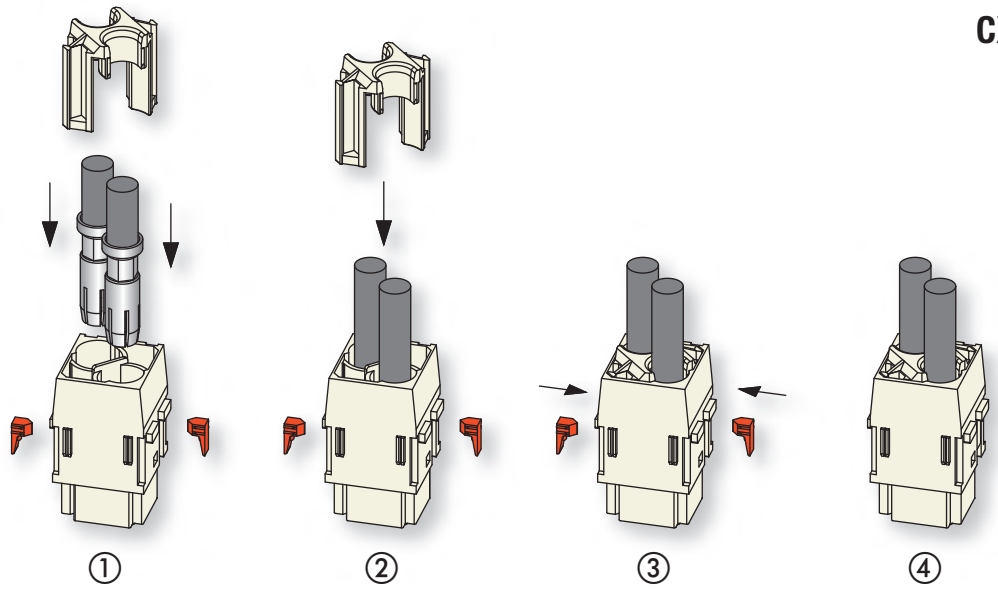
This innovative insert design, **patented by ILME**, ensures a quicker fitting and removal of crimped contacts.

The **four provided keys** firmly fasten the contact holder and; once the insert is joined to other inserts (and it is installed in the corresponding MIXO frame) the connection is totally secure and **extremely resistant, even under the most severe stresses** such as vibration and shock.

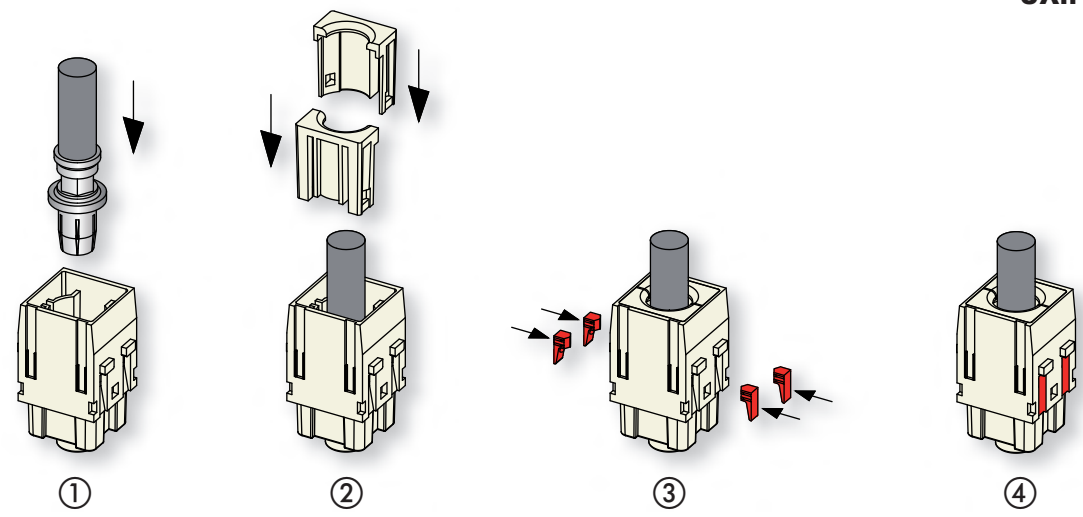
The contacts can be removed **without any special tool,** using a simple screwdriver.

The crimping operation can be carried out quickly and efficiently with the **hand operated hydraulic pliers**, which is pre-fitted with the suitable locator.
Suitable crimp dies available on request.

CX..G 100A



CX..Y 200A



MIXO modular units 1 pole 200A - 1000V

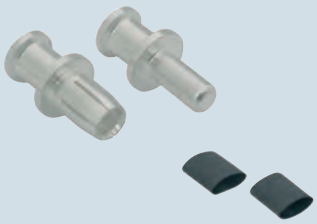
The modular inserts must be installed in suitable frames which are then mounted in traditional housings * or COB panel support.

frames for modular units * ..... page: 215

* enclosures: housings or high construction hoods

modular units, crimp connections

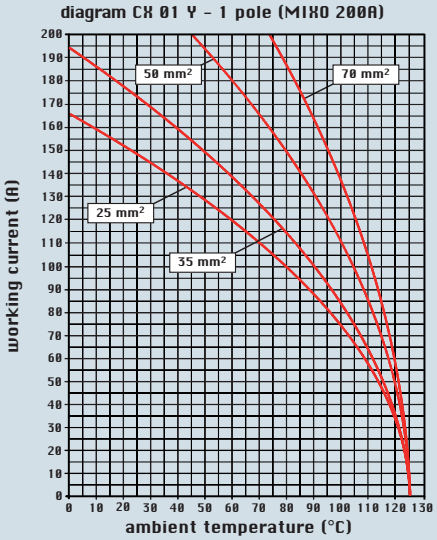
200A silver plated crimp contacts heat shrink tube



description	part No.	part No.
without contacts (to be ordered separately)		
- female inserts for female contacts	**CX 01 YF**	
- male inserts for male contacts	**CX 01 YM**	
200A female crimp contacts		
16 mm² AWG 6 one groove (back side)		**CYFA 16**
25 mm² AWG 4 with no grooves		**CYFA 25**
35 mm² AWG 2 one groove		**CYFA 35**
50 mm² AWG 1 two grooves		**CYFA 50**
70 mm² AWG 2/0 with no grooves		**CYFA 70**
200A male crimp contacts		
16 mm² AWG 6 one groove (back side)		**CYMA 16**
25 mm² AWG 4 with no grooves		**CYMA 25**
35 mm² AWG 2 one groove		**CYMA 35**
50 mm² AWG 1 two grooves		**CYMA 50**
70 mm² AWG 2/0 with no grooves		**CYMA 70**
heat shrink tube for CYFA/CYMA 16 contacts or for conductor with total external Ø < 10 mm		**CR TT**

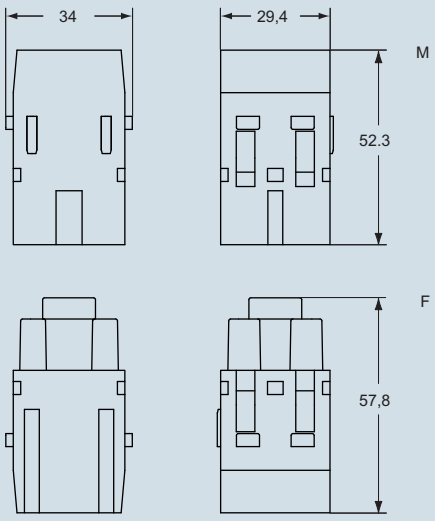
silver plated

- characteristics according to EN 61984:
  200A 1000V 8kV 3
  200A 920/1600V 8kV 2
- cUL (UL for USA and Canada), CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0,2 mΩ
- for contact crimping instructions, please see the crimping tool section (200A contacts, CYF and CYM series) on page 542
- for maximum current load, see the following load curves inserts, for more information see page 565



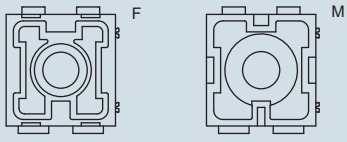
dimensions shown are not binding and may be changed without notice

dimensions in mm



contacts side (front view)

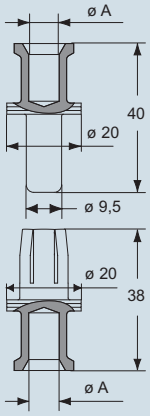
side with reference arrow ▲



- 2 frame slots

dimensions in mm

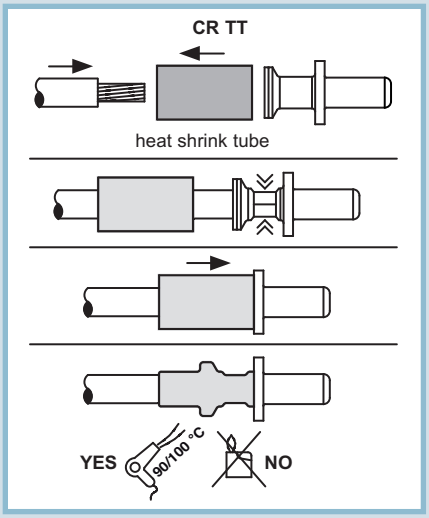
CYF and **CYM**



CYF and CYM contacts

conductor section (mm²)	conductor slot ø A (mm)	conductor stripping lenght (mm)
16	6,1	15
25	7,0	15
35	8,2	15
50	9,8	15
70	11,8	15

CR TT

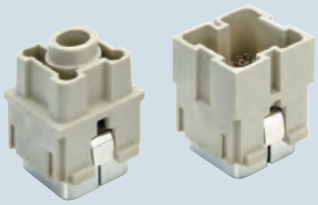


The modular inserts must be installed in suitable frames which are then mounted in traditional housings * or COB panel support.

frames for modular units * ..... page: 215

* enclosures: housings or high construction hoods

modular units,
crimp connections
PE module for earth termination



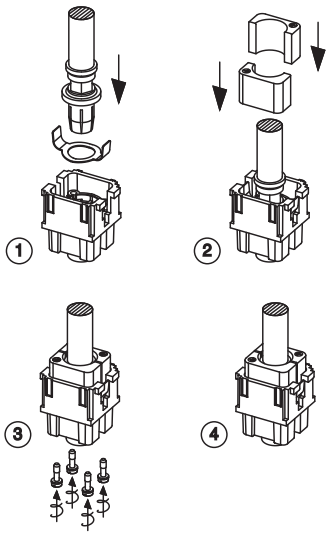
200A silver plated crimp contacts

description	part No.	part No.
without contacts (to be ordered separately) - PE female inserts for female contacts - PE male inserts for male contacts	**CX 01 YPEF** **CX 01 YPEM**	
200A female crimp contacts 16 mm² AWG 6 one groove (back side) 25 mm² AWG 4 with no grooves 35 mm² AWG 2 one groove 50 mm² AWG 1 two grooves 70 mm² AWG 2/0 with no grooves		**CYFA 16** **CYFA 25** **CYFA 35** **CYFA 50** **CYFA 70**
200A male crimp contacts 16 mm² AWG 6 one groove (back side) 25 mm² AWG 4 with no grooves 35 mm² AWG 2 one groove 50 mm² AWG 1 two grooves 70 mm² AWG 2/0 with no grooves		**CYMA 16** **CYMA 25** **CYMA 35** **CYMA 50** **CYMA 70**

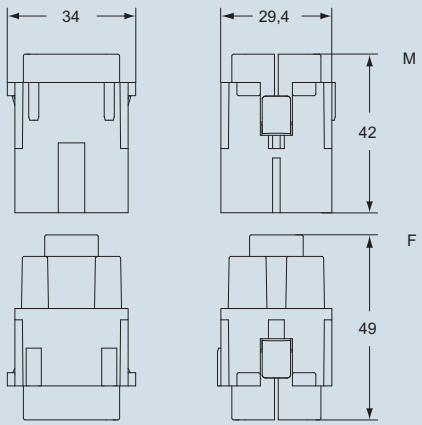
silver plated

- cUL (UL for USA and Canada), CCC *, EAC certified
  * CQC certification being applied for
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0

CX 01 YPE

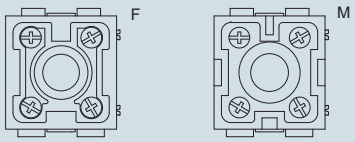


dimensions in mm



contacts side (front view)

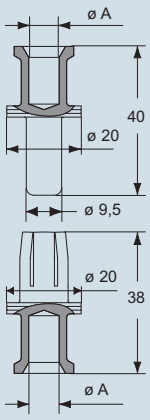
side with reference arrow ▲



- 2 frame slots

dimensions in mm

CYF and **CYM**



CYF and CYM contacts

conductor section (mm²)	conductor slot ø A (mm)	conductor stripping lenght (mm)
16	6,1	15
25	7,0	15
35	8,2	15
50	9,8	15
70	11,8	15

- for contact crimping instructions, please see the crimping tool section (200A contacts, CYF and CYM series) on page 542

dimensions shown are not binding
and may be changed without notice

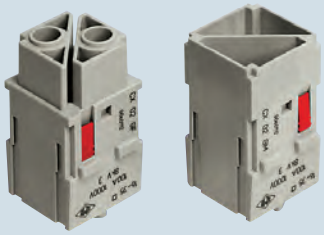
MIXO modular units 2 poles 100A - 1000V

The modular inserts must be installed in suitable frames which in turn are installed in traditional housings * or COB panel support.

frames for modular units * ..... page: 215

* enclosures: bulkhead mounting housings, high construction housings or high construction hoods

modular units, crimp connections

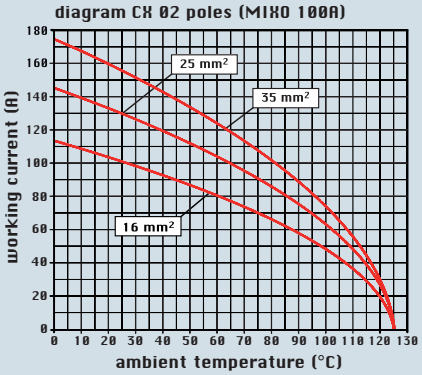


100A silver plated crimp contacts, PE adapter

description	part No.	part No.
without contacts (to be ordered separately) - female inserts for female contacts ** - male inserts for male contacts **	**CX 02 GF** **CX 02 GM**	
100A female crimp contacts 8 - 10 mm² AWG 8 - 7 16 mm² AWG 6 - 5 25 mm² AWG 4 - 3 35 mm² AWG 2 100A male crimp contacts 8 - 10 mm² AWG 8 - 7 16 mm² AWG 6 - 5 25 mm² AWG 4 - 3 35 mm² AWG 2		**CGFA 10** **CGFA 16** **CGFA 25** **CGFA 35** **CGMA 10** **CGMA 16** **CGMA 25** **CGMA 35** **silver plated**
cable earthing adapter 16 mm² (AWG 6 - 5)		**CGT 16**

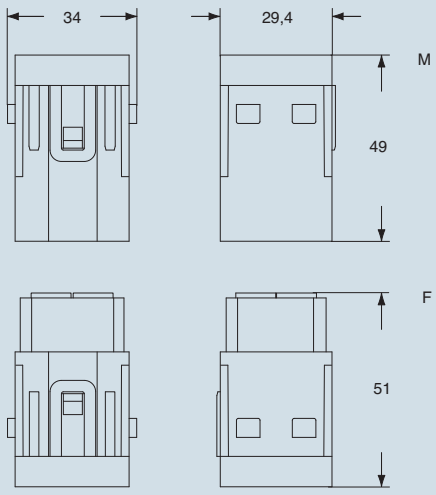
** on request, version with pole 3/4 numbering, references: **CX 02 GFN, CX 02 GMN**

- characteristics according to EN 61984:
  100A 1000V 8kV 3
  100A 920/1600V 8kV 2
- cUL (UL for USA and Canada), CCC *, GL, EAC certified; * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0.3 mΩ
- for contact crimping instructions, please see the crimping tool section (100A contacts, CGF and CGM series) on page 542
- for maximum current load, see the following load curves inserts, for more information see page 565



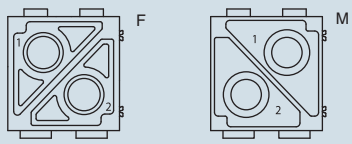
dimensions shown are not binding and may be changed without notice

dimensions in mm



contacts side (front view)

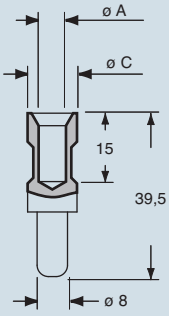
side with reference arrow ▲



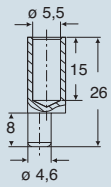
- 2 frame slots

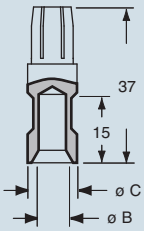
dimensions in mm

CGF and **CGM**



CGT 16





CGF and CGM contacts

conductor section (mm²)	conductor slot ø A (mm)	ø B (mm)	ø C (mm)	conductor stripping lenght (mm)
8-10	4,3	4,3	13	15
16	5,5	5,5	13	15
25	7,0	7,0	13	15
35	7,9	8,2	12,5	15

How to use the PE adapter (CGT 16):

1) Strip 15 mm of flexible PE protective cable
2) Crimp the cable on the CGT 16 adapter by using the CGPZ pliers with the CGD 16 C matrix
3) Fix the adapter tip in the larger earth terminal (6 mm²) of frames CX...TM/TF
4) To be used with bulkhead mounting housings or high construction hoods
5) Cannot be used with T-TYPE series

MIXO modular units 2 poles 70A - 1000V

The modular inserts must be installed in suitable frames which in turn are installed in traditional housings * or COB panel support.

frames for modular units * ... page: 214 - 215

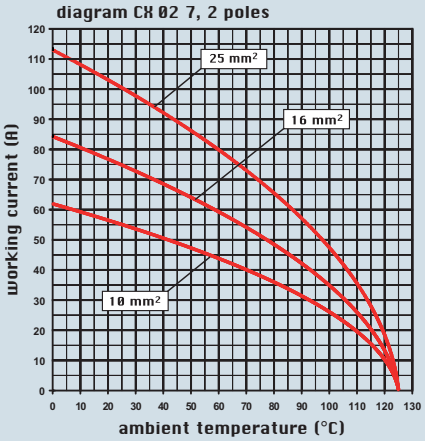
* enclosures: bulkhead mounting housings, high construction housings or high construction hoods

modular units, crimp connections

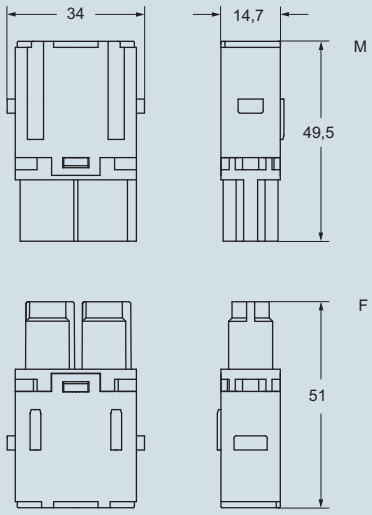
70A silver plated crimp contacts

description	part No.	part No.
without contacts (to be ordered separately) - female inserts for female contacts - male inserts for male contacts	**CX 02 7F** **CX 02 7M**	
70A female crimp contacts 10 mm² AWG 8 - 7 16 mm² AWG 6 - 5 25 mm² AWG 4 - 3 70A male crimp contacts 10 mm² AWG 8 - 7 16 mm² AWG 6 - 5 25 mm² AWG 4 - 3		**CX7FA 10** **CX7FA 16** **CX7FA 25** **CX7MA 10** **CX7MA 16** **CX7MA 25** **silver plated**

- characteristics according to EN 61984:
  70A 1000V 8kV 3
  70A 1600V 12kV 2
- cUL (UL for USA and Canada), EAC certified
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- for contact crimping instructions, please see the crimping tool section (70A contacts, CX7F and CX7M series) on page 542
- **C7ES** removal tool
- for maximum current load, see the following load curves inserts, for more information see page 565

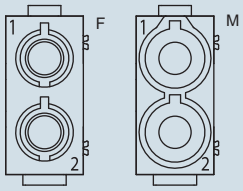


dimensions in mm



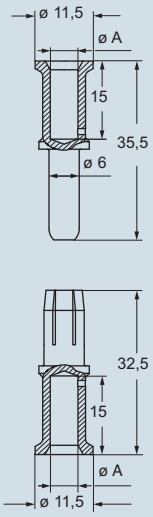
contacts side (front view)

side with reference arrow ▲



- 1 frame slot

dimensions in mm



contacts CX7F and CX7M

conductor section (mm²)	conductor slot ø A (mm)	conductor stripping lenght (mm)
10	4,3	15
16	5,5	15
25	7,0	15

dimensions shown are not binding and may be changed without notice

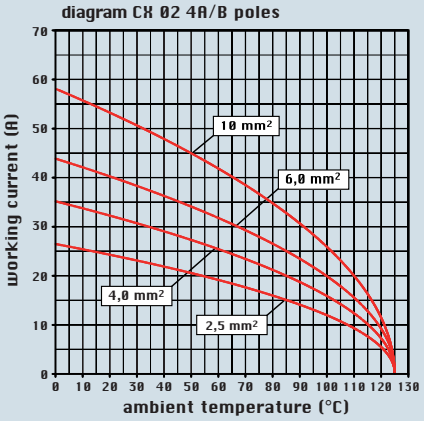
MIXO

The modular inserts must be installed in suitable frames which in turn are installed in traditional housings or COB panel support.

frames for modular units ..... page: 214 - 215

- characteristics according to EN 61984:
  40A 1000V 8kV 3
  40A 1600V 12kV 2
- UL, CSA, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0.5 mΩ

- for maximum current load, see the following load curves inserts, for more information see page 565



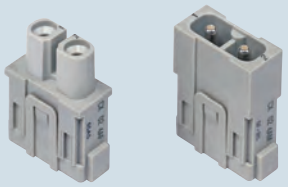
- use flexible cables with sections from 2,5 to 10 mm² or extra flexible cables with sections from 2,5 to 6 mm²
- do not twist the cables
- fully insert the braids in the rear section of the contact

conductor section (mm²)	conductor stripping lenght (mm)	tightening torque (Nm)
2,5	5+1	1,5
4	5+1	1,5
6	8+1	2
10	8+1	2

- insert a 2 mm hexagonal key in the front section of the contact and tighten by keeping the cable held down in position
- a 2 mm hexagonal key can be supplied on request, reference **CX AS**

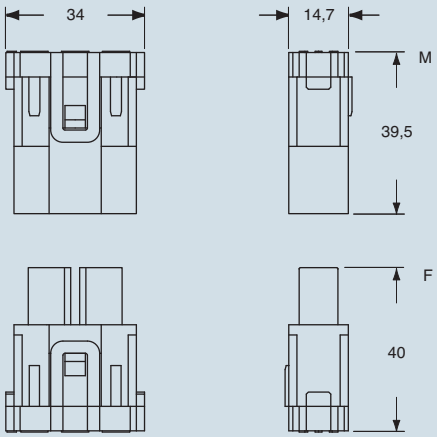
dimensions shown are not binding
and may be changed without notice

modular units,
screw terminal connection
2,5 - 8 mm²



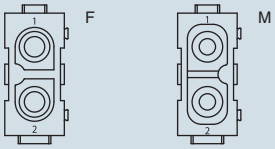
description	part No.
- female inserts with female contacts - male inserts with male contacts	**CX 02 4AF** **CX 02 4AM**
- female inserts with female contacts - male inserts with male contacts	

dimensions in mm



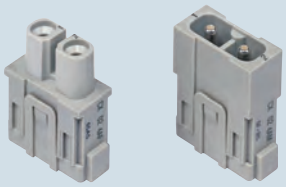
contacts side (front view)

side with reference arrow ▲



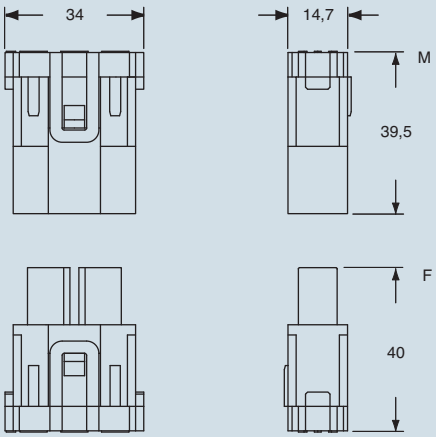
- inserts for Ø 4mm cables, section:
  2,5-8 mm² - AWG 14-8
- 1 frame slot

modular units,
screw terminal connection
6 - 10 mm²



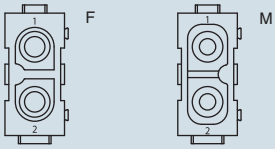
description	part No.
- female inserts with female contacts - male inserts with male contacts	**CX 02 4BF** **CX 02 4BM**

dimensions in mm



contacts side (front view)

side with reference arrow ▲



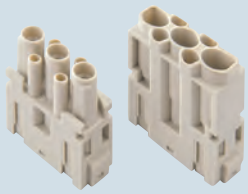
- inserts for Ø 4.8 mm cables, section:
  6-10 mm² - AWG 10-8
- 1 frame slot

The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units ..... page: 214 - 215

- male and female contacts finger proof
- their key characteristic **lies in the fact that they guarantee maximum safety even in case of accidental contact with fingers (IPXXB or IP2X)**. Safety is guaranteed as standard on female contacts, but also on male contacts. This feature is important as it ensures full compliance with the recent safety standard **EN 60204-1**, concerning electric equipment fitted on machines and in particular with the requirements of Article 6.2.4 concerning protection against residual voltage.
In the case of plugs or similar devices, the withdrawal of which results in the exposure of conductors (for example pins), the discharge time shall not exceed 1 s, otherwise such conductors shall be protected against direct contact to at least an IP2X or IPXXB.

modular units, crimp connections



40A and 10A crimp contacts silver and gold plated

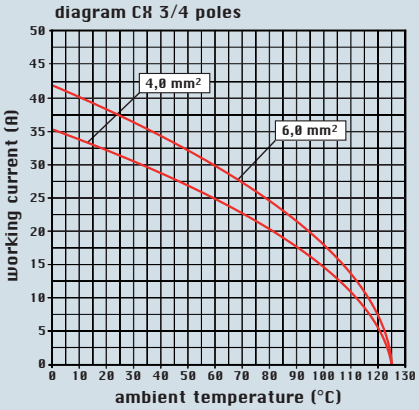
40A

10A

description	part No.	part No.	part No.
without contacts (to be ordered separately) - female inserts for female contacts - male inserts for male contacts	**CX 3/4 XDF** **CX 3/4 XDM**		
40A female crimp contacts 1,5 mm² AWG 16 2,5 mm² AWG 14 4 mm² AWG 12 6 mm² AWG 10 40A male crimp contacts 1,5 mm² AWG 16 2,5 mm² AWG 14 4 mm² AWG 12 6 mm² AWG 10		**CXFA 1.5** **CXFA 2.5** **CXFA 4.0** **CXFA 6.0** **CXMA 1.5** **CXMA 2.5** **CXMA 4.0** **CXMA 6.0** **silver plated**	
10A female contacts 0,14-0.37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5 10A male contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5** **CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5** **silver plated**	**CDFD 0.3** **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5** **CDMD 0.3** **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5** **gold plated 1)**

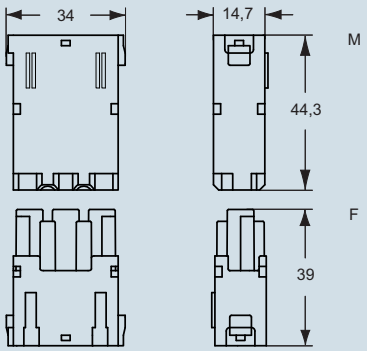
- characteristics according to EN 61984:
  3 poles 40A 830V 8kV 3
  4 poles 10A 830V 8kV 3
- cUL (UL for USA and Canada), CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0.3 mΩ (3 poles)
  ≤ 3 mΩ (4 poles)
- for maximum current load, see the following load curves inserts, for more information see page 565

diagram CH 3/4 poles



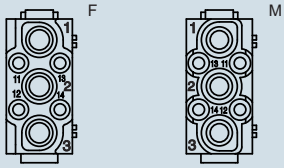
dimensions shown are not binding and may be changed without notice

dimensions in mm



contacts side (front view)

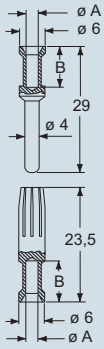
side with reference arrow ▲



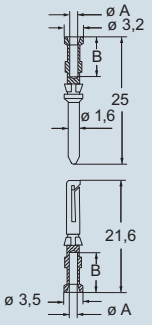
- 1 frame slot

dimensions in mm

CXF and CXM



CDF and CDM



CDF and CDM contacts

conductor section (mm²)	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

CXF and CXM contacts

1,5	1,8	9
2,5	2,2	9
4	2,85	9,6
6	3,5	9,6

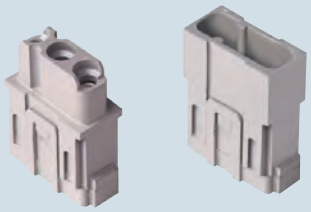
- for contact crimping, see the crimp tool section (40A contacts CXF, CXM series and 10A contacts CDF, CDM series) on pages 534, 536, 538, 544, 546, 548

MIXO modular units 3 poles 40A - 400/690V

The modular inserts must be installed in suitable frames which in turn are installed in traditional housings or COB panel support.

frames for modular units ..... page: 214 - 215

modular units, crimp connections

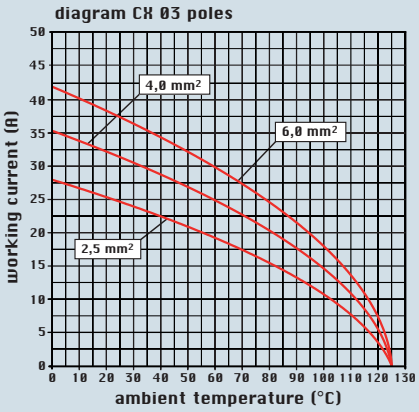


40A crimp contacts silver plated

description	part No.	part No.
without contacts (to be ordered separately) - female inserts for female contacts - male inserts for male contacts	**CX 03 4F *** **CX 03 4M ***	
40A female crimp contacts 1,5 mm² AWG 16 2,5 mm² AWG 14 4 mm² AWG 12 6 mm² AWG 10		**CXFA 1.5** **CXFA 2.5** **CXFA 4.0** **CXFA 6.0**
40A male crimp contacts 1,5 mm² AWG 16 2,5 mm² AWG 14 4 mm² AWG 12 6 mm² AWG 10		**CXMA 1.5** **CXMA 2.5** **CXMA 4.0** **CXMA 6.0**

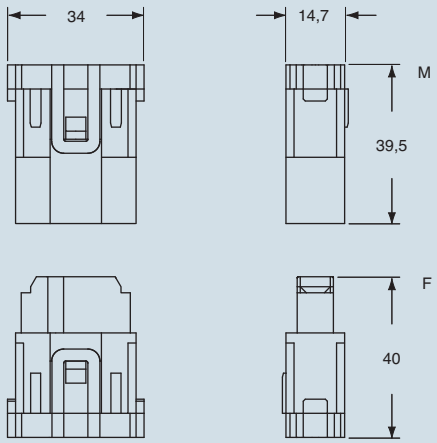
silver plated

- characteristics according to EN 61984:
  40A 400/690V 6kV 3
- UL, CSA, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0.3 mΩ
- for contact crimping instructions, please see the crimping tool section (40A contacts, CXF and CXM series) on pages 536 and 538
- for maximum current load, see the following load curves inserts, for more information see page 565



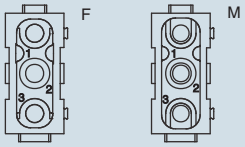
* cable diameter up to 5 mm

dimensions in mm



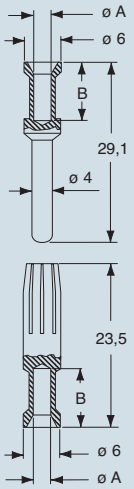
contacts side (front view)

side with reference arrow ▲



- 1 frame slot

dimensions in mm



CXF and CXM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
1,5	1,8	9
2,5	2,2	9
4	2,85	9,6
6	3,5	9,6

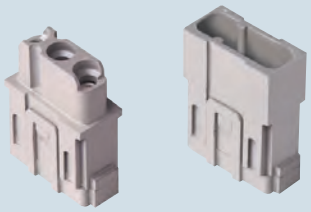
dimensions shown are not binding and may be changed without notice

The modular inserts must be installed in suitable frames which in turn are installed in traditional housings * or COB panel support.

frames for modular units * .... page: 214 - 215

* enclosures: bulkhead mounting housings, high construction housings or high construction hoods

modular units, crimp connections

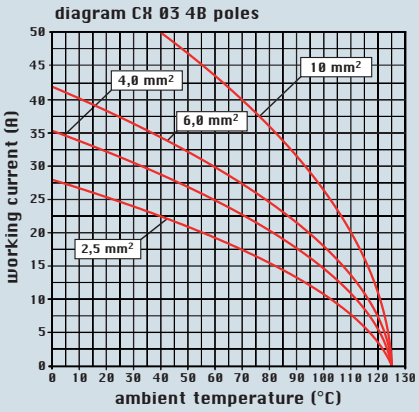


40A crimp contacts silver plated

description	part No.	part No.
without contacts (to be ordered separately) - female inserts for female contacts - male inserts for male contacts	**CX 03 4BF *** **CX 03 4BM ***	
40A female crimp contacts 1,5 mm² AWG 16 2,5 mm² AWG 14 4 mm² AWG 12 6 mm² AWG 10 10 mm² AWG 8		**CXFA 1.5** **CXFA 2.5** **CXFA 4.0** **CXFA 6.0** **CXFA 10**
40A male crimp contacts 1,5 mm² AWG 16 2,5 mm² AWG 14 4 mm² AWG 12 6 mm² AWG 10 10 mm² AWG 8		**CXMA 1.5** **CXMA 2.5** **CXMA 4.0** **CXMA 6.0** **CXMA 10**

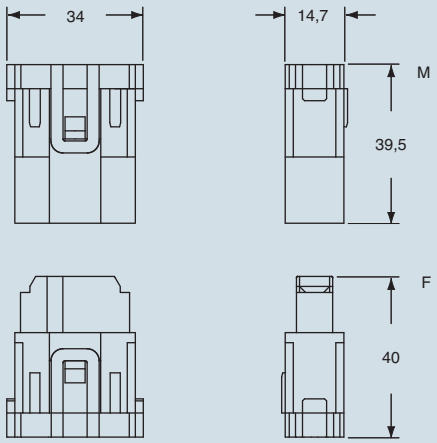
silver plated

- characteristics according to EN 61984:
  40A 500V 6kV 3
- cUL (UL for USA and Canada), EAC certified
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0.3 mΩ
- for contact crimping instructions (1.5 ÷ 10 mm²), please see the crimping tool section (40A contacts, CXF and CXM series) on pages 536 and 538
- for maximum current load, see the following load curves inserts, for more information see page 565



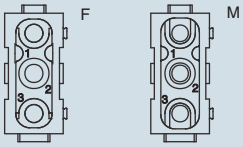
* cable diameter up to 7.5 mm
  contact section up to 10 mm²

dimensions in mm



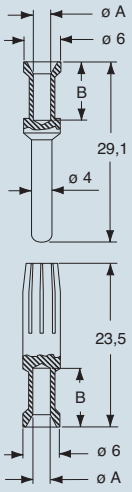
contacts side (front view)

side with reference arrow ▲



- 1 frame slot

dimensions in mm



CXF and CXM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
1,5	1,8	9
2,5	2,2	9
4	2,85	9,6
6	3,5	9,6
10	4,3	15

dimensions shown are not binding
and may be changed without notice

MIXO

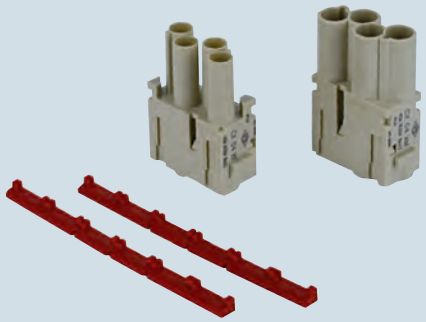
The modular inserts must be installed in suitable frames which are then mounted in traditional housings * or COB panel support.

frames for modular units * .... page: 214 - 215

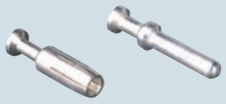
* enclosures: bulkhead mounting housings, high construction housings or high construction hoods

- male and female contacts finger proof
- their key characteristic **lies in the fact that they guarantee maximum safety even in case of accidental contact with fingers (IPXXB or IP2X)**. Safety is guaranteed as standard on female contacts, but also on male contacts. This feature is important as it ensures full compliance with the recent safety standard **EN 60204-1**, concerning electric equipment fitted on machines and in particular with the requirements of Article 6.2.4 concerning protection against residual voltage.
  In the case of plugs or similar devices, the with drawal of which results in the exposure of conductors (for example pins), the discharge time shall not exceed 1 s, otherwise such conductors shall be protected against direct contact to at least an IP2X or IPXXB.

modular units, crimp connections



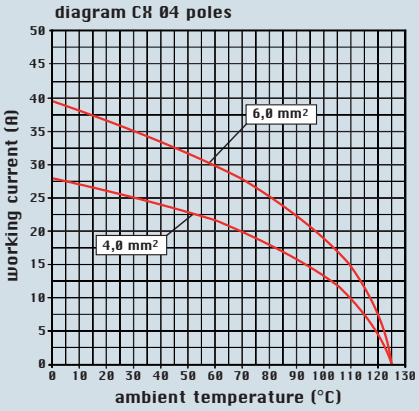
40A crimp contacts silver plated



description	part No.	part No.
without contacts (to be ordered separately)		
- female inserts for female contacts	**CX 04 XF**	
- male inserts for male contacts	**CX 04 XM**	
40A female crimp contacts		
1,5 mm² AWG 16		**CXFA 1.5**
2,5 mm² AWG 14		**CXFA 2.5**
4 mm² AWG 12		**CXFA 4.0**
6 mm² AWG 10		**CXFA 6.0**
40A male crimp contacts		
1,5 mm² AWG 16		**CXMA 1.5**
2,5 mm² AWG 14		**CXMA 2.5**
4 mm² AWG 12		**CXMA 4.0**
6 mm² AWG 10		**CXMA 6.0**

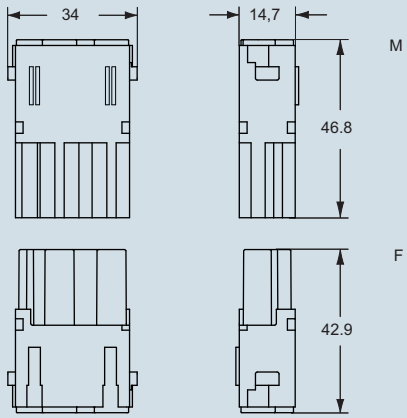
silver plated

- characteristics according to EN 61984:
  40A 830V 8kV 3
  40A 1000V 8kV 2
- certifications: cUL (UL for USA and Canada), (CSA), (GL), EAC; the certifications shown in brackets are being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0.3 mΩ
- for contact crimping instructions, please see the crimping tool section (40A contacts, CXF and CXM series) on pages 536 and 538
- for maximum current load, see the following load curves inserts, for more information see page 565



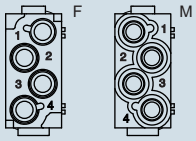
dimensions shown are not binding and may be changed without notice

dimensions in mm

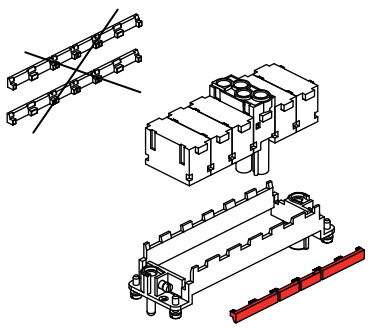


contacts side (front view)

side with reference arrow ▲

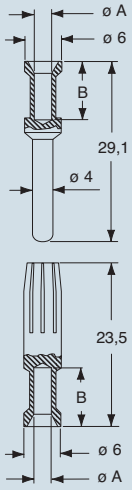


- 1 frame slot



Female inserts are supplied with two red lock tabs that must be used instead of those supplied with the frames.

dimensions in mm



CXF and CXM contacts

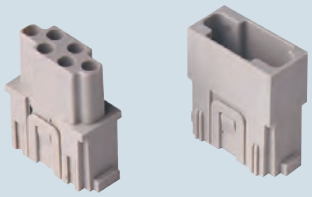
conductor section mm²	conductor slot ø A (mm)	conductor stripping lenght B (mm)
1,5	1,8	9
2,5	2,2	9
4	2,85	9,6
6	3,5	9,6

MIXO modular units 6 poles 16A - 500V

The modular inserts must be installed in suitable frames which in turn are installed in traditional housings or COB panel support.

frames for modular units ..... page: 214 - 215

modular units, crimp connections

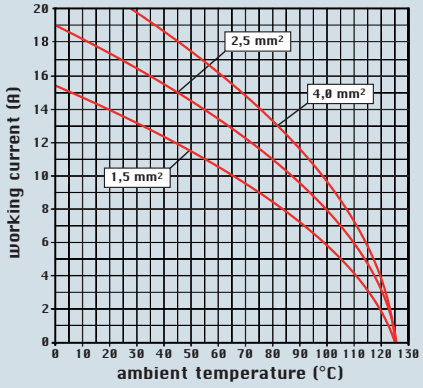


16A crimp contacts normal or for advanced opening silver and gold plated

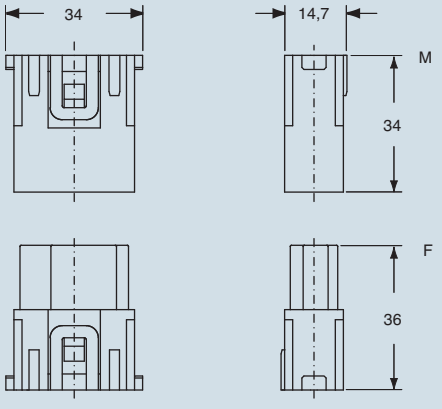
description			part No.	part No.	part No.
without contacts (to be ordered separately)					
- female inserts for female contacts			**CX 06 CF**		
- male inserts for male contacts			**CX 06 CM**		
16A female contacts					
0,14-0,37 mm²	AWG 26-22	one groove		**CCFA 0.3**	**CCFD 0.3**
0,5 mm²	AWG 20	with no grooves		**CCFA 0.5**	**CCFD 0.5**
0,75 mm²	AWG 18	one groove (back side)		**CCFA 0.7**	**CCFD 0.7**
1 mm²	AWG 18	one groove		**CCFA 1.0**	**CCFD 1.0**
1,5 mm²	AWG 16	two grooves		**CCFA 1.5**	**CCFD 1.5**
2,5 mm²	AWG 14	three grooves		**CCFA 2.5**	**CCFD 2.5**
3 mm²	AWG 12	one wide groove		**CCFA 3.0**	**CCFD 3.0**
4 mm²	AWG 12	with no grooves		**CCFA 4.0**	**CCFD 4.0**
					silver plated / **gold plated 1)**
16A male contacts					
0,14-0,37 mm²	AWG 26-22	one groove		**CCMA 0.3**	**CCMD 0.3**
0,5 mm²	AWG 20	with no grooves		**CCMA 0.5**	**CCMD 0.5**
0,75 mm²	AWG 18	one groove (back side)		**CCMA 0.7**	**CCMD 0.7**
1 mm²	AWG 18	one groove		**CCMA 1.0**	**CCMD 1.0**
1,5 mm²	AWG 16	two grooves		**CCMA 1.5**	**CCMD 1.5**
2,5 mm²	AWG 14	three grooves		**CCMA 2.5**	**CCMD 2.5**
3 mm²	AWG 12	one wide groove		**CCMA 3.0**	**CCMD 3.0**
4 mm²	AWG 12	with no grooves		**CCMA 4.0**	**CCMD 4.0**
16A male crimp contacts for advanced opening					
0,5 mm²	AWG 20	with no grooves		**CC 0.5 AN**	
0,75 mm²	AWG 18	one groove (back side)		**CC 0.7 AN**	
1 mm²	AWG 18	one groove		**CC 1.0 AN**	
1,5 mm²	AWG 16	two grooves		**CC 1.5 AN**	
2,5 mm²	AWG 14	three grooves		**CC 2.5 AN**	

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 400/690V 6kV 2
- UL, CSA, CCC *, GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 565

diagram CX 06 poles

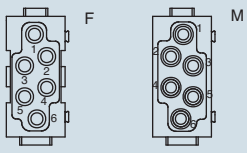


dimensions in mm



contacts side (front view)

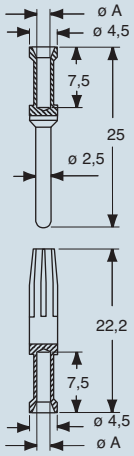
side with reference arrow ▲



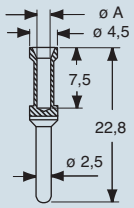
- 1 frame slot

dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length (mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

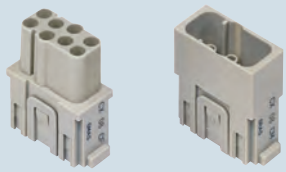
dimensions shown are not binding and may be changed without notice

MIXO modular units 8 poles 16A - 400V

The modular inserts must be installed in suitable frames which in turn are installed in traditional housings or COB panel support.

frames for modular units ..... page: 214 - 215

modular units, crimp connections



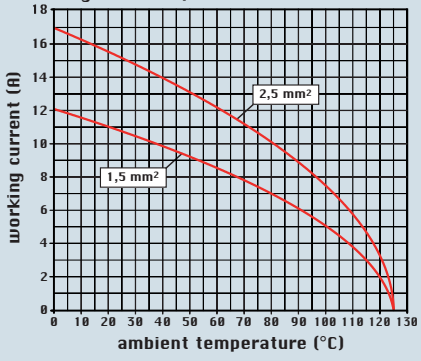
16A crimp contacts normal or for advanced opening silver and gold plated

description	part No.	part No.	part No.
without contacts (to be ordered separately)			
- female inserts for female contacts	**CX 08 CF**		
- male inserts for male contacts	**CX 08 CM**		
16A female contacts			
0,14-0,37 mm² AWG 26-22 one groove		**CCFA 0.3**	**CCFD 0.3**
0,5 mm² AWG 20 with no grooves		**CCFA 0.5**	**CCFD 0.5**
0,75 mm² AWG 18 one groove (back side)		**CCFA 0.7**	**CCFD 0.7**
1 mm² AWG 18 one groove		**CCFA 1.0**	**CCFD 1.0**
1,5 mm² AWG 16 two grooves		**CCFA 1.5**	**CCFD 1.5**
2,5 mm² AWG 14 three grooves		**CCFA 2.5**	**CCFD 2.5**
3 mm² AWG 12 one wide groove		**CCFA 3.0**	**CCFD 3.0**
4 mm² AWG 12 with no grooves		**CCFA 4.0**	**CCFD 4.0**
16A male contacts			
0,14-0,37 mm² AWG 26-22 one groove		**CCMA 0.3**	**CCMD 0.3**
0,5 mm² AWG 20 with no grooves		**CCMA 0.5**	**CCMD 0.5**
0,75 mm² AWG 18 one groove (back side)		**CCMA 0.7**	**CCMD 0.7**
1 mm² AWG 18 one groove		**CCMA 1.0**	**CCMD 1.0**
1,5 mm² AWG 16 two grooves		**CCMA 1.5**	**CCMD 1.5**
2,5 mm² AWG 14 three grooves		**CCMA 2.5**	**CCMD 2.5**
3 mm² AWG 12 one wide groove		**CCMA 3.0**	**CCMD 3.0**
4 mm² AWG 12 with no grooves		**CCMA 4.0**	**CCMD 4.0**
16A male crimp contacts for advanced opening			
0,5 mm² AWG 20 with no grooves		**CC 0.5 AN**	
0,75 mm² AWG 18 one groove (back side)		**CC 0.7 AN**	
1 mm² AWG 18 one groove		**CC 1.0 AN**	
1,5 mm² AWG 16 two grooves		**CC 1.5 AN**	
2,5 mm² AWG 14 three grooves		**CC 2.5 AN**	

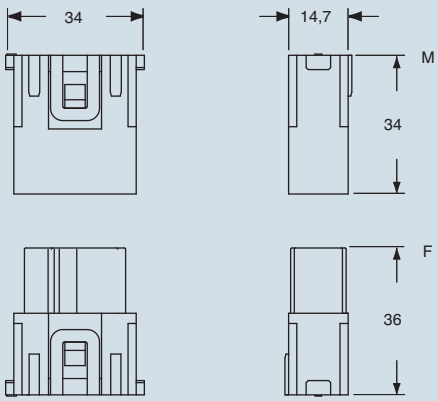
silver plated | **gold plated 1)**

- characteristics according to EN 61984:
  16A 400V 6kV 3
  16A 400/690V 6kV 2
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 565

diagram CX 08 poles

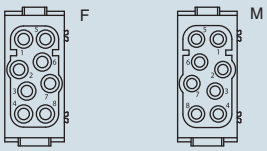


dimensions in mm



contacts side (front view)

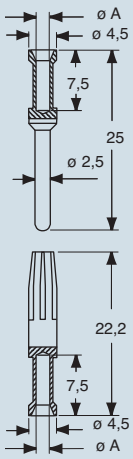
side with reference arrow ▲



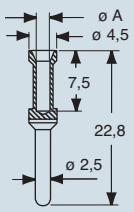
- 1 frame slot

dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length (mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

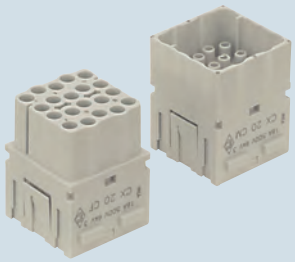
dimensions shown are not binding and may be changed without notice

The modular inserts must be installed in suitable frames which in turn are installed in traditional housings or COB panel support.

frames for modular units ..... page: 215

* on request, version with 3 fastened CX 20 CF/CM inserts with poles numbered from 1 – 60
references: **CX 60 CF**, **CX 60 CM**

modular units, crimp connections



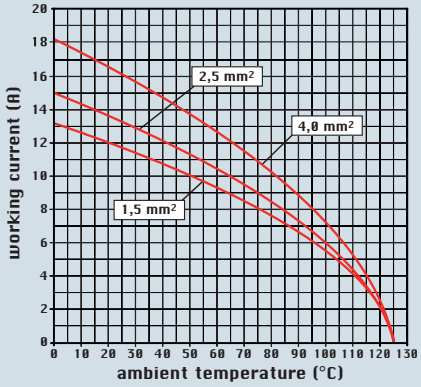
16A crimp contacts normal or for advanced opening silver and gold plated

description	part No.	part No.	part No.
without contacts (to be ordered separately) - female inserts for female contacts * - male inserts for male contacts *	**CX 20 CF** **CX 20 CM**		
16A female contacts			
0,14-0,37 mm² AWG 26-22 one groove		**CCFA 0.3**	**CCFD 0.3**
0,5 mm² AWG 20 with no grooves		**CCFA 0.5**	**CCFD 0.5**
0,75 mm² AWG 18 one groove (back side)		**CCFA 0.7**	**CCFD 0.7**
1 mm² AWG 18 one groove		**CCFA 1.0**	**CCFD 1.0**
1,5 mm² AWG 16 two grooves		**CCFA 1.5**	**CCFD 1.5**
2,5 mm² AWG 14 three grooves		**CCFA 2.5**	**CCFD 2.5**
3 mm² AWG 12 one wide groove		**CCFA 3.0**	**CCFD 3.0**
4 mm² AWG 12 with no grooves		**CCFA 4.0**	**CCFD 4.0**
16A male contacts			
0,14-0,37 mm² AWG 26-22 one groove		**CCMA 0.3**	**CCMD 0.3**
0,5 mm² AWG 20 with no grooves		**CCMA 0.5**	**CCMD 0.5**
0,75 mm² AWG 18 one groove (back side)		**CCMA 0.7**	**CCMD 0.7**
1 mm² AWG 18 one groove		**CCMA 1.0**	**CCMD 1.0**
1,5 mm² AWG 16 two grooves		**CCMA 1.5**	**CCMD 1.5**
2,5 mm² AWG 14 three grooves		**CCMA 2.5**	**CCMD 2.5**
3 mm² AWG 12 one wide groove		**CCMA 3.0**	**CCMD 3.0**
4 mm² AWG 12 with no grooves		**CCMA 4.0**	**CCMD 4.0**
16A male crimp contacts for advanced opening			
0,5 mm² AWG 20 with no grooves		**CC 0.5 AN**	
0,75 mm² AWG 18 one groove (back side)		**CC 0.7 AN**	
1 mm² AWG 18 one groove		**CC 1.0 AN**	
1,5 mm² AWG 16 two grooves		**CC 1.5 AN**	
2,5 mm² AWG 14 three grooves		**CC 2.5 AN**	

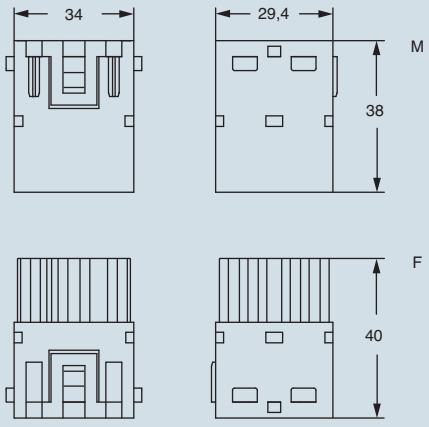
silver plated **gold plated**

- characteristics according to EN 61984:
  16A 500V 6kV 3
  16A 830V 8kV 2
- cUL (UL for USA and Canada), CSA, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 565

diagram CX 20 poles

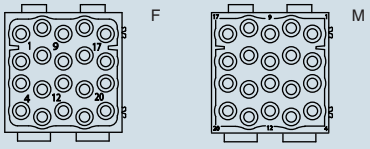


dimensions in mm



contacts side (front view)

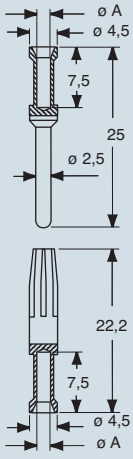
side with reference arrow ▲



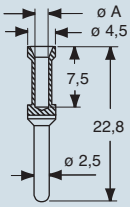
- 2 frame slots

dimensions in mm

CCF and CCM



CC...AN



CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length (mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

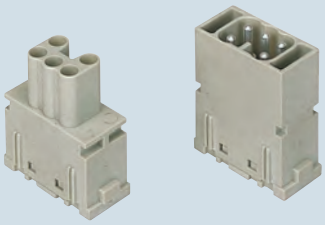
1) basic or high thickness gold plating page 481

dimensions shown are not binding and may be changed without notice

The modular inserts must be installed in suitable frames which in turn are installed in traditional housings or COB panel support.

frames for modular units ..... page: 214 - 215

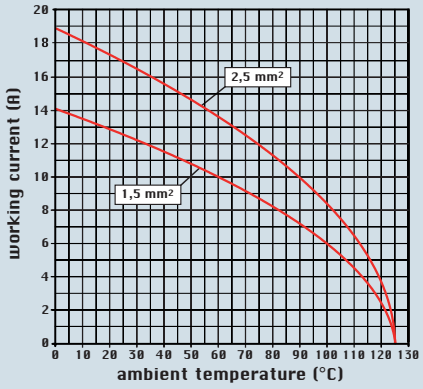
modular units, spring connection



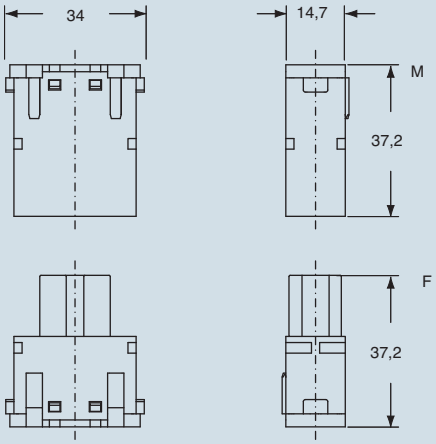
description	part No.
- female inserts with female contacts - male inserts with male contacts	**CX 05 SF** **CX 05 SM**

- characteristics according to EN 61984:
  16A 400V 6kV 3
  16A 500V 6kV 2
- UL, CSA, CCC *, GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 566

diagram CX 05 poles

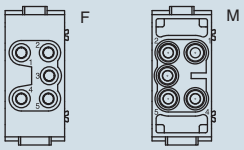


dimensions in mm



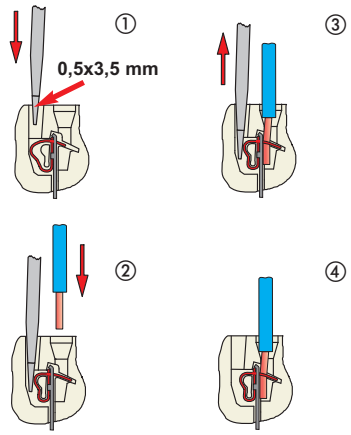
contacts side (front view)

side with reference arrow ▲



- inserts for section conductors:
  0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping lenght: 9...11 mm
- 1 frame slot

connection with spring terminal



dimensions shown are not binding
and may be changed without notice

MIXO modular units HT 2 poles 16A - 2900/5000V

The modular inserts must be installed in suitable frames which in turn are installed in traditional housings * or COB panel support.

frames for modular units * ..... page: 215

* enclosures: bulkhead mounting housings, high construction housings or high construction hoods

- characteristics according to EN 61984 **:
  16A 2900/5000V 15kV 3
  ** used for guidance as applicable
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for contact crimping, see the crimp tool section (16A CCF and CCM series contacts) on pages 534, 538, 544, 546, 548

high voltage modular units, crimp connections contact holder removal tool

16A crimp contacts silver and gold plated

description	part No.	part No.	part No.
without contacts (to be ordered separately)			
- female inserts high voltage for female contacts	**CX 02 HF**		
- male inserts high voltage for male contacts	**CX 02 HM**		
contact holder removal tool	**CHES**		

16A female contacts

0,14-0,37 mm²	AWG 26-22	one groove	**CCFA 0.3**	**CCFD 0.3**
0,5 mm²	AWG 20	with no grooves	**CCFA 0.5**	**CCFD 0.5**
0,75 mm²	AWG 18	one groove (back side)	**CCFA 0.7**	**CCFD 0.7**
1 mm²	AWG 18	one groove	**CCFA 1.0**	**CCFD 1.0**
1,5 mm²	AWG 16	two grooves	**CCFA 1.5**	**CCFD 1.5**
2,5 mm²	AWG 14	three grooves	**CCFA 2.5**	**CCFD 2.5**
3 mm²	AWG 12	one wide groove	**CCFA 3.0**	**CCFD 3.0**
4 mm²	AWG 12	with no grooves	**CCFA 4.0**	**CCFD 4.0**

16A male contacts

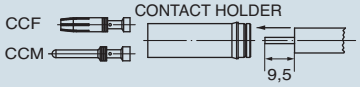
0,14-0,37 mm²	AWG 26-22	one groove	**CCMA 0.3**	**CCMD 0.3**
0,5 mm²	AWG 20	with no grooves	**CCMA 0.5**	**CCMD 0.5**
0,75 mm²	AWG 18	one groove (back side)	**CCMA 0.7**	**CCMD 0.7**
1 mm²	AWG 18	one groove	**CCMA 1.0**	**CCMD 1.0**
1,5 mm²	AWG 16	two grooves	**CCMA 1.5**	**CCMD 1.5**
2,5 mm²	AWG 14	three grooves	**CCMA 2.5**	**CCMD 2.5**
3 mm²	AWG 12	one wide groove	**CCMA 3.0**	**CCMD 3.0**
4 mm²	AWG 12	with no grooves	**CCMA 4.0**	**CCMD 4.0**

silver plated | **gold plated 1)**

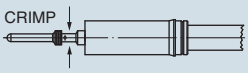
How to use the MIXO HT module

Wiring and assembly:

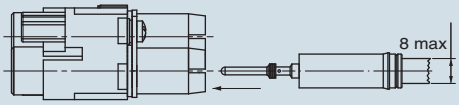
1) Strip the wire by 9.5 mm length and insert it into the contact holder



2) Crimp series CC contact (16A max) on the stripped wire



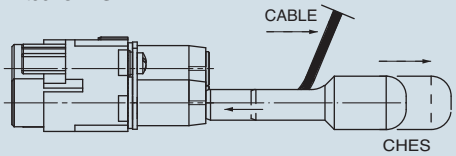
3) Insert the contact holder into the module



Heat shrinking tubes to be applied on the rear side of the module and over the contact holder are furnished together with the product

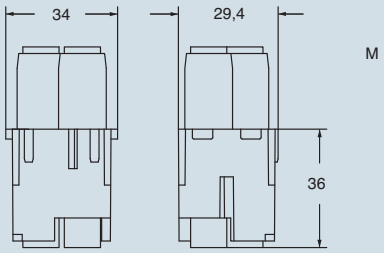
Removal:

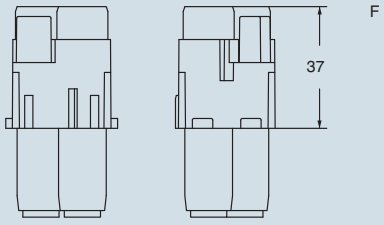
1) Remove the contact holder by means of the proper tool CHES



dimensions shown are not binding and may be changed without notice

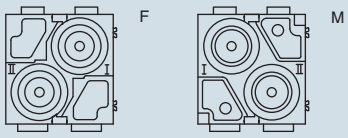
dimensions in mm





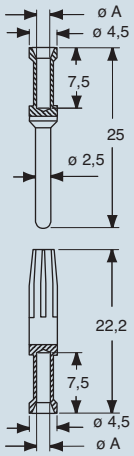
contacts side (front view)

side with reference arrow ▲



- 2 frame slots

dimensions in mm



CCF, CCM contacts

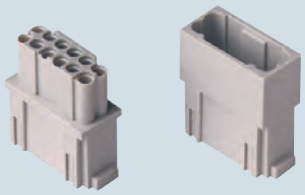
conductor section	conductor slot	conductors stripping length
mm²	ø A (mm)	(mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481

The modular inserts must be installed in suitable frames which in turn are installed in traditional housings or COB panel support.

frames for modular units ..... page: 214 - 215

modular units, crimp connections



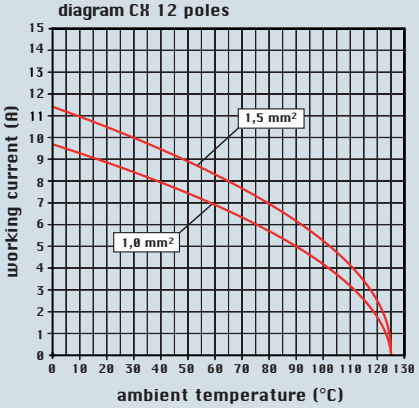
10A crimp contacts silver and gold plated

description	part No.	part No.	part No.
without contacts (to be ordered separately) - female inserts for female contacts - male inserts for male contacts	**CX 12 DF** **CX 12 DM**		
10A female contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5**	**CDFD 0.3** **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5**
10A male contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5**	**CDMD 0.3** **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5**

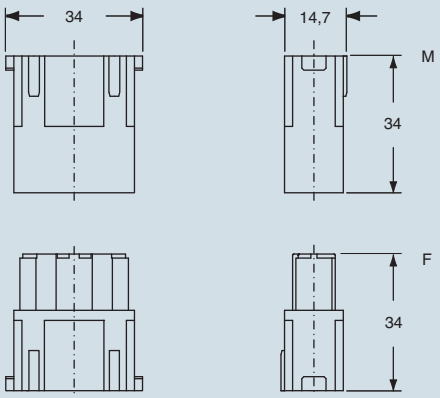
silver plated | **gold plated 1)**

- characteristics according to EN 61984:
  10A 160V 2,5kV 3
  10A 250V 4kV 2
- UL, CSA, CCC *, GL, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- PCBs interface, see article CIF 2.4
- for contact crimping, see the crimp tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 566

diagram CX 12 poles

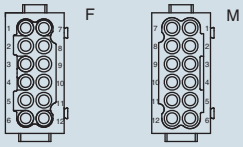


dimensions in mm



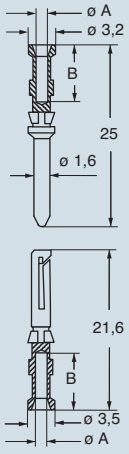
contacts side (front view)

side with reference arrow ▲



- 1 frame slot

dimensions in mm



CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

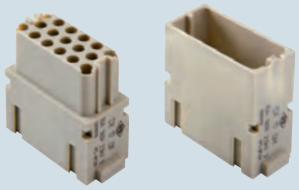
1) basic or high thickness gold plating page 480

dimensions shown are not binding and may be changed without notice

The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units ..... page: 214 - 215

modular units, crimp connections



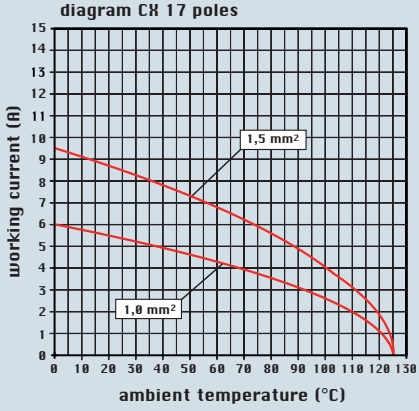
10A crimp contacts silver and gold plated

description	part No.	part No.	part No.
without contacts (to be ordered separately) - female inserts for female contacts - male inserts for male contacts	**CX 17 DF** **CX 17 DM**		
10A female contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5**	**CDFD 0.3** **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5**
10A male contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5**	**CDMD 0.3** **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5**

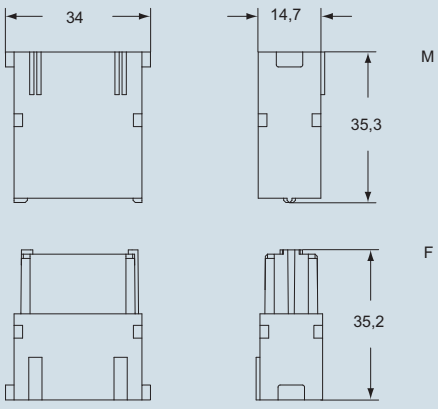
silver plated | **gold plated 1)**

- characteristics according to EN 61984:
  10A 160V 2,5kV 3
  10A 250V 4kV 2
- cUL (UL for USA and Canada), CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for contact crimping, see the crimp tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- for maximum current load, see the following load curves inserts, for more information see page 566

diagram CX 17 poles

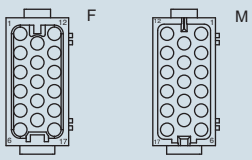


dimensions in mm



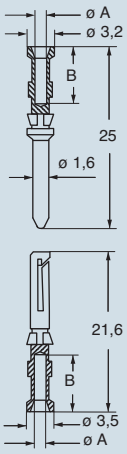
contacts side (front view)

side with reference arrow ▲



- 1 frame slot

dimensions in mm



CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

dimensions shown are not binding
and may be changed without notice

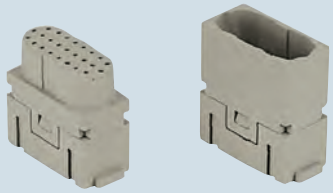
MIXO modular units 25 poles 4A - 50V

The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units ..... page: 214 - 215

- we recommend the use of CRF / CRM code pins

modular units, crimp connections

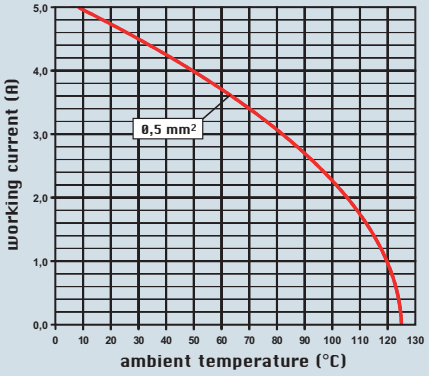


crimp contacts gold plated

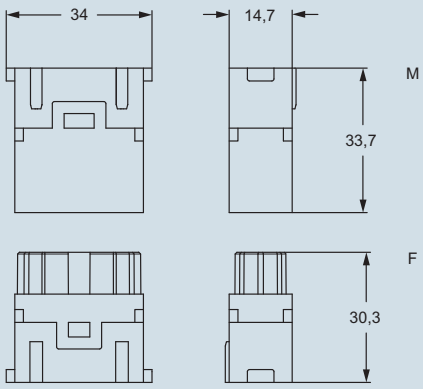
description	part No.	part No.
without contacts (to be ordered separately) - female inserts for female contacts - male inserts for male contacts	**CX 25 IF** **CX 25 IM**	
4A female crimp contacts 0,08-0,21 mm² AWG 28-24 0,13-0,33 mm² AWG 26-22 0,33-0,52 mm² AWG 22-20 4A male crimp contacts 0,08-0,21 mm² AWG 28-24 0,13-0,33 mm² AWG 26-22 0,33-0,52 mm² AWG 22-20		**CIFD 0.2** **CIFD 0.3** **CIFD 0.5** **CIMD 0.2** **CIMD 0.3** **CIMD 0.5** **gold plated**

- characteristics according to EN 61984:
  4A 50V 0,8kV 3
  4A 160V 2,5kV 2
- cUL (UL for USA and Canada), EAC certified
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- for crimp contacts CI series use, on page 540
  CIPZ D crimping tool
  CITP D turret head
  CIES insertion / removal tool
- for maximum current load, see the following load curves inserts, for more information see page 566

diagram CX 25 poles

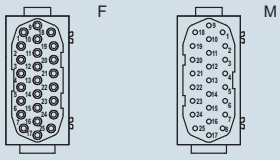


dimensions in mm



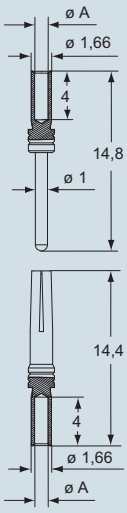
contacts side (front view)

side with reference arrow ▲



- 1 frame slot

dimensions in mm



CIF, CIM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length (mm)
0,08-0,21	0,64	4
0,13-0,33	0,90	4
0,33-0,52	1,12	4

dimensions shown are not binding
and may be changed without notice

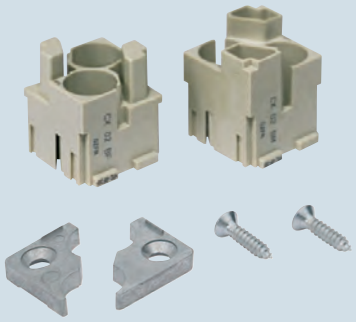
The modular inserts must be installed in suitable frames which in turn are installed in traditional housings * or COB panel support.

frames for modular units * ..... page: 215

* enclosures: bulkhead mounting housings, high construction housings or high construction hoods

- characteristics according to EN 61984:
  10A 50V 0,8kV 3
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 50V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit:
  -40 °C ... +70 °C (CX 01 B and CX 04 B)
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ (no CX 02 B)
- coaxial connector CX 01 B **cables with a typical impedance of 75 Ω** (atténuation see page 567)
- CX 04 B multiaxial connector for STP cables with 2 pairs and terminations compliant with EN 50173-1 Cat. 5 (100 MHz), compatible with 4-wire field bus protocols
- extraction tool for BUS shielded connectors from MIXO BUS insert part No. CX BES see page 502

seat for shielded connectors
metal adaptor



shielded connectors
10A crimp contacts, silver or gold plated

description	part No.	part No.	part No.
seat for two shielded connectors - female insert, two seats for BUS connectors - male insert, two seats for BUS connectors	**CX 02 BF** **CX 02 BM**		
shielded BUS multi axial connectors, 4 poles + shield - female insert, four contact seats + shield - male insert, four contact seats + shield		**CX 04 BF** **CX 04 BM**	
shielded BUS coaxial connectors, 1 pole + shield - female insert, one contact seats + shield - male insert, one contact seats + shield		**CX 01 BF** **CX 01 BM**	
metal adaptor (optional)	**CR GND**		

10A female contacts

0,14-0,37 mm²	AWG 26-22	identification No. 1	**CDFA 0.3**	silver plated	**CDFD 0.3**
0,5 mm²	AWG 20	identification No. 2	**CDFA 0.5**		**CDFD 0.5**
0,75 mm²	AWG 18	identification No. ②	**CDFA 0.7**		**CDFD 0.7**
1 mm²	AWG 18	identification No. 3	**CDFA 1.0**		**CDFD 1.0**
1,5 mm²	AWG 16	identification No. 4	**CDFA 1.5**		**CDFD 1.5**
2,5 mm²	AWG 14	identification No. 5	**CDFA 2.5**		**CDFD 2.5**

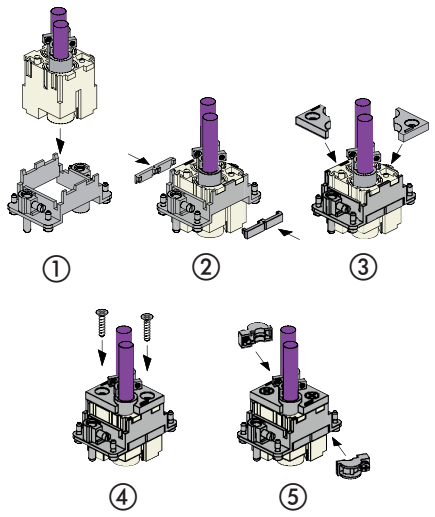
10A male contacts

0,14-0,37 mm²	AWG 26-22	identification No. 1	**CDMA 0.3**		**CDMD 0.3**
0,5 mm²	AWG 20	identification No. 2	**CDMA 0.5**		**CDMD 0.5**
0,75 mm²	AWG 18	identification No. ②	**CDMA 0.7**		**CDMD 0.7**
1 mm²	AWG 18	identification No. 3	**CDMA 1.0**		**CDMD 1.0**
1,5 mm²	AWG 16	identification No. 4	**CDMA 1.5**		**CDMD 1.5**
2,5 mm²	AWG 14	identification No. 5	**CDMA 2.5**		**CDMD 2.5**

gold plated

Note: The shielded connectors have their shield insulated from the enclosure's earthing point.
If you wish to earth-connect the shield, install on the panel an anchorage for shielded cables CR..ST (see page 482) or the CR GND metal adaptor.

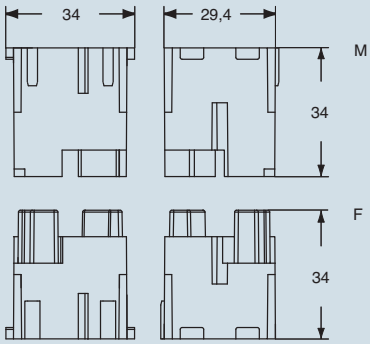
Use of the CR GND metal adaptor



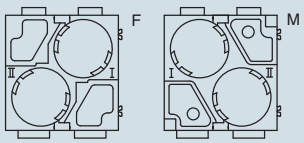
dimensions shown are not binding
and may be changed without notice

dimensions in mm

CX 02 BF, CX 02 BM

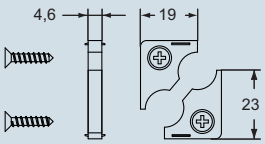


contacts side (front view)
side with reference arrow ▲

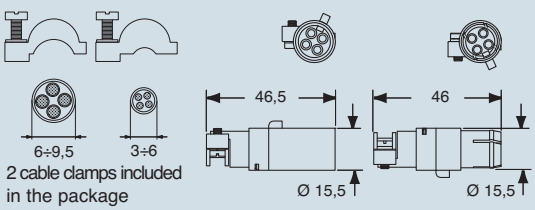


- 2 frame slots

CR GND

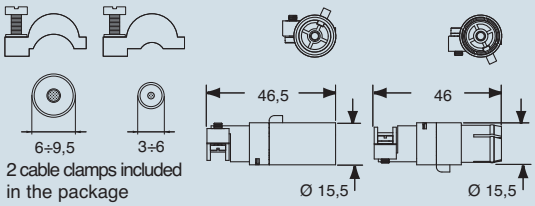


CX 04 BF, CX 04 BM



2 cable clamps included
in the package

CX 01 BF, CX 01 BM



2 cable clamps included
in the package

- conductors stripping length see page 195
- crimp contacts dimensions (CDF and CDM) see page 195
- for contact crimping, see the crimp tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548

MIXO modular units — 8 poles + shield (each connector) 5A - 50V

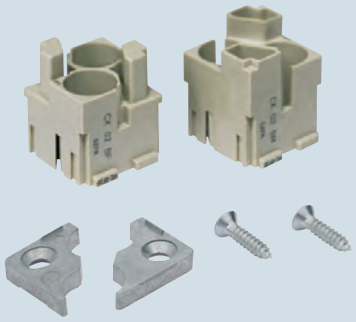
The modular inserts must be installed in suitable frames which are then mounted in traditional housings * or COB panel support.

frames for modular units * ..... page: 215

* enclosures: bulkhead mounting housings, high construction housings or high construction hoods

- characteristics according to EN 61984:
  5A 50V 0,8kV 3
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 50V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +70 °C (CX 08 B)
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- maximum Ø of the insulator: 2.4 mm
- for crimp 5A contacts CI series using:
  CIPZ D crimping tool
  CITP D turret head
  CIES insertion / removal tool
- extraction tool for BUS shielded connectors from MIXO BUS insert part No. CX BES see page 502

seat for shielded connectors
metal adaptor

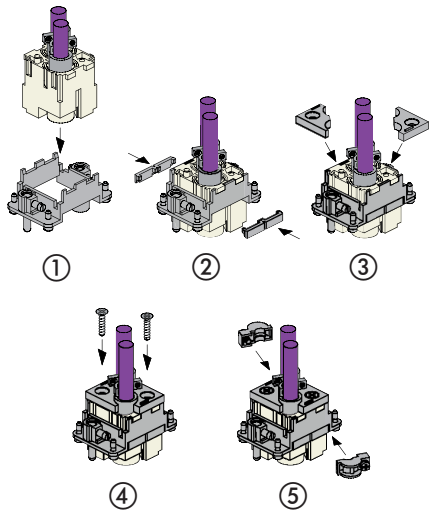


shielded connectors
5A crimp contacts, gold plated

description	part No.	part No.
seat for two shielded connectors - female insert, two seats for BUS connectors - male insert, two seats for BUS connectors	**CX 02 BF** **CX 02 BM**	
shielded BUS multi axial connectors, 8 poles + shield - female insert, eight contact seats + shield - male insert, eight contact seats + shield		**CX 08 BF** **CX 08 BM**
metal adaptor (optional)	**CR GND**	
5A female crimp contacts 0.08-0.21 mm² AWG 24-28 0.13-0.33 mm² AWG 26÷20 0.33-0.52 mm² AWG 20-22 5A male crimp contacts 0.08-0.21 mm² AWG 24-28 0.13-0.33 mm² AWG 26÷20 0.33-0.52 mm² AWG 20-22		**CIFD 0.2** **CIFD 0.3** **CIFD 0.5** **CIMD 0.2** **CIMD 0.3** **CIMD 0.5** **gold plated**

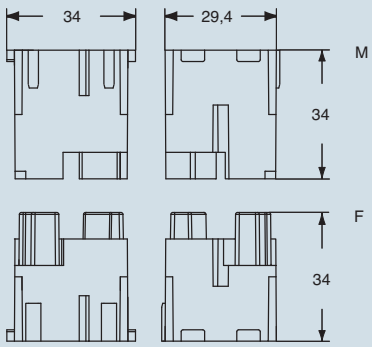
Note: The shielded connectors have their shield insulated from the enclosure's earthing point.
If you wish to earth-connect the shield, install on the panel an anchorage for shielded cables CR..ST (see page 482) or the CR GND metal adaptor.

Use of the CR GND metal adaptor



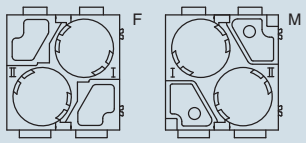
dimensions in mm

CX 02 BF, CX 02 BM



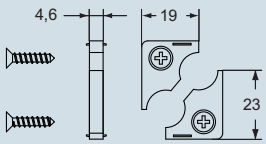
contacts side (front view)

side with reference arrow ▲

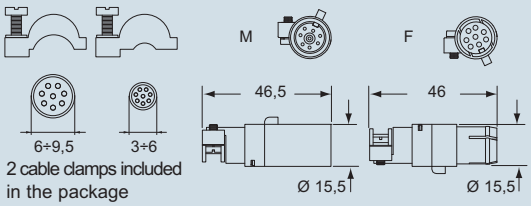


- 2 frame slots

CR GND

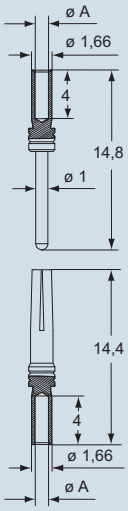


CX 08 BF, CX 08 BM



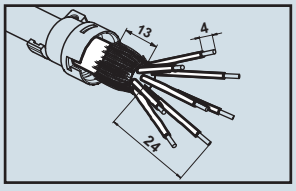
2 cable clamps included in the package

CIF and CIM



CIF, CIM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length (mm)
0,08-0,21	0,64	4
0,13-0,33	0,90	4
0,33-0,52	1,12	4



dimensions shown are not binding
and may be changed without notice

MIXO modular units — 1 pole + shield (each connector) 16A - 50V

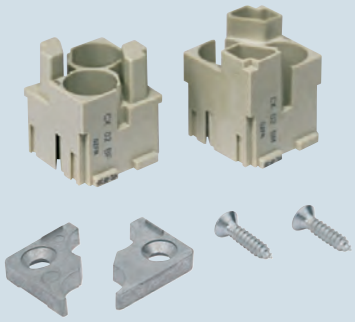
The modular inserts must be installed in suitable frames which are then mounted in traditional housings * or COB panel support.

frames for modular units * ..... page: 215

* enclosures: bulkhead mounting housings, high construction housings or high construction hoods

- characteristics according to EN 61984:
  16A 50V 0,8kV 3
- UL, CSA, CCC *, EAC certified
  * CQC certification being applied for
- rated voltage according to UL/CSA: 50V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +70 °C (CX 01 BC)
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ (no CX 02 B)
- CX 01 BC shielded connector for **cable with a typical impedance of 50 Ω** (atténuation see page 567)
- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF and CCM series) on pages 534, 538, 544, 546, 548
- extraction tool for BUS shielded connectors from MIXO BUS insert part No. CX BES see page 502

seat for shielded connectors
metal adaptor



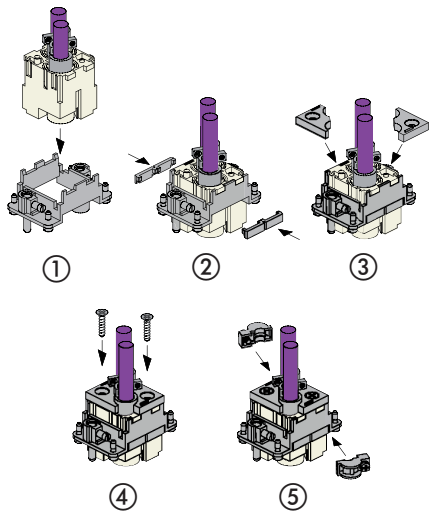
shielded connectors
16A crimp contacts, silver or gold plated

description	part No.	part No.	part No.
seat for two shielded connectors - female insert, two seats for BUS connectors - male insert, two seats for BUS connectors	**CX 02 BF** **CX 02 BM**		
shielded BUS coaxial connectors, 1 pole + shield - female insert, one contact seats + shield - male insert, one contact seats + shield		**CX 01 BCF** **CX 01 BCM**	
metal adaptor (optional)	**CR GND**		
16A female contacts			
0,14-0,37 mm² AWG 26-22 one groove		**CCFA 0.3**	**CCFD 0.3**
0,5 mm² AWG 20 with no grooves		**CCFA 0.5**	**CCFD 0.5**
0,75 mm² AWG 18 one groove (back side)		**CCFA 0.7**	**CCFD 0.7**
1 mm² AWG 18 one groove		**CCFA 1.0**	**CCFD 1.0**
1,5 mm² AWG 16 two grooves		**CCFA 1.5**	**CCFD 1.5**
2,5 mm² AWG 14 three grooves		**CCFA 2.5**	**CCFD 2.5**
3 mm² AWG 12 one wide groove		**CCFA 3.0**	**CCFD 3.0**
4 mm² AWG 12 with no grooves		**CCFA 4.0**	**CCFD 4.0**
16A male contacts			
0,14-0,37 mm² AWG 26-22 one groove		**CCMA 0.3**	**CCMD 0.3**
0,5 mm² AWG 20 with no grooves		**CCMA 0.5**	**CCMD 0.5**
0,75 mm² AWG 18 one groove (back side)		**CCMA 0.7**	**CCMD 0.7**
1 mm² AWG 18 one groove		**CCMA 1.0**	**CCMD 1.0**
1,5 mm² AWG 16 two grooves		**CCMA 1.5**	**CCMD 1.5**
2,5 mm² AWG 14 three grooves		**CCMA 2.5**	**CCMD 2.5**
3 mm² AWG 12 one wide groove		**CCMA 3.0**	**CCMD 3.0**
4 mm² AWG 12 with no grooves		**CCMA 4.0**	**CCMD 4.0**

silver plated | **gold plated 1)**

Note: The shielded connectors have their shield insulated from the enclosure's earthing point.
If you wish to earth-connect the shield, install on the panel an anchorage for shielded cables CR..ST (see page 482) or the CR GND metal adaptor.

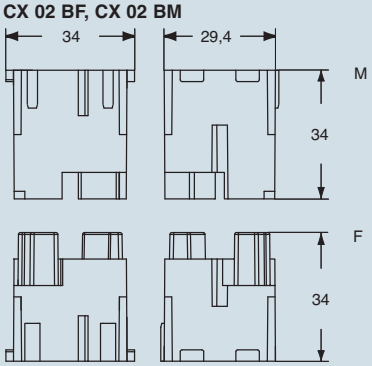
Use of the CR GND metal adaptor



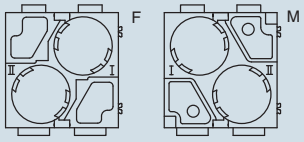
dimensions shown are not binding
and may be changed without notice

dimensions in mm

CX 02 BF, CX 02 BM

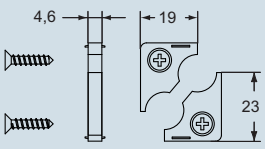


contacts side (front view)
side with reference arrow ▲

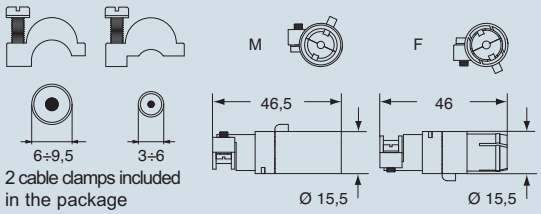


- 2 frame slots

CR GND

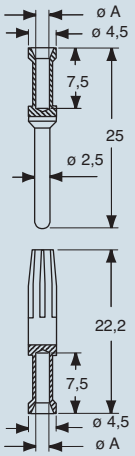


CX 01 BCF, CX 01 BCM



2 cable clamps included
in the package

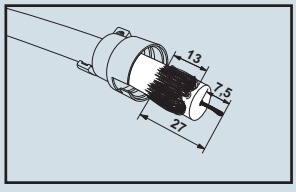
CCF and CCM



CCF and CCM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

1) basic or high thickness gold plating page 481



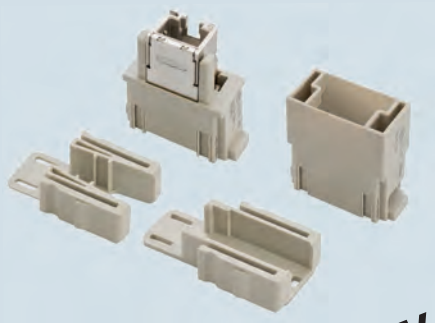
The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units ..... page: 214 - 215

- characteristics according to EN 61984:
  1A 50V 0,8kV 3
- insulation resistance: ≥ 10 GΩ
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- temperature range: from -40 °C to +70 °C
- we recommend to fix the cable with cable tie
- for contact crimping instructions see the crimping tool on page 554 and 555

WARNING:
inserts can be used on high enclosures or bulkhead housings only.

housing for RJ45 male connectors, RJ45 female connectors



NEW

crimp and IDC termination, RJ45 male connectors

NEW

description	part No.	part No.
- female insert with 1 RJ45 female connector, - male insert for 1 RJ45 male crimp connector, 8 data contacts (without RJ45 connector, to be ordered separately) - male insert for 1 RJ45 male IDC connector, 8 data contacts (without RJ45 connector, to be ordered separately)	**CX 01 J8F** **CX 01 J8M** **CX 01 J8IM ****	
- RJ45 male crimp connector, 8 data contacts - RJ45 male IDC connector, 8 data contacts		**CX 8 J6M** **CX 8 J6IM ***

CX 01 J8F technical data:
- RJ45 female insert, Cat. 6 Class E_A
- shielding housing: zinc diecast
- housing finish: nickel-plated
- current carrying capacity at 50 °C: 1A
- adequate for Power over Ethernet: PoE according to IEEE 802.3af
- connectors: IEC 60603-7-5
- adequate for 10 Gigabit Ethernet: 10 Gigabit Ethernet acc. to IEEE 802.3an
- custom-designed cabling systems: PROFINET Installation Guideline
- generic cabling systems: ANSI/TIA/EIA-568-C.2 ISO/IEC 11801 EN 50173-1 ISO/IEC 24702 EN 61918
- Class E_A (channel): ISO/IEC 11801, EN 50173-1

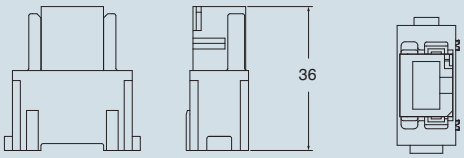
CX 8 J6M technical data:
- RJ45 male crimp connectors Cat. 6_A
- crimp pliers: **CJPZ T**
- screened cable stripper: **CJST**
- Cu-conductor diameter solid: 0,40 - 0,51 mm (AWG 26/1 - 24/1) stranded: 0,46 - 0,61 mm (AWG 27/7 - 24/7)
- insulation diameter: 0,85 - 1,05 mm
- cable diameter: 5,0 - 6,6 mm
- connectors: IEC 60603-7-51
- 10 Gigabit Ethernet acc. to IEEE 802.3an: adequate for 10 Gigabit Ethernet
- category 6_A: ISO/IEC 11801; EN 50173-1
- Class E_A: ISO/IEC 11801; EN 50173-1
- Category 6_A: ANSI/TIA/EIA-568-C.2

CX 8 J6IM technical data:
- RJ45 male IDC connectors Cat. 6 Class E_A
- Cu-conductor diameter solid: 0,41 - 0,64 mm (AWG 26/1 - 22/1) stranded: 0,48 - 0,76 mm (AWG 26/7 - 22/7)
- insulation diameter: 0,85 - 1,6 mm
- cable diameter: 5,5 - 7,3 mm
- connectors: IEC 60603-7-5
- category 6_A: ISO/IEC 11801; DIN EN 50173-1
- wrenches pliers for CX 8 J6IM: **CJPW K**
- 10 Gigabit Ethernet acc. to IEEE 802.3an: adequate for 10 Gigabit Ethernet
- Class E_A: ISO/IEC 11801; EN 50173-1
- Category 6: ANSI/TIA/EIA-568-C.2
- custom-designed cabling systems: according to PROFINET Installation Guideline

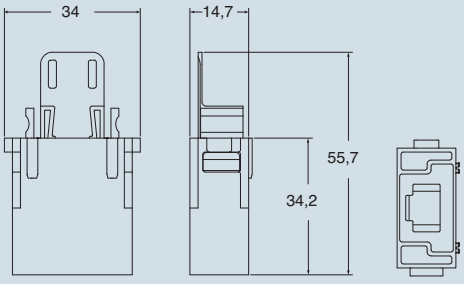
dimensions shown are not binding and may be changed without notice

dimensions in mm

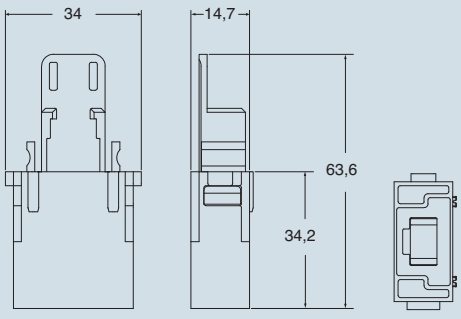
CX 01 J8F



CX 01 J8M



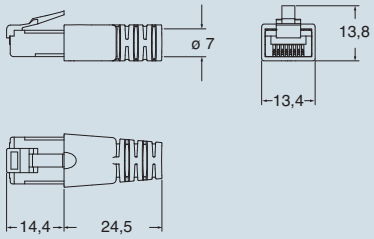
CX 01 J8IM **



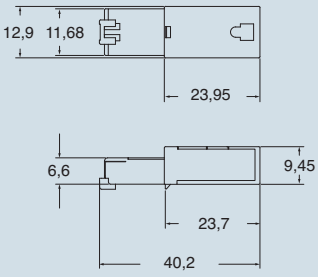
** CX 01 J8IM: to be used with high enclosures (T-TYPE hood M32/M40 only and CZAV/MZAV top entry hood only), bulkhead housings or COB ... BC/TCQ/TSF/TSFS only.

dimensions in mm

CX 8 J6M
can be used with CX 01 J8M



CX 8 J6IM
* can be used with CX 01 J8IM



CW patch cord RJ45

with 2 RJ45 male connectors

NEW

MIXO

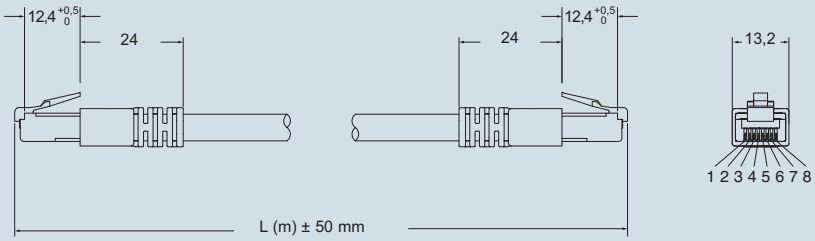
description	part No.	(L) meter
RJ45 male connector with 8 data contacts	**CW 1 J2M87**	1
	CW 2 J2M87	2
	CW 3 J2M87	3
	CW 5 J2M87	5
	CW 7.5 J2M87	7,5
	CW 10 J2M87	10
	CW 15 J2M87	15

RJ45 patch cord technical data:
- S/FTP Cat. 7, 4x2x AWG 27/7, PUR jacket
- temperature range: from -40 °C ÷ +75 °C
- nickel plated brass screening
- green RAL 6018 colour

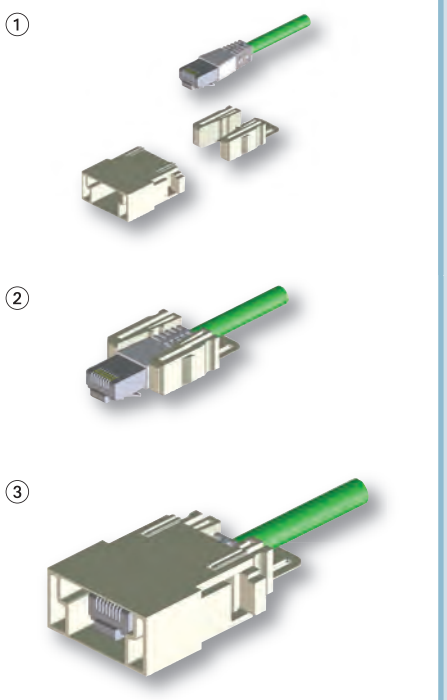
Can be used with:
- MIXO RJ45 **CX 01 J8M** male inserts

dimensions in mm

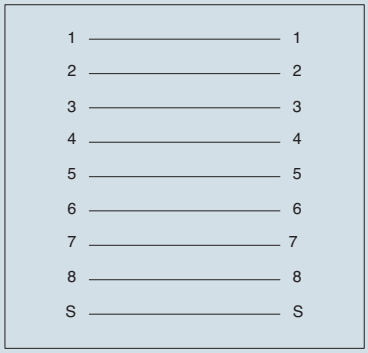
CW...J2M87



RJ45 male assembly



Wiring Diagram 1:1



dimensions shown are not binding
and may be changed without notice

MIXO modular units for 1 RJ45 + 4 poles connector 10A - 250V

The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units ..... page: 215

- characteristics according to EN 61984:
  10A 250V 4kV 3
- insulation resistance: ≥ 10 GΩ
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for contact crimping, see the crimp tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548

**** WARNING:**
the female inserts can only be used on high or flush mounting enclosures

housing for RJ45 connectors, RJ45 connectors

10A crimp contacts silver and gold plated

description	part No.	part No.	part No.
without RJ45 connector and without contacts (to be ordered separately) - female inserts for 1 RJ45 female connector and for 4 10A (CDF) female contacts - male inserts for 1 RJ45 male connector and for 4 10A (CDM) male contacts	**CX 01 JF **** **CX 01 JM**		
- RJ45 female connector, 8 data contacts - RJ45 female connector, 8 data contacts / 2 power contacts	**CX 8 JF *** **CX 8/2 JF ***		
- RJ45 male connector, 4 data contacts - RJ45 male connector, 4 data contacts / 2 power contacts - RJ45 male connector, 6 data contacts / 2 power contacts - RJ45 male connector, 8 data contacts - RJ45 male connector, 4 data contacts cat. 5e profiNET®	**CX 4 JM** **CX 4/2 JM** **CX 6/2 JM** **CX 8 JM** **CX 4E JM**		
10A female contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5 10A male contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5** **silver plated** **CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5**	**CDFD 0.3** **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5** **gold plated** **CDMD 0.3** **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5**

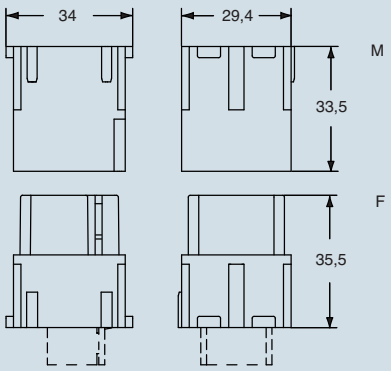
RJ45 connector features:
- RJ45 insert, Cat. 5 Ethernet
- rated current: 2,1A at 70 °C
- rated voltage: 50VDC / 35VAC
- IDC terminals:
  for 0,22 mm² (AWG 24/7) data contacts **CX 4 JM**
  for 0,14 mm² (AWG 26/7) or 0,22 mm² (AWG 24/7) data contacts **CX 4/2 JM**
  for 0,34 mm² (AWG 22/7) or 0,38 mm² (AWG 22/19) power contacts **CX 4/2 JM**
  for 0,14 mm² (AWG 26/7) data contacts **CX 6/2 JM**
  for 0,25 mm² (AWG 23/19) power contacts **CX 6/2 JM**
  for 0,14 mm² (AWG 26/7) data contacts **CX 8 JM**
  for 0,34 mm² (AWG 22/7) data contacts **CX 4E JM**
- /7 = 7-strands wire
  /19 = 19-strands wire
- Ø$_{max}$ insulating conductors 1 mm (data), 1,4 mm (power and CX 4E JM)
- Ø$_{max}$ complete cable 7 mm (CX 8 JM: 6,9 mm)
- temperature range: from -40°C to 120 °C
- nickel plated brass screening
- crimp pliers: **CJPZ Y**
- screened cable stripper: **CJST**

* 4 pole version on request, part No. **CX 4 JF** and **CX 4/2 JF** with "crossover" link

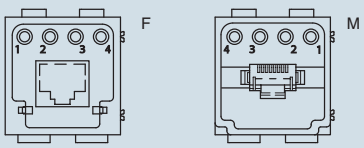
crimp contacts dimensions (CDF and CDM) see page 195

dimensions in mm

CX 01 JF, CX 01 JM



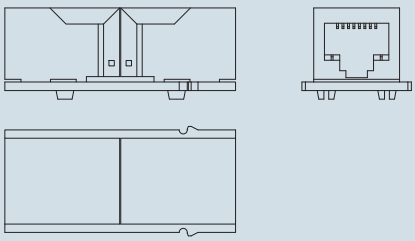
contacts side (front view)
side with reference arrow ▲



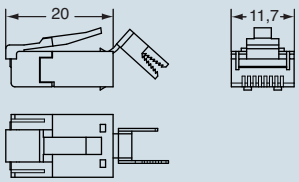
- 2 frame slots

dimensions in mm

CX 4 JF, CX 4/2 JF, CX 8 JF, CX 8/2 JF



CX 4 JM, CX 4/2 JM, CX 6/2 JM, CX 8 JM, CX 4E JM



dimensions shown are not binding and may be changed without notice

The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units ..... page: 215

- characteristics according to EN 61984:
  10A 250V 4kV 3
- insulation resistance: ≥ 10 GΩ
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for contact crimping, see the crimp tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548

**** WARNING:**
the female inserts can only be used on high or flush mounting enclosures

housing for RJ45 connectors, RJ45 connectors

10A crimp contacts silver and gold plated

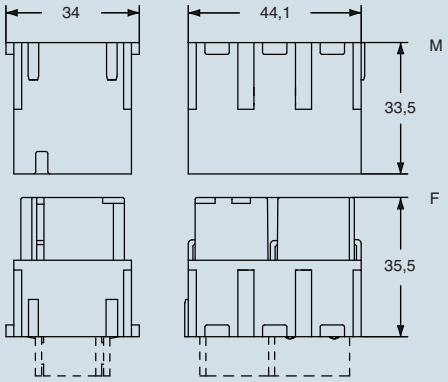
description	part No.	part No.	part No.
without RJ45 connector and without contacts (to be ordered separately) - female insert for 2 RJ45 female connectors and for 8 10A (CDF) female contacts - male insert for 2 RJ45 male connectors and for 8 10A (CDM) male contacts	**CX 02 JF **** **CX 02 JM**		
- RJ45 female connector, 8 data contacts - RJ45 female connector, 8 data contacts / 2 power contacts	**CX 8 JF *** **CX 8/2 JF ***		
- RJ45 male connector, 4 data contacts - RJ45 male connector, 4 data contacts / 2 power contacts - RJ45 male connector, 6 data contacts / 2 power contacts - RJ45 male connector, 8 data contacts - RJ45 male connector, 4 data contacts cat. 5e profiNET®	**CX 4 JM** **CX 4/2 JM** **CX 6/2 JM** **CX 8 JM** **CX 4E JM**		
10A female contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5 10A male contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5** **silver plated** **CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5**	**CDFD 0.3** **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5** **gold plated** **CDMD 0.3** **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5**

RJ45 connector features:
- RJ45 insert, Cat. 5 Ethernet
- rated current: 2,1A at 70 °C
- rated voltage: 50VDC / 35VAC
- IDC terminals:
  for 0,22 mm² (AWG 24/7) data contacts **CX 4 JM**
  for 0,14 mm² (AWG 26/7) or 0,22 mm² (AWG 24/7) data contacts **CX 4/2 JM**
  for 0,34 mm² (AWG 22/7) or 0,38 mm² (AWG 22/19) power contacts **CX 4/2 JM**
  for 0,14 mm² (AWG 26/7) data contacts **CX 6/2 JM**
  for 0,25 mm² (AWG 23/19) power contacts **CX 6/2 JM**
  for 0,14 mm² (AWG 26/7) data contacts **CX 8 JM**
  for 0,34 mm² (AWG 22/7) data contacts **CX 4E JM**
- /7 = 7-strands wire
  /19 = 19-strands wire
- Ø$_{max}$ insulating conductors 1 mm (data), 1,4 mm (power and CX 4E JM)
- Ø$_{max}$ complete cable 7 mm (CX 8 JM: 6,9 mm)
- temperature range: from -40°C to 120 °C
- nickel plated brass screening
- crimp pliers: **CJPZ Y**
- screened cable stripper: **CJST**

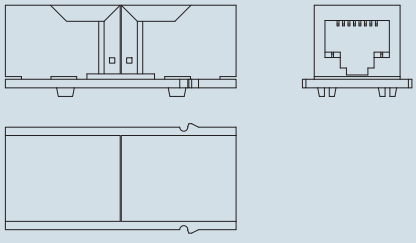
* 4 pole version on request, part No. **CX 4 JF** and **CX 4/2 JF** with "crossover" link

crimp contacts dimensions (CDF and CDM) see page 195

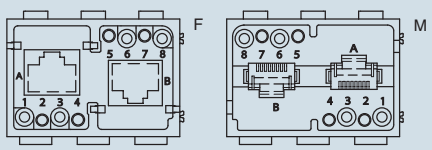
dimensions in mm
CX 02 JF, CX 02 JM



dimensions in mm
CX 4 JF, CX 4/2 JF, CX 8 JF, CX 8/2 JF

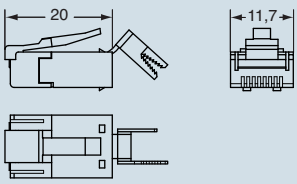


contacts side (front view)
side with reference arrow ▲



- 3 frame slots

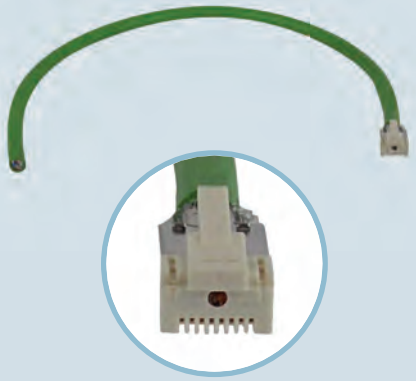
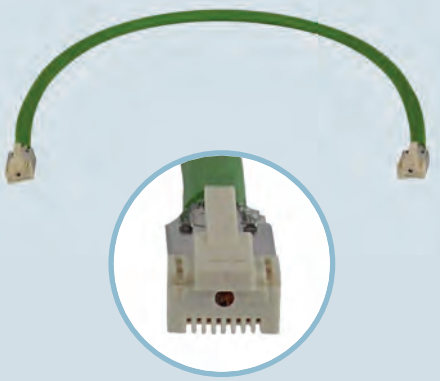
CX 4 JM, CX 4/2 JM, CX 6/2 JM, CX 8 JM, CX 4E JM



dimensions shown are not binding and may be changed without notice

CW patch cord RJ45

MIXO

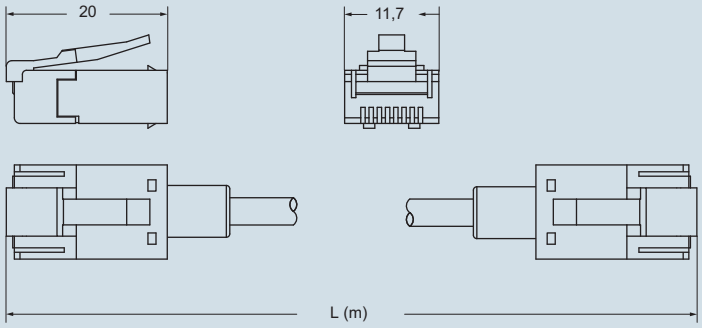
	with 1 RJ45 male connector		with 2 RJ45 male connectors	
				
description	part No.	(L) metre	part No.	(L) metre
RJ45 male connector with 4 data contacts / 2 power contacts	**CW 0.5 JM4/2** **CW 2 JM4/2** **CW 5 JM4/2** **CW 10 JM4/2**	0.5 2 5 10		
RJ45 male connector with 8 data contacts	**CW 0.5 JM8** **CW 2 JM8** **CW 5 JM8** **CW 10 JM8**	0.5 2 5 10	**CW 0.5 J2M8** **CW 2 J2M8** **CW 5 J2M8** **CW 10 J2M8**	0.5 2 5 10
RJ45 male connector with 4 data contacts, Class 5e	**CW 0.5 JM4E** **CW 2 JM4E** **CW 5 JM4E** **CW 10 JM4E**	0.5 2 5 10	**CW 0.5 J2M4E** **CW 2 J2M4E** **CW 5 J2M4E** **CW 10 J2M4E**	0.5 2 5 10

RJ45 connector features:
- insert RJ45, Cat. 5 Ethernet
- nominal current: 2,1A at 70 °C
- nominal voltage: 50V DC / 35V AC
- temperature range: from -40 °C to +120 °C
- nickel plated brass screening

Can be used with:
- MIXO RJ45: CX 01 JM and CX 02 JM male inserts see pages 202 and 203

dimensions in mm

CW JM 4/2, 8, 4E and CW J2M 4/2, 8, 4E



Wiring Diagram

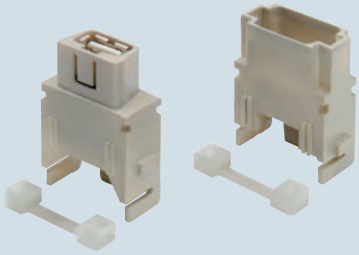
dimensions shown are not binding
and may be changed without notice

The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units ..... page: 214 - 215

WARNING
enclosures: bulkhead mounting housings, high construction housings or high construction hoods

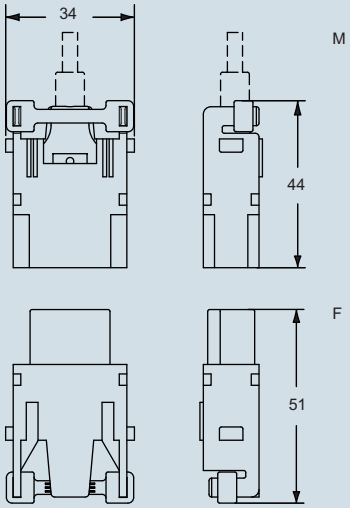
housing for USB male connectors, USB female - female connectors



description	part No.
- female insert with USB female - female connector	**CX 01 UF** [1]
- male insert without USB male connector (patch cable to be ordered separately)	**CX 01 UM** [1]

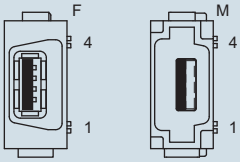
[1] cUL (UL for USA and Canada), EAC certified

dimensions in mm



contacts side (front view)

side with reference arrow ▲

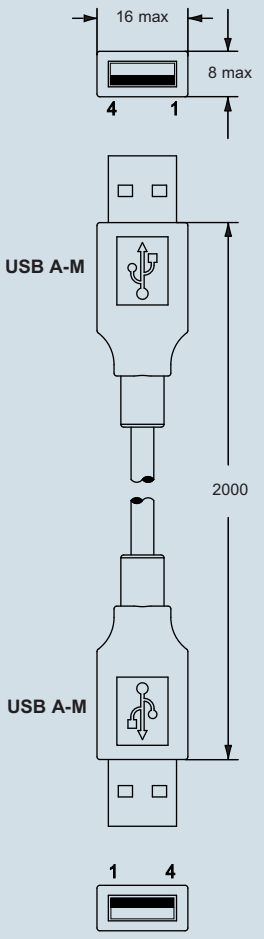


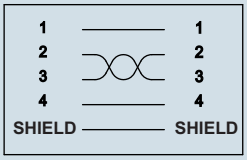
- 1 frame slot

patch cable USB

part No.
CW 2 UAM

dimensions in mm

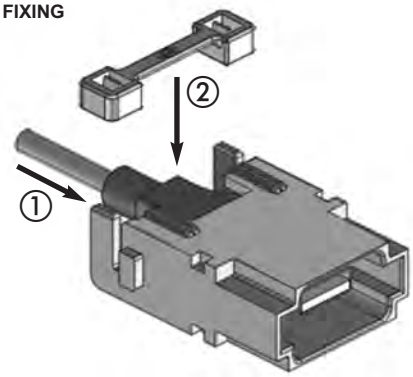




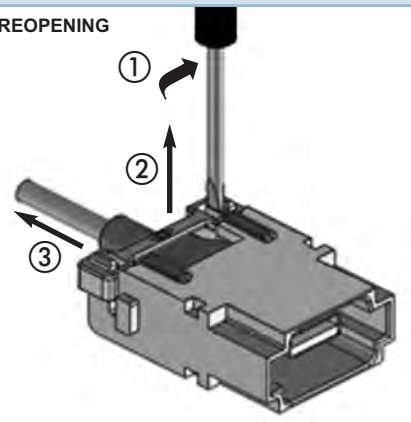
USB connector features:
- USB-A / USB-A Hi-Speed - 2.0 insert
- temperature range: from -25 °C to +80 °C

** 5 m on request

FIXING



REOPENING



dimensions shown are not binding
and may be changed without notice

MIXO modular units — for 9-pole crimp D-SUB connector

The modular inserts must be installed in suitable frames which are then mounted in traditional housings * or COB panel support.

frames for modular units * ..... page: 214 - 215

* enclosures: housings or high construction hoods

- characteristics according to EN 61984:
  5A 50V 0,8kV 3
- for crimp 5A contacts CI series using:
  CIPZ D crimping tool
  CIVTP D turret head
  CIVES insertion / removal tool

module adapter for 1 D-SUB connector

5A crimp contacts for D-SUB, gold plated

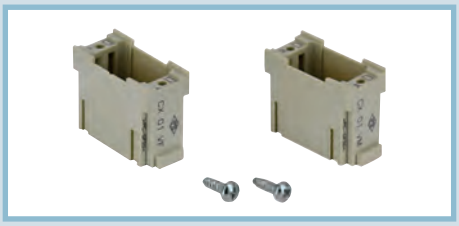
description	part No.	part No.
seat for 1 D-SUB crimp contacts connector and shield (included) - female insert with connector - male insert with connector	 **CX 01 9VF** **CX 01 9VM**	
5A female crimp contacts 0.08-0.13 mm² AWG 28-26 0.20-0.52 mm² AWG 24-20 5A male crimp contacts 0.08-0.13 mm² AWG 28-26 0.20-0.52 mm² AWG 24-20		**CIVFD 0.1** **CIVFD 0.5** **CIVMD 0.1** **CIVMD 0.5** gold plated

we recommend the use of CRF CX / CRM CX code pins

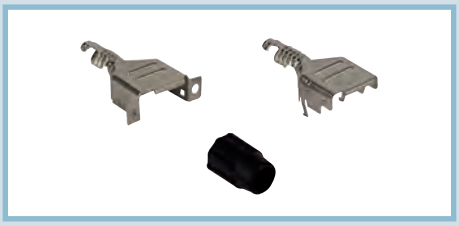
Alternatively:

- Seat for 1 D-SUB connector (without connector and shield):
  CX 01 VM (for male connector)
  CX 01 VF (for female connector)

Can also be used with 15-pole D-SUB Hi-Density connectors.
For further information, please contact I.L.M.E. SpA.



- **CR CX VS** shield for CX 01 VM/VF inserts



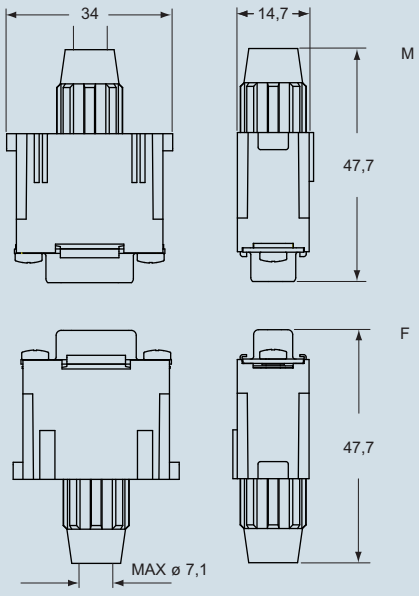
- Special version with cable contacts
  section 0,32-0,82 mm² AWG 22-18
  CIVFD 0.8 female
  CIVMD 0.8 male

- Seats for 1 D-SUB screw connectors (without shield):
  CX 01 9VFS (with female connectors)
  CX 01 9VMS (with male connectors)

dimensions shown are not binding
and may be changed without notice

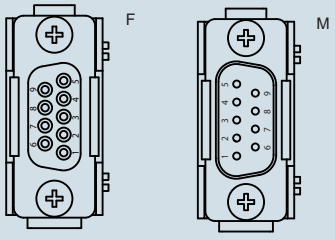
dimensions in mm

CX 01 9VF, CX 01 9VM



contacts side (front view)

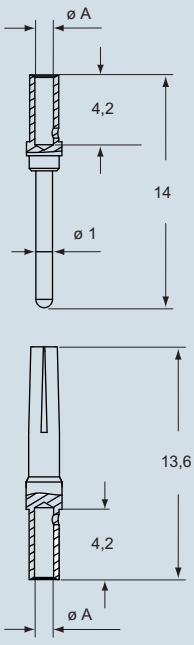
side with reference arrow ▲



- 1 frame slot

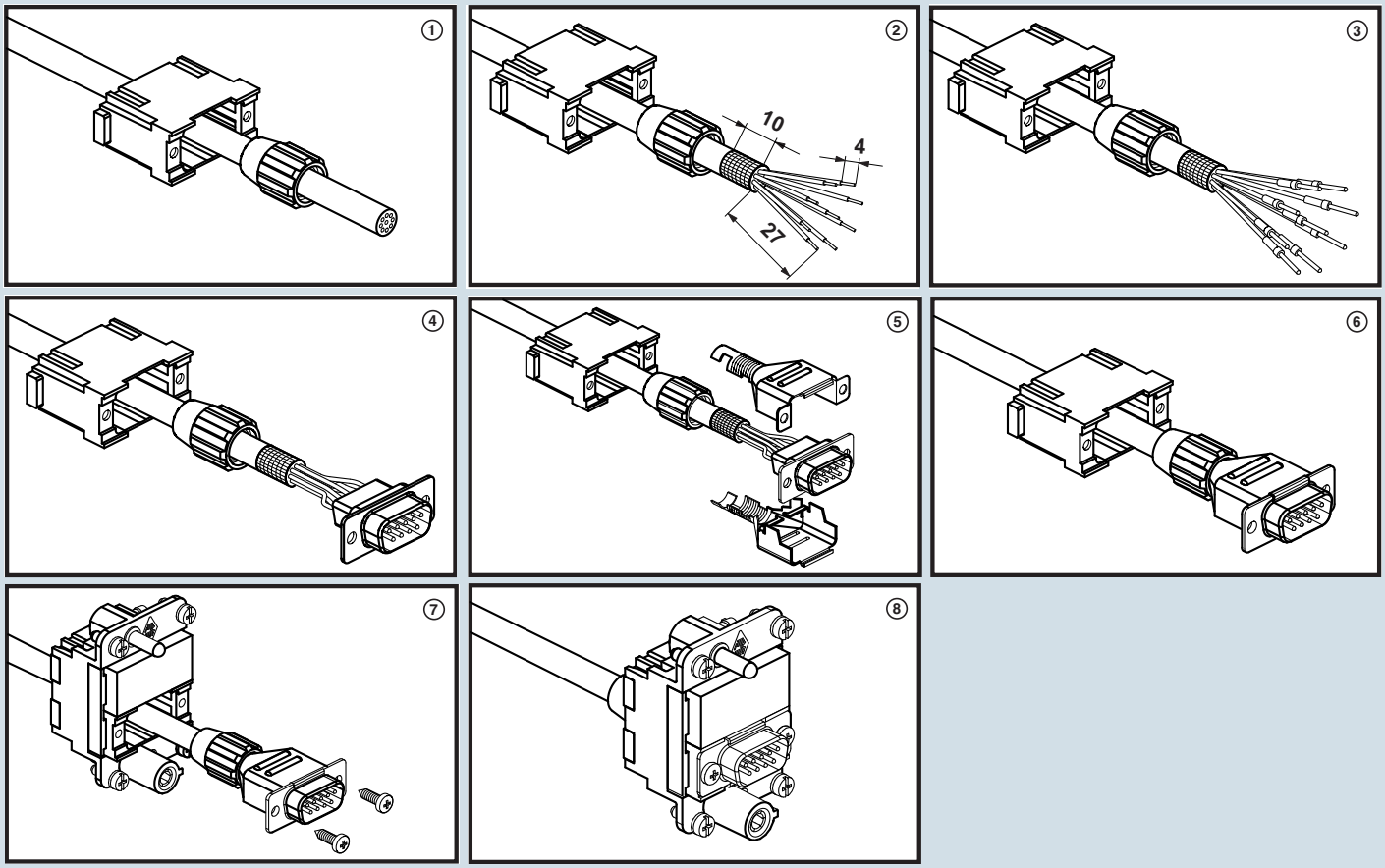
dimensions in mm

CIVF and CIVM

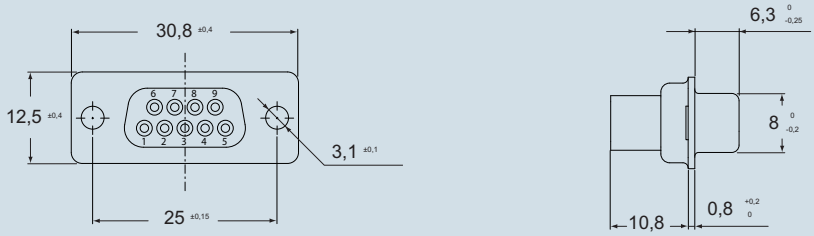


CIVF and CIVM contacts

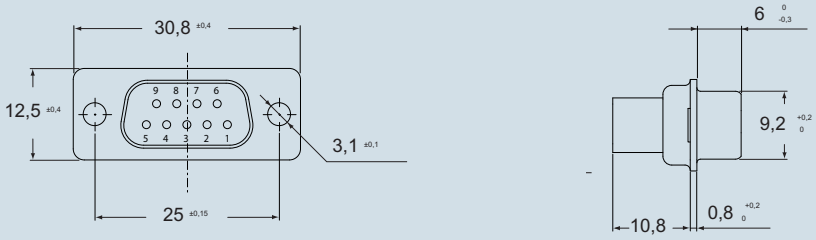
conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,08-0,13	0,63	4
0,20-0,52	1,14	4



9-pole female CRIMP D-SUB connector (can be used with CX 01 VF)



9-pole male CRIMP D-SUB connector (can be used with CX 01 VM)



dimensions in mm

MIXO series

Modular inserts for multipole connectors

MIXO inserts for multipole connectors for fibre optic and coaxial contacts.
LWL contacts according to CECC 78 001-801 (former DIN 41 626 part 3) for 1 / 2,2 mm POF (Polymer Optical Fibre) and 1,5 / 2,3 mm MOST (Media Oriented System Transport) optical fibre.
Coaxial contacts (DIN 41 626) 50 ohm and 75 ohm.

The new MIXO insert allows the use of contacts for fibre optic and contacts for coaxial cables.

To protect against EMC-problems (electromagnetic interference) and for the realization of galvanic separations on BUS applications of PROFINET/Ethernet fields, solutions with optical fibres are recommended.
Fibre optic connectors are many industrial applications, particularly, modern railway vehicles, converters, wind energy, naval equipments and robots.

The new connectors can be used in applications from -40 °C up to +85°C even in case of frequent temperature variability.

The inserts can be mounted in CX .. TF/TM frames and in the relative enclosures for industrial applications to achieve IP65/66/67/68/69K degree of protection (according to the required versions). The realization of mixed connectors electrical/optical are also possible.

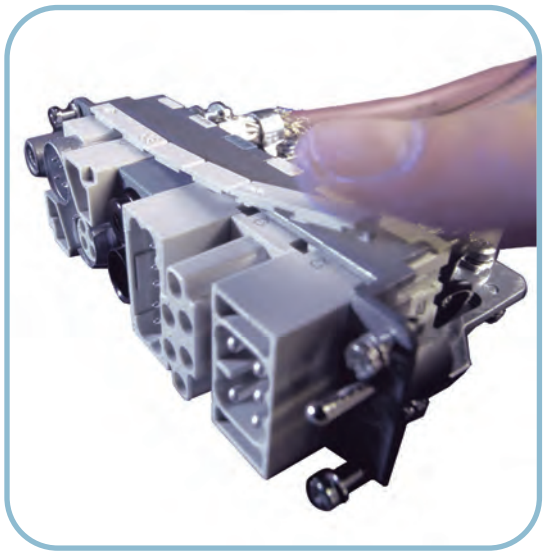
These new inserts have the same features as the standard MIXO series with easy module fixing system.

On request we may provide also POF (Ø 2,2 mm external diameter, Ø 1,0 mm fibre) and MOST-POF (Ø 2,3 mm external diameter, Ø 1,0 mm fibre) contacts for use at higher temperatures and high temperature variations.
For further optical fibre versions, please contact us.

To assemble the contacts it is needed to cut and strip the cable, to crimp the contact (even gluing is possible) and then to grind the fibre tip protruding from the contact.

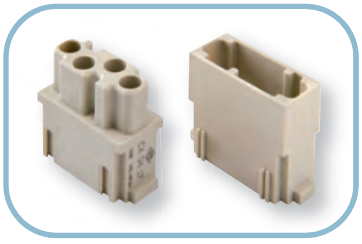
In the same MIXO insert it is also possible to use coaxial connectors for 50 ohm (RG 316/U, RG 174/U and RG 188 A/U) and 75 ohm (RG 179 B/U, RG 187 A/U and TZC 75 101) cables.

To remove both male and female contacts please use the correct extraction tool.

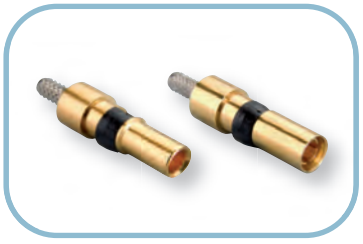


CECC 78 001-801 contacts
(DIN 41 626, part 3)

Mixo insert
for 4 optical fibre contacts



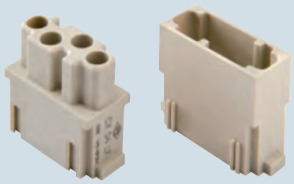
DIN 41 626 contacts



The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units ..... page: 214 - 215

modular units, crimp connections



POF / MOST crimp contacts

description	part No.	part No.
without contacts (to be ordered separately) - female inserts for female contacts - male inserts for male contacts	**CX 04 LF** [1] **CX 04 LM** [1]	
female contacts POF * 1,0 mm male contacts POF * 1,0 mm		**CX PLF** **CX PLM**
female contacts MOST ** 1/1,5 mm male contacts MOST ** 1/1,5 mm		**CX MLF** **CX MLM**

*** POF = POLYMER OPTICAL FIBRE**
**** MOST = MEDIA ORIENTED SYSTEM TRANSPORT**

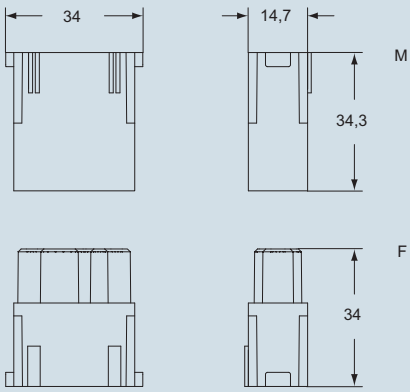
[1] cUL (UL for USA and Canada), EAC certified

- ambient temperature limit: -40 °C ... +85 °C
- inserts are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- max external diameter: 2,2 mm (POF)
  2,3 mm (MOST)
- polymer fibre diameter: 1,0 mm (POF)
  1/1,5 mm (MOST)
- attenuation: < 2.5 dB
- to crimp contacts CX PLF / PLM and CX MLF / MLM please use tool CLPZ R (see the crimping tool section on page 550)

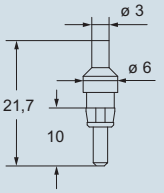
We recommend to use CLASS enclosures with two levers or V-TYPE enclosures (with one or two levers) that provides a higher coupling depth due to the higher locking force they produce. We further suggest the use of code pins CRF CX / CRM CX.

dimensions in mm

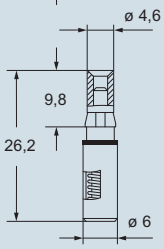
CX 04 LF / LM



dimensions in mm



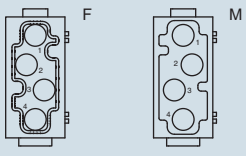
M (**CX PLM / MLM**)



F (**CX PLF / MLF**)

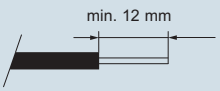
contacts side (front view)

side with reference arrow ▲

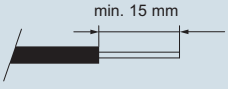


- 1 frame slot

cable stripping for fibre optic



male contact



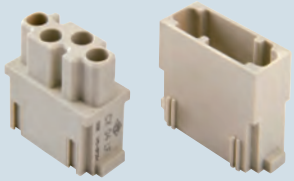
female contact

dimensions shown are not binding
and may be changed without notice

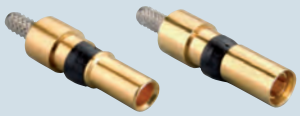
The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units ..... page: 214 - 215

modular units, crimp / solder connections



crimp / solder coaxial contacts



description	part No.	part No.
without contacts (to be ordered separately)		
- female inserts for female contacts	**CX 04 LF** [1]	
- male inserts for male contacts	**CX 04 LM** [1]	
female coaxial contacts 50Ω		**CX 50 F**
male coaxial contacts 50Ω		**CX 50 M**
female coaxial contacts 75Ω		**CX 75 F**
male coaxial contacts 75Ω		**CX 75 M**

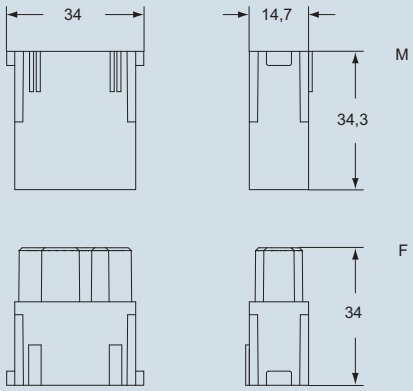
- inserts are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- in accordance with standard DIN 41626-2
- finishing: contact surfaces and body gold plated, back end and ferrule nickel plated
- frequency range: ≤ 2 GHz
- reflection coefficient: ≤ 0.1
- rated voltage: 50V
- rated current: 1.5A
- to crimp contacts CX 50 M/F, CX 75 M/F use tool COPZ (see the crimping tool section on page 552).

Warnings:
We recommend the use of code pins **CRF CX** / **CRM CX**.

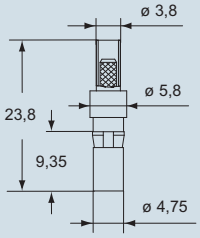
[1] cUL (UL for USA and Canada), EAC certified

dimensions in mm

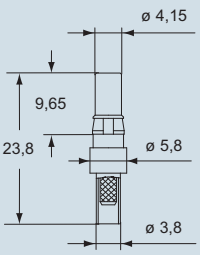
CX 04 LF / LM



dimensions in mm



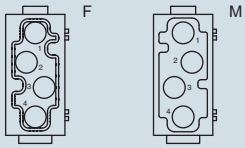
M (**CX 50 M / CX 75 M**)



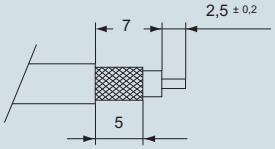
F (**CX 50 F / CX 75 F**)

contacts side (front view)

side with reference arrow ▲



conductor stripping



- 1 frame slot

coaxial contacts	for cables	ø external	part No.
50Ω	RG 316/U	2,49 ±0,1	CX 50 F CX 50 M
	RG 174/U	2,79 ±0,127	
	RG 188 A/U	2,79 max	
75Ω	RG 179 B/U	2,54 ±0,127	CX 75 F CX 75 M
	RG 187 A/U	2,79 max	
	TZC 75 101	2,79 max	

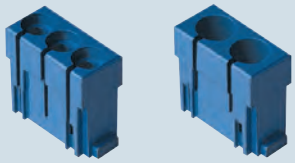
dimensions shown are not binding and may be changed without notice

The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units .... page: 214 - 215

- UL, CSA, CCC *, GL, EAC certified
  * CQC certification being applied for
- are made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles

modular units with 2 or 3 seats



pneumatic contacts with or without closing valve

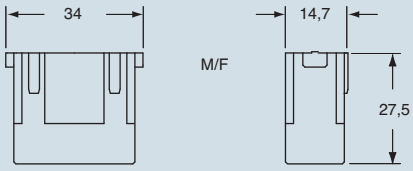
description	part No.	part No.
without contacts (to be ordered separately) - inserts with 3 housings for tube Ø 1,6 - 4,0 - inserts with 2 housings for tube Ø 6,0	**CX 03 P** **CX 02 P**	
female contacts without closing valve - for tubes with internal ø 1,6 mm - for tubes with internal ø 3 mm - for tubes with internal ø 4 mm - for tubes with internal ø 6 mm male contacts without closing valve - for tubes with internal ø 1,6 mm - for tubes with internal ø 3 mm - for tubes with internal ø 4 mm - for tubes with internal ø 6 mm		**CX 1.6 PF** **CX 3.0 PF** **CX 4.0 PF** **CX 6.0 PF** **CX 1.6 PM** **CX 3.0 PM** **CX 4.0 PM** **CX 6.0 PM**
female contacts with closing valve - for tubes with internal ø 1,6 mm - for tubes with internal ø 3 mm - for tubes with internal ø 4 mm - for tubes with internal ø 6 mm male contacts (use contacts without closing valve)		**CX 1.6 VC** **CX 3.0 VC** **CX 4.0 VC** **CX 6.0 VC**

Warnings:
CRM/F CX code pins and guides must be used for pneumatic contacts modules.
These pins also provide coding if pneumatic contacts modules are used exclusively.

Use of units for pneumatic contacts

- identical male and female modular units
- pneumatic contacts for pressure values up to 8 bar, for use with clean and dry compressed air
- contacts for gas on request (see Warnings)
- use of tubes with Ø 1,6 - 3 - 4 and 6 mm, and possible replacement of tubes with assembled units
- possibility of using tubes with different diameters in the same modular unit
- female contacts with or without closing valve
- working temperature range - 40 °C ÷ + 80 °C

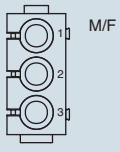
dimensions in mm



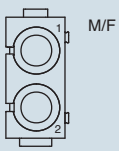
contacts side (front view)

side with reference arrow ▲

CX 03 P



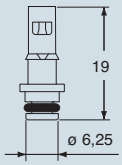
CX 02 P

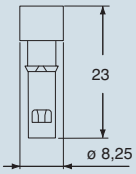


- 1 frame slot

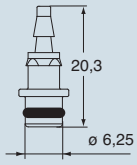
dimensions in mm

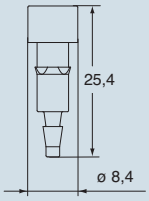
CX 1.6 PF/PM/VC



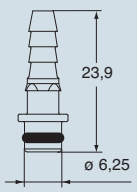


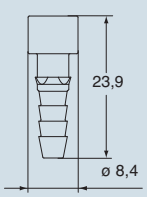
CX 3.0 PF/PM/VC



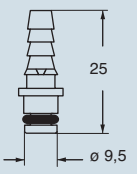


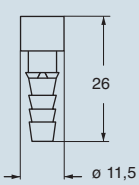
CX 4.0 PF/PM/VC





CX 6.0 PF/PM/VC



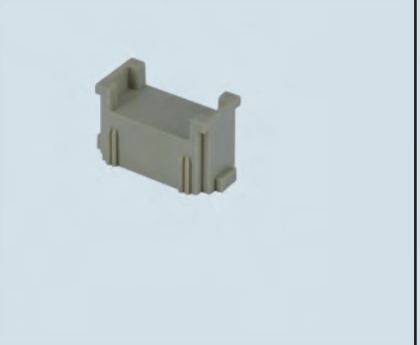


dimensions shown are not binding
and may be changed without notice

The modular units inserts must be installed in suitable frames which in turn are installed in traditional housings or COB panel support. Alternatively, individual modules with a width of 14,7, can be installed in plastic supports.

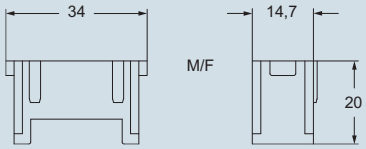
frames for modular units ..... page: 214 - 215

dummy module



description	part No.
dummy module for unused frame seats	**CX FM**

dimensions in mm



- 1 frame slot

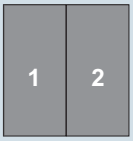
dimensions shown are not binding
and may be changed without notice

1) Calculate the number of frame slots taken up by the required inserts

frame slot 1, 2 or 3 modules

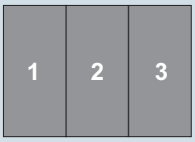
size: 1 frame slot

	No. of frame slots
CX 01 J8	1
CX 01 9VF/M	1
CX 01 UF/M	1
CX 02 4AF/M	1
CX 02 4BF/M	1
CX 02 7F/M	1
CX 02 P	1
CX 03 4F/M	1
CX 03 4BF/M	1
CX 03 P	1
CX 3/4 XDF/M	1
CX 04 LF/M	1
CX 04 XF/M	1
CX 05 SF/M	1
CX 06 CF/M	1
CX 08 CF/M	1
CX 12 DF/M	1
CX 17 DF/M	1
CX 25 IF/M	1
CX FM	1



size: 2 frame slots

	No. of frame slots
CX 01 JF/M	2
CX 01 YF/M	2
CX 01 YPEF/M	2
CX 02 BF/M	2
CX 02 GF/M	2
CX 02 HF/M	2
CX 20 CF/M	2



size: 3 frame slots

	No. of frame slots
CX 02 JF/M	3

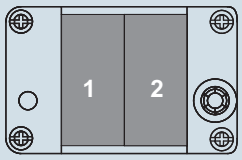
2) Select the right frame according to the number of required modules

available 1, 2, 3, 4 and 6 modules

CX 01 T

1 module

CX 02 TF/TM

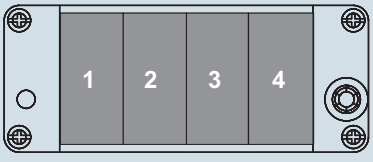


2 modules

CX 03 TF/TM

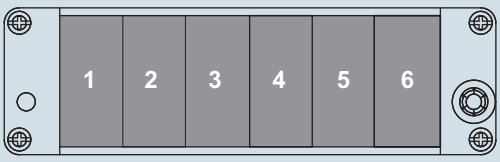
3 modules

CX 04 TF/TM



4 modules

CX 06 TF/TM



6 modules

Fill the unused frame slots by using CX FM dummy module

enclosures:
size "49.16" page:

IL-BRID ..... 230 - 232
W-TYPE for aggressive environments .. 370
EMC 390

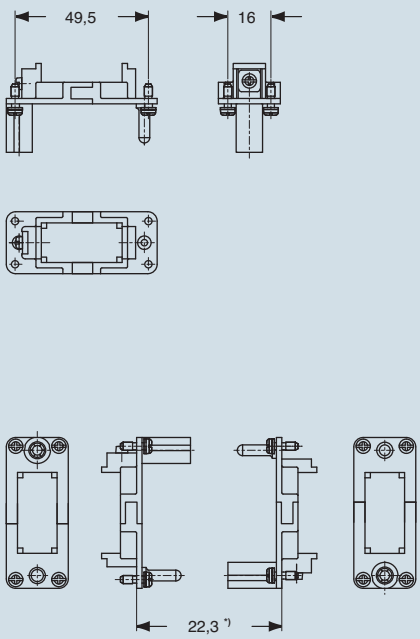
panel supports: page:
COB + adaptor ..... 462 - 464

frames for modular units

description	part No.
for CZ enclosures, size 49.16	**CX 01 T**

- die-cast zinc alloy frames
- with VDE ground contacts
- possibility of mounting female and male modular units on the same frame
- polarisation on frames
- code pins CR..CX

dimensions in mm



***)** distance for electric contacts: max 24 mm
distance for pneumatic contacts: max 23,5 mm

- small earth terminal for cables from 1-2,5 mm², AWG 18-14

dimensions shown are not binding
and may be changed without notice

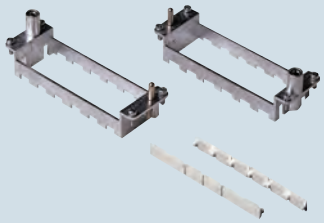
enclosures: page:

C-TYPE IP65/IP66 ..... 240 - 271
C7 IP67 ..... 274 - 277
V-TYPE IP65/IP66 ..... 280 - 299
BIG hoods ..... 304 - 319
T-TYPE IP65 insulating ..... 326 - 333
T-TYPE / W IP66 insulating ..... 336 - 343
HYGIENIC T-TYPE / H IP66/IP69 ..... 350 - 357
HYGIENIC T-TYPE / C IP66/IP69, -50 °C 358 - 365
W-TYPE for aggressive environments 373 - 378
EMC ..... 392 - 395
central lever ..... 404 - 412
IP68 ..... 420 - 435
LS-TYPE ..... 450 - 457

panel supports: page:

COB ..... 462 - 463

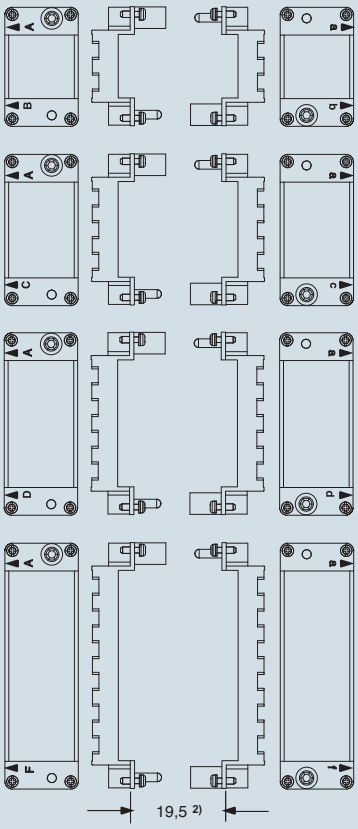
frames for modular units with lock-in tabs



description	part No.	part No.	
frames for modular units (module lock-in tabs included)	**type for hoods**	**type for housings**	for housings size
- for 2 modular units	**CX 02 TM**	**CX 02 TF**	44.27
- for 3 modular units	**CX 03 TM**	**CX 03 TF**	57.27
- for 4 modular units	**CX 04 TM**	**CX 04 TF**	77.27 and 77.62
- for 6 modular units	**CX 06 TM**	**CX 06 TF**	104.27 and 104.62
lock-in tabs for modular units (6 units) dividable	**CX CFM**		

polarisation of frames with relative identification letters and couplings

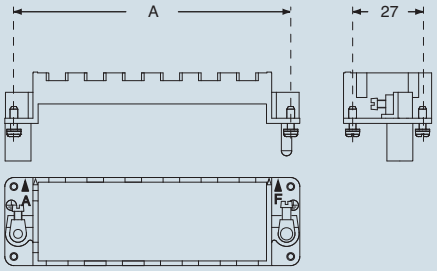
frame for hoods [1] **frames for housings** [1]



[1] the frames can be used either in hoods or housings, for a correct coupling please use both frame types (one with upper-case letters and the other with lower-case letters)
[2] distance for electric and fibre optic contacts: max 21 mm
distance for pneumatic contacts: max 20,5 mm

dimensions shown are not binding and may be changed without notice

dimensions in mm

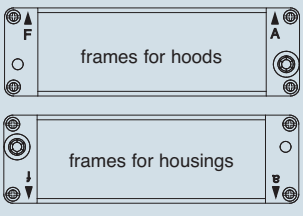


part No.	A (mm)	for housings size
CX 02 TM / TF	44	44,27
CX 03 TM / TF	57	57,27
CX 04 TM / TF	77,5	77,27 and 77,62
CX 06 TM / TF	104	104,27 and 104,62

- large earth terminal for cables from 4-6 mm², AWG 12-10
- small earth terminal for cables from 1-2,5 mm², AWG 18-14

position of modules (contact side view)

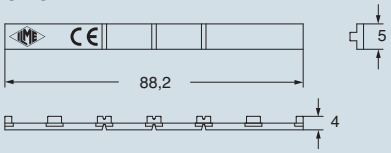
side with reference arrow ▲



side with reference arrow ▲

When two or more identical connectors of the MIXO series are used, coded pins are used prevent incorrect coupling (CR...CX series).

CX CFM



- die-cast zinc alloy frames
- with VDE ground contacts
- possibility of mounting female and male modular units on the same frame
- frames supplied with lock-in tab to attach units
- polarisation on frames
- code pins CR..CX

Warning
the module support frames are marked:
- with upper-case letters **A-B**, **A-C**, **A-D** and **A-F** (for use in hoods)
- with lower-case letters **a-b**, **a-c**, **a-d** and **a-f** (for use in housings)

Positioning the modules in the frames according to the respective letters is ensuring the specular assembly of modules, for which the hood will be coupled correctly to the housing.

CLASS ENCLOSURES

CK-CKA

Insulating or Metallic
- IP44, IP66/67

from page 221

CQ

Insulating
- IP66/IP67
- Up to 40A inserts

from page 226

IL-BRID

Reduces the stress of closing lever
- Metallic
- Stainless steel and thermoplastic material
- IP66

from page 228

C-TYPE

Classic, flexible
- Metallic
- CLASS rotative lever
- IP65/IP66

from page 237

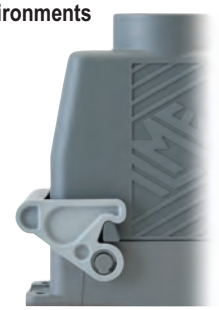
T-TYPE

For standard connections
- Insulating
- Robust
- Resistant to chemical agents
- IP65

from page 324

T-TYPE / W

For aggressive environments
- Insulating
- Robust
- Chemical resistant
- IP66



from page 334

HYGIENIC

For food & beverage applications
- Thermoplastic material
- IP66/IP69

T-TYPE/H
- HNBR gaskets
- Range of temperatures: -40 °C / +70 °C

T-TYPE/C
- SILICONE gaskets
- Range of temperatures: -50 °C / +70 °C

from page 344

V-TYPE IP67

Water tightness in a limited space
- Metallic
- Lever in stainless steel
- IP66/IP67

from page 272

V-TYPE IP65/IP66

Water tightness in a limited space
- Metallic
- Lever in stainless steel
- IP65/IP66

from page 279

CLASS ENCLOSURES

BIG - HOODS

Large and modular hoods
- Multiple cable entries
- Simple and easy to inspect cabling
- Electronic card slots
- IP66

from page 300

W-TYPE

For aggressive environments
- Metallic with chrome treatment
- IP66

from page 367

EMC

For electromagnetic compatibility
- Conductive gaskets
- IP66

from page 379

180 °C

For high temperature environments
- Metallic
- IP66

from page 396

CENTRAL LEVER

For limited mounting spaces
- Reduces insert uncoupling stress
- IP65/IP66

from page 403

IP68

Water tight
- Mechanical robustness
- Resistant to chemical agents
- Screw or bayonet locking
- IP66/IP68

from page 413

830V

Insulated for CME and CMCE 16p inserts
- CLASS lever
- IP65/IP66

from page 437

COB

Mounting inside control panel
- Inspectable
- IP20

from page 460

LS-TYPE

For stage equipment
- Metallic
- Thermoplastic lever
- IP65

from page 449

ENCLOSURE CHARACTERISTICS

Series	Version	Enclosure material	Size		Pg or M passage diameter	
CK/MK	Standard	Insulating	21.21	(03)	M 20	Pg 11
CKA/MKA **CKAX/MKAX**	Standard W (aggressive environments) S (EMC)	Metallic	21.21	(03)	M 20	Pg 11
CKG/MKG	Standard	Insulating	21.21	(03)	M 20	Pg 11
CKAG/MKAG	Standard	Metallic	21.21	(03)		
CGK/MGK	IP68	Metallic	21.21	(03)	M 20	Pg 13,5
CQ	Standard	Insulating	32.13	(08)	—	Pg 16 - 21
	S (EMC)	Metallized insulating				
IL-BRID **(CZ/MZ)**	Standard	Metallic	49.16 66.16	(15) (25)	M 20 - 25 M 20 - 25	Pg 13,5 - 21 Pg 16 - 21
C-TYPE **(CH / CA/MH / MA)**	Standard C-TYPE W (aggressive environments) S (EMC) R (high temperatures) 830V (insulated)	Metallic	66.40	(50)	M 25 - 29	Pg 21 - 29
			44.27	(6)	M 20 - 40	Pg 13.5 - 29
			57.27 77.27 104.27 77.62	(10) (16) (24) (32)	M 20 - 40 M 25 - 50 M 25 - 50 M 32 - 50	Pg 16 - 29 Pg 21 - 36 Pg 21 - 36 Pg 29 - 42
			104.62	(48)	M 32 - 50	Pg 29 - 42
T-TYPE **(TCH / TH / TMA / TA)**	Standard (RAL 7012 grey) W (aggressive environments) HYGIENIC (H or C)	Insulating	44.27	(6)	M 25 - 32	
			57.27 77.27 104.27	(10) (16) (24)	M 25 - 32 M 32 - 40 M 32 - 40	—
V-TYPE IP67 **(C7I, C7P/M7P, ...)**	IP67 stainless steel levers	Metallic	44.27	(6)	M 20 - 40	Pg 16 - 29
			57.27 77.27 104.27	(10) (16) (24)	M 20 - 40 M 25 - 40 M 25 - 40	Pg 16 - 29 Pg 21 - 29 Pg 21 - 29
V-TYPE IP65/IP66 **(CVI L, CVP/MVP L, ...)**	IP65/IP66 stainless steel levers	Metallic	44.27 57.27 77.27 104.27	(6) (10) (16) (24)	M 20 - 40 M 20 - 40 M 25 - 40 M 25 - 40	Pg 16 - 29 Pg 16 - 29 Pg 21 - 29 Pg 21 - 29
BIG **LARGE HOODS** **(CB - MB)**	Standard W (aggressive environments)	Metallic	44.27	(6)	M 20 - 50	
			57.27 77.27 104.27	(10) (16) (24)	M 20 - 50 M 20 - 50 M 20 - 50	—
IP68 **(CG/MG)**	IP68	Metallic	44.27 57.27 77.27 104.27	(6) (10) (16) (24)	M 25 - 32 M 25 - 32 M 32 - 50 M 32 - 50	Pg 16 - 29 Pg 16 - 29 Pg 21 - 36 Pg 21 - 36
Central Lever **(YX - YC)**	Standard	Metallic	44.27 57.27 77.27 104.27	(6) (10) (16) (24)	M 25 - 32 M 25 - 32 M 32 - 40 M 32 - 50	Pg 21 - 29 Pg 21 - 29 Pg 21 - 36 Pg 21 - 36
COB	Standard	Insulating	44.27 57.27 77.27 104.27	(6) (10) (16) [1] (24)	—	—
LS-TYPE **(CHIN, CHPN/MHPN ...)**	Light & Sound application	Metallic Thermoplastic lever	44.27	(6)	M 20 - 40	Pg 16 - 29
			57.27 77.27 104.27	(10) (16) (24)	M 20 - 40 M 25 - 40 M 25 - 40	Pg 16 - 29 Pg 21 - 29 Pg 21 - 29

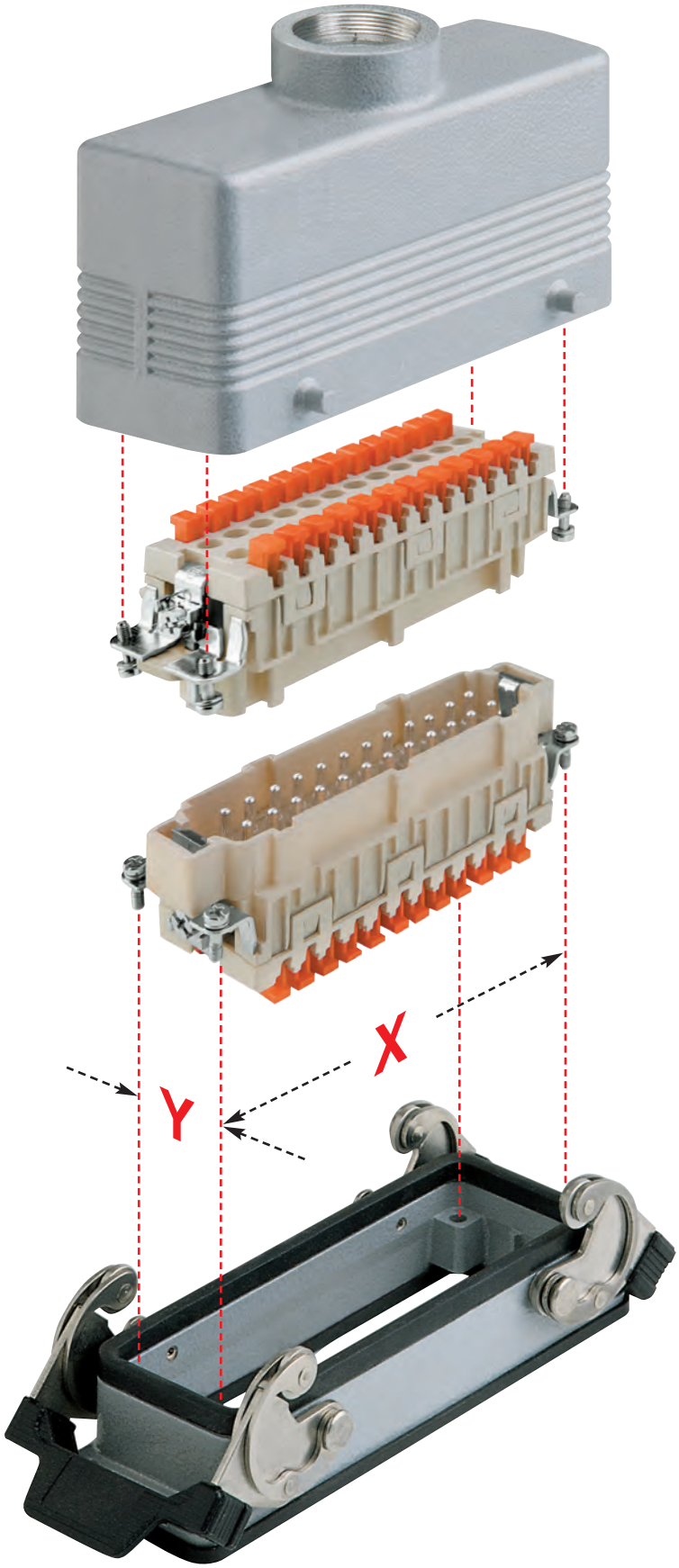
[1] 49.16 (15) and 66.16 (25) with adaptor CR xx/16.

ENCLOSURE CHARACTERISTICS

Series	Locking device	Notes	IP (EN 60529) [2]	UL 50 Type (NEMA 250 Type)	Environmental temperature range	from page
CK/MK	single		IP44	12	-40 °C - +125 °C	221
		with CKR 65 (D)	IP66/IP67, IP69	12, 4, 4X	-40 °C - +125 °C	
CKA/MKA CKAX/MKAX	single		IP44	12	-40 °C - +125 °C	223
		with CKR 65 (D)	IP66/IP67, IP69	12, 4, 4X	-40 °C - +125 °C	
CKG/MKG	single	for CXL, CJ K and CX 1/2 BD inserts	IP66/IP67, IP69	12, 4, 4X	-40 °C - +125 °C	526
CKAG/MKAG						
CGK/MGK	screw		IP68, IP69	12, 4, 4X	-40 °C - +125 °C	416
CQ	single	with conductive gasket CR 08 EMC	IP66/IP67, IP69	12, 4, 4X	-40 °C - +125 °C	226 and 388
IL-BRID (CZ/MZ)	single		IP66, IP69	12, 4, 4X	-40 °C - +125 °C	230
	dual					
C-TYPE (CH / CA/MH / MA)	single		IP65, IP66, IP69	12, 4, 4X [3]	-40 °C - +125 °C (R = -40 °C - 180 °C)	237
	dual					
T-TYPE (TCH/TH/TMA/TA)	single		IP65, IP66, IP69	12 (Standard version only)	-40 °C - +90 °C -40 °C - +70 °C **(T-TYPE/C)** -50 °C - +70 °C **(T-TYPE/H)**	326
	dual					
V-TYPE IP67 (C7I, C7P/M7P, ...)	single (44.27)		IP67, IP69	12, 4, 4X [3]	-40 °C - +125 °C	274
	dual (57.27, 77.27, 104.27)					
V-TYPE IP65/IP66	single		IP66, IP69	12, 4, 4X [3]	-40 °C - +125 °C	280
BIG LARGE HOODS (CB - MB)	single (44.27)		IP66	12, 4, 4X	-40 °C - +125 °C	304
	dual (57.77, 77.27, 104.27)					
IP68 (CG/MG)	screw or bayonet		IP66, IP68, IP69	12, 4, 4X	-40 °C - +125 °C	416
Central Lever (YX - YC)	single central lever		IP65	12, 4, 4X	-40 °C - +125 °C	404
COB	dual		IP20		-40 °C - +125 °C	462
LS-TYPE (CHIN, CHPN/MHPN ...)	single (44.27)		IP65	12, 4, 4X [3]	-40 °C - +125 °C	450
	dual (57.27, 77.27, 104.27)					

[2] The enclosures ensure IP protection rating when coupled and locked with the locking lever. The cover (CS, CP) only provides mechanical protection without ensuring the protection rating.
[3] Not approved versions with plastic cover.

Combinations between enclosures and inserts



Identification of enclosures

Connector inserts and their enclosures are numerous and therefore the search for the correct pairing of one with another can be complex.

To facilitate this operation (in addition to the normal part number) the definition of "**size**" has been introduced in this catalogue.

As indicated in the illustration on the left and in the table below the size value refers to the screw fixing centre distances which constitute a unique element since they are common to both the inserts and the enclosures.

All the pages that illustrate combinable articles (inserts and enclosures) carry references as per the examples illustrated on the opposite page.

Following is a table that shows all the sizes of the enclosures and the dimensions of the housings where the inserts will be fastened.

enclosures size	insert housing with screw fixing centre distance x-y
"21.21"	(21 x 21 mm) **
"32.13"	32 x 13 mm
"49.16"	49,5 x 16 mm
"66.16"	66 x 16 mm
"66.40"	66 x 16 mm (2 inserts)
"44.27"	44 x 27 mm
"57.27"	57 x 27 mm
"77.27"	77,5 x 27 mm
"104.27"	104 x 27 mm
"77.62"	77,5 x 27 mm (2 inserts)
"104.62"	104 x 27 mm (2 inserts)

**** dimensions relating to the insert cross-section size not being able to identify a screw fixing centre distance since provided with a single screw.**

inserts: page:

CK ..... 3 poles + ⏚ 48
CK ..... 4 poles + ⏚ 48
CKS ..... 3 poles + ⏚ 49
CKS ..... 4 poles + ⏚ 49
CD ..... 7 poles + ⏚ 53
CD ..... 8 poles 54
CQ ..... 12 poles + ⏚ 165
CQ ..... 5 poles + ⏚ 166

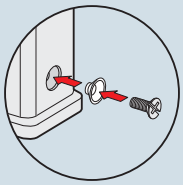
insert dimensions:
21 x 21 mm

bulkhead mounting housings

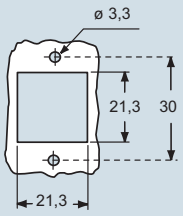
angled bulkhead mounting housings

description	part No.	part No. (entry - Pg 11)	part No. (entry - M 20)
with lever with lever	**CK 03 I** (white) **CK 03 IN** (black)		
without cable entry, with lever without cable entry, with lever		**CK 03 IA** (white) **CK 03 IAN** (black)	
with cable entry and lever with cable entry and lever		**CK 03 IAPS** (white) **CK 03 IAPNS** (black)	**MK IAP20** (white) **MK IAPN20** (black)
gasket and screw kit for IP66/IP67 [1] for CK, CQ 05, CKS inserts	**CKR 65**	**CKR 65**	
gasket and screw kit for IP66/IP67 [1] for CD 07/08 inserts	**CKR 65 D**	**CKR 65 D**	

1) To obtain the protection rating IP66/IP67 a kit is provided that includes a gasket to fit under the insert fixing screws supplied with the kit (see illustrative example).
CQ 12 inserts are already supplied with a gasket and screw which ensure IP66/IP67 protection rating.

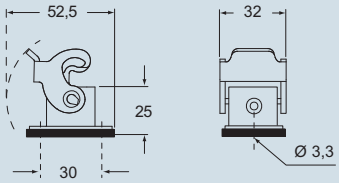


panel cut-out for enclosures, in mm



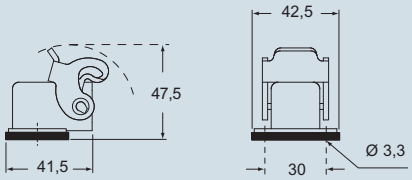
dimensions in mm

CK I(N)

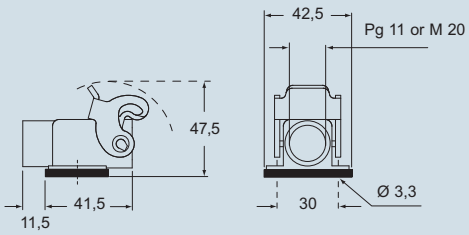


dimensions in mm

CK IA(N)



CK IAP(N)S and **MK IAP(N)**



Type 12
Type 4/4X only
with CKR 65 (D)

IP66/IP67 with CKR 65 (D) [1]

dimensions shown are not binding
and may be changed without notice

CK and **MK** enclosures size “21.21” standard insulating version **C-TYPE**

inserts: page:

CK ..... 3 poles + ⏚ 48
CK ..... 4 poles + ⏚ 48
CKS ..... 3 poles + ⏚ 49
CKS ..... 4 poles + ⏚ 49
CD ..... 7 poles + ⏚ 53
CD ..... 8 poles 54
CQ ..... 12 poles + ⏚ 165
CQ ..... 5 poles + ⏚ 166

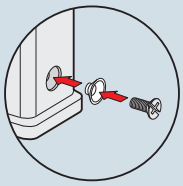
insert dimensions:
21 x 21 mm

hoods

covers

description	part No. (entry - Pg 11)	part No. (entry - M 20)	part No. (with eyelet)	part No. (with loop)
with pegs, top entry with pegs, top entry	**CK 03 VS** (white) **CK 03 VNS** (black)	**MK V20** (white) **MK VN20** (black)		
with pegs, side entry with pegs, side entry	**CK 03 VAS** (white) **CK 03 VANS** (black)	**MK VA20** (white) **MK VAN20** (black)		
with lever, top entry with lever, top entry	**CK 03 VGS** (white) **CK 03 VGNS** (black)	**MK VG20** (white) **MK VGN20** (black)		
with pegs and gasket, for female inserts with pegs and gasket, for female inserts with pegs, for male inserts with pegs, for male inserts			**CK 03 C** (white) **CK 03 CN** (black) **CK 03 CA** (white) **CK 03 CAN** (black)	**CK 03 CS** (white) **CK 03 CAS** (white)
with lever and gasket, for female inserts with lever and gasket, for female inserts with lever, for male inserts with lever, for male inserts				**CK 03 CX** (white) **CK 03 CXN** (black) **CK 03 CXA** (white) **CK 03 CXAN** (black)
gasket and screw kit for IP66/IP67 **1)** for CK, CQ 05, CKS inserts	**CKR 65**			
gasket and screw kit for IP66/IP67 **1)** for CD 07/08 inserts	**CKR 65 D**			

1) To obtain the protection rating IP66/IP67 a kit is provided that includes a gasket to fit under the insert fixing screws supplied with the kit (see illustrative example).
CQ 12 inserts are already supplied with a gasket and screw which ensure IP66/IP67 protection rating.



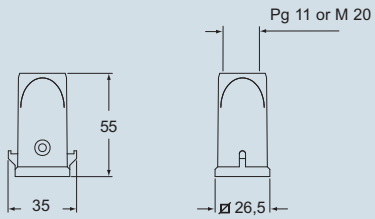
Type 12
Type 4/4X only
with CKR 65 (D)

IP66/IP67 with CKR 65 (D) **1)**

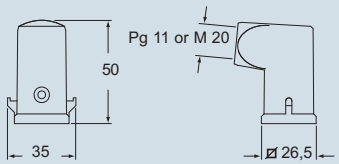
dimensions shown are not binding
and may be changed without notice

dimensions in mm

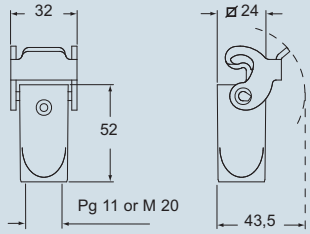
CK V(N)S and **MK V(N)**



CK VA(N)S and **MK VA(N)**

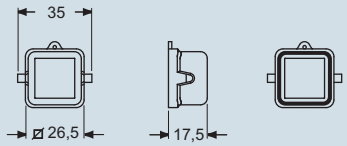


CK VG(N)S and **MK VG(N)**

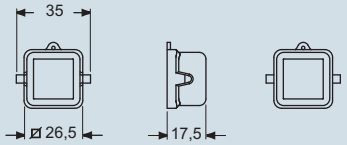


dimensions in mm

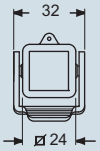
CK C(S)(N)

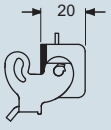


CK CA(S)(N)

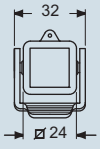


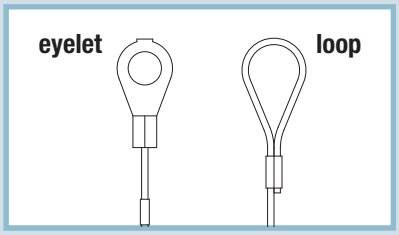
CK CX(N)





CK CXA(N)





inserts: page:

CK	3 poles + ⏚	48
CK	4 poles + ⏚	48
CKS	3 poles + ⏚	49
CKS	4 poles + ⏚	49
CD	8 poles	54
CQ	12 poles + ⏚	165
CQ	5 poles + ⏚	166

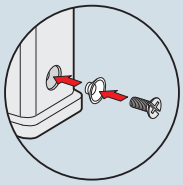
insert dimensions:
21 x 21 mm

bulkhead mounting housings

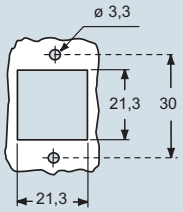
angled bulkhead mounting housings

description	part No.	part No. (entry - Pg 11)	part No. (entry - M 20)
with galvanised steel lever with stainless steel lever	**CKA 03 I** **CKAX 03 I**		
without cable entry, galvanized steel lever without cable entry, stainless steel lever		**CKA 03 IA** **CKAX 03 IA**	
with cable entry, galvanized steel lever with cable entry, stainless steel lever with cable entry, galvanized steel lever, bulkhead hole closed with cable entry, stainless steel lever, bulkhead hole closed		**CKA 03 IAPS** **CKAX 03 IAPS** **CKA 03 APS** **CKAX 03 APS**	**MKA IAP20** **MKAX IAP20** **MKA AP20** **MKAX AP20**
gasket and screw kit for IP66/IP67 **1)** for CK, CQ 05, CKS inserts	**CKR 65**	**CKR 65**	
gasket and screw kit for IP66/IP67 **1)** for CD 07/08 inserts	**CKR 65 D**	**CKR 65 D**	

1) To obtain the protection rating IP66/IP67 a kit is provided that includes a gasket to fit under the insert fixing screws supplied with the kit (see illustrative example).
CQ 12 inserts are already supplied with a gasket and screw which ensure IP66/IP67 protection rating.



panel cut-out for enclosures, in mm



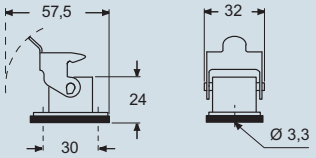
Type 12
Type 4/4X only
with CKR 65 (D)

IP66/IP67 with CKR 65 (D) **1)**

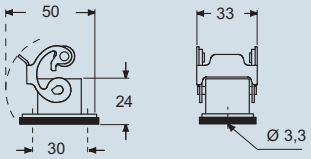
dimensions shown are not binding
and may be changed without notice

dimensions in mm

CKA I

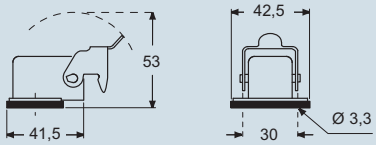


CKAX I

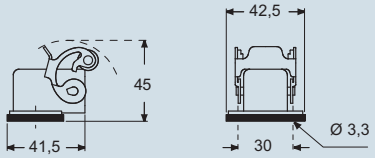


dimensions in mm

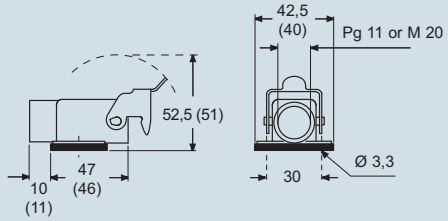
CKA IA



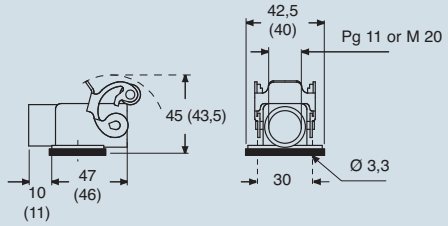
CKAX IA



CKA IAPS (CKA APS) and **MKA IAP (MKA AP)**



CKAX IAPS (CKAX APS) and **MKAX IAP (MKAX AP)**

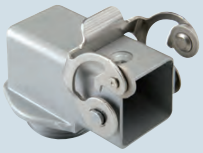


inserts: page:

CK ..... 3 poles + ⏚ 48
CK ..... 4 poles + ⏚ 48
CKS ..... 3 poles + ⏚ 49
CKS ..... 4 poles + ⏚ 49
CD ..... 8 poles 54
CQ ..... 12 poles + ⏚ 165
CQ ..... 5 poles + ⏚ 166

insert dimensions:
21 x 21 mm

angled bulkhead mounting housings



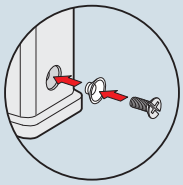
bulkhead mounting housings with self closing cover

NEW

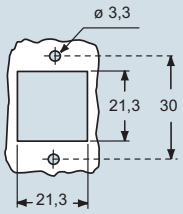
description	part No.	part No.
galvanized steel lever, M20 fixing thread (•) stainless steel lever, M20 fixing thread (•)	**MKA IAF20** 1) **MKAX IAF20** 1)	
galvanized steel lever, M25 fixing thread (•) stainless steel lever, M25 fixing thread (•)	**MKA IAF25** 1) **MKAX IAF25** 1)	
with galvanised steel lever, for female inserts with galvanised steel lever, for male inserts		**CKA 03 ILS** **CKA 03 ILSA**
with stainless steel lever, for female inserts with stainless steel lever, for male inserts		**CKAX 03 ILS** **CKAX 03 ILSA**
gasket and screw kit for IP66/IP67 1) for CK, CQ 05, CKS inserts	**CKR 65**	**CKR 65**
gasket and screw kit for IP66/IP67 1) for CD 07/08 inserts	**CKR 65 D**	**CKR 65 D**

(•) locknut supplied on request, see catalogue cable glands (articles AS M20N and AS M25N metallic, AS M20L and AS M25L insulating)

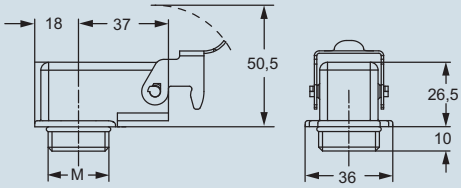
1) To obtain the protection rating IP66/IP67 a kit is provided that includes a gasket to fit under the insert fixing screws supplied with the kit (see illustrative example).
CQ 12 inserts are already supplied with a gasket and screw which ensure IP66/IP67 protection rating.



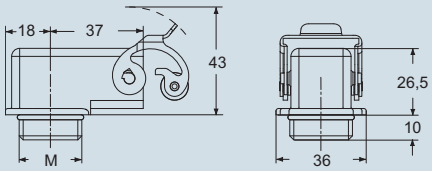
panel cut-out for enclosures CKA ILS/ILSA, in mm



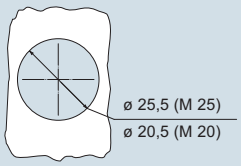
dimensions in mm
MKA IAF

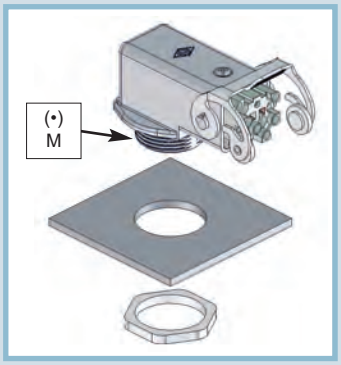


MKAX IAF

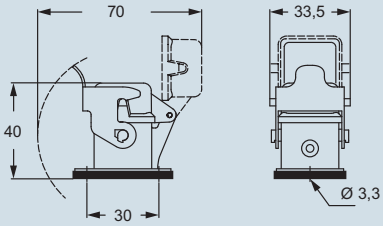


panel cut-out

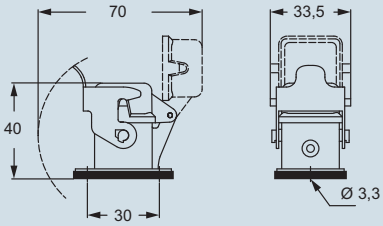




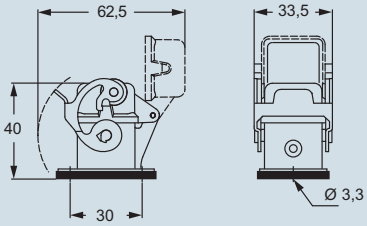
dimensions in mm
CKA ILS



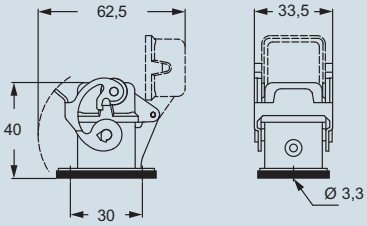
CKA ILSA



CKAX ILS



CKAX ILSA



Type 12
Type 4/4X only
with CKR 65 (D)

IP66/IP67 with CKR 65 (D) 1)

dimensions shown are not binding
and may be changed without notice

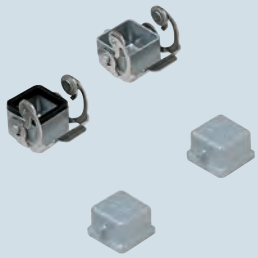
inserts: page:

CK	3 poles + ⏚	48
CK	4 poles + ⏚	48
CKS	3 poles + ⏚	49
CKS	4 poles + ⏚	49
CD	8 poles	54
CQ	12 poles + ⏚	165
CQ	5 poles + ⏚	166

insert dimensions:
21 x 21 mm

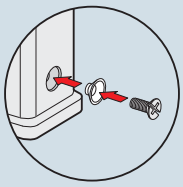
hoods

covers



description	part No. (entry - Pg 11)	part No. (entry - M 20)	part No. (with eyelet)	part No. (with loop)
with pegs, top entry with pegs, side entry	**CKA 03 VS** **CKA 03 VAS**	**MKA V20** **MKA VA20**		
with galvanised steel lever, top entry with stainless steel lever, top entry	**CKA 03 VGS** **CKAX 03 VGS**	**MKA VG20** **MKAX VG20**		
with pegs and gasket, for female inserts with pegs, for male inserts			**CKA 03 C** [1] **CKA 03 CA** [1]	**CKA 03 CS** [1] **CKA 03 CAS** [1]
with stainless steel lever and gasket, for female inserts with stainless steel lever, for male inserts				**CKAX 03 CX** **CKAX 03 CXA**
gasket and screw kit for IP66/IP67 [2] for CK, CQ 05, CKS inserts	**CKR 65**			
gasket and screw kit for IP66/IP67 [2] for CD 08 inserts	**CKR 65 D**			

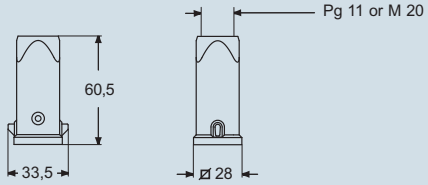
2) To obtain the protection rating IP66/IP67 a kit is provided that includes a gasket to fit under the insert fixing screws supplied with the kit (see illustrative example).
CQ 12 inserts are already supplied with a gasket and screw which ensure IP66/IP67 protection rating.



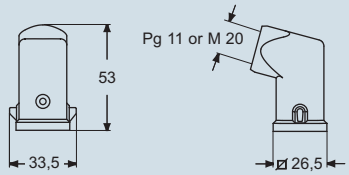
1) preferably be used with enclosures CKAX (stainless steel lever).

dimensions in mm

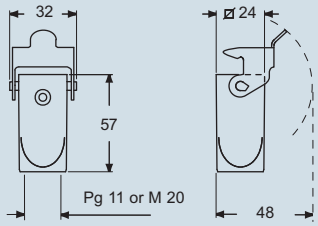
CKA VS and **MKA V**



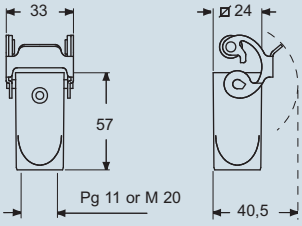
CKA VAS and **MKA VA**



CKA VGS and **MKA VG**

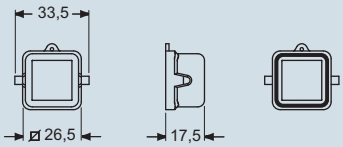


CKAX VGS and **MKAX VG**

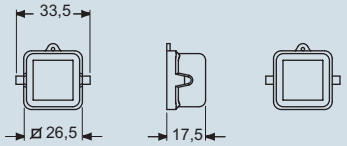


dimensions in mm

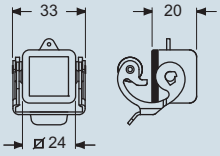
CKA C(S)



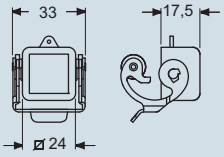
CKA CA(S)

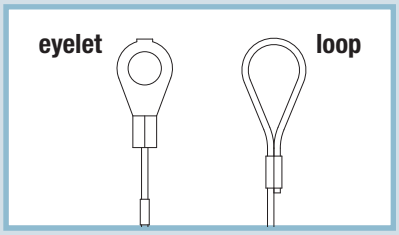


CKAX CX



CKAX CXA





Type 12
Type 4/4X only
with CKR 65 (D)

IP66/IP67 with CKR 65 (D) [2]

dimensions shown are not binding
and may be changed without notice

inserts: page:

CQ 08 ..... 8 poles + ⏚ 167
CQ 04/2 ..... 4 poles + 2 poles + ⏚ 168

insert centre distance:
32 x 13 mm

bulkhead mounting housing with single lever

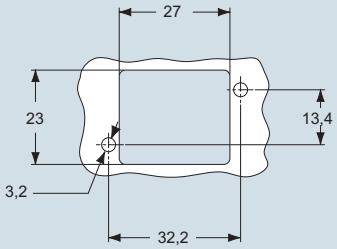
hoods with 2 pegs

description	part No.	entry Pg	part No.	entry Pg
with lever without cable entry, angled, with lever with cable entry, angled, with lever	**CQ 08 I** **CQ 08 IA** **CQ 08 IAP**	21		
with pegs, side entry *			**CQ 08 VA**	16
with pegs, top entry *			**CQ 08 V**	21
with pegs, side and top entry 1)			**MQ 08 VO225**	25 x 2

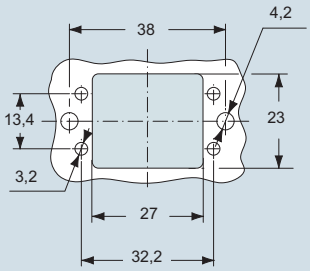
* Pg male thread on enclosure exterior

1) metric thread on the internal enclosure;
accessories to be ordered separately:
- **AL M25DN** insulating black sealing plug M25
- **AL M25IN** insulating black cable gland M25

panel cut-out for CQ I enclosure, in mm

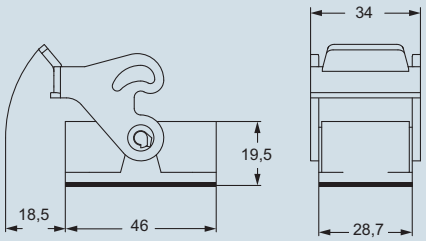


panel cut-out for CQ IA - CQ IAP enclosure, in mm

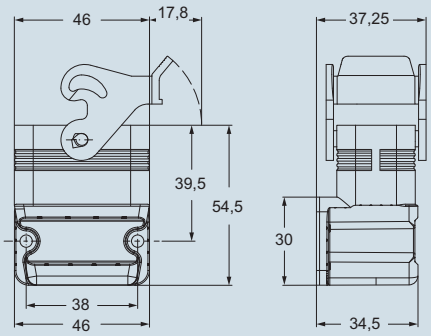


dimensions in mm

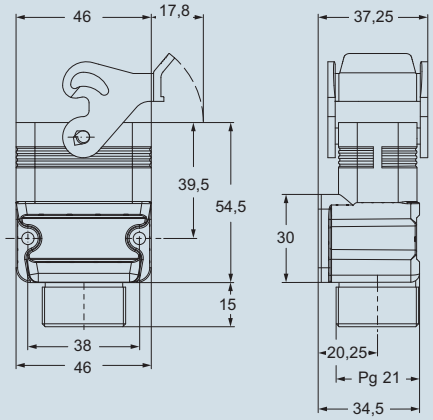
CQ I



CQ IA

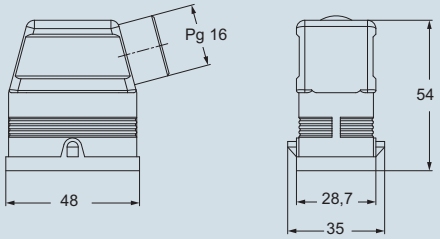


CQ IAP

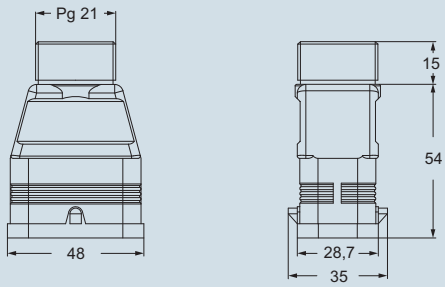


dimensions in mm

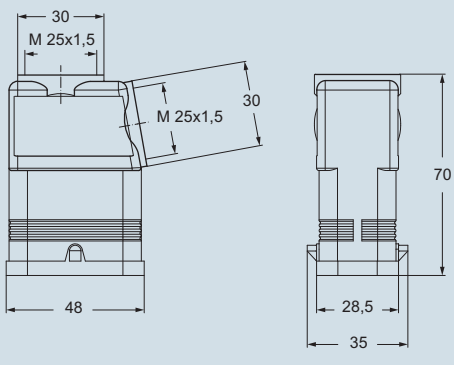
CQ VA



CQ V



MQ VO



Type 4/4X/12
(pending for MQ 08 VO225)

IP66 IP67 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CQ 08 ..... 8 poles + ⏚ 167
CQ 04/2 ..... 4 poles + 2 poles + ⏚ 168

insert centre distance:
32 x 13 mm

hoods with single lever

covers with 2 pegs
thermoplastic resin cable glands

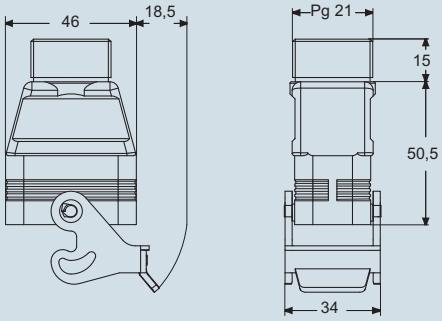
description	part No.	entry Pg	part No.
with lever, top entry *	**CQ 08 VG**	21	
cover with 2 pegs for female inserts cover with 2 pegs for male inserts			**CQ 08 C** **CQ 08 CA**
cable gland head and gasket for CQ 08 VA enclosure cable gland head and gasket for CQ 08 V and VG enclosure			**CRQ 16** **CRQ 21**

* Pg male thread on enclosure exterior

cable diameters for cable glands:
- CRQ 16: 10 - 14,5 mm
- CRQ 21: 14 - 18 mm

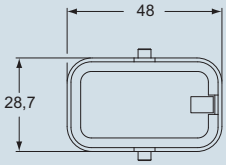
dimensions in mm

CQ VG

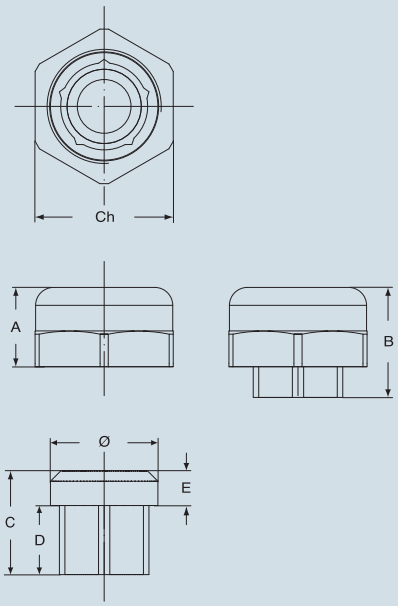


dimensions in mm

CQ C and **CQ CA**



CRQ 16 and **CRQ 21**



part No.	A	B	C	D	E	Ø	Ch
CRQ 16	15,5	21,5	20,25	13,5	6,75	21	27
CRQ 21	18,2	27,5	25	15,5	9	26,5	33

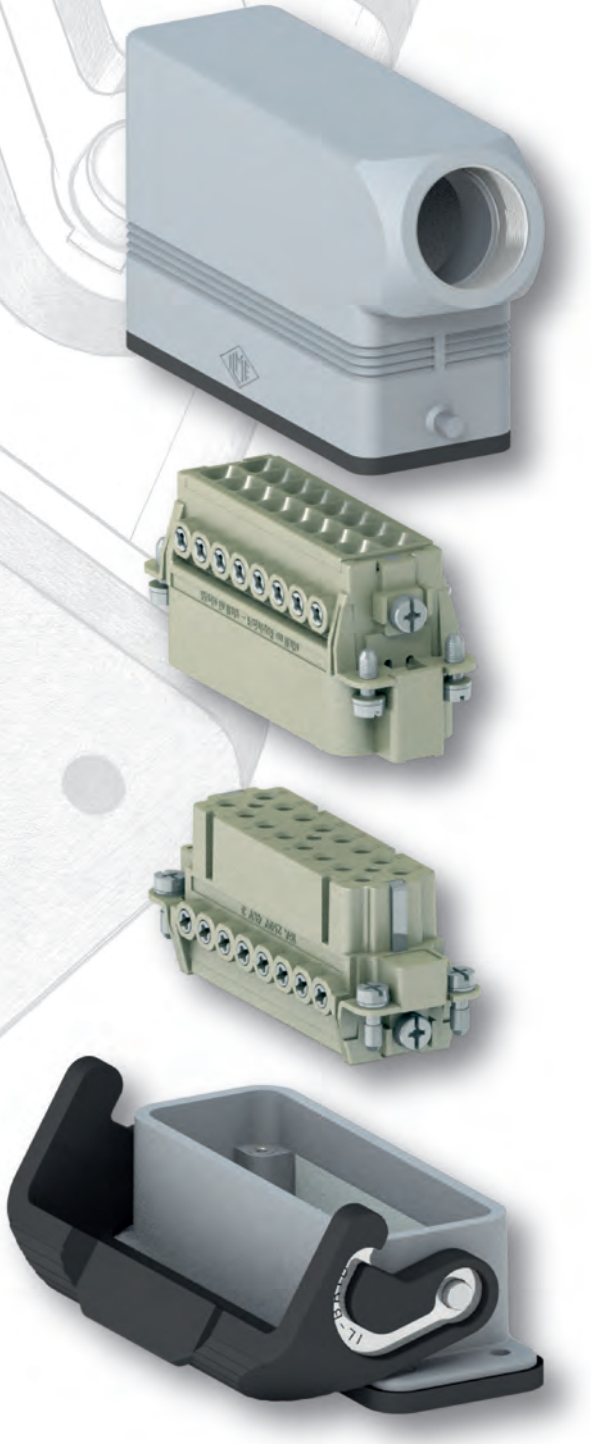
Type 4/4X/12

IP66 IP67

dimensions shown are not binding
and may be changed without notice

IL-BRID series

Soft closing, strong hold



IL-BRID series

The coordinated effects of two materials

The new IL-BRID locking lever.

Through its original design, the new lever combines the smoothness of the thermoplastic material with the sturdiness of the stainless steel spring.

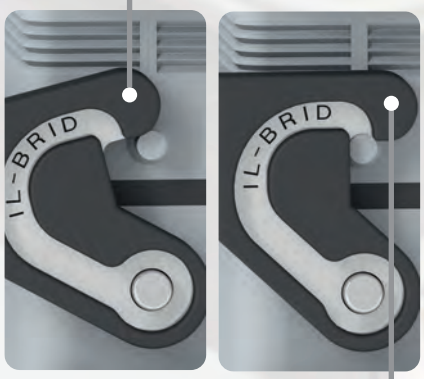
The locking lever also has a linear design which favors a quick wash without retaining external elements.

IL-BRID

**NEW LEVER
IN STAINLESS STEEL
AND THERMOPLASTIC
MATERIAL**

Soft closing.

In the first phase, the thermoplastic lever comes into play: sliding the new lever on the pin reduces friction and wear.
It is suitable in all applications with frequent opening and closing.



Strong hold.

After the first closing phase involving the plastic component, the stainless steel hook intervenes to guarantee higher resistance to mechanical stress.

inserts: page:

CD	15	poles + ⏚	55
CSAH	10	poles + ⏚	87
CDA	10	poles + ⏚	98
CDC	10	poles + ⏚	99
MIXO	1	module	179 - 214

insert centre distance:
49 x 16 mm

bulkhead mounting housings with single lever

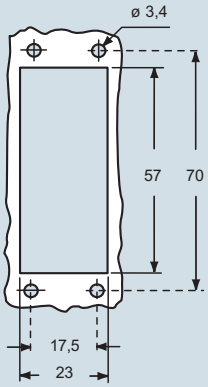
NEW

surface mounting housings with single lever

NEW

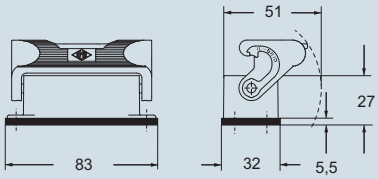
description	part No.	part No.	entry Pg	part No.	entry M
with single lever	**CZI 15 L**				
with single lever and cover	**CZI 15 LS**				
with single lever		**CZP 15 L**	16		
with single lever		**CZP 15 L2**	16 x 2		
with single lever		**CZP 15 L21**	21	**MZP 15 L25**	25
with single lever		**CZP 15 L221**	21 x 2	**MZP 15 L225**	25 x 2
with lever and cover		**CZP 15 LS**	16		
with lever and cover		**CZP 15 LS2**	16 x 2		
with lever and cover		**CZP 15 LS21**	21	**MZP 15 LS25**	25
with lever and cover		**CZP 15 LS221**	21 x 2	**MZP 15 LS225**	25 x 2

panel cut-out for bulkhead mounting housings in mm



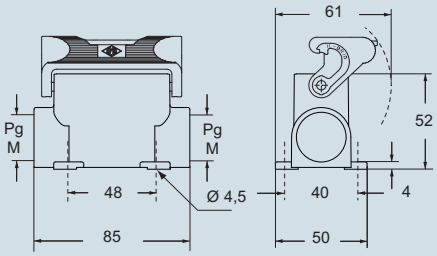
dimensions in mm

CZI L

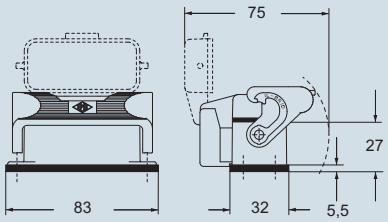


dimensions in mm

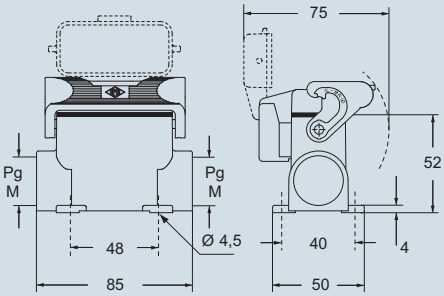
CZP L and **MZP L**



CZI LS



CZP LS and **MZP LS**



N.B.:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.

Type 4/4X/12

EN 60529 IP66 IEC 60529

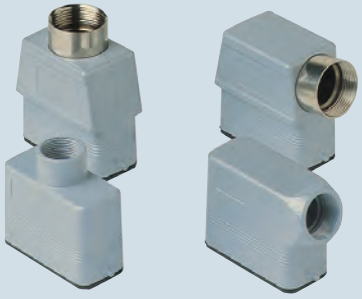
dimensions shown are not binding and may be changed without notice

inserts: page:

CD	15	poles + ⏚	55
CSAH	10	poles + ⏚	87
CDA	10	poles + ⏚	98
CDC	10	poles + ⏚	99
MIXO	1	module	179 - 214

insert centre distance:
49 x 16 mm

hoods with 2 pegs



hoods with single lever

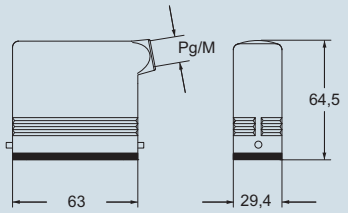
NEW

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with pegs, side entry	**CZO 15 L**	16	**MZO 15 L20**	20				
with pegs, side entry			**MZO 15 L25**	25				
with pegs, side entry, high construction	**CZAO 15 L16**	16	**MZAO 15 L20**	20				
with pegs, side entry, high construction	**CZAO 15 L21**	21	**MZAO 15 L25**	25				
with pegs, top entry	**CZV 15 L**	13.5	**MZV 15 L20**	20				
with pegs, top entry, high construction	**CZAV 15 L16**	16	**MZAV 15 L20**	20				
with pegs, top entry, high construction	**CZAV 15 L21**	21	**MZAV 15 L25**	25				
with pegs, side entry, high construction, without adaptor *	**CZFO 15 L16**	16	**MZFO 15 L20**	20				
with pegs, side entry, high construction, without adaptor *	**CZFO 15 L21**	21	**MZFO 15 L25**	25				
with pegs, top entry, high construction, without adaptor *	**CZFV 15 L16**	16	**MZFV 15 L20**	20				
with pegs, top entry, high construction, without adaptor *	**CZFV 15 L21**	21	**MZFV 15 L25**	25				
with lever, top entry					**CZV 15 LG**	13,5	**MZV 15 LG20**	20

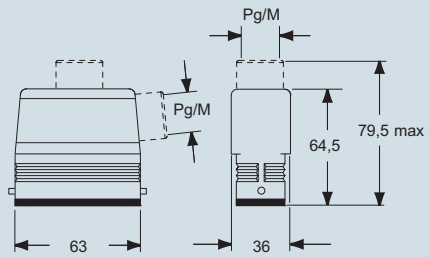
* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

dimensions in mm

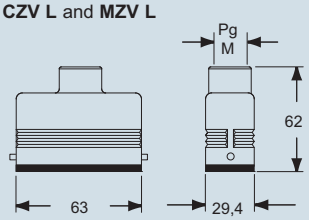
CZO L and **MZO L**



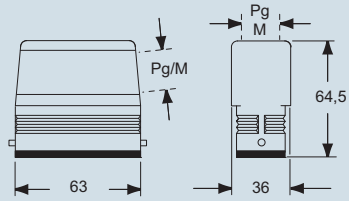
CZAO L - MZAO L and **CZAV L - MZAV L**



CZV L and **MZV L**

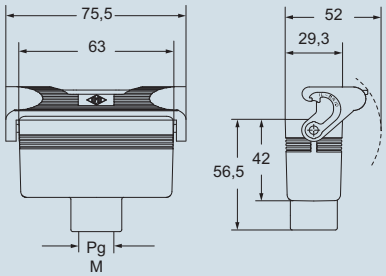


CZFO L - MZFO L and **CZFV L - MZFV L**



dimensions in mm

CZV LG and **MZV LG**



Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding and may be changed without notice

inserts: page:

CD	15	poles + ⏚	55
CSAH	10	poles + ⏚	87
CDA	10	poles + ⏚	98
CDC	10	poles + ⏚	99
MIXO	1	module	179 - 214

Cover versions L and LG cannot be used together with coding pins. If this application is required, please contact ILME SpA.

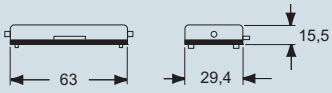
covers

NEW

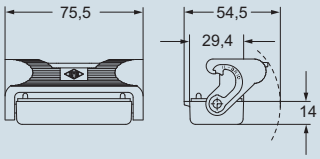
description	part No. (with eyelet)	part No. (with loop)
with pegs (for 1 lever enclosures)	**CZC 15 L**	**CZC 15 SL**
with lever (for enclosures with pegs)		**CZC 15 LG**

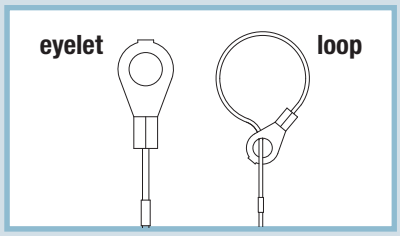
dimensions in mm

CZC L (SL)



CZC LG





Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding and may be changed without notice

inserts: page:

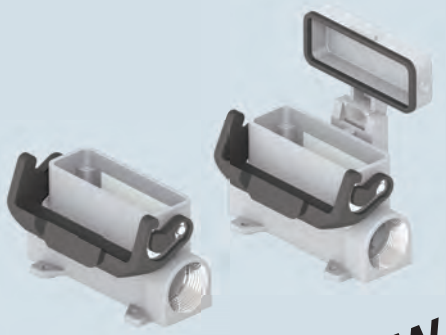
CD	25 poles + ⏚	56
CDD	38 poles + ⏚	68
CSAH	16 poles + ⏚	88
CDA	16 poles + ⏚	100
CDC	16 poles + ⏚	101

insert centre distance:
66 x 16 mm

bulkhead mounting housings with single lever

NEW

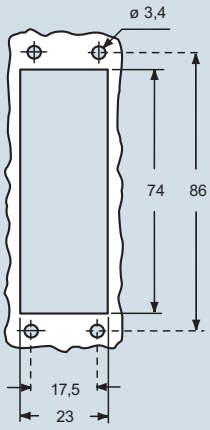
surface mounting housings with single lever



NEW

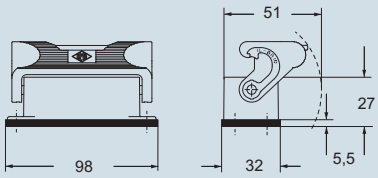
description	part No.	part No.	entry Pg	part No.	entry M
with single lever	**CZI 25 L**				
with single lever and cover	**CZI 25 LS**				
with single lever, high construction		**CZAP 25 L**	16		
with single lever, high construction		**CZAP 25 L2**	16 x 2		
with single lever, high construction		**CZAP 25 L21**	21	**MZAP 25 L25**	25
with single lever, high construction		**CZAP 25 L221**	21 x 2	**MZAP 25 L225**	25 x 2
with single lever and cover, high construction		**CZAP 25LS**	16		
with single lever and cover, high construction		**CZAP 25LS2**	16 x 2		
with single lever and cover, high construction		**CZAP 25LS21**	21	**MZAP 25LS25**	25
with single lever and cover, high construction		**CZAP 25LS221**	21 x 2	**MZAP 25LS225**	25 x 2

panel cut-out for bulkhead mounting housings in mm

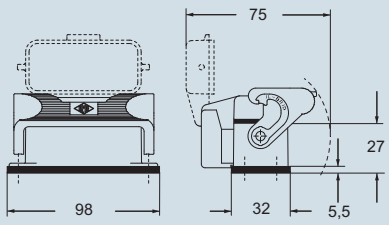


dimensions in mm

CZI L

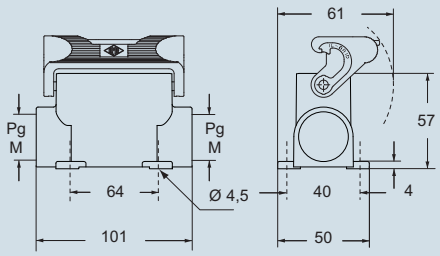


CZI LS

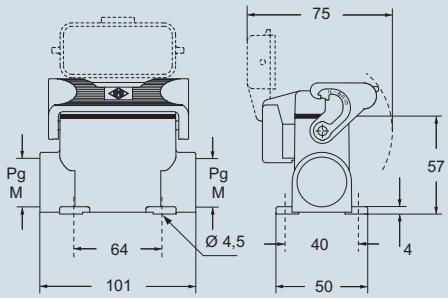


dimensions in mm

CZAP L and **MZAP L**



CZAP LS and **MZAP LS**



N.B.:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

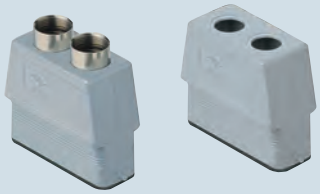
inserts: page:

CD ..... 25 poles + ⏚ 56
CDD ..... 38 poles + ⏚ 68
CSAH ..... 16 poles + ⏚ 88
CDA ..... 16 poles + ⏚ 100
CDC ..... 16 poles + ⏚ 101

insert centre distance:
66 x 16 mm

hoods with 2 pegs

hoods with 2 pegs, double top entry



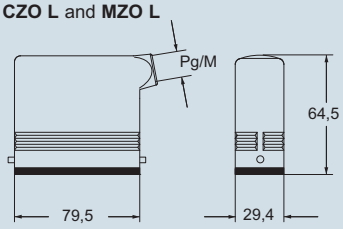
description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with pegs, side entry	**CZO 25 L**	16	**MZO 25 L20**	20				
with pegs, side entry			**MZO 25 L25**	25				
with pegs, side entry, high construction	**CZAO 25 L16**	16	**MZAO 25 L20**	20				
with pegs, side entry, high construction	**CZAO 25 L21**	21	**MZAO 25 L25**	25				
with pegs, top entry	**CZV 25 L**	16	**MZV 25 L20 ****	20				
with pegs, top entry, high construction	**CZAV 25 L16**	16	**MZAV 25 L20**	20				
with pegs, top entry, high construction	**CZAV 25 L21**	21	**MZAV 25 L25**	25				
with pegs, side entry, high construction, without adaptor *	**CZFO 25 L16**	16	**MZFO 25 L20**	20				
with pegs, side entry, high construction, without adaptor *	**CZFO 25 L21**	21	**MZFO 25 L25**	25				
with pegs, top entry, high construction, without adaptor *	**CZFV 25 L16**	16	**MZFV 25 L20**	20				
with pegs, top entry, high construction, without adaptor *	**CZFV 25 L21**	21	**MZFV 25 L25**	25				
with pegs for 1 lever					**CZAV 25 L216**	16 x 2	**MZAV 25 L220**	20 x 2
with pegs for 1 lever, without adaptor *					**CZFV 25 L216**	16 x 2	**MZFV 25 L220**	20 x 2

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

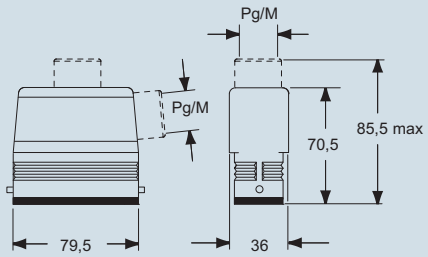
** can only be used with a complete cable gland (to be purchased separately)

dimensions in mm

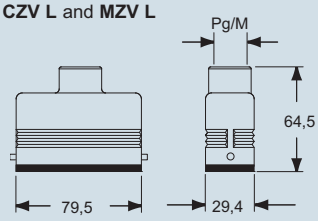
CZO L and **MZO L**



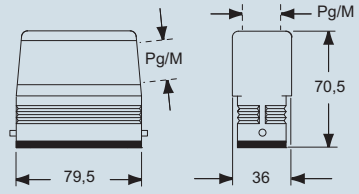
CZAO L - MZAO L and **CZAV L - MZAV L**



CZV L and **MZV L**

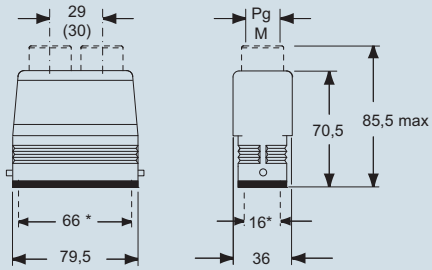


CZFO L - MZFO L and **CZFV L - MZFV L**



dimensions in mm

CZAV/CZFV L2 and **(MZAV)/MZFV L2**



Type 4/4X/12

dimensions shown are not binding and may be changed without notice

inserts: page:

CD ..... 25 poles + ⏚ 56
CDD ..... 38 poles + ⏚ 68
CSAH ..... 16 poles + ⏚ 88
CDA ..... 16 poles + ⏚ 100
CDC ..... 16 poles + ⏚ 101

insert centre distance:
66 x 16 mm

Cover versions L and LG cannot be used together with coding pins. If this application is required, please contact ILME SpA.

hoods with single lever

NEW

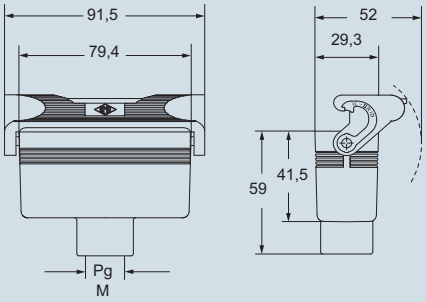
covers

NEW

description	part No.	entry Pg	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with lever, top entry	**CZV 25 LG**	16	**MZV 25 LG20**	20		
with pegs (for 1 lever enclosures)					**CZC 25 L**	**CZC 25 SL**
with lever (for enclosures with pegs)						**CZC 25 LG**

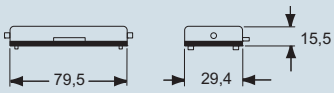
dimensions in mm

CZV LG and **MZV LG**

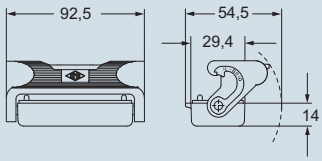


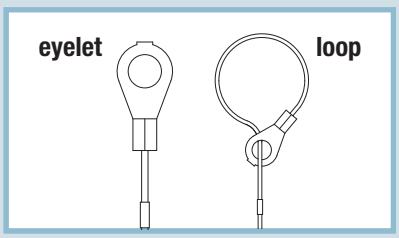
dimensions in mm

CZC L (SL)



CZC LG





Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding and may be changed without notice

inserts: page:

CD	50 poles + ⏚	58
CDD	76 poles + ⏚	71
CSAH	32 poles + ⏚	89
CDA	32 poles + ⏚	102
CDC	32 poles + ⏚	103

insert dimensions:
2 x (66 x 16) mm

bulkhead mounting housings with 2 levers or 4 pegs

surface mounting housings with 2 levers or 4 pegs

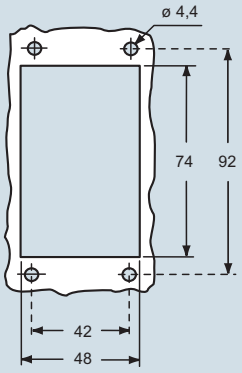
description	part No.	part No.	entry Pg	part No.	entry M
with levers	**CHI 50**				
with pegs and cover [1]	**CHI 50 CS**				
with levers		**CHP 50.21**	21	**MHP 50.32**	32
with levers		**CHP 50.221**	21 x 2	**MHP 50.232**	32 x 2
with levers		**CHP 50.29**	29	**MHP 50.40**	40
with levers		**CHP 50.229**	29 x 2	**MHP 50.240**	40 x 2
with pegs and cover [1]		**CHP 50 CS**	21	**MHP 50 CS32**	32
with pegs and cover [1]		**CHP 50 CS2**	21 x 2	**MHP 50 CS232**	32 x 2
with pegs and cover [1]		**CHP 50 CS29**	29	**MHP 50 CS40**	40
with pegs and cover [1]		**CHP 50 CS229**	29 x 2	**MHP 50 CS240**	40 x 2

[1] may be combined with enclosures:
- CHO/CAO 50 X and CAV 50 X
- MHO/MAO/MFO 50 X and MAV/MFV 50 X

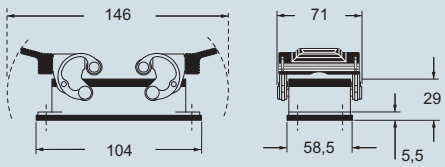
dimensions in mm

dimensions in mm

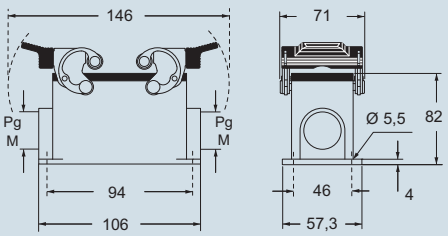
panel cut-out for bulkhead mounting housings in mm



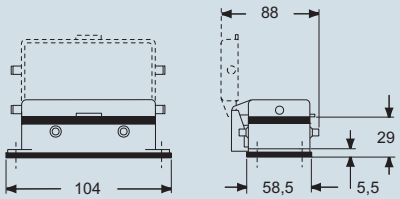
CHI



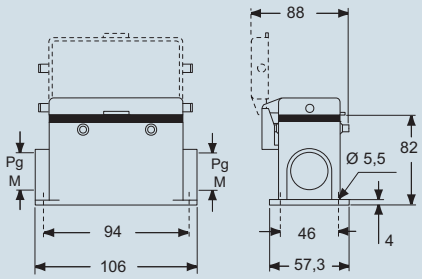
CHP and **MHP**



CHI CS



CHP CS and **MHP CS**



N.B.:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.
The cover (CS, CP) only ensures mechanical protection, but does not ensure IP65 protection rating.

Type 4/4X/12

EN 60529 IP66 IEC 60529

dimensions shown are not binding
and may be changed without notice

CH - CA and MH - MA enclosures size “66.40” standard version C-TYPE

inserts: page:

CD	50	poles + ⏚	58
CDD	76	poles + ⏚	71
CSAH	32	poles + ⏚	89
CDA	32	poles + ⏚	102
CDC	32	poles + ⏚	103

insert dimensions:
2 x (66 x 16) mm

hoods with 4 pegs

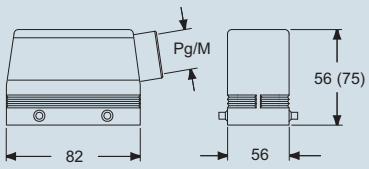
hoods with 2 levers or 4 pegs

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with pegs, side entry	**CHO 50**	21	**MHO 50.25**	25				
with pegs, side entry			**MHO 50.32**	32				
with pegs, side entry, high construction	**CAO 50.21**	21	**MAO 50.25**	25				
with pegs, side entry, high construction	**CAO 50.29**	29	**MAO 50.32**	32				
with pegs, top entry, high construction					**CAV 50.21**	21	**MAV 50.25**	25
with pegs, top entry, high construction					**CAV 50.29**	29	**MAV 50.32**	32
with levers and gasket, top entry, high construction					**CAV 50 G29**	29	**MAV 50 G32**	32
with pegs, side entry, high construction, without adaptor *	**CFO 50.21**	21	**MFO 50.25**	25				
with pegs, side entry, high construction, without adaptor *	**CFO 50.29**	29	**MFO 50.32**	32				
with pegs, top entry, high construction, without adaptor *					**CFV 50.21**	21	**MFV 50.25**	25
with pegs, top entry, high construction, without adaptor *					**CFV 50.29**	29	**MFV 50.32**	32
with levers and gasket, top entry, high, without adapter *					**CFV 50 G29**	29	**MFV 50 G32**	32

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

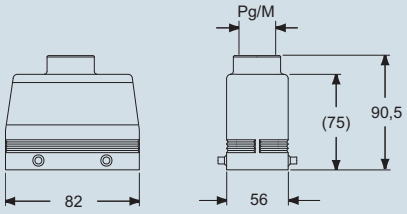
dimensions in mm

CHO (CAO/CFO) and **MHO (MAO/MFO)**

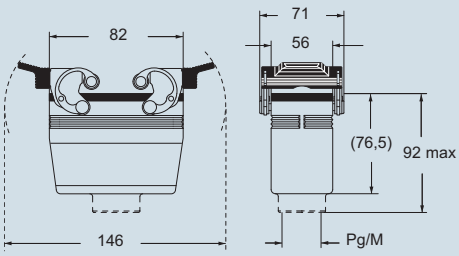


dimensions in mm

CAV (CFV) and **MAV (MFV)**



CAV G (CFV G) and **MAV G (MFV G)**



Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

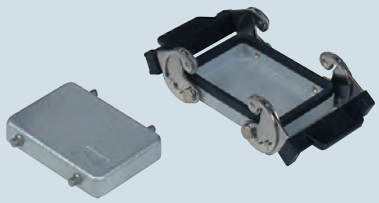
CD	50	poles + ⏚	58
CDD	76	poles + ⏚	71
CSAH	32	poles + ⏚	89
CDA	32	poles + ⏚	102
CDC	32	poles + ⏚	103

insert dimensions:
2 x (66 x 16) mm

CHC 50 and CHC 50 G covers cannot be used together with coding pins. If this application is required, please contact ILME SpA.

hoods with 2 levers

covers



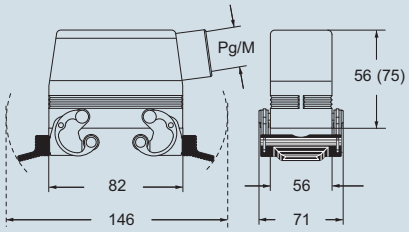
description	part No.	entry Pg	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with levers, side entry [1]	**CHO 50 X**	21	**MHO 50 X25**	25		
with levers, side entry [1]			**MHO 50 X32**	32		
with levers, side entry, high construction [1]	**CAO 50 X**	21	**MAO 50 X25**	25		
with levers, side entry, high construction [1]	**CAO 50 X29**	29	**MAO 50 X32**	32		
with levers, top entry, high construction [1]	**CAV 50 X**	21	**MAV 50 X25**	25		
with levers, top entry, high construction [1]	**CAV 50 X29**	29	**MAV 50 X32**	32		
with levers, side entry, high construction, without adaptor [1]*	**CFO 50 X**	21	**MFO 50 X25**	25		
with levers, side entry, high construction, without adaptor [1]*	**CFO 50 X29**	29	**MFO 50 X32**	32		
with levers, top entry, high construction, without adaptor [1]*	**CFV 50 X**	21	**MFV 50 X25**	25		
with levers, top entry, high construction, without adaptor [1]*	**CFV 50 X29**	29	**MFV 50 X32**	32		
with 4 pegs (for enclosures with 2 levers)					**CHC 50**	**CHC 50 S**
with 2 levers (for hoods with 4 pegs)						**CHC 50 G**

[1] may be combined with enclosures:
- CHI 50 CS, CHP 50 CS and MHP 50 CS

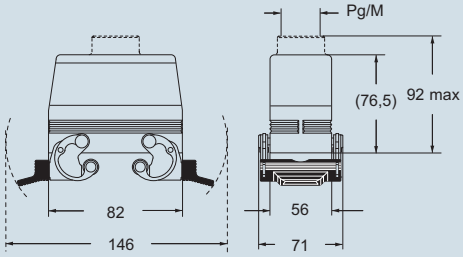
* enclosure without adaptor, threaded on the body, to to be used only with a complete cable gland.

dimensions in mm

CHO X (CAO X/CFO X) and **MHO X (MAO X/MFO X)**

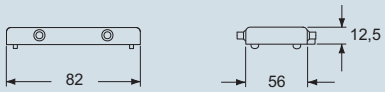


CAV X (CFV X) and **MAV X (MFV X)**

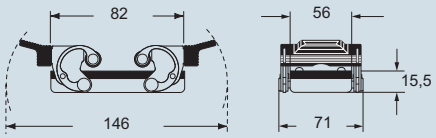


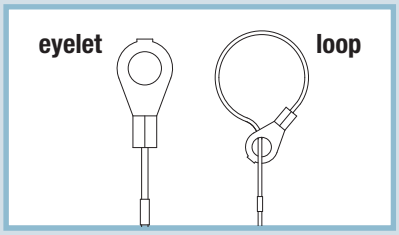
dimensions in mm

CHC(S)



CHC G





Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding and may be changed without notice

inserts: page:

CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CT, CTSE (16A) ***)**	6	poles + ⏚	130
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 215

***)** can be used only in bulkhead mounting housings

insert centre distance:
44 x 27 mm

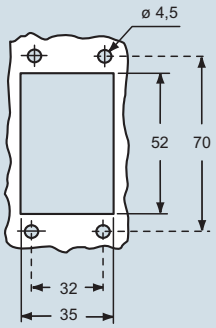
bulkhead mounting housings with single lever

bulkhead mounting housings with 2 pegs

description	part No.	part No.
with lever	**CHI 06 L**	
with lever and cover	**CHI 06 LS**	
with pegs [1]		**CHI 06 LC**
with pegs and aluminum cover [1]		**CHI 06 LCS**
with pegs and plastic cover [1]		**CHI 06 LCP**

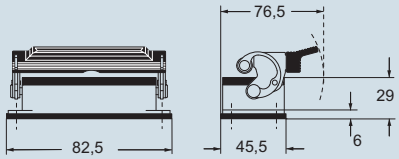
[1] may be combined with enclosures:
- CHO/CHV 06 LX
- CHO/CHV 06 LX

panel cut-out for bulkhead mounting housings in mm

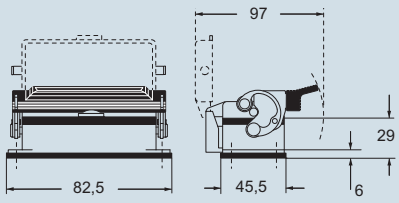


dimensions in mm

CHI L

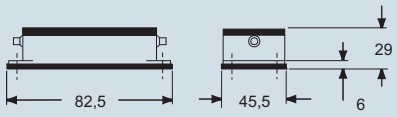


CHI LS

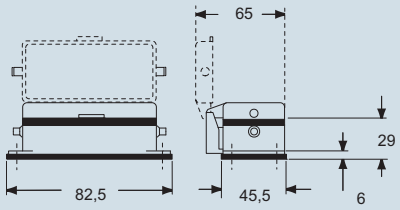


dimensions in mm

CHI LC



CHI LCS/LCP



N.B.:
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The cover (CS, CP) only ensures mechanical protection, but does not ensure IP65 protection rating.

c UL us Type 4/4X/12
(except enclosures with plastic cover)

EN 60529 IP66 IEC 60529

dimensions shown are not binding
and may be changed without notice

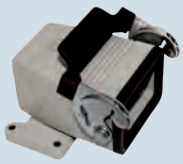
inserts: page:

CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 215

insert centre distance:
44 x 27 mm

surface mounting housings with single lever

angled surface mounting housings with single lever



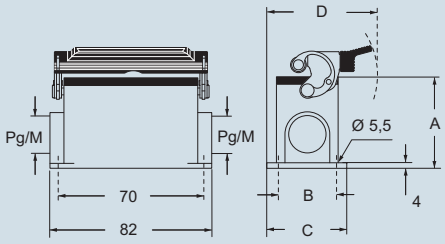
description	part No.	entry Pg	part No.	entry M	part No.	entry M
with lever	**CHP 06 L**	16	**MHP 06 L20**	20		
with lever	**CHP 06 L2**	16 x 2	**MHP 06 L220**	20 x 2		
with lever, high construction	**CAP 06 L**	21	**MAP 06 L32**	32		
with lever, high construction	**CAP 06 L2**	21 x 2	**MAP 06 L232**	32 x 2		
with lever, high construction	**CAP 06 L29**	29	**MAP 06 L40**	40		
with lever, high construction	**CAP 06 L229**	29 x 2	**MAP 06 L240**	40 x 2		
with lever and cover	**CHP 06 LS**	16	**MHP 06 LS20**	20		
with lever and cover	**CHP 06 LS2**	16 x 2	**MHP 06 LS220**	20 x 2		
with lever and cover, high construction	**CAP 06 LS**	21	**MAP 06 LS32**	32		
with lever and cover, high construction	**CAP 06 LS2**	21 x 2	**MAP 06 LS232**	32 x 2		
with lever and cover, high construction	**CAP 06 LS29**	29	**MAP 06 LS40**	40		
with lever and cover, high construction	**CAP 06 LS229**	29 x 2	**MAP 06 LS240**	40 x 2		
with lever, cable gland entry, closed bulkhead *					**MAV 06LG25-F**	**M25**

* - be used only with a complete cable gland (to be purchased separately)

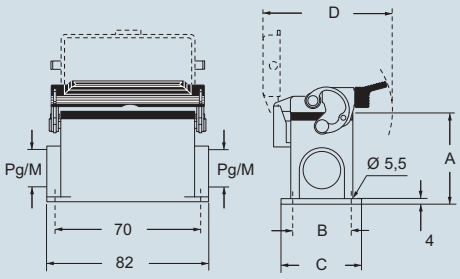
- versions with M32 , Pg 21 or Pg 29 entry on request

dimensions in mm

CHP L - CAP L and **MHP L - MAP L**



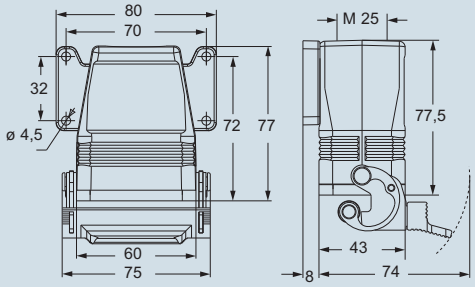
CHP LS - CAP LS and **MHP LS - MAP LS**



type	A	B	C	D
CHP L / MHP L	53	40	52	73,5
CAP L / MAP L	74	45	57	82
CHP LS / MHP LS	53	40	52	97
CAP LS / MAP LS	74	45	57	97

dimensions in mm

MAV 06LG25-F



N.B.:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.
The cover (CS, CP) only ensures mechanical protection, but does not ensure IP65 protection rating.

c UL us Type 4/4X/12

EN 60529 IP66 IEC 60529

dimensions shown are not binding and may be changed without notice

CH - CA and MH - MA enclosures size “44.27” standard version C-TYPE

inserts: page:

CDD ..... 24 poles + ⏚ 67
CDS ..... 9 poles + ⏚ 78
CSH ..... 6 poles + ⏚ 91
CNE, CSE ..... 6 poles + ⏚ 104
CCE ..... 6 poles + ⏚ 110
CSS ..... 6 poles + ⏚ 122
CQE ..... 10 poles + ⏚ 138
MIXO ..... 2 modules 179 - 215

insert centre distance:
44 x 27 mm

hoods with 2 pegs

hoods with 1 lever

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with pegs, side entry	**CHO 06 L13**	13,5	**MHO 06 L20**	20				
with pegs, side entry	**CHO 06 L16**	16	**MHO 06 L25**	25				
with pegs, side entry, high construction	**CAO 06 L21**	21	**MAO 06 L25**	25				
with pegs, side entry, high construction	**CAO 06 L29**	29	**MAO 06 L32**	32				
with pegs, side entry, high construction, without adaptor *	**CFO 06 L21**	21	**MFO 06 L25**	25				
with pegs, side entry, high construction, without adaptor *	**CFO 06 L29**	29	**MFO 06 L32**	32				
with pegs, top entry	**CHV 06 L13** [1]	13,5	**MHV 06 L20** [1]	20				
with pegs, top entry	**CHV 06 L16** [1]	16	**MHV 06 L25** [1]	25				
with pegs, top entry, high construction	**CAV 06 L21**	21	**MAV 06 L25**	25				
with pegs, top entry, high construction	**CAV 06 L29**	29	**MAV 06 L32**	32				
with pegs, top entry, high construction, without adaptor *	**CFV 06 L21**	21	**MFV 06 L25**	25				
with pegs, top entry, high construction, without adaptor *	**CFV 06 L29**	29	**MFV 06 L32**	32				
with lever, top entry					**CHV 06 LG**	16	**MHV 06 LG25**	25
with lever, top entry, high construction					**CAV 06 LG21**	21	**MAV 06 LG25**	25
with lever, top entry, high construction					**CAV 06 LG29**	29	**MAV 06 LG32**	32
with lever, top entry, high construction, without adaptor *					**CFV 06 LG21**	21	**MFV 06 LG25**	25
with lever, top entry, high construction, without adaptor *					**CFV 06 LG29**	29	**MFV 06 LG32**	32

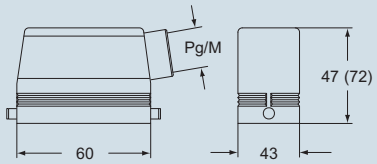
* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

[1] cannot be used with MIXO series

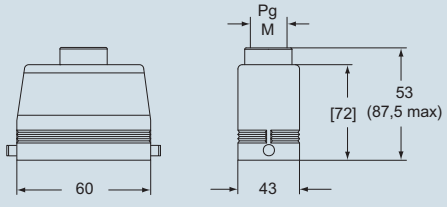
alternatively, hoods with pegs are coupled with fixed enclosures:
- C7, IP67 stainless steel lever, page 274
- CV, IP66 stainless steel lever, page 280 and 284

dimensions in mm

CHO L (CAO L) and **(CFO L)**
MHO L (MAO L) and **(MFO L)**

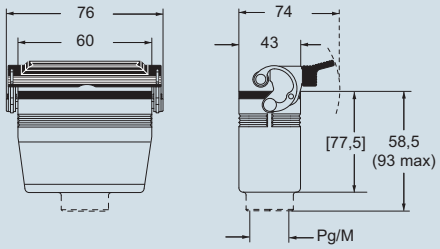


CHV L (CAV L) and **[CFV L]**
MHV L (MAV L) and **[MFV L]**



dimensions in mm

CHV LG (CAV LG) and **[CFV LG]**
MHV LG (MAV LG) and **[MFV LG]**



Type 4/4X/12

according to the type of lever

dimensions shown are not binding
and may be changed without notice

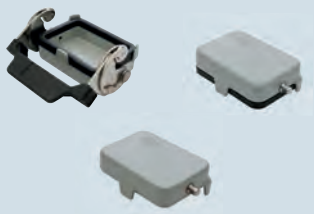
inserts: page:

CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 215

insert centre distance:
44 x 27 mm

hoods with 1 lever

covers



description	part No.	entry Pg	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with lever, without gasket, side entry [1) 3)]	**CHO 06 LX16**	16	**MHO 06 LX20**	20		
with lever, without gasket, side entry [1) 3)]			**MHO 06 LX25**	25		
with lever, without gasket, top entry [1) 3)]	**CHV 06 LX16**	16	**MHV 06 LX20**	20		
with lever, without gasket, top entry [1) 3)]			**MHV 06 LX25**	25		
with lever (for hoods with pegs)						**CHC 06 LG**
with pegs (for enclosures with lever)					**CHC 06 L**	**CHC 06 SL**
with pegs and gasket (for hoods with lever) [2)]						**CHC 06 LC**

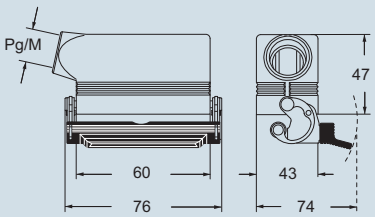
[1)] may be combined with enclosures: CHI 06 LCS/LCP/LC

[2)] may be combined with enclosures:
- CHO/CHV 06 LX
- CHO/CHV 06 LX

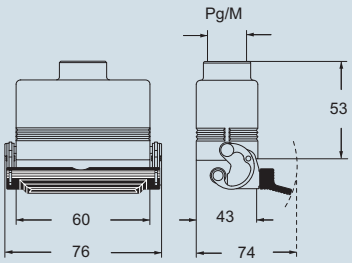
[3)] cannot be used with MIXO inserts

dimensions in mm

CHO LX and **MHO LX**

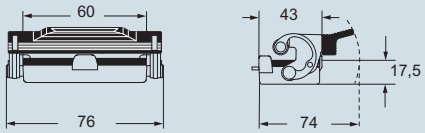


CHV LX and **MHV LX**

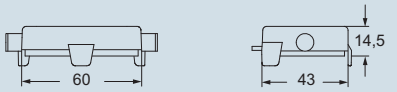


dimensions in mm

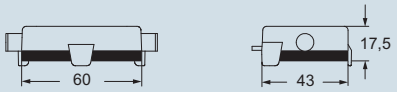
CHC LG



CHC L (SL)



CHC LC



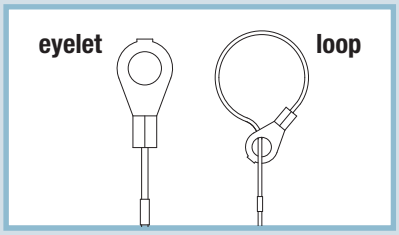
dust protection cover

CHCP 06 page 496

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice



inserts: page:

CDD ..... 42 poles + ⏚ 69
CDS ..... 18 poles + ⏚ 79
CSH ..... 10 poles + ⏚ 92
CNE, CSE ..... 10 poles + ⏚ 105
CCE ..... 10 poles + ⏚ 111
CSS ..... 10 poles + ⏚ 123
CT, CTSE (16A) ***)** .. 10 poles + ⏚ 131
CQE ..... 18 poles + ⏚ 139
CMCE ..... 3+2 (aux) poles + ⏚ 148
CMSH ..... 3+2 (aux) poles + ⏚ 149
CX ..... 8/24 poles + ⏚ 169
MIXO ..... 3 modules 179 - 215

***)** can be used only in bulkhead mounting housings

insert centre distance:
57 x 27 mm

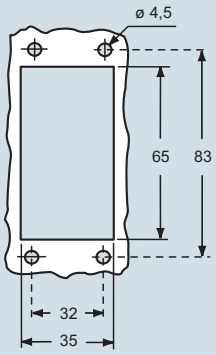
bulkhead mounting housings with 2 levers or 4 pegs

bulkhead mounting housings with single lever

description	part No.	part No.
with one or two levers	**CHI 10**	**CHI 10 L**
with pegs [1]	**CHI 10 C**	
with pegs and aluminum cover [1]	**CHI 10 CS**	
with pegs and plastic cover [1]	**CHI 10 CP**	
with lever and cover		**CHI 10 LS**

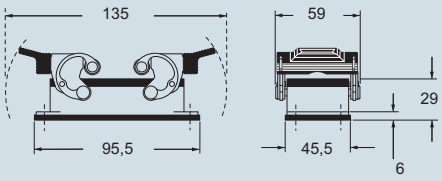
[1] may be combined with enclosures:
- CHO/CAO 10 X and CHV/CAV 10 X
- MHO/MAO 10 X and MHV/MAV 10 X

panel cut-out for bulkhead mounting housings in mm

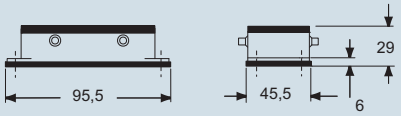


dimensions in mm

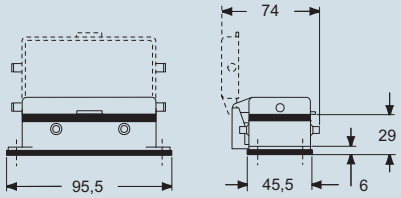
CHI



CHI C

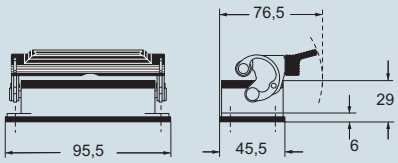


CHI CS/CP

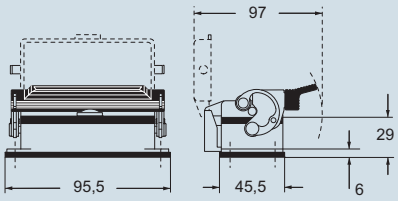


dimensions in mm

CHI L



CHI LS



N.B.:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.
The cover (CS, CP) only ensures mechanical protection, but does not ensure IP65 protection rating.

Type 4/4X/12
(except enclosures with plastic cover)

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

ANGLED VERSION

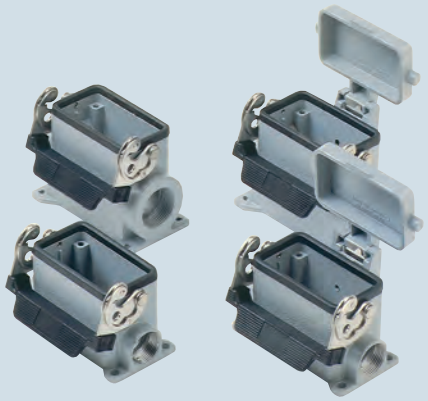
page 469

inserts:		page:
CDD	42 poles + ⏚	69
CDS	18 poles + ⏚	79
CSH	10 poles + ⏚	92
CNE, CSE	10 poles + ⏚	105
CCE	10 poles + ⏚	111
CSS	10 poles + ⏚	123
CQE	18 poles + ⏚	139
CMCE	3+2 (aux) poles + ⏚	148
CMSH	3+2 (aux) poles + ⏚	149
CX	8/24 poles + ⏚	169
MIXO	3 modules	179 - 215

insert centre distance:
57 x 27 mm

surface mounting housings with 2 levers or 4 pegs

surface mounting housings with single lever



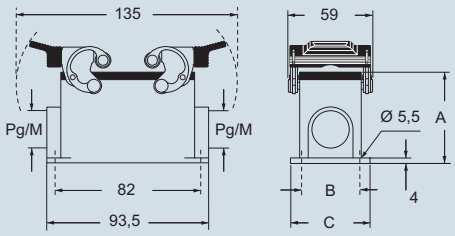
description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with levers	**CHP 10**	16	**MHP 10.20**	20	**CHP 10 L**	16	**MHP 10 L20**	20
with levers	**CHP 10.2**	16 x 2	**MHP 10.220**	20 x 2	**CHP 10 L2**	16 x 2	**MHP 10 L220**	20 x 2
with levers, high construction	**CAP 10.21**	21	**MAP 10.32**	32	**CAP 10 L**	21	**MAP 10 L32**	32
with levers, high construction	**CAP 10.221**	21 x 2	**MAP 10.232**	32 x 2	**CAP 10 L2**	21 x 2	**MAP 10 L232**	32 x 2
with levers, high construction	**CAP 10.29**	29	**MAP 10.40**	40	**CAP 10 L29**	29	**MAP 10 L40**	40
with levers, high construction	**CAP 10.229**	29 x 2	**MAP 10.240**	40 x 2	**CAP 10 L229**	29 x 2	**MAP 10 L240**	40 x 2
with pegs and aluminum cover [1]	**CHP 10 CS**	16	**MHP 10 CS20**	20				
with pegs and aluminum cover [1]	**CHP 10 CS2**	16 x 2	**MHP 10 CS220**	20 x 2				
with pegs and aluminum cover, high construction [1]	**CAP 10 CS**	21	**MAP 10 CS32**	32				
with pegs and aluminum cover, high construction [1]	**CAP 10 CS2**	21 x 2	**MAP 10 CS232**	32 x 2				
with pegs and aluminum cover, high construction [1]	**CAP 10 CS29**	29	**MAP 10 CS40**	40				
with pegs and aluminum cover, high construction [1]	**CAP 10 CS229**	29 x 2	**MAP 10 CS240**	40 x 2				
with pegs and plastic cover [1]	**CHP 10 CP**	16	**MHP 10 CP20**	20				
with pegs and plastic cover [1]	**CHP 10 CP2**	16 x 2	**MHP 10 CP220**	20 x 2				
with pegs and plastic cover, high construction [1]	**CAP 10 CP**	21	**MAP 10 CP32**	32				
with pegs and plastic cover, high construction [1]	**CAP 10 CP2**	21 x 2	**MAP 10 CP232**	32 x 2				
with pegs and plastic cover, high construction [1]	**CAP 10 CP29**	29	**MAP 10 CP40**	40				
with pegs and plastic cover, high construction [1]	**CAP 10 CP229**	29 x 2	**MAP 10 CP240**	40 x 2				
with lever and cover					**CHP 10 LS**	16	**MHP 10 LS20**	20
with lever and cover					**CHP 10 LS2**	16 x 2	**MHP 10 LS220**	20 x 2
with lever and cover, high construction					**CAP 10 LS**	21	**MAP 10 LS32**	32
with lever and cover, high construction					**CAP 10 LS2**	21 x 2	**MAP 10 LS232**	32 x 2
with lever and cover, high construction					**CAP 10 LS29**	29	**MAP 10 LS40**	40
with lever and cover, high construction					**CAP 10 LS229**	29 x 2	**MAP 10 LS240**	40 x 2

[1] may be combined with enclosures:
- CHO/CAO 10 X and CHV/CAV 10 X
- MHO/MAO 10 X and MHV/MAV 10 X

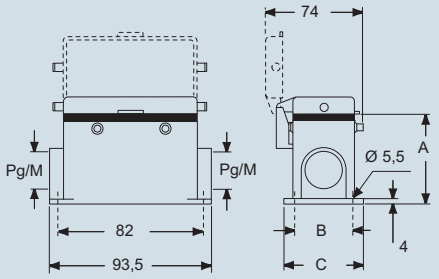
N.B.:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.
The cover (CS, CP) only ensures mechanical protection, but does not ensure IP65 protection rating.

dimensions in mm

CHP - CAP and **MHP - MAP**



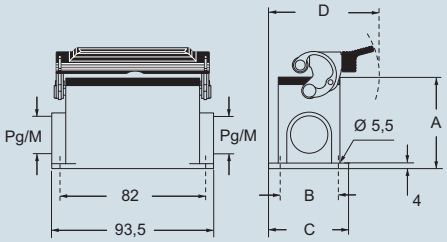
CHP CS/CP - CAP CS/CP and **MHP CS/CP - MAP CS/CP**



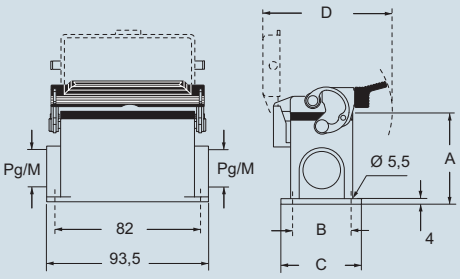
type	A	B	C
CHP / MHP	57	40	52
CAP / MAP	74	45	57
CHP CS / MHP CS	57	40	52
CAP CS / MAP CS	74	45	57
CHP CP / MHP CP	57	40	52
CAP CP / MAP CP	74	45	57

dimensions in mm

CHP L - CAP L and **MHP L - MAP L**



CHP LS - CAP LS and **MHP LS - MAP LS**



type	A	B	C	D
CHP L / MHP L	57	40	52	79,5
CAP L / MAP L	74	45	57	82
CHP LS / MHP LS	57	40	52	97
CAP LS / MAP LS	74	45	57	97

c UL us Type 4/4X/12
(except enclosures with plastic cover)

EN 60529 IP66 IEC 60529

dimensions shown are not binding
and may be changed without notice

CH - CA and MH - MA enclosures size “57.27” standard version C-TYPE

inserts: page:

CDD	42	poles + ⏚	69
CDS	18	poles + ⏚	79
CSH	10	poles + ⏚	92
CNE, CSE	10	poles + ⏚	105
CCE	10	poles + ⏚	111
CSS	10	poles + ⏚	123
CQE	18	poles + ⏚	139
CMCE	3+2 (aux)	poles + ⏚	148
CMSH	3+2 (aux)	poles + ⏚	149
CX	8/24	poles + ⏚	169
MIXO	3	modules	179 - 215

insert centre distance:
57 x 27 mm

hoods with 4 pegs

hoods with 2 pegs

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with pegs, side entry	**CHO 10**	16	**MHO 10.20**	20	**CHO 10 L**	16	**MHO 10 L20**	20
with pegs, side entry			**MHO 10.25**	25			**MHO 10 L25**	25
with pegs, side entry, high construction	**CAO 10.21**	21	**MAO 10.32**	32	**CAO 10 L21**	21	**MAO 10 L32**	32
with pegs, side entry, high construction	**CAO 10.29**	29	**MAO 10.40**	40	**CAO 10 L29**	29	**MAO 10 L40**	40
with pegs, top entry	**CHV 10**	16	**MHV 10.20 ****	20	**CHV 10 L**	16	**MHV 10 L20 ****	20
with pegs, top entry			**MHV 10.25**	25			**MHV 10 L25**	25
with pegs, top entry, high construction	**CAV 10.21**	21	**MAV 10.32**	32	**CAV 10 L21**	21	**MAV 10 L32**	32
with pegs, top entry, high construction	**CAV 10.29**	29	**MAV 10.40**	40	**CAV 10 L29**	29	**MAV 10 L40**	40
with pegs, frontal entry, high construction	**CAF 10**	16	**MAF 10.20**	20				
with pegs, frontal entry, high constr., without adaptor *	**CFF 10**	16	**MFF 10.20**	20				

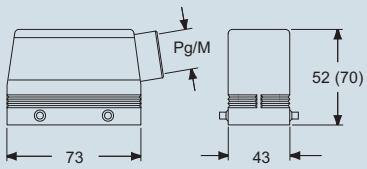
* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

** can only be used with a complete cable gland (to be purchased separately)

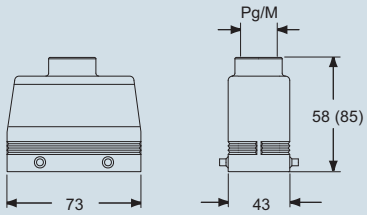
alternatively, hoods with pegs are coupled with fixed enclosures:
- C7, IP67 stainless steel lever, page 275
- CV, IP66 stainless steel lever, page 281 and 288

dimensions in mm

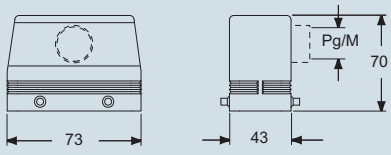
CHO (CAO) and **MHO (MAO)**



CHV (CAV) and **MHV (MAV)**

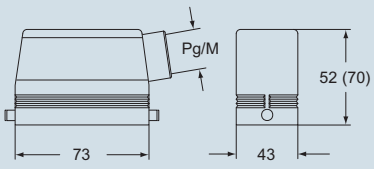


CAF/CFF and **MAF/MFF**

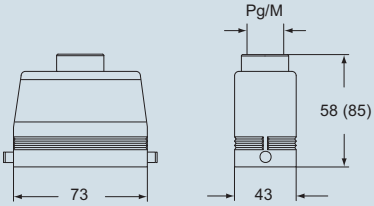


dimensions in mm

CHO L (CAO L) and **MHO L (MAO L)**



CHV L (CAV L) and **MHV L (MAV L)**



cULus Type 4/4X/12

EN 60529 IP66 IP67 IEC 60529 according to the type of lever

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD	42	poles + ⏚	69
CDS	18	poles + ⏚	79
CSH	10	poles + ⏚	92
CNE, CSE	10	poles + ⏚	105
CCE	10	poles + ⏚	111
CSS	10	poles + ⏚	123
CQE	18	poles + ⏚	139
CMCE	3+2 (aux)	poles + ⏚	148
CMSH	3+2 (aux)	poles + ⏚	149
CX	8/24	poles + ⏚	169
MIXO	3	modules	179 - 215

insert centre distance:
57 x 27 mm

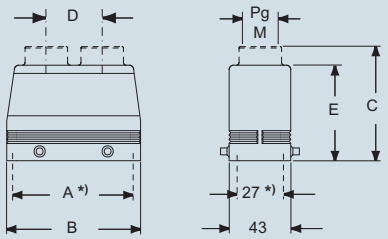
hoods with double top entry

description	part No.	entry Pg	part No.	entry M
with pegs for two levers - used with enclosures size “57.27”	**CAV 10.213**	13,5 x 2	**MAV 10.220**	20 x 2
with pegs for two levers, without adaptor * - used with enclosures size “57.27”	**CFV 10.213**	13,5 x 2	**MFV 10.220**	20 x 2

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

dimensions in mm

CAV/CFV and **MAV/MFV**



part No.	A *)	B	C	D	E
CAV 10.213 **MAV 10.220**	57	73	82 (84,5)	26 (28,5)	70
CFV 10.213 **MFV 10.220**	57	73	—	28,5 (26)	70

*) screw fixing centre distance

alternatively, hoods with pegs are coupled with fixed enclosures:
- C7, IP67 stainless steel lever, page 275
- CV, IP66 stainless steel lever, page 281 and 288

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding and may be changed without notice

inserts:			page:
CDD	42	poles + ⏚	69
CDS	18	poles + ⏚	79
CSH	10	poles + ⏚	92
CNE, CSE	10	poles + ⏚	105
CCE	10	poles + ⏚	111
CSS	10	poles + ⏚	123
CQE	18	poles + ⏚	139
CMCE	3+2 (aux)	poles + ⏚	148
CMSH	3+2 (aux)	poles + ⏚	149
CX	8/24	poles + ⏚	169
MIXO	3	modules	179 - 215

insert centre distance:
57 x 27 mm

hoods with 2 levers

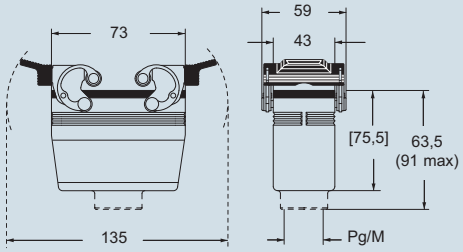
hoods with 1 levers

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with levers and gasket, top entry	**CHV 10 G**	16	**MHV 10 G25**	25	**CHV 10 LG**	16	**MHV 10 LG25**	25
with levers and gasket, top entry, high construction	**CAV 10 G**	21	**MAV 10 G25**	25	**CAV 10 LG21**	21	**MAV 10 LG25**	25
with levers and gasket, top entry, high construction	**CAV 10 G29**	29	**MAV 10 G32**	32	**CAV 10 LG29**	29	**MAV 10 LG32**	32
with levers and gasket, top entry, high, without adapter *	**CFV 10 G**	21	**MFV 10 G25**	25	**CFV 10 LG21**	21	**MFV 10 LG25**	25
with levers and gasket, top entry, high, without adapter *	**CFV 10 G29**	29	**MFV 10 G32**	32	**CFV 10 LG29**	29	**MFV 10 LG32**	32

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

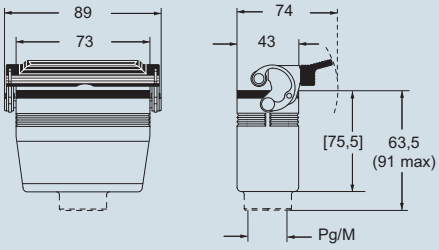
dimensions in mm

CHV G (CAV G) and **[CFV G]**,
MHV G (MAV G) and **[MFV G]**



dimensions in mm

CHV LG (CAV LG) and **[CFV LG]**,
MHV LG (MAV LG) and **[MFV LG]**



Type 4/4X/12

IP66 EN 60529 IEC 60529

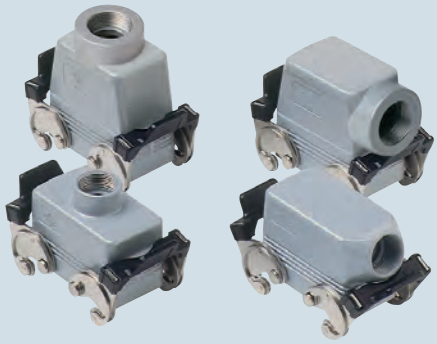
dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD	42	poles + ⏚	69
CDS	18	poles + ⏚	79
CSH	10	poles + ⏚	92
CNE, CSE	10	poles + ⏚	105
CCE	10	poles + ⏚	111
CSS	10	poles + ⏚	123
CQE	18	poles + ⏚	139
CMCE	3+2 (aux)	poles + ⏚	148
CMSH	3+2 (aux)	poles + ⏚	149
CX	8/24	poles + ⏚	169
MIXO	3	modules	179 - 215

insert centre distance:
57 x 27 mm

hoods with 2 levers



covers

description	part No.	entry Pg	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with levers, side entry [1]	**CHO 10 X**	16	**MHO 10 X20**	20		
with levers, side entry [1]			**MHO 10 X25**	25		
with levers, side entry, high construction [1]	**CAO 10 X**	21	**MAO 10 X32**	32		
with levers, side entry, high construction [1]	**CAO 10 X29**	29	**MAO 10 X40**	40		
with levers, top entry [1]	**CHV 10 X**	16	**MHV 10 X20** **	20		
with levers, top entry [1]			**MHV 10 X25**	25		
with levers, top entry, high construction [1]	**CAV 10 X**	21	**MAV 10 X32**	32		
with levers, top entry, high construction [1]	**CAV 10 X29**	29	**MAV 10 X40**	40		
with 4 pegs (for enclosures with 2 levers with gasket)					**CHC 10**	**CHC 10 S**
with 4 pegs and gasket (for enclosures with 2 levers) [2]						**CHC 10 C**
with 2 pegs (for enclosures with 1 lever with gasket)					**CHC 10 L**	**CHC 10 SL**
with 2 levers (for hoods with 4 pegs)						**CHC 10 G**
with 1 lever (for hoods with 2 pegs)						**CHC 10 LG**

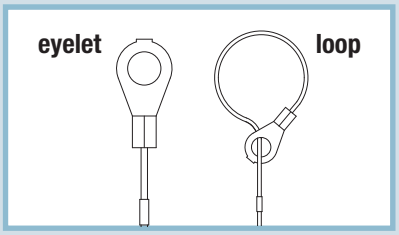
[1] may be combined with enclosures:
- CHI/CHP/CAP 10 CS/CP/C
- MHP/MAP 10 CS/CP

[2] may be combined with enclosures:
- CHO/CAO 10 X and CHV/CAV 10 X
- MHO/MAO 10 X and MHV/MAV 10 X

** can only be used with a complete cable gland (to be purchased separately)

dust protection cover

CHCP 10 page 496



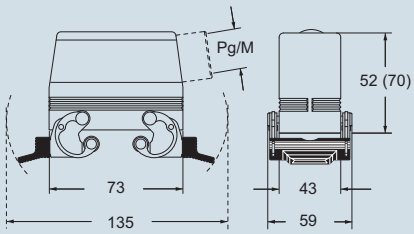
Type 4/4X/12

IP66 EN 60529 IEC 60529

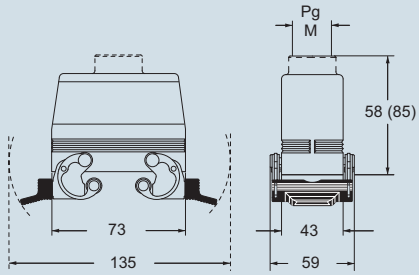
dimensions shown are not binding
and may be changed without notice

dimensions in mm

CHO X (CAO X) and **MHO X (MAO X)**



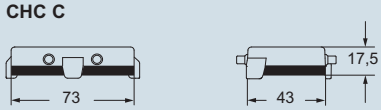
CHV X (CAV X) and **MHV X (MAV X)**



dimensions in mm

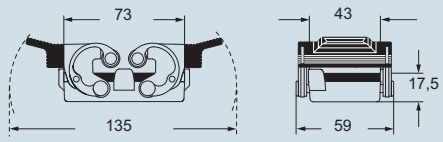
CHC (S)

CHC C

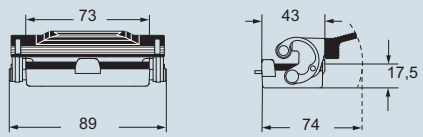


CHC L (SL)

CHC G



CHC LG



inserts: page:

CD	40	poles + ⏚	57
CT, CTS (10A) ***)**	40	poles + ⏚	64
CDD	72	poles + ⏚	70
CDS	27	poles + ⏚	80
CSH	16	poles + ⏚	93
CNE, CSE	16	poles + ⏚	106
CCE	16	poles + ⏚	112
CSS	16	poles + ⏚	124
CT, CTSE (16A) ***)**	16	poles + ⏚	132
CQE	32	poles + ⏚	140
CQEE	40	poles + ⏚	146
CMCE, CMSH 6+2 (aux)		poles + ⏚	150-151
CP	6	poles + ⏚	162
CX	6/36 and 12/2	poles + ⏚	170-171
CX	4/0 and 4/2	poles + ⏚	172
MIXO	4	modules	179-215

***)** can be used only in bulkhead mounting housings

insert centre distance: **77,5 x 27 mm**

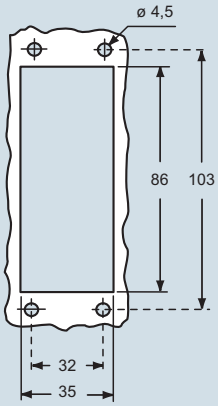
bulkhead mounting housings with 2 levers or 4 pegs

bulkhead mounting housings with single lever

description	part No.	part No.
with one or two levers	**CHI 16**	**CHI 16 L**
with pegs [1]	**CHI 16 C**	
with pegs and aluminum cover [1]	**CHI 16 CS**	
with pegs and plastic cover [1]	**CHI 16 CP**	
with lever and cover		**CHI 16 LS**

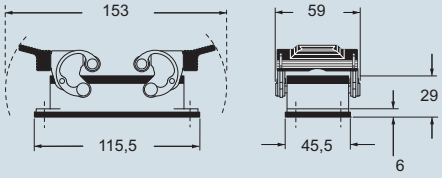
[1] may be combined with enclosures:
- CHO/CAO 16 X and CHV/CAV 16 X
- MHO/MAO 16 X and MHV/MAV 16 X

panel cut-out for bulkhead mounting housings in mm

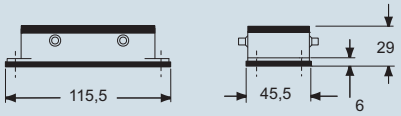


dimensions in mm

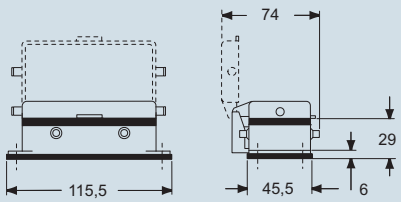
CHI



CHI C

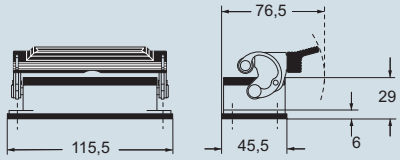


CHI CS/CP

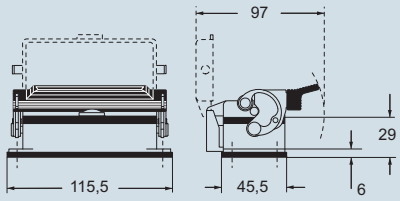


dimensions in mm

CHI L



CHI LS



N.B.:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.
The cover (CS, CP) only ensures mechanical protection, but does not ensure IP65 protection rating.

c UL us Type 4/4X/12
(except enclosures with plastic cover)

EN 60529 IP66 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD	40	poles + ⏚	57
CDD	72	poles + ⏚	70
CDS	27	poles + ⏚	80
CSH	16	poles + ⏚	93
CNE, CSE	16	poles + ⏚	106
CCE	16	poles + ⏚	112
CSS	16	poles + ⏚	124
CQE	32	poles + ⏚	140
CQEE	40	poles + ⏚	146
CMCE, CMSH 6+2 (aux)		poles + ⏚	150-151
CP	6	poles + ⏚	162
CX	6/36 and 12/2	poles + ⏚	170-171
CX	4/0 and 4/2	poles + ⏚	172
MIXO	4	modules	179-215

insert centre distance:
77,5 x 27 mm

surface mounting housings with 2 levers or 4 pegs

surface mounting housings with single lever

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with levers	**CHP 16**	21	**MHP 16.25**	25	**CHP 16 L**	21	**MHP 16 L25**	25
with levers	**CHP 16.2**	21 x 2	**MHP 16.225**	25 x 2	**CHP 16 L2**	21 x 2	**MHP 16 L225**	25 x 2
with levers, high construction	**CAP 16.21**	21	**MAP 16.32**	32	**CAP 16 L**	21	**MAP 16 L32**	32
with levers, high construction	**CAP 16.221**	21 x 2	**MAP 16.232**	32 x 2	**CAP 16 L2**	21 x 2	**MAP 16 L232**	32 x 2
with levers, high construction	**CAP 16.29**	29	**MAP 16.40**	40	**CAP 16 L29**	29	**MAP 16 L40**	40
with levers, high construction	**CAP 16.229**	29 x 2	**MAP 16.240**	40 x 2	**CAP 16 L229**	29 x 2	**MAP 16 L240**	40 x 2
with pegs and aluminum cover [1]	**CHP 16 CS**	21	**MHP 16 CS25**	25				
with lever and aluminum cover [1]	**CHP 16 CS2**	21 x 2	**MHP 16 CS225**	25 x 2				
with pegs and aluminum cover, high construction [1]	**CAP 16 CS**	21	**MAP 16 CS32**	32				
with pegs and aluminum cover, high construction [1]	**CAP 16 CS2**	21 x 2	**MAP 16 CS232**	32 x 2				
with pegs and aluminum cover, high construction [1]	**CAP 16 CS29**	29	**MAP 16 CS40**	40				
with pegs and aluminum cover, high construction [1]	**CAP 16 CS229**	29 x 2	**MAP 16 CS240**	40 x 2				
with pegs and plastic cover [1]	**CHP 16 CP**	21	**MHP 16 CP25**	25				
with pegs and plastic cover [1]	**CHP 16 CP2**	21 x 2	**MHP 16 CP225**	25 x 2				
with pegs and plastic cover, high construction [1]	**CAP 16 CP**	21	**MAP 16 CP32**	32				
with pegs and plastic cover, high construction [1]	**CAP 16 CP2**	21 x 2	**MAP 16 CP232**	32 x 2				
with pegs and plastic cover, high construction [1]	**CAP 16 CP29**	29	**MAP 16 CP40**	40				
with pegs and plastic cover, high construction [1]	**CAP 16 CP229**	29 x 2	**MAP 16 CP240**	40 x 2				
with lever and cover					**CHP 16 LS**	21	**MHP 16 LS25**	25
with lever and cover					**CHP 16 LS2**	21 x 2	**MHP 16 LS225**	25 x 2
with lever and cover, high construction					**CAP 16 LS**	21	**MAP 16 LS32**	32
with lever and cover, high construction					**CAP 16 LS2**	21 x 2	**MAP 16 LS232**	32 x 2
with lever and cover, high construction					**CAP 16 LS29**	29	**MAP 16 LS40**	40
with lever and cover, high construction					**CAP 16 LS229**	29 x 2	**MAP 16 LS240**	40 x 2

[1] may be combined with enclosures:
- CHO/CAO 16 X and CHV/CAV 16 X
- MHO/MAO 16 X and MHV/MAV 16 X

N.B.:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.
The cover (CS, CP) only ensures mechanical protection, but does not ensure IP65 protection rating.

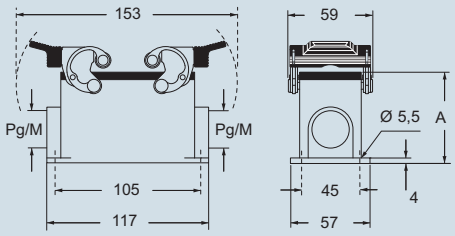
Type 4/4X/12
(except enclosures with plastic cover)

IP66 EN 60529 IEC 60529

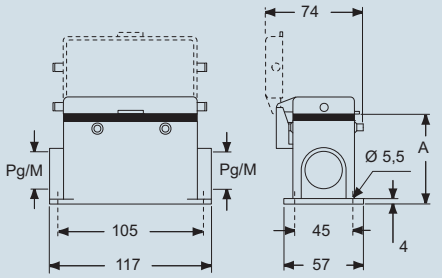
dimensions shown are not binding and may be changed without notice

dimensions in mm

CHP - CAP and **MHP - MAP**



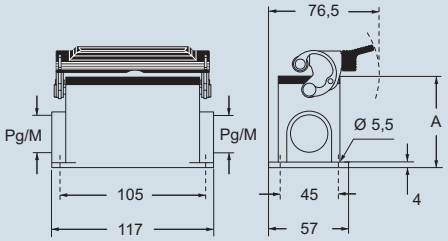
CHP CS/CP - CAP CS/CP and **MHP CS/CP - MAP CS/CP**



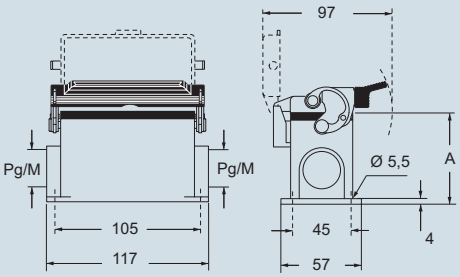
type	A
CHP / MHP	63
CAP / MAP	81
CHP CS / MHP CS	63
CAP CS / MAP CS	81
CHP CP / MHP CP	63
CAP CP / MAP CP	81

dimensions in mm

CHP L - CAP L and **MHP L - MAP L**



CHP LS - CAP LS and **MHP LS - MAP LS**



type	A
CHP L / MHP L	63
CAP L / MAP L	81
CHP LS / MHP LS	63
CAP LS / MAP LS	81

CH - CA and MH - MA enclosures size “77.27” standard version C-TYPE

inserts: page:

CD	40	poles + ⏚	57
CDD	72	poles + ⏚	70
CDS	27	poles + ⏚	80
CSH	16	poles + ⏚	93
CNE, CSE	16	poles + ⏚	106
CCE	16	poles + ⏚	112
CSS	16	poles + ⏚	124
CQE	32	poles + ⏚	140
CQEE	40	poles + ⏚	146
CMCE, CMSH	6+2 (aux)	poles + ⏚	150-151
CP	6	poles + ⏚	162
CX	6/36 and 12/2	poles + ⏚	170-171
CX	4/0 and 4/2	poles + ⏚	172
MIXO	4	modules	179-215

insert centre distance:
77,5 x 27 mm

hoods with 4 pegs

hoods with 2 pegs

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with pegs, side entry	**CHO 16**	21	**MHO 16.25**	25	**CHO 16 L**	21	**MHO 16 L25**	25
with pegs, side entry			**MHO 16.32**	32			**MHO 16 L32**	32
with pegs, side entry, high construction	**CAO 16.21**	21	**MAO 16.32**	32	**CAO 16 L21**	21	**MAO 16 L32**	32
with pegs, side entry, high construction	**CAO 16.29**	29	**MAO 16.40**	40	**CAO 16 L29**	29	**MAO 16 L40**	40
with pegs, top entry	**CHV 16**	21	**MHV 16.25** **	25	**CHV 16 L**	21	**MHV 16 L25**	25
with pegs, top entry			**MHV 16.32**	32			**MHV 16 L32**	32
with pegs, top entry, high construction	**CAV 16.21**	21	**MAV 16.32**	32	**CAV 16 L21**	21	**MAV 16 L32**	32
with pegs, top entry, high construction	**CAV 16.29**	29	**MAV 16.40**	40	**CAV 16 L29**	29	**MAV 16 L40**	40
with pegs, frontal entry, high construction	**CAF 16**	21	**MAF 16.25**	25				
with pegs, frontal entry, high constr., without adaptor *	**CFF 16**	21	**MFF 16.25**	25				

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

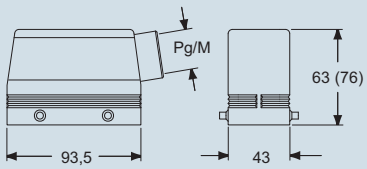
** can only be used with a complete cable gland (to be purchased separately)

dimensions in mm

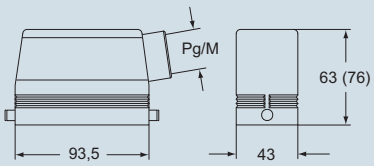
dimensions in mm

alternatively, hoods with pegs are coupled with fixed enclosures:
- C7, IP67 stainless steel lever, page 276
- CV, IP66 stainless steel lever, page 282 and 292

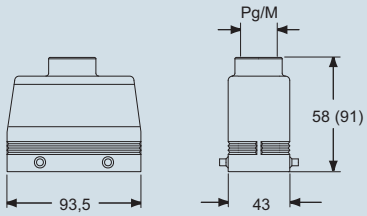
CHO (CAO) and **MHO (MAO)**



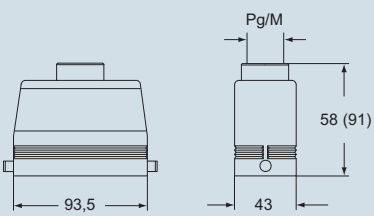
CHO L (CAO L) and **MHO L (MAO L)**



CHV (CAV) and **MHV (MAV)**



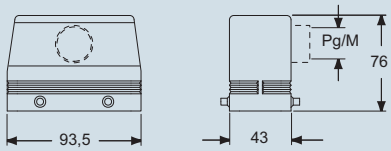
CHV L (CAV L) and **MHV L (MAV L)**



Type 4/4X/12

according to the type of lever

CAF/CFF and **MAF/MFF**



dimensions shown are not binding
and may be changed without notice

inserts: page:

CD ..... 40 poles + ⏚ 57
CDD ..... 72 poles + ⏚ 70
CDS ..... 27 poles + ⏚ 80
CSH ..... 16 poles + ⏚ 93
CNE, CSE ..... 16 poles + ⏚ 106
CCE ..... 16 poles + ⏚ 112
CSS ..... 16 poles + ⏚ 124
CQE ..... 32 poles + ⏚ 140
CQEE ..... 40 poles + ⏚ 146
CMCE, CMSH 6+2 (aux) poles + ⏚ 150-151
CP..... 6 poles + ⏚ 162
CX ..... 6/36 and 12/2 poles + ⏚ 170-171
CX ..... 4/0 and 4/2 poles + ⏚ 172
MIXO ..... 4 modules 179-215

insert centre distance:
77,5 x 27 mm

hoods with double top entry

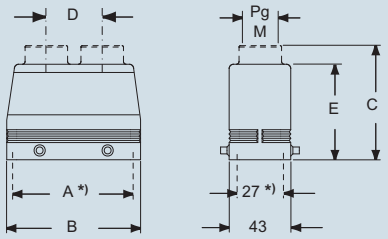
hoods with double front entry

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with pegs for two levers - used with enclosures size “77.27” - used with enclosures size “77.27”	 **CAV 16.216** **CAV 16.221**	 16 x 2 21 x 2	 **MAV 16.220** **MAV 16.225**	 20 x 2 25 x 2				
with pegs for 2 lever, without adaptor * - used with enclosures size “77.27” - used with enclosures size “77.27”	 **CFV 16.216** **CFV 16.221**	 16 x 2 21 x 2	 **MFV 16.220** **MFV 16.225**	 20 x 2 25 x 2				
with pegs for two levers - used with enclosures size “77.27”					**CAF 16.221**	21 x 2	**MAF 16.225**	25 x 2
with pegs for 2 lever, without adaptor * - used with enclosures size “77.27”					**CFF 16.221**	21 x 2	**MFF 16.225**	25 x 2

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

dimensions in mm

CAV/CFV and **MAV/MFV**

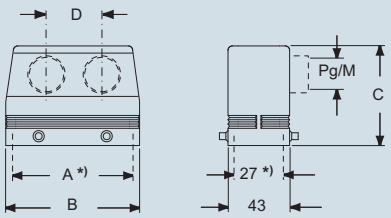


part No.	A *)	B	C	D	E
CAV 16.216/MAV 16.220	77,5	93,5	89 (90,5)	35 (30)	76
CAV 16.221/MAV 16.225	77,5	93,5	90,5	40	76
CFV 16.216/MFV 16.220	77,5	93,5	—	30 (35)	76
CFV 16.221/MFV 16.225	77,5	93,5	—	40	76

*) screw fixing centre distance

dimensions in mm

CAF/CFF and **MAF/MFF**



part No.	A *)	B	C	D
CAF/CFF 16.221 / MAF/MFF 16.225	77,5	93,5	76	40

*) screw fixing centre distance

alternatively, hoods with pegs are coupled with fixed enclosures:
- C7, IP67 stainless steel lever, page 276
- CV, IP66 stainless steel lever, page 282 and 292

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding and may be changed without notice

inserts: page:

CD ..... 40 poles + ⏚ 57
CDD ..... 72 poles + ⏚ 70
CDS ..... 27 poles + ⏚ 80
CSH ..... 16 poles + ⏚ 93
CNE, CSE ..... 16 poles + ⏚ 106
CCE ..... 16 poles + ⏚ 112
CSS ..... 16 poles + ⏚ 124
CQE ..... 32 poles + ⏚ 140
CQEE ..... 40 poles + ⏚ 146
CMCE, CMSH 6+2 (aux) poles + ⏚ 150-151
CP ..... 6 poles + ⏚ 162
CX ..... 6/36 and 12/2 poles + ⏚ 170-171
CX ..... 4/0 and 4/2 poles + ⏚ 172
MIXO ..... 4 modules 179-215

insert centre distance:
77,5 x 27 mm

inclined hoods for 2 levers with side entry

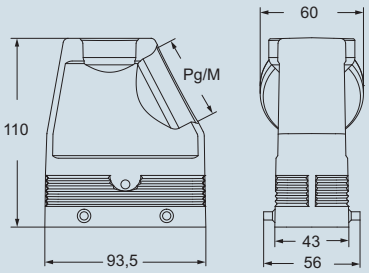
inclined hoods for 2 levers with top entry

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
used with enclosures size “77.27” - with pegs for two levers, side entry - with pegs for two levers, side entry	**CIO 16.36**	36	**MIO 16.40** **MIO 16.50**	40 50				
used with enclosures size “77.27” - with pegs for two levers, top entry					**CIV 16.29**	29	**MIV 16.40**	40

alternatively, hoods with pegs are coupled with fixed enclosures:
- C7, IP67 stainless steel lever, page 276
- CV, IP66 stainless steel lever, page 282 and 292

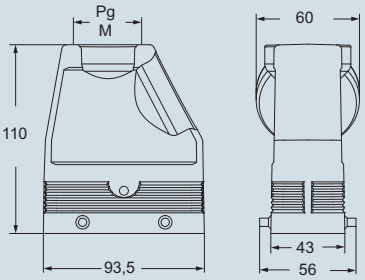
dimensions in mm

CIO and **MIO**



dimensions in mm

CIV and **MIV**



EN 60529 IP66 IP67 IEC 60529 according to the type of lever

dimensions shown are not binding
and may be changed without notice

inserts:		page:
CD	40 poles + ⏚	57
CDD	72 poles + ⏚	70
CDS	27 poles + ⏚	80
CSH	16 poles + ⏚	93
CNE, CSE	16 poles + ⏚	106
CCE	16 poles + ⏚	112
CSS	16 poles + ⏚	124
CQE	32 poles + ⏚	140
CQEE	40 poles + ⏚	146
CMCE, CMSH 6+2 (aux)	poles + ⏚	150-151
CP	6 poles + ⏚	162
CX	6/36 and 12/2 poles + ⏚	170-171
CX	4/0 and 4/2 poles + ⏚	172
MIXO	4 modules	179-215

insert centre distance:
77,5 x 27 mm

hoods with 2 levers

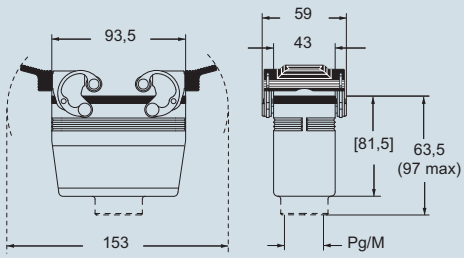
hoods with 1 lever

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with levers and gasket, top entry	**CHV 16 G**	21	**MHV 16 G32**	32	**CHV 16 LG**	21	**MHV 16 LG32**	32
with levers and gasket, top entry, high construction	**CAV 16 G**	21	**MAV 16 G25**	25	**CAV 16 LG21**	21	**MAV 16 LG25**	25
with levers and gasket, top entry, high construction	**CAV 16 G29**	29	**MAV 16 G32**	32	**CAV 16 LG29**	29	**MAV 16 LG32**	32
with levers and gasket, top entry, high construction			**MAV 16 G40**	40			**MAV 16 LG40**	40
with levers and gasket, top entry, high, without adapter *	**CFV 16 G**	21	**MFV 16 G25**	25	**CFV 16 LG21**	21	**MFV 16 LG25**	25
with levers and gasket, top entry, high, without adapter *	**CFV 16 G29**	29	**MFV 16 G32**	32	**CFV 16 LG29**	29	**MFV 16 LG32**	32
with levers and gasket, top entry, high, without adapter *			**MFV 16 G40**	40			**MFV 16 LG40**	40

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

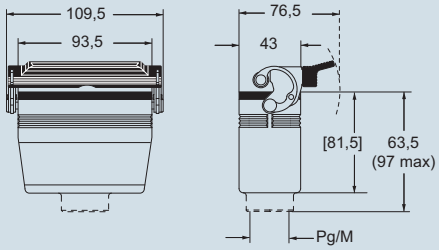
dimensions in mm

CHV G (CAV G) and **[CFV G]**,
MHV G (MAV G) and **[MFV G]**



dimensions in mm

CHV LG (CAV LG) and **[CFV LG]**,
MHV LG (MAV LG) and **[MFV LG]**



Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

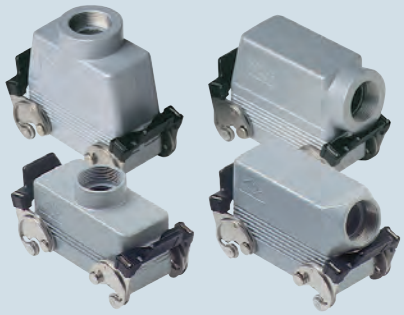
CH - CA and MH - MA enclosures size “77.27” standard version C-TYPE

inserts:

		page:
CD	40 poles + ⏚	57
CDD	72 poles + ⏚	70
CDS	27 poles + ⏚	80
CSH	16 poles + ⏚	93
CNE, CSE	16 poles + ⏚	106
CCE	16 poles + ⏚	112
CSS	16 poles + ⏚	124
CQE	32 poles + ⏚	140
CQEE	40 poles + ⏚	146
CMCE, CMSH 6+2 (aux)	poles + ⏚	150-151
CP	6 poles + ⏚	162
CX	6/36 and 12/2 poles + ⏚	170-171
CX	4/0 and 4/2 poles + ⏚	172
MIXO	4 modules	179-215

insert centre distance:
77,5 x 27 mm

hoods with 2 levers



covers

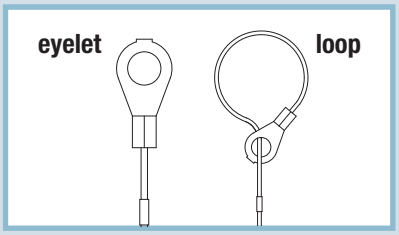
description	part No.	entry Pg	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with levers, side entry [1]	**CHO 16 X**	21	**MHO 16 X25**	25		
with levers, side entry [1]			**MHO 16 X32**	32		
with levers, side entry, high construction [1]	**CAO 16 X**	21	**MAO 16 X32**	32		
with levers, side entry, high construction [1]	**CAO 16 X29**	29	**MAO 16 X40**	40		
with levers, top entry [1]	**CHV 16 X**	21	**MHV 16 X25**	25		
with levers, top entry [1]			**MHV 16 X32**	32		
with levers, top entry, high construction [1]	**CAV 16 X**	21	**MAV 16 X32**	32		
with levers, top entry, high construction [1]	**CAV 16 X29**	29	**MAV 16 X40**	40		
with 4 pegs (for enclosures with 2 levers with gasket)					**CHC 16**	**CHC 16 S**
with 4 pegs and gasket (for enclosures with 2 levers) [2]						**CHC 16 C**
with 2 pegs (for enclosures with 1 lever with gasket)					**CHC 16 L**	**CHC 16 SL**
with 2 levers (for hoods with 4 pegs)						**CHC 16 G**
with 1 lever (for hoods with 2 pegs)						**CHC 16 LG**

[1] may be combined with enclosures:
- CHI/CHP/CAP 16 CS/CP/C
- MHP/MAP 16 CS/CP

[2] may be combined with enclosures:
- CHO/CAO 16 X and CHV/CAV 16 X
- MHO/MAO 16 X and MHV/MAV 16 X

dust protection cover

CHCP 16 page 496



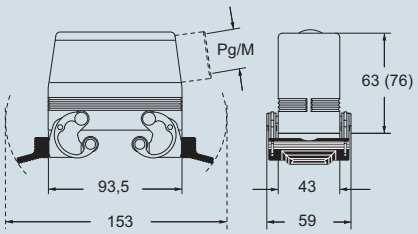
Type 4/4X/12

IP66 EN 60529 IEC 60529

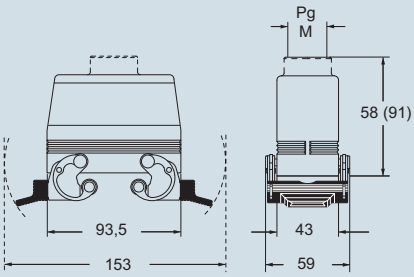
dimensions shown are not binding
and may be changed without notice

dimensions in mm

CHO X (CAO X) and MHO X (MAO X)

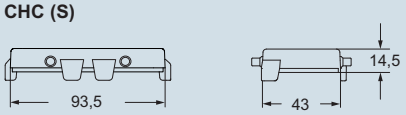


CHV X (CAV X) and MHV X (MAV X)

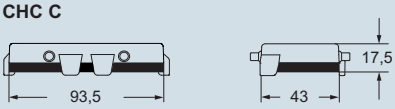


dimensions in mm

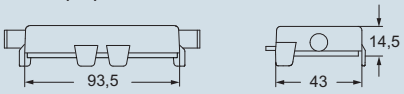
CHC (S)



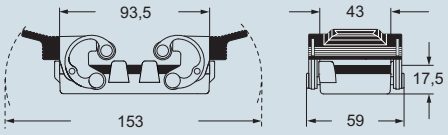
CHC C



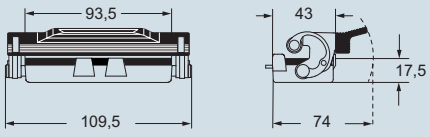
CHC L (SL)



CHC G



CHC LG



inserts: page:

CD ..... 64 poles + ⏚ 59
CT, CTS (10A) ***)** ..... 64 poles + ⏚ 65
CDD ..... 108 poles + ⏚ 72
CDS ..... 42 poles + ⏚ 81
CSH ..... 24 poles + ⏚ 94
CNE, CSE ..... 24 poles + ⏚ 107
CCE ..... 24 poles + ⏚ 113
CSS ..... 24 poles + ⏚ 125
CT, CTSE (16A) ***)** 24 poles + ⏚ 133
CQE ..... 46 poles + ⏚ 141
CQEE ..... 64 poles + ⏚ 147
CMCE ..... 10+2 (aux) poles + ⏚ 152
CMSH ..... 10+2 (aux) poles + ⏚ 153
CX ..... 4/8 and 6/6 poles + ⏚ 173 and 175
MIXO ..... 6 modules 179-215

***)** can be used only in bulkhead mounting housings

insert centre distance: **104 x 27 mm**

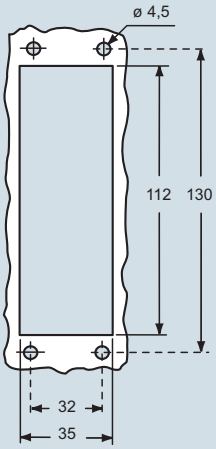
bulkhead mounting housings with 2 levers or 4 pegs

bulkhead mounting housings with single lever

description	part No.	part No.
with one or two levers	**CHI 24**	**CHI 24 L**
with pegs [1]	**CHI 24 C**	
with pegs and aluminum cover [1]	**CHI 24 CS**	
with pegs and plastic cover [1]	**CHI 24 CP**	
with lever and cover		**CHI 24 LS**

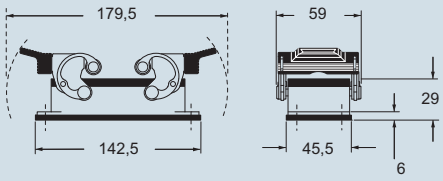
[1] may be combined with enclosures:
- CHO/CAO 24 X and CHV/CAV 24 X
- MHO/MAO 24 X and MHV/MAV 24 X

panel cut-out for bulkhead mounting housings in mm

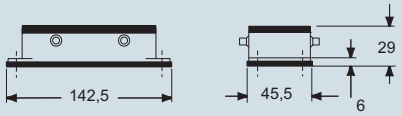


dimensions in mm

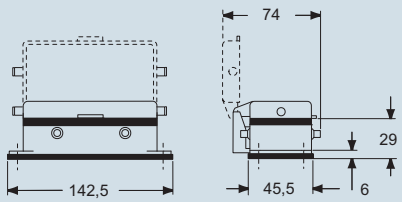
CHI



CHI C

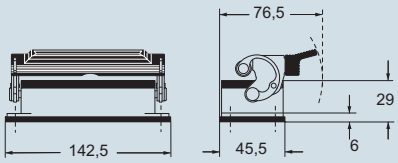


CHI CS/CP

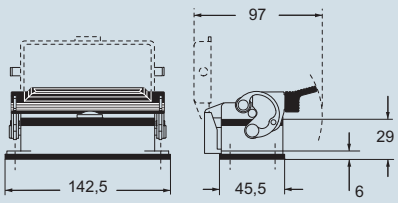


dimensions in mm

CHI L



CHI LS



N.B.:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.
The cover (CS, CP) only ensures mechanical protection, but does not ensure IP65 protection rating.

c UL us Type 4/4X/12
(except enclosures with plastic cover)

EN 60529 IP66 IEC 60529

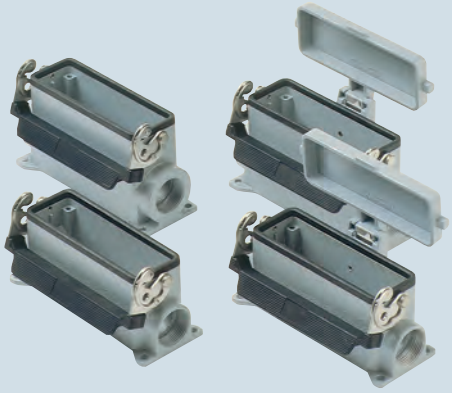
dimensions shown are not binding
and may be changed without notice

inserts:		page:
CD 64	poles + ⏚	59
CDD 108	poles + ⏚	72
CDS 42	poles + ⏚	81
CSH 24	poles + ⏚	94
CNE, CSE 24	poles + ⏚	107
CCE 24	poles + ⏚	113
CSS 24	poles + ⏚	125
CQE 46	poles + ⏚	141
CQEE 64	poles + ⏚	147
CMCE ..... 10+2 (aux)	poles + ⏚	152
CMSH ..... 10+2 (aux)	poles + ⏚	153
CX ..... 4/8 and 6/6	poles + ⏚	173 and 175
MIXO 6	modules	179-215

insert centre distance:
104 x 27 mm

surface mounting housings with 2 levers or 4 pegs

surface mounting housings with single lever

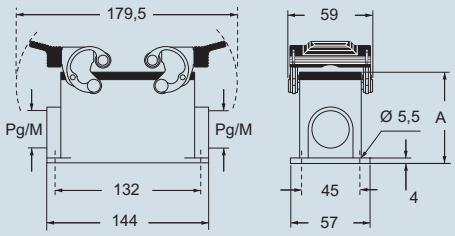


description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with levers	**CHP 24**	21	**MHP 24.25**	25	**CHP 24 L**	21	**MHP 24 L25**	25
with levers	**CHP 24.2**	21 x 2	**MHP 24.225**	25 x 2	**CHP 24 L2**	21 x 2	**MHP 24 L225**	25 x 2
with levers, high construction	**CAP 24.21**	21	**MAP 24.32**	32	**CAP 24 L**	21	**MAP 24 L32**	32
with levers, high construction	**CAP 24.221**	21 x 2	**MAP 24.232**	32 x 2	**CAP 24 L2**	21 x 2	**MAP 24 L232**	32 x 2
with levers, high construction	**CAP 24.29**	29	**MAP 24.40**	40	**CAP 24 L29**	29	**MAP 24 L40**	40
with levers, high construction	**CAP 24.229**	29 x 2	**MAP 24.240**	40 x 2	**CAP 24 L229**	29 x 2	**MAP 24 L240**	40 x 2
with pegs and aluminum cover [1]	**CHP 24 CS**	21	**MHP 24 CS25**	25				
with pegs and aluminum cover [1]	**CHP 24 CS2**	21 x 2	**MHP 24 CS225**	25 x 2				
with pegs and aluminum cover, high construction [1]	**CAP 24 CS**	21	**MAP 24 CS32**	32				
with pegs and aluminum cover, high construction [1]	**CAP 24 CS2**	21 x 2	**MAP 24 CS232**	32 x 2				
with pegs and aluminum cover, high construction [1]	**CAP 24 CS29**	29	**MAP 24 CS40**	40				
with pegs and aluminum cover, high construction [1]	**CAP 24 CS229**	29 x 2	**MAP 24 CS240**	40 x 2				
with pegs and plastic cover [1]	**CHP 24 CP**	21	**MHP 24 CP25**	25				
with pegs and plastic cover [1]	**CHP 24 CP2**	21 x 2	**MHP 24 CP225**	25 x 2				
with pegs and plastic cover, high construction [1]	**CAP 24 CP**	21	**MAP 24 CP32**	32				
with pegs and plastic cover, high construction [1]	**CAP 24 CP2**	21 x 2	**MAP 24 CP232**	32 x 2				
with pegs and plastic cover, high construction [1]	**CAP 24 CP29**	29	**MAP 24 CP40**	40				
with pegs and plastic cover, high construction [1]	**CAP 24 CP229**	29 x 2	**MAP 24 CP240**	40 x 2				
with lever and cover					**CHP 24 LS**	21	**MHP 24 LS25**	25
with lever and cover					**CHP 24 LS2**	21 x 2	**MHP 24 LS225**	25 x 2
with lever and cover, high construction					**CAP 24 LS**	21	**MAP 24 LS32**	32
with lever and cover, high construction					**CAP 24 LS2**	21 x 2	**MAP 24 LS232**	32 x 2
with lever and cover, high construction					**CAP 24 LS29**	29	**MAP 24 LS40**	40
with lever and cover, high construction					**CAP 24 LS229**	29 x 2	**MAP 24 LS240**	40 x 2

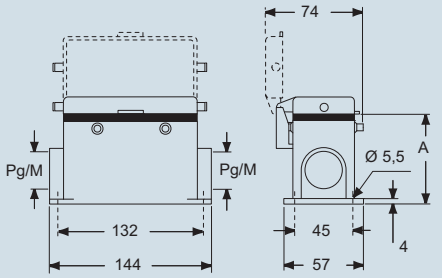
[1] may be combined with enclosures:
- CHO/CAO 24 X and CHV/CAV 24 X
- MHO/MAO 24 X and MHV/MAV 24 X

dimensions in mm

CHP - CAP and **MHP - MAP**



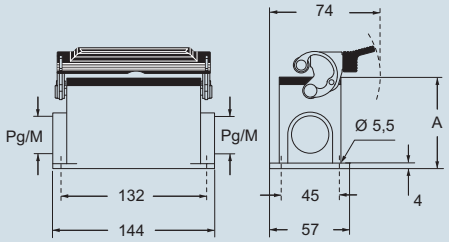
CHP CS/CP - CAP CS/CP and **MHP CS/CP - MAP CS/CP**



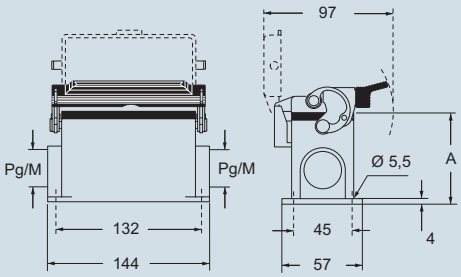
type	A
CHP / MHP	63
CAP / MAP	81
CHP CS / MHP CS	63
CAP CS / MAP CS	81
CHP CP / MHP CP	63
CAP CP / MAP CP	81

dimensions in mm

CHP L - CAP L and **MHP L - MAP L**



CHP LS - CAP LS and **MHP LS - MAP LS**



type	A
CHP L / MHP L	63
CAP L / MAP L	81
CHP LS / MHP LS	63
CAP LS / MAP LS	81

N.B.:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.
The cover (CS, CP) only ensures mechanical protection, but does not ensure IP65 protection rating.

c UL us Type 4/4X/12
(except enclosures with plastic cover)

EN 60529 IP66 IEC 60529

dimensions shown are not binding and may be changed without notice

CH - CA and MH - MA enclosures size “104.27” standard version C-TYPE

inserts:			page:
CD	64	poles + ⏚	59
CDD	108	poles + ⏚	72
CDS	42	poles + ⏚	81
CSH	24	poles + ⏚	94
CNE, CSE	24	poles + ⏚	107
CCE	24	poles + ⏚	113
CSS	24	poles + ⏚	125
CQE	46	poles + ⏚	141
CQEE	64	poles + ⏚	147
CMCE	10+2 (aux)	poles + ⏚	152
CMSH	10+2 (aux)	poles + ⏚	153
CX	4/8 and 6/6	poles + ⏚	173 and 175
MIXO	6	modules	179-215

insert centre distance:
104 x 27 mm

hoods with 4 pegs

hoods with 2 pegs

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with pegs, side entry	**CHO 24**	21	**MHO 24.25**	25	**CHO 24 L**	21	**MHO 24 L25**	25
with pegs, side entry			**MHO 24.32**	32			**MHO 24 L32**	32
with pegs, side entry, high construction	**CAO 24.21**	21	**MAO 24.32**	32	**CAO 24 L21**	21	**MAO 24 L32**	32
with pegs, side entry, high construction	**CAO 24.29**	29	**MAO 24.40**	40	**CAO 24 L29**	29	**MAO 24 L40**	40
with pegs, top entry	**CHV 24**	21	**MHV 24.25** **	25	**CHV 24 L**	21	**MHV 24 L25**	25
with pegs, top entry			**MHV 24.32**	32			**MHV 24 L32**	32
with pegs, top entry	**CHV 24.29**	29	**MHV 24.40**	40	**CHV 24 L29**	29	**MHV 24 L40**	40
with pegs, top entry, high construction	**CAV 24.21**	21	**MAV 24.32**	32	**CAV 24 L21**	21	**MAV 24 L32**	32
with pegs, top entry, high construction	**CAV 24.29**	29	**MAV 24.40**	40	**CAV 24 L29**	29	**MAV 24 L40**	40
with pegs, frontal entry, high construction	**CAF 24.21**	21	**MAF 24.25**	25				
with pegs, frontal entry, high construction	**CAF 24.29**	29	**MAF 24.32**	32				
with pegs, frontal entry, high constr., without adaptor *	**CFF 24.21**	21	**MFF 24.25**	25				
with pegs, frontal entry, high constr., without adaptor *	**CFF 24.29**	29	**MFF 24.32**	32				

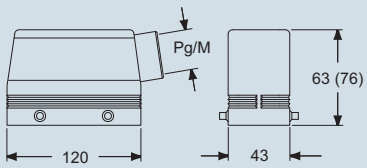
* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

** can only be used with a complete cable gland (to be purchased separately)

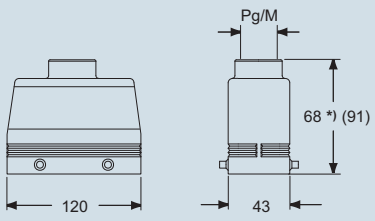
alternatively, hoods with pegs are coupled with fixed enclosures:
- C7, IP67 stainless steel lever, page 277
- CV, IP66 stainless steel lever, page 283 and 296

dimensions in mm

CHO (CAO) and **MHO (MAO)**

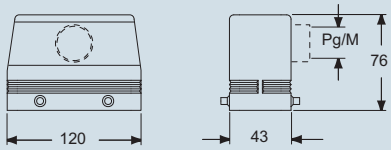


CHV (CAV) and **MHV (MAV)**



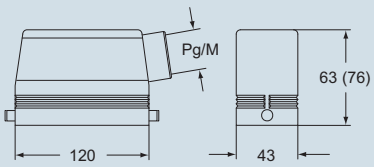
*) 69,5 for Pg 29 - M 40 versions

CAF/CFF and **MAF/MFF**

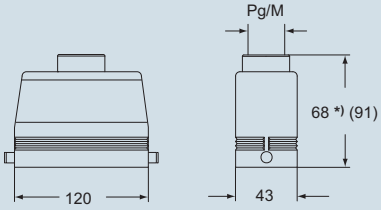


dimensions in mm

CHO L (CAO L) and **MHO L (MAO L)**



CHV L (CAV L) and **MHV L (MAV L)**



*) 69,5 for Pg 29 - M 40 versions

Type 4/4X/12

IP66 IP67 according to the type of lever

dimensions shown are not binding and may be changed without notice

inserts:		page:
CD	64 poles + ⏚	59
CDD	108 poles + ⏚	72
CDS	42 poles + ⏚	81
CSH	24 poles + ⏚	94
CNE, CSE	24 poles + ⏚	107
CCE	24 poles + ⏚	113
CSS	24 poles + ⏚	125
CQE	46 poles + ⏚	141
CQEE	64 poles + ⏚	147
CMCE	10+2 (aux) poles + ⏚	152
CMSH	10+2 (aux) poles + ⏚	153
CX	4/8 and 6/6 poles + ⏚	173 and 175
MIXO	6 modules	179-215

insert centre distance:
104 x 27 mm

hoods with double top entry and 4 pegs

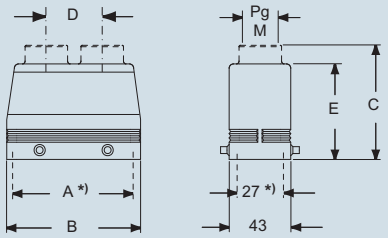
hoods with double front entry and 4 pegs

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with pegs for two levers - used with enclosures size “104.27” - used with enclosures size “104.27”	**CAV 24.221** **CAV 24.229**	21 x 2 29 x 2	**MAV 24.232**	32 x 2				
with pegs for 2 lever, without adaptor * - used with enclosures size “104.27”	**CFV 24.221**	21 x 2	**MFV 24.232**	32 x 2				
with pegs for two levers - used with enclosures size “104.27”					**CAF 24.221**	21 x 2	**MAF 24.225**	25 x 2
with pegs for 2 lever, without adaptor * - used with enclosures size “104.27”					**CFF 24.221**	21 x 2	**MFF 24.225**	25 x 2

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

dimensions in mm

CAV/CFV and **MAV/MFV**

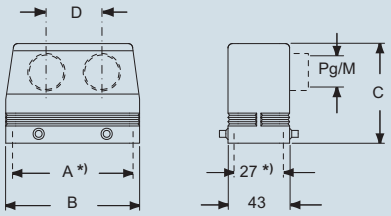


part No.	A *)	B	C	D	E
CAV 24.221/MAV 24.232	104	120	90.5 (91)	50	76
CAV 24.229	104	120	90.5	50	76
CFV 24.221/MFV 24.232	104	120	—	50	76

*) screw fixing centre distance

dimensions in mm

CAF/CFF and **MAF/MFF**



part No.	A *)	B	C	D
CAF/CFF 24.221 / MAF/MFF 24.225	104	120	76	50

*) screw fixing centre distance

alternatively, hoods with pegs are coupled with fixed enclosures:
- C7, IP67 stainless steel lever, page 277
- CV, IP66 stainless steel lever, page 283 and 296

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding and may be changed without notice

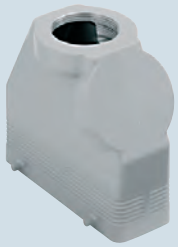
inserts: page:

CD ..... 64 poles + ⏚ 59
CDD ..... 108 poles + ⏚ 72
CDS ..... 42 poles + ⏚ 81
CSH ..... 24 poles + ⏚ 94
CNE, CSE ..... 24 poles + ⏚ 107
CCE ..... 24 poles + ⏚ 113
CSS ..... 24 poles + ⏚ 125
CQE ..... 46 poles + ⏚ 141
CQEE ..... 64 poles + ⏚ 147
CMCE ..... 10+2 (aux) poles + ⏚ 152
CMSH ..... 10+2 (aux) poles + ⏚ 153
CX ..... 4/8 and 6/6 poles + ⏚ 173 and 175
MIXO ..... 6 modules 179-215

insert centre distance:
104 x 27 mm

inclined hoods for 2 levers with side entry

inclined hoods for 2 levers with top entry

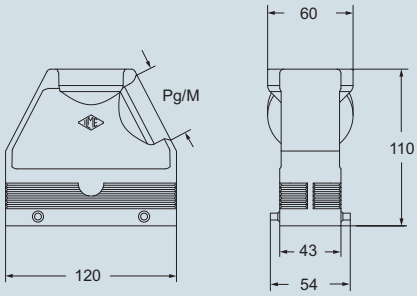


description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
used with enclosures size “104.27” - with pegs for two levers, side entry - with pegs for two levers, side entry	**CIO 24.36**	36	**MIO 24.40** **MIO 24.50**	40 50				
used with enclosures size “104.27” - with pegs for two levers, top entry - with pegs for two levers, top entry					**CIV 24.36**	36	**MIV 24.40** **MIV 24.50**	40 50

alternatively, hoods with pegs are coupled with fixed enclosures:
- C7, IP67 stainless steel lever, page 277
- CV, IP66 stainless steel lever, page 283 and 296

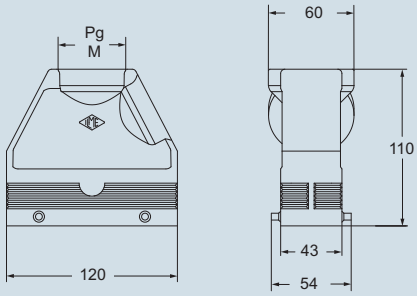
dimensions in mm

CIO and **MIO**



dimensions in mm

CIV and **MIV**



Type 4/4X/12

IP66 IP67 according to the type of lever

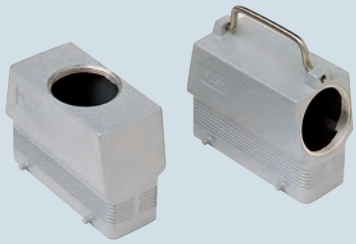
dimensions shown are not binding
and may be changed without notice

inserts: page:

CD	64	poles + ⏚	59
CDD	108	poles + ⏚	72
CDS	42	poles + ⏚	81
CSH	24	poles + ⏚	94
CNE, CSE	24	poles + ⏚	107
CCE	24	poles + ⏚	113
CSS	24	poles + ⏚	125
CQE	46	poles + ⏚	141
CQEE	64	poles + ⏚	147
CMCE	10+2 (aux)	poles + ⏚	152
CMSH	10+2 (aux)	poles + ⏚	153
CX	4/8 and 6/6	poles + ⏚	173 and 175
MIXO	6	modules	179-215

insert centre distance:
104 x 27 mm

enlarged hoods,
side or top entry with 4 pegs

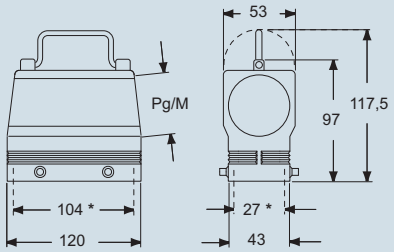


description	part No.	entry Pg	part No.	entry M
used with enclosures size “104.27”				
- with pegs for two levers, side entry	**CQO 24**	36	**MQO 24.40**	40
- with pegs for two levers, top entry	**CQV 24**	36	**MQV 24.40**	40

alternatively, hoods with pegs are coupled with fixed enclosures:
- C7, IP67 stainless steel lever, page 277
- CV, IP66 stainless steel lever, page 283 and 296

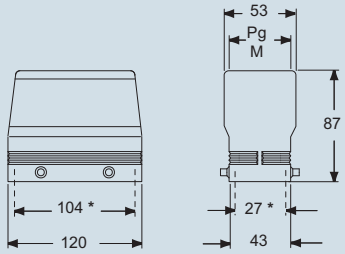
dimensions in mm

CQO and **MQO**



* screw fixing centre distance

CQV and **MQV**



*) screw fixing centre distance

Type 4/4X/12

IP66 IP67 according to the type of lever

dimensions shown are not binding
and may be changed without notice

CH - CA and **MH - MA** enclosures size “104.27” standard version **C-TYPE**

inserts: page:

CD ..... 64 poles + ⏚ 59
CDD ..... 108 poles + ⏚ 72
CDS ..... 42 poles + ⏚ 81
CSH ..... 24 poles + ⏚ 94
CNE, CSE ..... 24 poles + ⏚ 107
CCE ..... 24 poles + ⏚ 113
CSS ..... 24 poles + ⏚ 125
CQE ..... 46 poles + ⏚ 141
CQEE ..... 64 poles + ⏚ 147
CMCE ..... 10+2 (aux) poles + ⏚ 152
CMSH ..... 10+2 (aux) poles + ⏚ 153
CX ..... 4/8 and 6/6 poles + ⏚ 173 and 175
MIXO ..... 6 modules 179-215

insert centre distance:
104 x 27 mm

hoods with 2 levers

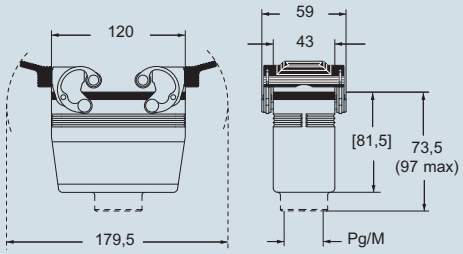
hoods with 1 lever

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with levers and gasket, top entry	**CHV 24 G**	21	**MHV 24 G32**	32	**CHV 24 LG**	21	**MHV 24 LG32**	32
with levers and gasket, top entry, high construction	**CAV 24 G**	21	**MAV 24 G25**	25	**CAV 24 LG21**	21	**MAV 24 LG25**	25
with levers and gasket, top entry, high construction	**CAV 24 G29**	29	**MAV 24 G32**	32	**CAV 24 LG29**	29	**MAV 24 LG32**	32
with levers and gasket, top entry, high construction			**MAV 24 G40**	40			**MAV 24 LG40**	40
with levers and gasket, top entry, high, without adaptor *	**CFV 24 G**	21	**MFV 24 G25**	25	**CFV 24 LG21**	21	**MFV 24 LG25**	25
with levers and gasket, top entry, high, without adaptor *	**CFV 24 G29**	29	**MFV 24 G32**	32	**CFV 24 LG29**	29	**MFV 24 LG32**	32
with levers and gasket, top entry, high, without adaptor *			**MFV 24 G40**	40			**MFV 24 LG40**	40

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

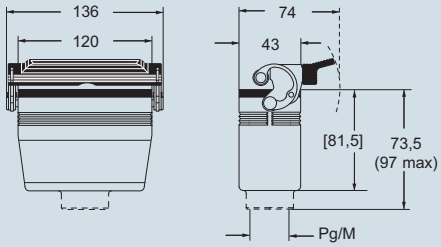
dimensions in mm

CHV G (CAV G) and **[CFV G]**,
MHV G (MAV G) and **[MFV G]**



dimensions in mm

CHV LG (CAV LG) and **[CFV LG]**,
MHV LG (MAV LG) and **[MFV LG]**



Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD	64	poles + ⏚	59
CDD	108	poles + ⏚	72
CDS	42	poles + ⏚	81
CSH	24	poles + ⏚	94
CNE, CSE	24	poles + ⏚	107
CCE	24	poles + ⏚	113
CSS	24	poles + ⏚	125
CQE	46	poles + ⏚	141
CQEE	64	poles + ⏚	147
CMCE	10+2 (aux)	poles + ⏚	152
CMSH	10+2 (aux)	poles + ⏚	153
CX	4/8 and 6/6	poles + ⏚	173 and 175
MIXO	6	modules	179-215

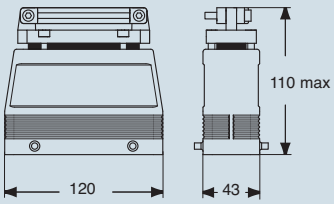
insert centre distance:
104 x 27 mm

hoods for ribbon cable with 4 pegs

gaskets for ribbon cable hood

description	part No.	part No.
with pegs, top entry	**CAN 24**	
ribbon cable seals (supplied separately) - one slot for cable sizes 18,8 x 5,8 mm - one slot for cable sizes 63,8 x 5,1 mm - one slot for cable sizes 36 x 9 mm - not pre-drilled		**CRN 1** **CRN 2** **CRN 3** **CRN P**

dimensions in mm



Type 4/4X/12

dimensions shown are not binding
and may be changed without notice

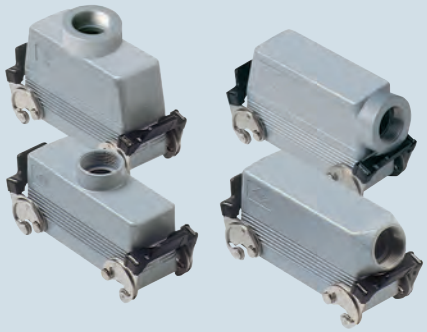
CH - CA and **MH - MA** enclosures size “104.27” standard version **C-TYPE**

inserts: page:

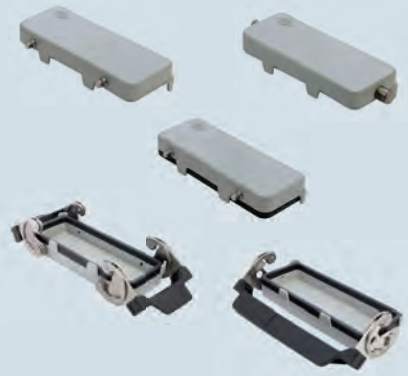
CD ..... 64 poles + ⏚ 59
CDD ..... 108 poles + ⏚ 72
CDS ..... 42 poles + ⏚ 81
CSH ..... 24 poles + ⏚ 94
CNE, CSE ..... 24 poles + ⏚ 107
CCE ..... 24 poles + ⏚ 113
CSS ..... 24 poles + ⏚ 125
CQE ..... 46 poles + ⏚ 141
CQEE ..... 64 poles + ⏚ 147
CMCE ..... 10+2 (aux) poles + ⏚ 152
CMSH ..... 10+2 (aux) poles + ⏚ 153
CX ..... 4/8 and 6/6 poles + ⏚ 173 and 175
MIXO ..... 6 modules 179-215

insert centre distance:
104 x 27 mm

hoods with 2 levers



covers



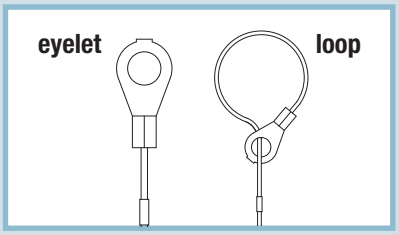
description	part No.	entry Pg	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with levers, side entry [1]	**CHO 24 X**	21	**MHO 24 X25**	25		
with levers, side entry [1]			**MHO 24 X32**	32		
with levers, side entry, high construction [1]	**CAO 24 X**	21	**MAO 24 X32**	32		
with levers, side entry, high construction [1]	**CAO 24 X29**	29	**MAO 24 X40**	40		
with levers, top entry [1]	**CHV 24 X**	21	**MHV 24 X25**	25		
with levers, top entry [1]			**MHV 24 X32**	32		
with levers, top entry, high construction [1]	**CAV 24 X**	21	**MAV 24 X32**	32		
with levers, top entry, high construction [1]	**CAV 24 X29**	29	**MAV 24 X40**	40		
with 4 pegs (for enclosures with 2 levers with gasket)					**CHC 24**	**CHC 24 S**
with 4 pegs and gasket (for enclosures with 2 levers) [2]						**CHC 24 C**
with 2 pegs (for enclosures with 1 lever with gasket)					**CHC 24 L**	**CHC 24 SL**
with 2 levers (for hoods with 4 pegs)						**CHC 24 G**
with 1 lever (for hoods with 2 pegs)						**CHC 24 LG**

[1] may be combined with enclosures:
- CHI/CHP/CAP 24 CS/CP/C
- MHP/MAP 24 CS/CP

[2] may be combined with enclosures:
- CHO/CAO 24 X and CHV/CAV 24 X
- MHO/MAO 24 X and MHV/MAV 24 X

dust protection cover

CHCP 24 page 496



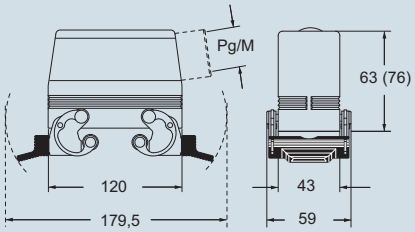
Type 4/4X/12

IP66 EN 60529 IEC 60529

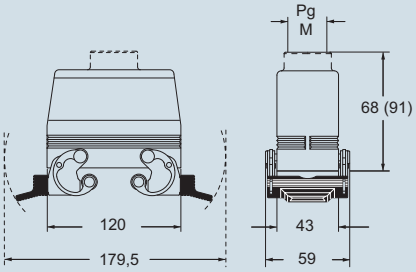
dimensions shown are not binding
and may be changed without notice

dimensions in mm

CHO X (CAO X) and **MHO X (MAO X)**

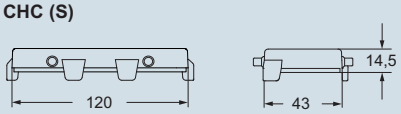


CHV X (CAV X) and **MHV X (MAV X)**

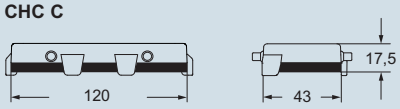


dimensions in mm

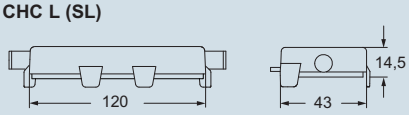
CHC (S)



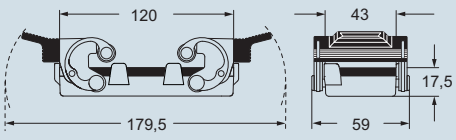
CHC C



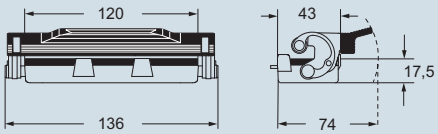
CHC L (SL)



CHC G



CHC LG



inserts: page:

CD	80	poles + ⏚	60
CDD	144	poles + ⏚	73
CDS	54	poles + ⏚	82
CSH	32	poles + ⏚	95
CNE, CSE	32	poles + ⏚	108
CCE	32	poles + ⏚	114
CSS	32	poles + ⏚	126
CTSE (16A) ***)**	32	poles + ⏚	134
CQE	64	poles + ⏚	142
CMCE	12+4 (aux)	poles + ⏚	154
CME	12+4 (aux)	poles + ⏚	155
CMSH	12+4 (aux)	poles + ⏚	155
CP	12	poles + ⏚	163
MIXO	4 + 4	modules	179-215

***)** can be used only in bulkhead mounting housings

insert centre distance:
2 x (77,5 x 27) mm

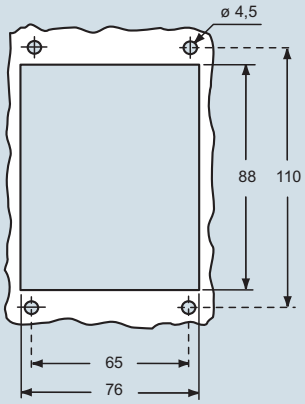
bulkhead mounting housings with 2 levers or 4 pegs

bulkhead mounting housings with single lever

description	part No.	part No.
with one or two levers	**CHI 32**	**CHI 32 L**
with pegs and cover [1)]	**CHI 32 CS**	
with lever and cover		**CHI 32 LS**

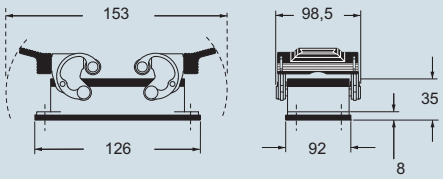
[1)] may be combined with enclosures:
- CHO/CHV/CFO/CFV 32 X
- MHO/MHV/MFO/MFV 32 X

panel cut-out for bulkhead mounting housings in mm

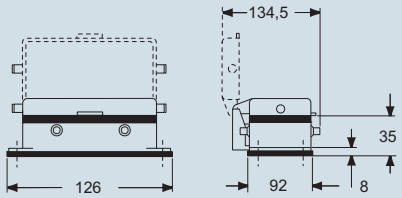


dimensions in mm

CHI

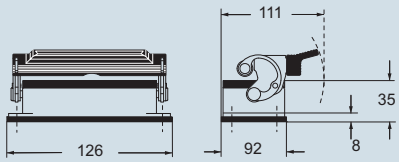


CHI CS

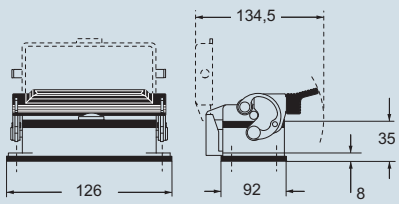


dimensions in mm

CHI L



CHI LS



N.B.:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.
The cover (CS) only ensures mechanical protection, but does not ensure IP65 protection rating.

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
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inserts: page:

CD ..... 80 poles + ⏚ 60
CDD ..... 144 poles + ⏚ 73
CDS ..... 54 poles + ⏚ 82
CSH ..... 32 poles + ⏚ 95
CNE, CSE ..... 32 poles + ⏚ 108
CCE ..... 32 poles + ⏚ 114
CSS ..... 32 poles + ⏚ 126
CQE ..... 64 poles + ⏚ 142
CMCE ..... 12+4 (aux) poles + ⏚ 154
CME ..... 12+4 (aux) poles + ⏚ 155
CMSH ..... 12+4 (aux) poles + ⏚ 155
CP..... 12 poles + ⏚ 163
MIXO ..... 4 + 4 modules 179-215

insert centre distance:
2 x (77,5 x 27) mm

surface mounting housing with 2 levers

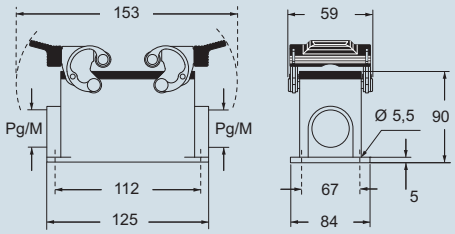
surface mounting housings with single lever

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with one or two levers	**CHP 32.29**	29	**MHP 32.40**	40	**CHP 32 L29**	29	**MHP 32 L40**	40
with one or two levers	**CHP 32.229**	29 x 2	**MHP 32.240**	40 x 2	**CHP 32 L229**	29 x 2	**MHP 32 L240**	40 x 2
with one or two levers	**CHP 32**	36	**MHP 32.50**	50	**CHP 32 L**	36	**MHP 32 L50**	50
with one or two levers	**CHP 32.2**	36 x 2	**MHP 32.250**	50 x 2	**CHP 32 L2**	36 x 2	**MHP 32 LS250**	50 x 2
with one or two levers	**CHP 32.42**	42			**CHP 32 L42**	42		
with one or two levers	**CHP 32.242**	42 x 2			**CHP 32 L242**	42 x 2		
with lever and cover					**CHP 32 LS29**	29	**MHP 32 LS40**	40
with lever and cover					**CHP 32 LS229**	29 x 2	**MHP 32 LS240**	40 x 2
with lever and cover					**CHP 32 LS**	36	**MHP 32 LS50**	50
with lever and cover					**CHP 32 LS2**	36 x 2	**MHP 32 LS250**	50 x 2
with lever and cover					**CHP 32 LS42**	42		
with lever and cover					**CHP 32 LS242**	42 x 2		

N.B.:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.
The cover (CS) only ensures mechanical protection, but does not ensure IP65 protection rating.

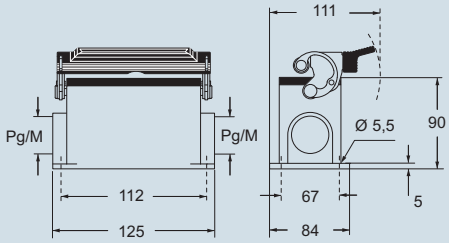
dimensions in mm

CHP and **MHP**

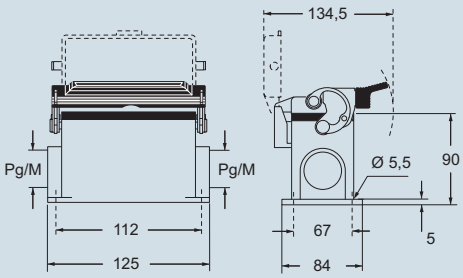


dimensions in mm

CHP L and **MHP L**



CHP LS and **MHP LS**



Type 4/4X/12

EN 60529 IP66 IEC 60529

dimensions shown are not binding
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inserts:			page:
CD	80	poles + ⏚	60
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CCE	32	poles + ⏚	114
CSS	32	poles + ⏚	126
CQE	64	poles + ⏚	142
CMCE	12+4 (aux)	poles + ⏚	154
CME	12+4 (aux)	poles + ⏚	155
CMSH	12+4 (aux)	poles + ⏚	155
CP	12	poles + ⏚	163
MIXO	4 + 4	modules	179-215

insert centre distance:
2 x (77,5 x 27) mm

hoods with 4 pegs and 2 levers

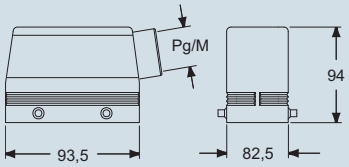
hoods with 2 pegs and 1 lever

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with pegs, side entry with pegs, side entry with pegs, side entry	**CHO 32.29** **CHO 32** **CHO 32.42**	29 36 42	**MHO 32.32** **MHO 32.40** **MHO 32.50**	32 40 50	**CHO 32 L**	36	**MHO 32 L40**	40
with pegs, side entry, without adaptor * with pegs, side entry, without adaptor * with pegs, side entry, without adaptor *	**CFO 32.29** **CFO 32** **CFO 32.42**	29 36 42	**MFO 32.32** **MFO 32.40** **MFO 32.50**	32 40 50	**CFO 32 L**	36	**MFO 32 L40**	40
with pegs, top entry with pegs, top entry with pegs, top entry	**CHV 32.29** **CHV 32** **CHV 32.42**	29 36 42	**MHV 32.32** **MHV 32.40** **MHV 32.50**	32 40 50	**CHV 32 L**	36	**MHV 32 L40**	40
with pegs, top entry, without adaptor * with pegs, top entry, without adaptor * with pegs, top entry, without adaptor *	**CFV 32.29** **CFV 32** **CFV 32.42**	29 36 42	**MFV 32.32** **MFV 32.40** **MFV 32.50**	32 40 50	**CFV 32 L**	36	**MFV 32 L40**	40
with levers and gasket, top entry with one or two levers and gasket, top entry with levers and gasket, top entry	**CHV 32 G29** **CHV 32 G** **CHV 32 G42**	29 36 42	**MHV 32 G32** **MHV 32 G40** **MHV 32 G50**	32 40 50	**CHV 32 LG**	36	**MHV 32 LG40**	40
with levers and gasket, top entry, without adaptor * with lever/s and gasket, top entry, without adaptor * with levers and gasket, top entry, without adaptor *	**CFV 32 G29** **CFV 32 G** **CFV 32 G42**	29 36 42	**MFV 32 G32** **MFV 32 G40** **MFV 32 G50**	32 40 50	**CFV 32 LG**	36	**MFV 32 LG40**	40

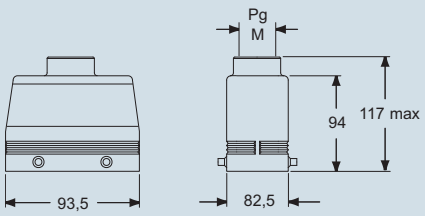
* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

dimensions in mm

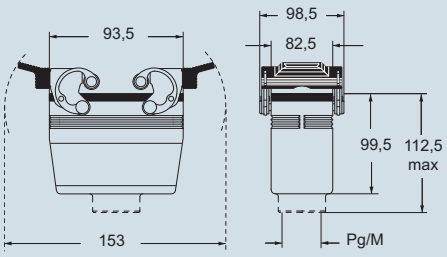
CHO/CFO and **MHO/MFO**



CHV/CFV and **MHV/MFV**

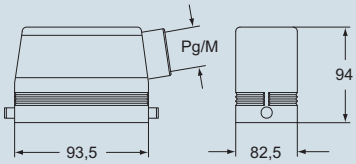


CHV/CFV G and **MHV/MFV G**

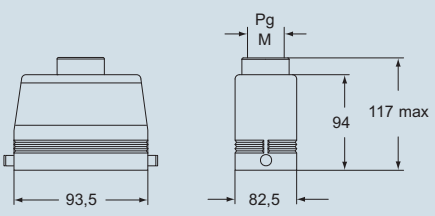


dimensions in mm

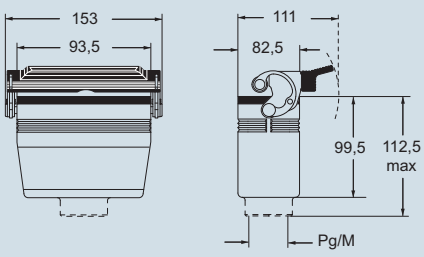
CHO/CFO L and **MHO/MFO L**



CHV/CFV L and **MHV/MFV L**



CHV/CFV LG and **MHV/MFV LG**



Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding and may be changed without notice

inserts:

		page:
CD 80	poles + ⏚	60
CDD 144	poles + ⏚	73
CDS 54	poles + ⏚	82
CSH 32	poles + ⏚	95
CNE, CSE 32	poles + ⏚	108
CCE 32	poles + ⏚	114
CSS 32	poles + ⏚	126
CQE 64	poles + ⏚	142
CMCE ..... 12+4 (aux)	poles + ⏚	154
CME ..... 12+4 (aux)	poles + ⏚	155
CMSH ..... 12+4 (aux)	poles + ⏚	155
CP..... 12	poles + ⏚	163
MIXO ..... 4 + 4	modules	179-215

insert centre distance:
2 x (77,5 x 27) mm

hoods with 2 levers

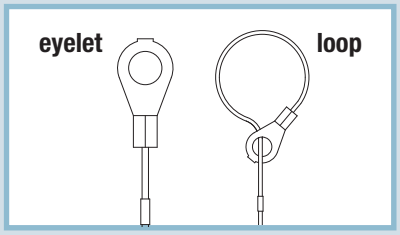
covers

description	part No.	entry Pg	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with levers, side entry [1]	**CHO 32 X**	36	**MHO 32 X40**	40		
with levers, side entry, without adaptor * [1]	**CFO 32 X**	36	**MFO 32 X40**	40		
with levers, top entry [1]	**CHV 32 X**	36	**MHV 32 X40**	40		
with levers, top entry, without adaptor * [1]	**CFV 32 X**	36	**MFV 32 X40**	40		
with 4 pegs (for enclosures with 2 levers with gasket) with 4 pegs and gasket (for enclosures with 2 levers) [2] with 2 pegs (for enclosures with 1 lever with gasket)					**CHC 32** **CHC 32 L**	**CHC 32 S** **CHC 32 C** **CHC 32 SL**
with 2 levers (for hoods with 4 pegs) with 1 lever (for hoods with 2 pegs)						**CHC 32 G** **CHC 32 LG**

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland

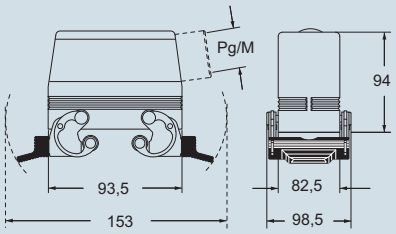
[1] may be combined with CHI 32 CS enclosures

[2] may be combined with enclosures:
- CHO/CFO 32 X and CHV/CFV 32 X
- MHO/MFO 32 X and MHV/MFV 32 X

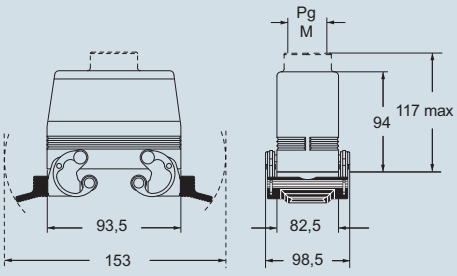


dimensions in mm

CHO/CFO X and **MHO/MFO X**

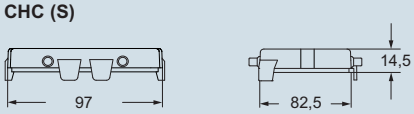


CHV/CFV X and **MHV/MFV X**

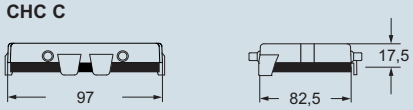


dimensions in mm

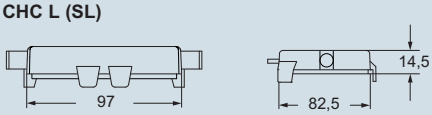
CHC (S)



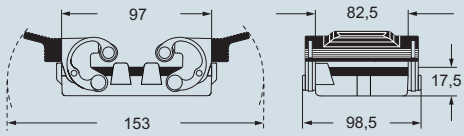
CHC C



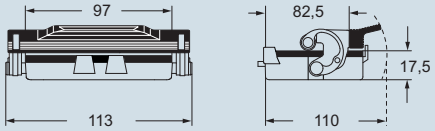
CHC L (SL)



CHC G



CHC LG



Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD ..... 128 poles + ⏚ 61
CDD ..... 216 poles + ⏚ 74
CDS ..... 84 poles + ⏚ 83
CSH ..... 48 poles + ⏚ 96
CNE, CSE ..... 48 poles + ⏚ 109
CCE ..... 48 poles + ⏚ 115
CSS ..... 48 poles + ⏚ 127
CTSE (16A) ***)** ..... 48 poles + ⏚ 135
CQE ..... 92 poles + ⏚ 143
CMCE ..... 20+4 (aux) poles + ⏚ 156
CME ..... 20+4 (aux) poles + ⏚ 157
CMSH ..... 20+4 (aux) poles + ⏚ 157
CMCE ..... 32+4 (aux) poles + ⏚ 160
CME ..... 32+4 (aux) poles + ⏚ 161
MIXO ..... 6 + 6 modules 179-215

***)** can be used only in bulkhead mounting housings

insert centre distance: **2 x (104 x 27) mm**

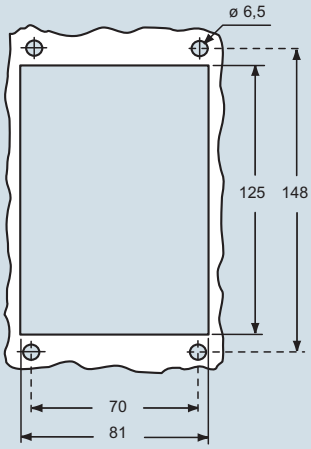
bulkhead and surface mounting enclosures with single lever

hoods with 2 pegs

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting enclosures with lever	**CHI 48 L**	—						
bulkhead mounting enclosures with lever and cover	**CHI 48 LS**	—						
surface mounting enclosures with lever and cover	**CHP 48 LS29**	29 x 2	**MHP 48 LS40**	40 x 2				
surface mounting enclosures with lever and cover	**CHP 48 LS**	36 x 2	**MHP 48 LS50**	50 x 2				
with pegs, side entry					**CHO 48 L29**	29	**MHO 48 L32**	32
with pegs, side entry					**CHO 48 L**	36	**MHO 48 L40**	40
with pegs, side entry					**CHO 48 L42**	42	**MHO 48 L50**	50
with pegs, side entry, without adaptor *					**CFO 48 L29**	29	**MFO 48 L32**	32
with pegs, side entry, without adaptor *					**CFO 48 L**	36	**MFO 48 L40**	40
with pegs, side entry, without adaptor *					**CFO 48 L42**	42	**MFO 48 L50**	50
with pegs, top entry					**CHV 48 L29**	29	**MHV 48 L32**	32
with pegs, top entry					**CHV 48 L**	36	**MHV 48 L40**	40
with pegs, top entry					**CHV 48 L42**	42	**MHV 48 L50**	50
with pegs, top entry, without adaptor *					**CFV 48 L29**	29	**MFV 48 L32**	32
with pegs, top entry, without adaptor *					**CFV 48 L**	36	**MFV 48 L40**	40
with pegs, top entry, without adaptor *					**CFV 48 L42**	42	**MFV 48 L50**	50

* enclosure without adaptor, threaded on the body, to be used only with a complete cable gland.

panel cut-out for bulkhead mounting housings in mm



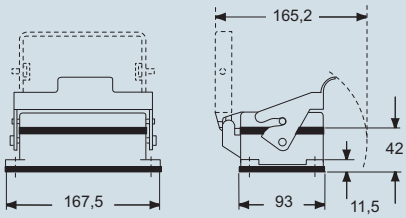
N.B.:
The enclosures ensure IP66 protection (or IP65 for hinged cover versions) rating when mated and locked with the closing levers.

Type 4/4X/12

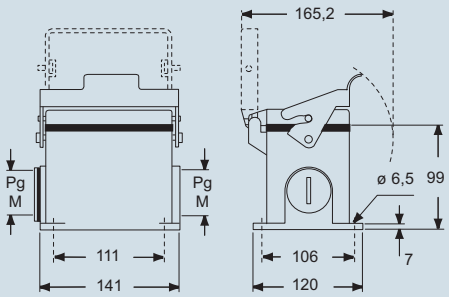
dimensions shown are not binding and may be changed without notice

dimensions in mm

CHI L - LS

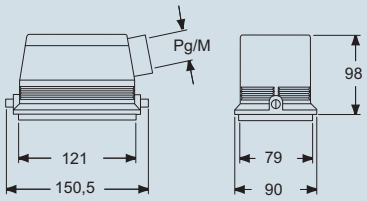


CHP LS and **MHP LS**

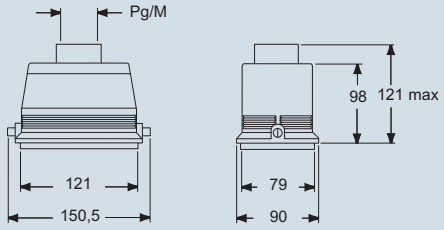


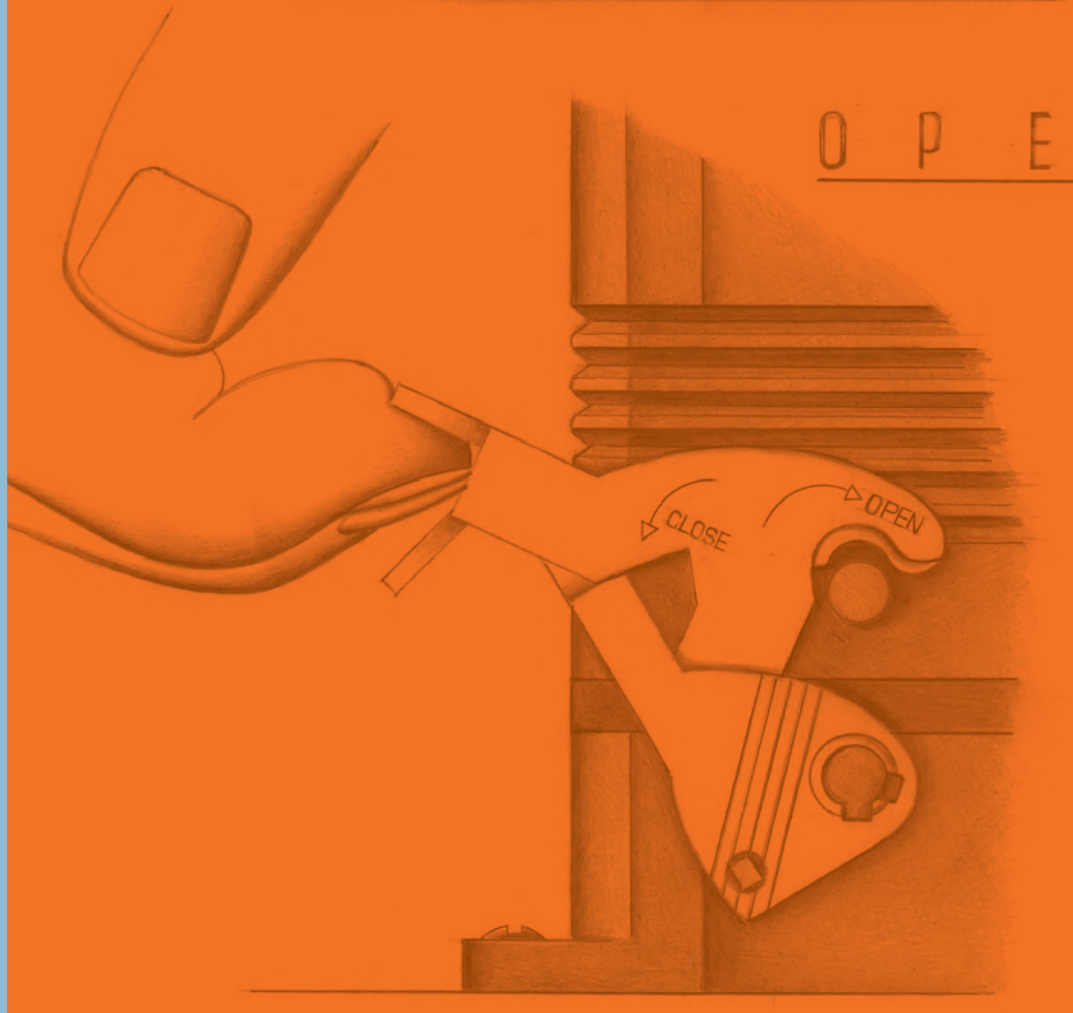
dimensions in mm

CHO/CFO L and **MHO/MFO L**



CHV/CFV L and **MHV/MFV L**





IP67

V-TYPE IP67

Enclosures with IP67 V-TYPE closure

The performance requirements in **connection protection** are increasingly varied and specialized.

To respond to this wide range of needs, **ILME has developed several new solutions, including the innovative V-TYPE lever.**

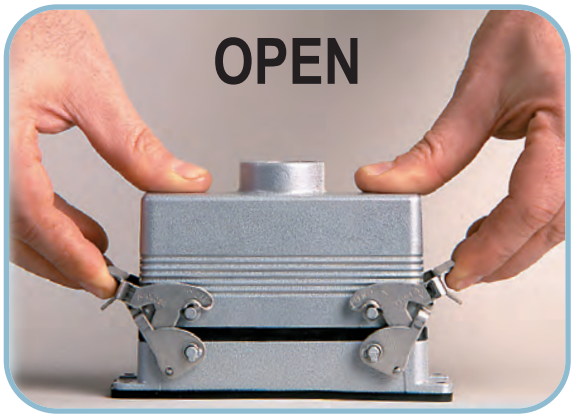
This original lever, due to the **vertical closing movement, offers an IP66/IP67 degree of protection** (according to EN 60529) when fitted with a complete and coupled connector **and used with ILME standard hoods in die cast aluminium moulded (without adaptor).**
The high degree of protection is therefore not dependant on the use of special gaskets or locking devices.

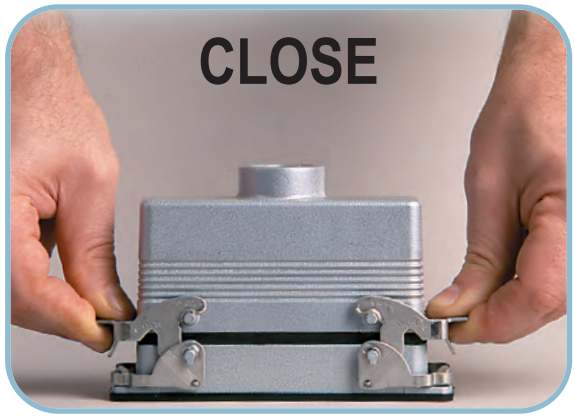
The fixing flanges are the same as those fitted on traditional models.
This means it is possible to use the new housings **as alternatives to the traditional version without affecting the interchangeability,** or changing dimensions, spaces, flanges or fixing positions.

The V-TYPE lever further extends the range, which includes the traditional version (CLASS series), with springs and rollers and the insulated version (T-TYPE series), **thus, offering customers a complete and custom selection for all needs. ILME is the ONLY company that offers a lever system for all possible requirements.**

The V-TYPE lever is the result of ongoing research on connection protection systems which confirms ILME **as a proactive leader in new solutions with forty years experience.**

The new lever differs from other commercial ones because of its closing movement principle, consisting of 2 hinged elements that are then pivoted on the housing.
This composite movement enables to move the lever above the pin of the housing that has to be fixed in place with an initial rotatory movement and then press it downwards to engage the locking mechanism.





The tight seal after closure and the simplicity of the movement are key characteristics that **only ILME has managed to combine into a single lever.**

The V-TYPE lever also has other interesting functional characteristics for several applications:

- **The friction on the pin is almost zero** because the lever exerts its pressure vertically, thus significantly reducing wear in case of frequent use.
- The complete lever is **manufactured in stainless steel** and is fitted with a catch that prevents it from being accidentally detached.
- **The absence of parts in plastic** offers a higher resistance to impacts and in case of contact with oils and aggressive chemical substances or high ambient temperatures.
- **The lever can be used for applications with vibrations** because it has no springs and is therefore more rigid.
- **The lever occupies a very small space** during the closing phase.
- **It is recommended** in cases when the cable **weight forces the levers to open**, such as vertically installed connectors and the cable is mounted in the bottom.

The interchangeability with equivalent traditional levers with springs and rollers **simplifies the management of stocks, reduces costs and increases flexibility of use.**

Available in bulkhead or surface-mounted versions for sizes 44.27 with a single lever, 57.27, 77.27 and 104.27 with 2 levers.
High construction models are available on request.

The item code identifies the new series with the **suffix C7 or M7**:
- **C7I** bulkhead mounting housing
- **C7P** surface mounting housing, Pg thread, standard height
- **M7P** surface mounting housing, metric thread, standard height
- **C7AP** surface mounting housing, Pg thread, high
- **M7AP** surface mounting housing, metric thread, high.

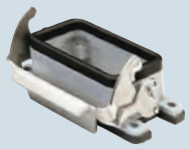
inserts: page:

CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CT, CTSE (16A) *)	6	poles + ⏚	130
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 215

*) can be used only in bulkhead mounting housings

insert centre distance:
44 x 27 mm

bulkhead mounting housings with single lever in stainless steel



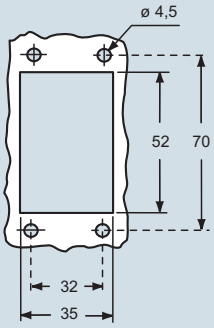
lever in stainless steel

surface mounting housings with single lever in stainless steel

lever in stainless steel

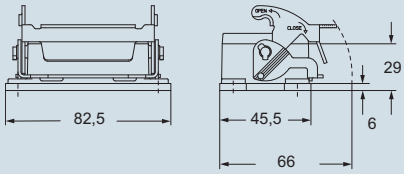
description	part No.	part No.	entry Pg	part No.	entry M
with lever, size “44.27”	**C7I 06 L**				
with lever, size “44.27”		**C7P 06 L**	16	**M7P 06 L20**	20
with lever, size “44.27”		**C7P 06 L2**	16 x 2	**M7P 06 L220**	20 x 2
with lever, high construction, size “44.27”		**C7AP 06 L**	21	**M7AP 06 L32**	32
with lever, high construction, size “44.27”		**C7AP 06 L2**	21 x 2	**M7AP 06 L232**	32 x 2
with lever, high construction, size “44.27”		**C7AP 06 L29**	29	**M7AP 06 L40**	40
with lever, high construction, size “44.27”		**C7AP 06 L229**	29 x 2	**M7AP 06 L240**	40 x 2

panel cut-out for bulkhead mounting housings in mm



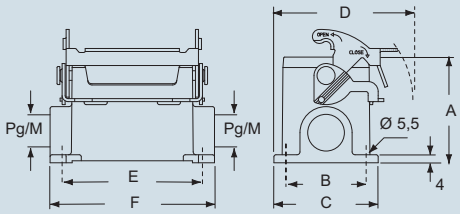
dimensions in mm

C7I L



dimensions in mm

C7P L - C7AP L and **M7P L - M7AP L**



The new lever, due to the vertical closing movement, offers an IP66/IP67 protection rating (according to EN 60529) when fitted with a complete and coupled connector and used with ILME standard hoods in die cast aluminum with pegs (without adaptor).

For bulkhead mounting housings, IP66/IP67 protection rating is guaranteed for mounting on a sufficiently rigid panel; use suitable length M4 screws (negligible surface buckling when subjected to tightening couple on the fixing screws of 0,8 - 1,2 Nm or deformation caused by the weight of the complete connector).
In case of insufficient rigidity use of C7.. FL flanges (page 278) is recommended, in which case use suitable length M4 screws and M4 (on the enclosure) and M4 (on the flange) flat/spring washers with M4 locknut.
In addition, the panel surface in contact with the flange gasket of the bulkhead mounting housings must be free from defects (deep scratches, grooves, burrs) that could negatively affect the performance of the gasket.

type	A	B	C	D	E	F
C7P/M7P 06 L	53	40	52	70	70	82
C7AP/M7AP 06 L	73	45	57	72,5	70	82

Hoods:

page 242

page 304 - 306

Type 4/4X/12

IP66 IP67 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts:			page:
CDD	42	poles + ⏚	69
CDS	18	poles + ⏚	79
CSH	10	poles + ⏚	92
CNE, CSE	10	poles + ⏚	105
CCE	10	poles + ⏚	111
CSS	10	poles + ⏚	123
CT, CTSE (16A) ***)**	10	poles + ⏚	131
CQE	18	poles + ⏚	139
CMCE	3+2 (aux)	poles + ⏚	148
CMSH	3+2 (aux)	poles + ⏚	149
CX	8/24	poles + ⏚	169
MIXO	3	modules	179 - 215

***)** can be used only in bulkhead mounting housings

insert centre distance:
57 x 27 mm

bulkhead mounting housings with 2 levers in stainless steel

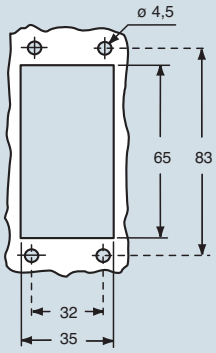
lever in stainless steel

surface mounting housings with 2 levers in stainless steel

lever in stainless steel

description	part No.	part No.	entry Pg	part No.	entry M
with levers, size “57.27”	**C7I 10**				
with levers, size “57.27”		**C7P 10**	16	**M7P 10.20**	20
with levers, size “57.27”		**C7P 10.2**	16 x 2	**M7P 10.220**	20 x 2
with levers, high construction, size “57.27”		**C7AP 10.21**	21	**M7AP 10.32**	32
with levers, high construction, size “57.27”		**C7AP 10.221**	21 x 2	**M7AP 10.232**	32 x 2
with levers, high construction, size “57.27”		**C7AP 10.29**	29	**M7AP 10.40**	40
with levers, high construction, size “57.27”		**C7AP 10.229**	29 x 2	**M7AP 10.240**	40 x 2

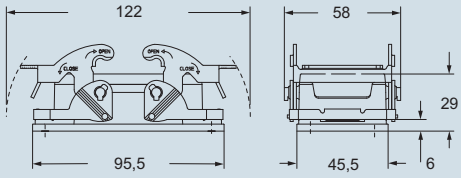
panel cut-out for bulkhead mounting housings in mm



The new lever, due to the vertical closing movement, offers an IP66/IP67 protection rating (according to EN 60529) when fitted with a complete and coupled connector and used with ILME standard hoods in die cast aluminum with pegs (without adaptor).

dimensions in mm

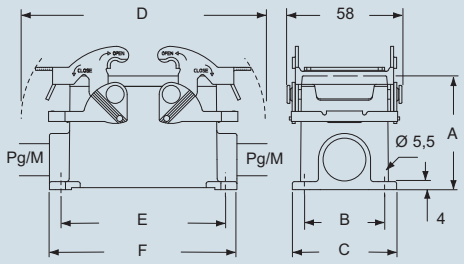
C7I



For bulkhead mounting housings, IP66/IP67 protection rating is guaranteed for mounting on a sufficiently rigid panel; use suitable length M4 screws (negligible surface buckling when subjected to tightening couple on the fixing screws of 0,8 - 1,2 Nm or deformation caused by the weight of the complete connector).
In case of insufficient rigidity use of C7.. FL flanges (page 278) is recommended, in which case use suitable length M4 screws and M4 (on the enclosure) and M4 (on the flange) flat/spring washers with M4 locknut.
In addition, the panel surface in contact with the flange gasket of the bulkhead mounting housings must be free from defects (deep scratches, grooves, burrs) that could negatively affect the performance of the gasket.

dimensions in mm

C7P - C7AP and **M7P - M7AP**



type	A	B	C	D	E	F
C7P/M7P 10	57	40	52	122	82	93,5
C7AP/M7AP 10	73	45	57	122	82	93,5

Hoods:

page 246 **page 308 - 311**

Type 4/4X/12

EN 60529 IP66 IP67 IEC 60529

dimensions shown are not binding and may be changed without notice

C7 - C7A and M7 - M7A IP67 enclosures size “77.27” V-TYPE lever version

inserts:			page:
CD	40	poles + ⏚	57
CT, CTS (10A) *)	40	poles + ⏚	64
CDD	72	poles + ⏚	70
CDS	27	poles + ⏚	80
CSH	16	poles + ⏚	93
CNE, CSE	16	poles + ⏚	106
CCE	16	poles + ⏚	112
CSS	16	poles + ⏚	124
CT, CTSE (16A) *)	16	poles + ⏚	132
CQE	32	poles + ⏚	140
CQEE	40	poles + ⏚	146
CMCE, CMSH 6+2 (aux)		poles + ⏚	150-151
CP	6	poles + ⏚	162
CX 6/36 and 12/2		poles + ⏚	170-171
CX 4/0 and 4/2		poles + ⏚	172
MIXO	4	modules	179-215

*) can be used only in bulkhead mounting housings

insert centre distance: **77,5 x 27 mm**

bulkhead mounting housings with 2 levers in stainless steel

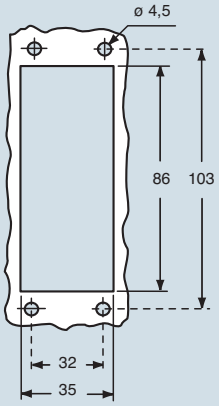
lever in stainless steel

surface mounting housings with 2 levers in stainless steel

lever in stainless steel

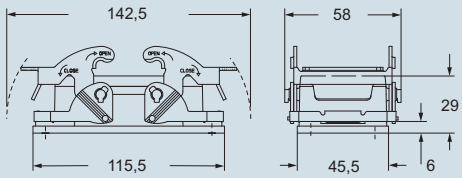
description	part No.	part No.	entry Pg	part No.	entry M
with levers, size “77.27”	**C7I 16**				
with levers, size ”77.27“		**C7P 16**	21	**M7P 16.25**	25
with levers, size ”77.27“		**C7P 16.2**	21 x 2	**M7P 16.225**	25 x 2
with levers, high construction, size ”77.27“		**C7AP 16.21**	21	**M7AP 16.32**	32
with levers, high construction, size ”77.27“		**C7AP 16.221**	21 x 2	**M7AP 16.232**	32 x 2
with levers, high construction, size ”77.27“		**C7AP 16.29**	29	**M7AP 16.40**	40
with levers, high construction, size ”77.27“		**C7AP 16.229**	29 x 2	**M7AP 16.240**	40 x 2

panel cut-out for bulkhead mounting housings in mm



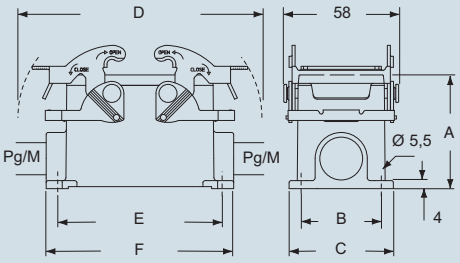
dimensions in mm

C7I



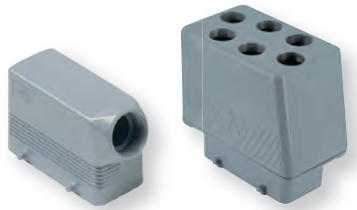
dimensions in mm

C7P - C7AP and **M7P - M7AP**



The new lever, due to the vertical closing movement, offers an IP66/IP67 protection rating (according to EN 60529) when fitted with a complete and coupled connector and used with ILME standard hoods in die cast aluminum with pegs (without adaptor).

Hoods:



page 252 page 312 - 315

Type 4/4X/12

IP66 IP67 EN 60529 IEC 60529

For bulkhead mounting housings, IP66/IP67 protection rating is guaranteed for mounting on a sufficiently rigid panel; use suitable length M4 screws (negligible surface buckling when subjected to tightening couple on the fixing screws of 0,8 - 1,2 Nm or deformation caused by the weight of the complete connector).
In case of insufficient rigidity use of C7.. FL flanges (page 278) is recommended, in which case use suitable length M4 screws and M4 (on the enclosure) and M4 (on the flange) flat/spring washers with M4 locknut.
In addition, the panel surface in contact with the flange gasket of the bulkhead mounting housings must be free from defects (deep scratches, grooves, burrs) that could negatively affect the performance of the gasket.

type	A	B	C	D	E	F
C7P/M7P 16	63	45	57	142,5	105	117
C7AP/M7AP 16	77	45	57	142,5	105	117

dimensions shown are not binding and may be changed without notice

C7 - C7A and M7 - M7A IP67 enclosures size “104.27” V-TYPE lever version

inserts:

		page:
CD	64 poles + ⏚	59
CT, CTS (10A) *)	64 poles + ⏚	65
CDD	108 poles + ⏚	72
CDS	42 poles + ⏚	81
CSH	24 poles + ⏚	94
CNE, CSE	24 poles + ⏚	107
CCE	24 poles + ⏚	113
CSS	24 poles + ⏚	125
CT, CTSE (16A) *)	24 poles + ⏚	133
CQE	46 poles + ⏚	141
CQEE	64 poles + ⏚	147
CMCE	10+2 (aux) poles + ⏚	152
CMSH	10+2 (aux) poles + ⏚	153
CX	4/8 and 6/6 poles + ⏚	173 and 175
MIXO	6 modules	179-215

*) can be used only in bulkhead mounting housings

insert centre distance: **104 x 27 mm**

bulkhead mounting housings with 2 levers in stainless steel

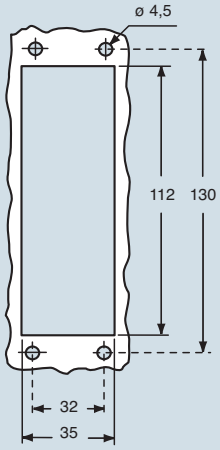
lever in stainless steel

surface mounting housings with 2 levers in stainless steel

lever in stainless steel

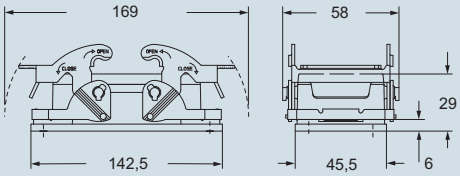
description	part No.	part No.	entry Pg	part No.	entry M
with levers, size ”104.27”	**C7I 24**				
with levers, size ”104.27“		**C7P 24**	21	**M7P 24.25**	25
with levers, size ”104.27“		**C7P 24.2**	21 x 2	**M7P 24.225**	25 x 2
with levers, high construction, size ”104.27“		**C7AP 24.21**	21	**M7AP 24.32**	32
with levers, high construction, size ”104.27“		**C7AP 24.221**	21 x 2	**M7AP 24.232**	32 x 2
with levers, high construction, size ”104.27“		**C7AP 24.29**	29	**M7AP 24.40**	40
with levers, high construction, size ”104.27“		**C7AP 24.229**	29 x 2	**M7AP 24.240**	40 x 2

panel cut-out for bulkhead mounting housings in mm



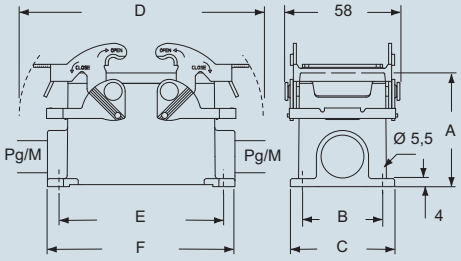
dimensions in mm

C7I



dimensions in mm

C7P - C7AP and **M7P - M7AP**



type	A	B	C	D	E	F
C7P/M7P 24	63	45	57	169	132	144
C7AP/M7AP 24	80	45	57	169	132	144

The new lever, due to the vertical closing movement, offers an IP66/IP67 protection rating (according to EN 60529) when fitted with a complete and coupled connector and used with ILME standard hoods in die cast aluminum with pegs (without adaptor).

For bulkhead mounting housings, IP66/IP67 protection rating is guaranteed for mounting on a sufficiently rigid panel; use suitable length M4 screws (negligible surface buckling when subjected to tightening couple on the fixing screws of 0,8 - 1,2 Nm or deformation caused by the weight of the complete connector).
In case of insufficient rigidity use of C7.. FL flanges (page 278) is recommended, in which case use suitable length M4 screws and M4 (on the enclosure) and M4 (on the flange) flat/spring washers with M4 locknut.
In addition, the panel surface in contact with the flange gasket of the bulkhead mounting housings must be free from defects (deep scratches, grooves, burrs) that could negatively affect the performance of the gasket.

Hoods:

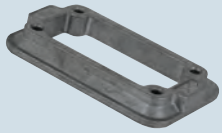
page 260 page 316 - 319

Type 4/4X/12

IP66 IP67 EN 60529 IEC 60529

dimensions shown are not binding and may be changed without notice

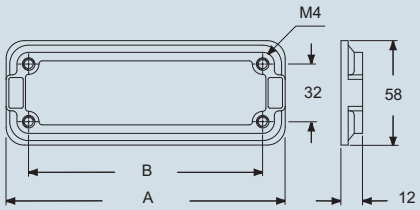
frames for bulkhead mounting housings



description	part No.
size "44.27"	**C7 06 FL**
size "57.27"	**C7 10 FL**
size "77.27"	**C7 16 FL**
size "104.27"	**C7 24 FL**

dimensions in mm

C7..FL



part No.	**A**	**B**
C7 06 FL	96	70
C7 10 FL	109	83
C7 16 FL	129	103
C7 24 FL	156	130

dimensions shown are not binding
and may be changed without notice

SIMPLEX covers

Enclosure versions

Bulkhead mount housings with new **SELF-CLOSING** covers ensure IP65 protection rating (according to EN 60529) when mated and locked with the closing lever, or IP44 protection rating when not mated and not locked with lever.

Characteristics of materials used:

- Made of die cast aluminium alloy.
- With epoxy-polyester powder coating.
- Gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer.
- Locking device in stainless steel.
- Self-closing covers in self-extinguishing thermoplastic material reinforced with glass fibres, UL approved.

SELF-CLOSING

Houseable inserts.

The enclosures series can be used with inserts:

❱ CD	40, 64 poles
❱ CT, CTS (10A)	40, 64 poles
❱ CDD	24, 42, 72, 108 poles
❱ CDS	9, 18, 27, 42 poles
❱ CQE	10, 18, 32, 46 poles
❱ CQEE	40, 64 poles
❱ CSH	6, 10, 16, 24 poles
❱ CCE	6, 10, 16, 24 poles
❱ CNE, CSE	6, 10, 16, 24 poles
❱ CSS	6, 10, 16, 24 poles
❱ CT, CTE, CTSE (16A)	6, 10, 16, 24 poles
❱ CMCE	3+2 (aux), 6+2 (aux), 10+2 (aux) poles
❱ CME	3+2 (aux), 6+2 (aux) poles
❱ CMSH	3+2 (aux), 6+2 (aux), 10+2 (aux) poles
❱ CP	6 poles
❱ CX	8/24, 6/36, 12/2, 4/0, 4/2, 4/8, 6/6 poles
❱ MIXO frame	2, 3, 4, 6 modules.

inserts: page:

CDD ..... 24 poles + ⏚ 67
CDS ..... 9 poles + ⏚ 78
CSH ..... 6 poles + ⏚ 91
CNE, CSE ..... 6 poles + ⏚ 104
CCE ..... 6 poles + ⏚ 110
CSS ..... 6 poles + ⏚ 122
CT, CTSE (16A) ***)** .... 6 poles + ⏚ 130
CQE ..... 10 poles + ⏚ 138
MIXO ..... 2 modules 179 - 215

***)** can be used only in bulkhead mounting housings

insert centre distance:
44 x 27 mm

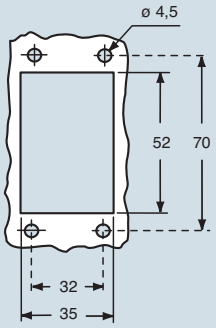
bulkhead mounting housings with single lever

lever in stainless steel

NEW

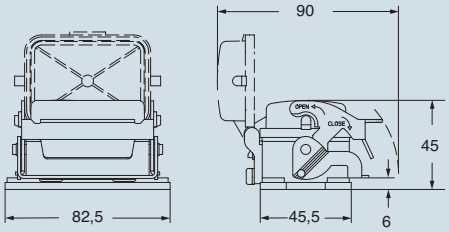
description	part No.
with lever and cover in plastic, size “44.27”	**CVI 06 LSP**

panel cut-out for bulkhead mounting housings in mm



dimensions in mm

CVI LSP



N.B.:
The enclosures ensure IP65 protection rating when mated and locked with the closing lever, or IP44 protection when not mated and locked with lever.

Hoods from page 242

EN 60529 IP65 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD	42	poles + ⏚	69
CDS	18	poles + ⏚	79
CSH	10	poles + ⏚	92
CNE, CSE	10	poles + ⏚	105
CCE	10	poles + ⏚	111
CSS	10	poles + ⏚	123
CT, CTSE (16A) ***)**	10	poles + ⏚	131
CQE	18	poles + ⏚	139
CMCE	3+2 (aux)	poles + ⏚	148
CMSH	3+2 (aux)	poles + ⏚	149
CX	8/24	poles + ⏚	169
MIXO	3	modules	179 - 215

***)** can be used only in bulkhead mounting housings

insert centre distance:
57 x 27 mm

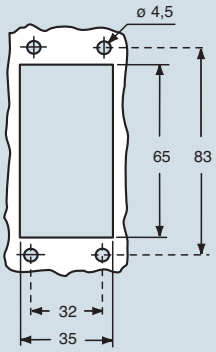
bulkhead mounting housings with single lever

lever in stainless steel

NEW

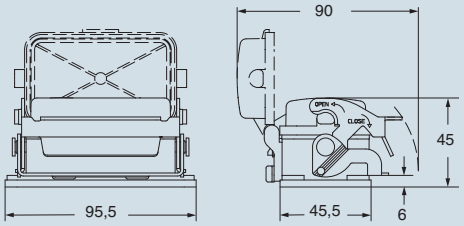
description	part No.
with lever and cover in plastic, size “57.27”	**CVI 10 LSP**

panel cut-out for bulkhead mounting housings in mm



dimensions in mm

CVI LSP



N.B.:
The enclosures ensure IP65 protection rating when mated and locked with the closing lever, or IP44 protection when not mated and locked with lever.

Hoods from page 246

EN 60529 IP65 IEC 60529

dimensions shown are not binding
and may be changed without notice

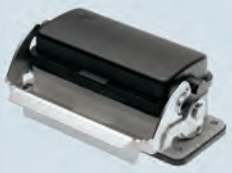
inserts: page:

CD ..... 40 poles + ⏚ 57
CT, CTS (10A) ***)** .... 40 poles + ⏚ 64
CDD ..... 72 poles + ⏚ 70
CDS ..... 27 poles + ⏚ 80
CSH ..... 16 poles + ⏚ 93
CNE, CSE ..... 16 poles + ⏚ 106
CCE ..... 16 poles + ⏚ 112
CSS ..... 16 poles + ⏚ 124
CT, CTSE (16A) ***)** .. 16 poles + ⏚ 132
CQE ..... 32 poles + ⏚ 140
CQEE ..... 40 poles + ⏚ 146
CMCE ..... 6+2 (aux) poles + ⏚ 150
CMSH ..... 6+2 (aux) poles + ⏚ 151
CP ..... 6 poles + ⏚ 162
CX ..... 6/36 and 12/2 poles + ⏚ 170-171
CX ..... 4/0 and 4/2 poles + ⏚ 172
MIXO ..... 4 modules 179-215

***)** can be used only in bulkhead mounting housings

insert centre distance: **77,5 x 27 mm**

bulkhead mounting housings with single lever



lever in stainless steel

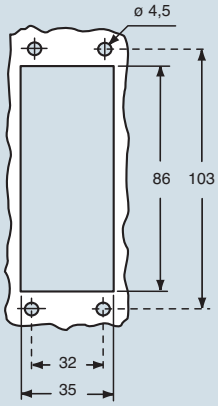
NEW

description

part No.

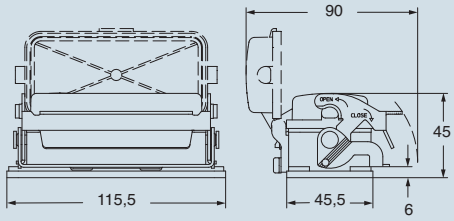
with lever and cover in plastic, size “77.27” **CVI 16 LSP**

panel cut-out for bulkhead mounting housings in mm



dimensions in mm

CVI LSP



N.B.:
The enclosures ensure IP65 protection rating when mated and locked with the closing lever, or IP44 protection when not mated and locked with lever.

Hoods from page 252

EN 60529 IP65 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD ..... 64 poles + ⏚ 59
CT, CTS (10A) ***)** .... 64 poles + ⏚ 65
CDD ..... 108 poles + ⏚ 72
CDS ..... 42 poles + ⏚ 81
CSH ..... 24 poles + ⏚ 94
CNE, CSE ..... 24 poles + ⏚ 107
CCE ..... 24 poles + ⏚ 113
CSS ..... 24 poles + ⏚ 125
CT, CTSE (16A) ***)** .. 24 poles + ⏚ 133
CQE ..... 46 poles + ⏚ 141
CQEE ..... 64 poles + ⏚ 147
CMCE ..... 10+2 (aux) poles + ⏚ 152
CMSH ..... 10+2 (aux) poles + ⏚ 153
CX ..... 4/8 and 6/6 poles + ⏚ 173 and 175
MIXO ..... 6 modules 179-215

***)** can be used only in bulkhead mounting housings

insert centre distance: **104 x 27 mm**

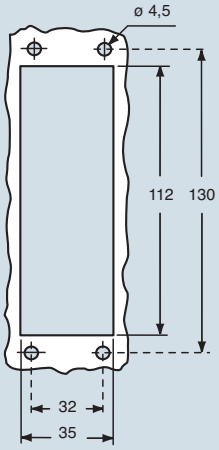
bulkhead mounting housings with single lever

lever in stainless steel

NEW

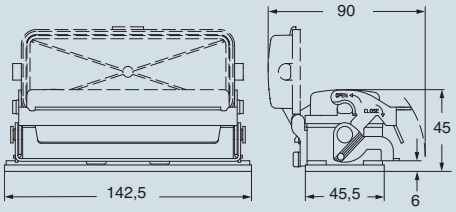
description	part No.
with lever and cover in plastic, size “104.27”	**CVI 24 LSP**

panel cut-out for bulkhead mounting housings in mm



dimensions in mm

CVI LSP



N.B.:
The enclosures ensure IP65 protection rating when mated and locked with the closing lever, or IP44 protection when not mated and locked with lever.

Hoods from page 260

EN 60529 IP65 IEC 60529

dimensions shown are not binding and may be changed without notice

inserts: page:

CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CT, CTSE (16A) ***)**	6	poles + ⏚	130
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 215

***)** can be used only in bulkhead mounting housings

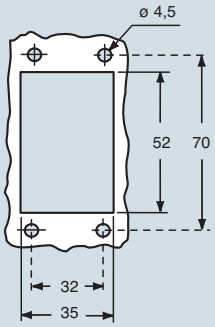
insert centre distance:
44 x 27 mm

bulkhead mounting housings with single lever

lever in stainless steel

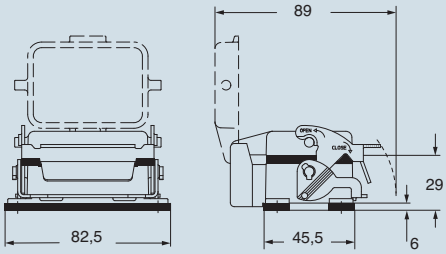
description	part No.
with lever and cover in aluminium, size “44.27”	**CVI 06 LS**
with lever and cover in plastic, size “44.27”	**CVI 06 LP**

panel cut-out for bulkhead mounting housings in mm



dimensions in mm

CVI LS/LP



NB:
The enclosures ensure IP66 protection (or IP65 cover versions) rating when mated and locked with the closing levers.

Hoods from page 242

Type 4/4X/12
(except enclosures with plastic cover)

IP65 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 215

insert centre distance:
44 x 27 mm

surface mounting housings with single lever and plastic cover

lever in stainless steel

surface mounting housings with single lever and aluminium cover

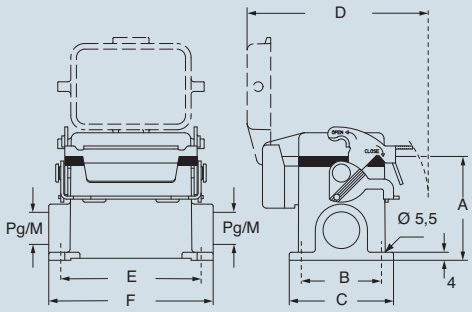
lever in stainless steel

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with lever and cover, size “44.27”	**CVP 06 LP**	16	**MVP 06 LP20**	20	**CVP 06 LS**	16	**MVP 06 LS20**	20
with lever and cover, size “44.27”	**CVP 06 LP2**	16 x 2	**MVP 06 LP220**	20 x 2	**CVP 06 LS2**	16 x 2	**MVP 06 LS220**	20 x 2
with lever and cover, high construction, size “44.27”	**CVAP 06 LP**	21	**MVAP 06 LP32**	32	**CVAP 06 LS**	21	**MVAP 06 LS32**	32
with lever and cover, high construction, size “44.27”	**CVAP 06 LP2**	21 x 2	**MVAP 06LP232**	32 x 2	**CVAP 06 LS2**	21 x 2	**MVAP 06LS232**	32 x 2
with lever and cover, high construction, size “44.27”	**CVAP 06 LP29**	29	**MVAP 06 LP40**	40	**CVAP 06LS29**	29	**MVAP 06 LS40**	40
with lever and cover, high construction, size “44.27”	**CVAP 06LP229**	29 x 2	**MVAP 06LP240**	40 x 2	**CVAP 06LS229**	29 x 2	**MVAP 06LS240**	40 x 2

NB:
The enclosures ensure IP66 protection (or IP65 cover versions) rating when mated and locked with the closing levers.

dimensions in mm

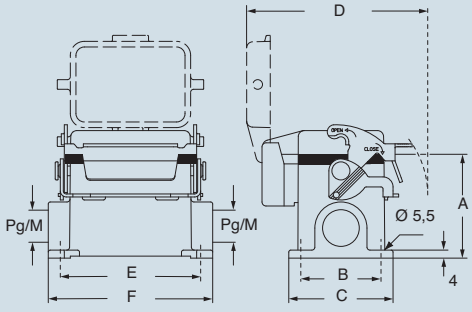
CVP LP - CVAP LP and **MVP LP - MVAP LP**



type	A	B	C	D	E	F
CVP/MVP 06 LP	53	40	52	91	70	82
CVAP/MVAP 06 LP	73	45	57	91	70	82

dimensions in mm

CVP LS - CVAP LS and **MVP LS - MVAP LS**



type	A	B	C	D	E	F
CVP/MVP 06 LS	53	40	52	91	70	82
CVAP/MVAP 06 LS	73	45	57	91	70	82

Hoods from page 242

cULus Type 4/4X/12
(except enclosures with plastic cover)

IP65 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD ..... 24 poles + ⏚ 67
CDS ..... 9 poles + ⏚ 78
CSH ..... 6 poles + ⏚ 91
CNE, CSE ..... 6 poles + ⏚ 104
CCE ..... 6 poles + ⏚ 110
CSS ..... 6 poles + ⏚ 122
CQE ..... 10 poles + ⏚ 138
MIXO ..... 2 modules 179 - 215

insert centre distance:
44 x 27 mm

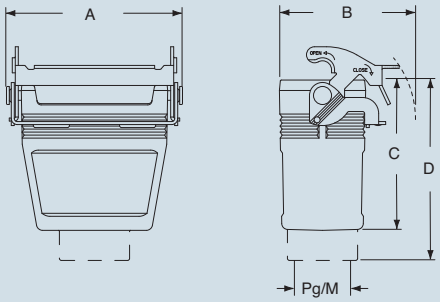
hoods top entry
with gasket and 1 lever

lever in stainless steel

description	part No.	entry Pg	part No.	entry M
with lever, size “44.27”	**CVV 06 LG**	16	**MVV 06 LG25**	25
with lever, high construction, size “44.27”	**CVAV 06 LG21**	21	**MVAV 06 LG25**	25
with lever, high construction, size “44.27”	**CVAV 06 LG29**	29	**MVAV 06 LG32**	32
with lever, high construction, without adaptor, size “44.27”	**CVFV 06 LG21**	21	**MVFV 06 LG25**	25
with lever, high construction, without adaptor, size “44.27”	**CVFV 06 LG29**	29	**MVFV 06 LG32**	32

dimensions in mm

CVV LG - CVAV LG - CVFV LG and
MVV LG - MVAV LG - MVFV LG



type	A	B	C	D
CVV/MVV 06 LG	74	65	45,5	58,5
CVAV/MVAV 06 LG	74	65	77	93
CVFV/MVFV 06 LG	74	65	77	—

Hoods from page 242

c UL us Type 4/4X/12

EN 60529 IP66 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD ..... 42 poles + ⏚ 69
CDS ..... 18 poles + ⏚ 79
CSH ..... 10 poles + ⏚ 92
CNE, CSE ..... 10 poles + ⏚ 105
CCE ..... 10 poles + ⏚ 111
CSS ..... 10 poles + ⏚ 123
CT, CTSE (16A) ***)** .. 10 poles + ⏚ 131
CQE ..... 18 poles + ⏚ 139
CMCE ..... 3+2 (aux) poles + ⏚ 148
CMSH ..... 3+2 (aux) poles + ⏚ 149
CX ..... 8/24 poles + ⏚ 169
MIXO ..... 3 modules 179 - 215

***)** can be used only in bulkhead mounting housings

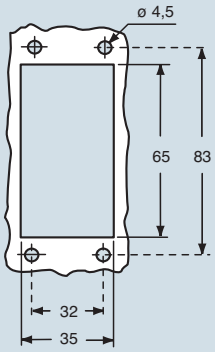
insert centre distance:
57 x 27 mm

bulkhead mounting housings with single lever

lever in stainless steel

description	part No.
with lever, size “57.27”	**CVI 10 L**
with lever and cover in aluminium, size “57.27”	
with lever and cover in plastic, size “57.27”	

panel cut-out for bulkhead mounting housings in mm



N.B.:
The enclosures ensure IP66 protection (or IP65 cover versions) rating when mated and locked with the closing levers.

Hoods from page 246

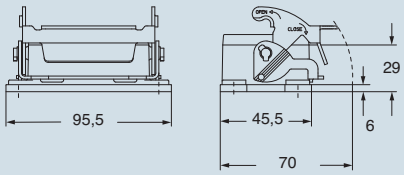
Type 4/4X/12
(except enclosures with plastic cover)

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

dimensions in mm

CVI L



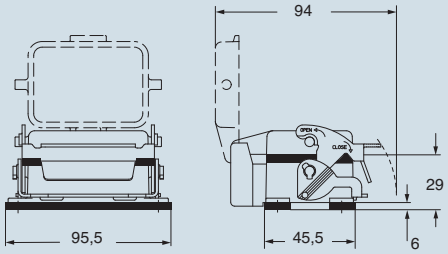
bulkhead mounting housings with single lever

lever in stainless steel

part No.
CVI 10 LS
CVI 10 LP

dimensions in mm

CVI LS/LP



inserts:			page:
CDD	42	poles + ⏚	69
CDS	18	poles + ⏚	79
CSH	10	poles + ⏚	92
CNE, CSE	10	poles + ⏚	105
CCE	10	poles + ⏚	111
CSS	10	poles + ⏚	123
CQE	18	poles + ⏚	139
CMCE	3+2 (aux)	poles + ⏚	148
CMSH	3+2 (aux)	poles + ⏚	149
CX	8/24	poles + ⏚	169
MIXO	3	modules	179 - 215

insert centre distance:
57 x 27 mm

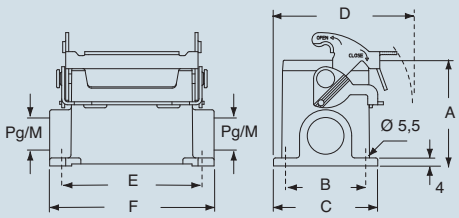
surface mounting housings with single lever

lever in stainless steel

description	part No.	entry Pg	part No.	entry M
with lever/s, size “57.27”	**CVP 10 L**	16	**MVP 10 L20**	20
with lever/s, size “57.27”	**CVP 10 L2**	16 x 2	**MVP 10 L220**	20 x 2
with lever/s, high construction, size “57.27”	**CVAP 10 L21**	21	**MVAP 10 L32**	32
with lever/s, high construction, size “57.27”	**CVAP 10 L221**	21 x 2	**MVAP 10 L232**	32 x 2
with lever/s, high construction, size “57.27”	**CVAP 10 L29**	29	**MVAP 10 L40**	40
with lever/s, high construction, size “57.27”	**CVAP 10 L229**	29 x 2	**MVAP 10 L240**	40 x 2

dimensions in mm

CVP L - CVAP L and **MVP L - MVAP L**



type	A	B	C	D	E	F
CVP/MVP 10 L	57	40	52	73	82	93,5
CVAP/MVAP 10 L	73	45	57	75,5	82	93,5

Hoods from page 246

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD	42	poles + ⏚	69
CDS	18	poles + ⏚	79
CSH	10	poles + ⏚	92
CNE, CSE	10	poles + ⏚	105
CCE	10	poles + ⏚	111
CSS	10	poles + ⏚	123
CQE	18	poles + ⏚	139
CMCE	3+2 (aux)	poles + ⏚	148
CMSH	3+2 (aux)	poles + ⏚	149
CX	8/24	poles + ⏚	169
MIXO	3	modules	179 - 215

insert centre distance:
57 x 27 mm

surface mounting housings with single lever and plastic cover

lever in stainless steel

surface mounting housings with single lever and aluminium cover

lever in stainless steel

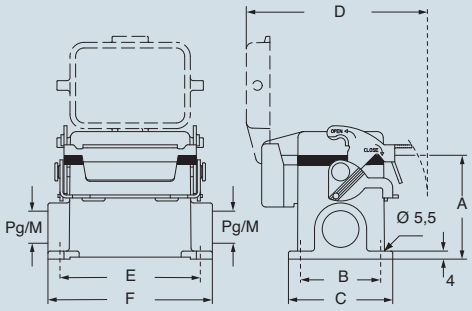
description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with lever and cover, size “57.27”	**CVP 10 LP**	16	**MVP 10 LP20**	20	**CVP 10 LS**	16	**MVP 10 LS20**	20
with lever and cover, size “57.27”	**CVP 10 LP2**	16 x 2	**MVP 10 LP220**	20 x 2	**CVP 10 LS2**	16 x 2	**MVP 10 LS220**	20 x 2
with lever and cover, high construction, size “57.27”	**CVAP 10 LP21**	21	**MVAP 10 LP32**	32	**CVAP 10 LS**	21	**MVAP 10 LS32**	32
with lever and cover, high construction, size “57.27”	**CVAP 10LP221**	21 x 2	**MVAP 10LP232**	32 x 2	**CVAP 10 LS2**	21 x 2	**MVAP 10LS232**	32 x 2
with lever and cover, high construction, size “57.27”	**CVAP 10 LP29**	29	**MVAP 10 LP40**	40	**CVAP 10LS29**	29	**MVAP 10 LS40**	40
with lever and cover, high construction, size “57.27”	**CVAP 10LP229**	29 x 2	**MVAP 10LP240**	40 x 2	**CVAP 10LS229**	29 x 2	**MVAP 10LS240**	40 x 2

NB:
The enclosures ensure IP66 protection (or IP65 cover versions) rating when mated and locked with the closing levers.

Hoods from page 246

dimensions in mm

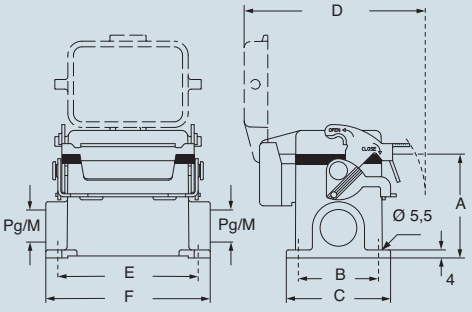
CVP LP - CVAP LP and **MVP LP - MVAP LP**



type	A	B	C	D	E	F
CVP/MVP 10 LP	57	40	52	94	82	93,5
CVAP/MVAP 10 LP	73	45	57	94	82	93,5

dimensions in mm

CVP LS - CVAP LS and **MVP LS - MVAP LS**



type	A	B	C	D	E	F
CVP/MVP 10 LS	57	40	52	94	82	93,5
CVAP/MVAP 10 LS	73	45	57	94	82	93,5

Type 4/4X/12
(except enclosures with plastic cover)

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD	42	poles + ⏚	69
CDS	18	poles + ⏚	79
CSH	10	poles + ⏚	92
CNE, CSE	10	poles + ⏚	105
CCE	10	poles + ⏚	111
CSS	10	poles + ⏚	123
CQE	18	poles + ⏚	139
CMCE	3+2 (aux)	poles + ⏚	148
CMSH	3+2 (aux)	poles + ⏚	149
CX	8/24	poles + ⏚	169
MIXO	3	modules	179 - 215

insert centre distance:
57 x 27 mm

Hoods from page 246

NB:
The enclosures ensure IP66 protection (or IP65 cover versions) rating when mated and locked with the closing levers.

Type 4/4X/12

dimensions shown are not binding and may be changed without notice

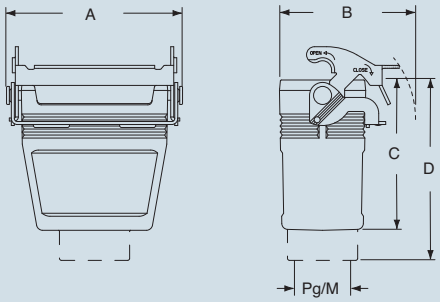
hoods, top entry, with gasket, with single lever

lever in stainless steel

description	part No.	entry Pg	part No.	entry M
with lever/s, size “57.27”	**CVV 10 LG**	16	**MVV 10 LG25**	25
with lever/s, high construction, size “57.27”	**CVAV 10 LG21**	21	**MVAV 10 LG25**	25
with lever/s, high construction, size “57.27”	**CVAV 10 LG29**	29	**MVAV 10 LG32**	32
with lever/s, high construction, without adapter, size “57.27”	**CVFV 10 LG21**	21	**MVFV 10 LG25**	25
with lever/s, high construction, without adapter, size “57.27”	**CVFV 10 LG29**	29	**MVFV 10 LG32**	32

dimensions in mm

CVV LG - CVAV LG - CVFV LG and
MVV LG - MVAV LG - MVFV LG



type	A	B	C	D
CVV/MVV 10 LG	87	68	50,5	63,5
CVAV/MVAV 10 LG	87	68	75	91
CVFV/MVFV 10 LG	87	68	75	—

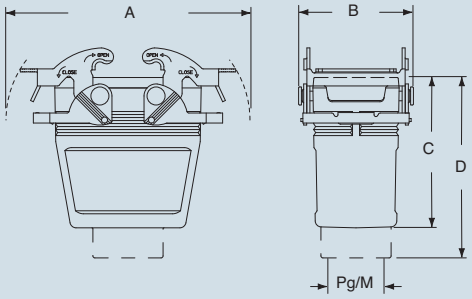
hoods, top entry, with gasket, with 2 levers

lever in stainless steel

description	part No.	entry Pg	part No.	entry M
with lever/s, size “57.27”	**CVV 10 G**	16	**MVV 10 G25**	25
with lever/s, high construction, size “57.27”	**CVAV 10 G21**	21	**MVAV 10 G25**	25
with lever/s, high construction, size “57.27”	**CVAV 10 G29**	29	**MVAV 10 G32**	32
with lever/s, high construction, without adapter, size “57.27”	**CVFV 10 G21**	21	**MVFV 10 G25**	25
with lever/s, high construction, without adapter, size “57.27”	**CVFV 10 G29**	29	**MVFV 10 G32**	32

dimensions in mm

CVV G - CVAV G - CVFV G and
MVV G - MVAV G - MVFV G



type	A	B	C	D
CVV/MVV 10 G	122	57	50,5	63,5
CVAV/MVAV 10 G	122	57	75	91
CVFV/MVFV 10 G	122	57	75	—

inserts: page:

CD ..... 40 poles + ⏚ 57
CT, CTS (10A) ***)** .... 40 poles + ⏚ 64
CDD ..... 72 poles + ⏚ 70
CDS ..... 27 poles + ⏚ 80
CSH ..... 16 poles + ⏚ 93
CNE, CSE ..... 16 poles + ⏚ 106
CCE ..... 16 poles + ⏚ 112
CSS ..... 16 poles + ⏚ 124
CT, CTSE (16A) ***)** .. 16 poles + ⏚ 132
CQE ..... 32 poles + ⏚ 140
CQEE ..... 40 poles + ⏚ 146
CMCE, CMSH 6+2 (aux) poles + ⏚ 150-151
CP ..... 6 poles + ⏚ 162
CX ..... 6/36 and 12/2 poles + ⏚ 170-171
CX ..... 4/0 and 4/2 poles + ⏚ 172
MIXO ..... 4 modules 179-215

***)** can be used only in bulkhead mounting housings

insert centre distance: **77,5 x 27 mm**

bulkhead mounting housings with single lever

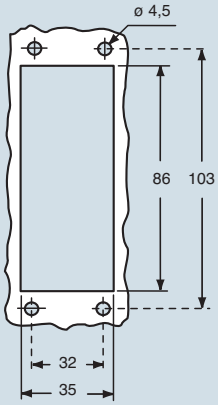
lever in stainless steel

bulkhead mounting housings with single lever

lever in stainless steel

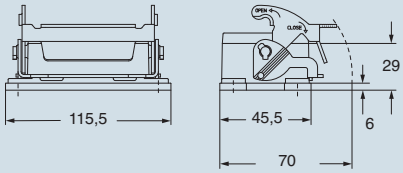
description	part No.	part No.
with lever, size “77.27”	**CVI 16 L**	
with lever and cover in aluminium, size “77.27”		**CVI 16 LS**
with lever and cover in plastic, size “77.27”		**CVI 16 LP**

panel cut-out for bulkhead mounting housings in mm



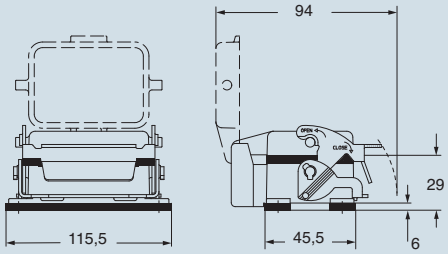
dimensions in mm

CVI L



dimensions in mm

CVI LS/LP



N.B.:
The enclosures ensure IP66 protection (or IP65 cover versions) rating when mated and locked with the closing levers.

Hoods from page 252

cULus Type 4/4X/12
(except enclosures with plastic cover)

EN 60529 IP66 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts:			page:
CD	40	poles + ⏚	57
CDD	72	poles + ⏚	70
CDS	27	poles + ⏚	80
CSH	16	poles + ⏚	93
CNE, CSE	16	poles + ⏚	106
CCE	16	poles + ⏚	112
CSS	16	poles + ⏚	124
CQE	32	poles + ⏚	140
CQEE	40	poles + ⏚	146
CMCE	6+2 (aux)	poles + ⏚	150
CMSH	6+2 (aux)	poles + ⏚	151
CP	6	poles + ⏚	162
CX	6/36 and 12/2	poles + ⏚	170-171
CX	4/0 and 4/2	poles + ⏚	172
MIXO	4	modules	179-215

insert centre distance:
77,5 x 27 mm

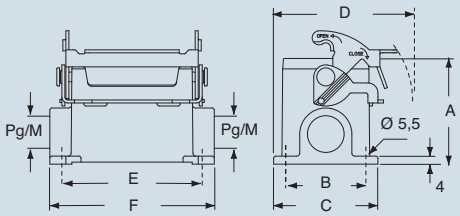
surface mounting housings with single lever

lever in stainless steel

description	part No.	entry Pg	part No.	entry M
with lever, size “77.27”	**CVP 16 L**	21	**MVP 16 L25**	25
with lever, size “77.27”	**CVP 16 L2**	21 x 2	**MVP 16 L225**	25 x 2
with lever, high construction, size “77.27”	**CVAP 16 L21**	21	**MVAP 16 L32**	32
with lever, high construction, size “77.27”	**CVAP 16 L221**	21 x 2	**MVAP 16 L232**	32 x 2
with lever, high construction, size “77.27”	**CVAP 16 L29**	29	**MVAP 16 L40**	40
with lever, high construction, size “77.27”	**CVAP 16 L229**	29 x 2	**MVAP 16 L240**	40 x 2

dimensions in mm

CVP L - CVAP L and **MVP L - MVAP L**



type	A	B	C	D	E	F
CVP/MVP 16 L	63	45	57	75.5	105	117
CVAP/MVAP 16 L	77	45	57	75.5	105	117

Hoods from page 252

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD	40	poles + ⏚	57
CDD	72	poles + ⏚	70
CDS	27	poles + ⏚	80
CSH	16	poles + ⏚	93
CNE, CSE	16	poles + ⏚	106
CCE	16	poles + ⏚	112
CSS	16	poles + ⏚	124
CQE	32	poles + ⏚	140
CQEE	40	poles + ⏚	146
CMCE	6+2 (aux)	poles + ⏚	150
CMSH	6+2 (aux)	poles + ⏚	151
CP	6	poles + ⏚	162
CX	6/36 and 12/2	poles + ⏚	170-171
CX	4/0 and 4/2	poles + ⏚	172
MIXO	4	modules	179-215

insert centre distance:
77,5 x 27 mm

surface mounting housings with single lever and plastic cover

lever in stainless steel

surface mounting housings with single lever and aluminium cover

lever in stainless steel

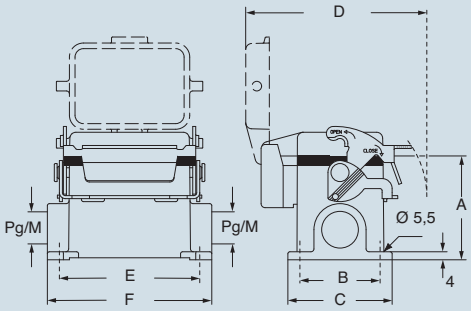
description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with lever and cover, size “77.27”	**CVP 16 LP**	21	**MVP 16 LP25**	25	**CVP 16 LS**	21	**MVP 16 LS25**	25
with lever and cover, size “77.27”	**CVP 16 LP2**	21 x 2	**MVP 16 LP225**	25 x 2	**CVP 16 LS2**	21 x 2	**MVP 16 LS225**	25 x 2
with lever and cover, high construction, size “77.27”	**CVAP 16 LP21**	21	**MVAP 16 LP32**	32	**CVAP 16 LS**	21	**MVAP 16 LS32**	32
with lever and cover, high construction, size “77.27”	**CVAP 16LP221**	21 x 2	**MVAP 16LP232**	32 x 2	**CVAP 16 LS2**	21 x 2	**MVAP 16LS232**	32 x 2
with lever and cover, high construction, size “77.27”	**CVAP 16 LP29**	29	**MVAP 16 LP40**	40	**CVAP 16LS29**	29	**MVAP 16 LS40**	40
with lever and cover, high construction, size “77.27”	**CVAP 16LP229**	29 x 2	**MVAP 16LP240**	40 x 2	**CVAP 16LS229**	29 x 2	**MVAP 16LS240**	40 x 2

N.B.:
The enclosures ensure IP66 protection (or IP65 cover versions) rating when mated and locked with the closing levers.

Hoods from page 252

dimensions in mm

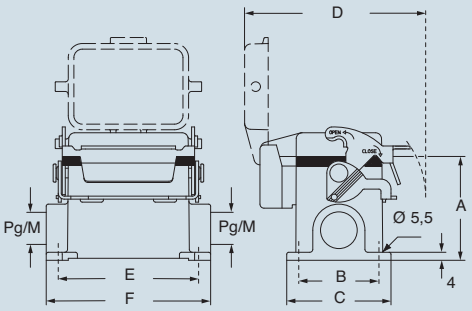
CVP LP - CVAP LP and **MVP LP - MVAP LP**



type	A	B	C	D	E	F
CVP/MVP 16 LP	63	45	57	94	105	117
CVAP/MVAP 16 LP	77	45	57	94	105	117

dimensions in mm

CVP LS - CVAP LS and **MVP LS - MVAP LS**



type	A	B	C	D	E	F
CVP/MVP 16 LS	63	45	57	94	105	117
CVAP/MVAP 16 LS	77	45	57	94	105	117

cULus Type 4/4X/12
(except enclosures with plastic cover)

EN 60529 IP66 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD	40	poles + ⏚	57
CDD	72	poles + ⏚	70
CDS	27	poles + ⏚	80
CSH	16	poles + ⏚	93
CNE, CSE	16	poles + ⏚	106
CCE	16	poles + ⏚	112
CSS	16	poles + ⏚	124
CQE	32	poles + ⏚	140
CQEE	40	poles + ⏚	146
CMCE	6+2 (aux)	poles + ⏚	150
CMSH	6+2 (aux)	poles + ⏚	151
CP	6	poles + ⏚	162
CX	6/36 and 12/2	poles + ⏚	170-171
CX	4/0 and 4/2	poles + ⏚	172
MIXO	4	modules	179-215

insert centre distance:
77,5 x 27 mm

Hoods from page 252

Type 4/4X/12

dimensions shown are not binding
and may be changed without notice

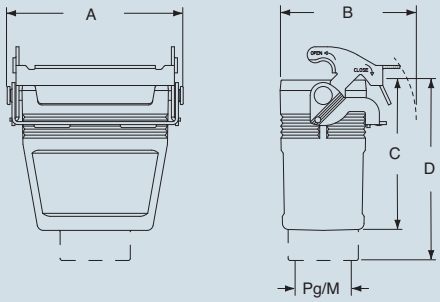
hoods top entry with gasket and 1 lever

lever in stainless steel

description	part No.	entry Pg	part No.	entry M
with lever/s, size “77.27”	**CVV 16 LG**	21	**MVV 16 LG32**	32
with lever/s, high construction, size “77.27”	**CVAV 16 LG21**	21	**MVAV 16 LG25**	25
with lever/s, high construction, size “77.27”	**CVAV 16 LG29**	29	**MVAV 16 LG32**	32
with lever/s, high construction, without adapter, size “77.27”	**CVFV 16 LG21**	21	**MVFV 16 LG25**	25
with lever/s, high construction, without adapter, size “77.27”	**CVFV 16 LG29**	29	**MVFV 16 LG32**	32

dimensions in mm

CVV LG - CVAV LG - CVFV LG and
MVV LG - MVAV LG - MVFV LG



type	A	B	C	D
CVV/MVV 16 LG	107.5	68	50.5	63.5
CVAV/MVAV 16 LG	107.5	68	81	97
CVFV/MVFV 16 LG	107.5	68	81	—

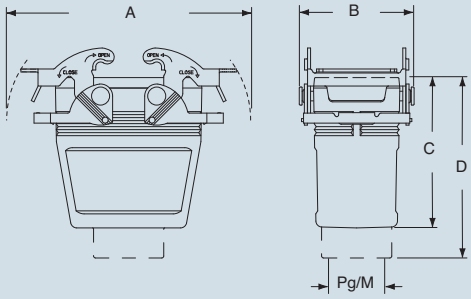
hoods, top entry, with gasket and 2 levers

lever in stainless steel

description	part No.	entry Pg	part No.	entry M
with lever/s, size “77.27”	**CVV 16 G**	21	**MVV 16 G32**	32
with lever/s, high construction, size “77.27”	**CVAV 16 G21**	21	**MVAV 16 G25**	25
with lever/s, high construction, size “77.27”	**CVAV 16 G29**	29	**MVAV 16 G32**	32
with lever/s, high construction, without adapter, size “77.27”	**CVFV 16 G21**	21	**MVFV 16 G25**	25
with lever/s, high construction, without adapter, size “77.27”	**CVFV 16 G29**	29	**MVFV 16 G32**	32

dimensions in mm

CVV G - CVAV G - CVFV G and
MVV G - MVAV G - MVFV G



type	A	B	C	D
CVV/MVV 16 G	142.5	57	50.5	63.5
CVAV/MVAV 16 G	142.5	57	81	97
CVFV/MVFV 16 G	142.5	57	81	—

inserts: page:

CD ..... 64 poles + ⏚ 59
CT, CTS (10A) ***)** .... 64 poles + ⏚ 65
CDD ..... 108 poles + ⏚ 72
CDS ..... 42 poles + ⏚ 81
CSH ..... 24 poles + ⏚ 94
CNE, CSE ..... 24 poles + ⏚ 107
CCE ..... 24 poles + ⏚ 113
CSS ..... 24 poles + ⏚ 125
CT, CTSE (16A) ***)** .. 24 poles + ⏚ 133
CQE ..... 46 poles + ⏚ 141
CQEE ..... 64 poles + ⏚ 147
CMCE ..... 10+2 (aux) poles + ⏚ 152
CMSH ..... 10+2 (aux) poles + ⏚ 153
CX ..... 4/8 and 6/6 poles + ⏚ 173 and 175
MIXO ..... 6 modules 179-215

***)** can be used only in bulkhead mounting housings

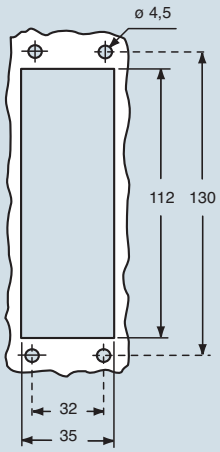
insert centre distance: **104 x 27 mm**

bulkhead mounting housings with single lever

lever in stainless steel

description	part No.
with lever, size “104.27”	**CVI 24 L**
with lever and cover in aluminium, size “104.27”	
with lever and cover in plastic, size “104.27”	

panel cut-out for bulkhead mounting housings in mm



N.B.:
The enclosures ensure IP66 protection (or IP65 cover versions) rating when mated and locked with the closing levers.

Hoods from page 260

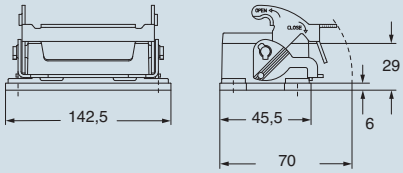
Type 4/4X/12
(except enclosures with plastic cover)

IP66 EN 60529 IEC 60529

dimensions shown are not binding and may be changed without notice

dimensions in mm

CVI L



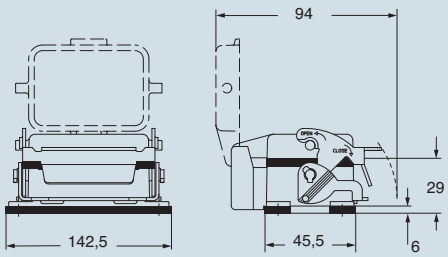
bulkhead mounting housings with single lever

lever in stainless steel

description	part No.
with lever and cover in aluminium, size “104.27”	**CVI 24 LS**
with lever and cover in plastic, size “104.27”	**CVI 24 LP**

dimensions in mm

CVI LS/LP



inserts: page:

CD ..... 64 poles + ⏚ 59
CDD ..... 108 poles + ⏚ 72
CDS ..... 42 poles + ⏚ 81
CSH ..... 24 poles + ⏚ 94
CNE, CSE ..... 24 poles + ⏚ 107
CCE ..... 24 poles + ⏚ 113
CSS ..... 24 poles + ⏚ 125
CQE ..... 46 poles + ⏚ 141
CQEE ..... 64 poles + ⏚ 147
CMCE ..... 10+2 (aux) poles + ⏚ 152
CMSH ..... 10+2 (aux) poles + ⏚ 153
CX ..... 4/8 and 6/6 poles + ⏚ 173 and 175
MIXO ..... 6 modules 179-215

insert centre distance:
104 x 27 mm

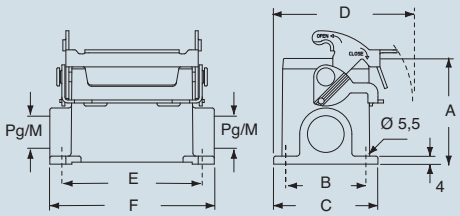
surface mounting housings with single lever

lever in stainless steel

description	part No.	entry Pg	part No.	entry M
with lever, size “104.27”	**CVP 24 L**	21	**MVP 24 L25**	25
with lever, size “104.27”	**CVP 24 L2**	21 x 2	**MVP 24 L225**	25 x 2
with lever, high construction, size “104.27”	**CVAP 24 L21**	21	**MVAP 24 L32**	32
with lever, high construction, size “104.27”	**CVAP 24 L221**	21 x 2	**MVAP 24 L232**	32 x 2
with lever, high construction, size “104.27”	**CVAP 24 L29**	29	**MVAP 24 L40**	40
with lever, high construction, size “104.27”	**CVAP 24 L229**	29 x 2	**MVAP 24 L240**	40 x 2

dimensions in mm

CVP L - CVAP L and **MVP L - MVAP L**



type	A	B	C	D	E	F
CVP/MVP 24 L	63	45	57	75,5	132	144
CVAP/MVAP 24 L	80	45	57	75,5	132	144

Hoods from page 260

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding and may be changed without notice

inserts: page:

CD ..... 64 poles + ⏚ 59
CDD ..... 108 poles + ⏚ 72
CDS ..... 42 poles + ⏚ 81
CSH ..... 24 poles + ⏚ 94
CNE, CSE ..... 24 poles + ⏚ 107
CCE ..... 24 poles + ⏚ 113
CSS ..... 24 poles + ⏚ 125
CQE ..... 46 poles + ⏚ 141
CQEE ..... 64 poles + ⏚ 147
CMCE ..... 10+2 (aux) poles + ⏚ 152
CMSH ..... 10+2 (aux) poles + ⏚ 153
CX ..... 4/8 and 6/6 poles + ⏚ 173 and 175
MIXO ..... 6 modules 179-215

insert centre distance:
104 x 27 mm

surface mounting housings with single lever and plastic cover

lever in stainless steel

surface mounting housings with single lever and aluminium cover

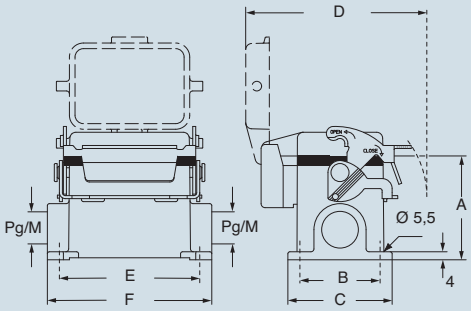
lever in stainless steel

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with lever and cover, size “104.27”	**CVP 24 LP**	21	**MVP 24 LP25**	25	**CVP 24 LS**	21	**MVP 24 LS25**	25
with lever and cover, size “104.27”	**CVP 24 LP2**	21 x 2	**MVP 24 LP225**	25 x 2	**CVP 24 LS2**	21 x 2	**MVP 24 LS225**	25 x 2
with lever and cover, high construction, size “104.27”	**CVAP 24 LP21**	21	**MVAP 24 LP32**	32	**CVAP 24 LS**	21	**MVAP 24 LS32**	32
with lever and cover, high construction, size “104.27”	**CVAP 24LP221**	21 x 2	**MVAP 24LP232**	32 x 2	**CVAP 24 LS2**	21 x 2	**MVAP 24LS232**	32 x 2
with lever and cover, high construction, size “104.27”	**CVAP 24 LP29**	29	**MVAP 24 LP40**	40	**CVAP 24LS29**	29	**MVAP 24 LS40**	40
with lever and cover, high construction, size “104.27”	**CVAP 24LP229**	29 x 2	**MVAP 24LP240**	40 x 2	**CVAP 24LS229**	29 x 2	**MVAP 24LS240**	40 x 2

N.B.:
The enclosures ensure IP66 protection (or IP65 cover versions) rating when mated and locked with the closing levers.

dimensions in mm

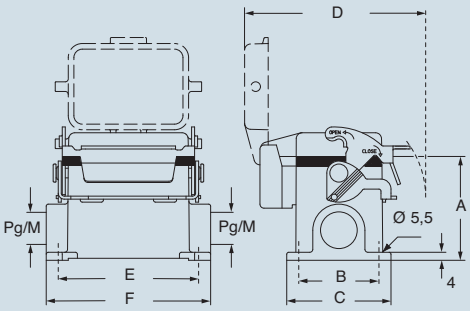
CVP LP - CVAP LP and MVP LP - MVAP LP



type	A	B	C	D	E	F
CVP/MVP 24 LP	63	45	57	94	132	144
CVAP/MVAP 24 LP	80	45	57	94	132	144

dimensions in mm

CVP LS - CVAP LS and MVP LS - MVAP LS



type	A	B	C	D	E	F
CVP/MVP 24 LS	63	45	57	94	132	144
CVAP/MVAP 24 LS	80	45	57	94	132	144

Hoods from page 260

c UL us Type 4/4X/12
(except enclosures with plastic cover)

EN 60529 IP66 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD	64 poles + ⏚	59
CDD	108 poles + ⏚	72
CDS	42 poles + ⏚	81
CSH	24 poles + ⏚	94
CNE, CSE	24 poles + ⏚	107
CCE	24 poles + ⏚	113
CSS	24 poles + ⏚	125
CQE	46 poles + ⏚	141
CQEE	64 poles + ⏚	147
CMCE	10+2 (aux) poles + ⏚	152
CMSH	10+2 (aux) poles + ⏚	153
CX	4/8 and 6/6 poles + ⏚	173 and 175
MIXO	6 modules	179-215

insert centre distance:
104 x 27 mm

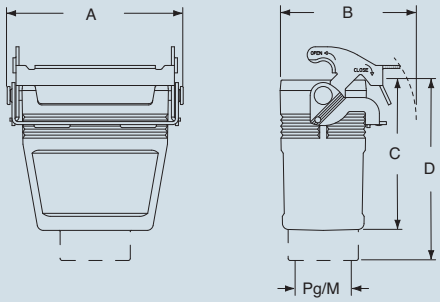
hoods top entry with gasket and 1 lever

lever in stainless steel

description	part No.	entry Pg	part No.	entry M
with lever/s, size “104.27”	**CVV 24 LG**	21	**MVV 24 LG32**	32
with lever/s, high construction, size “104.27”	**CVAV 24 LG21**	21	**MVAV 24 LG25**	25
with lever/s, high construction, size “104.27”	**CVAV 24 LG29**	29	**MVAV 24 LG32**	32
with lever/s, high construction, without adapter, size “104.27”	**CVFV 24 LG21**	21	**MVFV 24 LG25**	25
with lever/s, high construction, without adapter, size “104.27”	**CVFV 24 LG29**	29	**MVFV 24 LG32**	32

dimensions in mm

CVV LG - CVAV LG - CVFV LG and
MVV LG - MVAV LG - MVFV LG



type	A	B	C	D
CVV/MVV 24 LG	134	68	60,5	73,5
CVAV/MVAV 24 LG	134	68	81	97
CVFV/MVFV 24 LG	134	68	81	—

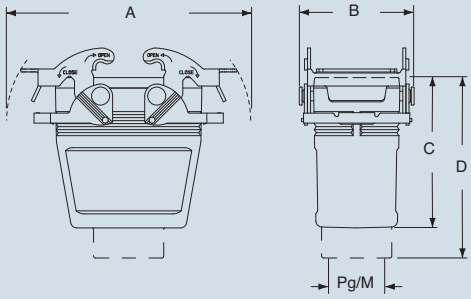
hoods, top entry, with gasket and 2 levers

lever in stainless steel

description	part No.	entry Pg	part No.	entry M
with lever/s, size “104.27”	**CVV 24 G**	21	**MVV 24 G32**	32
with lever/s, high construction, size “104.27”	**CVAV 24 G21**	21	**MVAV 24 G25**	25
with lever/s, high construction, size “104.27”	**CVAV 24 G29**	29	**MVAV 24 G32**	32
with lever/s, high construction, without adapter, size “104.27”	**CVFV 24 G21**	21	**MVFV 24 G25**	25
with lever/s, high construction, without adapter, size “104.27”	**CVFV 24 G29**	29	**MVFV 24 G32**	32

dimensions in mm

CVV G - CVAV G - CVFV G and
MVV G - MVAV G - MVFV G



type	A	B	C	D
CVV/MVV 24 G	169	57	60,5	73,5
CVAV/MVAV 24 G	169	57	81	97
CVFV/MVFV 24 G	169	57	81	—

Hoods from page 260

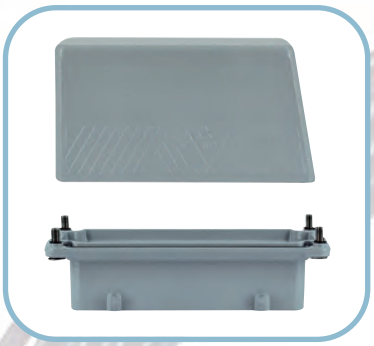
Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

BIG

LARGE MODULAR ENCLOSURE



MORE ENTRIES AND SPACE FOR CABLES

EASY WIRING AND INSPECTION

ELECTRONIC BOARD SLOTS

THE SPACE YOU HAVE ALWAYS WANTED...

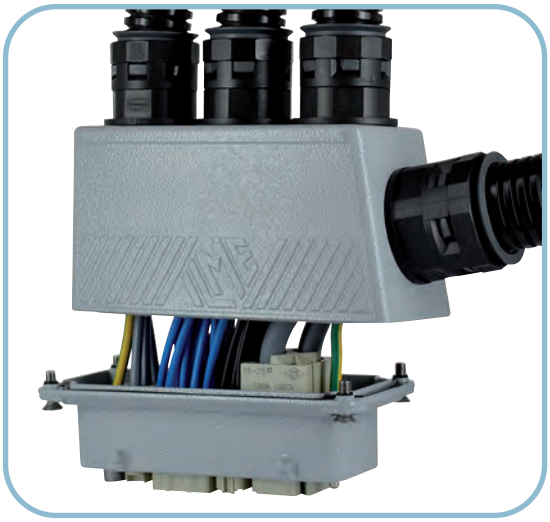
BIG Enclosures

The space you have always wanted ....

BIG Series, based on the wide-ranging experience achieved by ILME, introduces a significant **change in the design of hoods and has been specifically designed to meet the new requirements of the wiring market.**
The new enclosures **integrate the existing range** and **are ideal for installations with structured and complex wiring.**

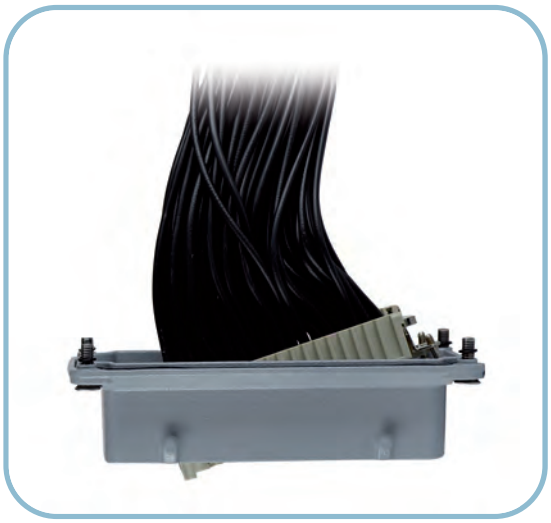
Accurate design

The **large dimensions** of these innovative enclosures have been chosen to offer customers an **adequate space to store conductors.**
The **width** of the new enclosures is **greater than that of previous versions**: 66 mm compared to the 43 mm for standard enclosures.
The **height** of BIG enclosures has also been **increased to 100 mm** for sizes “44.27” and “57.27” (standard versions for high models: 70 and 72mm), **and to 110 mm** for sizes “77.27” and “104.27” (standard versions for high models: 76 mm).
The cable compartment is now fully accessible during assembly (the connector insert is fully inserted in the lower half of the enclosure), **offering three times the space compared to standard enclosures.** This means it is possible to bend cables and pipes with greater bending radii.
Due to this important feature, the new BIG enclosures are **particularly suitable for MIXO modular inserts**, being versatile and customizable, for multiple cable entries.
Each insert, differentiated according to electric power or signal, pneumatic, optical fiber or Ethernet network current, **may thus have the specific branching. One single large connector can replace what previously required two connectors.**



Ease of use

The possibility of **splitting the enclosure in two halves simplifies the installation of the insert.**
It is also possible to **connect the insert with a cable and later insert it in the lower half of the enclosure** (except for the 6 pole version).

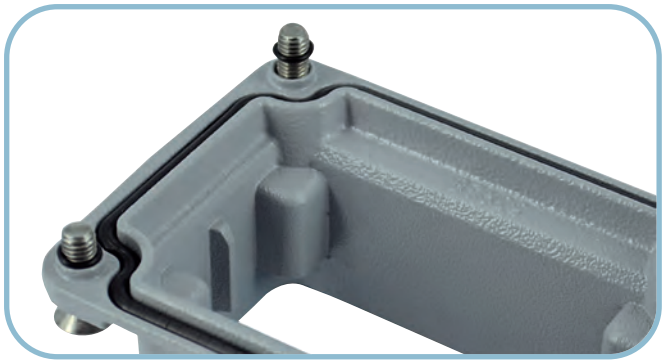


BIG Enclosures

The space you have always wanted ....

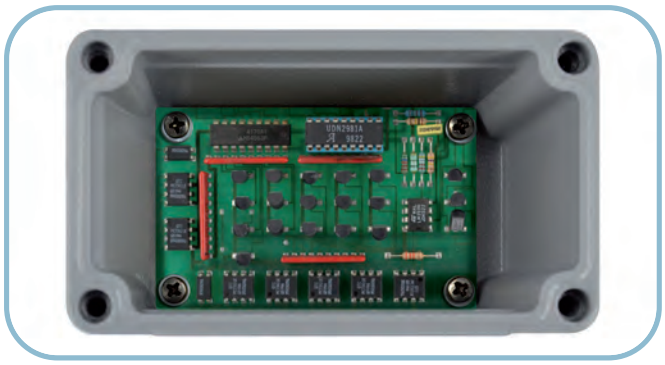
Options for the connection of control and signalling devices

All the five walls of the upper half of the enclosure have a high thickness to allow them to be drilled and threaded, even with multiple threads.
BIG enclosures enable the connection – of push – buttons, selectors, switches and signalling lamps after the necessary holes have been drilled. It is possible, for example, to enable power supplies or signalling circuits, even after the connector has been coupled.



Simplified installation

Installation operations for the new hoods are simple and fast.
No special accessories, tools or expensive additional operations are required.
The lower half of the enclosure must be fixed to the upper half by means of the 4 screws supplied.
It is possible to prevent the fixing screws from coming loose by fitting on each screw the O-ring seal supplied with the enclosures.



Compartment for electronic boards

It is possible to install electronic boards in the lower section of enclosures with side entry. In this case, it is however necessary to order CR MBS screws separately to fix the board in place.

Greater protection

It is also possible to fix one earthing terminal in the upper half of the enclosure to provide protection against indirect contacts.
In this case, it is however necessary to order separately earthing terminal CR MBT, consisting of a fixing screws and a wire-terminal for 6 mm^2 conductors.

BIG Enclosures

The space you have always wanted ....

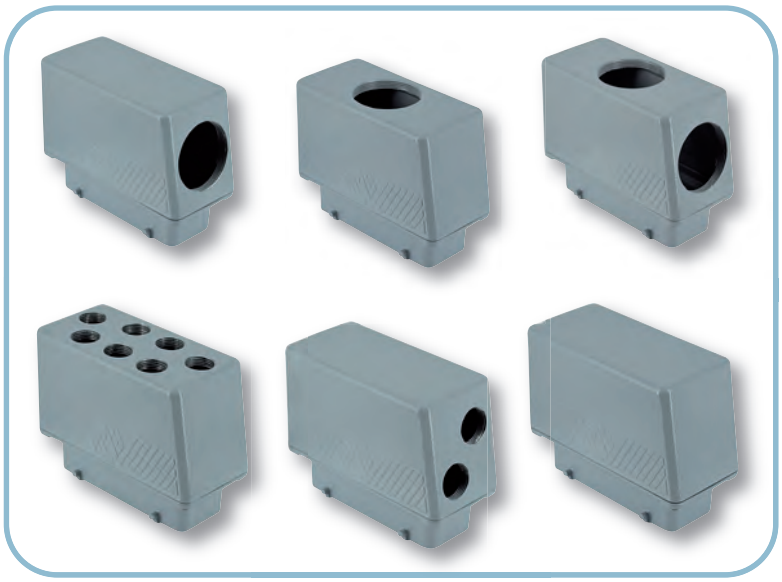
Range

The new items are classified with the following pre-code:

- MBO for enclosures with side entry
- MBV for enclosures with one or more top entries
- MBVO for enclosures with top and side entries
- CBC for closed enclosures that can be drilled

The available versions are:

- for enclosures with size “44.27”:
  single lever
- for enclosures with sizes “57.27”, “72.27” and “104.27”:
  two levers



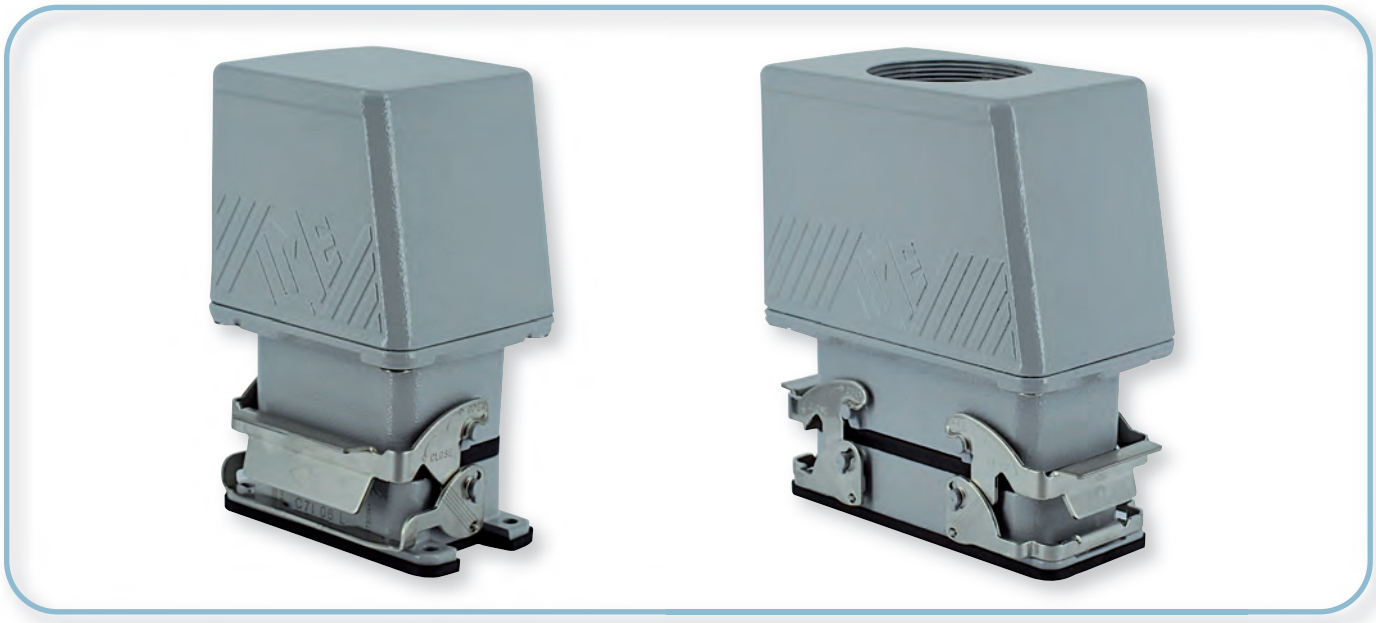
Technical characteristics

1) The new BIG enclosures are made in die-cast aluminum alloy and are fitted with cast pegs with a reinforced design, painted with epoxy-polyester powder paint.
The sealing gasket in anti-aging NBR elastomer, resistant to oils and fuels, is positioned internally to guarantee a greater protection from light and atmospheric agents.

2) BIG enclosures guarantee an IP66 protection rating (EN 60529) after the connector has been coupled, and completed with appropriate cable glands; they are manufactured in compliance with standard IEC/EN 61984.

3) Ambient temperature range -40°C / +125°C.

4) Versions for class W aggressive environments are also available on request.



Warning

Due to the considerable weight of BIG hoods, when fitted with inserts, conductors and cable glands, we recommend to use them in combination with housings fitted with V-TYPE closing levers (C7/M7/CV/MV).

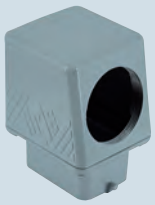
If used in combination with enclosures series CLASS, it is advisable to appropriately anchor the cables in order to prevent their weight from being applied to the closing levers.

inserts: page:

CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CT, CTSE (16A)	6	poles + ⏚	130
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 215

insert centre distance:
44 x 27 mm

hoods with 2 pegs

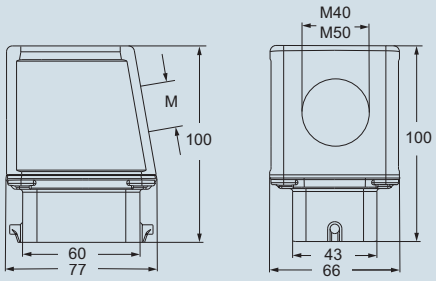


hoods with 2 pegs

description	part No.	entry M	part No.	entry M
with pegs, side entry	**MBO 06 L40**	40		
with pegs, side entry	**MBO 06 L50**	50		
with pegs, top entry			**MBV 06 L40**	40
with pegs, top entry			**MBV 06 L50**	50

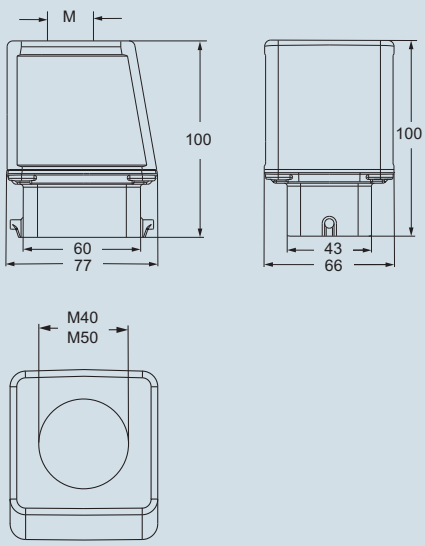
dimensions in mm

MBO 06 L



dimensions in mm

MBV 06 L



Housings page 274

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD ..... 24 poles + ⏚ 67
CDS ..... 9 poles + ⏚ 78
CSH ..... 6 poles + ⏚ 91
CNE, CSE ..... 6 poles + ⏚ 104
CCE ..... 6 poles + ⏚ 110
CSS ..... 6 poles + ⏚ 122
CT, CTSE (16A) ..... 6 poles + ⏚ 130
CQE ..... 10 poles + ⏚ 138
MIXO ..... 2 modules 179 - 215

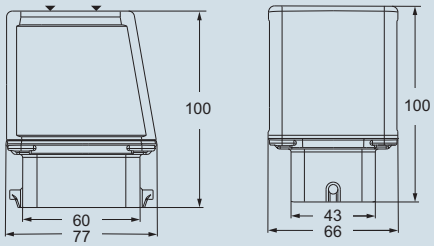
insert centre distance:
44 x 27 mm

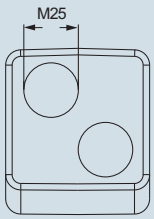
hoods with 2 pegs

description	part No.	entry M
with pegs, top entry	**MBV 06 L225**	25 x 2

dimensions in mm

MBV 06 L225



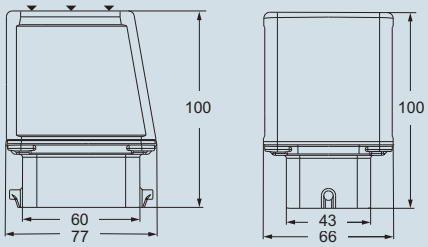


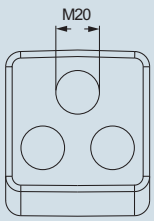
hoods with 2 pegs

part No.	entry M
MBV 06 L320	20 x 3

dimensions in mm

MBV 06 L320





Housings page 274

Type 4/4X/12

IP66 EN 60529 IEC 60529

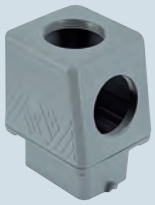
dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD ..... 24 poles + ⏚ 67
CDS ..... 9 poles + ⏚ 78
CSH ..... 6 poles + ⏚ 91
CNE, CSE ..... 6 poles + ⏚ 104
CCE ..... 6 poles + ⏚ 110
CSS ..... 6 poles + ⏚ 122
CT, CTSE (16A) ..... 6 poles + ⏚ 130
CQE ..... 10 poles + ⏚ 138
MIXO ..... 2 modules 179 - 215

insert centre distance:
44 x 27 mm

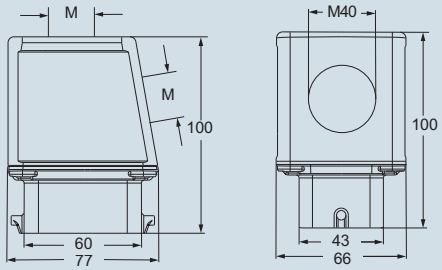
hoods with 2 pegs

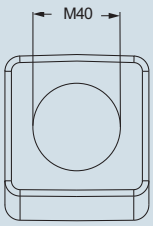


description	part No.	entry M
with pegs, side and top entries	**MBVO 06 L240**	2 x 40

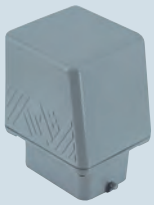
dimensions in mm

MBVO 06 L240





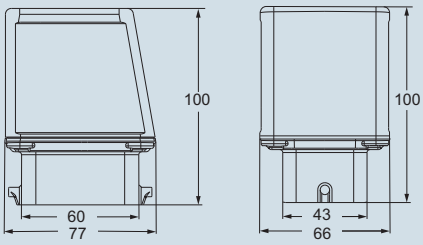
hoods with 2 pegs



description	part No.
with pegs, without entries, designed to be drilled	**CBC 06 L**

dimensions in mm

CBC 06 L

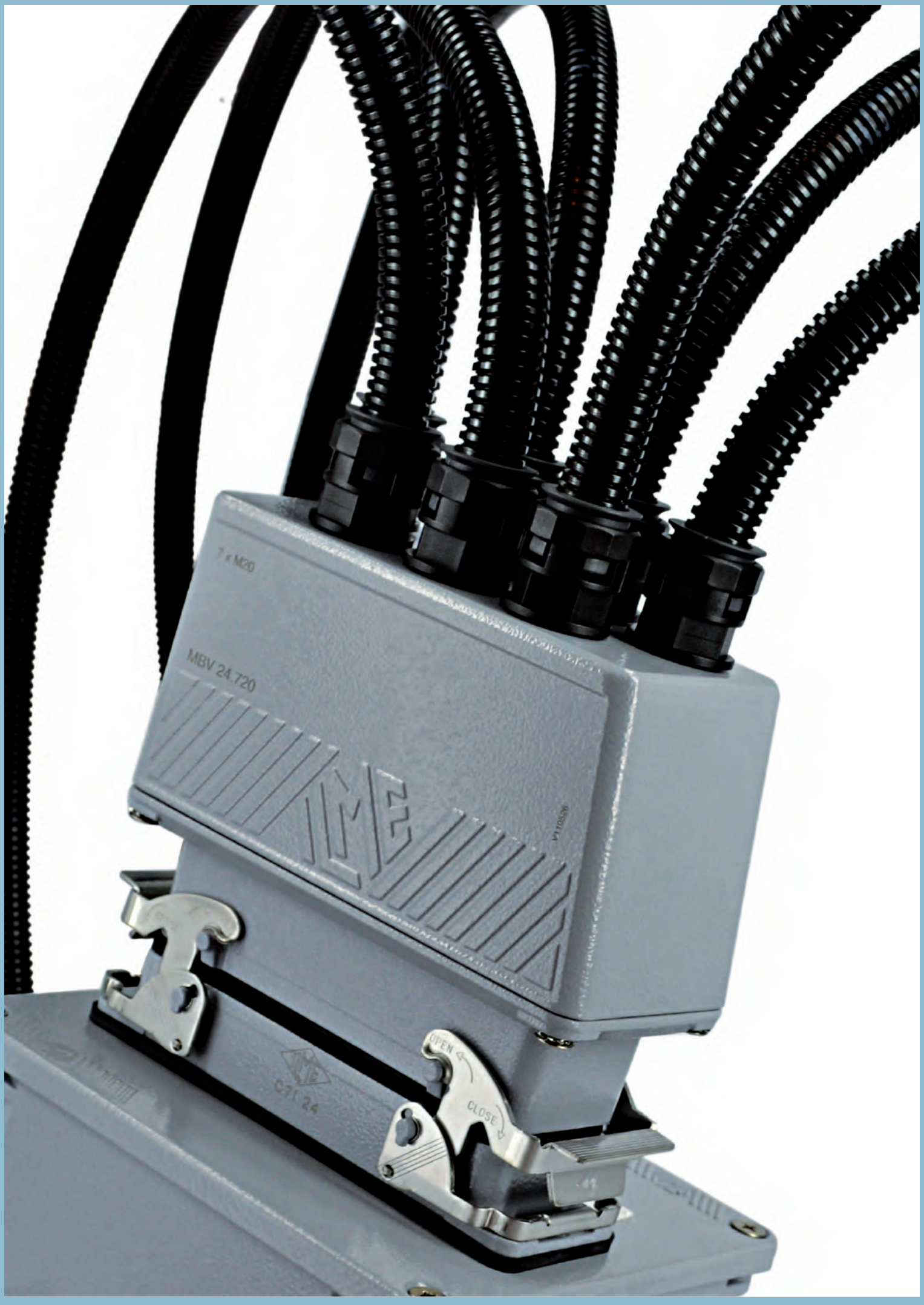


Housings page 274

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

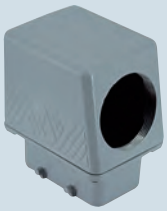

1 x M20
MBV 24.720
OPEN
CLOSE

inserts: page:

CDD ..... 42 poles + ⏚ 69
CDS ..... 18 poles + ⏚ 79
CSH ..... 10 poles + ⏚ 92
CNE, CSE ..... 10 poles + ⏚ 105
CCE ..... 10 poles + ⏚ 111
CSS ..... 10 poles + ⏚ 123
CT, CTSE (16A) ..... 10 poles + ⏚ 131
CQE ..... 18 poles + ⏚ 139
CMCE ..... 3+2 (aux) poles + ⏚ 148
CMSH ..... 3+2 (aux) poles + ⏚ 149
CX ..... 8/24 poles + ⏚ 169
MIXO ..... 3 modules 179 - 215

insert centre distance:
57 x 27 mm

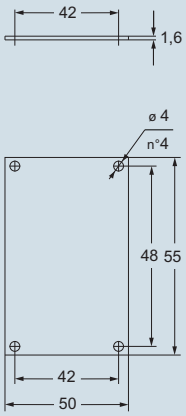
hoods with 4 pegs



hoods with 4 pegs

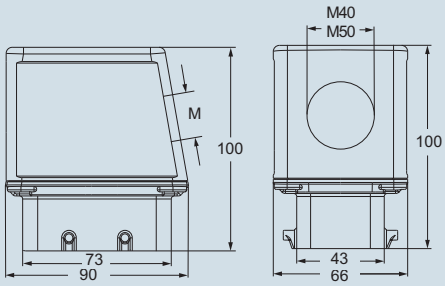
description	part No.	entry M	part No.	entry M
with pegs, side entry	**MBO 10.40**	40		
with pegs, side entry	**MBO 10.50**	50		
with pegs, top entry			**MBV 10.40**	40
with pegs, top entry			**MBV 10.50**	50

dimensions in mm of electronic boards for MBO enclosures side entry



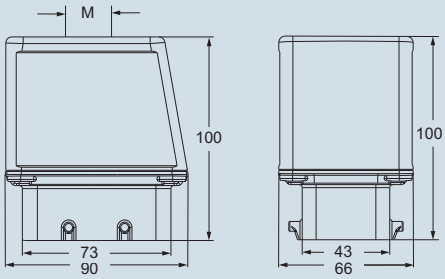
dimensions in mm

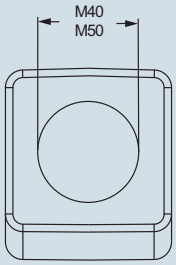
MBO 10



dimensions in mm

MBV 10





Housings page 275

c UL us Type 4/4X/12

EN 60529 IP66 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD ..... 42 poles + ⏚ 69
CDS ..... 18 poles + ⏚ 79
CSH ..... 10 poles + ⏚ 92
CNE, CSE ..... 10 poles + ⏚ 105
CCE ..... 10 poles + ⏚ 111
CSS ..... 10 poles + ⏚ 123
CT, CTSE (16A) ..... 10 poles + ⏚ 131
CQE ..... 18 poles + ⏚ 139
CMCE ..... 3+2 (aux) poles + ⏚ 148
CMSH ..... 3+2 (aux) poles + ⏚ 149
CX ..... 8/24 poles + ⏚ 169
MIXO ..... 3 modules 179 - 215

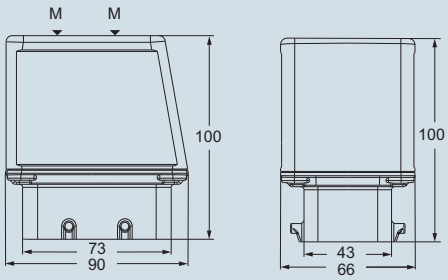
insert centre distance:
57 x 27 mm

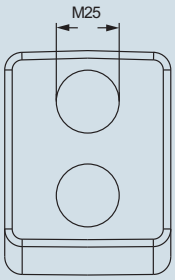
hoods with 4 pegs

description	part No.	entry M
with pegs, top entry	**MBV 10.225**	25 x 2

dimensions in mm

MBV 10.225





Housings page 275

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD ..... 42 poles + ⏚ 69
CDS ..... 18 poles + ⏚ 79
CSH ..... 10 poles + ⏚ 92
CNE, CSE ..... 10 poles + ⏚ 105
CCE ..... 10 poles + ⏚ 111
CSS ..... 10 poles + ⏚ 123
CT, CTSE (16A) ..... 10 poles + ⏚ 131
CQE ..... 18 poles + ⏚ 139
CMCE ..... 3+2 (aux) poles + ⏚ 148
CMSH ..... 3+2 (aux) poles + ⏚ 149
CX ..... 8/24 poles + ⏚ 169
MIXO ..... 3 modules 179 - 215

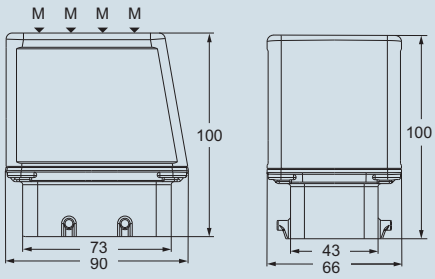
insert centre distance:
57 x 27 mm

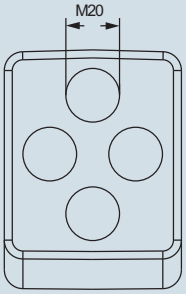
hoods with 4 pegs

description	part No.	entry M
with pegs, top entry	**MBV 10.420**	20 x 4

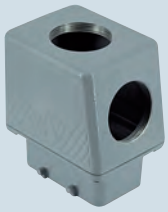
dimensions in mm

MBV 10.420





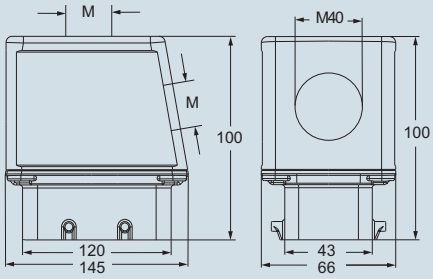
hoods with 4 pegs

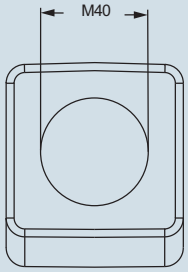


description	part No.	entry M
with pegs, side and top entries	**MBVO 10.240**	40 x 2

dimensions in mm

MBVO 10.240





Housings page 275

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD ..... 42 poles + ⏚ 69
CDS ..... 18 poles + ⏚ 79
CSH ..... 10 poles + ⏚ 92
CNE, CSE ..... 10 poles + ⏚ 105
CCE ..... 10 poles + ⏚ 111
CSS ..... 10 poles + ⏚ 123
CT, CTSE (16A) ..... 10 poles + ⏚ 131
CQE ..... 18 poles + ⏚ 139
CMCE ..... 3+2 (aux) poles + ⏚ 148
CMSH ..... 3+2 (aux) poles + ⏚ 149
CX ..... 8/24 poles + ⏚ 169
MIXO ..... 3 modules 179 - 215

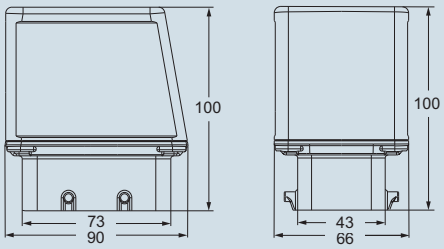
insert centre distance:
57 x 27 mm

hoods with 4 pegs

description	part No.
with pegs, without entries, designed to be drilled	**CBC 10**

dimensions in mm

CBC 10



Housings page 275

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD	40	poles + ⏚	57
CDD	72	poles + ⏚	70
CDS	27	poles + ⏚	80
CSH	16	poles + ⏚	93
CNE, CSE	16	poles + ⏚	106
CCE	16	poles + ⏚	112
CSS	16	poles + ⏚	124
CT, CTSE (16A)	16	poles + ⏚	132
CQE	32	poles + ⏚	140
CQEE	40	poles + ⏚	146
CMCE, CMSH 6+2 (aux)		poles + ⏚	150-151
CP	6	poles + ⏚	162
CX	6/36 and 12/2	poles + ⏚	170-171
CX	4/0 and 4/2	poles + ⏚	172
MIXO	4	modules	179-215

insert centre distance:
77,5 x 27 mm

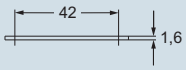
hoods with 4 pegs

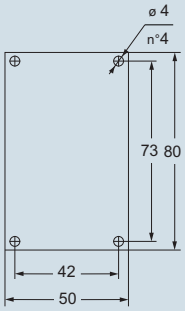
description	part No.	entry M
with pegs, side entry	**MBO 16.40**	40
with pegs, side entry	**MBO 16.50**	50

hoods with 4 pegs

part No.	entry M
MBV 16.40	40
MBV 16.50	50

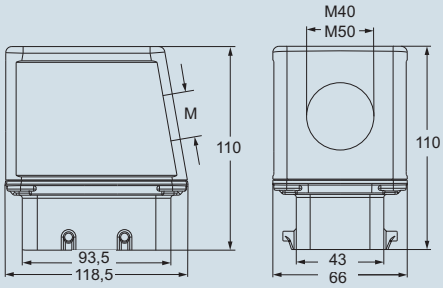
dimensions in mm of electronic boards for MBO enclosures side entry





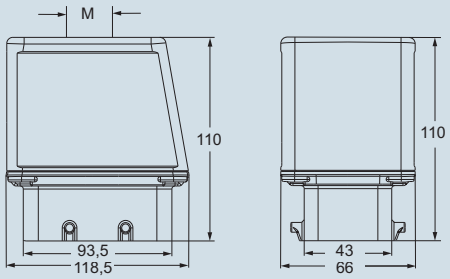
dimensions in mm

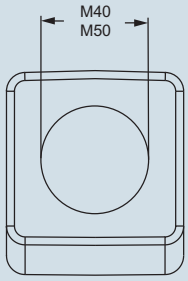
MBO 16



dimensions in mm

MBV 16





Housings page 276

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD	40	poles + ⏚	57
CDD	72	poles + ⏚	70
CDS	27	poles + ⏚	80
CSH	16	poles + ⏚	93
CNE, CSE	16	poles + ⏚	106
CCE	16	poles + ⏚	112
CSS	16	poles + ⏚	124
CT, CTSE (16A)	16	poles + ⏚	132
CQE	32	poles + ⏚	140
CQEE	40	poles + ⏚	146
CMCE, CMSH 6+2 (aux)		poles + ⏚	150-151
CP	6	poles + ⏚	162
CX	6/36 and 12/2	poles + ⏚	170-171
CX	4/0 and 4/2	poles + ⏚	172
MIXO	4	modules	179-215

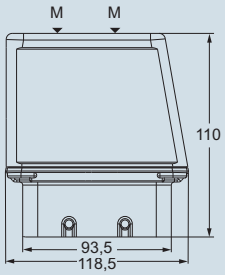
insert centre distance:
77,5 x 27 mm

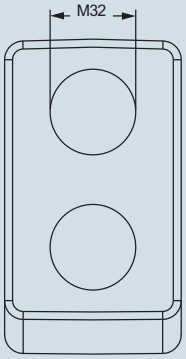
hoods with 4 pegs

description	part No.	entry M
with pegs, top entry	**MBV 16.232**	32 x 2

dimensions in mm

MBV 16.232



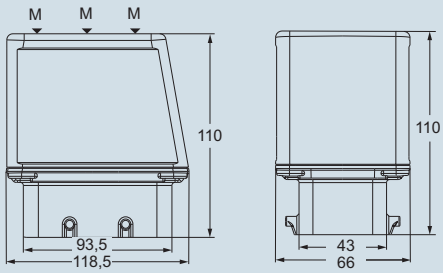


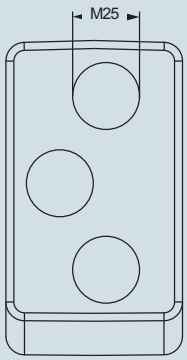
hoods with 4 pegs

description	part No.	entry M
with pegs, top entry	**MBV 16.325**	25 x 3

dimensions in mm

MBV 16.325





Housings page 276

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD ..... 40 poles + ⏚ 57
CDD ..... 72 poles + ⏚ 70
CDS ..... 27 poles + ⏚ 80
CSH ..... 16 poles + ⏚ 93
CNE, CSE ..... 16 poles + ⏚ 106
CCE ..... 16 poles + ⏚ 112
CSS ..... 16 poles + ⏚ 124
CT, CTSE (16A) ..... 16 poles + ⏚ 132
CQE ..... 32 poles + ⏚ 140
CQEE ..... 40 poles + ⏚ 146
CMCE, CMSH 6+2 (aux) poles + ⏚ 150-151
CP ..... 6 poles + ⏚ 162
CX ..... 6/36 and 12/2 poles + ⏚ 170-171
CX ..... 4/0 and 4/2 poles + ⏚ 172
MIXO ..... 4 modules 179-215

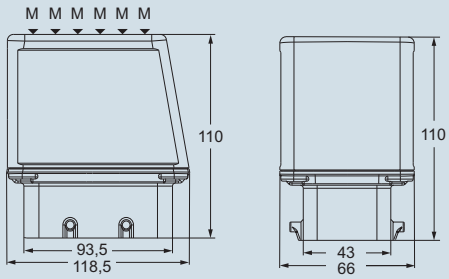
insert centre distance:
77,5 x 27 mm

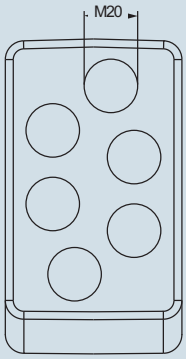
hoods with 4 pegs

description	part No.	entry M
with pegs, top entry	**MBV 16.620**	20 x 6

dimensions in mm

MBV 16.620



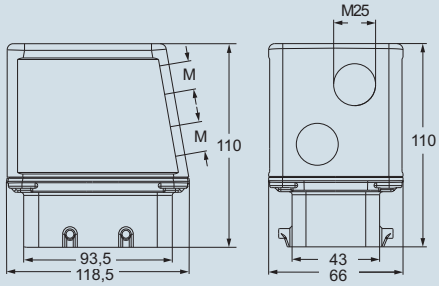


hoods with 4 pegs

description	part No.	entry M
with pegs, side entry	**MBO 16.225**	25 x 2

dimensions in mm

MBO 16.225



Housings page 276

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD	40	poles + ⏚	57
CDD	72	poles + ⏚	70
CDS	27	poles + ⏚	80
CSH	16	poles + ⏚	93
CNE, CSE	16	poles + ⏚	106
CCE	16	poles + ⏚	112
CSS	16	poles + ⏚	124
CT, CTSE (16A)	16	poles + ⏚	132
CQE	32	poles + ⏚	140
CQEE	40	poles + ⏚	146
CMCE, CMSH 6+2 (aux)		poles + ⏚	150-151
CP	6	poles + ⏚	162
CX	6/36 and 12/2	poles + ⏚	170-171
CX	4/0 and 4/2	poles + ⏚	172
MIXO	4	modules	179-215

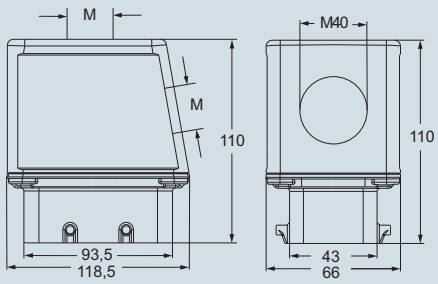
insert centre distance:
77,5 x 27 mm

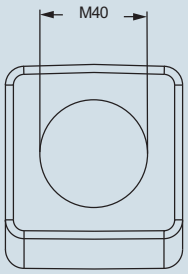
hoods with 4 pegs

description	part No.	entry M
with pegs, side and top entries	**MBVO 16.240**	40 x 2

dimensions in mm

MBVO 16.240



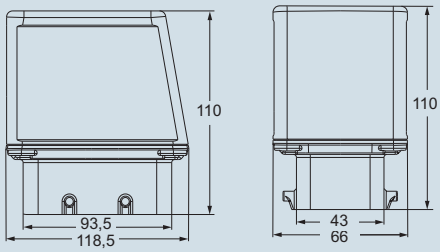


hoods with 4 pegs

description	part No.
with pegs, without entries, designed to be drilled	**CBC 16**

dimensions in mm

CBC 16



Housings page 276

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

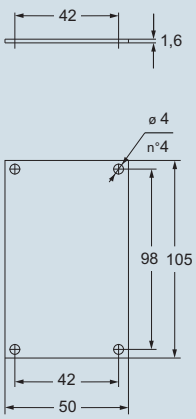
CD ..... 64 poles + ⏚ 59
CDD ..... 108 poles + ⏚ 72
CDS ..... 42 poles + ⏚ 81
CSH ..... 24 poles + ⏚ 94
CNE, CSE ..... 24 poles + ⏚ 107
CCE ..... 24 poles + ⏚ 113
CSS ..... 24 poles + ⏚ 125
CT, CTSE (16A) ..... 24 poles + ⏚ 133
CQE ..... 46 poles + ⏚ 141
CQEE ..... 64 poles + ⏚ 147
CMCE ..... 10+2 (aux) poles + ⏚ 152
CMSH ..... 10+2 (aux) poles + ⏚ 153
CX ..... 4/8 and 6/6 poles + ⏚ 173 and 175
MIXO ..... 6 modules 179-215

insert centre distance:
104 x 27 mm

hoods with 4 pegs

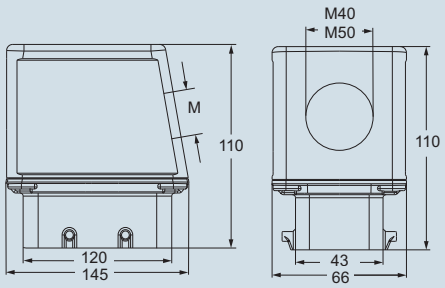
description	part No.	entry M
with pegs, side entry	**MBO 24.40**	40
with pegs, side entry	**MBO 24.50**	50

dimensions in mm of electronic boards for MBO enclosures side entry



dimensions in mm

MBO 24

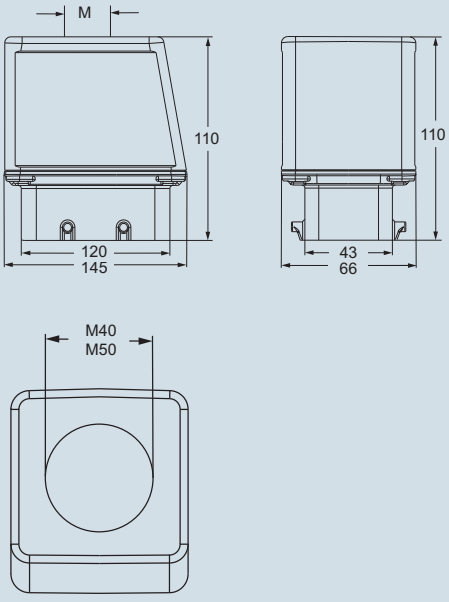


hoods with 4 pegs

description	part No.	entry M
with pegs, top entry	**MBV 24.40**	40
with pegs, top entry	**MBV 24.50**	50

dimensions in mm

MBV 24



Housings page 277

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD	64 poles + ⏚	59
CDD	108 poles + ⏚	72
CDS	42 poles + ⏚	81
CSH	24 poles + ⏚	94
CNE, CSE	24 poles + ⏚	107
CCE	24 poles + ⏚	113
CSS	24 poles + ⏚	125
CT, CTSE (16A)	24 poles + ⏚	133
CQE	46 poles + ⏚	141
CQEE	64 poles + ⏚	147
CMCE	10+2 (aux) poles + ⏚	152
CMSH	10+2 (aux) poles + ⏚	153
CX	4/8 and 6/6 poles + ⏚	173 and 175
MIXO	6 modules	179-215

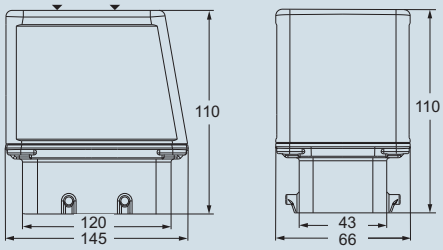
insert centre distance:
104 x 27 mm

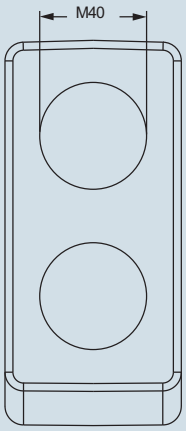
hoods with 4 pegs

description	part No.	entry M
with pegs, top entry	**MBV 24.240**	40 x 2

dimensions in mm

MBV 24.240



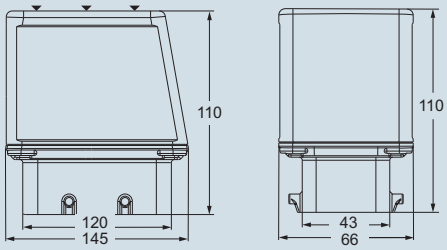


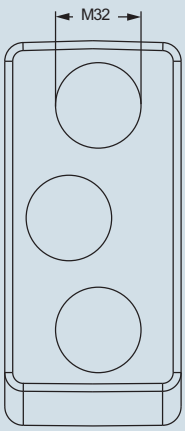
hoods with 4 pegs

description	part No.	entry M
with pegs, top entry	**MBV 24.332**	32 x 3

dimensions in mm

MBV 24.332





Housings page 277

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD ..... 64 poles + ⏚ 59
CDD ..... 108 poles + ⏚ 72
CDS ..... 42 poles + ⏚ 81
CSH ..... 24 poles + ⏚ 94
CNE, CSE ..... 24 poles + ⏚ 107
CCE ..... 24 poles + ⏚ 113
CSS ..... 24 poles + ⏚ 125
CT, CTSE (16A) ..... 24 poles + ⏚ 133
CQE ..... 46 poles + ⏚ 141
CQEE ..... 64 poles + ⏚ 147
CMCE ..... 10+2 (aux) poles + ⏚ 152
CMSH ..... 10+2 (aux) poles + ⏚ 153
CX ..... 4/8 and 6/6 poles + ⏚ 173 and 175
MIXO ..... 6 modules 179-215

insert centre distance:
104 x 27 mm

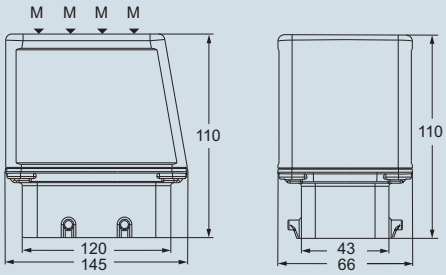
hoods with 4 pegs

hoods with 4 pegs

description	part No.	entry M	part No.	entry M
with pegs, top entry	**MBV 24.425**	25 x 4		
with pegs, top entry	**MBV 24.720**	20 x 7		
with pegs, side entry			**MBO 24.225**	25 x 2

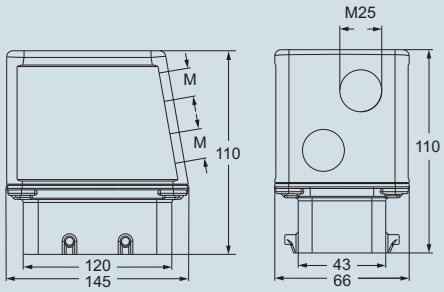
dimensions in mm

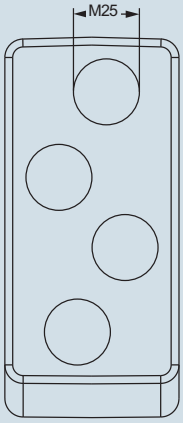
MBV 24



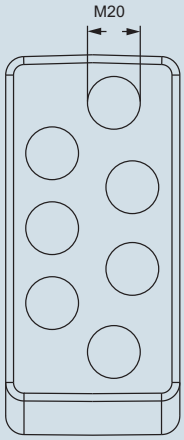
dimensions in mm

MBO 24.225





MBV 24.425



MBV 24.720

Housings page 277

c UL us Type 4/4X/12

EN 60529 IP66 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD	64 poles + ⏚	59
CDD	108 poles + ⏚	72
CDS	42 poles + ⏚	81
CSH	24 poles + ⏚	94
CNE, CSE	24 poles + ⏚	107
CCE	24 poles + ⏚	113
CSS	24 poles + ⏚	125
CT, CTSE (16A)	24 poles + ⏚	133
CQE	46 poles + ⏚	141
CQEE	64 poles + ⏚	147
CMCE	10+2 (aux) poles + ⏚	152
CMSH	10+2 (aux) poles + ⏚	153
CX	4/8 and 6/6 poles + ⏚	173 and 175
MIXO	6 modules	179-215

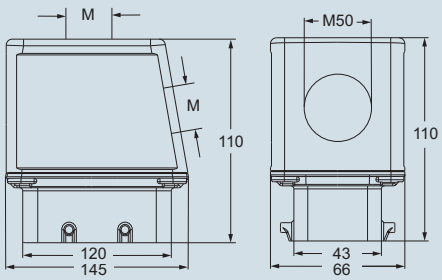
insert centre distance:
104 x 27 mm

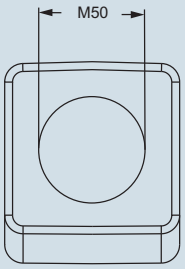
hoods with 4 pegs

description	part No.	entry M
with pegs, side and top entries	**MBVO 24.250**	50 x 2

dimensions in mm

MBVO 24.250



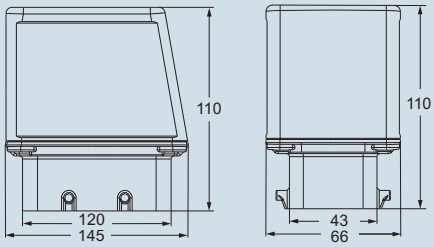


hoods with 4 pegs

description	part No.
with pegs, without entries, designed to be drilled	**CBC 24**

dimensions in mm

CBC 24



Housings page 277

Type 4/4X/12

EN 60529 IP66 IEC 60529

dimensions shown are not binding
and may be changed without notice

T-TYPE enclosures

Standard & Aggressive environments, Hygienic applications

T-TYPE STANDARD

for standard applications

Pages 324-333

T-TYPE/W

for aggressive environments

Pages 334-343

HYGIENIC T-TYPE/H

for food & beverage

HYGIENIC T-TYPE/C

for low temperatures

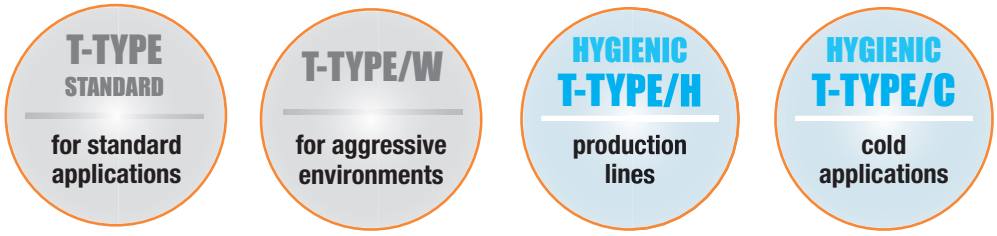
ECOLAB

Pages 344-365

T-TYPE General information

International standards

The T-TYPE enclosures have been successfully tested



T-TYPE enclosures have been **successfully** tested in accordance with the following international standards, guaranteeing their usage for numerous applications:

- **EN 61984: Connectors - Safety requirements and tests.**
- **ANSI/UL 50 (Enclosures for Electrical Equipment)** equivalent to voluntary North American standard NEMA 250 (NEMA = National Electrical Manufactures Association) and the corresponding Canadian standard CSA C22.2 No. 94 (Special Purpose Enclosures) for degrees of protection used in North America and required by local installation codes (e.g. NFPA 70 National Electrical Code in the USA, CSA plant standards for Canada). The current type approval was obtained after passing a series of tests carried out in accordance with the standard, in particular: **Type 12 (= NEMA 12)** for internal use, similar to degree of protection IP54 according to IEC/EN 60529. (Only standard T-TYPE enclosures).
- **EN 60529: Degrees of protection provided by enclosures (IP Code)** for ratings IP65, IP66 and IP69.
- **EN 62262: Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK Code)** for ratings IK09 (enclosures with levers), IK10 (enclosures without levers).
- **IEC 60068-2-52: Environmental testing - Part 2-52:**
  Salt mist, cyclic: with 5% solution of sodium chloride (NaCl), solution Ph from 6,5 to 7,2;
  ENVIRONMENTAL CONDITIONS: salt mist 35 °C for 2 hours; 40 °C for 168 hours with 93% relative humidity;
  NO. OF CYCLES: 4;
  TEST PASSED: maintaining the IP degree of protection and with a change of contact resistance ≤ 50% of the initial value or ≤ 5 mΩ.
- **IEC 60068-2-6: Environmental testing - Part 2-6:**
  Vibration (sinusoidal): with values 10Hz÷500Hz, 0,35 mm amplitude of displacement, 50m/s² ($5g_n$), crossover point 60,1 Hz;
  NO. OF CYCLES: 10;
  TEST PASSED: scanning 3 axes for 2 hours, with a change of contact resistance value ≤ 50% of the initial value or ≤ 5 mΩ and no micro-interruption (≥ 1 µs).
- **IEC 60068-2-3: Environmental testing - Part 2-3:**
  Damp heat, steady state: at 40 °C, 93% relative humidity, 504 hours;
  TEST PASSED: with a change of contact resistance value ≤ 50% of the initial value or ≤ 5 mΩ and no disruptive discharge (insulation resistance > 100 GΩ).
- **IEC 60068-2-30: Environmental testing - Part 2-30:**
  Damp heat, cyclic: 40 °C, 95% relative humidity, 12 hours at ambient temperature;
  NO. OF CYCLES: 21;
  TEST PASSED: with a change of contact resistance value ≤ 50% of the initial value or ≤ 5 mΩ and no disruptive discharge (insulation resistance > 100 GΩ).

T-TYPE General information

Resistance to chemicals comparison table

The classification herewith provided is only a generic reference guide in order to enable a first selection. It is based on literature data provided by the suppliers of the raw materials used, which are related to tests carried out on specimens under test conditions which are not always homogeneous and involving accelerating techniques, therefore not necessarily describing real operational conditions. The actual behaviour of products in the field may therefore be positively or negatively influenced by several variable environmental parameters such as temperature, relative humidity, simultaneous presence of a plurality of substances and their concentration, exposure time, dynamic or static application condition, and so on. The accuracy of transferring the indications given herein to the actual conditions of use is therefore merely indicative and does not imply any guarantee or responsibility by ILME.

	T-TYPE	T-TYPE / W	T-TYPE / H	T-TYPE / C
A				
Acetone (propanone)	x	x	x	x
Active chlorine	x	x	x	x
Alum	●	●	●	●
Ammonia, 10% aqueous solution	●	x	●	●
Ammonia, liquid	x	x	●	●
Ammonium acetate	●	x	●	●
Ammonium carbonate	●	●	●	x
Ammonium chloride	●	●	●	x
Ammonium nitrate	●	●	●	●
Ammonium phosphate	●	●	●	●
Ammonium sulphate	●	●	●	●
Amyl alcohol	□	□	□	x
Aniline	□	□	x	x
Aqua regia (1:3 nitric acid : hydrochloric acid)	x	x	x	x
Asphalt	□	□	□	x
B				
Beer	●	●	●	●
Benzene	x	□	x	x
Borax	□	□	□	□
Boric acid	●	●	●	●
Boric acid, 10% aqueous solution	●	●	●	●
Boric water (boric acid 3%)	●	●	●	●
Butane, gas	□	□	□	x
Butane, liquid	□	□	□	x
C				
Calcium chloride	●	●	●	●
Calcium chloride, 10% aqueous solution	●	●	●	●
Calcium chloride, diluted suspension	●	●	●	●
Calcium nitrate	●	●	●	●
Calcium sulphate	●	●	x	●
Caustic potash (potassium hydroxide) 10%	x	●	●	x
Citric acid 50% aqueous solution	x	x	●	●
Copper sulphate 10% aqueous solution	●	●	●	●
Cresol	□	□	x	x
Cresolic solution	□	□	x	x
Cutting oil	□	□	□	x
Cyclo-hexane	□	□	□	x
D				
Deca-hydro-naphtalene	x	x	x	x
Di-exyl Phtalate	●	x	x	x

	T-TYPE	T-TYPE / W	T-TYPE / H	T-TYPE / C
D				
Di-isononyl Phtalate	●	x	x	x
Di-optyl Phtalate	●	●	x	x
Diesel Oil	□	□	□	□
Diluted Glucose	●	●	●	●
Diluted Glycerine	●	●	●	●
Diluted Glycol	●	●	●	●
Diluted Phenol	□	□	x	x
Diluted urea	●	●	●	●
E				
Ethanol (ethyl alcohol)	x	x	x	●
Ethyl alcohol	●	●	□	●
Ethylene-glycol or propylene-glycol	●	●	●	●
F				
Fatty acids	●	●	●	□
Ferric chloride, 10% aqueous solution	x	x	x	x
Formalin (formaldehyde 40% aqueous solution)	x	x	●	●
Fruit juices	●	●	●	●
Fuel oils	□	□	□	x
G				
Gaseous ammonia	□	x	●	●
Gaseous propane	x	●	●	x
Glycerine	●	●	●	●
Grinding oil	□	□	□	x
Gypsum (see calcium sulphate)	●	●	x	●
H				
Heptane	□	□	□	x
Hexane	□	□	□	x
Hydrochloric acid, <2% aqueous solution	x	x	●	□
Hydrogen sulphide	□	x	●	x
I				
Ink	●	●	●	●
IRM oil 901	●	●	●	●
IRM oil 902	□	●	●	x
IRM oil 903	x	□	□	□
Isopropyl alcohol	□	●	●	●
K				
Kitchen salt, aqueous solution	●	●	●	●

Legend ● : Resistant □ : Limited resistance x : Not resistant

T-TYPE General information

Resistance to chemicals comparison table

	T-TYPE	T-TYPE / W	T-TYPE / H	T-TYPE / C
L				
Lactic acid	●	●	●	●
Linseed oil	●	●	●	●
Liquid soap	x	●	●	●
Lubricating engine oil	□	□	□	x
Lubricating oil	●	●	●	x
M				
Mercury	●	●	●	●
Methanol (methyl alcohol)	x	x	●	●
Methyl alcohol, diluted 50%	□	□	●	●
Mineral based oil	●	●	●	●
Mineral oils (un-tasteful)	●	●	●	●
Mothballs (naphthalene, paradichlorobenzene)	□	□	x	x
Muriatic acid, concentrated	x	x	x	x
N				
n-Butanol (butyl alcohol)	●	●	●	●
Naphthalene	□	●	x	x
Normal (low octane) gasoline (petrol)	□	□	□	x
O				
Octane	□	□	□	x
Oleic acid	●	●	●	x
Oxalic acid	●	●	●	●
Ozone	x	x	x	□
P				
Paraffin oil	●	●	●	●
Petrol ether	□	□	□	□
Petroleum	●	●	●	●
Petroleum spirit (dry cleaning)	□	□	x	x
Potassium carbonate	●	●	●	●
Potassium chlorate	●	●	x	●
Potassium chloride	●	●	●	●
Potassium cyanide, aqueous solution	●	●	●	●
Potassium di-chromate	□	□	●	●
Potassium iodide	□	□	●	●
Potassium nitrate	□	x	x	●
Potassium persulphate	□	□	x	●
Potassium sulphate	□	□	●	●
S				
Sea water	●	●	●	●
Silicon oil	●	●	●	x
Soap solution	□	●	●	●
Sodium bicarbonate (oxide)	●	●	●	●
Sodium carbonate (washing soda)	●	●	●	●
Sodium chlorate	●	●	x	●
Sodium chloride (kitchen salt)	●	●	●	●

	T-TYPE	T-TYPE / W	T-TYPE / H	T-TYPE / C
S				
Sodium disulphate, aqueous solution	●	●	●	●
Sodium hydroxide (caustic soda)	x	x	●	●
Sodium hydroxide 12,5% (liscivia)	□	x	●	●
Sodium Hypochlorite	x	x	●	●
Sodium nitrate	●	●	●	x
Sodium nitrite	□	□	●	x
Sodium perborate	●	●	●	●
Sodium phosphate	●	●	●	x
Sodium silicate	●	x	x	●
Sodium sulphate	●	●	●	●
Sodium sulphide	●	●	●	●
Sodium Thiosulphate (photographic fixer)	●	●	●	●
Solution for photographic processing	●	●	●	●
Starch, aqueous (amylum)	●	●	●	●
Stearic acid	●	●	●	●
Succinic acid (butanedioic acid)	●	●	●	●
Sulphur	●	●	x	x
Sulphur dioxide (sulphurous anhydride)	□	x	x	□
Sulphuric acid, 2% aqueous solution	x	x	□	□
T				
Tallow	●	●	●	●
Tar	□	□	x	□
Tartaric acid	●	●	●	●
Toluene	x	x	x	x
Transformer oil (dielectric)	●	●	●	●
Trichloroethylene	x	x	x	x
Trichresyl phosphate	●	●	x	x
Turpentine essence	x	□	□	x
U				
Urine	●	●	●	●
V				
Vegetable oil	●	●	●	●
Vinegar	x	□	●	□
W				
Water	●	●	●	●
White alcohol (isopropanol + ethanol)	□	●	●	●
X				
Xylene	x	x	x	x

Legend ● : Resistant □ : Limited resistance x : Not resistant

T-TYPE Standard

For modular and standard inserts

Alongside the wide range of traditional metallic enclosures for ILME multipole connectors, there is now available a **new series of enclosures in self-extinguishing thermoplastic material** in the most common sizes “44.27”, “57.27”, “77.27” and “104.27”.

Quality and money saving are the main features of these enclosures, as an outcome of careful product studies.

Valuable characteristics of these new versions of enclosures:
- **significant structural solidity** and mechanical robustness by virtue of **substantial thickness;**
- **external dimensions** of the bulkhead mounting housings are **similar to those of the corresponding metallic enclosures; hole fixing centres are unchanged;**
- **pre-fastened gaskets** for easier installation;
- **wide space inside the enclosures** for cables, with mounted connector inserts, similar to the corresponding “high construction” versions;
- possibility of making **total insulation** constructions (equivalent to Class II) ⧈ ;
- **absence of powder paint** for environments in which these are not recommended (e.g. to avoid food contamination).

STANDARD APPLICATIONS

DATA SHEETS AT PAGES 326-333

- **Enclosures** in **thermoplastic material, dark grey RAL 7012 colour,** with high thicknesses providing structural solidity and durability.
- Built-in **polyurethane gaskets.**
- **Locking levers** in **thermoplastic material colour grey RAL 7001.**
- **M25, M32 and M40** threaded cable entries.
- **IP65** degree of protection according to **EN 60529;**
- **UL TYPE 12** degree of protection according to **ANSI/UL50.**
- Each enclosure carries its own part number, thread/size, conformity **markings** and UL type rating.
- Ambient temperature range: **-40 °C / +90 °C.**

Interchangeability with other ILME series

T-TYPE series housings can be coupled with metal hoods. Insulating hoods can be coupled with “V-TYPE” metal housings.

Hoods “57.27”, “77.27” and “104.07” can be mounted on COB TCQ and COB BC frames simply by replacing the supplied levers with COB L levers (to be purchased separately).

Insulating enclosures are ideal for mounting of all ILME inserts with the exception of series models CT 40/ 64 and CTS 40/ 64 connector. Inserts with 45° terminals of the CT series (screw-type terminals) and CTSE (spring terminals) are only insertable from the front (therefore not from the back) of the bulkhead mounting housings.

Being made by insulating material, they do not require a special reinforced insulation as metal ones do, for use with series CME higher voltage connector inserts (screw-type terminals).

With the exception of the limitations described below, it is generally possible to mount the MIXO series modular connectors and frames with the ground and screen anchors dedicated to this series.

Limitations

With respect to enclosures in metal alloy, ILME insulating enclosures have some limitations of use in combination with particular accessories:
- CRZ 06/ 10/ 16/ 24 reduction plates cannot be mounted with bulkhead mounting housings due to increased dimensions of the fastening flange of these insulating enclosures.
- The CYG 16 in-line joint cannot be mounted on the bulkhead mounting housings T-TYPE series because the gaskets of the latter do not fit together with the joint profile.
- The CYR 16.3 and CYR 24.4 round cable feed-throughs are difficult to position on their respective bulkhead mounting housings T-TYPE series.
- CPT 24 disposable protection cover cannot be mounted on insulating enclosures due to increased outer dimensions of these enclosures.
- MIXO series insert anchors cannot be mounted on TMAO 06/10 enclosures.
- CN insert anchors cannot be mounted on TMAO 06/10 enclosures.
- When using both cable entries of surface mounting housings, the conduit shall be of insulating type.

T-TYPE Standard

For modular and standard inserts

FOCUS ON:

① Construction

By using the BC-MUL® moulding technique and use of MIL.BOX® material, **these enclosures are structurally solid and mechanically robust,** due to their increased thickness. They are particularly resistant to the main pollutants present in industrial environments. The lever enclosure pegs are built into the enclosures. The methods for fastening the connector inserts to the enclosures are made of M3 threaded metal inserts.

With reference to metal construction enclosures, which to comply with the electrical installation safety norms, must be earthed via a metal connection to the grounding terminal of the inserts mounted inside the enclosures, the new series of enclosures offers a solution for **total insulation** constructions (equivalent to class II) where necessary. The thermoplastic material used is RAL 7012 dark grey colour and UL 94V-2 grade self-extinguishing and has passed glow wire testing in accordance with the IEC (EN) 60695-2-11 at 650 °C in compliance with intended uses.

The **surface mounting** high construction housings are supplied **with an open threaded entry** and diametrically opposite a closed threaded entry, which can be **opened** by the user, if required (with suitable tool).

Manufactured from insulating material, they do not require **special reinforced insulation** as the metal versions do, for use with series **CME higher voltage** connector inserts (screw-type terminals).

② Gaskets

T-TYPE standard sealing gaskets have been produced by means of the FIPFG technology (Formed-In-Place-Foam-Gasket). They have therefore been incorporated in the base flange on bulkhead mounting housings for easier installation.

• T-TYPE standard: Built-in polyurethane gaskets

③ Levers

The locking levers have been produced in self-extinguishing thermoplastic material, grey RAL 7001 colour.

④ Dimensions

The internal dimensions allow mounting of all connector inserts in their relevant sizes. The external dimensions of the bulkhead mounting housings are similar to those of the corresponding metallic enclosures; hole fixing centres are unchanged.

Hoods offer an inner cabling space similar to that of the “high” construction models of the corresponding metal enclosures. Other characteristics are in compliance with the applicable safety standard for electrical connectors, IEC/EN 61984.

⑤ Cable entries

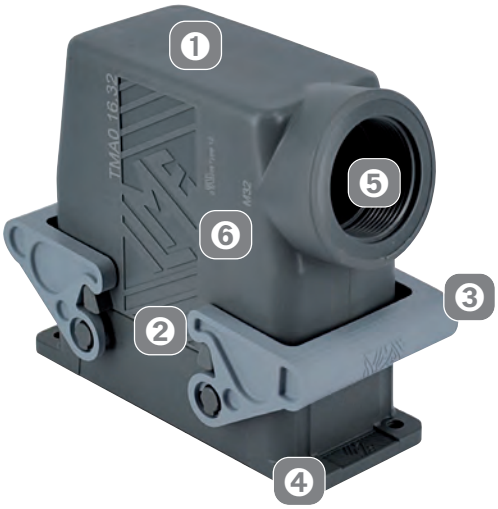
The housing and hood cable entries are available with metric thread, respectively:

- **M25 or M32** for smaller sizes “44.27” and “57.27”.
- **M32 or M40** for larger sizes “77.27” and “104.27”.

The recent standard IEC/EN 61076-7-100 regarding metric cable entries for multipole electrical connectors for heavy duty uses, which standardises some main dimensions for entries and their related accessories (gaskets, pressure nuts), have been carefully considered in the product design.

⑥ Markings

Each enclosure carries its own part number and conformity markings.

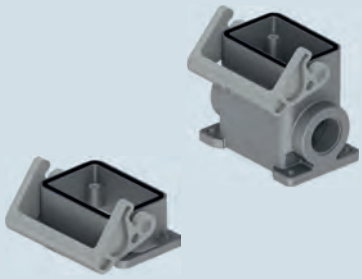


inserts:			page:
CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CT, CTSE (16A) ***)**	6	poles + ⏚	130
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 215

***) only for standard insulating version TCHI**

insert centre distance:
44 x 27 mm

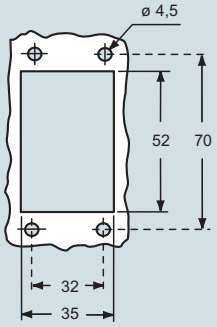
housings with single lever



hoods with 2 pegs

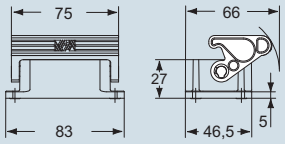
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic lever	**TCHI 06 L**			
surface mounting housing with thermoplastic lever surface mounting housing with thermoplastic lever	**TMAP 06 L25** **TMAP 06 L32**	**25** **32**		
with pegs, side entry with pegs, side entry			**TMAO 06 L25** **TMAO 06 L32**	**25** **32**
with pegs, top entry with pegs, top entry			**TMAV 06 L25** **TMAV 06 L32**	**25** **32**

panel cut-out for bulkhead mounting housing in mm

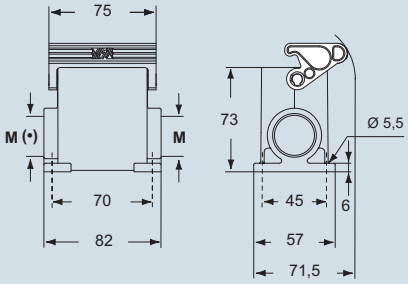


dimensions in mm

TCHI 06 L



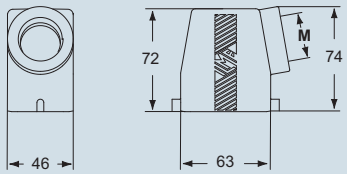
TMAP 06 L25 and **TMAP 06 L32**



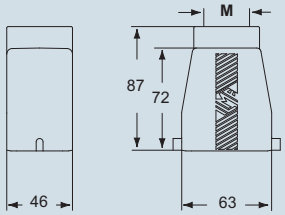
(•) The surface mounting, high construction housings are supplied with an open threaded entry (•) and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

dimensions in mm

TMAO 06 L25 and **TMAO 06 L32**



TMAV 06 L25 and **TMAV 06 L32**



cULus Type 12

EN 60529 IP65 IEC 60529 ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CT, CTSE (16A) ***)**	6	poles + ⏚	130
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 215

***) only for standard insulating version TCHI**

insert centre distance:
44 x 27 mm

hoods with single lever top entry

NEW

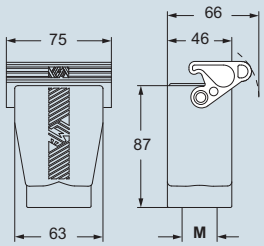
covers

NEW

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic lever and gasket	**TMAV 06 LG25**	**25**		
with thermoplastic lever and gasket	**TMAV 06 LG32**	**32**		
with pegs			**TCHC 06 L**	**TCHC 06 SL**
with thermoplastic lever and gasket				**TCHC 06 LG**

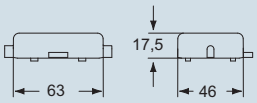
dimensions in mm

TMAV 06 LG25 and **TMAV 06 LG32**

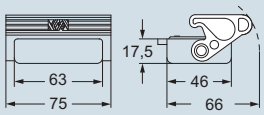


dimensions in mm

TCHC 06 L (SL)



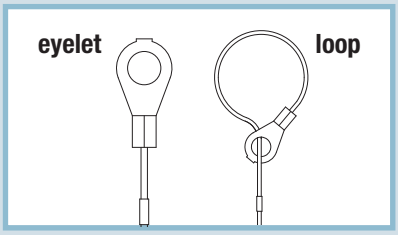
TCHC 06 LG



Type 12

IP65 EN 60529 IEC 60529 ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding
and may be changed without notice



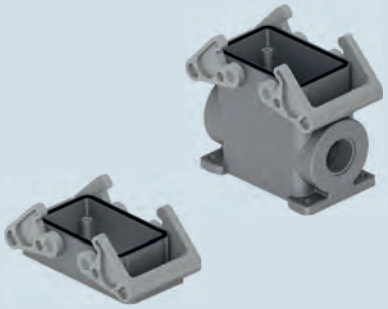
inserts: page:

CDD ..... 42 poles + ⏚ 69
CDS ..... 18 poles + ⏚ 79
CSH ..... 10 poles + ⏚ 92
CNE, CSE ..... 10 poles + ⏚ 105
CCE ..... 10 poles + ⏚ 111
CSS ..... 10 poles + ⏚ 123
CT, CTSE (16A) ***)** .. 10 poles + ⏚ 131
CQE ..... 18 poles + ⏚ 139
CMCE ..... 3+2 (aux) poles + ⏚ 148
CME ..... 3+2 (aux) poles + ⏚ 149
CMSH ..... 3+2 (aux) poles + ⏚ 149
CX ..... 8/24 poles + ⏚ 169
MIXO ..... 3 modules 179 - 215

***) only for standard insulating version TCHI**

insert centre distance:
57 x 27 mm

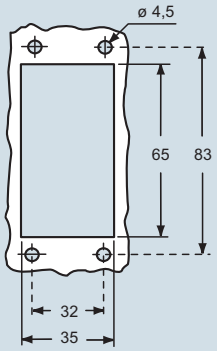
housings with double lever



hoods with 4 pegs

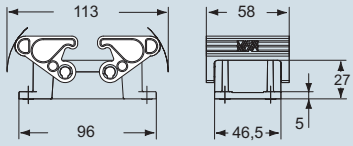
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic levers	**TCHI 10**			
surface mounting housing with thermoplastic levers surface mounting housing with thermoplastic levers	**TMAP 10.25** **TMAP 10.32**	**25** **32**		
with pegs, side entry with pegs, side entry			**TMAO 10.25** **TMAO 10.32**	**25** **32**
with pegs, top entry with pegs, top entry			**TMAV 10.25** **TMAV 10.32**	**25** **32**

panel cut-out for bulkhead mounting housing in mm

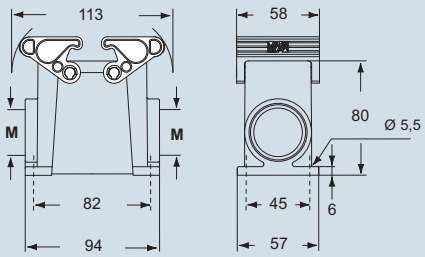


dimensions in mm

TCHI 10



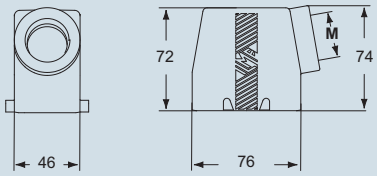
TMAP 10.25 and **TMAP 10.32**



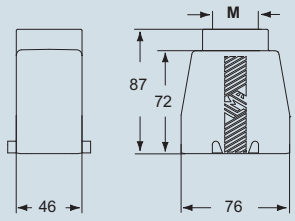
The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

dimensions in mm

TMAO 10.25 and **TMAO 10.32**



TMAV 10.25 and **TMAV 10.32**



c UL us Type 12

EN 60529 IP65 IEC 60529 ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD	42	poles + ⏚	69
CDS	18	poles + ⏚	79
CSH	10	poles + ⏚	92
CNE, CSE	10	poles + ⏚	105
CCE	10	poles + ⏚	111
CSS	10	poles + ⏚	123
CT, CTSE (16A) ***)**	10	poles + ⏚	131
CQE	18	poles + ⏚	139
CMCE	3+2 (aux)	poles + ⏚	148
CME	3+2 (aux)	poles + ⏚	149
CMSH	3+2 (aux)	poles + ⏚	149
CX	8/24	poles + ⏚	169
MIXO	3	modules	179 - 215

***) only for standard insulating version TCHI**

insert centre distance:
57 x 27 mm

hoods with double lever top entry

NEW

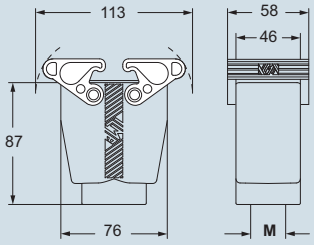
covers

NEW

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic levers and gasket	**TMAV 10 G25**	**25**		
with thermoplastic levers and gasket	**TMAV 10 G32**	**32**		
with 4 pegs			**TCHC 10**	**TCHC 10 S**
with 2 thermoplastic levers and gasket				**TCHC 10 G**

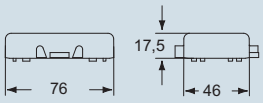
dimensions in mm

TMAV 10 G25 and **TMAV 10 G32**

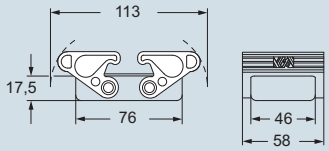


dimensions in mm

TCHC 10 (S)



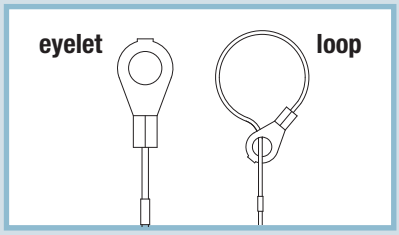
TCHC 10 G



c UL us Type 12

EN 60529 IP65 IEC 60529 ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding
and may be changed without notice



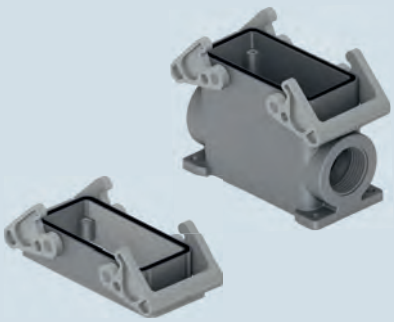
inserts: page:

CD ..... 40 poles + ⏚ 57
CDD ..... 72 poles + ⏚ 70
CDS ..... 27 poles + ⏚ 80
CSH ..... 16 poles + ⏚ 93
CNE, CSE ..... 16 poles + ⏚ 106
CCE ..... 16 poles + ⏚ 112
CSS ..... 16 poles + ⏚ 124
CT, CTSE (16A) *) .. 16 poles + ⏚ 132
CQE ..... 32 poles + ⏚ 140
CQEE ..... 40 poles + ⏚ 146
CMCE ..... 6+2 (aux) poles + ⏚ 150
CME, CMSH .. 6+2 (aux) poles + ⏚ 151
CP ..... 6 poles + ⏚ 162
CX ..... 6/36 and 12/2 poles + ⏚ 170-171
CX ..... 4/0 and 4/2 poles + ⏚ 172
MIXO ..... 4 modules 179-215

***) only for standard insulating version TCHI**

insert centre distance: **77,5 x 27 mm**

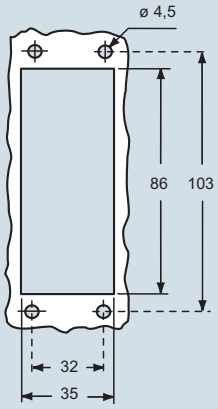
housings with double lever



hoods with 4 pegs

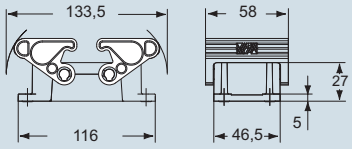
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic levers	**TCHI 16**			
surface mounting housing with thermoplastic levers surface mounting housing with thermoplastic levers	**TMAP 16.32** **TMAP 16.40**	**32** **40**		
with pegs, side entry with pegs, side entry			**TMAO 16.32** **TMAO 16.40**	**32** **40**
with pegs, top entry with pegs, top entry			**TMAV 16.32** **TMAV 16.40**	**32** **40**

panel cut-out for bulkhead mounting housing in mm

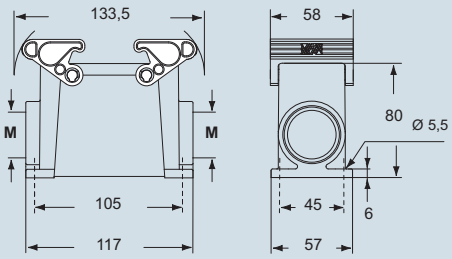


dimensions in mm

TCHI 16



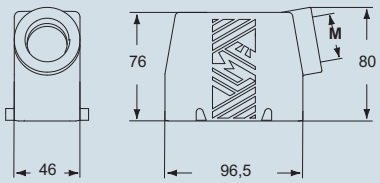
TMAP 16.32 and **TMAP 16.40**



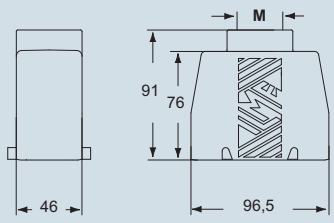
The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

dimensions in mm

TMAO 16.32 and **TMAO 16.40**



TMAV 16.32 and **TMAV 16.40**



c UL us Type 12

EN 60529 IP65 IEC 60529 ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD ..... 40 poles + ⏚ 57
CDD ..... 72 poles + ⏚ 70
CDS ..... 27 poles + ⏚ 80
CSH ..... 16 poles + ⏚ 93
CNE, CSE ..... 16 poles + ⏚ 106
CCE ..... 16 poles + ⏚ 112
CSS ..... 16 poles + ⏚ 124
CT, CTSE (16A) ***)** .. 16 poles + ⏚ 132
CQE ..... 32 poles + ⏚ 140
CQEE ..... 40 poles + ⏚ 146
CMCE ..... 6+2 (aux) poles + ⏚ 150
CME, CMSH .. 6+2 (aux) poles + ⏚ 151
CP ..... 6 poles + ⏚ 162
CX ..... 6/36 and 12/2 poles + ⏚ 170-171
CX ..... 4/0 and 4/2 poles + ⏚ 172
MIXO ..... 4 modules 179-215

***) only for standard insulating version TCHI**

insert centre distance: **77,5 x 27 mm**

hoods with double lever top entry

NEW

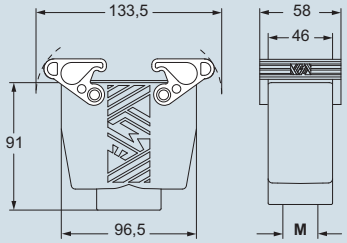
covers

NEW

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic levers and gasket	**TMAV 16 G32**	**32**		
with thermoplastic levers and gasket	**TMAV 16 G40**	**40**		
with 4 pegs			**TCHC 16**	**TCHC 16 S**
with 2 thermoplastic levers and gasket				**TCHC 16 G**

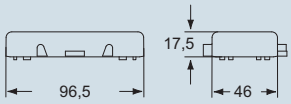
dimensions in mm

TMAV 16 G32 and **TMAV 16 G40**

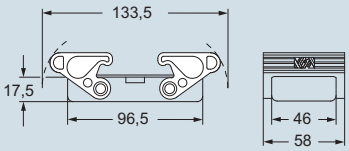


dimensions in mm

TCHC 16 (S)



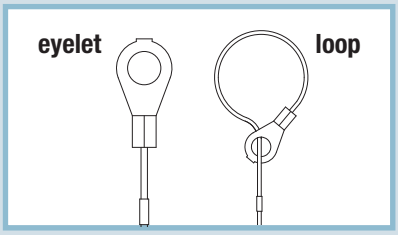
TCHC 16 G



Type 12

IP65 ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding
and may be changed without notice



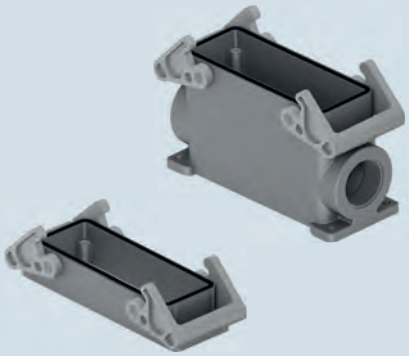
inserts: page:

CD ..... 64 poles + ⏚ 59
CDD ..... 108 poles + ⏚ 72
CDS ..... 42 poles + ⏚ 81
CSH ..... 24 poles + ⏚ 94
CNE, CSE ..... 24 poles + ⏚ 107
CCE ..... 24 poles + ⏚ 113
CSS ..... 24 poles + ⏚ 125
CT, CTSE (16A) *) .. 24 poles + ⏚ 133
CQE ..... 46 poles + ⏚ 141
CQEE ..... 64 poles + ⏚ 147
CMCE ..... 10+2 (aux) poles + ⏚ 152
CME, CMSH 10+2 (aux) poles + ⏚ 153
CMCE ..... 16+2 (aux) poles + ⏚ 158
CME ..... 16+2 (aux) poles + ⏚ 159
CX ..... 4/8 and 6/6 poles + ⏚ 173 and 175
MIXO ..... 6 modules 179-215

***) only for standard insulating version TCHI**

insert centre distance: **104 x 27 mm**

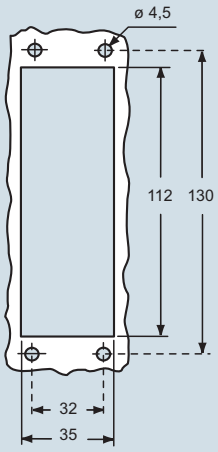
housings with double lever



hoods with 4 pegs

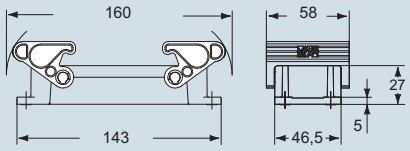
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic levers	**TCHI 24**			
surface mounting housing with thermoplastic levers surface mounting housing with thermoplastic levers	**TMAP 24.32** **TMAP 24.40**	**32** **40**		
with pegs, side entry with pegs, side entry			**TMAO 24.32** **TMAO 24.40**	**32** **40**
with pegs, top entry with pegs, top entry			**TMAV 24.32** **TMAV 24.40**	**32** **40**

panel cut-out for bulkhead mounting housing in mm

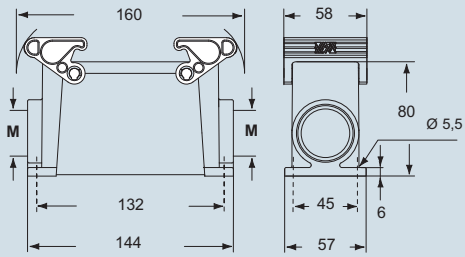


dimensions in mm

TCHI 24



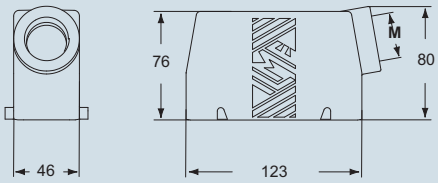
TMAP 24.32 and **TMAP 24.40**



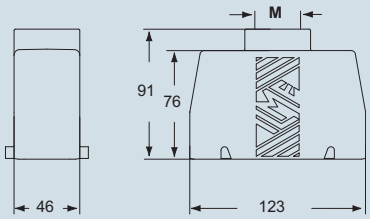
The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

dimensions in mm

TMAO 24.32 and **TMAO 24.40**



TMAV 24.32 and **TMAV 24.40**



c UL us Type 12

EN 60529 IP65 IEC 60529 ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD	64 poles + ⏚	59
CDD	108 poles + ⏚	72
CDS	42 poles + ⏚	81
CSH	24 poles + ⏚	94
CNE, CSE	24 poles + ⏚	107
CCE	24 poles + ⏚	113
CSS	24 poles + ⏚	125
CT, CTSE (16A) *)	24 poles + ⏚	133
CQE	46 poles + ⏚	141
CQEE	64 poles + ⏚	147
CMCE	10+2 (aux) poles + ⏚	152
CME, CMSH	10+2 (aux) poles + ⏚	153
CMCE	16+2 (aux) poles + ⏚	158
CME	16+2 (aux) poles + ⏚	159
CX	4/8 and 6/6 poles + ⏚	173 and 175
MIXO	6 modules	179-215

***) only for standard insulating version TCHI**

insert centre distance: **104 x 27 mm**

hoods with double lever top entry

NEW

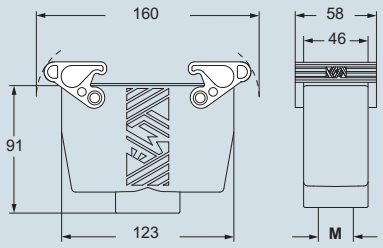
covers

NEW

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic levers and gasket	**TMAV 24 G32**	**32**		
with thermoplastic levers and gasket	**TMAV 24 G40**	**40**		
with 4 pegs			**TCHC 24**	**TCHC 24 S**
with 2 thermoplastic levers and gasket				**TCHC 24 G**

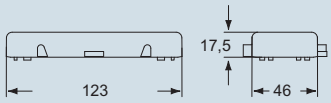
dimensions in mm

TMAV 24 G32 and **TMAV 24 G40**

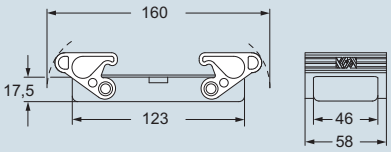


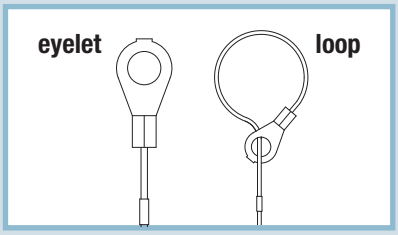
dimensions in mm

TCHC 24



TCHC 24 G





cULus Type 12

EN 60529 IP65 IEC 60529 ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding and may be changed without notice

T-TYPE / W

Aggressive environments

- **Enclosures** in **thermoplastic material, dark grey RAL 7012 colour,** with high thicknesses providing structural solidity and durability.
- Built-in **FKM fluoroelastomer sealing gaskets.**
- **Locking levers** in **thermoplastic material colour grey RAL 7001.**
- **M25, M32 and M40** threaded cable entries.
- **IP66** degree of protection according to **EN 60529.**
- Each enclosure carries its own part number, thread size and conformity **markings**.
- Ambient temperature range: **-40 °C / +90 °C.**

NOTE: As the characterizing element of the T-TYPE/W series is the **different sealing gasket** material, hoods and covers without sealing gaskets for this series are the same of T-TYPE Standard.

DATA SHEETS AT PAGES 336-343

T-TYPE/W

IP66
for aggressive environments

OFFSHORE

NAVAL

SALT-SPRAYERS

T-TYPE / W

Featuring an original design, T-TYPE/W construction types available are:

surface mounting housings
with double entry of which one closed but threaded

hoods
with levers

bulkhead mounting housings

hoods
with side entry

hoods
with top entry

covers
with pegs (for housings) with levers (for hoods)

single lever, side and top entry, for size "44.27"

single lever, side and top entry, for size "44.27"

double lever, side and top entry, for other sizes "57.27, 77.27, 104.27"

double lever, side and top entry, for other sizes "57.27, 77.27, 104.27"

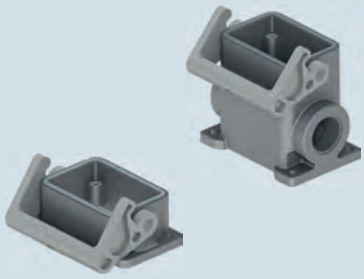
inserts: page:

CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CT, CTSE (16A) ***)**	6	poles + ⏚	130
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 215

***) only for standard insulating version THIW**

insert centre distance:
44 x 27 mm

housings with single lever



FKM gasket

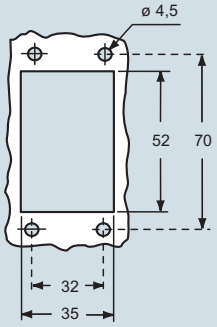
NEW

hoods with 2 pegs

description	part No.	entry M
bulkhead mounting housing with thermoplastic levers	**THIW 06 L**	
surface mounting housing with thermoplastic levers	**TAPW 06 L25**	**25**
surface mounting housing with thermoplastic levers	**TAPW 06 L32**	**32**

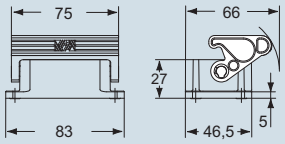
description	part No.	entry M
with pegs, side entry	**TMAO 06 L25**	**25**
with pegs, side entry	**TMAO 06 L32**	**32**
with pegs, top entry	**TMAV 06 L25**	**25**
with pegs, top entry	**TMAV 06 L32**	**32**

panel cut-out for bulkhead mounting housing in mm

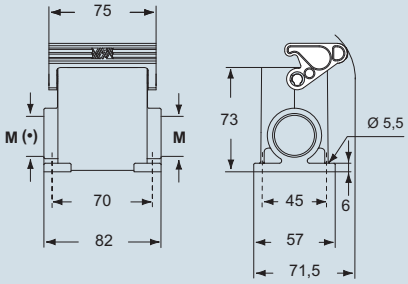


dimensions in mm

THIW 06 L



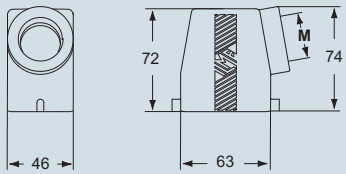
TAPW 06 L25 and **TAPW 06 L32**



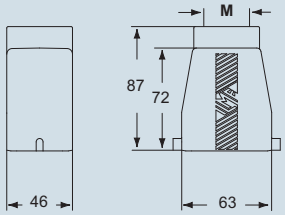
(•) The surface mounting, high construction housings are supplied with an open threaded entry (•) and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

dimensions in mm

TMAO 06 L25 and **TMAO 06 L32**



TMAV 06 L25 and **TMAV 06 L32**



EN 60529 IP66 IEC 60529 ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CT, CTSE (16A) ***)**	6	poles + ⏚	130
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 215

***) only for standard insulating version THIW**

insert centre distance:
44 x 27 mm

hoods with single lever
top entry

FKM gasket

NEW

covers

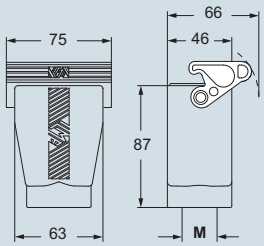
FKM gasket

NEW

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic lever and gasket	**TAVW 06 LG25**	**25**		
with thermoplastic lever and gasket	**TAVW 06 LG32**	**32**		
with pegs			**TCHC 06 L**	**TCHC 06 SL**
with thermoplastic lever and gasket				**THCW 06 LG**

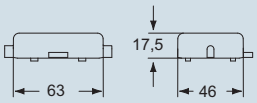
dimensions in mm

TAVW 06 LG25 and **TAVW 06 LG32**

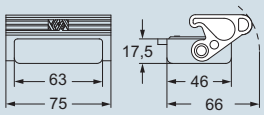


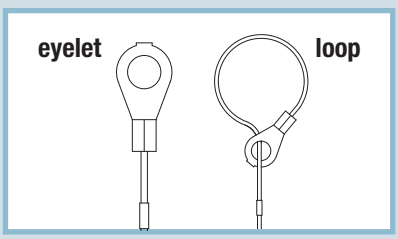
dimensions in mm

TCHC 06 L (SL)



THCW 06 LG





EN 60529 IP66 IEC 60529 ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding
and may be changed without notice

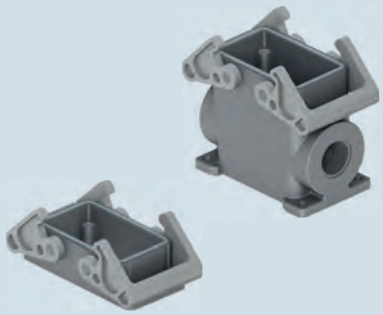
inserts: page:

CDD ..... 42 poles + ⏚ 69
CDS ..... 18 poles + ⏚ 79
CSH ..... 10 poles + ⏚ 92
CNE, CSE ..... 10 poles + ⏚ 105
CCE ..... 10 poles + ⏚ 111
CSS ..... 10 poles + ⏚ 123
CT, CTSE (16A) ***)** .. 10 poles + ⏚ 131
CQE ..... 18 poles + ⏚ 139
CMCE ..... 3+2 (aux) poles + ⏚ 148
CME ..... 3+2 (aux) poles + ⏚ 149
CMSH ..... 3+2 (aux) poles + ⏚ 149
CX ..... 8/24 poles + ⏚ 169
MIXO ..... 3 modules 179 - 215

***) only for standard insulating version THIW**

insert centre distance:
57 x 27 mm

housings with double lever



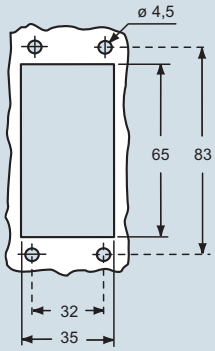
FKM gasket

NEW

hoods with 4 pegs

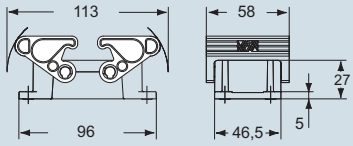
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic levers	**THIW 10**			
surface mounting housing with thermoplastic levers surface mounting housing with thermoplastic levers	**TAPW 10.25** **TAPW 10.32**	**25** **32**		
with pegs, side entry with pegs, side entry			**TMAO 10.25** **TMAO 10.32**	**25** **32**
with pegs, top entry with pegs, top entry			**TMAV 10.25** **TMAV 10.32**	**25** **32**

panel cut-out for bulkhead mounting housing in mm

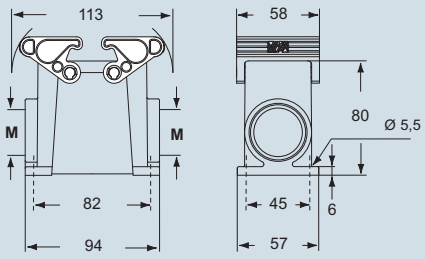


dimensions in mm

THIW 10



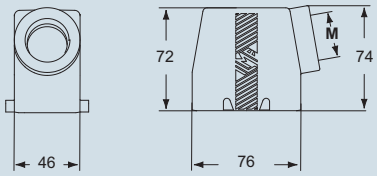
TAPW 10.25 and **TAPW 10.32**



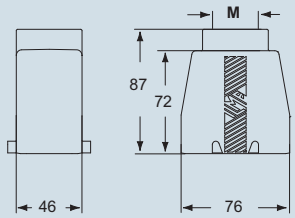
The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

dimensions in mm

TMAO 10.25 and **TMAO 10.32**



TMAV 10.25 and **TMAV 10.32**



EN 60529 IP66 IEC 60529 ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding
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inserts: page:

CDD ..... 42 poles + ⏚ 69
CDS ..... 18 poles + ⏚ 79
CSH ..... 10 poles + ⏚ 92
CNE, CSE ..... 10 poles + ⏚ 105
CCE ..... 10 poles + ⏚ 111
CSS ..... 10 poles + ⏚ 123
CT, CTSE (16A) ***)** .. 10 poles + ⏚ 131
CQE ..... 18 poles + ⏚ 139
CMCE ..... 3+2 (aux) poles + ⏚ 148
CME ..... 3+2 (aux) poles + ⏚ 149
CMSH ..... 3+2 (aux) poles + ⏚ 149
CX ..... 8/24 poles + ⏚ 169
MIXO ..... 3 modules 179 - 215

***) only for standard insulating version THIW**

insert centre distance:
57 x 27 mm

hoods with double lever top entry

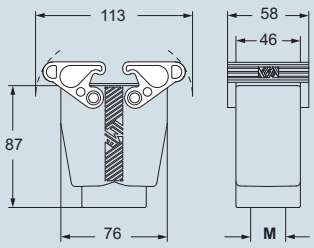
FKM gasket

NEW

description	part No.	entry M
with thermoplastic levers and gasket	**TAVW 10 G25**	**25**
with thermoplastic levers and gasket	**TAVW 10 G32**	**32**

dimensions in mm

TAVW 10 G25 and **TAVW 10 G32**



covers

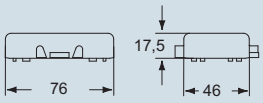
NEW

FKM gasket

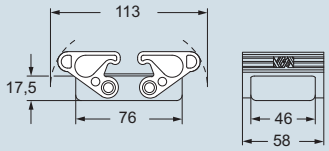
description	part No. (with eyelet)	part No. (with loop)
with 4 pegs	**TCHC 10**	**TCHC 10 S**
with 2 thermoplastic levers and gasket		**THCW 10 G**

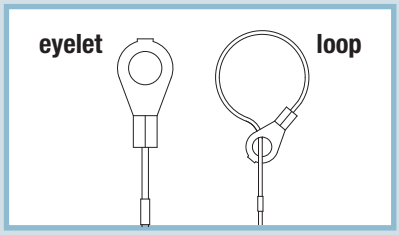
dimensions in mm

TCHC 10 (S)



THCW 10 G





EN 60529 IP66 IEC 60529 ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding
and may be changed without notice

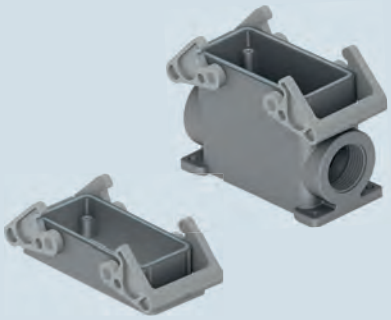
inserts: page:

CD ..... 40 poles + ⏚ 57
CDD ..... 72 poles + ⏚ 70
CDS ..... 27 poles + ⏚ 80
CSH ..... 16 poles + ⏚ 93
CNE, CSE ..... 16 poles + ⏚ 106
CCE ..... 16 poles + ⏚ 112
CSS ..... 16 poles + ⏚ 124
CT, CTSE (16A) ***)** .. 16 poles + ⏚ 132
CQE ..... 32 poles + ⏚ 140
CQEE ..... 40 poles + ⏚ 146
CMCE ..... 6+2 (aux) poles + ⏚ 150
CME, CMSH .. 6+2 (aux) poles + ⏚ 151
CP ..... 6 poles + ⏚ 162
CX ..... 6/36 and 12/2 poles + ⏚ 170-171
CX ..... 4/0 and 4/2 poles + ⏚ 172
MIXO ..... 4 modules 179-215

***) only for standard insulating version THIW**

insert centre distance: **77,5 x 27 mm**

housings with double lever



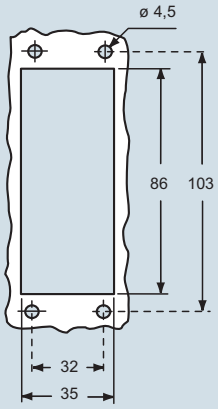
FKM gasket

NEW

hoods with 4 pegs

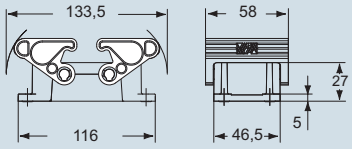
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic levers	**THIW 16**			
surface mounting housing with thermoplastic levers surface mounting housing with thermoplastic levers	**TAPW 16.32** **TAPW 16.40**	**32** **40**		
with pegs, side entry with pegs, side entry			**TMAO 16.32** **TMAO 16.40**	**32** **40**
with pegs, top entry with pegs, top entry			**TMAV 16.32** **TMAV 16.40**	**32** **40**

panel cut-out for bulkhead mounting housing in mm

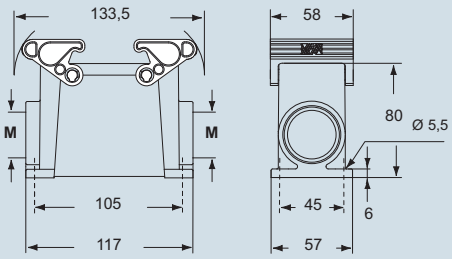


dimensions in mm

THIW 16



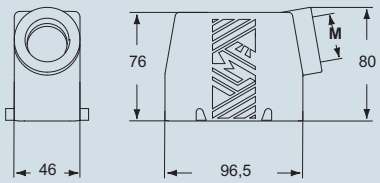
TAPW 16.32 and **TAPW 16.40**



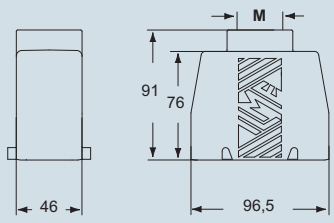
The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

dimensions in mm

TMAO 16.32 and **TMAO 16.40**



TMAV 16.32 and **TMAV 16.40**



EN 60529 IP66 IEC 60529 ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding
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inserts: page:

CD ..... 40 poles + ⏚ 57
CDD ..... 72 poles + ⏚ 70
CDS ..... 27 poles + ⏚ 80
CSH ..... 16 poles + ⏚ 93
CNE, CSE ..... 16 poles + ⏚ 106
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CT, CTSE (16A) *) .. 16 poles + ⏚ 132
CQE ..... 32 poles + ⏚ 140
CQEE ..... 40 poles + ⏚ 146
CMCE ..... 6+2 (aux) poles + ⏚ 150
CME, CMSH .. 6+2 (aux) poles + ⏚ 151
CP ..... 6 poles + ⏚ 162
CX ..... 6/36 and 12/2 poles + ⏚ 170-171
CX ..... 4/0 and 4/2 poles + ⏚ 172
MIXO ..... 4 modules 179-215

***) only for standard insulating version THIW**

insert centre distance: **77,5 x 27 mm**

hoods with double lever top entry

FKM gasket

NEW

covers

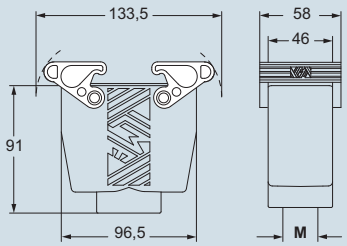
FKM gasket

NEW

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic levers and gasket	**TAVW 16 G32**	**32**		
with thermoplastic levers and gasket	**TAVW 16 G40**	**40**		
with 4 pegs			**TCHC 16**	**TCHC 16 S**
with 2 thermoplastic levers and gasket				**THCW 16 G**

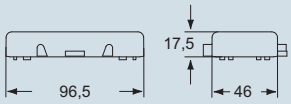
dimensions in mm

TAVW 16 G32 and **TAVW 16 G40**

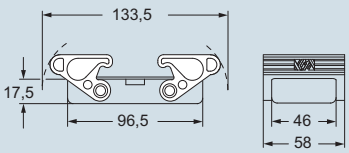


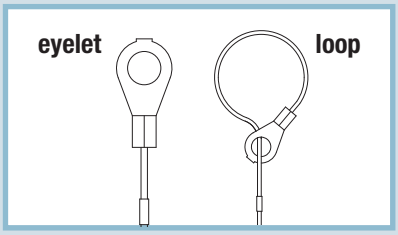
dimensions in mm

TCHC 16 (S)



THCW 16 G





EN 60529 IP66 IEC 60529 ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding and may be changed without notice

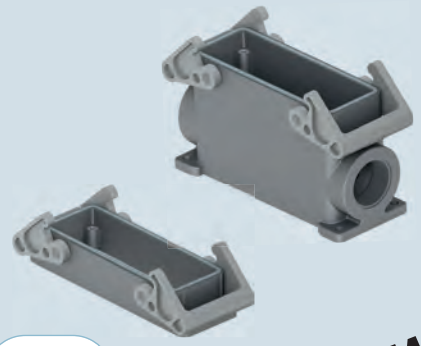
inserts: page:

CD ..... 64 poles + ⏚ 59
CDD ..... 108 poles + ⏚ 72
CDS ..... 42 poles + ⏚ 81
CSH ..... 24 poles + ⏚ 94
CNE, CSE ..... 24 poles + ⏚ 107
CCE ..... 24 poles + ⏚ 113
CSS ..... 24 poles + ⏚ 125
CT, CTSE (16A) *) .. 24 poles + ⏚ 133
CQE ..... 46 poles + ⏚ 141
CQEE ..... 64 poles + ⏚ 147
CMCE ..... 10+2 (aux) poles + ⏚ 152
CME, CMSH 10+2 (aux) poles + ⏚ 153
CMCE ..... 16+2 (aux) poles + ⏚ 158
CME ..... 16+2 (aux) poles + ⏚ 159
CX ..... 4/8 and 6/6 poles + ⏚ 173 and 175
MIXO ..... 6 modules 179-215

***) only for standard insulating version THIW**

insert centre distance: **104 x 27 mm**

housings with double lever



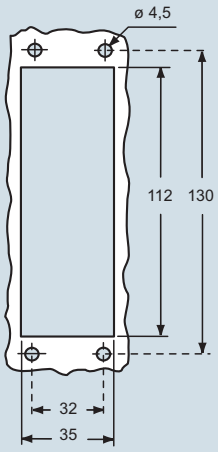
FKM gasket

NEW

hoods with 4 pegs

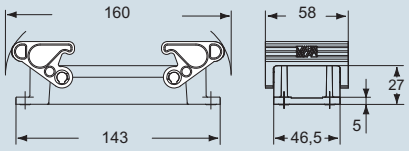
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic levers	**THIW 24**			
surface mounting housing with thermoplastic levers surface mounting housing with thermoplastic levers	**TAPW 24.32** **TAPW 24.40**	**32** **40**		
with pegs, side entry with pegs, side entry			**TMAO 24.32** **TMAO 24.40**	**32** **40**
with pegs, top entry with pegs, top entry			**TMAV 24.32** **TMAV 24.40**	**32** **40**

panel cut-out for bulkhead mounting housing in mm

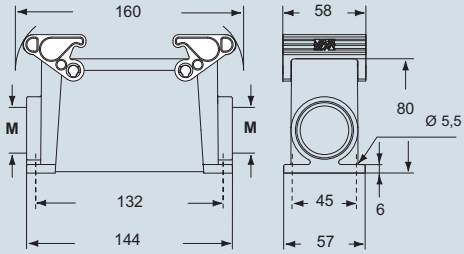


dimensions in mm

THIW 24



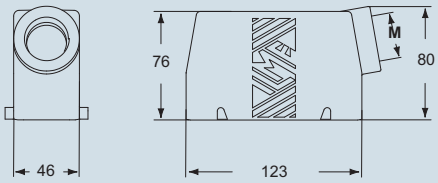
TAPW 24.32 and **TAPW 24.40**



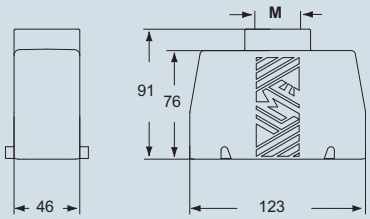
The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

dimensions in mm

TMAO 24.32 and **TMAO 24.40**



TMAV 24.32 and **TMAV 24.40**



EN 60529 IP66 IEC 60529 ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD ..... 64 poles + ⏚ 59
CDD ..... 108 poles + ⏚ 72
CDS ..... 42 poles + ⏚ 81
CSH ..... 24 poles + ⏚ 94
CNE, CSE ..... 24 poles + ⏚ 107
CCE ..... 24 poles + ⏚ 113
CSS ..... 24 poles + ⏚ 125
CT, CTSE (16A) *) .. 24 poles + ⏚ 133
CQE ..... 46 poles + ⏚ 141
CQEE ..... 64 poles + ⏚ 147
CMCE ..... 10+2 (aux) poles + ⏚ 152
CME, CMSH 10+2 (aux) poles + ⏚ 153
CMCE ..... 16+2 (aux) poles + ⏚ 158
CME ..... 16+2 (aux) poles + ⏚ 159
CX ..... 4/8 and 6/6 poles + ⏚ 173 and 175
MIXO ..... 6 modules 179-215

***) only for standard insulating version THIW**

insert centre distance: **104 x 27 mm**

hoods with double lever top entry

FKM gasket

NEW

covers

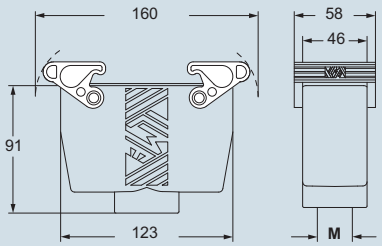
FKM gasket

NEW

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic levers and gasket	**TAVW 24 G32**	**32**		
with thermoplastic levers and gasket	**TAVW 24 G40**	**40**		
with 4 pegs			**TCHC 24**	**TCHC 24 S**
with 2 thermoplastic levers and gasket				**THCW 24 G**

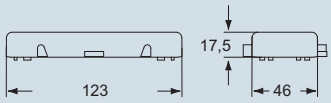
dimensions in mm

TAVW 24 G32 and **TAVW 24 G40**

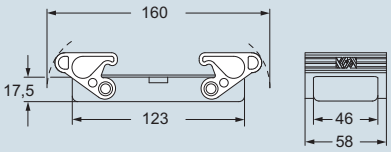


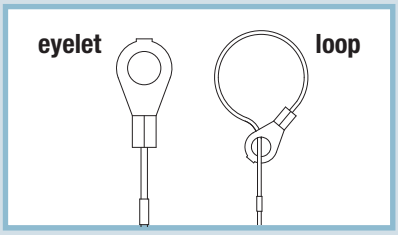
dimensions in mm

TCHC 24 (S)



THCW 24 G





EN 60529 IP66 IEC 60529 ambient temperature limits -40 °C / +90 °C

dimensions shown are not binding and may be changed without notice

HYGIENIC

For food and beverage

DAIRY

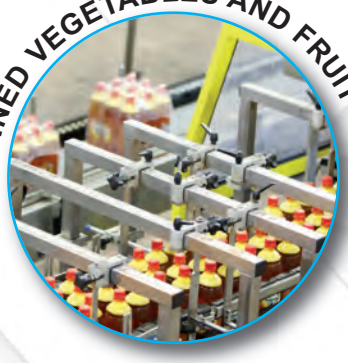
PASTA

PASTRIES AND BAKERY PRODUCTS

HYGIENIC
application fields

food & beverage
applications

CANNED VEGETABLES AND FRUIT JUICE



WINE AND SPIRITS

PET FOOD

MEAT AND POULTRY

HYGIENIC

Resistance of materials to detergents/disinfectants used in the food industry

The new **ILME T-TYPE/H and T-TYPE/C** enclosure materials have been selected to guarantee compatibility with the principal alkaline or acid detergents and disinfectants used in the food industry. In particular, series T-TYPE/H and T-TYPE/C enclosures have been tested according to protocol **F&E/P3-E n. 40-1 by Ecolab,** leading multinational in the detergent sector, to verify their compatibility with the following cleaning fluids:

- **Acid foaming detergents: P3-topax 52, Topaz AC5, P3-topmaxx 520 and P3-topax 56.**
- **Alkaline foaming detergents: P3-topax 19, Topaz MD3 and Ecofoam Basic.**
- **Strong alkaline foaming detergents: P3-topax 36, Topaz HD1 and P3-topax 30.**
- **Alkaline-chloride foaming detergents-disinfectants: P3-topax 66, Ecofoam CL and P3-topax M95.**
- **Non-foaming peracetic based disinfectants: P3-oxonia active, P3-topactive OKTO and P3-topactive DES.**
- **Neutral disinfectants: P3-topax 990 and P3-topax 91.**

ECOLAB F&E/P3-E n. 40-1 Test Protocol

SEE DECLARATION OF COMPATIBILITY AT PAGES 346-347

- Full immersion of parts in detergent/disinfectant solutions.
- Water hardness of 200ppm $CaCO_3$
- Tests performed at concentrations 30% higher than those normally recommended in technical data sheets.
- Test duration (each detergent): 28 days at 20 °C (equivalent to 6 years of daily cleaning).
- Test solution renewed every 3-4 days for oxidizing products (P3-oxonia active, P3-topactive OKTO, P3-topax 66).
- Test results evaluation: ISO 4068-1 (esthetic appearance and mass loss).

Cleanability and degrees of protection used in the food industry

Series T-TYPE/H and T-TYPE/C enclosures have been designed to facilitate cleaning of surfaces that could potentially come into contact with food. For this purpose **Series T-TYPE/H and T-TYPE/C** enclosures have **IP66 and IP69 degrees of protection as per IEC 60529 Edition 2.2 (2013-08)** to allow jet washing, as typically used in the food industry.

The suitability of ILME products for the **cleanability** requirements stated by Machinery Directive 2006/42/EC for both Splash and Food Area zones (EN 1672-2 and EN ISO 14159) **depends on the specific installation of ILME products on the machine and must be evaluated by the machine manufacturer**.
In addition to the Hygienic version, aluminium enclosures are also available with degrees of protection up to IP68 (check for possible applicability).

Declaration of compatibility - By courtesy of ECOLAB s.r.l.

ECOLAB

DECLARATION OF COMPATIBILITY

between ECOLAB hygiene products
and ILME enclosures for multipole connectors

For the completely safe cleaning of your plant

The ideal partner for Industrial Connections for power supply of plug connected devices, connections for auxiliary circuits and automation control:

T-type H and T-type C enclosures

Supplier of hygiene solutions for Food and Beverage industries

Products

Equipments

Services

The declaration proves the high resistance of these enclosures to Ecolab products commonly and worldwide used in Food and Beverage Industries.

ILME S.p.a.
Via Marco Antonio Colonna, 9 - 20149 Milano (MI)
www.ilme.com

Ecolab s.r.l.
Via Paracelso 6 – 20864 Agrate Brianza (MB)
www.it.ecolab.eu

Declaration of compatibility - By courtesy of ECOLAB s.r.l.

ECOLAB

Compatible products with T-type/C and T-type/H ILME enclosures

See below for the test procedure

PRODUCT	%	T-TYPE ENCLOSURE	DEFECT QUANTITY	DEFECT QUALITY	COLOR VARIATION
P3-topax 52 - Topaz AC5	6	C and H	0	0	0
P3-topax 19 - Topaz MD3	6	C and H	0	0	0
P3-topax 36 - Topaz HD1	6	C and H	0	0	0
P3-topax 91	6	C and H	0	0	0
P3-topax 990	6	C and H	0	0	0
P3-oxonia active	1	C and H	0	0	0
P3-topactive okto	3	C and H	0	0	0
P3-topax 66	6	C and H	0	0	0

DEFECT QUANTITY: 0 means - No detectable defect
DEFECT QUALITY: 0 means - Up to 10x magnification no detectable defect
COLOR VARIATION: 0 means - Unchanged, no discoloration

Test procedure

- Test performed by Ecolab Technical Application Service
- Ecolab reference method 40.1 – ISO 4068-1 for the evaluation
- Full immersion of parts in detergent/disinfectant solutions
- Water hardness of 200ppm $CaCO_3$
- 28 days total time at 20°C (equivalent to the contact time that occurs in 6 years of daily cleaning)
- Concentrations tested 30% higher than those normally recommended
- Test solution renewed every 3-4 days for oxidizing products (P3-oxonia active, P3-topactive OKTO, P3-topax 66)

Final statement

- The Ecolab Technical Application Service Italy certifies that the ILME enclosures for multipole connectors T-type/C and T-type/H are perfectly compatible with the above listed Ecolab detergents and disinfectants used in a concentration 30% higher than those normally recommended.

February 2016

HYGIENIC

T-TYPE/H & T-TYPE/C

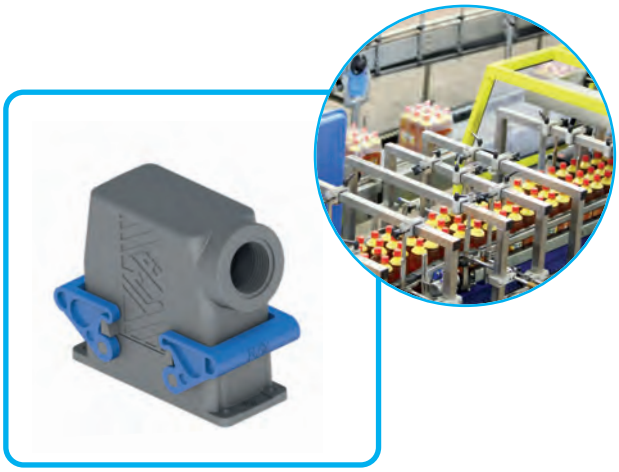
For this purpose, the following improvements to the T-TYPE series have been made in order to satisfy the requirements laid down by chapter 2.1 of **Machinery Directive 2006/42/EC** for the machines on which they are installed:
- material cleanability and resistance to the cleaning and sanitising agents normally used in the food industry;
- materials in terms of the requirements for accidental contact with food products.

T-TYPE / H

PRODUCTION LINES APPLICATIONS

DATA SHEETS AT PAGES 350-357

- **Enclosures** in **thermoplastic material, dark grey RAL 7012 colour,** with high thicknesses providing structural solidity and durability.
- Sealing gaskets made by **HNBR rubber formulated in accordance with FDA Guideline 21 CFR §177.2600.**
- **Levers** in **thermoplastic material, blue RAL 5015 colour.**
- **M25, M32 and M40** threaded cable entries.
- **IP66 and IP69** degree of protection according to **EN 60529.**
- Each enclosure carries its own part number, thread/size and conformity **markings**.
- Ambient temperature range: **-40 °C / +70 °C.**



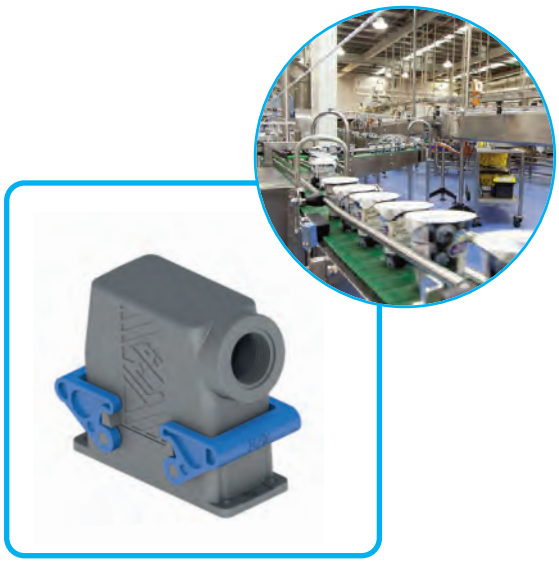
T-TYPE / C

LOW TEMPERATURE APPLICATIONS

DATA SHEETS AT PAGES 358-365

- **The Hygienic T-TYPE/C Series enclosures** have been **specifically designed** for food and beverage ambient temperature as low as -50 °C **(range: -50 °C / +70 °C).**
- **Enclosures** in **thermoplastic material, dark grey RAL 7012 colour,** with high thicknesses providing structural solidity and durability.
- This version differs from the Hygienic T-TYPE/H one for the **sealing gaskets** made by in accordance with **FDA Guideline 21 CFR §177.2600.**
- ILME **T-TYPE/C** series enclosure materials have been selected according to **EU n. 10/2011** regulation requirements and each component has been tested according to **EU regulation n. 10/2011** and **EC regulation n. 1935/2004.**

NOTE: As the characterizing elements of the Hygienic Series are the different sealing gasket material and the different locking lever, hoods and covers without sealing gaskets and locking levers are the same of series T-TYPE Standard.



HYGIENIC

T-TYPE/H & T-TYPE/C

FOCUS ON:

1 Construction

By using the BC-MUL® moulding technique together with the use of MIL.BOX® material, **these enclosures are structurally solid and mechanically robust,** due to their increased thickness. They are particularly resistant to the main pollutants present in industrial environments. The lever enclosure pegs are built into the enclosures. The methods for fastening the connectors to the enclosures are made by M3 threaded metal inserts. With reference to metal construction, which to comply with electrical installation safety norms, must be earthed via a metal connection to the protective earth terminal of the connector inserts inside the enclosure, **the new series of enclosures offers a solution for total insulation constructions ⧈ (equivalent to class II) where necessary.**

The thermoplastic material used is RAL 7012 dark grey colour and has passed **glow wire** testing in accordance with the IEC (EN) 60695-2-11 at **650 °C** in compliance with intended uses.

2 Gaskets

Gaskets have been produced in **HNBR rubber or SILICONE rubber** and have been incorporated in the base flange on bulkhead mounting housings for easier installation.

3 Levers

The locking levers have been produced in **self-extinguishing thermoplastic material,** blue RAL 5015 colour.
In accordance with the requirements set forth in **EHEDG Guideline n. 32** "Materials of construction for food equipment in contact with food" (EHEDG = European Hygienic Engineering & Design Group), the closing levers and sealing gaskets are coloured blue to easily identify any accidental contaminations in food products and to facilitate the visual identification of their complete cleanliness.

4 Dimensions

The internal dimensions allow mounting of all connector inserts in their relevant sizes. The external dimensions of the bulkhead mounting housings are similar to those of the corresponding metallic enclosures; hole fixing centres are unchanged. Hoods offer an inner cabling space similar to that of the "high" construction models of the corresponding metal enclosures. Other characteristics are in compliance with the applicable safety standard for electrical connectors, **IEC/EN 61984.**

5 Cable entries

The housing and hood cable entries are available with metric thread, respectively:

- **M25 or M32** for smaller sizes "44.27" and "57.27".
- **M32 or M40** for larger sizes "77.27" and "104.27".

The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

The recent standard **IEC/EN 61076-7-100** regarding metric cable entries for multipole electrical connectors for heavy duty uses, which standardises some main dimensions for entries and their related accessories (gaskets, pressure nuts), have been carefully considered in the product design.

6 Markings

Each enclosure carries its own part number and conformity markings.

inserts: page:

CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CT, CTSE (16A) ***)**	6	poles + ⏚	130
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 215

***) only for standard insulating version THIH**

insert centre distance:
44 x 27 mm

housings with single lever

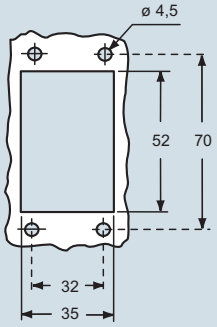
HNBR gasket

NEW

hoods with 2 pegs

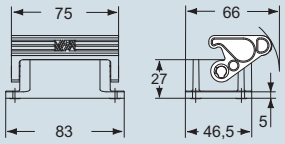
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic lever	**THIH 06 L**			
surface mounting housing with thermoplastic lever surface mounting housing with thermoplastic lever	**TAPH 06 L25** **TAPH 06 L32**	**25** **32**		
with pegs, side entry with pegs, side entry			**TMAO 06 L25** **TMAO 06 L32**	**25** **32**
with pegs, top entry with pegs, top entry			**TMAV 06 L25** **TMAV 06 L32**	**25** **32**

panel cut-out for bulkhead mounting housing in mm

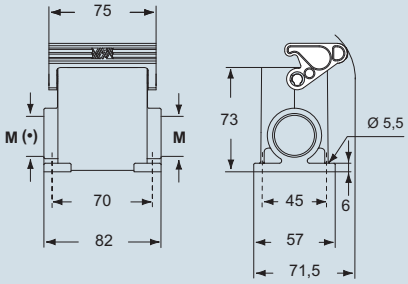


dimensions in mm

THIH 06 L



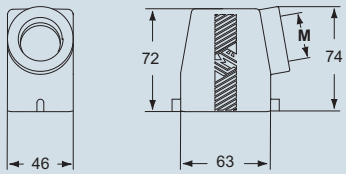
TAPH 06 L25 and **TAPH 06 L32**



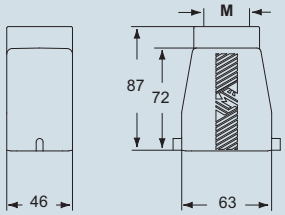
(•) The surface mounting, high construction housings are supplied with an open threaded entry (•) and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

dimensions in mm

TMAO 06 L25 and **TMAO 06 L32**



TMAV 06 L25 and **TMAV 06 L32**



EN 60529 IP66 IP69 IEC 60529 ambient temperature limits -40 °C / +70 °C

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CT, CTSE (16A) ***)**	6	poles + ⏚	130
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 215

***) only for standard insulating version THIH**

insert centre distance:
44 x 27 mm

hoods with single lever top entry

HNBR gasket

NEW

covers

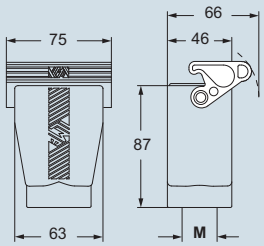
HNBR gasket

NEW

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic lever and gasket	**TAVH 06 LG25**	**25**		
with thermoplastic lever and gasket	**TAVH 06 LG32**	**32**		
with pegs			**TCHC 06 L**	**TCHC 06 SL**
with thermoplastic lever and gasket				**THCH 06 LG**

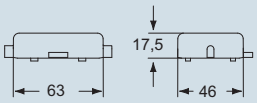
dimensions in mm

TAVH 06 LG25 and **TAVH 06 LG32**

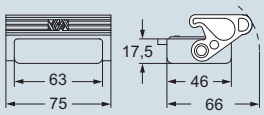


dimensions in mm

TCHC 06 L (SL)

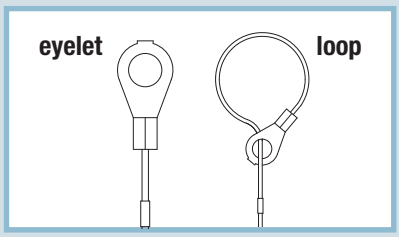


THCH 06 LG



EN 60529 IP66 IP69 IEC 60529 ambient temperature limits -40 °C / +70 °C

dimensions shown are not binding
and may be changed without notice



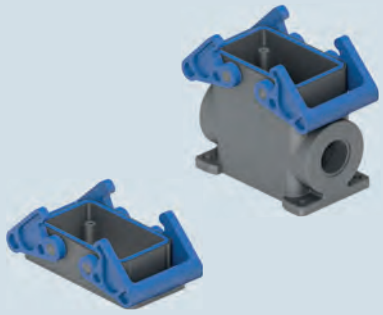
inserts: page:

CDD ..... 42 poles + ⏚ 69
CDS ..... 18 poles + ⏚ 79
CSH ..... 10 poles + ⏚ 92
CNE, CSE ..... 10 poles + ⏚ 105
CCE ..... 10 poles + ⏚ 111
CSS ..... 10 poles + ⏚ 123
CT, CTSE (16A) *) .. 10 poles + ⏚ 131
CQE ..... 18 poles + ⏚ 139
CMCE ..... 3+2 (aux) poles + ⏚ 148
CME ..... 3+2 (aux) poles + ⏚ 149
CMSH ..... 3+2 (aux) poles + ⏚ 149
CX ..... 8/24 poles + ⏚ 169
MIXO ..... 3 modules 179 - 215

***) only for standard insulating version THIH**

insert centre distance:
57 x 27 mm

housings with double lever



HNBR gasket

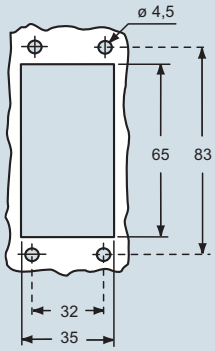
NEW

hoods with 4 pegs

description	part No.	entry M
bulkhead mounting housing with thermoplastic levers	**THIH 10**	
surface mounting housing with thermoplastic levers	**TAPH 10.25**	**25**
surface mounting housing with thermoplastic levers	**TAPH 10.32**	**32**

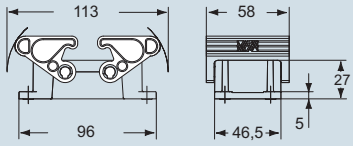
description	part No.	entry M
with pegs, side entry	**TMAO 10.25**	**25**
with pegs, side entry	**TMAO 10.32**	**32**
with pegs, top entry	**TMAV 10.25**	**25**
with pegs, top entry	**TMAV 10.32**	**32**

panel cut-out for bulkhead mounting housing in mm

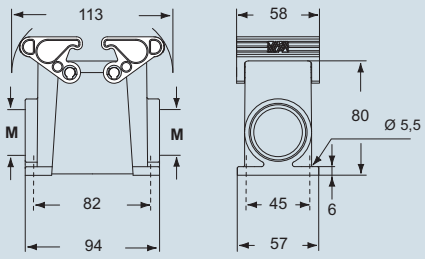


dimensions in mm

THIH 10



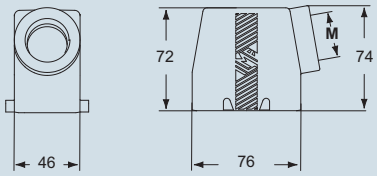
TAPH 10.25 and **TAPH 10.32**



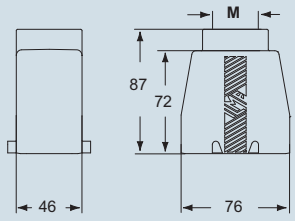
The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

dimensions in mm

TMAO 10.25 and **TMAO 10.32**



TMAV 10.25 and **TMAV 10.32**



EN 60529 IP66 IP69 IEC 60529 ambient temperature limits -40 °C / +70 °C

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD ..... 42 poles + ⏚ 69
CDS ..... 18 poles + ⏚ 79
CSH ..... 10 poles + ⏚ 92
CNE, CSE ..... 10 poles + ⏚ 105
CCE ..... 10 poles + ⏚ 111
CSS ..... 10 poles + ⏚ 123
CT, CTSE (16A) *) .. 10 poles + ⏚ 131
CQE ..... 18 poles + ⏚ 139
CMCE ..... 3+2 (aux) poles + ⏚ 148
CME ..... 3+2 (aux) poles + ⏚ 149
CMSH ..... 3+2 (aux) poles + ⏚ 149
CX ..... 8/24 poles + ⏚ 169
MIXO ..... 3 modules 179 - 215

***) only for standard insulating version THIH**

insert centre distance:
57 x 27 mm

hoods with double lever top entry

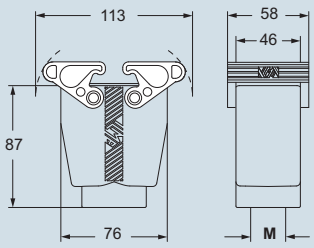
HNBR gasket

NEW

description	part No.	entry M
with thermoplastic levers and gasket	**TAVH 10 G25**	**25**
with thermoplastic levers and gasket	**TAVH 10 G32**	**32**

dimensions in mm

TAVH 10 G25 and **TAVH 10 G32**



covers

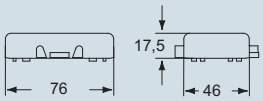
NEW

HNBR gasket

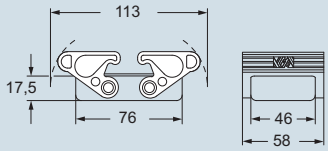
description	part No. (with eyelet)	part No. (with loop)
with 4 pegs	**TCHC 10**	**TCHC 10 S**
with 2 thermoplastic levers and gasket		**THCH 10 G**

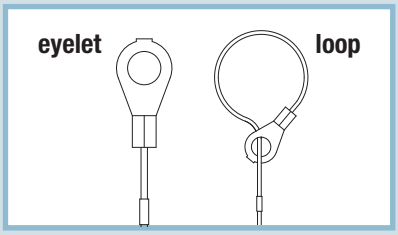
dimensions in mm

TCHC 10 (S)



THCH 10 G





ambient temperature limits -40 °C / +70 °C

dimensions shown are not binding
and may be changed without notice

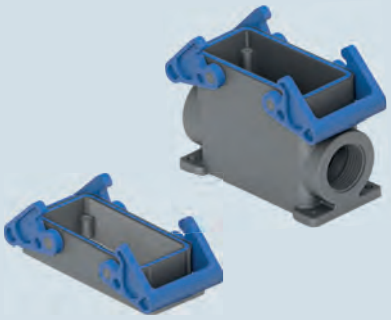
inserts: page:

CD	40	poles + ⏚	57
CDD	72	poles + ⏚	70
CDS	27	poles + ⏚	80
CSH	16	poles + ⏚	93
CNE, CSE	16	poles + ⏚	106
CCE	16	poles + ⏚	112
CSS	16	poles + ⏚	124
CT, CTSE (16A) *)	16	poles + ⏚	132
CQE	32	poles + ⏚	140
CQEE	40	poles + ⏚	146
CMCE	6+2 (aux)	poles + ⏚	150
CME, CMSH	6+2 (aux)	poles + ⏚	151
CP	6	poles + ⏚	162
CX	6/36 and 12/2	poles + ⏚	170-171
CX	4/0 and 4/2	poles + ⏚	172
MIXO	4	modules	179-215

***) only for standard insulating version THIH**

insert centre distance: **77,5 x 27 mm**

housings with double lever



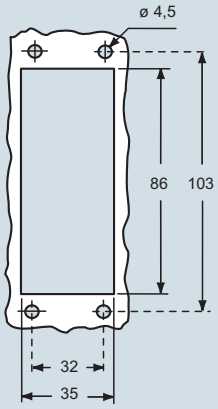
HNBR gasket

NEW

hoods with 4 pegs

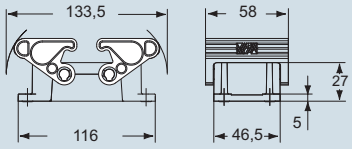
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic levers	**THIH 16**			
surface mounting housing with thermoplastic levers surface mounting housing with thermoplastic levers	**TAPH 16.32** **TAPH 16.40**	**32** **40**		
with pegs, side entry with pegs, side entry			**TMAO 16.32** **TMAO 16.40**	**32** **40**
with pegs, top entry with pegs, top entry			**TMAV 16.32** **TMAV 16.40**	**32** **40**

panel cut-out for bulkhead mounting housing in mm

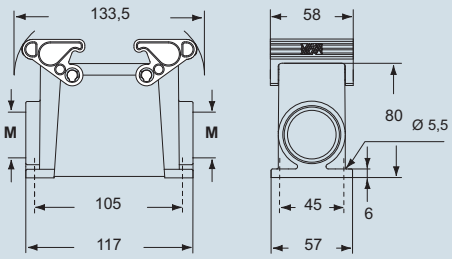


dimensions in mm

THIH 16



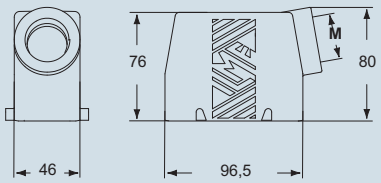
TAPH 16.32 and **TAPH 16.40**



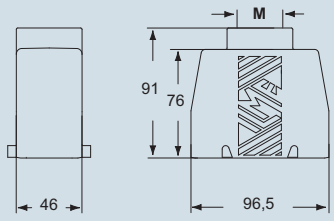
The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

dimensions in mm

TMAO 16.32 and **TMAO 16.40**



TMAV 16.32 and **TMAV 16.40**



EN 60529 IP66 IP69 IEC 60529 ambient temperature limits -40 °C / +70 °C

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD	40	poles + ⏚	57
CDD	72	poles + ⏚	70
CDS	27	poles + ⏚	80
CSH	16	poles + ⏚	93
CNE, CSE	16	poles + ⏚	106
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CT, CTSE (16A) ***)**	16	poles + ⏚	132
CQE	32	poles + ⏚	140
CQEE	40	poles + ⏚	146
CMCE	6+2 (aux)	poles + ⏚	150
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CP	6	poles + ⏚	162
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CX	4/0 and 4/2	poles + ⏚	172
MIXO	4	modules	179-215

***) only for standard insulating version THIH**

insert centre distance: **77,5 x 27 mm**

hoods with double lever top entry

HNBR gasket

NEW

covers

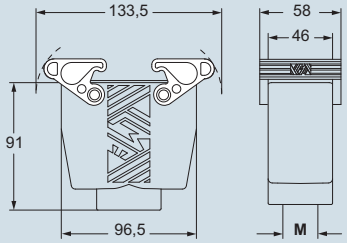
NEW

HNBR gasket

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic levers and gasket	**TAVH 16 G32**	**32**		
with thermoplastic levers and gasket	**TAVH 16 G40**	**40**		
with 4 pegs			**TCHC 16**	**TCHC 16 S**
with 2 thermoplastic levers and gasket				**THCH 16 G**

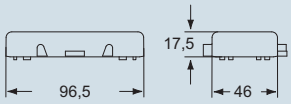
dimensions in mm

TAVH 16 G32 and **TAVH 16 G40**

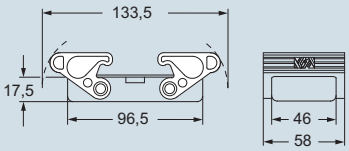


dimensions in mm

TCHC 16 (S)

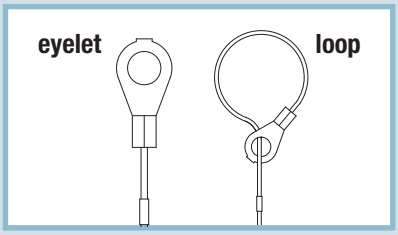


THCH 16 G



ambient temperature limits -40 °C / +70 °C

dimensions shown are not binding and may be changed without notice



inserts: page:

CD ..... 64 poles + ⏚ 59
CDD ..... 108 poles + ⏚ 72
CDS ..... 42 poles + ⏚ 81
CSH ..... 24 poles + ⏚ 94
CNE, CSE ..... 24 poles + ⏚ 107
CCE ..... 24 poles + ⏚ 113
CSS ..... 24 poles + ⏚ 125
CT, CTSE (16A) *) .. 24 poles + ⏚ 133
CQE ..... 46 poles + ⏚ 141
CQEE ..... 64 poles + ⏚ 147
CMCE ..... 10+2 (aux) poles + ⏚ 152
CME, CMSH 10+2 (aux) poles + ⏚ 153
CMCE ..... 16+2 (aux) poles + ⏚ 158
CME ..... 16+2 (aux) poles + ⏚ 159
CX ..... 4/8 and 6/6 poles + ⏚ 173 and 175
MIXO ..... 6 modules 179-215

***) only for standard insulating version THIH**

insert centre distance: **104 x 27 mm**

housings with double lever

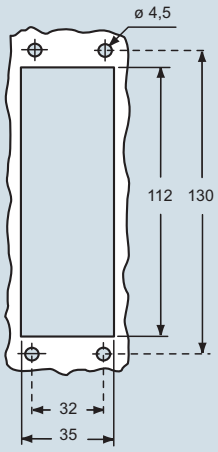
HNBR gasket

NEW

hoods with 4 pegs

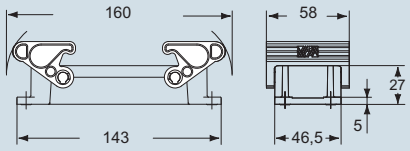
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic levers	**THIH 24**			
surface mounting housing with thermoplastic levers surface mounting housing with thermoplastic levers	**TAPH 24.32** **TAPH 24.40**	**32** **40**		
with pegs, side entry with pegs, side entry			**TMAO 24.32** **TMAO 24.40**	**32** **40**
with pegs, top entry with pegs, top entry			**TMAV 24.32** **TMAV 24.40**	**32** **40**

panel cut-out for bulkhead mounting housing in mm

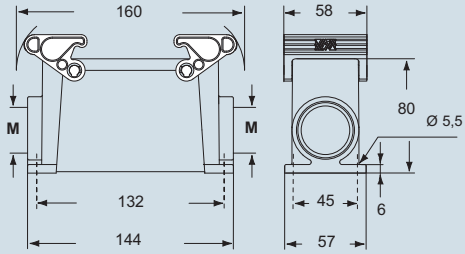


dimensions in mm

THIH 24



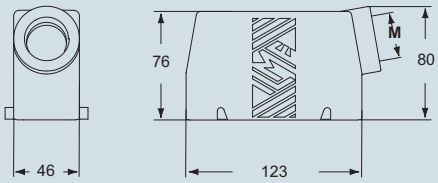
TAPH 24.32 and **TAPH 24.40**



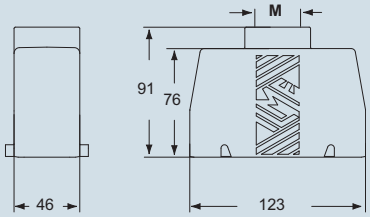
The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

dimensions in mm

TMAO 24.32 and **TMAO 24.40**



TMAV 24.32 and **TMAV 24.40**



EN 60529 IP66 IP69 IEC 60529

ambient temperature limits -40 °C / +70 °C

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD	64 poles + ⏚	59
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CDS	42 poles + ⏚	81
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CQE	46 poles + ⏚	141
CQEE	64 poles + ⏚	147
CMCE	10+2 (aux) poles + ⏚	152
CME, CMSH	10+2 (aux) poles + ⏚	153
CMCE	16+2 (aux) poles + ⏚	158
CME	16+2 (aux) poles + ⏚	159
CX	4/8 and 6/6 poles + ⏚	173 and 175
MIXO	6 modules	179-215

***) only for standard insulating version THIH**

insert centre distance: **104 x 27 mm**

hoods with double lever top entry

HNBR gasket

NEW

covers

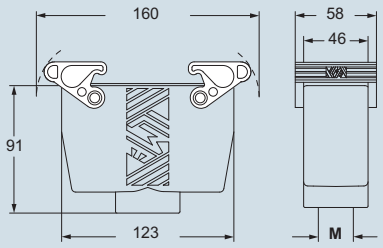
HNBR gasket

NEW

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic levers and gasket	**TAVH 24 G32**	**32**		
with thermoplastic levers and gasket	**TAVH 24 G40**	**40**		
with 4 pegs			**TCHC 24**	**TCHC 24 S**
with 2 thermoplastic levers and gasket				**THCH 24 G**

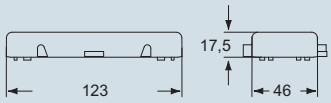
dimensions in mm

TAVH 24 G32 and **TAVH 24 G40**

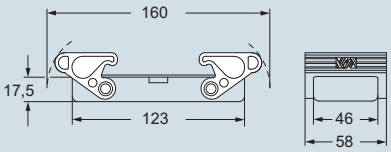


dimensions in mm

TCHC 24 (S)

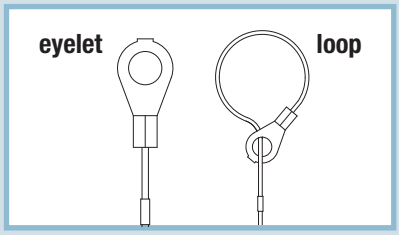


THCH 24 G



EN 60529 IP66 IP69 IEC 60529 ambient temperature limits -40 °C / +70 °C

dimensions shown are not binding and may be changed without notice



inserts: page:

CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CT, CTSE (16A) *)	6	poles + ⏚	130
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 21

***) only for standard insulating version THIC**

insert centre distance:
44 x 27 mm

housings with single lever

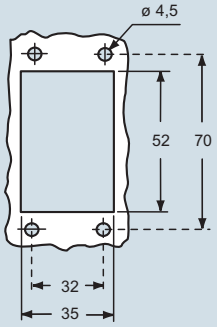
SILICONE gasket

NEW

hoods with 2 pegs

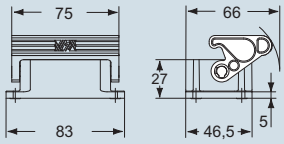
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic lever	**THIC 06 L**			
surface mounting housing with thermoplastic lever surface mounting housing with thermoplastic lever	**TAPC 06 L25** **TAPC 06 L32**	**25** **32**		
with pegs, side entry with pegs, side entry			**TMAO 06 L25** **TMAO 06 L32**	**25** **32**
with pegs, top entry with pegs, top entry			**TMAV 06 L25** **TMAV 06 L32**	**25** **32**

panel cut-out for bulkhead mounting housing in mm

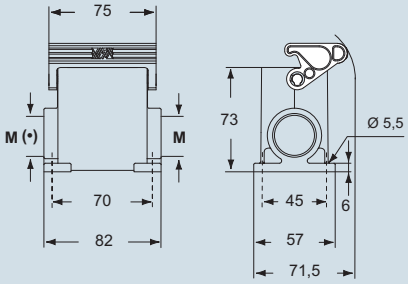


dimensions in mm

THIC 06 L



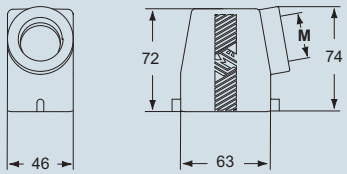
TAPC 06 L25 and **TAPC 06 L32**



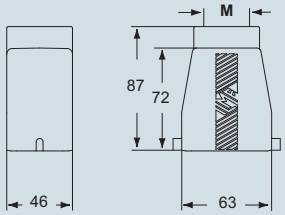
(•) The surface mounting, high construction housings are supplied with an open threaded entry (•) and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

dimensions in mm

TMAO 06 L25 and **TMAO 06 L32**



TMAV 06 L25 and **TMAV 06 L32**



EN 60529 IP66 IP69 IEC 60529 ambient temperature limits -50 °C / +70 °C

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CT, CTSE (16A) ***)**	6	poles + ⏚	130
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 21

***) only for standard insulating version THIC**

insert centre distance:
44 x 27 mm

hoods with single lever top entry

SILICONE gasket

NEW

covers

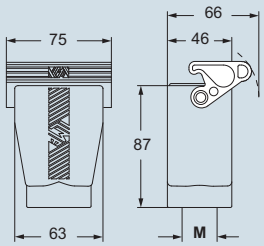
SILICONE gasket

NEW

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with thermoplastic lever and gasket	**TAVC 06 LG25**	**25**		
with thermoplastic lever and gasket	**TAVC 06 LG32**	**32**		
with pegs			**TCHC 06 L**	**TCHC 06 SL**
with thermoplastic lever and gasket				**THCC 06 LG**

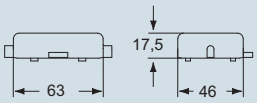
dimensions in mm

TAVC 06 LG25 and **TAVC 06 LG32**

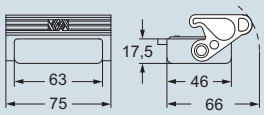


dimensions in mm

TCHC 06 L (SL)

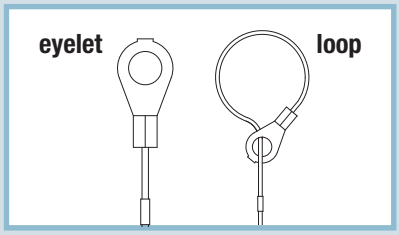


THCC 06 LG



EN 60529 IP66 IP69 IEC 60529 ambient temperature limits -50 °C / +70 °C

dimensions shown are not binding
and may be changed without notice



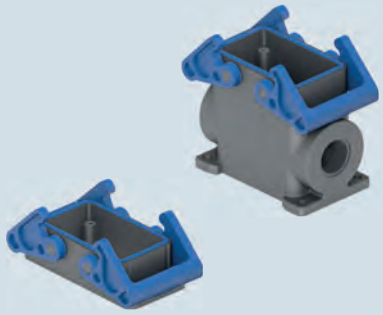
inserts: page:

CDD	42	poles + ⏚	69
CDS	18	poles + ⏚	79
CSH	10	poles + ⏚	92
CNE, CSE	10	poles + ⏚	105
CCE	10	poles + ⏚	111
CSS	10	poles + ⏚	123
CT, CTSE (16A) *)	10	poles + ⏚	131
CQE	18	poles + ⏚	139
CMCE	3+2 (aux)	poles + ⏚	148
CME	3+2 (aux)	poles + ⏚	149
CMSH	3+2 (aux)	poles + ⏚	149
CX	8/24	poles + ⏚	169
MIXO	3	modules	179 - 215

***) only for standard insulating version THIC**

insert centre distance:
57 x 27 mm

housings with double lever



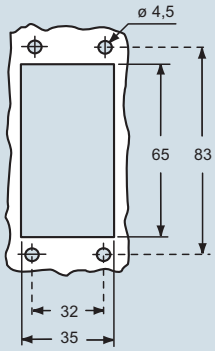
SILICONE gasket

NEW

hoods with 4 pegs

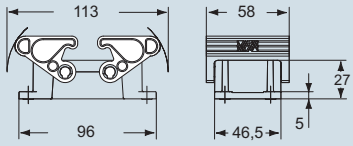
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic levers	**THIC 10**			
surface mounting housing with thermoplastic levers surface mounting housing with thermoplastic levers	**TAPC 10.25** **TAPC 10.32**	**25** **32**		
with pegs, side entry with pegs, side entry			**TMAO 10.25** **TMAO 10.32**	**25** **32**
with pegs, top entry with pegs, top entry			**TMAV 10.25** **TMAV 10.32**	**25** **32**

panel cut-out for bulkhead mounting housing in mm

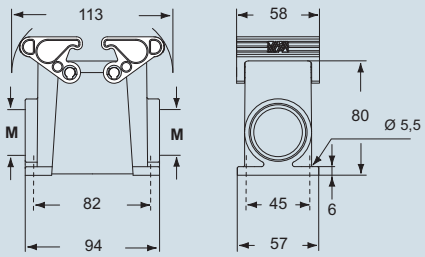


dimensions in mm

THIC 10



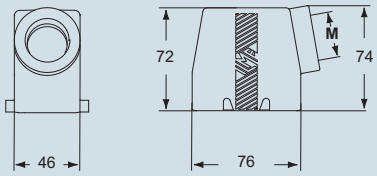
TAPC 10.25 and **TAPC 10.32**



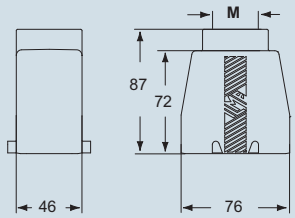
The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

dimensions in mm

TMAO 10.25 and **TMAO 10.32**



TMAV 10.25 and **TMAV 10.32**



EN 60529 IP66 IP69 IEC 60529 ambient temperature limits -50 °C / +70 °C

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD	42	poles + ⏚	69
CDS	18	poles + ⏚	79
CSH	10	poles + ⏚	92
CNE, CSE	10	poles + ⏚	105
CCE	10	poles + ⏚	111
CSS	10	poles + ⏚	123
CT, CTSE (16A) *)	10	poles + ⏚	131
CQE	18	poles + ⏚	139
CMCE	3+2 (aux)	poles + ⏚	148
CME	3+2 (aux)	poles + ⏚	149
CMSH	3+2 (aux)	poles + ⏚	149
CX	8/24	poles + ⏚	169
MIXO	3	modules	179 - 215

***) only for standard insulating version THIC**

insert centre distance:
57 x 27 mm

hoods with double lever top entry

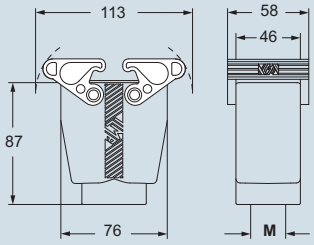
SILICONE gasket

NEW

description	part No.	entry M
with thermoplastic levers and gasket	**TAVC 10 G25**	**25**
with thermoplastic levers and gasket	**TAVC 10 G32**	**32**

dimensions in mm

TAVC 10 G25 and **TAVC 10 G32**



covers

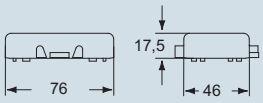
SILICONE gasket

NEW

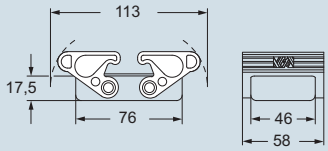
description	part No. (with eyelet)	part No. (with loop)
with 4 pegs	**TCHC 10**	**TCHC 10 S**
with 2 thermoplastic levers and gasket		**THCC 10 G**

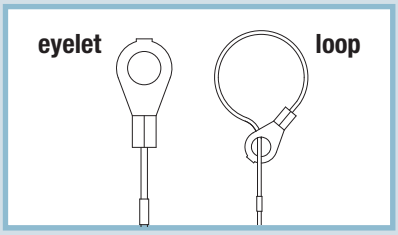
dimensions in mm

TCHC 10 (S)



THCC 10 G





EN 60529 IP66 IP69 IEC 60529 ambient temperature limits -50 °C / +70 °C

dimensions shown are not binding
and may be changed without notice

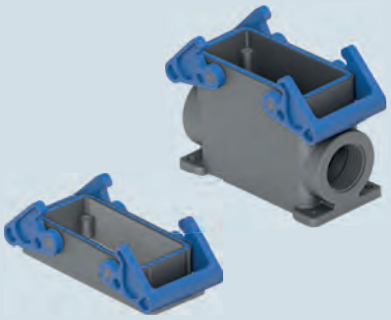
inserts: page:

CD 40	poles + ⏚	57
CDD 72	poles + ⏚	70
CDS 27	poles + ⏚	80
CSH 16	poles + ⏚	93
CNE, CSE 16	poles + ⏚	106
CCE 16	poles + ⏚	112
CSS 16	poles + ⏚	124
CT, CTSE (16A) ***)** .. 16	poles + ⏚	132
CQE 32	poles + ⏚	140
CQEE 40	poles + ⏚	146
CMCE ..... 6+2 (aux)	poles + ⏚	150
CME, CMSH .. 6+2 (aux)	poles + ⏚	151
CP 6	poles + ⏚	162
CX ..... 6/36 and 12/2	poles + ⏚	170-171
CX ..... 4/0 and 4/2	poles + ⏚	172
MIXO 4	modules	179-215

***) only for standard insulating version THIC**

insert centre distance: **77,5 x 27 mm**

housings with double lever



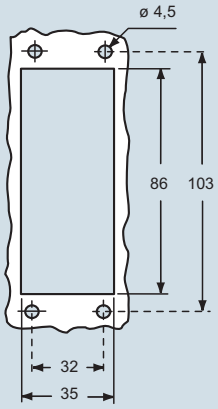
SILICONE gasket

NEW

hoods with 4 pegs

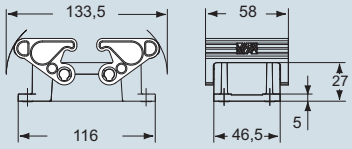
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic levers	**THIC 16**			
surface mounting housing with thermoplastic levers surface mounting housing with thermoplastic levers	**TAPC 16.32** **TAPC 16.40**	**32** **40**		
with pegs, side entry with pegs, side entry			**TMAO 16.32** **TMAO 16.40**	**32** **40**
with pegs, top entry with pegs, top entry			**TMAV 16.32** **TMAV 16.40**	**32** **40**

panel cut-out for bulkhead mounting housing in mm

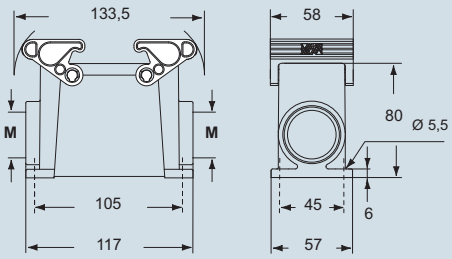


dimensions in mm

THIC 16



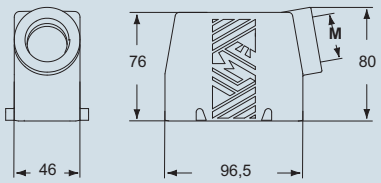
TAPC 16.32 and **TAPC 16.40**



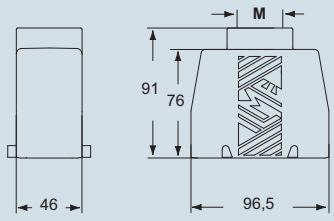
The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

dimensions in mm

TMAO 16.32 and **TMAO 16.40**



TMAV 16.32 and **TMAV 16.40**



EN 60529 IP66 IP69 IEC 60529 ambient temperature limits -50 °C / +70 °C

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD	40	poles + ⏚	57
CDD	72	poles + ⏚	70
CDS	27	poles + ⏚	80
CSH	16	poles + ⏚	93
CNE, CSE	16	poles + ⏚	106
CCE	16	poles + ⏚	112
CSS	16	poles + ⏚	124
CT, CTSE (16A) *)	16	poles + ⏚	132
CQE	32	poles + ⏚	140
CQEE	40	poles + ⏚	146
CMCE	6+2 (aux)	poles + ⏚	150
CME, CMSH	6+2 (aux)	poles + ⏚	151
CP	6	poles + ⏚	162
CX	6/36 and 12/2	poles + ⏚	170-171
CX	4/0 and 4/2	poles + ⏚	172
MIXO	4	modules	179-215

***) only for standard insulating version THIC**

insert centre distance: **77,5 x 27 mm**

hoods with double lever top entry

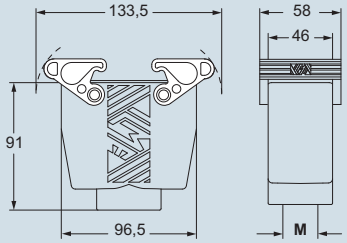
SILICONE gasket

NEW

description	part No.	entry M
with thermoplastic levers and gasket	**TAVC 16 G32**	**32**
with thermoplastic levers and gasket	**TAVC 16 G40**	**40**

dimensions in mm

TAVC 16 G32 and **TAVC 16 G40**



covers

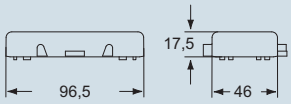
SILICONE gasket

NEW

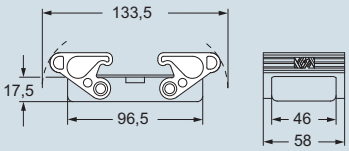
description	part No. (with eyelet)	part No. (with loop)
with 4 pegs	**TCHC 16**	**TCHC 16 S**
with 2 thermoplastic levers and gasket		**THCC 16 G**

dimensions in mm

TCHC 16 (S)

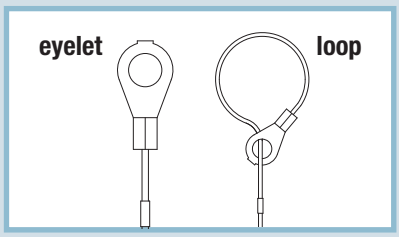


THCC 16 G



EN 60529 IP66 IP69 IEC 60529 ambient temperature limits -50 °C / +70 °C

dimensions shown are not binding and may be changed without notice



inserts: page:

CD ..... 64 poles + ⏚ 59
CDD ..... 108 poles + ⏚ 72
CDS ..... 42 poles + ⏚ 81
CSH ..... 24 poles + ⏚ 94
CNE, CSE ..... 24 poles + ⏚ 107
CCE ..... 24 poles + ⏚ 113
CSS ..... 24 poles + ⏚ 125
CT, CTSE (16A) *) .. 24 poles + ⏚ 133
CQE ..... 46 poles + ⏚ 141
CQEE ..... 64 poles + ⏚ 147
CMCE ..... 10+2 (aux) poles + ⏚ 152
CME, CMSH 10+2 (aux) poles + ⏚ 153
CMCE ..... 16+2 (aux) poles + ⏚ 158
CME ..... 16+2 (aux) poles + ⏚ 159
CX ..... 4/8 and 6/6 poles + ⏚ 173 and 175
MIXO ..... 6 modules 179-215

***) only for standard insulating version THIC**

insert centre distance: **104 x 27 mm**

housings with double lever

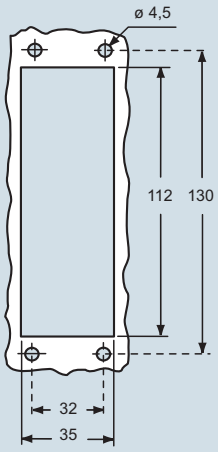
SILICONE gasket

NEW

hoods with 4 pegs

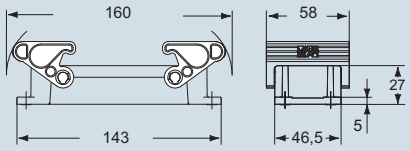
description	part No.	entry M	part No.	entry M
bulkhead mounting housing with thermoplastic levers	**THIC 24**			
surface mounting housing with thermoplastic levers surface mounting housing with thermoplastic levers	**TAPC 24.32** **TAPC 24.40**	**32** **40**		
with pegs, side entry with pegs, side entry			**TMAO 24.32** **TMAO 24.40**	**32** **40**
with pegs, top entry with pegs, top entry			**TMAV 24.32** **TMAV 24.40**	**32** **40**

panel cut-out for bulkhead mounting housing in mm

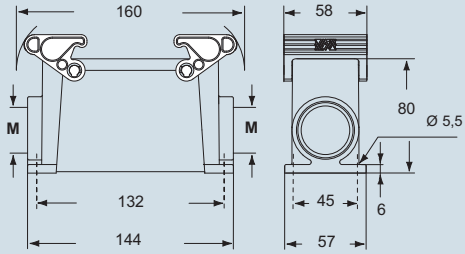


dimensions in mm

THIC 24



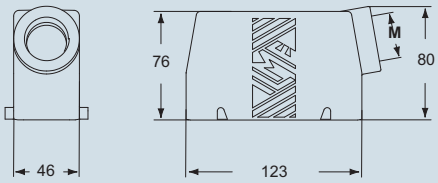
TAPC 24.32 and **TAPC 24.40**



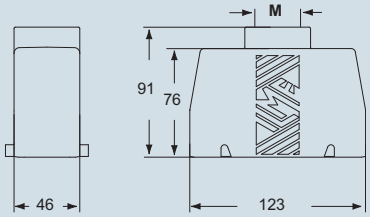
The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

dimensions in mm

TMAO 24.32 and **TMAO 24.40**



TMAV 24.32 and **TMAV 24.40**



EN 60529 IP66 IP69 IEC 60529

ambient temperature limits -50 °C / +70 °C

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD ..... 64 poles + ⏚ 59
CDD ..... 108 poles + ⏚ 72
CDS ..... 42 poles + ⏚ 81
CSH ..... 24 poles + ⏚ 94
CNE, CSE ..... 24 poles + ⏚ 107
CCE ..... 24 poles + ⏚ 113
CSS ..... 24 poles + ⏚ 125
CT, CTSE (16A) ***)** .. 24 poles + ⏚ 133
CQE ..... 46 poles + ⏚ 141
CQEE ..... 64 poles + ⏚ 147
CMCE ..... 10+2 (aux) poles + ⏚ 152
CME, CMSH 10+2 (aux) poles + ⏚ 153
CMCE ..... 16+2 (aux) poles + ⏚ 158
CME ..... 16+2 (aux) poles + ⏚ 159
CX ..... 4/8 and 6/6 poles + ⏚ 173 and 175
MIXO ..... 6 modules 179-215

***) only for standard insulating version THIC**

insert centre distance: **104 x 27 mm**

hoods with double lever top entry

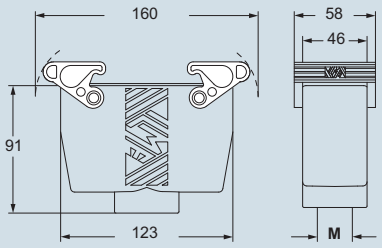
SILICONE gasket

NEW

description	part No.	entry M
with thermoplastic levers and gasket	**TAVC 24 G32**	**32**
with thermoplastic levers and gasket	**TAVC 24 G40**	**40**

dimensions in mm

TAVC 24 G32 and **TAVC 24 G40**



covers

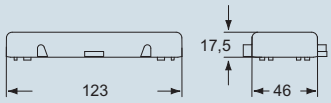
SILICONE gasket

NEW

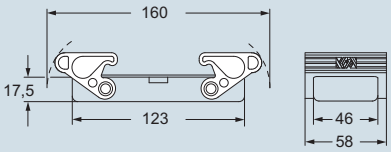
description	part No. (with eyelet)	part No. (with loop)
with 4 pegs	**TCHC 24**	**TCHC 24 S**
with 2 thermoplastic levers and gasket		**THCC 24 G**

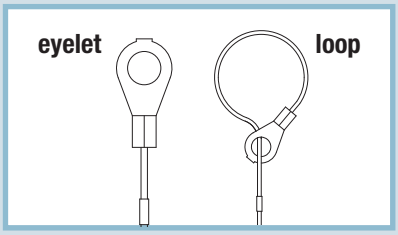
dimensions in mm

TCHC 24 (S)



THCC 24 G





EN 60529 IP66 IP69 IEC 60529 ambient temperature limits -50 °C / +70 °C

dimensions shown are not binding and may be changed without notice

inserts: page:

CD ..... 40, 64 poles + ⏚ 57 and 59
CDD ..... 24, 42, 72, 108 poles + ⏚ 67-72
CDS ..... 9, 18, 27, 42 poles + ⏚ 78-81
CSH ..... 6, 10, 16, 24 poles + ⏚ 91-94
CNE, CSE .... 6, 10, 16, 24 poles + ⏚ 104-107
CCE ..... 6, 10, 16, 24 poles + ⏚ 110-113
CSS ..... 6, 10, 16, 24 poles + ⏚ 122-125
CT, CTSE ..... 6, 10, 16, 24 poles + ⏚ 130-133
CQE ..... 10, 18, 32, 46 poles + ⏚ 138-141
CQEE ..... 40, 64 poles + ⏚ 146-147
CMCE 3, 6, 10, 16+2 (aux) poles + ⏚ 148-158
CMSH ..... 3, 6, 10+2 (aux) poles + ⏚ 149-153
CP ..... 6 poles + ⏚ 162
CX ..... 8/24, 6/36, 12/2 poles + ⏚ 169-171

insert centre distance:
44 X 27 mm, 57 x 27 mm
77,5 x 27 mm, 104 x 27 mm

optional PE jumpers

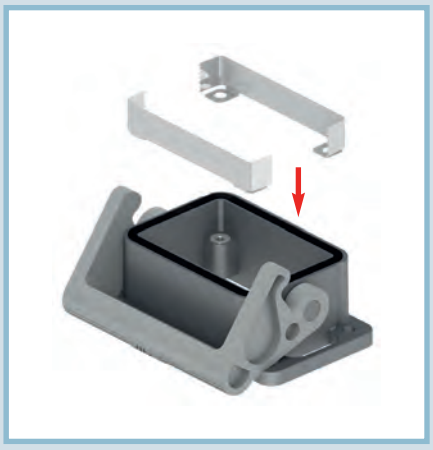
NEW

description	part No.
galvanized brass, to be optionally used with T-TYPE enclosures series and COB systems.	
- for inserts “44.27” size	**CR 06 BPE**
- for inserts “57.27” size	**CR 10 BPE**
- for inserts “77.27” size	**CR 16 BPE**
- for inserts “104.27” size	**CR 24 BPE**

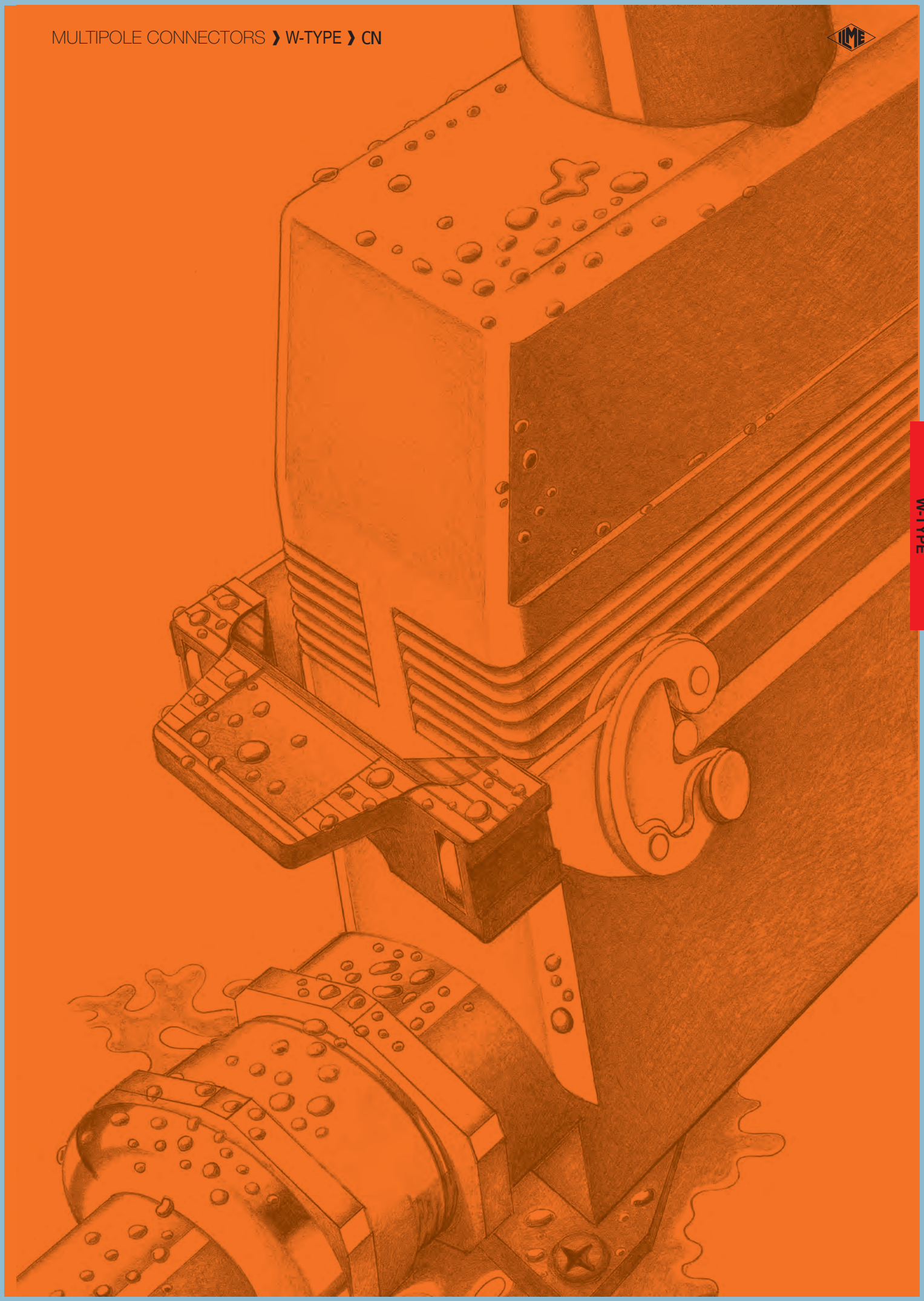
CR...BPE accessories PE (protective earth) jumpers could be mounted under the connector inserts for the connection of the two insert’s PE plates.

To guarantee to proper alignment of the insert inside the enclosure, it is necessary to use both jumpers supplied (in the same housing or hood); the jumpers are not usable individually.

Furthermore the user is responsible for verifying the continuity of the PE connection ⏚ (male and female) independently of using CR...BPE earth jumpers.



dimensions shown are not binding
and may be changed without notice



W-TYPE

Enclosures for aggressive environments

Series W-TYPE connector enclosures for aggressive environments is specially **designed for industrial applications where particularly aggressive external agents are present** (e.g. salty environments, etc.).

The range includes enclosures in the 7 basic sizes (size 21.21 for CKA..W and MKA..W models, sizes 44.27, 57.27, 77.27 and 104.27 for CH..W, CA..W and MH..W, MA..W models, sizes 49.16 and 66.16 for CZ..W and MZ..W models) and in the 3 double sizes (sizes 66.40 also known as 50 poles, 77.62 a.k.a. 32 poles, 104.62 a.k.a. 48 poles).

Series W-TYPE enclosures may be bulkhead mounting, surface-mounting or hood type with side or top entry. They are **distinguished by the black colour** and have the following characteristics:

- **chromate conversion treatment of castings** RoHS 2 compliant, providing **50% improved corrosion in resistance in salt spray tests** (according to UNI EN ISO 9227) compared to the previous green coloured versions;
- **thermosetting epoxy powder coating** (with improved resistance to chemicals compared to epoxy polyester of the standard enclosures series);
- **FKM fluoroelastomer gaskets** (with improved resistance to chemicals and aging);
- **ambient temperature limits from -40 °C to +125 °C.**

Other constructional characteristics are:

1) CKA..W and MKA..W series
- 21.21 inserts size
- stainless steel monoblock locking lever

2) CH..W, CA..W and MH..W, MA..W series
- 44.27, 57.27, 77.27, 104.27, single inserts sizes and 77.62, 104.62, 66.40 double inserts sizes;
- CLASS type locking levers (stainless steel lever body, springs and pins, lever handle by fibreglass reinforced thermoplastic material);
- stainless steel riveted pegs;
- supplementary insulation inside enclosures.

3) CZ..W and MZ..W series
- 49.16, 66.16 inserts size;
- stainless steel monoblock locking lever (body, handle, springs), rolls and pins;
- stainless steel riveted pegs;
- supplementary insulation inside enclosures.

Series **W-TYPE** enclosures are approved by UL with c UL us Recognized Component mark for USA and Canada, with protection type ratings **UL Type 4 (= NEMA 4), UL Type 4X (= NEMA 4X) and UL Type 12 (= NEMA 12)** according to the American standard ANSI/UL 50 and ANSI/UL 50E and the corresponding Canadian Standards CSA C22.2 No.94.1 and CSA C22.2 No.94.2.

Upon connector complete and fitted with suitably rated cable glands or conduit fittings, series **W-TYPE** enclosures guarantee a **degree of protection IP44** (for size 21.21, **IP66/IP67** using CKR 65(D) kit), or **IP66** (all other sizes) as well as **IP69** according to EN 60529 (the IPX9 test recently added to this standard covers resistance to high pressure and temperature water jetting, jets applied at 80 °C (± 5 °C) at a pressure of 80 bar to 100 bar, 30 s for each angle of inclination 0°, 30°, 60° and 90° with reference to the horizontal plane).

Series **W-TYPE** enclosures **can accommodate all connector inserts** with either crimp, screw, spring or the innovative **SQUICH®** connection.

Series **W-TYPE** enclosures, being not equipped with internal tabs and thanks to the additional insulation strips placed inside, are **also suitable for series CME 830V rated inserts.**

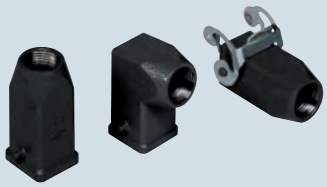
inserts: page:

CK	3 poles + ⏚	48
CK	4 poles + ⏚	48
CKS	3 poles + ⏚	49
CKS	4 poles + ⏚	49
CD	8 poles	54
CQ	12 poles + ⏚	165
CQ	5 poles + ⏚	166

insert dimensions:
21 x 21 mm

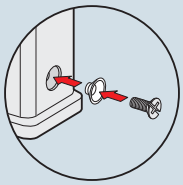
bulkhead mounting housings straight and angled

hoods

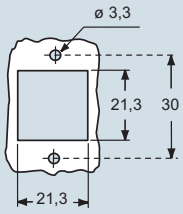


description	part No. (entry - Pg 11)	part No. (entry - M 20)	part No. (entry - Pg 11)	part No. (entry - M 20)
with stainless steel lever without cable entry, with stainless steel lever	**CKAXW 03 I** **CKAXW 03 IA**			
with cable entry, with stainless steel lever with cable entry, with stainless steel lever, bulkhead hole closed	**CKAXW 03 IAP** **CKAXW 03 AP**	**MKAXW IAP20** **MKAXW AP20**		
with pegs, top entry with pegs, side entry			**CKAW 03 V** **CKAW 03 VA**	**MKAW V20** **MKAW VA20**
with stainless steel lever, top entry			**CKAXW 03 VG**	**MKAXW VG20**
gasket and screw kit for IP66/IP67/IP69 [1] for CK, CQ 05, CKS inserts	**CKR 65**		**CKR 65**	
gasket and screw kit for IP66/IP67/IP69 [1] for CD 08 inserts	**CKR 65 D**		**CKR 65 D**	

1) To obtain the protection rating IP66/IP67/IP69 a kit is provided that includes a gasket to fit under the insert fixing screws supplied with the kit (see illustrative example).
CQ 12 inserts are already supplied with a gasket and screw which ensure IP66/IP67/IP69 protection rating.



panel cut-out for bulkhead mounting housings in mm



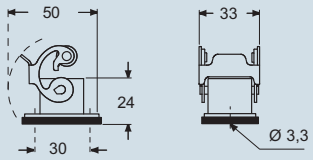
Type 12
Type 4/4X only
with CKR 65 (D)

IP66/IP67/IP69 with CKR 65 (D) [1]

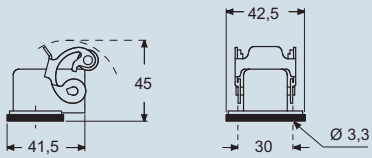
dimensions shown are not binding
and may be changed without notice

dimensions in mm

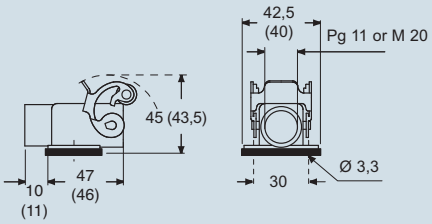
CKAXW I



CKAXW IA

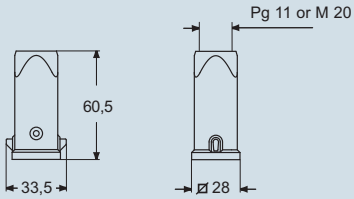


CKAXW IAP (CKAXW AP) and
MKAXW IAP (MKAXW AP)

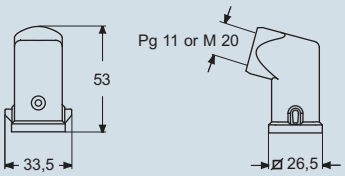


dimensions in mm

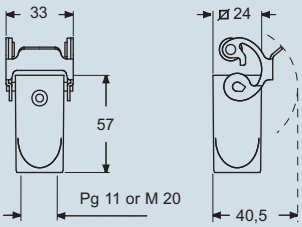
CKAW V and **MKAW V**



CKAW VA and **MKAW VA**



CKAXW VG and **MKAXW VG**



CZ-MZ and CZA-MZA enclosures size “49.16” for aggressive environments W-TYPE

inserts: page:

CD	15	poles + ⏚	55
CSAH	10	poles + ⏚	87
CDA	10	poles + ⏚	98
CDC	10	poles + ⏚	99
MIXO	1	module	179 - 214

insert centre distance:
49 x 16 mm

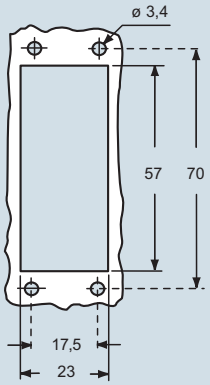
The covers for L and LG versions cannot be used together with coding pins.
If this application is required, please contact ILME SpA.

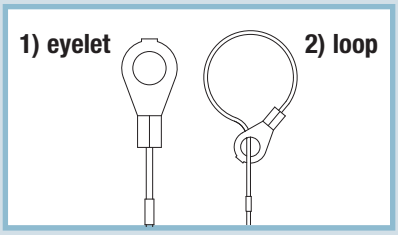
housings and cover

hoods and cover

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with lever	**CZIW 15 L**	—						
surface mounting housing, with lever	**CZPW 15 L2**	16 x 2	**MZPW 15 L225**	25 x 2				
cover with pegs (for 1 lever enclosures) **1)**	**CZCW 15 L**							
enclosure with pegs, side entry					**CZOW 15 L**	16	**MZOW 15 L20**	20
enclosure with pegs, side entry							**MZOW 15 L25**	25
enclosure with pegs, side entry, high construction					**CZAOW 15 L21**	21	**MZAOW 15 L25**	25
enclosure with pegs, top entry					**CZVW 15 L**	13,5	**MZVW 15 L20**	20
enclosure with pegs, top entry, high construction					**CZAVW 15 L21**	21	**MZAVW 15 L25**	25
cover with lever (for enclosures with pegs) **2)**					**CZCW 15 LG**			

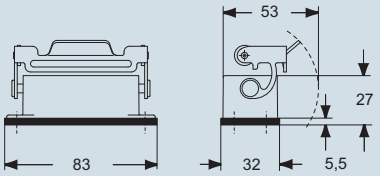
panel cut-out for bulkhead mounting housing in mm



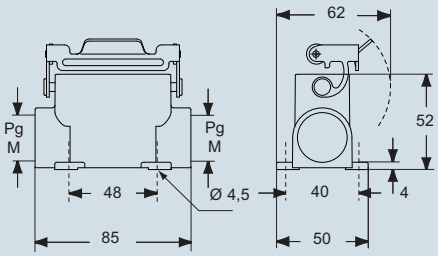


dimensions in mm

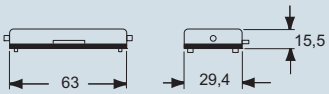
CZIW L



CZPW L and **MZPW L**

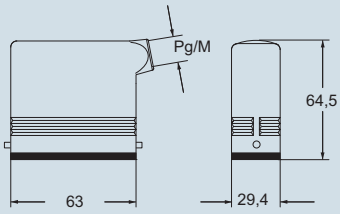


CZCW L

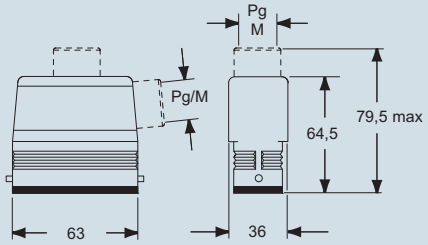


dimensions in mm

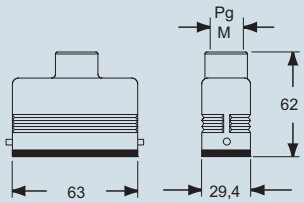
CZOW L and **MZOW L**



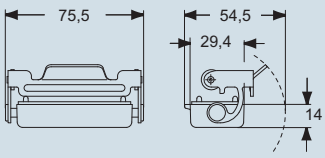
CZAOW L - MZAOW L and **CZAVW L - MZAVW L**



CZVW L and **MZVW L**



CZCW LG



Type 4/4X/12

IP66 IP69 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD	25 poles + ⏚	56
CDD	38 poles + ⏚	68
CSAH	16 poles + ⏚	88
CDA	16 poles + ⏚	100
CDC	16 poles + ⏚	101

insert centre distance:
66 x 16 mm

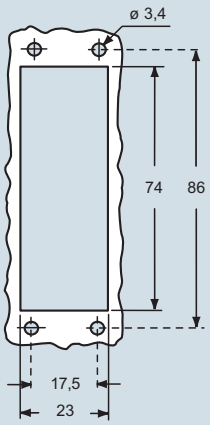
The covers for L and LG versions cannot be used together with coding pins.
If this application is required, please contact ILME SpA.

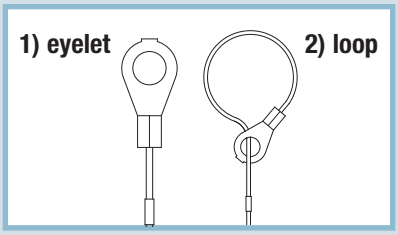
housings and cover

hoods and cover

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with lever	**CZIW 25 L**	—						
surface mounting housing, with lever, high construction	**CZAPW 25 L2**	16 x 2	**MZAPW 25L225**	25 x 2				
cover with pegs (for 1 lever enclosures) **1)**	**CZCW 25 L**							
enclosure with pegs, side entry					**CZOW 25 L**	16	**MZOW 25 L20**	20
enclosure with pegs, side entry							**MZOW 25 L25**	25
enclosure with pegs, side entry, high construction					**CZAOW 25 L21**	21	**MZAOW 25 L25**	25
enclosure with pegs, top entry					**CZVW 25 L**	16	**MZVW 25 L20** *	20
enclosure with pegs, top entry, high construction					**CZAVW 25 L21**	21	**MZAVW 25 L25**	25
cover with lever (for enclosures with pegs) **2)**					**CZCW 25 LG**			

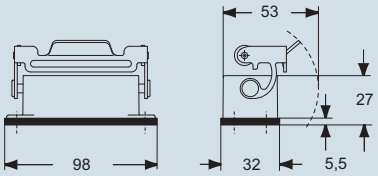
panel cut-out for bulkhead mounting housing in mm



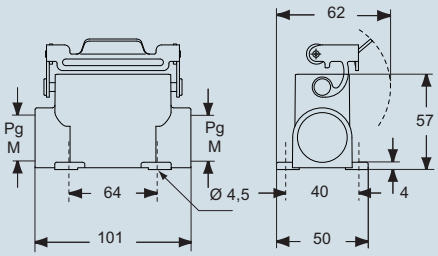


dimensions in mm

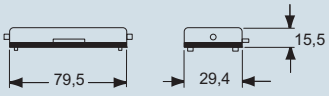
CZIW L



CZAPW L and **MZAPW L**

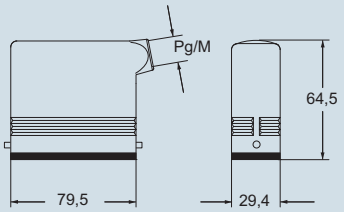


CZCW L

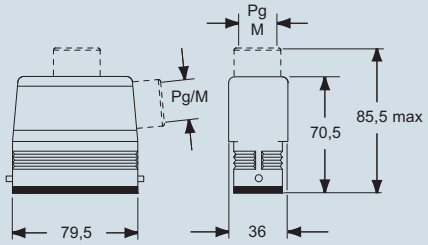


dimensions in mm

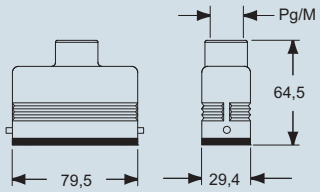
CZOW L and **MZOW L**



CZAOW L - MZAOW L and **CZAVW L - MZAVW L**

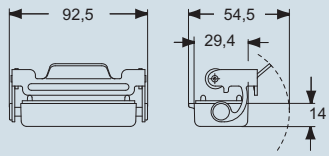


CZVW L and **MZVW L**



* can only be used with a complete cable gland (to be purchased separately)

CZCW LG



Type 4/4X/12

IP66 IP69 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD	50 poles + ⏚	58
CDD	76 poles + ⏚	71
CSAH	32 poles + ⏚	89
CDA	32 poles + ⏚	102
CDC	32 poles + ⏚	103

insert dimensions:
2 x (66 x 16) mm

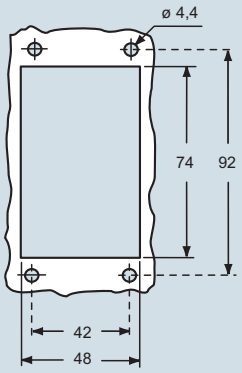
CHCW 50 and CHCW 50 G covers cannot be used together with coding pins. If this application is required, please contact ILME SpA.

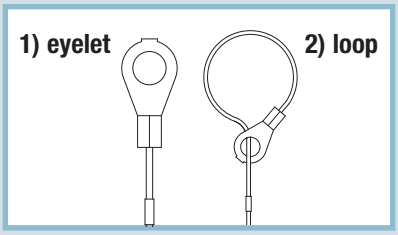
housings and cover

hoods and cover

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housings with lever	**CHIW 50**	—						
surface mounting housing, with lever	**CHPW 50.21**	21	**MHPW 50.32**	32				
surface mounting housing, with lever	**CHPW 50.229**	29 x 2	**MHPW 50.240**	40 x 2				
cover with 4 pegs (for housings with 2 levers) **1)**	**CHCW 50**							
enclosure with pegs, side entry					**CHOW 50**	21	**MHOW 50.25**	25
enclosure with pegs, side entry							**MHOW 50.32**	32
enclosure with pegs, side entry, high construction					**CAOW 50.29**	29	**MAOW 50.32**	32
enclosure with pegs, top entry, high construction					**CAVW 50.29**	29	**MAVW 50.32**	32
cover with 2 levers (for enclosures with 4 pegs) **2)**					**CHCW 50 G**			

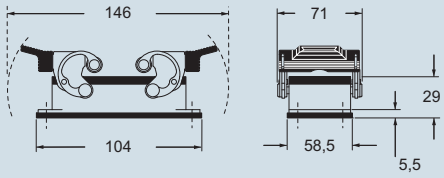
panel cut-out for bulkhead mounting housing in mm



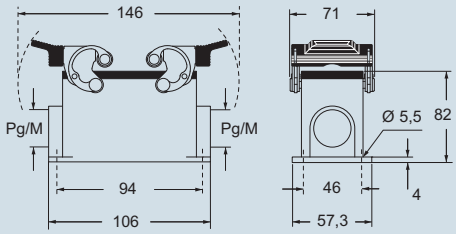


dimensions in mm

CHIW



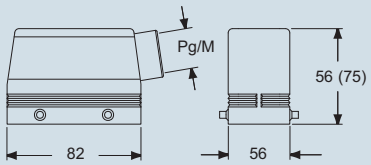
CHPW and **MHPW**



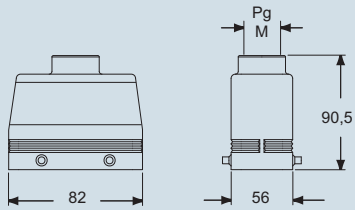
CHCW

dimensions in mm

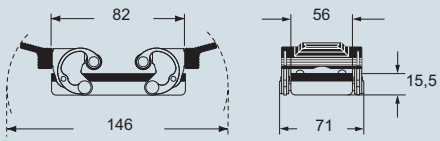
CHOW (CAOW) and **MHOW (MAOW)**



CAVW and **MAVW**



CHCW G



Type 4/4X/12

IP66 IP69 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CT, CTSE (16A) ***)	6	poles + ⏚	130
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 215

***) only for enclosure CHIW 06 L**

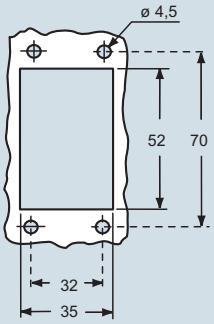
insert centre distance:
44 x 27 mm

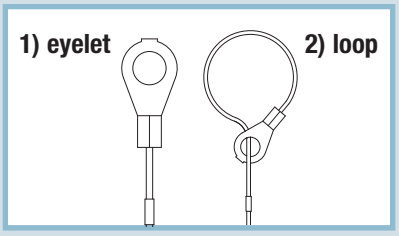
housings and cover

hoods and cover

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with lever surface mounting housing, with lever, high construction	**CHIW 06 L** **CAPW 06 L**	— 21	**MAPW 06 L32**	32				
cover with pegs (for 1 lever enclosures) **1)**	**CHCW 06 L**							
enclosure with pegs, side entry, high construction enclosure with pegs, top entry, high construction					**CAOW 06 L21** **CAVW 06 L21**	21 21	**MAOW 06 L32** **MAVW 06 L32**	32 32
cover with lever (for enclosures with pegs) **2)**					**CHCW 06 LG**			
enclosure with lever and gasket, side entry, high construction					**CAVW 06 LG**	21	**MAVW 06 LG32**	32

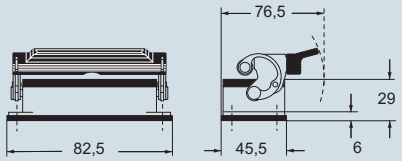
panel cut-out for bulkhead mounting housing in mm



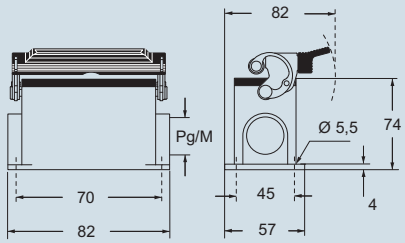


dimensions in mm

CHIW L



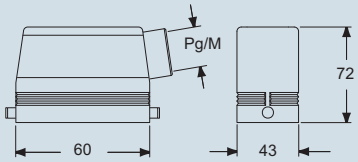
CAPW L and **MAPW L**



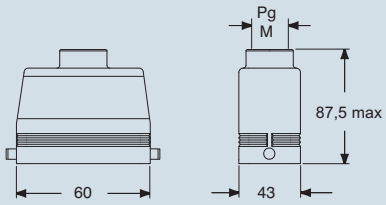
CHCW L

dimensions in mm

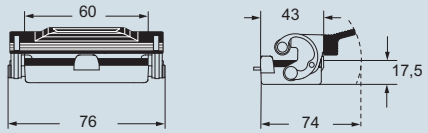
CAOW L and **MAOW L**



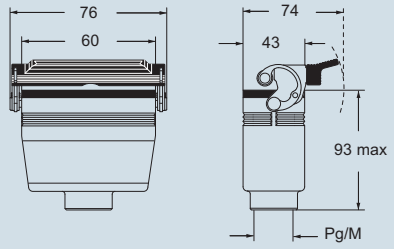
CAVW L and **MAVW L**



CHCW LG



CAVW LG and **MAVW LG**



Type 4/4X/12

IP66 IP69

dimensions shown are not binding
and may be changed without notice

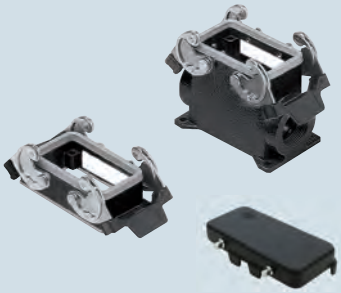
inserts: page:

CDD ..... 42 poles + ⏚ 69
CDS ..... 18 poles + ⏚ 79
CSH ..... 10 poles + ⏚ 92
CNE, CSE ..... 10 poles + ⏚ 105
CCE ..... 10 poles + ⏚ 111
CSS ..... 10 poles + ⏚ 123
CT, CTSE (16A) ***)** .. 10 poles + ⏚ 131
CQE ..... 18 poles + ⏚ 139
CMCE ..... 3+2 (aux) poles + ⏚ 148
CME ..... 3+2 (aux) poles + ⏚ 149
CMSH ..... 3+2 (aux) poles + ⏚ 149
CX ..... 8/24 poles + ⏚ 169
MIXO ..... 3 modules 179 - 215

***) only for enclosure CHIW 10**

insert centre distance:
57 x 27 mm

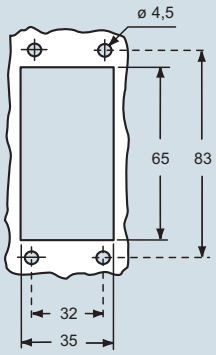
housings and cover



hoods and cover

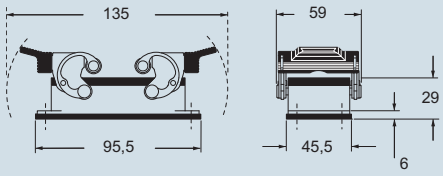
description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with levers surface mounting housing, with levers, high construction	**CHIW 10** **CAPW 10.21**	— 21	**MAPW 10.32**	32				
cover with 4 pegs (for enclosures with 2 levers) **1)**	**CHCW 10**							
enclosure with pegs, side entry, high construction enclosure with pegs, top entry, high construction					**CAOW 10.21** **CAVW 10.21**	21 21	**MAOW 10.32** **MAVW 10.32**	32 32
cover with 2 levers (for enclosures with 4 pegs) **2)**					**CHCW 10 G**			
enclosure with levers and gasket, top entry, high construction					**CAVW 10 G**	21	**MAVW 10 G32**	32

panel cut-out for bulkhead mounting housings in mm

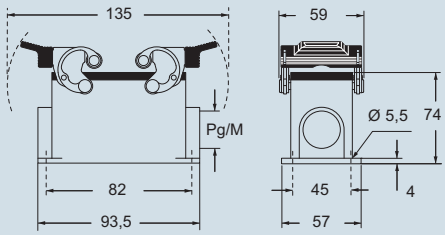


dimensions in mm

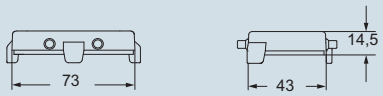
CHIW



CAPW and **MAPW**

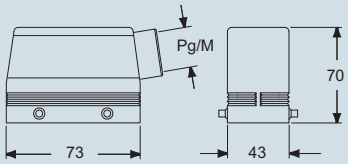


CHCW

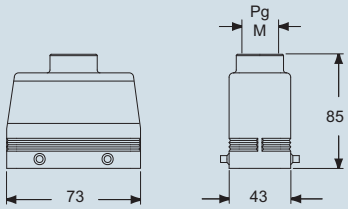


dimensions in mm

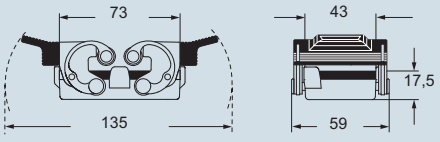
CAOW and **MAOW**



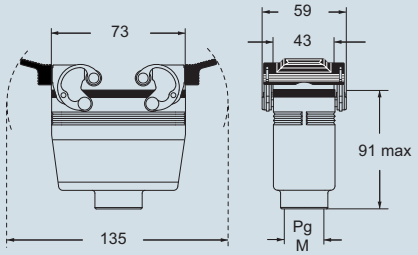
CAVW and **MAVW**

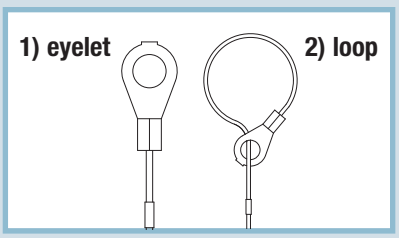


CHCW G



CAVW G and **MAVW G**





Type 4/4X/12

IP66 IP69 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts:			page:
CD	40	poles + ⏚	57
CT, CTS (10A) ***)**	40	poles + ⏚	64
CDD	72	poles + ⏚	70
CDS	27	poles + ⏚	80
CSH	16	poles + ⏚	93
CNE, CSE	16	poles + ⏚	106
CCE	16	poles + ⏚	112
CSS	16	poles + ⏚	124
CT, CTSE (16A) ***)**	16	poles + ⏚	132
CQE	32	poles + ⏚	140
CQEE	40	poles + ⏚	146
CMCE	6+2 (aux)	poles + ⏚	150
CME, CMSH	6+2 (aux)	poles + ⏚	151
CP	6	poles + ⏚	162
CX	6/36 and 12/2	poles + ⏚	170-171
CX	4/0 and 4/2	poles + ⏚	172
MIXO	4	modules	179-215

***) only for enclosure CHIW 16**

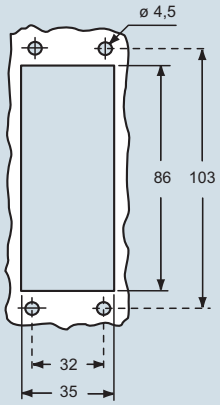
insert centre distance: **77,5 x 27 mm**

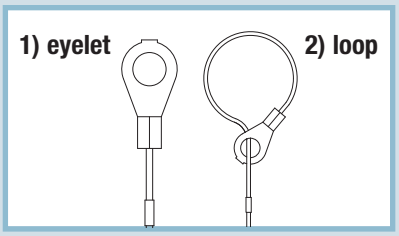
housings and cover

hoods and cover

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with levers	**CHIW 16**	—						
surface mounting housing, with levers, high construction	**CAPW 16.21**	21	**MAPW 16.32**	32				
cover with 4 pegs (for enclosures with 2 levers) **1)**	**CHCW 16**							
enclosure with pegs, side entry					**CHOW 16**	21	**MHOW 16.25**	25
enclosure with pegs, side entry							**MHOW 16.32**	32
enclosure with pegs, side entry, high construction					**CAOW 16.29**	29	**MAOW 16.32**	32
enclosure with pegs, side entry, high construction							**MAOW 16.40**	40
enclosure with pegs, top entry					**CHVW 16**	21	**MHVW 16.25**	25
enclosure with pegs, top entry							**MHVW 16.32**	32
enclosure with pegs, top entry, high construction					**CAVW 16.29**	29	**MAVW 16.32**	32
enclosure with pegs, top entry, high construction							**MAVW 16.40**	40
cover with 2 levers (for enclosures with 4 pegs **2)**					**CHCW 16 G**			
enclosure with levers and gasket, top entry, high construction					**CAVW 16 G29**	29	**MAVW 16 G32**	32

panel cut-out for bulkhead mounting housings in mm



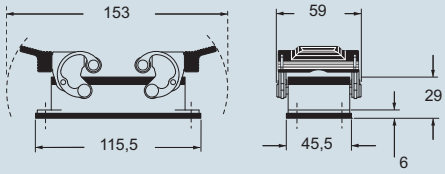


Type 4/4X/12

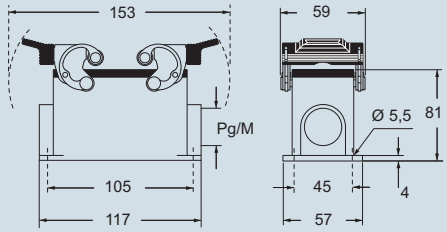
dimensions shown are not binding and may be changed without notice

dimensions in mm

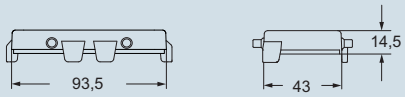
CHIW



CAPW and **MAPW**

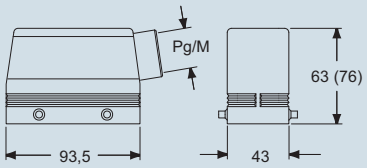


CHCW

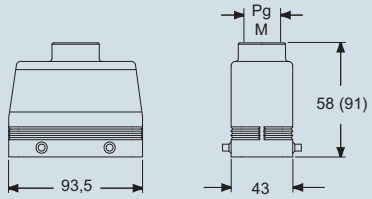


dimensions in mm

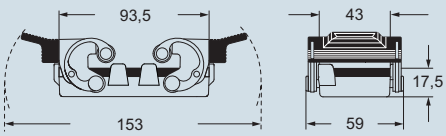
CHOW (CAOW) and **MHOW (MAOW)**



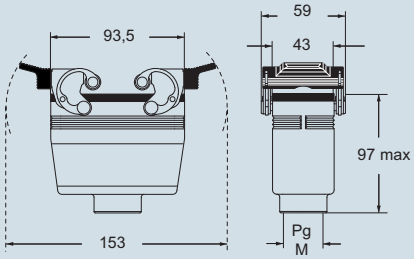
CHVW (CAVW) and **MHVW (MAVW)**



CHCW G



CAVW G and **MAVW G**



inserts: page:

CD ..... 64 poles + ⏚ 59
CT, CTS (10A) ***)** ..... 64 poles + ⏚ 65
CDD ..... 108 poles + ⏚ 72
CDS ..... 42 poles + ⏚ 81
CSH ..... 24 poles + ⏚ 94
CNE, CSE ..... 24 poles + ⏚ 107
CCE ..... 24 poles + ⏚ 113
CSS ..... 24 poles + ⏚ 125
CT, CTSE (16A) ***)** 24 poles + ⏚ 133
CQE ..... 46 poles + ⏚ 141
CQEE ..... 64 poles + ⏚ 147
CMCE ..... 10+2 (aux) poles + ⏚ 152
CME, CMSH 10+2 (aux) poles + ⏚ 153
CMCE ..... 16+2 (aux) poles + ⏚ 158
CME ..... 16+2 (aux) poles + ⏚ 159
CX ..... 4/8 and 6/6 poles + ⏚ 173 and 175
MIXO ..... 6 modules 179-215

***) only for enclosure CHIW 24**

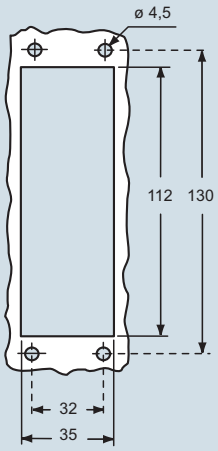
insert centre distance: **104 x 27 mm**

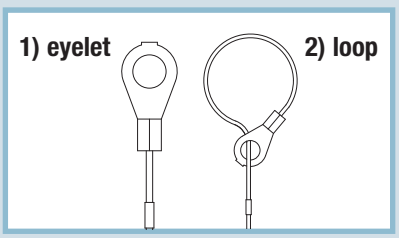
housings and cover

hoods and cover

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with levers	**CHIW 24**	—						
surface mounting housing, with levers, high construction	**CAPW 24.21**	21	**MAPW 24.32**	32				
cover with 4 pegs (for enclosures with 2 levers) **1)**	**CHCW 24**							
enclosure with pegs, side entry					**CHOW 24**	21	**MHOW 24.25**	25
enclosure with pegs, side entry							**MHOW 24.32**	32
enclosure with pegs, side entry, high construction					**CAOW 24.29**	29	**MAOW 24.32**	32
enclosure with pegs, side entry, high construction							**MAOW 24.40**	40
enclosure with pegs, top entry					**CHVW 24**	21	**MHVW 24.25**	25
enclosure with pegs, top entry							**MHVW 24.32**	32
enclosure with pegs, top entry, high construction					**CAVW 24.29**	29	**MAVW 24.32**	32
enclosure with pegs, top entry, high construction							**MAVW 24.40**	40
cover with 2 levers (for enclosures with 4 pegs) **2)**					**CHCW 24 G**			
enclosure with levers and gasket, top entry					**CHVW 24 G**	21	**MHVW 24 G32**	32

panel cut-out for bulkhead mounting housings in mm





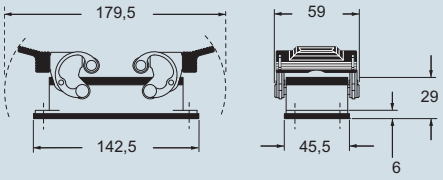
Type 4/4X/12

IP66 IP69 EN 60529 IEC 60529

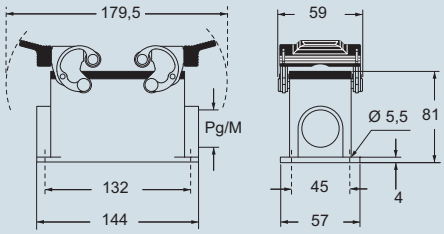
dimensions shown are not binding and may be changed without notice

dimensions in mm

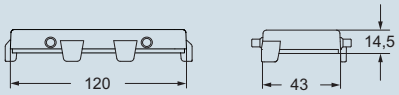
CHIW



CAPW and **MAPW**

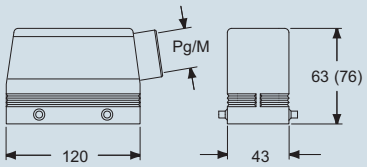


CHCW

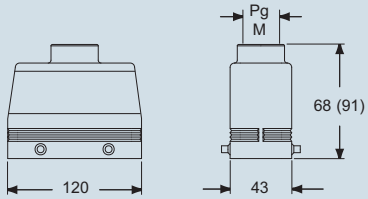


dimensions in mm

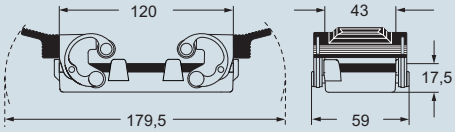
CHOW (CAOW) and **MHOW (MAOW)**



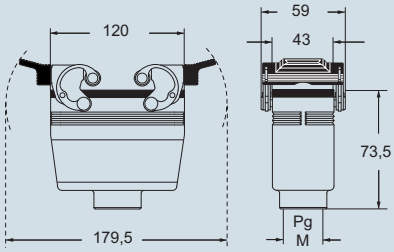
CHVW (CAVW) and **MHVW (MAVW)**



CHCW G



CHVW G and **MHVW G**



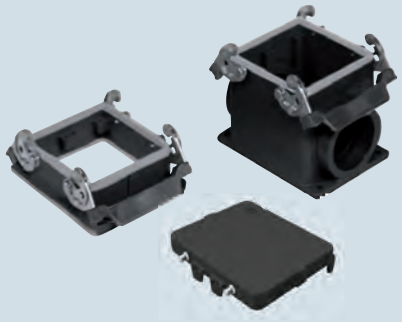
inserts:

			page:
CD	80	poles + ⏚	60
CDD	144	poles + ⏚	73
CDS	54	poles + ⏚	82
CSH	32	poles + ⏚	95
CNE, CSE	32	poles + ⏚	108
CCE	32	poles + ⏚	114
CSS	32	poles + ⏚	126
CTSE (16A) ***)**	32	poles + ⏚	134
CQE	64	poles + ⏚	142
CMCE	12+4 (aux)	poles + ⏚	154
CME	12+4 (aux)	poles + ⏚	155
CMSH	12+4 (aux)	poles + ⏚	155
CP	12	poles + ⏚	163
MIXO	4 + 4	modules	179-215

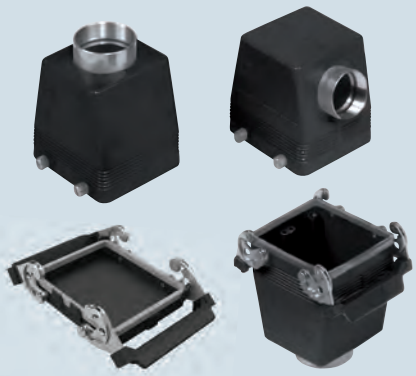
***) only for enclosure CHIW 32**

insert centre distance:
2 x (77,5 x 27) mm

housings and cover

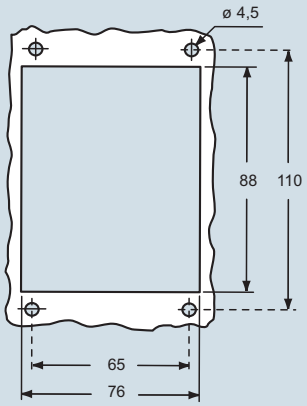


hoods and cover



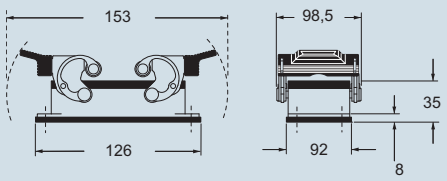
description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with levers surface mounting housing, with levers	**CHIW 32** **CHPW 32**	— 36	**MHPW 32.50**	50				
cover with 4 pegs (for enclosures with 2 levers) **1)**	**CHCW 32**							
enclosure with pegs, side entry enclosure with pegs, top entry					**CHOW 32** **CHVW 32**	36 36	**MHOW 32.40** **MHVW 32.40**	40 40
cover with 2 levers (for enclosures with 4 pegs) **2)**					**CHCW 32 G**			
enclosure with levers and gasket, top entry					**CHVW 32 G**	36	**MHVW 32 G40**	40

panel cut-out for bulkhead mounting housings in mm

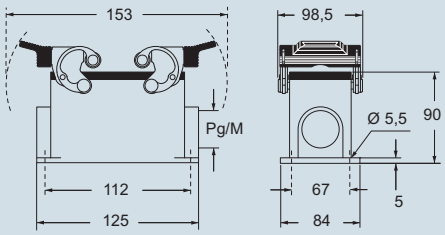


dimensions in mm

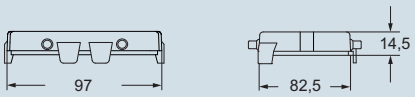
CHIW



CHPW and **MHPW**

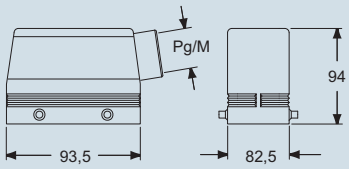


CHCW

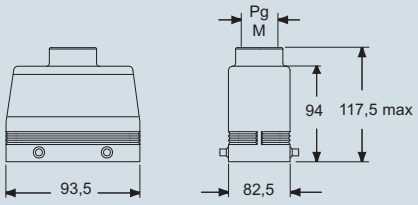


dimensions in mm

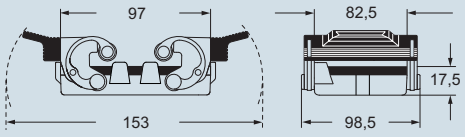
CHOW and **MHOW**



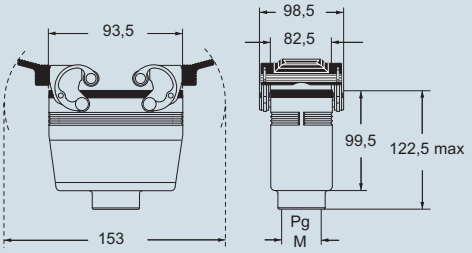
CHVW and **MHVW**

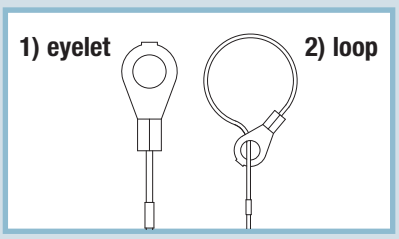


CHCW G



CHVW G and **MHVW G**





Type 4/4X/12

IP66 IP69 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

CH and **MH** enclosures size “104.62” for aggressive environments **W-TYPE**

inserts: page:

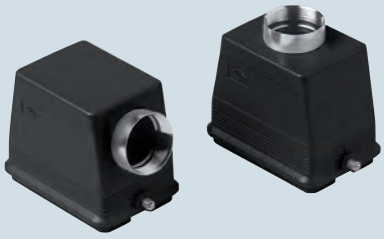
CD	128	poles + ⏚	61
CDD	216	poles + ⏚	74
CDS	84	poles + ⏚	83
CSH	48	poles + ⏚	96
CNE, CSE	48	poles + ⏚	109
CCE	48	poles + ⏚	115
CSS	48	poles + ⏚	127
CTSE (16A) ***)**	48	poles + ⏚	135
CQE	92	poles + ⏚	143
CMCE	20+4 (aux)	poles + ⏚	156
CME	20+4 (aux)	poles + ⏚	157
CMSH	20+4 (aux)	poles + ⏚	157
CMCE	32+4 (aux)	poles + ⏚	160
CME	32+4 (aux)	poles + ⏚	161
MIXO	6 + 6	modules	179-215

***) only for enclosure CHIW 48 LS**

insert centre distance: **2 x (104 x 27) mm**

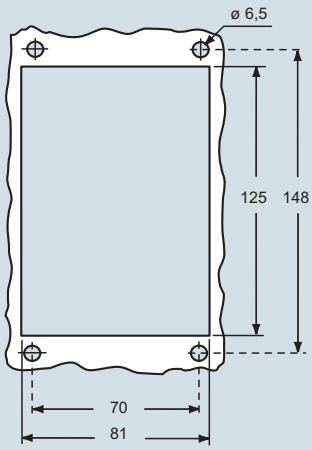
bulkhead and surface mounting housings

hoods



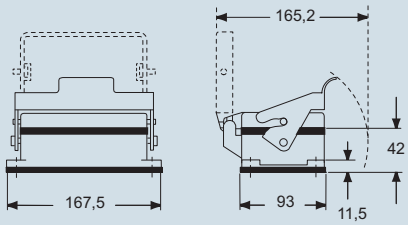
description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housings, with lever and cover	**CHIW 48 LS**	—						
surface mounting housings, with lever and cover	**CHPW 48 LS**	36 x 1/2	**MHPW 48 LS40**	40 x 1/2				
side entry, with pegs					**CHOW 48 L**	36	**MHOW 48 L40**	40
top entry, with pegs					**CHVW 48 L**	36	**MHVW 48 L40**	40

panel cut-out for bulkhead mounting housings in mm

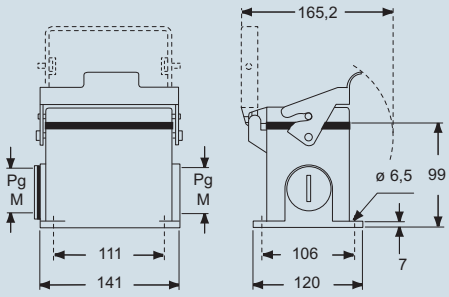


dimensions in mm

CHIW LS

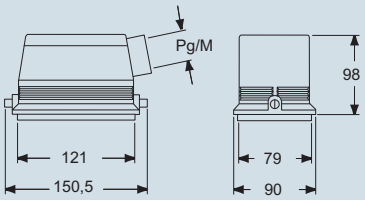


CHPW LS and **MHPW LS**

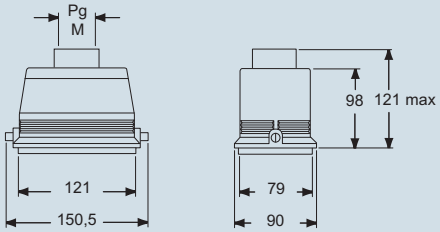


dimensions in mm

CHOW L and **MHOW L**



CHVW L and **MHVW L**



Type 4/4X/12

IP66 IP69

dimensions shown are not binding
and may be changed without notice

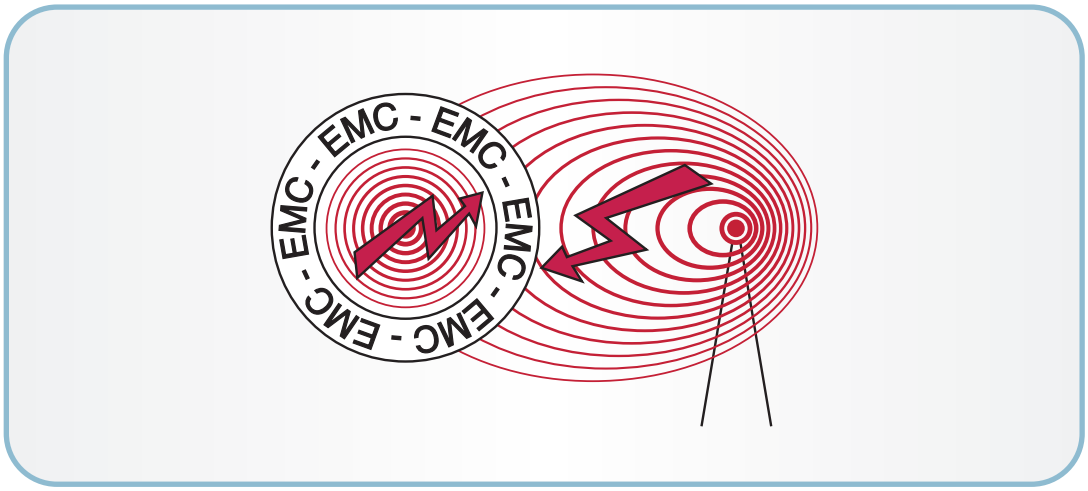
EMC

Connectors and electromagnetic compatibility

Connectors and electromagnetic compatibility (EMC) Directives and standards.

The concept of **Electromagnetic Compatibility** (EMC) is the reversal in the positive sense of what was until recently known as **Electromagnetic Interference** (EMI): ***we have electromagnetic compatibility*** between a device and the environment (including surrounding equipment) when there is no reciprocal electromagnetic interference or when this is within tolerable limits.

In other words, ***to obtain electromagnetic compatibility,*** measures must be adopted aimed at bringing the electrical or electronic equipment to levels of **emission** and electromagnetic **immunity** against electromagnetic interference such that it continues to function properly without causing disturbance to other equipment present in the surrounding environment.



In the electrical equipment of industrial machines, rectangular multipole connectors with their metallic enclosures are widely used due to their high standards of safety, reliability, mechanical robustness and resistance to corrosion and pollution.

These connectors are passive electromechanical components: they do not generate electromagnetic interference and are not disturbed in their function. Taken by themselves, therefore, they fall outside the scope of Directive 2014/30/EU on electromagnetic compatibility and the CE marking is therefore not required for EMC aspects: it still applies, however, under the Low Voltage Directive 2014/30/EU.

It is rather the devices and industrial equipment mentioned above, in which the connectors are for the most part used (e.g. on-board electric panels) which, taken as a whole, must be CE marked also for EMC aspects, having to meet the essential requirements of the EMC Directive.
For the EMC in **industrial environments** two European standards are in force, not intended for specific equipment, which regulate the **emissions** and **immunity** of devices.
These are therefore generic standards, one for **emissions EN 61000-6-4**:2007 + A1:2011 (class. CEI 210-66:2007 + 210-66;V1:2011, equivalent to IEC 61000-4:2006 + A1:2010) and one for **immunity EN 61000-6-2**:2005 (class. CEI 210-54:2006, equivalent to IEC 61000-6-2:2005) [1].
These apply in the absence of provisions in the particular EMC product standards or in the total absence of the latter.

For industrial equipment, when appliances are not intentionally designed to generate radio frequencies [2], the latter case applies (no particular standards). In the European standards for switchgear and controlgear (EN 60947-1) and in those for the electrical equipment of machines EN 60204-1 emission and immunity limits have been for some time in the process of being issued, as well as their verification, if necessary, with reference to above mentioned EMC standards for industrial environment.

EMC testing should not be performed on individual components, but rather on the entire apparatus, sometimes not without inconsiderable logistical difficulties, due to their size, reproducing as far as possible their operation in real operating conditions.
It is therefore incorrect to assign limits of electromagnetic emission and immunity imposed on the equipment on, for example, electrical connectors used as components of the equipment.

*1) There are two similar standards for the other standardized environment, defined as **residential, commercial and light industrial environment**, respectively EN 61000-6-3:2007 + A1:2011 (class. CEI 210-65:2007 + CEI 2010-61;V1:2011) for emissions (equivalent to IEC 61000-6-3:2006 + A1:2010) and **EN 61000-6-1**:2007 (class. CEI 210-64:2007) for immunity (equivalent to IEC 61000-6-1:2006).*

*2) In which case for such devices, called ISM (industrial, scientific, medical) **EN 55011**:2007 standard for emission of radio interference would apply.*

EMC

Connectors and electromagnetic compatibility

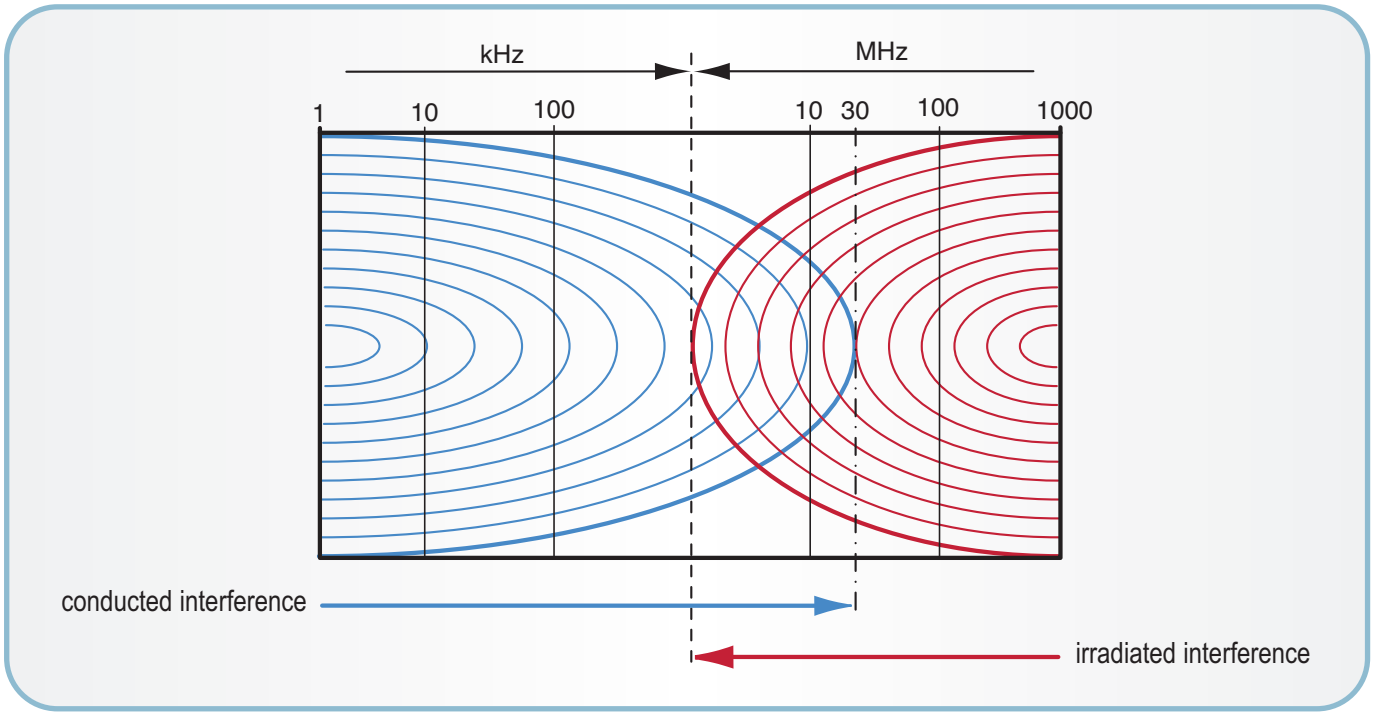
Electromagnetic interference and ILME connectors.

Many years ago the entry into force of the first EMC European Directive, with requirement for electrical and electronic equipment to comply with the levels of electromagnetic pollution dictated by the standards, brought renewed interest in all the appropriate steps to mitigate the effects of electromagnetic interference.

Electromagnetic interference can occur in two forms: **conducted or radiated**. With reference to connectors, **conducted interference** transmitted on conductors wired to the connectors, is, for example: harmonics, superimposed on the voltage of the power supply at 50 Hz, caused by withdrawal of biased current or by electromechanical or electronic switches, or radio frequency interference noise which is inductively or capacitively coupled with the cable, overlapping transported signals.

This is characterized by frequency and amplitude (intensity) and can be filtered to some extent, in both in the outgoing (emission) and incoming (immunity) directions, only via in-line passive electrical filters, which the designer of the electrical equipment must foresee since he is the only one with a knowledge of all the terms of the problem [3)].

Radiated interference, transmitted in the form of electromagnetic waves, is characterized by the values of amplitude of associated electric (V/m) and magnetic fields and with the frequency or frequency band (rarely is this located on a single frequency, more often it occupies a band). This may come from inside the device: in this case it is necessary to mitigate emissions. Or from the outside, in which case it is necessary to raise immunity.



By test convention, **interference with frequency up to 30 MHz** is considered to be conducted and **irradiated with frequency above 30 MHz up to 1 GHz.**

3) For example, for trapezoidal D-Sub type connectors for digital data transmission, there are connectors on the market which incorporate "general purpose" filters for any conducted interference.

The sources of electromagnetic interference are classified as **intentional** and **unintentional**.
The first (e.g. radio-telecommunication antennas, mobile phones) use high frequency electromagnetic fields for functional reasons. For the second (e.g. ignition of internal combustion engines, electric arc furnaces) they are a by-product.

EMC

Connectors and electromagnetic compatibility

In most industrial applications, compared to the overall EMC issues of a device, connectors (inserts + enclosures), taken by themselves, are not the priority concern of the designer.
The enclosures of the low-frequency industrial connectors, taking shape as a barrier to a “shell”, are implicitly a “peripheral” aspect: the designer of electrical equipment / electronics will take care first of all the “core” of the EMC problem, that of the active components tinside of their systems, by limiting the emissions and enhance immunity.
In fact, to have significant problems due to radiation through the opening constituted by a connector enclosure on a control panel, there must be a particularly “efficient” radiofrequency source inside the panel.
Essentially, significant design errors must have been committed regarding the EMC of the entire equipment.

In certain cases the coupling of connectors may constitute the weak link in the chain, for example where it is not possible for functional reasons to further reduce interference of the electronics inside the control panel. In these cases one must rely on the efficiency of the shield. Even if the equipment manufacturer uses shielded fabrication and high quality shielded cables, continuity and homogeneity of such shielding could be significantly degraded precisely in the passage between free connector and panel.
In dealing with electromagnetic compatibility of electrical equipment of an industrial machine, a second aspect to be addressed as a priority is the presence of large quantities of interface cabling.
In these cases, the significant attenuation of the shield necessary for the cables must not be jeopardised by the connector enclosures due to imperfect earthing of the cable shield.

It should nevertheless be pointed out that increasing shielding may not be sufficient to solve possible problems and should be considered as a complementary choice.

Electromagnetic shielding of connectors: fundamental principles.

To consider the electromagnetic compatibility aspects of an electrical/electronic device in the final verification rather than in the design phase almost always leads to a substantial increase in overall development time and costs.

The designer who deals with electromagnetic compatibility issues should use the same rules and the same precautions regardless of whether the equipment is subsequently shielded.
Numerous products meet electromagnetic compatibility standards without the use of shielding. However, when all other limiting interventions are impossible or uneconomical, recourse to increased efficiency of the electromagnetic shield is the only answer.

An **electromagnetic shield** is a barrier to the transmission of electromagnetic fields.
To generalise the concept to include conducted emissions, a filter can be considered as a shield.
We will restrict ourselves here to considering a shield as a barrier to radiated emissions.

The metallic containers which completely enclose an electrical/electronic device or a part thereof ***constitute an electromagnetic shield***, with the task of preventing the emissions of electrical/electronic devices or a part thereof to radiate outside the equipment container itself.
A cable connected to a device is part of the same for the purposes of electromagnetic compatibility.
A flexible multicore cable is shielded by surrounding the insulated conductors with a conductive metal mesh.
An electromagnetic shield is characterized by a parameter which measures its efficiency.
The shielding attenuation is the ratio between the radiated power generated inside a device and the residual radiated power outside the unit.
The attenuation introduced by a shield can be measured by comparing the absence and presence of the shield.
Shielding attenuation is measured in dB (decibel). 20 dB is equivalent to an order of magnitude, i.e. attenuation of a factor of 10, 40 dB = attenuation of a factor of 100, etc.

EMC

Connectors and electromagnetic compatibility

To obtain large shielding attenuation values (e.g. 100 dB) the shield must completely enclose the electronic device and not have any means of access from the outside, such as openings, joints, cracks or cables.
Any means of access through a shield, if not properly treated, can drastically reduce the efficiency of the shield.
The passage of a cable through a shield must be properly considered. One common method is to place filters on the cable at which it crosses the shield. Another is to use shielded cables, with their shields connected for the entire perimeter to the equipment shield.
To reduce radiated emissions of a cable, the cable shield must be connected to a point with zero potential (an ideal ground therefore, not the "signal" ground of an electronic circuit).

To achieve electromagnetic shielding conductive materials (metals) are used.
Shielding attenuation depends mainly on the electrical conductivity of the material and the thickness of the shield.

Rectangular or square connectors– special case – intrinsically *anisotropic*, are more difficult to shield and less predictable in behaviour than circular connectors (isotropic geometry) used, not by accident, with coaxial terminations for RF applications.
Connector enclosures are typically made of aluminium die cast alloy, an excellent metal for shielding electric fields because it is an excellent conductor. It is also better than steel in shielding phenomena of an impulsive nature (typical example is electrostatic discharge) which cause interference in the high frequency spectrum and is among the most insidious and dangerous.
It is important to ensure electrical continuity along the boundary of the enclosure, not only to ensure high shielding attenuation but also to avoid accumulation of static electricity.
It is important not to "economically" tip the balance of a screening system which is only as effective as its weakest component.

A good shielded cable has a shield attenuation greater than that attributable to the connector, but only for very small lengths of cable (e.g. one metre).
When the length of the shielded cable increases, shield attenuation is significantly reduced.
This indicates that it is much more important to improve the shield quality of cables, which are mainly responsible for radiated interference emissions and in an electrical system are often present in considerable quantity, before that of the connector.

What dramatically increases the efficiency of shielding is the quality of its connection to the conductor: EMC cable glands create a very homogeneous and continuous contact between the cable shield and connector enclosure.

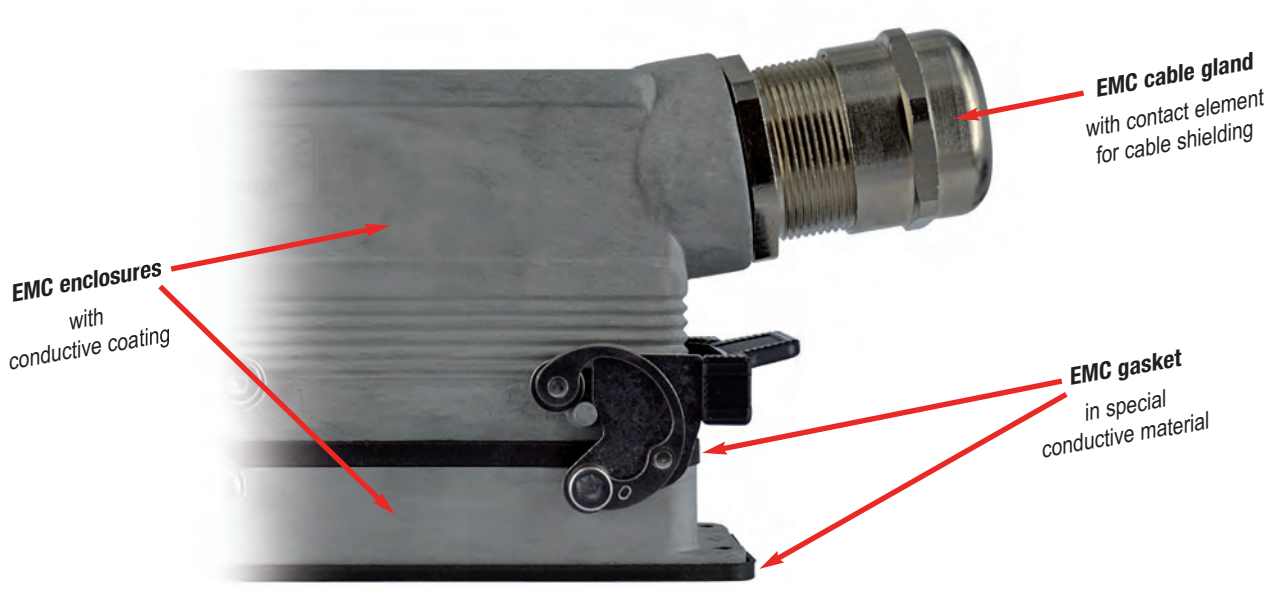
EMC connector enclosures and accessories.

In light of the foregoing, ILME has developed for the designers of the electrical/electronic equipment of machines the new series of EMC connector enclosures and accessories.
Available as bulkhead mounting housings and hood versions in the various sizes, they maintain the robustness and reliability of standard types whilst possessing increased high frequency shielding characteristics.
In the development of EMC enclosures recourse to geometrical modifications compared to the standard versions has been avoided so as not to affect their dimensional compatibility with the latter: in using EMC enclosures the equipment designer need not foresee any changes in layout due to increased dimensions and need not renounce the convenience of the traditional locking lever closures.
The increase in shielding attenuation is achieved primarily by providing a homogeneous and as uniform as possible electrical continuity of earthing to the cable shield in the connection between cable and hood and between hood and housing.
At the contact between the bulkhead-mounting housings and the fixing surface a special conductive gasket is foreseen.

EMC

Connectors and electromagnetic compatibility

EMC connector.



The enclosure surfaces are treated to make them extremely conductive while maintaining the necessary corrosion resistance.
The bulkhead mounting housing has a special conductive gasket.
For best results the surface underneath the gasket should be conductive.
Since the use of this enclosure system presupposes the use of shielded cables, the hood should comprise a special cable gland with anchoring device for the cable shield.
These metal cable glands ensure IP66 protection rating, are resistant to corrosion and equipped internally with a contact element with geometry that ensures uniform earthing of the cable conductor shield on the metal shell of the hood.
Even with standard enclosures (not EMC), the contact with an EMC cable gland between the cable shield and the connector enclosure, permanently earthed to the insert inside, produces an attenuation of electromagnetic interference on average higher (by approx. 6 – 15 dB up to 600 MHz, corresponding to a factor of 2 – 5,6) than the attenuation achieved by connecting the shield mesh directly to the earth terminal of the connector insert.

The reasons for this are:
- the uniform 360° contact via the contact device of the EMC cable gland avoids what instead happens when the shield mesh is earthed to the earth terminal of the connector, i.e. the discontinuity of the shield which necessarily opens precisely around the connector;
- more efficient distribution of induced current circulating on the shield mesh;
- directly involving the metal shell constituted by the enclosure avoids transmitting interference to the connector, as happens when the shield is connected to the earth terminal of the connector.

EMC

Connectors and electromagnetic compatibility

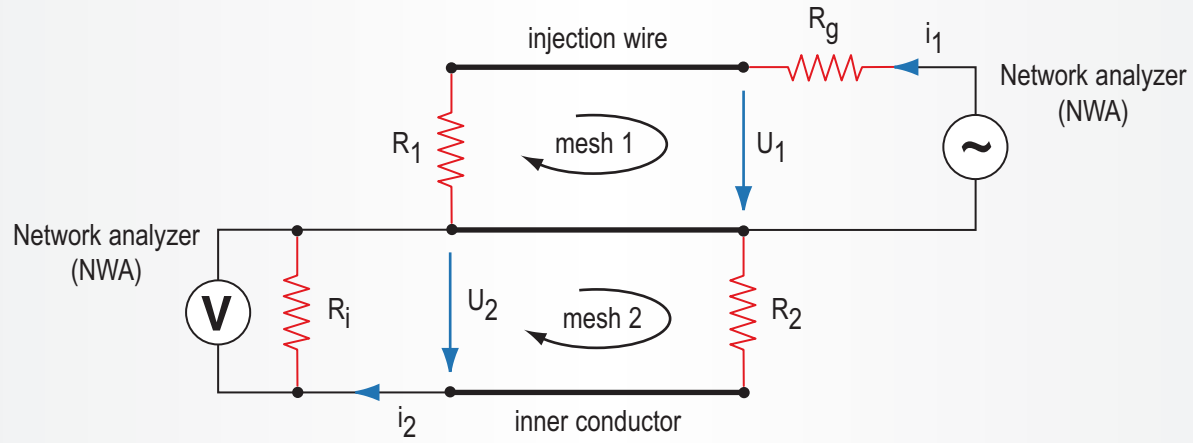
Experimental tests.

Tests for measurement of the shielding of ILME special EMC enclosures for multipole rectangular connectors for industrial use were conducted at the CESI EMC Laboratory in Milan, national notified body for certification under the EMC Directive.
Shielding attenuation of a component is defined as the ratio of the power radiated within the component and the maximum interference power outside the component in the room (**VG 95214-11**).
For a connector it can be expressed, in analogy with cables, as a function of transfer impedance, which is the ratio between the voltage induced in the shield and the current flowing outside the same.
The transfer impedance measurement is a widely used and accepted method to determine shielding attenuation of coaxial cables and connectors.

Only recently, due to the increase in digital data transmission speeds and the increase in frequencies of transmitted signals, the issue of identifying efficient and repeatable methods for measuring shielding efficiency, also for connectors traditionally considered low frequency, has been addressed at a regulatory level.

An experimental method for determining surface transfer impedance of coupled low frequency connectors is still being studied by IEC.

The method chosen by ILME for verification of its system of EMC enclosures and accessories is the **line injection method** based on German military standards **VG 95214-10** and **VG 95214-11.**



Legend:

R_g = output impedance of the signal generator (NWA port1)
R_1 = termination resistance of the generator circuit (mesh 1)
R_i = input impedance of the measuring instrument (NWA port 2)
R_2 = termination resistance of the generator circuit (mesh 2)

A signal with a frequency of 0,1 MHz to 1000 MHz generated by port 1 of the measuring device (a network analyzer with 75 Ω output impedance) circulates in the mesh 1 consisting of an insulated conductor (injection wire) resting on the surface of two coupled enclosures (shield), terminating on a calibrated (and shielded) resistance of 75 Ω. As a result of the current i_1 injected in the mesh 1, an induced voltage U_2 is generated in the mesh 2, consisting of an inner pick-up conductor connected to two contacts at the center of the connector inserts, terminated on another calibrated resistance of 75 Ω (shielded), in turn earthed on the coupled enclosures which act as a shield. The voltage is measured on port 2 of the measuring device for S parameters (scattering parameters). The network analyzer sees the device under test as a filter and calculates the measurement providing a graph illustrating the **shielding attenuation** (measured in dB) as a function of frequency in MHz.

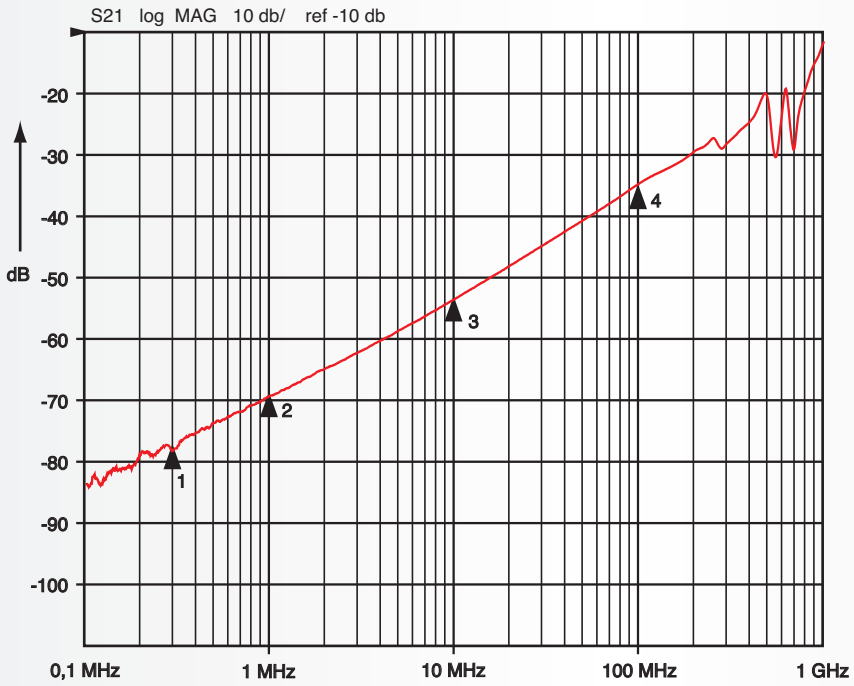
EMC

Connectors and electromagnetic compatibility

The tests were performed on:
- coupled standard enclosures
- coupled EMC enclosures

The results are summarized in the diagrams below.

Standard enclosure diagram.



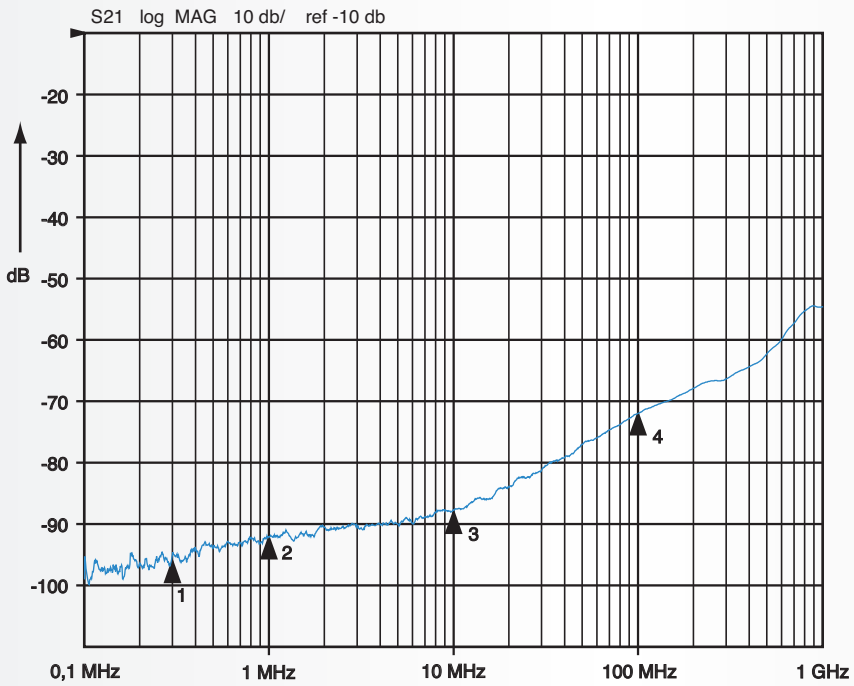
1_:-78.167 dB
300 kHz

2_:-69.369 dB
1 MHz

3_:-53.543 dB
10 MHz

4_:-34.719 dB
100 MHz

EMC enclosure diagram.



1_:-93.988 dB
300 kHz

2_:-91.86 dB
1 MHz

3_:-87.557 dB
10 MHz

4_:-71.649 dB
100 MHz

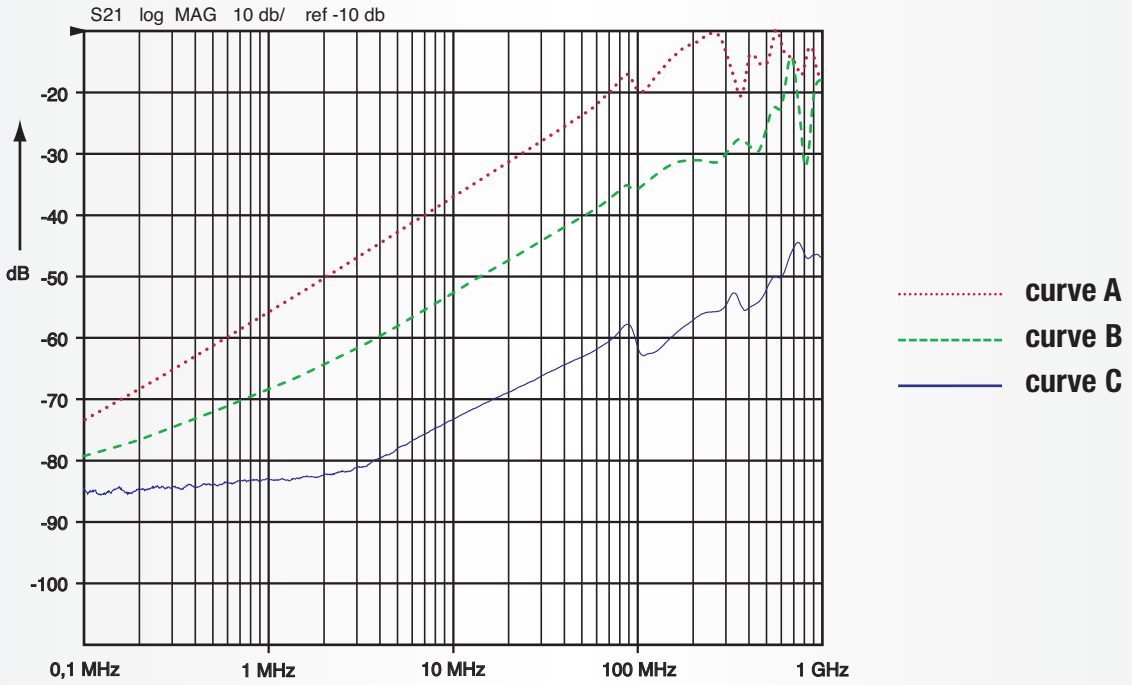
EMC

Connectors and electromagnetic compatibility

To highlight the influence of the cable gland the shielding attenuation measurements were repeated on:

- coupled standard enclosures with standard cable gland and cable shield earthed to the earth terminal of the connector
  see curve A
- coupled standard enclosures with EMC cable gland and cable shield earthed to the cable gland
  see curve B
- coupled EMC enclosures with EMC cable gland and cable shield earthed to the cable gland
  see curve C

The results are summarized in the diagrams below.



Conclusions

The measurements suggest the following considerations:

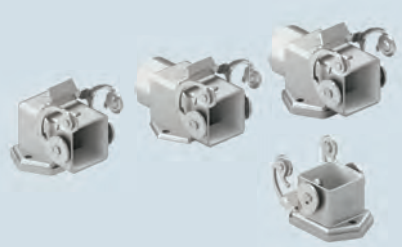
- standard enclosures already provide good levels of shielding attenuation;
- when used with EMC cable glands, standard enclosures clearly increase their shielding attenuation;
- EMC enclosures, with better shielding attenuation values, provide further improvements.

inserts: page:

CK	3 poles + ⏚	48
CK	4 poles + ⏚	48
CKS	3 poles + ⏚	49
CKS	4 poles + ⏚	49
CD	8 poles	54
CQ	12 poles + ⏚	165
CQ	5 poles + ⏚	166

insert dimensions:
21 x 21 mm

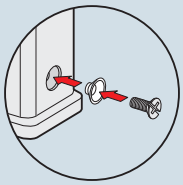
bulkhead mounting housings straight and angled



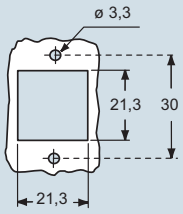
hoods

description	part No. (entry - Pg 11)	part No. (entry - M 20)	part No. (entry - Pg 11)	part No. (entry - M 20)
with stainless steel lever without cable entry, stainless steel lever	**CKAXS 03 I** **CKAXS 03 IA**			
with cable entry, stainless steel lever with cable entry, stainless steel lever, bulkhead hole closed	**CKAXS 03 IAP** **CKAXS 03 AP**	**MKAXS IAP20** **MKAXS AP20**		
with pegs, top entry with pegs, side entry			**CKAS 03 V** **CKAS 03 VA**	**MKAS V20** **MKAS VA20**
with stainless steel lever, top entry			**CKAXS 03 VG**	**MKAXS VG20**
gasket and screw kit for IP66/IP67 [1] for CK, CQ 05, CKS inserts	**CKR 65**		**CKR 65**	
gasket and screw kit for IP66/IP67 [1] for CD 08 inserts	**CKR 65 D**		**CKR 65 D**	

1) To obtain the protection rating IP66/IP67 a kit is provided that includes a gasket to fit under the insert fixing screws supplied with the kit (see illustrative example).
CQ 12 inserts are already supplied with a gasket and screw which ensure IP66/IP67 protection rating.



panel cut-out for bulkhead mounting housings in mm



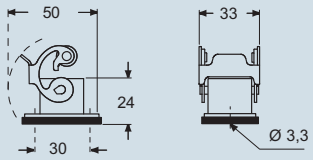
Type 12
Type 4/4X only
with CKR 65 (D)

IP66/IP67 with CKR 65 (D) [1]

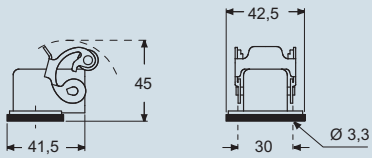
dimensions shown are not binding
and may be changed without notice

dimensions in mm

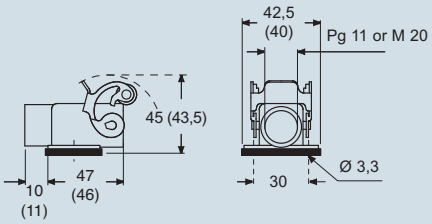
CKAXS I



CKAXS IA

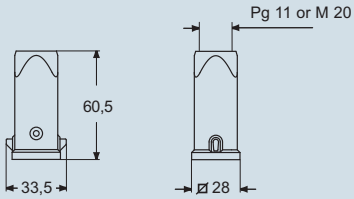


CKAXS IAP (CKAXS AP) and
MKAXS IAP (MKAXS AP)

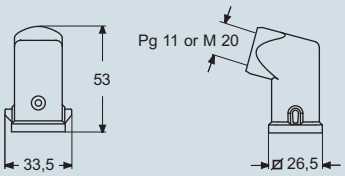


dimensions in mm

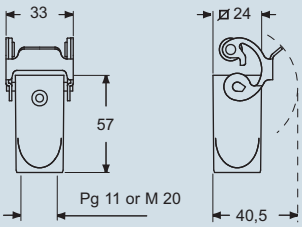
CKAS V and **MKAS V**



CKAS VA and **MKAS VA**



CKAXS VG and **MKAXS VG**



inserts: page:

CQ 08 ..... 8 poles + ⏚ 167
CQ 04/2 ..... 4 poles + 2 poles + ⏚ 168

insert centre distance: **32 x 13 mm**

- metallized insulating enclosures

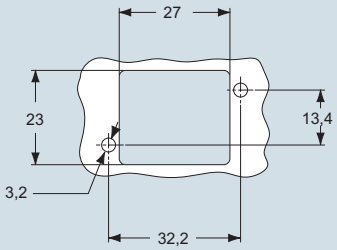
bulkhead mounting housing with single lever

hoods with 2 pegs

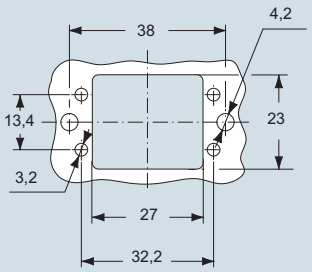
description	part No.	entry Pg	part No.	entry Pg
with lever without cable entry, angled, with lever with cable entry, angled, with lever	**CQS 08 I** **CQS 08 IA** **CQS 08 IAP**	21		
with pegs, side entry *			**CQS 08 VA**	16
with pegs, top entry *			**CQS 08 V**	21

* Pg male thread on enclosure exterior

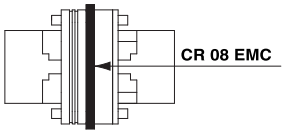
panel cut-out for CQS I enclosure, in mm



panel cut-out for CQS IA - CQS IAP enclosure, in mm



Note:
when using series “CQS 08” enclosures, replace the gasket provided with male inserts with the conductive gasket “**CR 08 EMC**”.



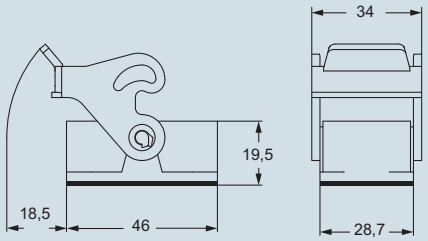
c UL us Type 12

EN 60529 IP66 IP67 IEC 60529

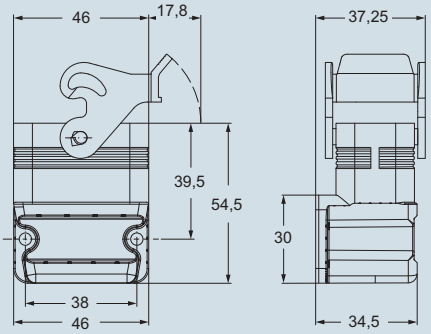
dimensions shown are not binding
and may be changed without notice

dimensions in mm

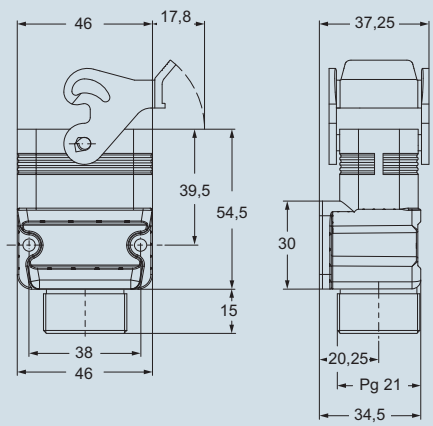
CQS I



CQS IA

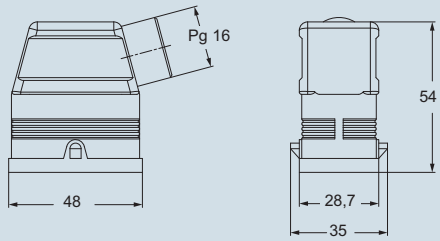


CQS IAP

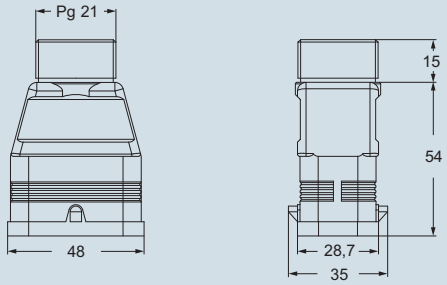


dimensions in mm

CQS VA



CQS V



inserts: page:

CQ 08 ..... 8 poles + ⏚ 167
CQ 04/2 ..... 4 poles + 2 poles + ⏚ 168

insert centre distance: **32 x 13 mm**

- metallic insulating enclosures

hoods with single lever

description	part No.	entry Pg
with lever, top entry *	**CQS 08 VG**	21

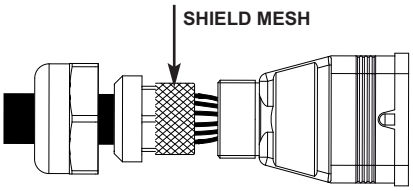
conductive gasket for CQM male inserts thermoplastic resin cable glands

description	part No.
conductive gasket for CQM male inserts	**CR 08 EMC**
cable gland head and gasket for CQS 08 VA enclosure cable gland head and gasket for CQS 08 V, VG and IAP enclosure	**CRQ 16** **CRQ 21**

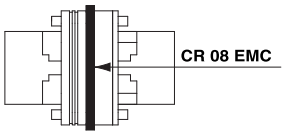
* Pg male thread on enclosure exterior

cable diameters for cable glands:
- CRQ 16: 10 - 14.5 mm (4 - 7 mm on request)
- CRQ 21: 14 - 18 mm (7 - 10 mm on request)

place the cable shield mesh between the CRQ cable gland gasket and the seat of the gasket itself.



Note:
when using series “CQS 08” enclosures, replace the gasket provided with male inserts with the conductive gasket “**CR 08 EMC**”.



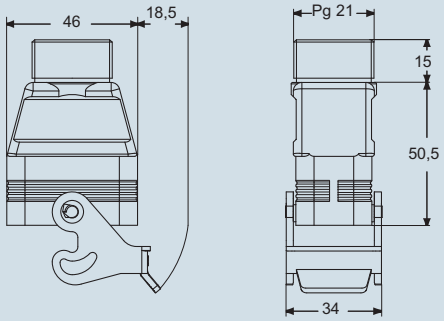
c UL us Type 12

EN 60529 IP66 IP67 IEC 60529

dimensions shown are not binding
and may be changed without notice

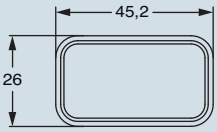
dimensions in mm

CQS VG

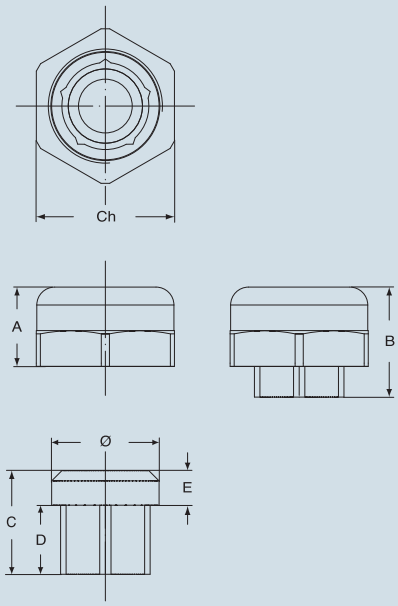


dimensions in mm

CR 08 EMC



CRQ 16 and **CRQ 21**



part No.	A	B	C	D	E	Ø	Ch
CRQ 16	15,5	21,5	20,25	13,5	6,75	21	27
CRQ 21	18,2	27,5	25	15,5	9	26,5	33

CZ - MZ and CZA - MZA enclosures size “49.16” EMC version

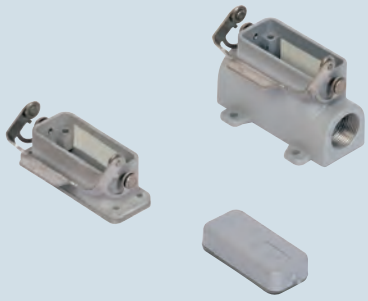
inserts: page:

CD	15	poles + ⏚	55
CSAH	10	poles + ⏚	87
CDA	10	poles + ⏚	98
CDC	10	poles + ⏚	99
MIXO	1	module	179 - 214

insert centre distance:
49 x 16 mm

The covers for L and LG versions cannot be used together with coding pins.
If this application is required, please contact ILME SpA.

housings and cover for electromagnetic compatibility

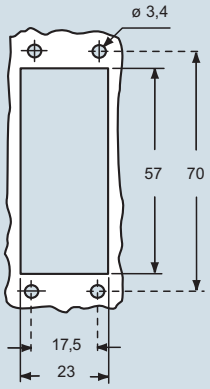


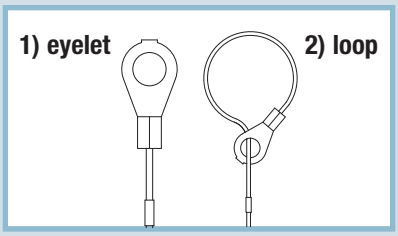
hoods and cover for electromagnetic compatibility

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with lever	**CZIS 15 L**	—-						
surface mounting housing with lever	**CZPS 15 L2**	16 x 2	**MZPS 15 L225**	25 x 2				
cover with pegs (for 1 lever enclosures) **1)**	**CZCS 15 L**							
enclosure with pegs, side entry					**CZOS 15 L**	16	**MZOS 15 L20**	20
enclosure with pegs, side entry							**MZOS 15 L25**	25
enclosure with pegs, side entry, high, without adaptor *					**CZFOS 15 L21**	21	**MZFOS 15 L25**	25
enclosure with pegs, top entry					**CZVS 15 L**	13.5	**MZVS 15 L20**	20
enclosure with pegs, top entry, high, without adaptor *					**CZFVS 15 L21**	21	**MZFVS 15 L25**	25
cover with lever (for enclosures with pegs) **2)**					**CZCS 15 LG**			

* enclosure without adaptor, threaded on the enclosure body, to be used only with a complete cable gland.

panel cut-out for bulkhead mounting housing in mm





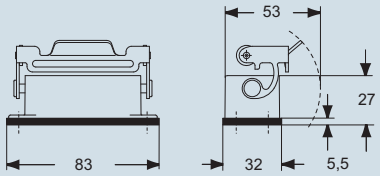
Type 4/4X/12

IP66 EN 60529 IEC 60529

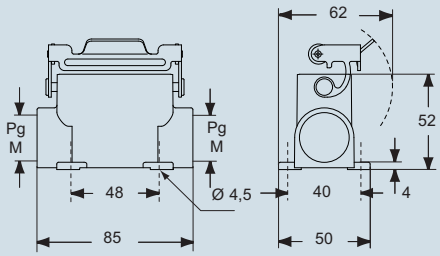
dimensions shown are not binding and may be changed without notice

dimensions in mm

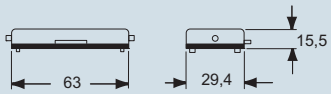
CZIS L



CZPS L and **MZPS L**

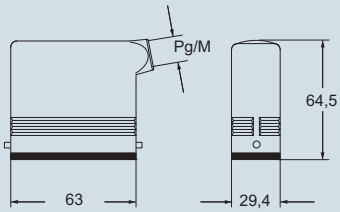


CZCS L

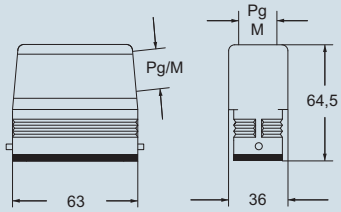


dimensions in mm

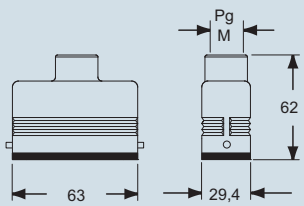
CZOS L and **MZOS L**



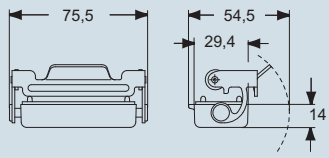
CZFOS L - MZFOS L and **CZFVS L - MZFVS L**



CZVS L and **MZVS L**



CZCS LG



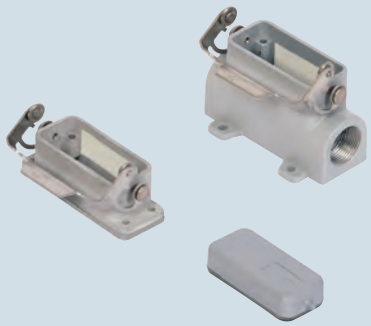
inserts: page:

CD	25	poles + ⏚	56
CDD	38	poles + ⏚	68
CSAH	16	poles + ⏚	88
CDA	16	poles + ⏚	100
CDC	16	poles + ⏚	101

insert centre distance:
66 x 16 mm

The covers for L and LG versions cannot be used together with coding pins.
If this application is required, please contact ILME SpA.

housings and cover for electromagnetic compatibility

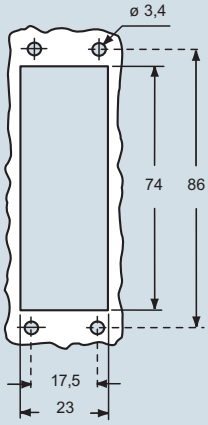


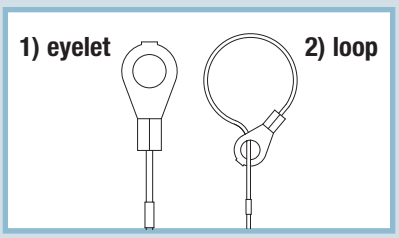
hoods and cover for electromagnetic compatibility

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with lever	**CZIS 25 L**	—-						
surface mounting housing with lever, high construction	**CZAPS 25 L2**	16 x 2	**MZAPS 25L225**	25 x 2				
cover with pegs (for 1 lever enclosures) **1)**	**CZCS 25 L**							
enclosure with pegs, side entry					**CZOS 25 L**	16	**MZOS 25 L20**	20
enclosure with pegs, side entry							**MZOS 25 L25**	25
enclosure with pegs, side entry, high, without adaptor *					**CZFOS 25 L21**	21	**MZFOS 25 L25**	25
enclosure with pegs, top entry					**CZVS 25 L**	16	**MZVS 25 L20** **	20
enclosure with pegs, top entry, without adaptor *					**CZFVS 25 L21**	21	**MZFVS 25 L25**	25
cover with lever (for enclosures with pegs) **2)**					**CZCS 25 LG**			

* enclosure without adaptor, threaded on the enclosure body, to be used only with a complete cable gland.

panel cut-out for bulkhead mounting housing in mm





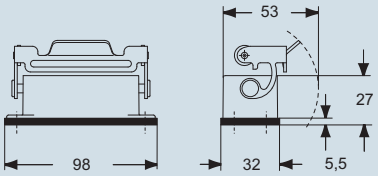
Type 4/4X/12

IP66 EN 60529 IEC 60529

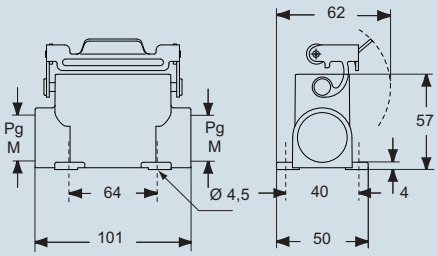
dimensions shown are not binding and may be changed without notice

dimensions in mm

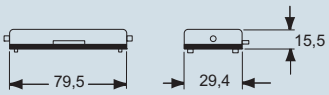
CZIS L



CZAPS L and **MZAPS L**

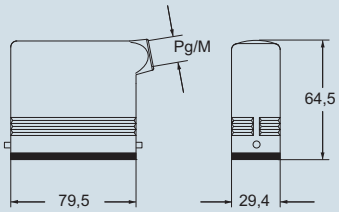


CZCS L

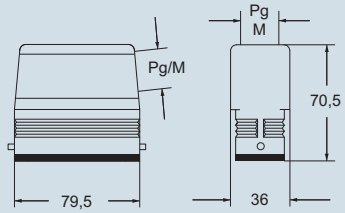


dimensions in mm

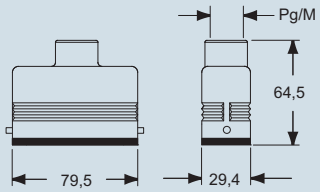
CZOS L and **MZOS L**



CZFOS L - MZFOS L and **CZFVS L - MZFVS L**

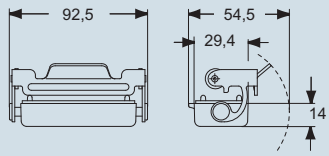


CZVS L and **MZVS L**



** can only be used with a complete cable gland (to be purchased separately)

CZCS LG



CH - CA - CF and MA - MF enclosures size “44.27” EMC version

inserts: page:

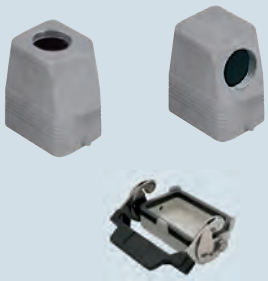
CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CT, CTSE (16A) *)	6	poles + ⏚	130
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 215

*) only for enclosure CHIS 06 L

insert centre distance:
44 x 27 mm

housings and cover for electromagnetic compatibility

hoods and cover for electromagnetic compatibility



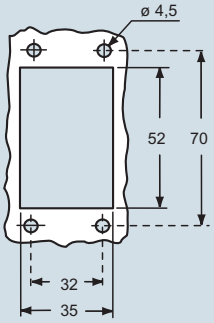
description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with lever	**CHIS 06 L**	—-						
surface mounting housing with lever, high construction	**CAPS 06 L**	21	**MAPS 06 L32**	32				
cover with pegs (for 1 lever enclosures) **1)**	**CHCS 06 L**							
enclosure with pegs, side entry, high, without adaptor *					**CFOS 06 L21**	21	**MFOS 06 L32**	32
enclosure with pegs, top entry, high, without adaptor *					**CFVS 06 L21**	21	**MFVS 06 L32**	32
cover with lever (for enclosures with pegs) **2)**					**CHCS 06 LG**			

* enclosure without adaptor, threaded on the enclosure body, to be used only with a complete cable gland.

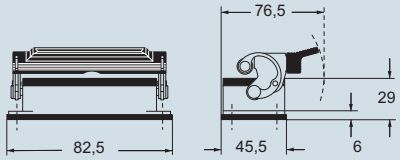
dimensions in mm

dimensions in mm

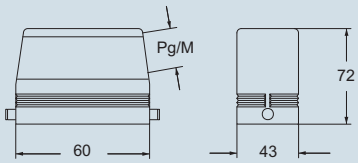
panel cut-out for bulkhead mounting housing in mm



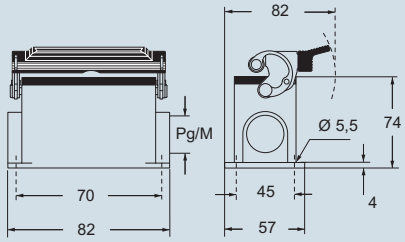
CHIS L



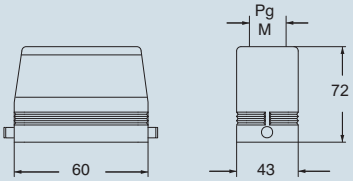
CFOS L and **MFOS L**

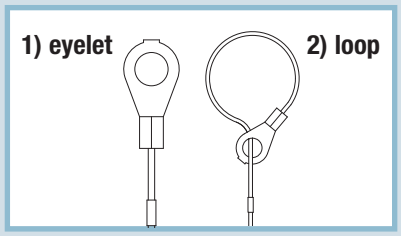


CAPS L and **MAPS L**

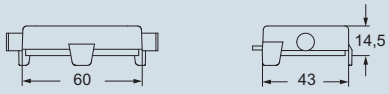


CFVS L and **MFVS L**

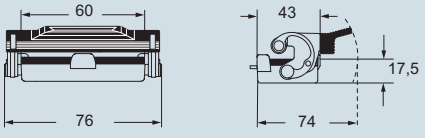




CHCS L



CHCS LG



Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

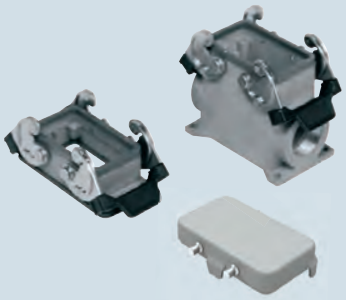
inserts: page:

CDD	42	poles + ⏚	69
CDS	18	poles + ⏚	79
CSH	10	poles + ⏚	92
CNE, CSE	10	poles + ⏚	105
CCE	10	poles + ⏚	111
CSS	10	poles + ⏚	123
CT, CTSE (16A) ***)**	10	poles + ⏚	131
CQE	18	poles + ⏚	139
CMCE	3+2 (aux)	poles + ⏚	148
CMSH	3+2 (aux)	poles + ⏚	149
CX	8/24	poles + ⏚	169
MIXO	3	modules	179 - 215

***) only for enclosure CHIS 10**

insert centre distance:
57 x 27 mm

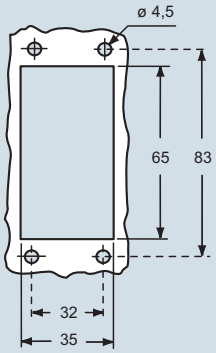
housings and cover for electromagnetic compatibility



hoods and cover for electromagnetic compatibility

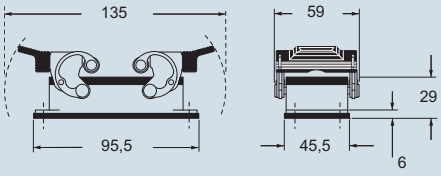
description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing, with levers surface mounting housing, with levers, high construction	**CHIS 10** **CAPS 10.21**	—- 21	**MAPS 10.32**	32				
cover with 4 pegs (for enclosures with 2 levers) **1)**	**CHCS 10**							
enclosure with pegs, side entry, high construction enclosure with pegs, top entry, high construction					**CAOS 10.21** **CAVS 10.21**	21 21	**MAOS 10.32** **MAVS 10.32**	32 32
cover with 2 levers (for enclosures with 4 pegs) **2)**					**CHCS 10 G**			

panel cut-out for bulkhead mounting housings in mm

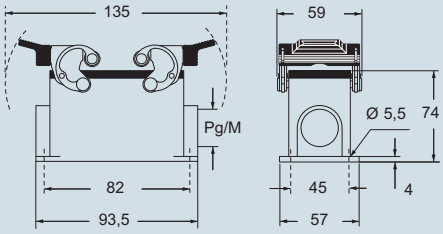


dimensions in mm

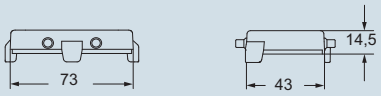
CHIS



CAPS and **MAPS**

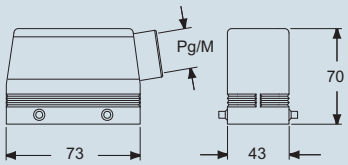


CHCS

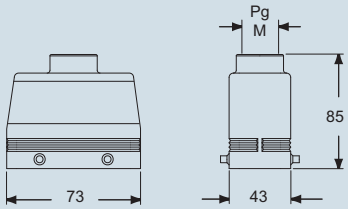


dimensions in mm

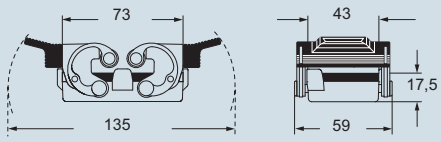
CAOS and **MAOS**

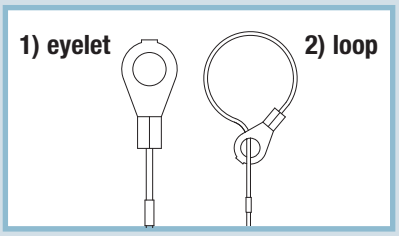


CAVS and **MAVS**



CHCS G





Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

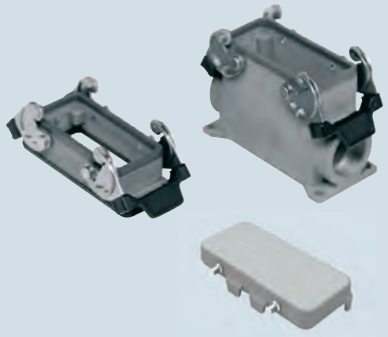
inserts: page:

CD 40	poles + ⏚	57
CT, CTS (10A) ***)** 40	poles + ⏚	64
CDD 72	poles + ⏚	70
CDS 27	poles + ⏚	80
CSH 16	poles + ⏚	93
CNE, CSE 16	poles + ⏚	106
CCE 16	poles + ⏚	112
CSS 16	poles + ⏚	124
CT, CTSE (16A) ***)** .. 16	poles + ⏚	132
CQE 32	poles + ⏚	140
CQEE 40	poles + ⏚	146
CMCE ..... 6+2 (aux)	poles + ⏚	150
CME, CMSH .. 6+2 (aux)	poles + ⏚	151
CP..... 6	poles + ⏚	162
CX ..... 6/36 and 12/2	poles + ⏚	170-171
CX ..... 4/0 and 4/2	poles + ⏚	172
MIXO 4	modules	179-215

***) only for enclosure CHIS 16**

insert centre distance: **77,5 x 27 mm**

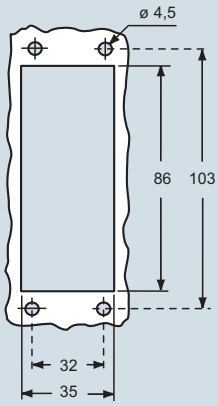
housings and cover for electromagnetic compatibility



hoods and cover for electromagnetic compatibility

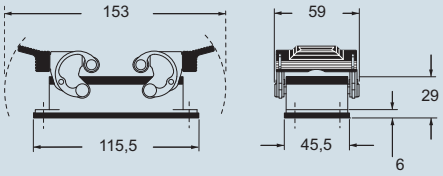
description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with levers	**CHIS 16**	—-						
surface mounting housing, with levers, high construction	**CAPS 16.21**	21	**MAPS 16.32**	32				
cover with 4 pegs (for enclosures with 2 levers) **1)**	**CHCS 16**							
enclosure with pegs, side entry					**CHOS 16**	21	**MHOS 16.25**	25
enclosure with pegs, side entry							**MHOS 16.32**	32
enclosure with pegs, side entry, high construction					**CAOS 16.29**	29	**MAOS 16.32**	32
enclosure with pegs, side entry, high construction							**MAOS 16.40**	40
enclosure with pegs, top entry					**CHVS 16**	21	**MHVS 16.25**	25
enclosure with pegs, top entry							**MHVS 16.32**	32
enclosure with pegs, top entry, high construction					**CAVS 16.29**	29	**MAVS 16.32**	32
enclosure with pegs, top entry, high construction							**MAVS 16.40**	40
cover with 2 levers (for enclosures with 4 pegs) **2)**					**CHCS 16 G**			

panel cut-out for bulkhead mounting housings in mm

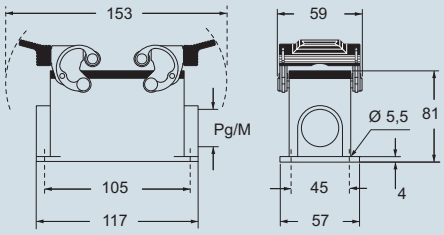


dimensions in mm

CHIS



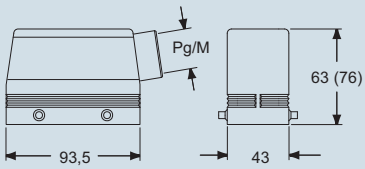
CAPS and **MAPS**



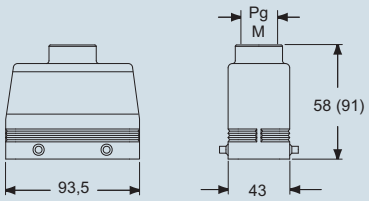
CHCS

dimensions in mm

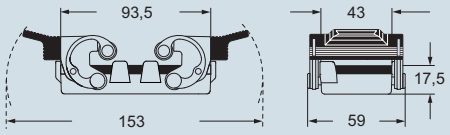
CHOS (CAOS) and **MHOS (MAOS)**

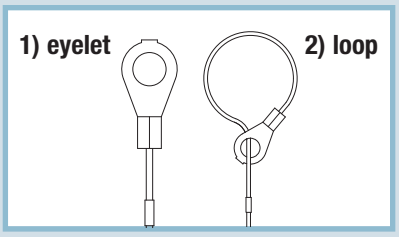


CHVS (CAVS) and **MHVS (MAVS)**



CHCS G





Type 4/4X/12

EN 60529 IP66 IEC 60529

dimensions shown are not binding and may be changed without notice

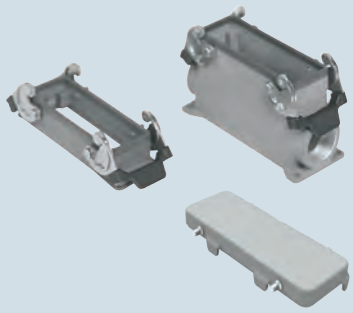
inserts: page:

CD	64	poles + ⏚	59
CT, CTS (10A) ***)**	64	poles + ⏚	65
CDD	108	poles + ⏚	72
CDS	42	poles + ⏚	81
CSH	24	poles + ⏚	94
CNE, CSE	24	poles + ⏚	107
CCE	24	poles + ⏚	113
CSS	24	poles + ⏚	125
CT, CTSE (16A) ***)**	24	poles + ⏚	133
CQE	46	poles + ⏚	141
CQEE	64	poles + ⏚	147
CMCE	10+2 (aux)	poles + ⏚	152
CMSH	10+2 (aux)	poles + ⏚	153
CX	4/8 and 6/6	poles + ⏚	173 and 175
MIXO	6	modules	179-215

***) only for enclosure CHIS 24**

insert centre distance:
104 x 27 mm

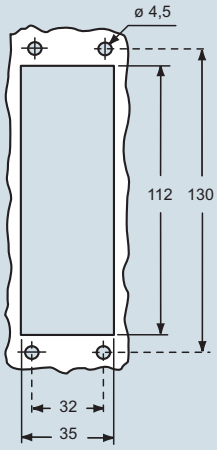
housings and cover for electromagnetic compatibility

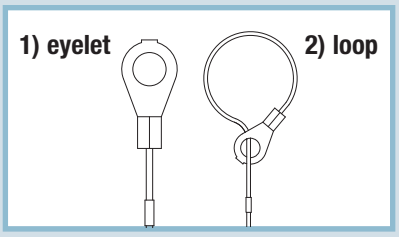


hoods and cover for electromagnetic compatibility

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with levers	**CHIS 24**	—-						
surface mounting housing with levers, high construction	**CAPS 24.21**	21	**MAPS 24.32**	32				
cover with 4 pegs (for enclosures with 2 levers) **1)**	**CHCS 24**							
enclosure with pegs, side entry					**CHOS 24**	21	**MHOS 24.25**	25
enclosure with pegs, side entry							**MHOS 24.32**	32
enclosure with pegs, side entry, high construction					**CAOS 24.29**	29	**MAOS 24.32**	32
enclosure with pegs, side entry, high construction							**MAOS 24.40**	40
enclosure with pegs, top entry					**CHVS 24**	21	**MHVS 24.25**	25
enclosure with pegs, top entry							**MHVS 24.32**	32
enclosure with pegs, top entry, high construction					**CAVS 24.29**	29	**MAVS 24.32**	32
enclosure with pegs, top entry, high construction							**MAVS 24.40**	40
cover with 2 levers (for enclosures with 4 pegs) **2)**					**CHCS 24 G**			

panel cut-out for bulkhead mounting housings in mm



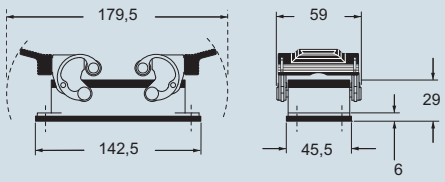


Type 4/4X/12

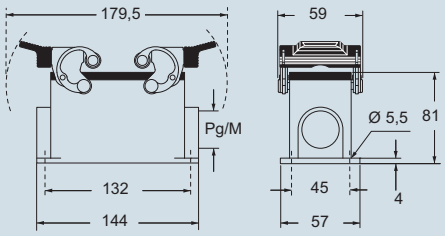
dimensions shown are not binding
and may be changed without notice

dimensions in mm

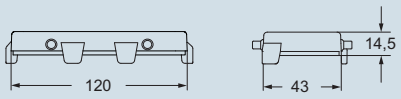
CHIS



CAPS and **MAPS**

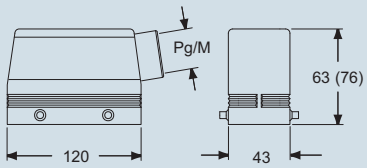


CHCS

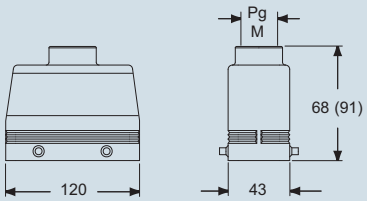


dimensions in mm

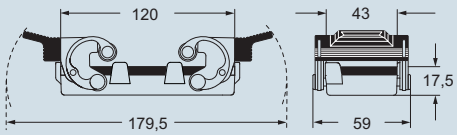
CHOS (CAOS) and **MHOS (MAOS)**



CHVS (CAVS) and **MHVS (MAVS)**



CHCS G



180 °C

Characteristics

180 °C ENCLOSURE VERSION

Description.

Series specifically developed for industrial applications where the ambient temperatures are particularly harsh (from -40°C to +180°C).
These enclosures have supplementary insulating strips inside.
For use with inserts in self-extinguishing thermoplastic material (PPS polyphenylene sulphide).

This version is distinguished by the red colour of the enclosures.

UL certified for USA and Canada for NEMA 4, NEMA 4X and NEMA 12 protection ratings, printed on the packaging.
IP65, IP66 and IP69 protection ratings.

Characteristics of materials used:

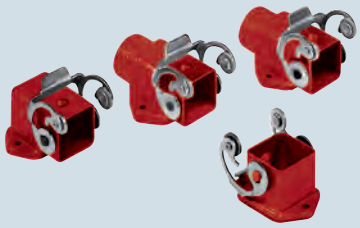
- made of die cast aluminium alloy
- chromate treated die cast
- coated with special thermoset powder with high resistance to high temperatures
- gaskets in anti-aging fluoro elastomer
- locking device with levers, springs and pegs in stainless steel
- monoblock lever handles in stainless steel (for CZ..R, CH..R 48 and MZ..R, MH..R 48 versions)
- lever handles in aluminium with special die-cast coating (for CH..R 10, 16, 24 and MH..R 10, 16, 24 versions)

inserts: page:

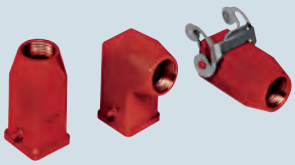
CK RY ..... 3 poles + ⏚ 51
CK RY ..... 4 poles + ⏚ 51

insert dimensions:
21 x 21 mm

bulkhead mounting housings straight and angled



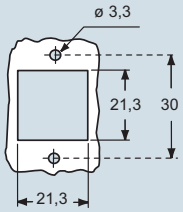
hoods



description	part No. (entry - Pg 11)	part No. (entry - M 20)	part No. (entry - Pg 11)	part No. (entry - M 20)
with stainless steel lever [1]	**CKAXR 03 I**			
without cable entry, stainless steel lever [1]	**CKAXR 03 IA**			
with cable entry, stainless steel lever [1]	**CKAXR 03 IAP**	**MKAXR IAP20**		
with cable entry, stainless steel lever [1], bulkhead hole closed	**CKAXR 03 AP**	**MKAXR AP20**		
with pegs, top entry [1]			**CKAR 03 V**	**MKAR V20**
with pegs, side entry [1]			**CKAR 03 VA**	**MKAR VA20**
with stainless steel lever, top entry [1]			**CKAXR 03 VG**	**MKAXR VG20**

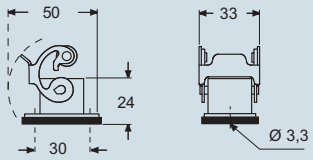
1) Enclosures with IP44 protection rating.

panel cut-out for bulkhead mounting housings in mm

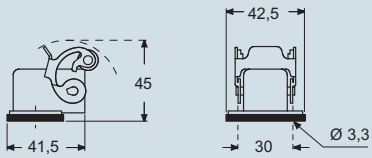


dimensions in mm

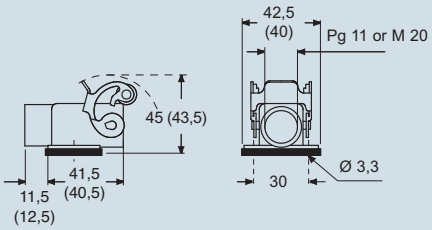
CKAXR I



CKAXR IA

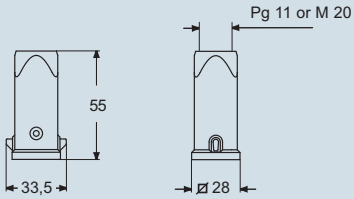


CKAXR IAP (CKAXR AP) and
MKAXR IAP (MKAXR AP)

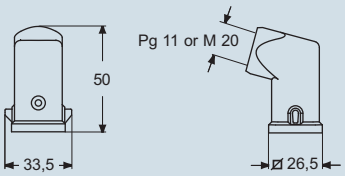


dimensions in mm

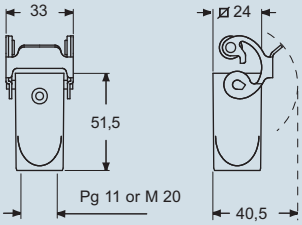
CKAR V and **MKAR V**



CKAR VA and **MKAR VA**



CKAXR VG and **MKAXR VG**



cULus Type 12

IP44 EN 60529 IEC 60529

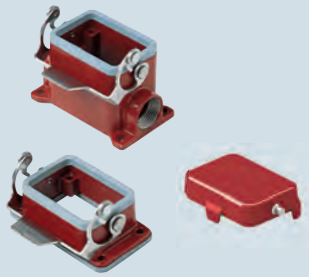
dimensions shown are not binding
and may be changed without notice

inserts: page:

CNE RY ..... 6 poles + ⏚ 116

insert centre distance:
44 x 27 mm

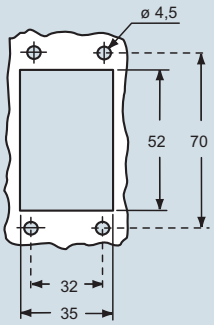
bulkhead and surface mounting housings and cover



hoods and cover

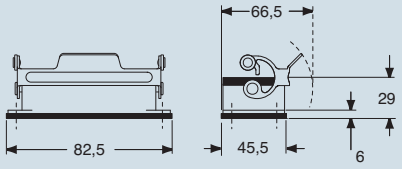
description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with lever	**CZIR 06 L**	—-						
surface mounting housing, with lever	**CZPR 06 L**	16	**MZPR 06 L20**	20				
surface mounting housing with lever, high construction	**CZAPR 06 L**	21	**MZAPR 06 L32**	32				
cover with pegs (for enclosures) **1)**	**CHCR 06 L**							
enclosure with pegs, side entry					**CHOR 06 L13**	13.5	**MHOR 06 L20**	20
enclosure with pegs, side entry, high construction					**CAOR 06 L21**	21	**MAOR 06 L32**	32
enclosure with pegs, top entry					**CHVR 06 L13**	13.5	**MHVR 06 L20**	20
enclosure with pegs, top entry, high construction					**CAVR 06 L21**	21	**MAVR 06 L32**	32
cover with lever (for hoods) **2)**					**CZCR 06 LG**			

panel cut-out for bulkhead mounting housing in mm

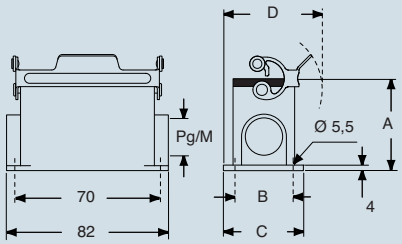


dimensions in mm

CZIR L

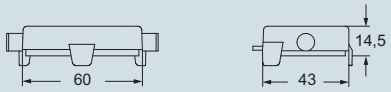


CZPR L - CZAPR L and **MZPR L - MZAPR L**



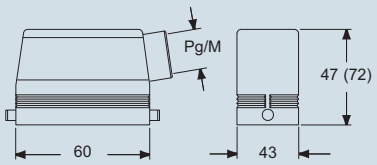
type	A	B	C	D
CZPR L / MZPR L	53	40	52	69,5
CZAPR L / MZAPR L	74	45	57	72

CHCR L

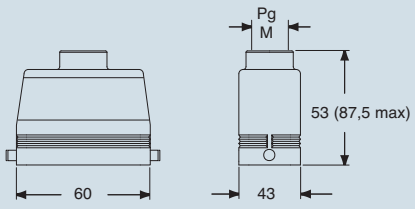


dimensions in mm

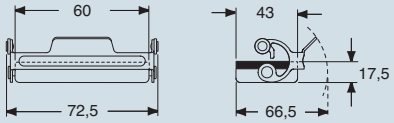
CHOR L (CAOR L) and **MHOR L (MAOR L)**

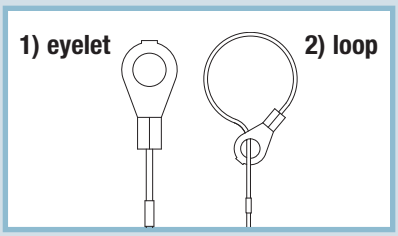


CHVR L (CAVR L) and **MHVR L (MAVR L)**



CZCR LG





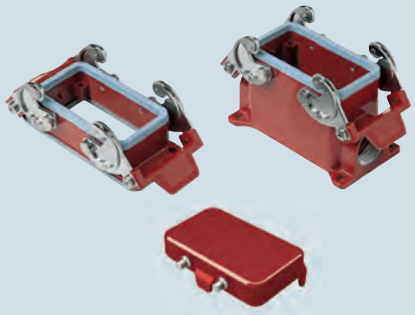
Type 4/4X/12

dimensions shown are not binding
and may be changed without notice

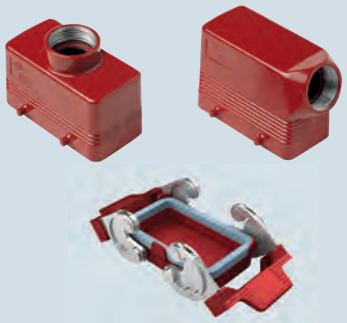
inserts: page:
CNE RY ..... 10 poles + ⏚ 117

insert centre distance:
57 x 27 mm

bulkhead and surface mounting housings and cover

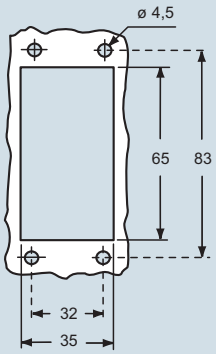


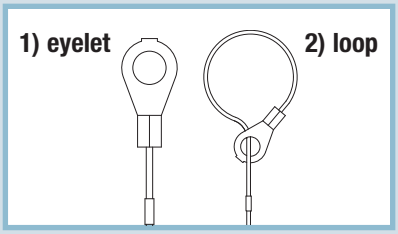
hoods and cover



description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing, with lever	**CHIR 10**	—-						
surface mounting housing, with levers	**CHPR 10**	16	**MHPR 10.20**	20				
surface mounting housing, with levers, high construction	**CAPR 10.21**	21	**MAPR 10.32**	32				
cover with 4 pegs (for enclosures) **1)**	**CHCR 10**							
enclosure with pegs, side entry					**CHOR 10**	16	**MHOR 10.20**	20
enclosure with pegs, side entry, high construction					**CAOR 10.21**	21	**MAOR 10.32**	32
enclosure with pegs, top entry					**CHVR 10**	16	**MHVR 10.20 ****	20
enclosure with pegs, top entry, high construction					**CAVR 10.21**	21	**MAVR 10.32**	32
cover with 2 levers (for hoods) **2)**					**CHCR 10 G**			

panel cut-out for bulkhead mounting housings in mm

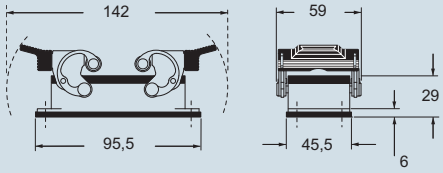




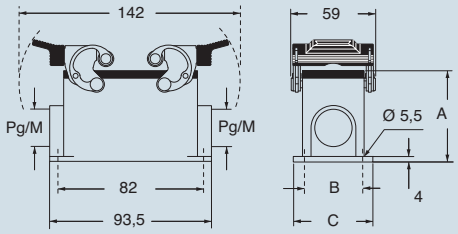
** can only be used with a complete cable gland (to be purchased separately)

dimensions in mm

CHIR

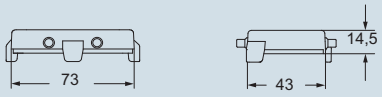


CHPR - CAPR and **MHPR - MAPR**



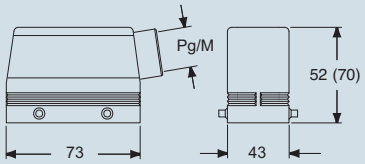
type	A	B	C
CHPR / MHPR	57	40	52
CAPR / MAPR	74	45	57

CHCR

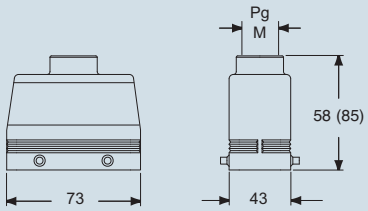


dimensions in mm

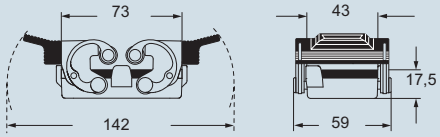
CHOR (CAOR) and **MHOR (MAOR)**



CHVR (CAVR) and **MHVR (MAVR)**



CHCR G



Type 4/4X/12

IP65 EN 60529 IEC 60529

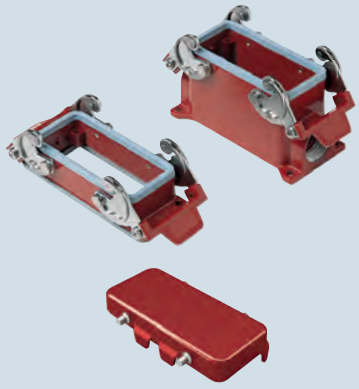
dimensions shown are not binding
and may be changed without notice

inserts: page:

CNE RY ..... 16 poles + ⏚ 118
CP RY..... 6 poles + ⏚ 162
CX RY ..... 4/0 and 2/2 poles + ⏚ 172

insert centre distance:
77,5 x 27 mm

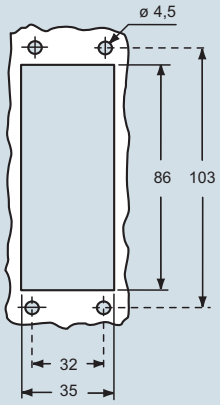
bulkhead and surface mounting housings and cover



hoods and cover

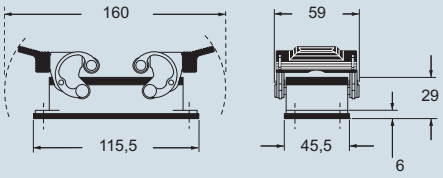
description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing with levers	**CHIR 16**	—-						
surface mounting housing, with levers, high construction	**CAPR 16.21**	21	**MAPR 16.32**	32				
cover with 4 pegs (for enclosures) **1)**	**CHCR 16**							
enclosure with pegs, side entry					**CHOR 16**	21	**MHOR 16.25**	25
enclosure with pegs, side entry, high construction					**CAOR 16.21**	21	**MAOR 16.40**	40
enclosure with pegs, top entry					**CHVR 16**	21	**MHVR 16.25**	25
enclosure with pegs, top entry, high construction					**CAVR 16.21**	21	**MAVR 16.40**	40
cover with 2 levers (for hoods) **2)**					**CHCR 16 G**			

panel cut-out for bulkhead mounting housings in mm

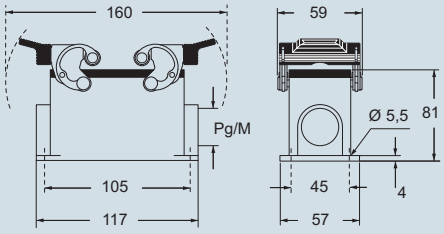


dimensions in mm

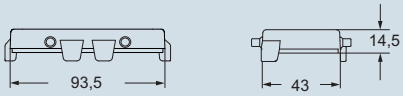
CHIR



CAPR and **MAPR**

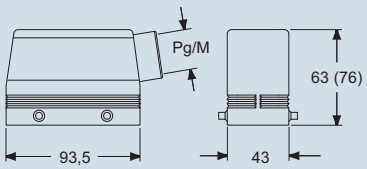


CHCR

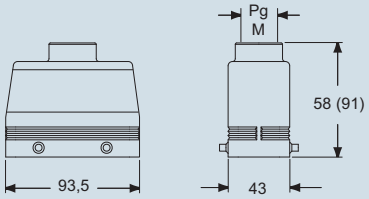


dimensions in mm

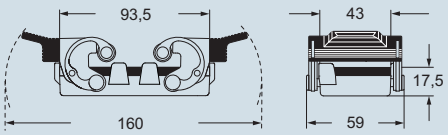
CHOR (CAOR) and **MHOR (MAOR)**

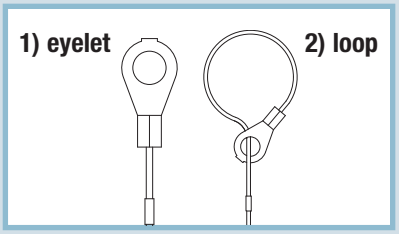


CHVR (CAVR) and **MHVR (MAVR)**



CHCR G





Type 4/4X/12

IP65 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CNE RY ..... 24 poles + ⏚ 119
CX RY ..... 4/8 poles + ⏚ 173

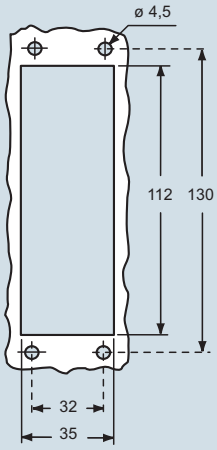
insert centre distance:
104 x 27 mm

bulkhead and surface mounting housings and cover

hoods and cover

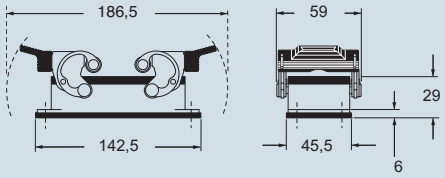
description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housing, with levers	**CHIR 24**	—-						
surface mounting housing, with levers, high construction	**CAPR 24.21**	21	**MAPR 24.32**	32				
cover with 4 pegs (for enclosures) **1)**	**CHCR 24**							
enclosure with pegs, side entry					**CHOR 24**	21	**MHOR 24.25**	25
enclosure with pegs, side entry, high construction					**CAOR 24.29**	29	**MAOR 24.40**	40
enclosure with pegs, top entry					**CHVR 24**	21	**MHVR 24.25**	25
enclosure with pegs, top entry, high construction					**CAVR 24.29**	29	**MAVR 24.40**	40
cover with 2 levers (for hoods) **2)**					**CHCR 24 G**			

panel cut-out for bulkhead mounting housings in mm

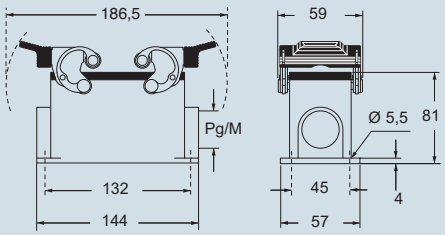


dimensions in mm

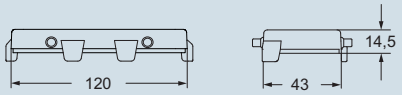
CHIR



CAPR and **MAPR**

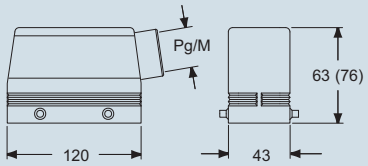


CHCR

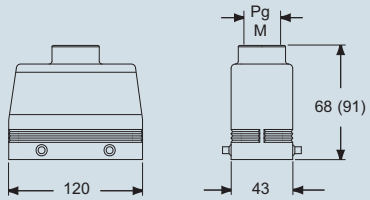


dimensions in mm

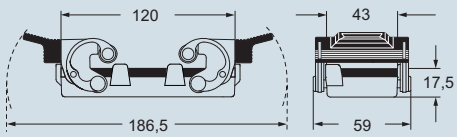
CHOR (CAOR) and **MHOR (MAOR)**

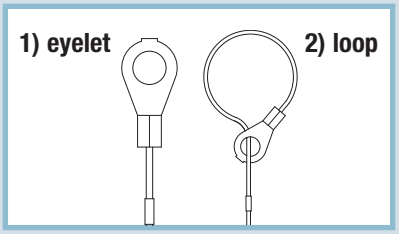


CHVR (CAVR) and **MHVR (MAVR)**



CHCR G





Type 4/4X/12

IP65 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CNE RY ..... 48 poles + ⏚ 120

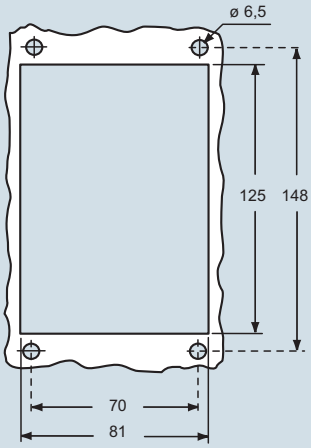
insert centre distance:
2 x (104 x 27) mm

bulkhead and surface mounting housings

hoods

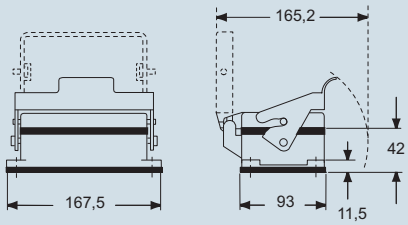
description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
bulkhead mounting housings, with lever and cover	**CHIR 48 LS**	—-						
surface mounting housings, with lever and cover	**CHPR 48 LS**	36 x 1/2	**MHPR 48 LS40**	40 x 1/2				
with pegs, side entry					**CHOR 48 L**	36	**MHOR 48 L40**	40
with pegs, top entry					**CHVR 48 L**	36	**MHVR 48 L40**	40

panel cut-out for bulkhead mounting housings in mm

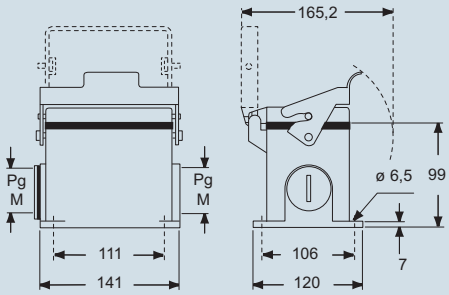


dimensions in mm

CHIR LS

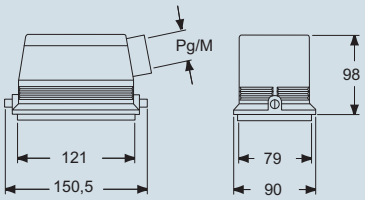


CHPR LS and **MHPR LS**

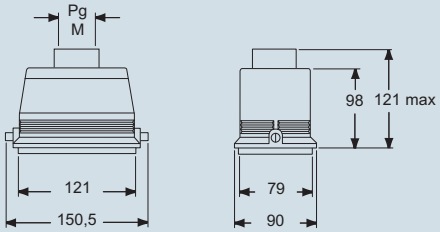


dimensions in mm

CHOR L and **MHOR L**



CHVR L and **MHVR L**



Type 4/4X/12

IP65 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

CENTRAL LEVER

Characteristics

CENTRAL LEVER ENCLOSURES

Description.

Series specifically designed for industrial applications with limited installation space. These enclosures can be installed, placed side-by-side and handled in a single operation.
Furthermore, the lever's shape reduces the effort required to uncouple the inner fittings.

Characteristics of materials used:

CH..YC, CA..YC and MA..YC, CA..YX and MF..YX series

- made of die cast aluminium alloy
- with epoxy-polyester powder coating
- gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer
- locking device with single stainless steel lever.

inserts: page:

CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CT, CTSE (16A) ***)**	6	poles + ⏚	130
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 215

***)** can be used only in bulkhead mounting housings

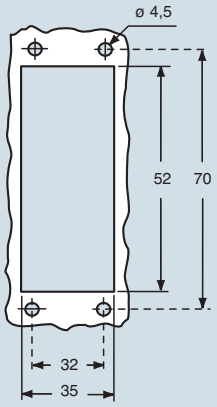
insert centre distance:
44 x 27 mm

bulkhead mounting housings for central lever

surface mounting housings, high construction with two entries for central lever

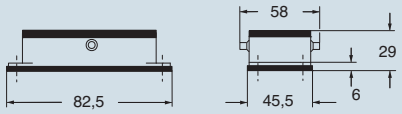
description	part No.	part No.	entry Pg	part No.	entry M
bulkhead mounting with pegs for central lever	**CHI 06 YC**				
surface mounting, high construction, with pegs, for central lever		**CAP 06 YC229**	29x2	**MAP 06 YC232**	32x2

panel cut-out for bulkhead mounting housings in mm



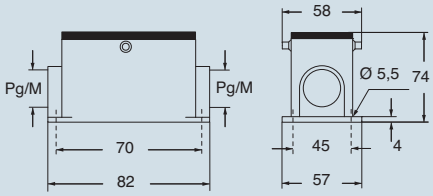
dimensions in mm

CHI YC



dimensions in mm

CAP YC and **MAP YC**



Even when coding is not required, it is recommended to use CRM and CRF pins with CD and CDD inserts and CRM CX and CRF CX pins with MIXO inserts to reduce movements when fitting and removing the connectors and to avoid contact damages.
Within this scope, the DIN 43 652 standard requires amaximum angular longitudinal fluctuation of ±5°.

Type 4/4X/12

IP65 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 215

insert centre distance:
44 x 27 mm

hoods with central lever

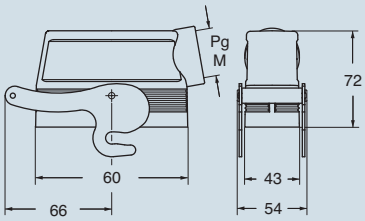
hoods with central lever

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
side entry, high construction	**CAO 06 YX21**	21	**MAO 06 YX25**	25				
side entry, high construction	**CAO 06 YX29**	29	**MAO 06 YX32**	32				
top entry, high construction					**CAV 06 YX21**	21	**MAV 06 YX25**	25
top entry, high construction					**CAV 06 YX29**	29	**MAV 06 YX32**	32

Even when coding is not required, it is recommended to use CRM and CRF pins with CD and CDD inserts and CRM CX and CRF CX pins with MIXO inserts to reduce movements when fitting and removing the connectors and to avoid contact damages.
Within this scope, the DIN 43 652 standard requires amaximum angular longitudinal fluctuation of ±5°.

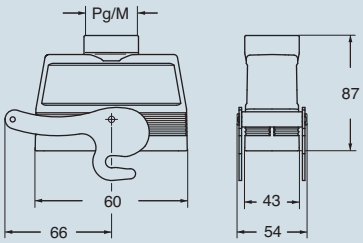
dimensions in mm

CAO..YX and **MAO..YX**



dimensions in mm

CAV..YX and **MAV..YX**



Type 4/4X/12

IP65 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD ..... 42 poles + ⏚ 69
CDS ..... 18 poles + ⏚ 79
CSH ..... 10 poles + ⏚ 92
CNE, CSE ..... 10 poles + ⏚ 105
CCE ..... 10 poles + ⏚ 111
CSS ..... 10 poles + ⏚ 123
CT, CTSE (16A) ***)** .. 10 poles + ⏚ 131
CQE ..... 18 poles + ⏚ 139
CMCE ..... 3+2 (aux) poles + ⏚ 148
CMSH ..... 3+2 (aux) poles + ⏚ 149
CX ..... 8/24 poles + ⏚ 169
MIXO ..... 3 modules 179 - 215

***)** can be used only in bulkhead mounting housings

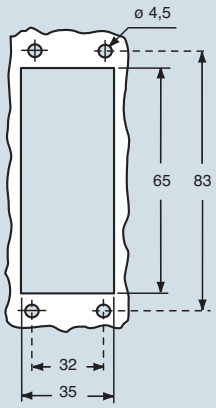
insert centre distance:
57 x 27 mm

bulkhead mounting housings for central lever

surface mounting housings, high construction with two entries for central lever

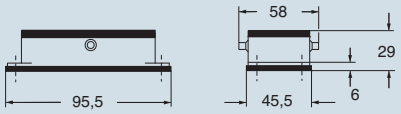
description	part No.	part No.	entry Pg	part No.	entry M
bulkhead mounting with pegs for central lever	**CHI 10 YC**				
surface mounting, high construction, with pegs, for central lever		**CAP 10 YC229**	29x2	**MAP 10 YC232**	32x2

panel cut-out for bulkhead mounting housings in mm



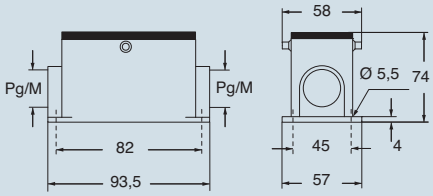
dimensions in mm

CHI YC



dimensions in mm

CAP YC and **MAP YC**



Even when coding is not required, it is recommended to use CRM and CRF pins with CD and CDD inserts and CRM CX and CRF CX pins with MIXO inserts to reduce movements when fitting and removing the connectors and to avoid contact damages.
Within this scope, the DIN 43 652 standard requires amaximum angular longitudinal fluctuation of ±5°.

c UL us Type 4/4X/12

EN 60529 IP65 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD	42	poles + ⏚	69
CDS	18	poles + ⏚	79
CSH	10	poles + ⏚	92
CNE, CSE	10	poles + ⏚	105
CCE	10	poles + ⏚	111
CSS	10	poles + ⏚	123
CQE	18	poles + ⏚	139
CMCE	3+2 (aux)	poles + ⏚	148
CMSH	3+2 (aux)	poles + ⏚	149
CX	8/24	poles + ⏚	169
MIXO	3	modules	179 - 215

insert centre distance:
57 x 27 mm

hoods with central lever

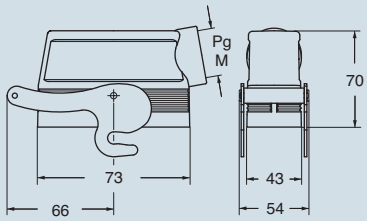
hoods with central lever

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
side entry, high construction	**CAO 10 YX21**	21	**MAO 10 YX32**	32				
side entry, high construction	**CAO 10 YX29**	29	**MAO 10 YX40**	40				
top entry, high construction					**CAV 10 YX21**	21	**MAV 10 YX32**	32
top entry, high construction					**CAV 10 YX29**	29	**MAV 10 YX40**	40

Even when coding is not required, it is recommended to use CRM and CRF pins with CD and CDD inserts and CRM CX and CRF CX pins with MIXO inserts to reduce movements when fitting and removing the connectors and to avoid contact damages.
Within this scope, the DIN 43 652 standard requires amaximum angular longitudinal fluctuation of ±5°.

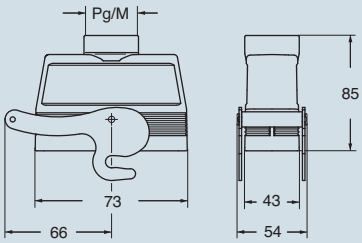
dimensions in mm

CAO..YX and **MAO..YX**



dimensions in mm

CAV..YX and **MAV..YX**



Type 4/4X/12

IP65 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD	40	poles + ⏚	57
CT, CTS (10A) ***)**	40	poles + ⏚	64
CDD	72	poles + ⏚	70
CDS	27	poles + ⏚	80
CSH	16	poles + ⏚	93
CNE, CSE	16	poles + ⏚	106
CCE	16	poles + ⏚	112
CSS	16	poles + ⏚	124
CT, CTSE (16A) ***)**	16	poles + ⏚	132
CQE	32	poles + ⏚	140
CQEE	40	poles + ⏚	146
CMCE, CMSH 6+2 (aux)		poles + ⏚	150-151
CP	6	poles + ⏚	162
CX	6/36 and 12/2	poles + ⏚	170-171
CX	4/0 and 4/2	poles + ⏚	172
MIXO	4	modules	179-215

***)** can be used only in bulkhead mounting housings

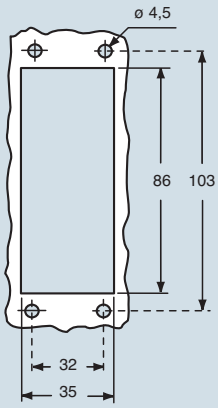
insert centre distance: **77,5 x 27 mm**

bulkhead mounting housings for central lever

surface mounting housings, high construction with two entries for central lever

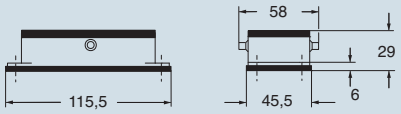
description	part No.	part No.	entry Pg	part No.	entry M
bulkhead mounting with pegs for central lever	**CHI 16 YC**				
surface mounting, high construction, with pegs, for central lever		**CAP 16 YC229**	29x2	**MAP 16 YC232**	32x2

panel cut-out for bulkhead mounting housings in mm



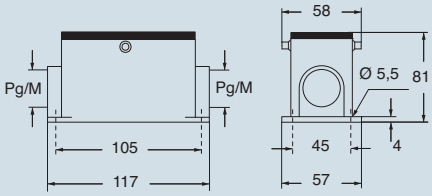
dimensions in mm

CHI YC



dimensions in mm

CAP YC and **MAP YC**



Even when coding is not required, it is recommended to use CRM and CRF pins with CD and CDD inserts and CRM CX and CRF CX pins with MIXO inserts to reduce movements when fitting and removing the connectors and to avoid contact damages.
Within this scope, the DIN 43 652 standard requires amaximum angular longitudinal fluctuation of ±5°.

c UL us Type 4/4X/12

EN 60529 IP65 IEC 60529

dimensions shown are not binding and may be changed without notice

inserts: page:

CD	40	poles + ⏚	57
CDD	72	poles + ⏚	70
CDS	27	poles + ⏚	80
CSH	16	poles + ⏚	93
CNE, CSE	16	poles + ⏚	106
CCE	16	poles + ⏚	112
CSS	16	poles + ⏚	124
CQE	32	poles + ⏚	140
CQEE	40	poles + ⏚	146
CMCE	6+2 (aux)	poles + ⏚	150
CMSH	6+2 (aux)	poles + ⏚	151
CP	6	poles + ⏚	162
CX	6/36 and 12/2	poles + ⏚	170-171
CX	4/0 and 4/2	poles + ⏚	172
MIXO	4	modules	179-215

insert centre distance:
77,5 x 27 mm

hoods with central lever

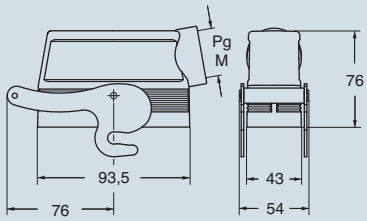
hoods with central lever

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
side entry, high construction	**CAO 16 YX21**	21	**MAO 16 YX32**	32				
side entry, high construction	**CAO 16 YX29**	29	**MAO 16 YX40**	40				
top entry, high construction					**CAV 16 YX21**	21	**MAV 16 YX32**	32
top entry, high construction					**CAV 16 YX29**	29	**MAV 16 YX40**	40

Even when coding is not required, it is recommended to use CRM and CRF pins with CD and CDD inserts and CRM CX and CRF CX pins with MIXO inserts to reduce movements when fitting and removing the connectors and to avoid contact damages.
Within this scope, the DIN 43 652 standard requires amaximum angular longitudinal fluctuation of ±5°.

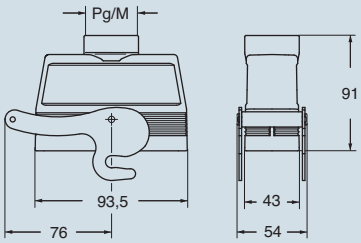
dimensions in mm

CAO..YX and **MAO..YX**



dimensions in mm

CAV..YX and **MAV..YX**



Type 4/4X/12

IP65 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD 64	poles + ⏚	59
CT, CTS (10A) ***)** 64	poles + ⏚	65
CDD 108	poles + ⏚	72
CDS 42	poles + ⏚	81
CSH 24	poles + ⏚	94
CNE, CSE 24	poles + ⏚	107
CCE 24	poles + ⏚	113
CSS 24	poles + ⏚	125
CT, CTSE (16A) ***)** 24	poles + ⏚	133
CQE 46	poles + ⏚	141
CQEE 64	poles + ⏚	147
CMCE ..... 10+2 (aux)	poles + ⏚	152
CMSH ..... 10+2 (aux)	poles + ⏚	153
CX ..... 4/8 and 6/6	poles + ⏚	173 and 175
MIXO 6	modules	179-215

***)** can be used only in bulkhead mounting housings

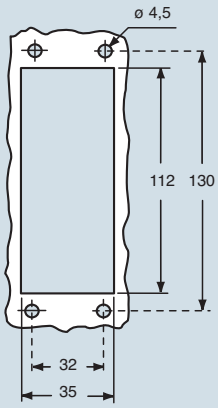
insert centre distance: **104 x 27 mm**

bulkhead mounting housings for central lever

surface mounting housings, high construction with two entries for central lever

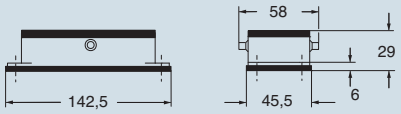
description	part No.	part No.	entry Pg	part No.	entry M
bulkhead mounting with pegs for central lever	**CHI 24 YC**				
surface mounting, high construction, with pegs, for central lever		**CAP 24 YC229**	29x2	**MAP 24 YC232**	32x2

panel cut-out for bulkhead mounting housings in mm



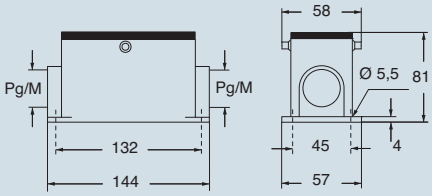
dimensions in mm

CHI YC



dimensions in mm

CAP YC and **MAP YC**



Even when coding is not required, it is recommended to use CRM and CRF pins with CD and CDD inserts and CRM CX and CRF CX pins with MIXO inserts to reduce movements when fitting and removing the connectors and to avoid contact damages.
Within this scope, the DIN 43 652 standard requires amaximum angular longitudinal fluctuation of ±5°.

Type 4/4X/12

IP65 EN 60529 IEC 60529

dimensions shown are not binding and may be changed without notice

inserts: page:

CD	64	poles + ⏚	59
CDD	108	poles + ⏚	72
CDS	42	poles + ⏚	81
CSH	24	poles + ⏚	94
CNE, CSE	24	poles + ⏚	107
CCE	24	poles + ⏚	113
CSS	24	poles + ⏚	125
CQE	46	poles + ⏚	141
CQEE	64	poles + ⏚	147
CMCE	10+2 (aux)	poles + ⏚	152
CMSH	10+2 (aux)	poles + ⏚	153
CX	4/8 and 6/6	poles + ⏚	173 and 175
MIXO	6	modules	179-215

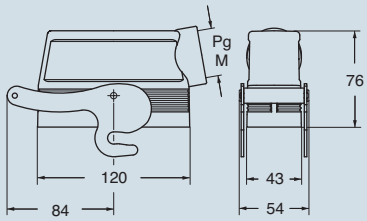
insert centre distance:
104 x 27 mm

hoods with central lever

description	part No.	entry Pg	part No.	entry M
side entry, high construction	**CAO 24 YX21**	21	**MAO 24 YX32**	32
side entry, high construction	**CAO 24 YX29**	29	**MAO 24 YX40**	40
top entry, high construction				
top entry, high construction				

dimensions in mm

CAO..YX and **MAO..YX**

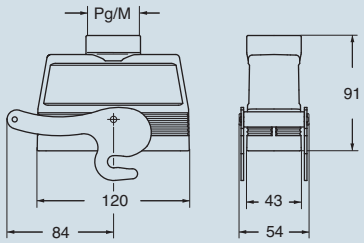


hoods with central lever

description	part No.	entry Pg	part No.	entry M
top entry, high construction	**CAV 24 YX21**	21	**MAV 24 YX32**	32
top entry, high construction	**CAV 24 YX29**	29	**MAV 24 YX40**	40

dimensions in mm

CAV..YX and **MAV..YX**



Even when coding is not required, it is recommended to use CRM and CRF pins with CD and CDD inserts and CRM CX and CRF CX pins with MIXO inserts to reduce movements when fitting and removing the connectors and to avoid contact damages.
Within this scope, the DIN 43 652 standard requires amaximum angular longitudinal fluctuation of ±5°.

Type 4/4X/12

IP65 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD ..... 64 poles + ⏚ 59
CDD ..... 108 poles + ⏚ 72
CDS ..... 42 poles + ⏚ 81
CSH ..... 24 poles + ⏚ 94
CNE, CSE ..... 24 poles + ⏚ 107
CCE ..... 24 poles + ⏚ 113
CSS ..... 24 poles + ⏚ 125
CQE ..... 46 poles + ⏚ 141
CQEE ..... 64 poles + ⏚ 147
CMCE ..... 10+2 (aux) poles + ⏚ 152
CMSH ..... 10+2 (aux) poles + ⏚ 153
CX ..... 4/8 and 6/6 poles + ⏚ 173 and 175
MIXO ..... 6 modules 179-215

insert centre distance:
104 x 27 mm

Even when coding is not required, it is recommended to use CRM and CRF pins with CD and CDD inserts and CRM CX and CRF CX pins with MIXO inserts to reduce movements when fitting and removing the connectors and to avoid contact damages.
Within this scope, the DIN 43 652 standard requires amaximum angular longitudinal fluctuation of ±5°.

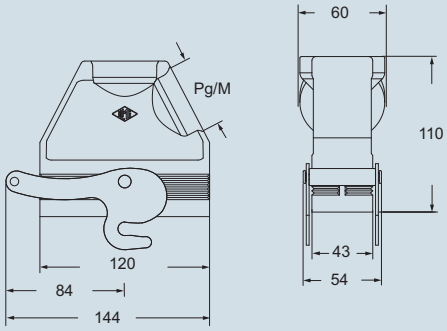
dimensions shown are not binding
and may be changed without notice

inclined hoods with central lever with side entry

description	part No.	entry Pg	part No.	entry M
side entry, high construction			**MIO 24 YX40**	40
side entry, high construction	**CIO 24 YX36**	36	**MIO 24 YX50**	50

dimensions in mm

CIO..YX and **MIO..YX**

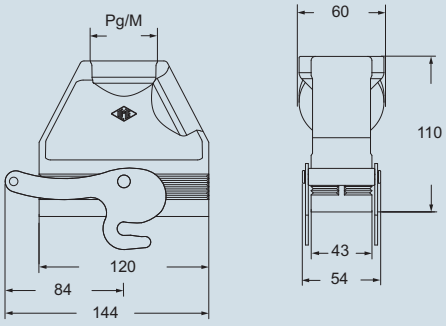


inclined hoods with central lever with top entry

description	part No.	entry Pg	part No.	entry M
top entry, high construction				
top entry, high construction	**CIV 24 YX36**	36	**MIV 24 YX40**	40
			MIV 24 YX50	50

dimensions in mm

CIV..YX and **MIV..YX**



IP68

IP68

General characteristics

CG/MG series (“44.27”, “57.27”, “77.27”, “104.27”).

The new CG/MG series of fixed and portable enclosures for connectors combines water tightness to IP68 rating and high mechanical sturdiness compliant with EMC standards.
The enclosures ensure the highest degree of protection from external interferences; more specifically, they protect people from accessing the dangerous components housed inside the enclosures (direct contact) and they protect the internal connector inserts from the ingress of foreign matters (dust) and from the harmful effects of fluid ingress.
The water tightness between the bulkhead mounting housings and the panel is ensured by an O-ring seal held in position in a slot within the bulkhead mounting housing base.
A second O-ring seal fitted around the edges of the enclosure ensures the water tightness between the portable and the fixed enclosure when the connector is mated.
To ensure the water tightness when the enclosure is fitted onto a cabinet panel, the optional mounting frame with four M6 threaded blind holes may need to be installed inside the panel. The fastening screws must be fitted inside the enclosure and, through the fastening holes to be drilled on the panel, must be tightened onto the M6 mounting frame internal thread instead of the usual fastening nuts.

The flush mounted fixed enclosure fastening holes have been drilled inside the O-ring seal in order to avoid having to use other seals. Although these enclosures are larger than the standard enclosures to leave more space for the cables, and the walls are thicker to achieve more mechanical sturdiness, the fixing points have remained the same as those of the standard enclosures.
The series is offered with two types of locking systems: bayonet and screw. The two closing points are located in asymmetrical positions to ensure an optimal water tightness and the lowest footprint in case of multiple enclosures placed alongside at the front.
The locking parts of both versions are made of high quality stainless steel and are firmly fastened inside the portable enclosure.
These locking parts can be fitted and removed by using either a 1,5 mm flat blade screwdriver or a 10 mm hexagonal key.
The fixed and portable enclosures are made of foundry grade aluminium alloy, particularly resistant to sea water corrosion.
The finish is made from epoxy polyester powder, which gives the enclosures high scratch and shock resistant properties.
The metal cover is made with the same quality materials as the enclosures, and is fitted with a short cord to make it always retrievable.

Scope of application:

External interconnections in vehicles, in harsh environments and in humid areas and with sensitive interconnections requiring screening.
They are particularly suitable for the applications in the railway industry and any application requiring high resistance to pressure, impact and corrosion, with IP68 protection rating.
They also ensure a good screening for electromagnetic compatibility.
The IP68 protection rating printed on the enclosure is ensured if the enclosures are correctly installed and the cable entry devices have equal or higher rating.

Protection rating compliant with EN 60529 standard.

When closed, the CG/MG enclosures protect the connector inserts fitted inside from outside interference, such as mechanical knocks, foreign bodies, humidity, dust, water or other fluids such as cleaning or cooling agents, oils etc.
The IP68 protection rating ensured by the enclosure is fully described in the EN 60529 standard, which classifies the enclosures according to their protection against the entry of foreign bodies and water.

IP68 = total protection against *dust*, and against the *access to hazardous parts* with access probe of Ø 1,0 mm (1st characteristic numeral), and protection against the effects of *continuous submersion in water* (duration ≥ 30 min upon agreement and water depth ≥ 1 m upon agreement) (2nd characteristic numeral).

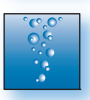
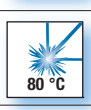
These enclosures have also successfully passed the tests required for the **IPX6** degree of protection (tightness to powerful water jets) and for the **IPX9** degree of protection (high pressure and temperature water jets) according to EN 60529. Their full degree of protection is therefore **IP66/IP68/IP69**.

The following table shows the different levels of protection required by the IP standard.

First characteristic numeral
Protection of people against access to hazardous parts - Protection of equipment against solid foreign objects

IP	Solid external objects	Protection
0		non-protected
1		protected against access to hazardous parts with the back of a hand protected against solid foreign objects of Ø 50 mm and greater
2		protected against access to hazardous parts with a finger - protected against solid foreign objects of Ø 12,5 mm and greater
3		protected against access to hazardous parts with a tool - protected against solid foreign objects of Ø 2,5 mm and greater
4		protected against access to hazardous parts with a wire - protected against solid foreign objects of Ø 1,0 mm and greater
5		protected against access to hazardous parts with a wire dust-protected (no harmful dust deposit)
6		protected against access to hazardous parts with a wire dust-tight (total protection against dust)

Second characteristic numeral
Protection of materials against harmful penetration of water

IP	Tests	Protection
0		non-protected
1		protected against vertically falling water drops
2		protected against vertically falling water drops when enclosure tilted up to 15° (on either side of the vertical)
3		protected against spraying water (at an angle up to 60° on either side of the vertical)
4		protected against splashing water from any direction
5		protected against water jets from any direction
6		protected against powerful water jets from any direction (similar to sea waves)
7		protected against the effects of temporary immersion in water at a maximum depth of 1 meter for 30 min
8		protected against the effects of continuous immersion in water at depth and/or duration upon agreement, more severe than for numeral 7
9		protected against high pressure and temperature water jets from any direction

IP68

Features of multipole connectors for industrial use in CG/MG enclosures

CG/MG series (“44.27”, “57.27”, “77.27”, “104.27”).

❶ Threaded cable entry hole, available in different Pg diameters (types with prefix starting with “C”) or metric pitch (types with prefix starting with “M”) compliant with EN 60423 standard, for cable entry devices compliant with EN 50262 standard, for vertical or horizontal layout.

❷ Sturdy, corrosion proof foundry grade aluminium alloy enclosures, with chromate treated die cast.
The following types are available: wall mounted, flush mounted fixed and portable enclosures with portable protective cover.

❸ Oven painted with epoxy polyester powder in black RAL 9005, which gives the enclosures a high mechanical strength and makes them resistant to external agents.

❹ The inserts are made of UL certified self-extinguishing fibreglass reinforced thermoplastics, and feature an operating temperature range between -40 °C and +125 °C.

❺ Insert profile polarised with asymmetrical guides to avoid incorrect matings.
The inserts have a mechanical life equal to or higher than 500 mating cycles.

❻ Inserts are manufactured in compliance with European standard EN 61984 (DIN VDE 0627), certified and identified with UL and CSA markings.

❼ Special NBR elastomere, anti-ageing, oil and fuel resistant seals which, together with the cable entry devices (not supplied) ensure mated connectors IP68 protection rating. The seals are internally positioned to give a better protection from sunlight and outside elements.

❽ Fixings are available in two solutions: with hexagonal head stainless steel screws or bayonet type. The slotted hexagonal head screws can be fitted and removed by using either a 1,5 mm thick blade screwdriver or a 10 mm hexagonal key, and can be easily accessed even when fitted on enclosures with horizontally exited cables. Tightening torque 2,5 Nm.

❾ Captive insert fastening screws, with anti-slackening spring washer.

❿ Contact position identified with numbers or codes on both sides of each insert and printed with a laser system or from a die.

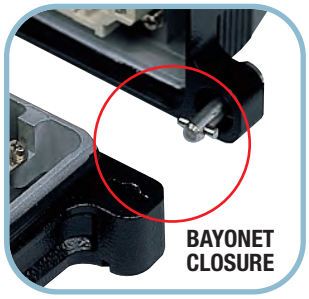
⓫ Silver or gold plated brass contacts connected to the wires by means of captive screws supplied already slackened, with spring terminal, by means of crimping (contacts available separately), or with a built-in 45° terminal block (still with screw or spring terminal).

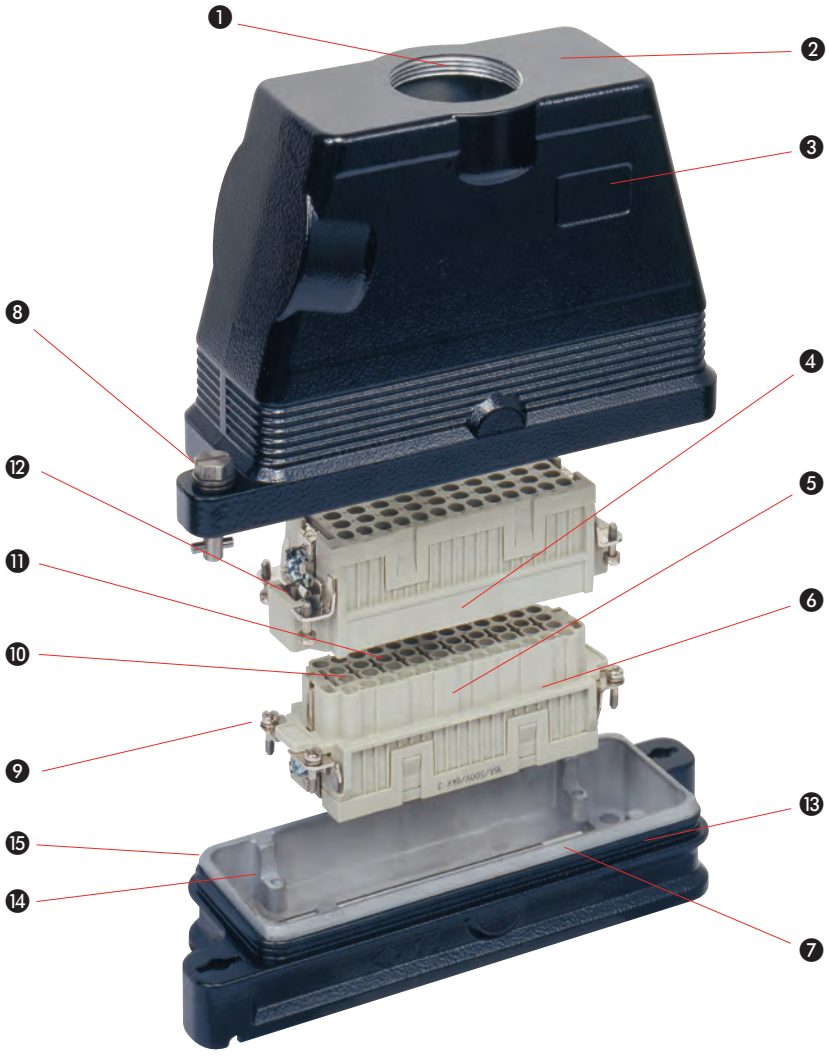
⓬ Protective earth terminal with a wide contact surface.

⓭ Fixed, flush mounted enclosure with fastening screws inside the gasket.

⓮ Wider enclosures to give more space for the cabling.

⓯ They ensure a good screening for electromagnetic compatibility, resistance to vibrations in compliance with EN 61373 standard and to pressurised water.





inserts: page:

CK ..... 3 poles + ⏚ 48
CK ..... 4 poles + ⏚ 48
CKS ..... 3 poles + ⏚ 49
CKS ..... 4 poles + ⏚ 49
CD * ..... 8 poles 54
CQ ..... 12 poles + ⏚ 165
CQ ..... 5 poles + ⏚ 166
CJ KF..... 503
(can be used only in I enclosures)
CJK 8 506
CX 1/2 BD..... 512
CLK SC 509

* to ensure IP68 protection rating with CD 08 insert, purchase the kit CKR 65 D.In this case do not use the screw supplied with the enclosure.

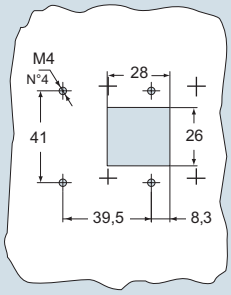
insert dimensions:
21 x 21 mm

bulkhead mounting housing

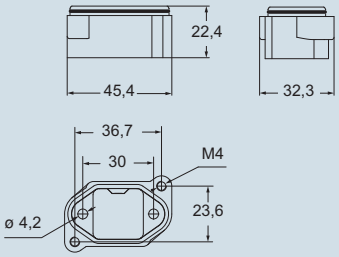
angled bulkhead mounting housings

description	part No.	part No.	entry Pg	part No.	entry M
bulkhead mounting housing	**CGK I**				
without cable entry (on request)		**CGK IA**			
with cable entry		**CGK IAP13**	13,5	**MGK IAP20**	20

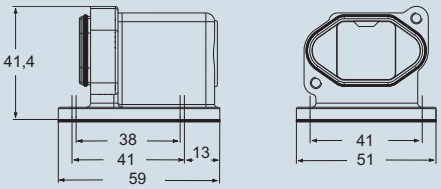
panel cut-out for CGK IA enclosures, in mm



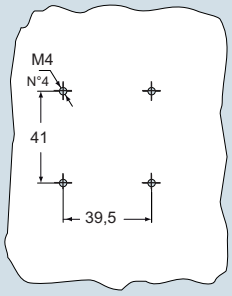
dimensions in mm
CGK I



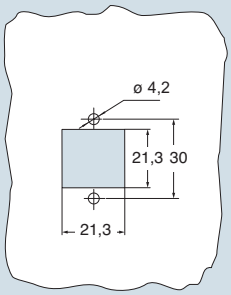
dimensions in mm
CGK IA



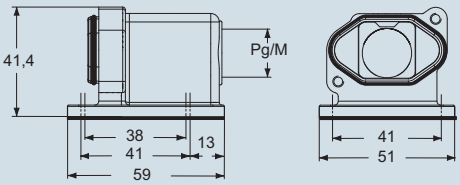
panel cut-out for CGK/MGK IAP enclosures, in mm



panel cut-out for CGK I enclosures, in mm



CGK IAP and **MGK IAP**



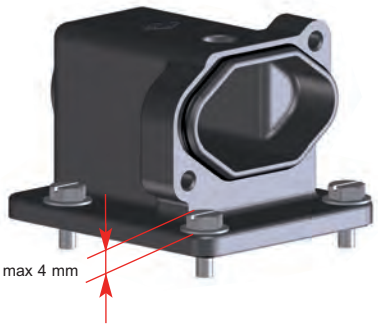
dust protection cover

CGKCP FX from page 497

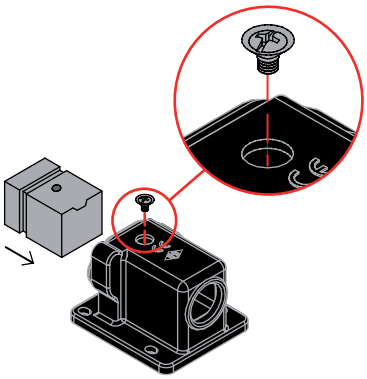
Type 12
Type 4/4X

according to IEC/EN 60529

dimensions shown are not binding
and may be changed without notice



- Eliminate the gasket and the insert fixing screw
- Use screw with gasket provided with the enclosure



inserts: page:

CK ..... 3 poles + ⏚ 48
CK ..... 4 poles + ⏚ 48
CKS ..... 3 poles + ⏚ 49
CKS ..... 4 poles + ⏚ 49
CD * ..... 8 poles 54
CQ ..... 12 poles + ⏚ 165
CQ ..... 5 poles + ⏚ 166

CJ KM..... 503
(can be used only in hoods)
CJK 8 506
CX 1/2 BD..... 512
CLK SC 509

* to ensure IP68 protection rating with CD 08 insert, purchase the kit CKR 65 D.In this case do not use the screw supplied with the enclosure.

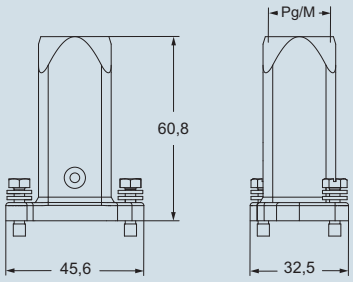
insert dimensions:
21 x 21 mm

hoods

description	part No.	entry Pg	part No.	entry M
top entry	**CGK V13**	13,5	**MGK V20**	20

dimensions in mm

CGK V and **MGK V**



dust protection cover

CGKCP MB from page 497

Type 12
Type 4/4X

according to IEC/EN 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CK ..... 3 poles + ⏚ 48
CK ..... 4 poles + ⏚ 48
CKS ..... 3 poles + ⏚ 49
CKS ..... 4 poles + ⏚ 49
CD * ..... 8 poles 54
CQ ..... 12 poles + ⏚ 165
CQ ..... 5 poles + ⏚ 166
CJ KF..... 503
(can be used only in I/IAP enclosures)
CJ KM..... 503
(can be used only in hoods)
CJK 8 506
CX 1/2 BD..... 512
CLK SC 509

* to ensure IP68 protection rating with CD 08 insert, purchase the kit CKR 65 D.In this case do not use the screw supplied with the enclosure.

insert dimensions: **21 x 21 mm**

bulkhead mounting housing

hoods

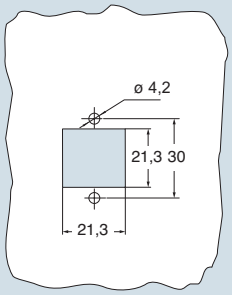
description	part No.	part No.	entry Pg	part No.	entry M
bulkhead mounting housing	**CGK I B**				
top entry		**CGK V13 B**	13,5	**MGK V20 B**	20

- Eliminate the gasket and the insert fixing screw
- Use screw with gasket provided with the enclosure

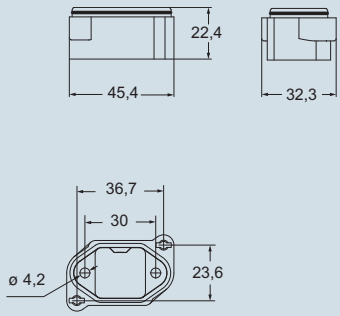
dimensions in mm

dimensions in mm

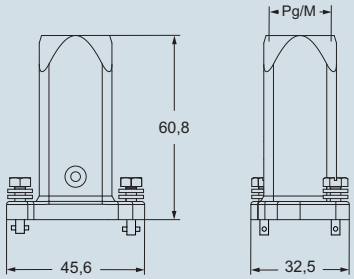
panel cut-out for CGK I B enclosures, in mm



CGK I B



CGK V B and MGK V B



dust protection cover

CGKCP FX from page 497

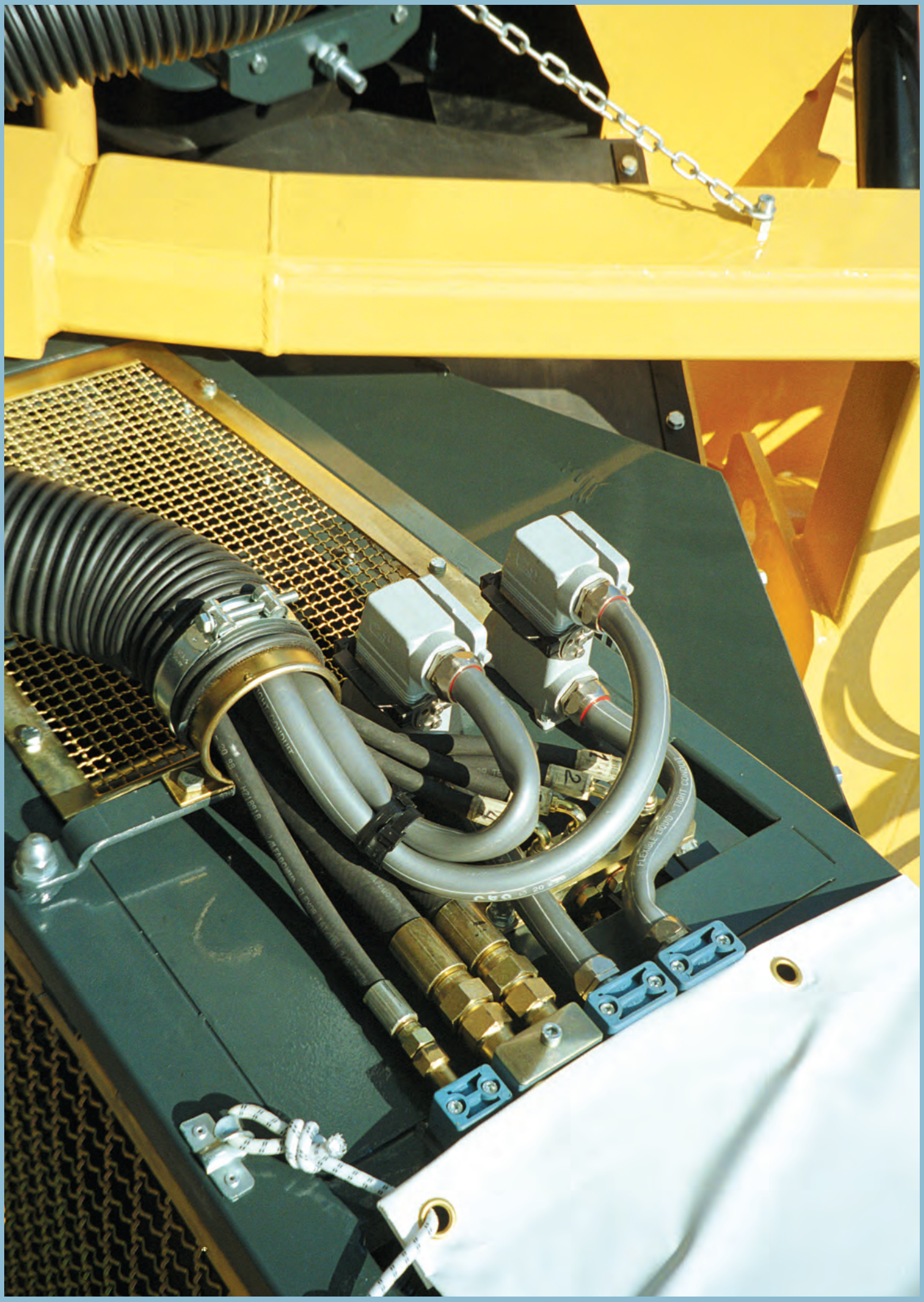
dust protection cover

CGKCP MB from page 497

Type 12
Type 4/4X

according to IEC/EN 60529

dimensions shown are not binding
and may be changed without notice



CG and **MG** enclosures size “44.27” high protection **IP68** version (screw locking)

inserts: page:

CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 215

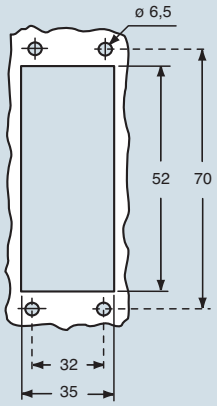
insert centre distance:
44 x 27 mm

bulkhead mounting housings

surface mounting housings

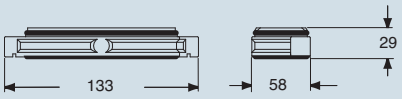
description	part No.	part No.	entry Pg	part No.	entry M
size ”44.27”	**CGI 06**				
size ”44.27”		**CGP 06.29**	29	**MGP 06.32**	32

panel cut-out for bulkhead mounting housings in mm



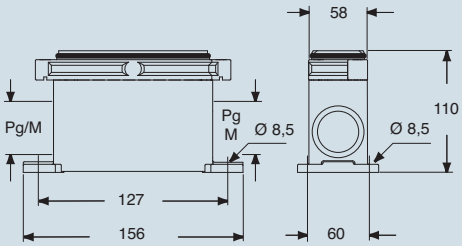
dimensions in mm

CGI



dimensions in mm

CGP and **MGP**



dust protection cover

CGCP FX from page 497

Type 4/4X/12

according to IEC/EN 60529

dimensions shown are not binding
and may be changed without notice

CG and **MG** enclosures size “44.27” high protection **IP68** version (screw locking)

inserts: page:

CDD ..... 24 poles + ⏚ 67
CDS ..... 9 poles + ⏚ 78
CSH ..... 6 poles + ⏚ 91
CNE, CSE ..... 6 poles + ⏚ 104
CCE ..... 6 poles + ⏚ 110
CSS ..... 6 poles + ⏚ 122
CQE ..... 10 poles + ⏚ 138
MIXO ..... 2 modules 179 - 215

insert centre distance:
44 x 27 mm

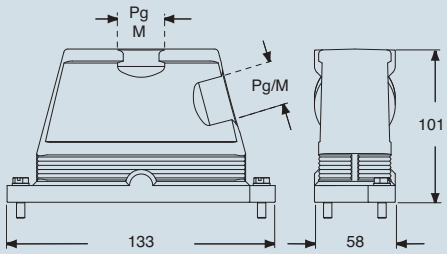
hoods

covers

description	part No.	entry Pg	part No.	entry M	part No.
with side entry					
size ”44.27”	**CGO 06.16**	16	**MGO 06.25**	25	
size ”44.27”	**CGO 06.21**	21	**MGO 06.32**	32	
size ”44.27”	**CGO 06.29**	29			
with top entry					
size ”44.27”	**CGV 06.16**	16	**MGV 06.25**	25	
size ”44.27”	**CGV 06.21**	21	**MGV 06.32**	32	
size ”44.27”	**CGV 06.29**	29	**MGV 06.40**	40	
size ”44.27”					**CGC 06**

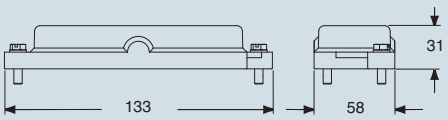
dimensions in mm

CGO/MGO and **CGV/MGV**



dimensions in mm

CGC



dust protection cover

CGCP MB from page 497

Type 4/4X/12

according to IEC/EN 60529

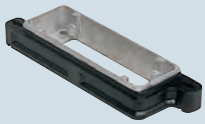
dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD ..... 24 poles + ⏚ 67
CDS ..... 9 poles + ⏚ 78
CSH ..... 6 poles + ⏚ 91
CNE, CSE ..... 6 poles + ⏚ 104
CCE ..... 6 poles + ⏚ 110
CSS ..... 6 poles + ⏚ 122
CQE ..... 10 poles + ⏚ 138
MIXO ..... 2 modules 179 - 215

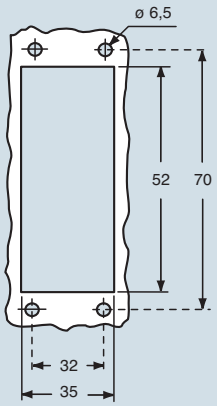
insert centre distance:
44 x 27 mm

bulkhead mounting housings



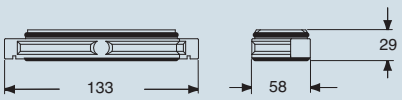
description	part No.
size ”44.27”	**CGI 06 B**

panel cut-out for bulkhead mounting housings in mm



dimensions in mm

CGI B



dust protection cover

CGCP FX from page 497

Type 4/4X/12

according to IEC/EN 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 215

insert centre distance:
44 x 27 mm

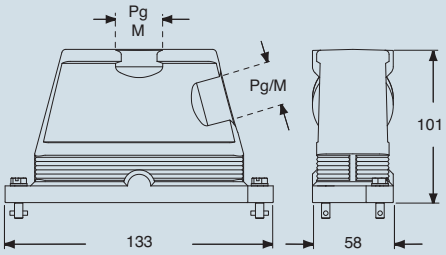
hoods

covers

description	part No.	entry Pg	part No.	entry M	part No.
with side entry					
size ”44.27”	**CGO 06.16 B**	16	**MGO 06.25 B**	25	
size ”44.27”	**CGO 06.21 B**	21	**MGO 06.32 B**	32	
size ”44.27”	**CGO 06.29 B**	29			
with top entry					
size ”44.27”	**CGV 06.16 B**	16	**MGV 06.25 B**	25	
size ”44.27”	**CGV 06.21 B**	21	**MGV 06.32 B**	32	
size ”44.27”	**CGV 06.29 B**	29	**MGV 06.40 B**	40	
size ”44.27”					**CGC 06 B**

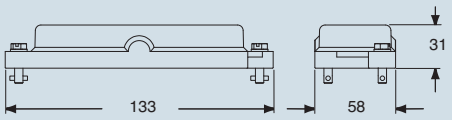
dimensions in mm

CGO/MGO B and **CGV/MGV B**



dimensions in mm

CGC B



dust protection cover

CGCP MB from page 497

Type 4/4X/12

according to IEC/EN 60529

dimensions shown are not binding
and may be changed without notice

CG and **MG** enclosures size “57.27” high protection **IP68** version (screw locking)

inserts: page:

CDD	42	poles + ⏚	69
CDS	18	poles + ⏚	79
CSH	10	poles + ⏚	92
CNE, CSE	10	poles + ⏚	105
CCE	10	poles + ⏚	111
CSS	10	poles + ⏚	123
CQE	18	poles + ⏚	139
CMCE	3+2 (aux)	poles + ⏚	148
CMSH	3+2 (aux)	poles + ⏚	149
CX	8/24	poles + ⏚	169
MIXO	3	modules	179 - 215

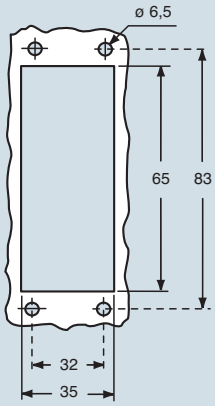
insert centre distance:
57 x 27 mm

bulkhead mounting housings

surface mounting housings

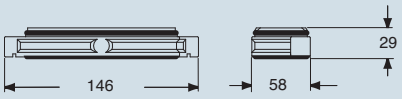
description	part No.	part No.	entry Pg	part No.	entry M
size ”57.27”	**CGI 10**				
size ”57.27”		**CGP 10.29**	29	**MGP 10.32**	32

panel cut-out for bulkhead mounting housings in mm



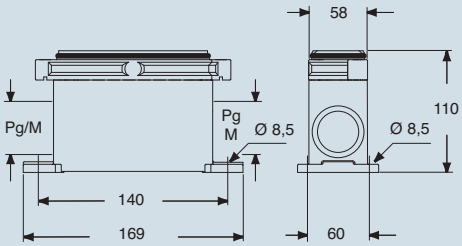
dimensions in mm

CGI



dimensions in mm

CGP and **MGP**



dust protection cover

CGCP FX from page 497

Type 4/4X/12

according to IEC/EN 60529

dimensions shown are not binding
and may be changed without notice

CG and **MG** enclosures size “57.27” high protection **IP68** version (screw locking)

inserts: page:

CDD ..... 42 poles + ⏚ 69
CDS ..... 18 poles + ⏚ 79
CSH ..... 10 poles + ⏚ 92
CNE, CSE ..... 10 poles + ⏚ 105
CCE ..... 10 poles + ⏚ 111
CSS ..... 10 poles + ⏚ 123
CQE ..... 18 poles + ⏚ 139
CMCE ..... 3+2 (aux) poles + ⏚ 148
CMSH ..... 3+2 (aux) poles + ⏚ 149
CX ..... 8/24 poles + ⏚ 169
MIXO ..... 3 modules 179 - 215

insert centre distance:
57 x 27 mm

hoods

covers

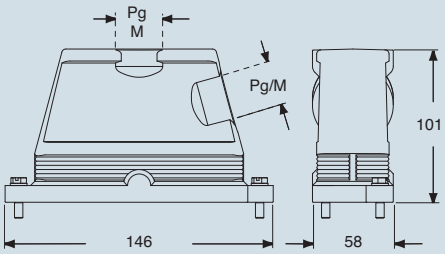
description	part No.	entry Pg	part No.	entry M	part No.
with side entry					
size ”57.27”	**CGO 10.16**	16	**MGO 10.25**	25	
size ”57.27”	**CGO 10.21**	21	**MGO 10.32**	32	
size ”57.27”	**CGO 10.29**	29			
with top entry					
size ”57.27”	**CGV 10.16**	16	**MGV 10.25**	25	
size ”57.27”	**CGV 10.21**	21	**MGV 10.32**	32	
size ”57.27”	**CGV 10.29**	29	**MGV 10.40**	40	
size ”57.27”					**CGC 10**

dust protection cover

CGCP MB from page 497

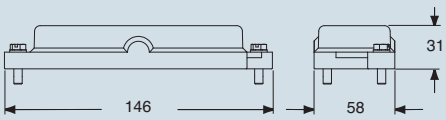
dimensions in mm

CGO/MGO and **CGV/MGV**



dimensions in mm

CGC



Type 4/4X/12

according to IEC/EN 60529

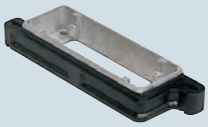
dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD	42	poles + ⏚	69
CDS	18	poles + ⏚	79
CSH	10	poles + ⏚	92
CNE, CSE	10	poles + ⏚	105
CCE	10	poles + ⏚	111
CSS	10	poles + ⏚	123
CQE	18	poles + ⏚	139
CMCE	3+2 (aux)	poles + ⏚	148
CMSH	3+2 (aux)	poles + ⏚	149
CX	8/24	poles + ⏚	169
MIXO	3	modules	179 - 215

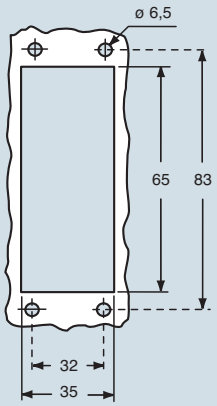
insert centre distance:
57 x 27 mm

bulkhead mounting housings



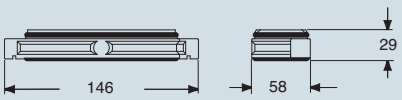
description	part No.
size ”57.27”	**CGI 10 B**

panel cut-out for bulkhead mounting housings in mm



dimensions in mm

CGI B



dust protection cover

CGCP FX from page 497

Type 4/4X/12

according to IEC/EN 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD	42	poles + ⏚	69
CDS	18	poles + ⏚	79
CSH	10	poles + ⏚	92
CNE, CSE	10	poles + ⏚	105
CCE	10	poles + ⏚	111
CSS	10	poles + ⏚	123
CQE	18	poles + ⏚	139
CMCE	3+2 (aux)	poles + ⏚	148
CMSH	3+2 (aux)	poles + ⏚	149
CX	8/24	poles + ⏚	169
MIXO	3	modules	179 - 215

insert centre distance:
57 x 27 mm

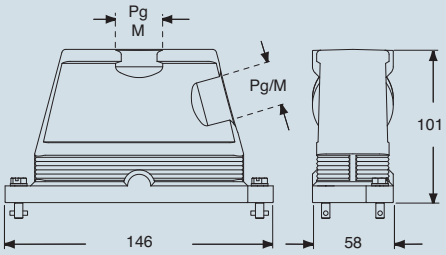
hoods

covers

description	part No.	entry Pg	part No.	entry M	part No.
with side entry					
size ”57.27”	**CGO 10.16 B**	16	**MGO 10.25 B**	25	
size ”57.27”	**CGO 10.21 B**	21	**MGO 10.32 B**	32	
size ”57.27”	**CGO 10.29 B**	29			
with top entry					
size ”57.27”	**CGV 10.16 B**	16	**MGV 10.25 B**	25	
size ”57.27”	**CGV 10.21 B**	21	**MGV 10.32 B**	32	
size ”57.27”	**CGV 10.29 B**	29	**MGV 10.40 B**	40	
size ”57.27”					**CGC 10 B**

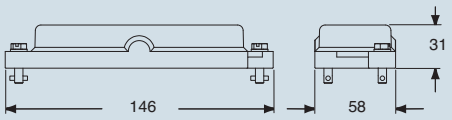
dimensions in mm

CGO/MGO B and **CGV/MGV B**



dimensions in mm

CGC B



dust protection cover

CGCP MB from page 497

Type 4/4X/12

according to IEC/EN 60529

dimensions shown are not binding
and may be changed without notice

CG and **MG** enclosures size “77.27” high protection **IP68** version (screw locking)

inserts:			page:
CD	40	poles + ⏚	57
CDD	72	poles + ⏚	70
CDS	27	poles + ⏚	80
CSH	16	poles + ⏚	93
CNE, CSE	16	poles + ⏚	106
CCE	16	poles + ⏚	112
CSS	16	poles + ⏚	124
CQE	32	poles + ⏚	140
CQEE	40	poles + ⏚	146
CMCE	6+2 (aux)	poles + ⏚	150
CMSH	6+2 (aux)	poles + ⏚	151
CP	6	poles + ⏚	162
CX	6/36 and 12/2	poles + ⏚	170-171
CX	4/0 and 4/2	poles + ⏚	172
MIXO	4	modules	179-215

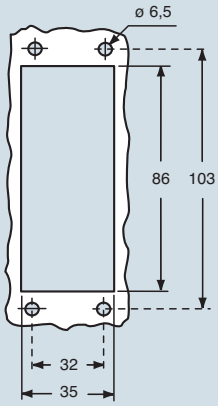
insert centre distance:
77,5 x 27 mm

bulkhead mounting housings

surface mounting housings

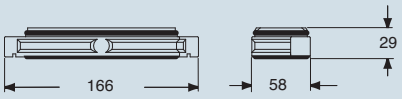
description	part No.	part No.	entry Pg	part No.	entry M
size ”77.27”	**CGI 16**				
size ”77.27”		**CGP 16.36**	36	**MGP 16.40**	40

panel cut-out for bulkhead mounting housings in mm



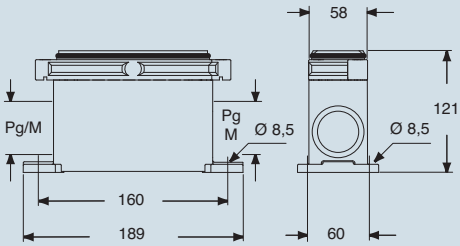
dimensions in mm

CGI



dimensions in mm

CGP and **MGP**



dust protection cover

CGCP FX from page 497

Type 4/4X/12

according to IEC/EN 60529

dimensions shown are not binding
and may be changed without notice

inserts:		page:
CD	40 poles + ⏚	57
CDD	72 poles + ⏚	70
CDS	27 poles + ⏚	80
CSH	16 poles + ⏚	93
CNE, CSE	16 poles + ⏚	106
CCE	16 poles + ⏚	112
CSS	16 poles + ⏚	124
CQE	32 poles + ⏚	140
CQEE	40 poles + ⏚	146
CMCE	6+2 (aux) poles + ⏚	150
CMSH	6+2 (aux) poles + ⏚	151
CP	6 poles + ⏚	162
CX	6/36 and 12/2 poles + ⏚	170-171
CX	4/0 and 4/2 poles + ⏚	172
MIXO	4 modules	179-215

insert centre distance:
77,5 x 27 mm

hoods

covers

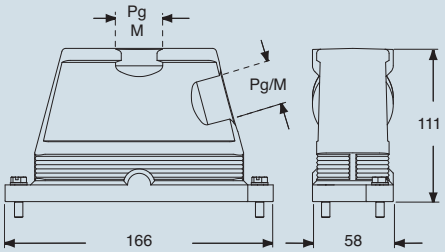
description	part No.	entry Pg	part No.	entry M	part No.
with side entry					
size ”77.27”	**CGO 16.21**	21	**MGO 16.32**	32	
size ”77.27”	**CGO 16.29**	29	**MGO 16.40**	40	
size ”77.27”	**CGO 16.36**	36	**MGO 16.50**	50	
with top entry					
size ”77.27”			**MGV 16.25**	25	
size ”77.27”			**MGV 16.225**	25x2	
size ”77.27”	**CGV 16.21**	21	**MGV 16.32**	32	
size ”77.27”	**CGV 16.221**	21x2			
size ”77.27”	**CGV 16.29**	29	**MGV 16.40**	40	
size ”77.27”	**CGV 16.36**	36	**MGV 16.50**	50	
size ”77.27”					**CGC 16**

dust protection cover

CGCP MB from page 497

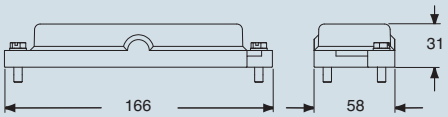
dimensions in mm

CGO/MGO and **CGV/MGV**



dimensions in mm

CGC



Type 4/4X/12

according to IEC/EN 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

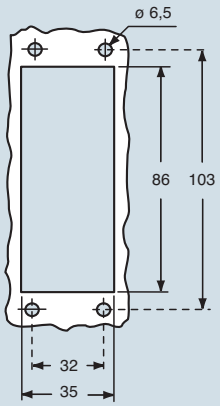
CD	40	poles + ⏚	57
CDD	72	poles + ⏚	70
CDS	27	poles + ⏚	80
CSH	16	poles + ⏚	93
CNE, CSE	16	poles + ⏚	106
CCE	16	poles + ⏚	112
CSS	16	poles + ⏚	124
CQE	32	poles + ⏚	140
CQEE	40	poles + ⏚	146
CMCE	6+2 (aux)	poles + ⏚	150
CMSH	6+2 (aux)	poles + ⏚	151
CP	6	poles + ⏚	162
CX	6/36 and 12/2	poles + ⏚	170-171
CX	4/0 and 4/2	poles + ⏚	172
MIXO	4	modules	179-215

insert centre distance:
77,5 x 27 mm

bulkhead mounting housings

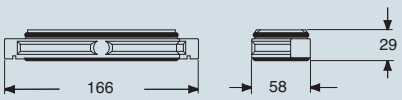
description	part No.
size ”77.27”	**CGI 16 B**

panel cut-out for bulkhead mounting housings in mm



dimensions in mm

CGI B



dust protection cover

CGCP FX from page 497

Type 4/4X/12

according to IEC/EN 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CD ..... 40 poles + ⏚ 57
CDD ..... 72 poles + ⏚ 70
CDS ..... 27 poles + ⏚ 80
CSH ..... 16 poles + ⏚ 93
CNE, CSE ..... 16 poles + ⏚ 106
CCE ..... 16 poles + ⏚ 112
CSS ..... 16 poles + ⏚ 124
CQE ..... 32 poles + ⏚ 140
CQEE ..... 40 poles + ⏚ 146
CMCE ..... 6+2 (aux) poles + ⏚ 150
CMSH ..... 6+2 (aux) poles + ⏚ 151
CP ..... 6 poles + ⏚ 162
CX ..... 6/36 and 12/2 poles + ⏚ 170-171
CX ..... 4/0 and 4/2 poles + ⏚ 172
MIXO ..... 4 modules 179-215

insert centre distance:
77,5 x 27 mm

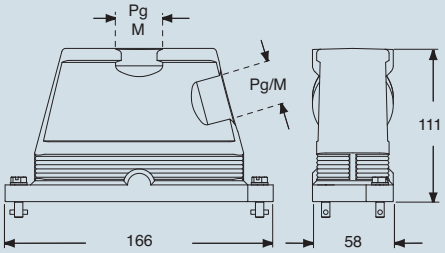
hoods

covers

description	part No.	entry Pg	part No.	entry M	part No.
with side entry					
size ”77.27”	**CGO 16.21 B**	21	**MGO 16.32 B**	32	
size ”77.27”	**CGO 16.29 B**	29	**MGO 16.40 B**	40	
size ”77.27”	**CGO 16.36 B**	36	**MGO 16.50 B**	50	
with top entry					
size ”77.27”			**MGV 16.25 B**	25	
size ”77.27”			**MGV 16.225 B**	25x2	
size ”77.27”	**CGV 16.21 B**	21	**MGV 16.32 B**	32	
size ”77.27”	**CGV 16.221 B**	21x2			
size ”77.27”	**CGV 16.29 B**	29	**MGV 16.40 B**	40	
size ”77.27”	**CGV 16.36 B**	36	**MGV 16.50 B**	50	
size ”77.27”					**CGC 16 B**

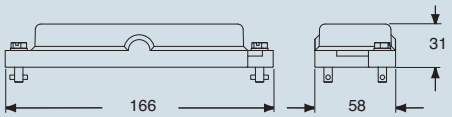
dimensions in mm

CGO/MGO B and **CGV/MGV B**



dimensions in mm

CGC B



dust protection cover

CGCP MB from page 497

Type 4/4X/12

according to IEC/EN 60529

dimensions shown are not binding
and may be changed without notice

CG and **MG** enclosures size “104.27” high protection **IP68** version (screw locking)

inserts:

			page:
CD	64	poles + ⏚	59
CDD	108	poles + ⏚	72
CDS	42	poles + ⏚	81
CSH	24	poles + ⏚	94
CNE, CSE	24	poles + ⏚	107
CCE	24	poles + ⏚	113
CSS	24	poles + ⏚	125
CQE	46	poles + ⏚	141
CQEE	64	poles + ⏚	147
CMCE	10+2 (aux)	poles + ⏚	152
CMSH	10+2 (aux)	poles + ⏚	153
CX	4/8 and 6/6	poles + ⏚	173 and 175
MIXO	6	modules	179-215

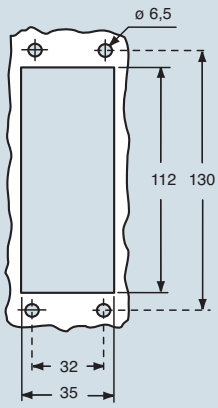
insert centre distance:
104 x 27 mm

bulkhead mounting housings

surface mounting housings

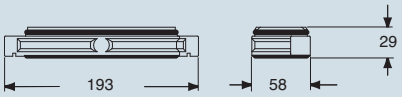
description	part No.	part No.	entry Pg	part No.	entry M
size ”104.27”	**CGI 24**				
size ”104.27”		**CGP 24.36**	36	**MGP 24.40**	40
size ”104.27”		**CGP 24.236**	36 x 2	**MGP 24.240**	40 x 2

panel cut-out for bulkhead mounting housings in mm



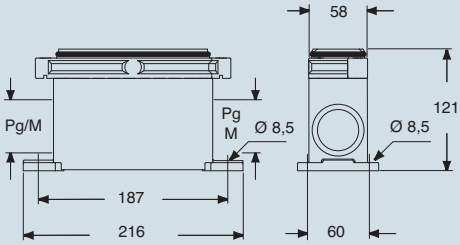
dimensions in mm

CGI



dimensions in mm

CGP and **MGP**



dust protection cover

CGCP FX from page 497

Type 4/4X/12

according to IEC/EN 60529

dimensions shown are not binding
and may be changed without notice

inserts:

			page:
CD	64	poles + ⏚	59
CDD	108	poles + ⏚	72
CDS	42	poles + ⏚	81
CSH	24	poles + ⏚	94
CNE, CSE	24	poles + ⏚	107
CCE	24	poles + ⏚	113
CSS	24	poles + ⏚	125
CQE	46	poles + ⏚	141
CQEE	64	poles + ⏚	147
CMCE	10+2 (aux)	poles + ⏚	152
CMSH	10+2 (aux)	poles + ⏚	153
CX	4/8 and 6/6	poles + ⏚	173 and 175
MIXO	6	modules	179-215

insert centre distance:
104 x 27 mm

hoods

covers

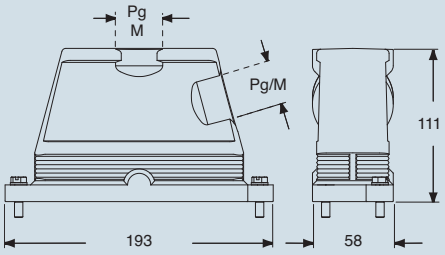
description	part No.	entry Pg	part No.	entry M	part No.
with side entry					
size ”104.27”	**CGO 24.21**	21	**MGO 24.32**	32	
size ”104.27”	**CGO 24.29**	29	**MGO 24.40**	40	
size ”104.27”	**CGO 24.36**	36	**MGO 24.50**	50	
with top entry					
size ”104.27”			**MGV 24.325**	25x3	
size ”104.27”	**CGV 24.21**	21	**MGV 24.32**	32	
size ”104.27”			**MGV 24.232**	32x2	
size ”104.27”	**CGV 24.29**	29	**MGV 24.40**	40	
size ”104.27”	**CGV 24.229**	29x2	**MGV 24.240**	40x2	
size ”104.27”	**CGV 24.36**	36	**MGV 24.50**	50	
size ”104.27”					**CGC 24**

dust protection cover

CGCP MB from page 497

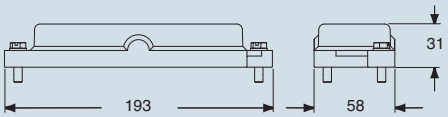
dimensions in mm

CGO/MGO and **CGV/MGV**



dimensions in mm

CGC



Type 4/4X/12

according to IEC/EN 60529

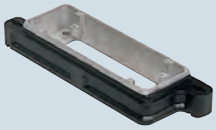
dimensions shown are not binding
and may be changed without notice

inserts: page:

CD ..... 64 poles + ⏚ 59
CDD ..... 108 poles + ⏚ 72
CDS ..... 42 poles + ⏚ 81
CSH ..... 24 poles + ⏚ 94
CNE, CSE ..... 24 poles + ⏚ 107
CCE ..... 24 poles + ⏚ 113
CSS ..... 24 poles + ⏚ 125
CQE ..... 46 poles + ⏚ 141
CQEE ..... 64 poles + ⏚ 147
CMCE ..... 10+2 (aux) poles + ⏚ 152
CMSH ..... 10+2 (aux) poles + ⏚ 153
CX ..... 4/8 and 6/6 poles + ⏚ 173 and 175
MIXO ..... 6 modules 179-215

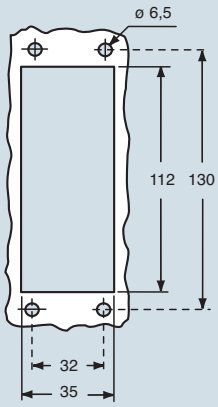
insert centre distance:
104 x 27 mm

bulkhead mounting housings



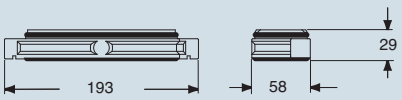
description	part No.
size ”104.27”	**CGI 24 B**

panel cut-out for bulkhead mounting housings in mm



dimensions in mm

CGI B



dust protection cover

CGCP FX from page 497

Type 4/4X/12

according to IEC/EN 60529

dimensions shown are not binding
and may be changed without notice

inserts:		page:
CD 64	poles + ⏚	59
CDD 108	poles + ⏚	72
CDS 42	poles + ⏚	81
CSH 24	poles + ⏚	94
CNE, CSE 24	poles + ⏚	107
CCE 24	poles + ⏚	113
CSS 24	poles + ⏚	125
CQE 46	poles + ⏚	141
CQEE 64	poles + ⏚	147
CMCE ..... 10+2 (aux)	poles + ⏚	152
CMSH ..... 10+2 (aux)	poles + ⏚	153
CX ..... 4/8 and 6/6	poles + ⏚	173 and 175
MIXO 6	modules	179-215

insert centre distance:
104 x 27 mm

hoods

covers

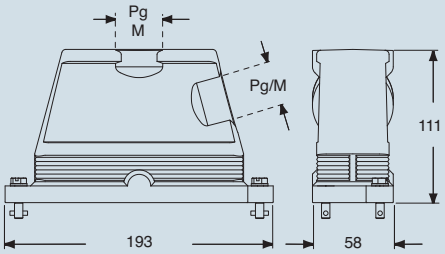
description	part No.	entry Pg	part No.	entry M	part No.
with side entry					
size ”104.27”	**CGO 24.21 B**	21	**MGO 24.32 B**	32	
size ”104.27”	**CGO 24.29 B**	29	**MGO 24.40 B**	40	
size ”104.27”	**CGO 24.36 B**	36	**MGO 24.50 B**	50	
with top entry					
size ”104.27”			**MGV 24.325 B**	25x3	
size ”104.27”	**CGV 24.21 B**	21	**MGV 24.32 B**	32	
size ”104.27”			**MGV 24.232 B**	32x2	
size ”104.27”	**CGV 24.29 B**	29	**MGV 24.40 B**	40	
size ”104.27”	**CGV 24.229 B**	29x2	**MGV 24.240 B**	40x2	
size ”104.27”	**CGV 24.36 B**	36	**MGV 24.50 B**	50	
size ”104.27”					**CGC 24 B**

dust protection cover

CGCP MB from page 497

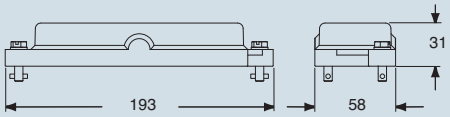
dimensions in mm

CGO/MGO B and **CGV/MGV B**



dimensions in mm

CGC B



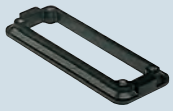
Type 4/4X/12

according to IEC/EN 60529

dimensions shown are not binding
and may be changed without notice

bulkhead mounting housings: page:
size "44.27" 420-423
size "57.27" 424-427
size "77.27" 428-431
size "104.27" 432-434

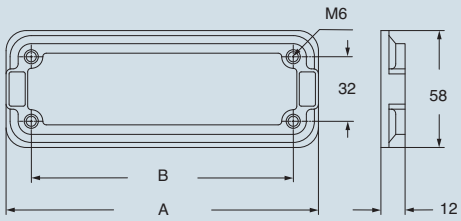
frames for bulkhead mounting housings



description	part No.
size "44.27"	**CG 06 FL**
size "57.27"	**CG 10 FL**
size "77.27"	**CG 16 FL**
size "104.27"	**CG 24 FL**

dimensions in mm

CG FL



part No.	**A**	**B**
CG 06 FL	96	70
CG 10 FL	109	83
CG 16 FL	129	103
CG 24 FL	156	130

Type 4/4X/12

dimensions shown are not binding
and may be changed without notice

inserts: page:
CME ..... 3+2 (aux) poles + ⏚ 149

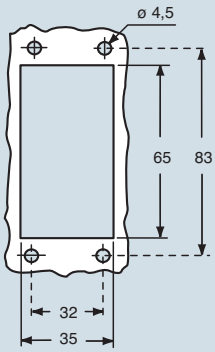
insert centre distance:
57 x 27 mm

bulkhead mounting housings with 2 levers

bulkhead mounting housings with single lever

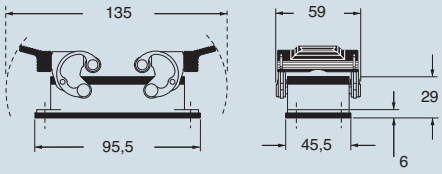
description	part No.	part No.
with one or two levers	**CMI 03**	**CMI 03 L**
with lever and cover		**CMI 03 LS**

panel cut-out for bulkhead mounting housings in mm



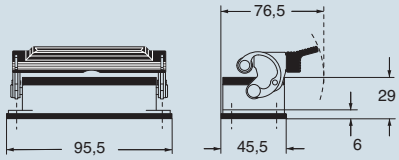
dimensions in mm

CMI

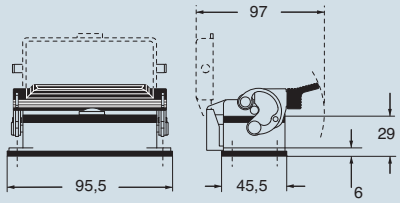


dimensions in mm

CMI L



CMI LS



N.B.:
The enclosures ensure IP66 protection (or IP65 for cover versions) rating when mated and locked with the closing levers.

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding and may be changed without notice

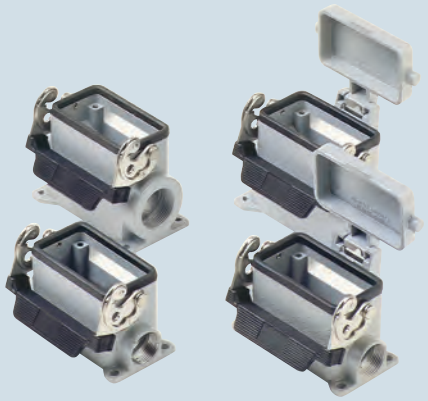
inserts: page:

CME ..... 3+2 (aux) poles + ⏚ 149

insert centre distance:
57 x 27 mm

surface mounting housings with 2 levers

surface mounting housings with single lever

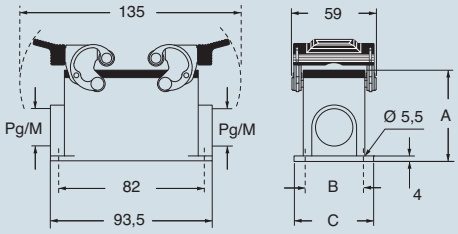


description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with lever/s	**CMP 03**	16	**MMP 03.20**	20	**CMP 03 L**	16	**MMP 03 L20**	20
with lever/s	**CMP 03.2**	16 x 2	**MMP 03.220**	20 x 2	**CMP 03 L2**	16 x 2	**MMP 03 L220**	20 x 2
with lever/s, high construction			**MMAP 03.32**	32			**MMAP 03 L32**	32
with lever/s, high construction			**MMAP 03.232**	32 x 2			**MMAP 03 L232**	32 x 2
with lever/s, high construction			**MMAP 03.40**	40			**MMAP 03 L40**	40
with lever/s, high construction			**MMAP 03.240**	40 x 2			**MMAP 03 L240**	40 x 2
with lever and cover					**CMP 03 LS**	16	**MMP 03 LS20**	20
with lever and cover					**CMP 03 LS2**	16 x 2	**MMP 03 LS220**	20 x 2
with lever and cover, high construction							**MMAP 03 LS32**	32
with lever and cover, high construction							**MMAP 03LS232**	32 x 2
with lever and cover, high construction							**MMAP 03 LS40**	40
with lever and cover, high construction							**MMAP 03LS240**	40 x 2

N.B.:
The enclosures ensure IP66 protection (or IP65 for cover versions) rating when mated and locked with the closing levers.

dimensions in mm

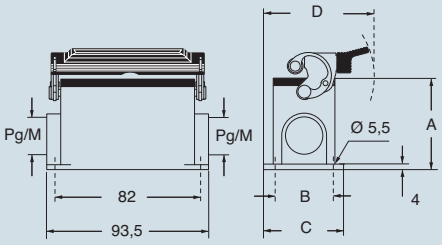
CMP - CMAP and **MMP - MMAP**



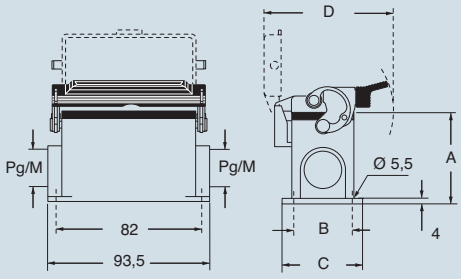
type	A	B	C
CMP / MMP	57	40	52
MMAP	74	45	57

dimensions in mm

CMP L and **MMP L - MMAP L**



CMP LS and **MMP LS - MMAP LS**



type	A	B	C	D
CMP L / MMP L	57	40	52	79.5
MMAP L	74	45	57	82
CMP LS / MMP LS	57	40	52	97
MMAP LS	74	45	57	97

Type 4/4X/12

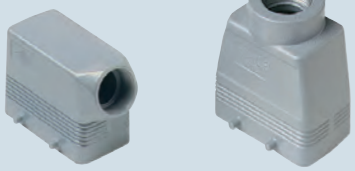
EN 60529 IP66 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:
CME ..... 3+2 (aux) poles + ⏚ 149

insert centre distance:
57 x 27 mm

hoods with 4 pegs



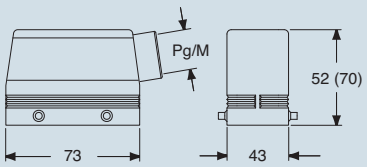
hoods with 2 pegs

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with pegs, side entry with pegs, side entry with pegs, side entry, high construction with pegs, side entry, high construction	**CMO 03**	16	**MMO 03.20** **MMO 03.25** **MMAO 03.32** **MMAO 03.40**	20 25 32 40	**CMO 03 L**	16	**MMO 03 L20** **MMO 03 L25** **MMAO 03 L32** **MMAO 03 L40**	20 25 32 40
with pegs, top entry with pegs, top entry with pegs, top entry, high construction with pegs, top entry, high construction	**CMV 03**	16	**MMV 03.20** **MMV 03.25** **MMAV 03.32** **MMAV 03.40**	20 25 32 40	**CMV 03 L**	16	**MMV 03 L20** * **MMV 03 L25** **MMAV 03 L32** **MMAV 03 L40**	20 25 32 40

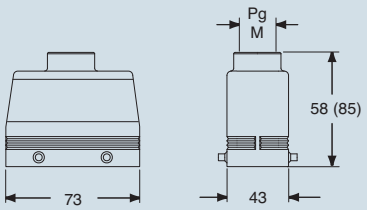
* can only be used with a complete cable gland (to be purchased separately)

dimensions in mm

CMO and **MMO (MMAO)**

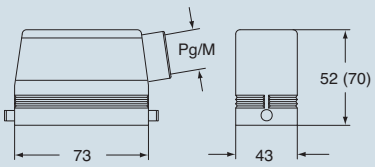


CMV and **MMV (MMAV)**

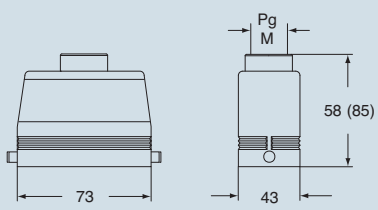


dimensions in mm

CMO L and **MMO L (MMAO L)**



CMV L and **MMV L (MMAV L)**



Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CME ..... 3+2 (aux) poles + ⏚ 149

insert centre distance:
57 x 27 mm

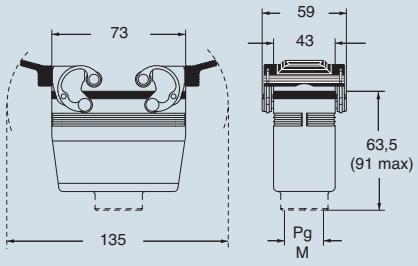
hoods with 2 levers

covers

description	part No.	entry Pg	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with levers and gasket, top entry with levers and gasket, top entry, high construction with levers and gasket, top entry, high construction	**CMV 03 G**	16	**MMV 03 G25** **MMAV 03 G25** **MMAV 03 G32**	25 25 32		
with 4 pegs (for enclosures with 2 levers with gasket) with 2 pegs (for enclosures with 1 lever with gasket)					**CHC 10** **CHC 10 L**	
with 2 levers (for hoods with 4 pegs) with 1 lever (for hoods with 2 pegs)						**CHC 10 G** **CHC 10 LG**

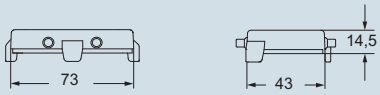
dimensions in mm

CMV G and **MMV G (MMAV G)**



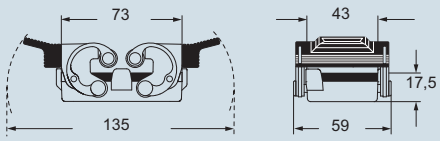
dimensions in mm

CHC

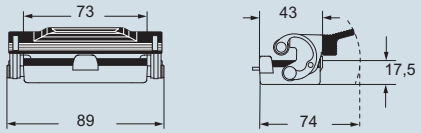


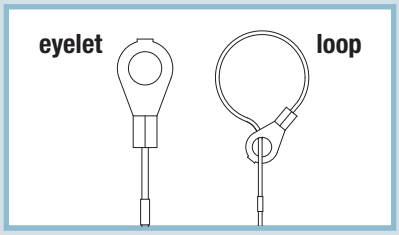
CHC L

CHC G



CHC LG





Type 4/4X/12

dimensions shown are not binding
and may be changed without notice

inserts: page:
CME ..... 6+2 (aux) poles + ⏚ 151

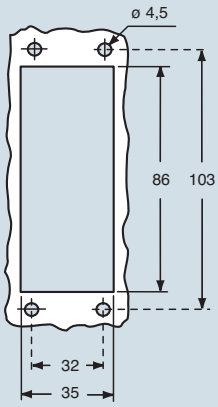
insert centre distance:
77,5 x 27 mm

bulkhead mounting housings with 2 levers

bulkhead mounting housings with single lever

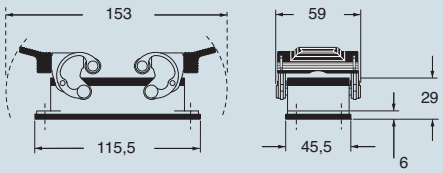
description	part No.	part No.
with one or two levers	**CMI 06**	**CMI 06 L**
with lever and cover		**CMI 06 LS**

panel cut-out for bulkhead mounting housings in mm



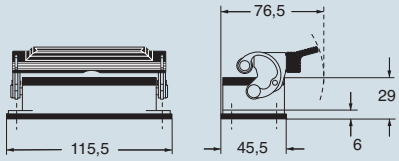
dimensions in mm

CMI

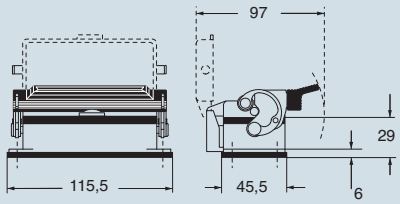


dimensions in mm

CMI L



CMI LS



N.B.:
The enclosures ensure IP66 protection (or IP65 for cover versions) rating when mated and locked with the closing levers.

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CME ..... 6+2 (aux) poles + ⏚ 151

insert centre distance:
77,5 x 27 mm

surface mounting housings with 2 levers

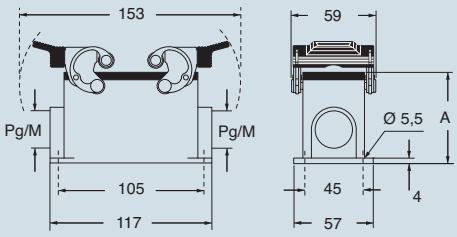
surface mounting housings with single lever

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with lever/s	**CMP 06**	21	**MMP 06.25**	25	**CMP 06 L**	21	**MMP 06 L25**	25
with lever/s	**CMP 06.2**	21 x 2	**MMP 06.225**	25 x 2	**CMP 06 L2**	21 x 2	**MMP 06 L225**	25 x 2
with lever/s, high construction			**MMAP 06.32**	32			**MMAP 06 L32**	32
with lever/s, high construction			**MMAP 06.232**	32 x 2			**MMAP 06 L232**	32 x 2
with lever/s, high construction			**MMAP 06.40**	40			**MMAP 06 L40**	40
with lever/s, high construction			**MMAP 06.240**	40 x 2			**MMAP 06 L240**	40 x 2
with lever and cover					**CMP 06 LS**	21	**MMP 06 LS25**	25
with lever and cover					**CMP 06 LS2**	21 x 2	**MMP 06 LS225**	25 x 2
with lever and cover, high construction							**MMAP 06 LS32**	32
with lever and cover, high construction							**MMAP 06LS232**	32 x 2
with lever and cover, high construction							**MMAP 06 LS40**	40
with lever and cover, high construction							**MMAP 06LS240**	40 x 2

N.B.:
The enclosures ensure IP66 protection (or IP65 for cover versions) rating when mated and locked with the closing levers.

dimensions in mm

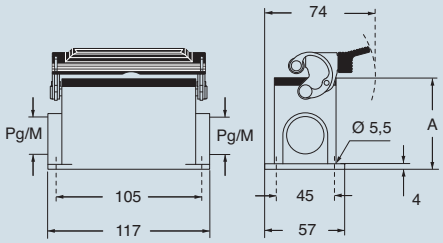
CMP and **MMP - MMAP**



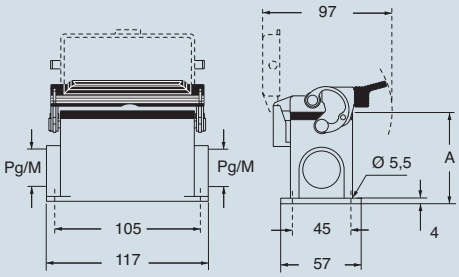
type	A
CMP / MMP	63
MMAP	81

dimensions in mm

CMP L and **MMP L - MMAP L**



CMP LS and **MMP LS - MMAP LS**



type	A
CMP L / MMP L	63
MMAP L	81
CMP LS / MMP LS	63
MMAP LS	81

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:
CME ..... 6+2 (aux) poles + ⏚ 151

insert centre distance:
77,5 x 27 mm

hoods with 4 pegs

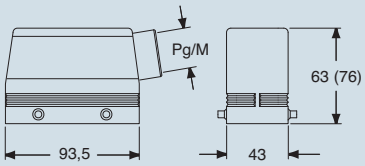
hoods with 2 pegs

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with pegs, side entry	**CMO 06**	21	**MMO 06.25**	25	**CMO 06 L**	21	**MMO 06 L25**	25
with pegs, side entry			**MMO 06.32**	32			**MMO 06 L32**	32
with pegs, side entry, high construction			**MMAO 06.32**	32			**MMAO 06 L32**	32
with pegs, side entry, high construction			**MMAO 06.40**	40			**MMAO 06 L40**	40
with pegs, top entry	**CMV 06**	21	**MMV 06.25** *	25	**CMV 06 L**	21	**MMV 06 L25**	25
with pegs, top entry			**MMV 06.32**	32			**MMV 06 L32**	32
with pegs, top entry, high construction			**MMAV 06.32**	32			**MMAV 06 L32**	32
with pegs, top entry, high construction			**MMAV 06.40**	40			**MMAV 06 L40**	40

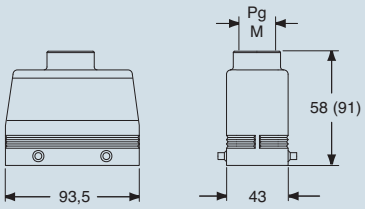
* can only be used with a complete cable gland (to be purchased separately)

dimensions in mm

CMO and **MMO (MMAO)**

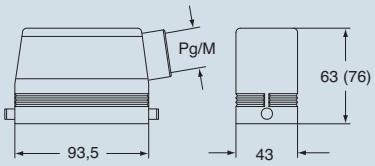


CMV and **MMV (MMAV)**

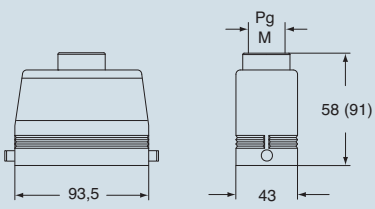


dimensions in mm

CMO L and **MMO L (MMAO L)**



CMV L and **MMV L (MMAV L)**



Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:
CME ..... 6+2 (aux) poles + ⏚ 151

insert centre distance:
77,5 x 27 mm

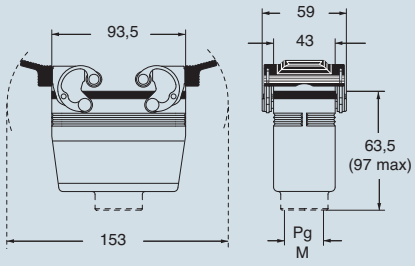
hoods with 2 levers

covers

description	part No.	entry Pg	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with levers and gasket, top entry with levers and gasket, top entry, high construction with levers and gasket, top entry, high construction	**CMV 06 G**	21	**MMV 06 G32** **MMAV 06 G25** **MMAV 06 G32**	32 25 32		
with 4 pegs (for enclosures with 2 levers with gasket) with 2 pegs (for enclosures with 1 lever with gasket)					**CHC 16** **CHC 16 L**	
with 2 levers (for hoods with 4 pegs) with 1 lever (for hoods with 2 pegs)						**CHC 16 G** **CHC 16 LG**

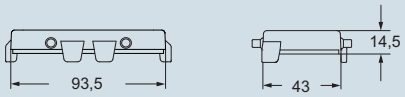
dimensions in mm

CMV G and **MMV G (MMAV G)**

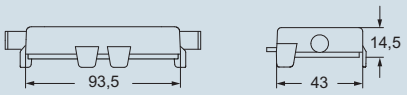


dimensions in mm

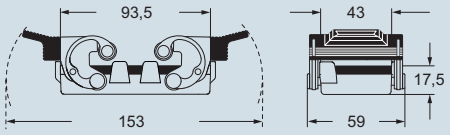
CHC



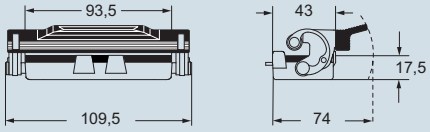
CHC L

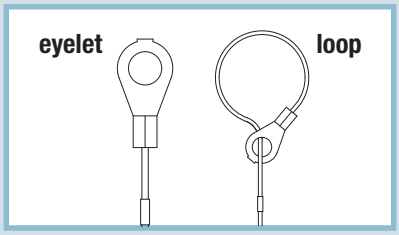


CHC G



CHC LG





Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CME ..... 10+2 (aux) poles + ⏚ 153
CMCE .....16+2 (aux) poles + ⏚ 158
CME ..... 16+2 (aux) poles + ⏚ 159

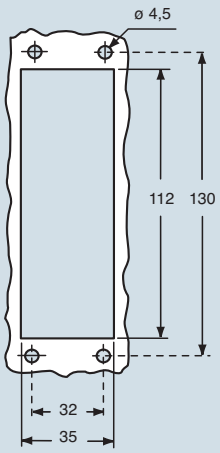
insert centre distance:
104 x 27 mm

bulkhead mounting housings with 2 levers

bulkhead mounting housings with single lever

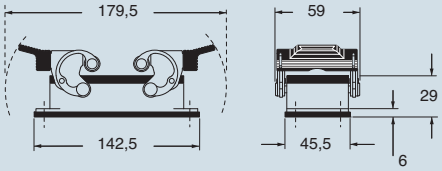
description	part No.	part No.
with one or two levers	**CMI 16**	**CMI 16 L**
with lever and cover		**CMI 16 LS**

panel cut-out for bulkhead mounting housings in mm



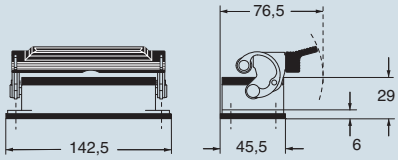
dimensions in mm

CMI

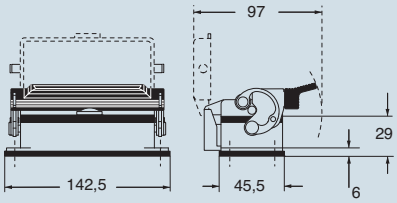


dimensions in mm

CMI L



CMI LS



N.B.:
The enclosures ensure IP66 protection (or IP65 for cover versions) rating when mated and locked with the closing levers.

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding and may be changed without notice

inserts: page:

CME ..... 10+2 (aux) poles + ⏚ 153
CMCE .....16+2 (aux) poles + ⏚ 158
CME ..... 16+2 (aux) poles + ⏚ 159

insert centre distance:
104 x 27 mm

surface mounting housings with 2 levers

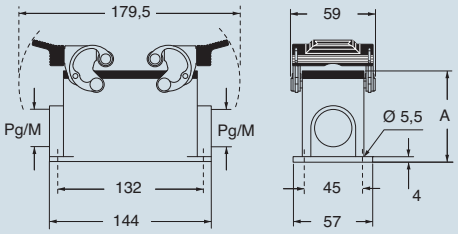
surface mounting housings with single lever

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with lever/s	**CMP 16**	21	**MMP 16.25**	25	**CMP 16 L**	21	**MMP 16 L25**	25
with lever/s	**CMP 16.2**	21 x 2	**MMP 16.225**	25 x 2	**CMP 16 L2**	21 x 2	**MMP 16 L225**	25 x 2
with lever/s, high construction			**MMAP 16.32**	32			**MMAP 16 L32**	32
with lever/s, high construction			**MMAP 16.232**	32 x 2			**MMAP 16 L232**	32 x 2
with lever/s, high construction			**MMAP 16.40**	40			**MMAP 16 L40**	40
with lever/s, high construction			**MMAP 16.240**	40 x 2			**MMAP 16 L240**	40 x 2
with lever and cover					**CMP 16 LS**	21	**MMP 16 LS25**	25
with lever and cover					**CMP 16 LS2**	21 x 2	**MMP 16 LS225**	25 x 2
with lever and cover, high construction							**MMAP 16 LS32**	32
with lever and cover, high construction							**MMAP 16LS232**	32 x 2
with lever and cover, high construction							**MMAP 16 LS40**	40
with lever and cover, high construction							**MMAP 16LS240**	40 x 2

N.B.:
The enclosures ensure IP66 protection (or IP65 for cover versions) rating when mated and locked with the closing levers.
The cover (CS, CP) only ensures mechanical protection, but does not ensure IP65 protection rating.

dimensions in mm

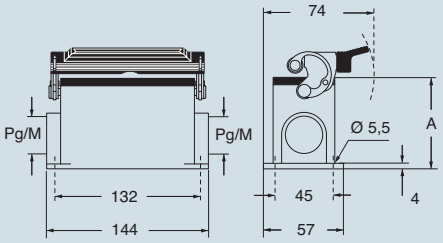
CMP and **MMP - MMAP**



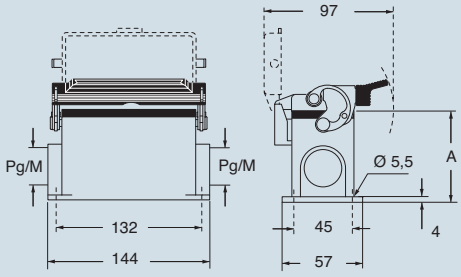
type	A
CMP / MMP	63
MMAP	81

dimensions in mm

CMP L and **MMP L - MMAP L**



CMP LS and **MMP LS - MMAP LS**



type	A
CMP L / MMP L	63
MMAP L	81
CMP LS / MMP LS	63
MMAP LS	81

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CME ..... 10+2 (aux) poles + ⏚ 153
CMCE .....16+2 (aux) poles + ⏚ 158
CME ..... 16+2 (aux) poles + ⏚ 159

insert centre distance:
104 x 27 mm

hoods with 4 pegs

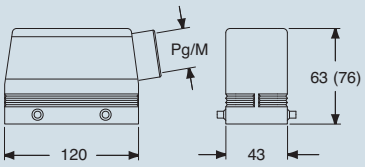
hoods with 2 pegs

description	part No.	entry Pg	part No.	entry M	part No.	entry Pg	part No.	entry M
with pegs, side entry	**CMO 16**	21	**MMO 16.25**	25	**CMO 16 L**	21	**MMO 16 L25**	25
with pegs, side entry			**MMO 16.32**	32			**MMO 16 L32**	32
with pegs, side entry, high construction			**MMAO 16.32**	32			**MMAO 16 L32**	32
with pegs, side entry, high construction			**MMAO 16.40**	40			**MMAO 16 L40**	40
with pegs, top entry	**CMV 16**	21	**MMV 16.25** *	25	**CMV 16 L**	21	**MMV 16 L25**	25
with pegs, top entry			**MMV 16.32**	32			**MMV 16 L32**	32
with pegs, top entry	**CMV 16.29**	29	**MMV 16.40**	40	**CMV 16 L29**	29	**MMV 16 L40**	40
with pegs, top entry, high construction			**MMAV 16.32**	32			**MMAV 16 L32**	32
with pegs, top entry, high construction			**MMAV 16.40**	40			**MMAV 16 L40**	40

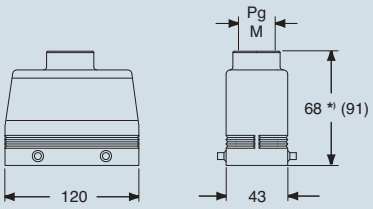
* can only be used with a complete cable gland (to be purchased separately)

dimensions in mm

CMO and **MMO (MMAO)**



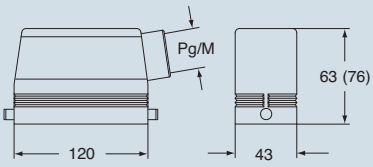
CMV and **MMV (MMAV)**



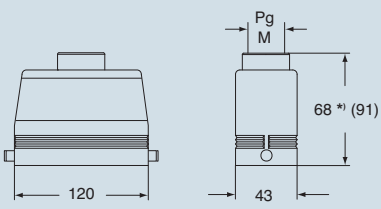
*) 69,5 for Pg 29 - M 40 versions

dimensions in mm

CMO L and **MMO L (MMAO L)**



CMV L and **MMV L (MMAV L)**



*) 69,5 for Pg 29 - M 40 versions

Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CME ..... 10+2 (aux) poles + ⏚ 153
CMCE .....16+2 (aux) poles + ⏚ 158
CME ..... 16+2 (aux) poles + ⏚ 159

insert centre distance:
104 x 27 mm

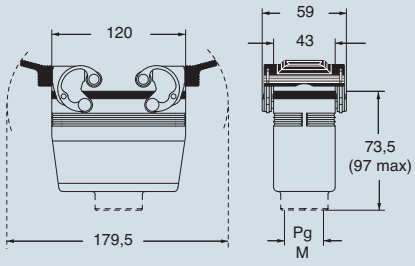
hoods with 2 levers

covers

description	part No.	entry Pg	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with levers and gasket, top entry with levers and gasket, top entry, high construction with levers and gasket, top entry, high construction	**CMV 16 G**	21	**MMV 16 G32** **MMAV 16 G25** **MMAV 16 G32**	32 25 32		
with 4 pegs (for enclosures with 2 levers with gasket) with 2 pegs (for enclosures with 1 lever with gasket)					**CHC 24** **CHC 24 L**	
with 2 levers (for hoods with 4 pegs) with 1 lever (for hoods with 2 pegs)						**CHC 24 G** **CHC 24 LG**

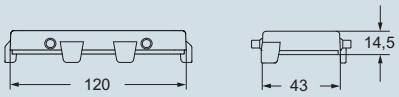
dimensions in mm

CMV G and **MMV G (MMAV G)**

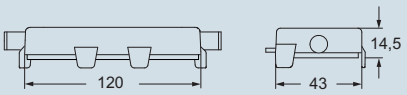


dimensions in mm

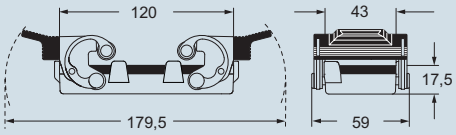
CHC



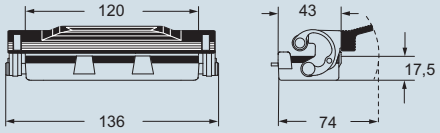
CHC L

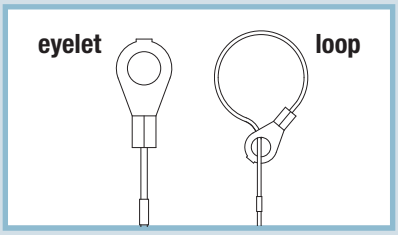


CHC G



CHC LG





Type 4/4X/12

IP66 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

LS-TYPE

Connections for stage equipment

The **LS-TYPE** enclosures are the ideal solution for the entertainment industry (lighting system power supply and related mixer and dimmer panels), including theatre stages, film sets, radio and TV studios, discos, trade fair booths, concert halls and night public events, both indoors and outdoors, etc.
All parts are in elegant RAL 9005 black to make them suitable for situations and locations where they should not be visible in the dark.

inserts: page:

CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CT, CTSE (16A) ***)**	6	poles + ⏚	130
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 215

***) only in the CHIN 06 L enclosure**

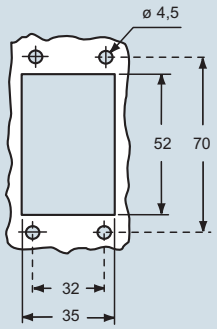
insert centre distance:
44 x 27 mm

housings with single lever

hoods with 2 pegs

description	part No.	entry M	part No.	entry M
bulkhead mounting housing, with lever	**CHIN 06 L**			
surface mounting housing, high construction, with lever	**MAPN 06 L32**	32		
with pegs, side entry with pegs,side entry, high construction			**MHON 06 L25** **MFON 06 L25**	25 25
with pegs, top entry with pegs,top entry, high construction			**MHVN 06 L25** **MFVN 06 L25**	25 25

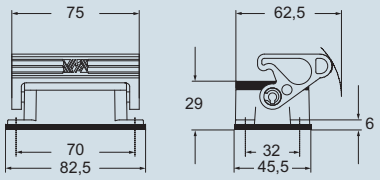
panel cut-out for bulkhead mounting housing in mm



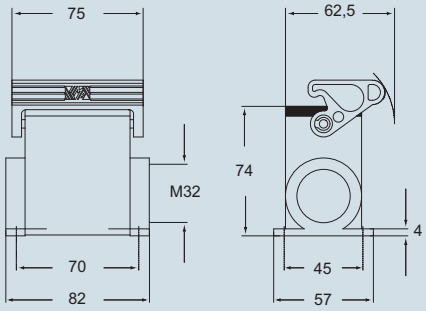
- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever (spare lever page 458)

dimensions in mm

CHIN 06 L

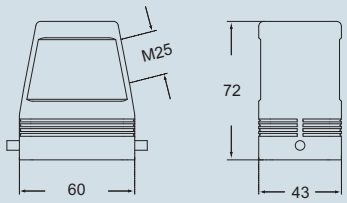


MAPN 06 L32

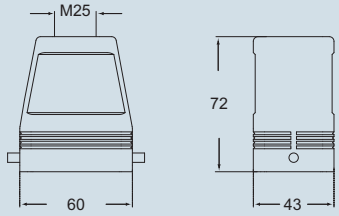


dimensions in mm

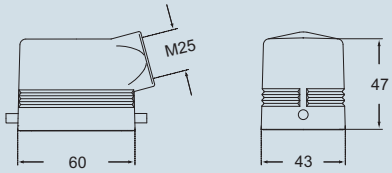
MFON 06 L25



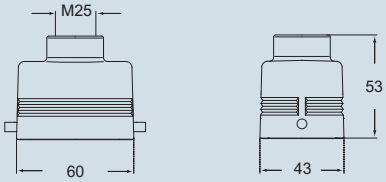
MFVN 06 L25



MHON 06 L25



MHVN 06 L25



Type 4/4X/12

IP65 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD	24	poles + ⏚	67
CDS	9	poles + ⏚	78
CSH	6	poles + ⏚	91
CNE, CSE	6	poles + ⏚	104
CCE	6	poles + ⏚	110
CSS	6	poles + ⏚	122
CQE	10	poles + ⏚	138
MIXO	2	modules	179 - 215

insert centre distance:
44 x 27 mm

hoods with single lever

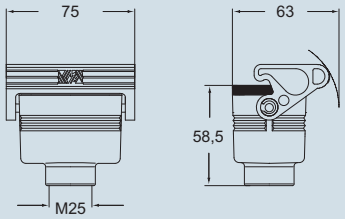
covers

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with lever and gasket, top entry	**MHVN 06 LG25**	25		
with lever and gasket, top entry, high construction	**MFVN 06 LG25**	25		
covers with pegs			**CHCN 06 L**	
covers with lever				**CHCN 06 LG**

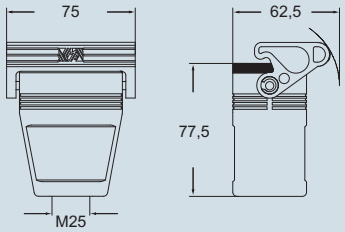
- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever (spare lever page 458)

dimensions in mm

MHVN 06 LG25

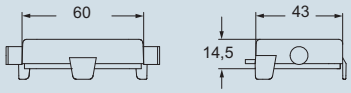


MFVN 06 LG25

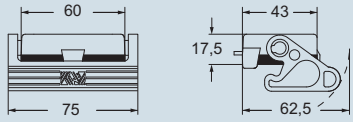


dimensions in mm

CHCN 06 L

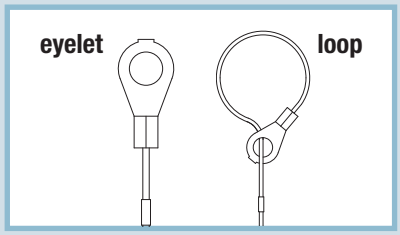


CHCN 06 LG



Type 4/4X/12

IP65 EN 60529 IEC 60529



dimensions shown are not binding
and may be changed without notice

CH..N - MA..N and MH..N - MF..N enclosures size “57.27” LS-TYPE version

inserts: page:

CDD	42	poles + ⏚	69
CDS	18	poles + ⏚	79
CSH	10	poles + ⏚	92
CNE, CSE	10	poles + ⏚	105
CCE	10	poles + ⏚	111
CSS	10	poles + ⏚	123
CT, CTSE *)	10	poles + ⏚	131
CQE	18	poles + ⏚	139
CMCE	3+2 (aux)	poles + ⏚	148
CMSH	3+2 (aux)	poles + ⏚	149
CX	8/24	poles + ⏚	169
MIXO	3	modules	179 - 215

***) only in the CHIN 10 enclosure**

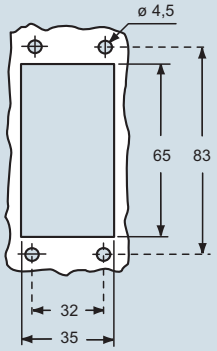
insert centre distance:
57 x 27 mm

housings with double lever

hoods with 4 pegs

description	part No.	entry M	part No.	entry M
bulkhead mounting housing, with 2 levers	**CHIN 10**			
surface mounting housing, high construction, with 2 levers	**MAPN 10.32**	32		
with pegs, side entry			**MHON 10.25**	25
with pegs, side entry, high construction			**MFON 10.32**	32
with pegs, top entry			**MHVN 10.25**	25
with pegs, top entry, high construction			**MFVN 10.32**	32

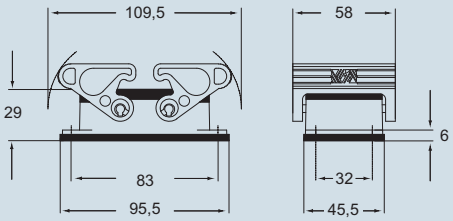
panel cut-out for bulkhead mounting housing in mm



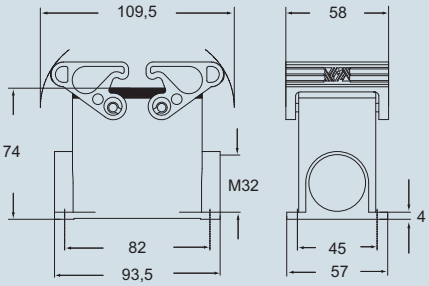
- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever (spare lever page 458)

dimensions in mm

CHIN 10

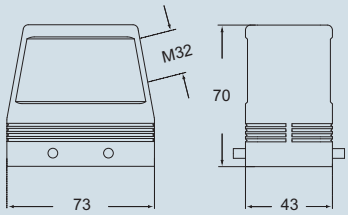


MAPN 10.32

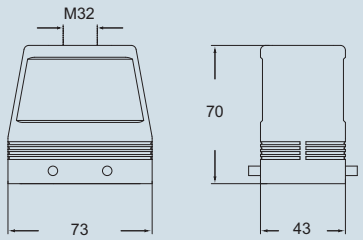


dimensions in mm

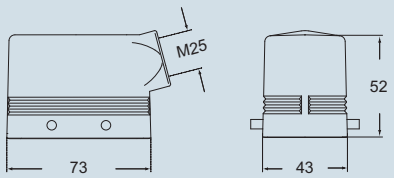
MFON 10.32



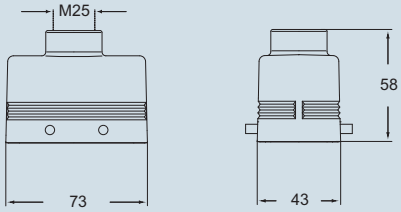
MFVN 10.32



MHON 10.25



MHVN 10.25



Type 4/4X/12

IP65 EN 60529 IEC 60529

dimensions shown are not binding
and may be changed without notice

inserts: page:

CDD	42	poles + ⏚	69
CDS	18	poles + ⏚	79
CSH	10	poles + ⏚	92
CNE, CSE	10	poles + ⏚	105
CCE	10	poles + ⏚	111
CSS	10	poles + ⏚	123
CQE	18	poles + ⏚	139
CMCE	3+2 (aux)	poles + ⏚	148
CMSH	3+2 (aux)	poles + ⏚	149
CX	8/24	poles + ⏚	169
MIXO	3	modules	179 - 215

insert centre distance:
57 x 27 mm

hoods with double lever

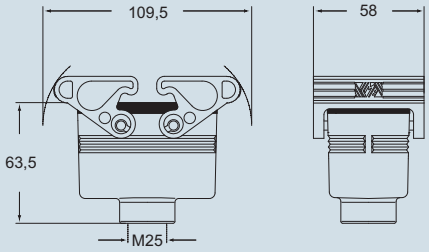
covers

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with 2 levers and gasket, top entry	**MHVN 10 G25**	25		
with 2 levers and gasket, top entry, high construction	**MFVN 10 G32**	32		
covers with pegs			**CHCN 10**	
covers with 2 levers				**CHCN 10 G**

- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever (spare lever page 458)

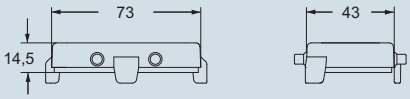
dimensions in mm

MHVN 10 G25

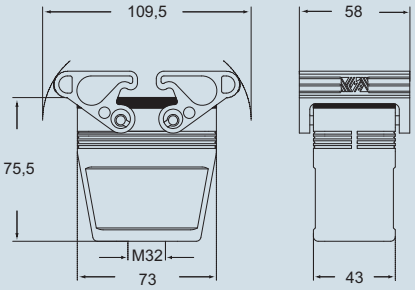


dimensions in mm

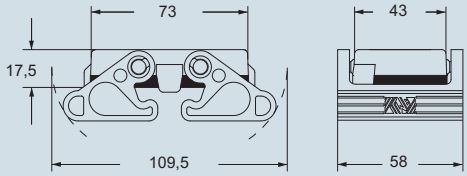
CHCN 10



MFVN 10 G32

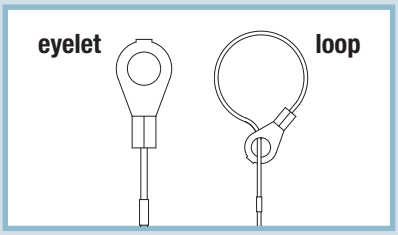


CHCN 10 G



Type 4/4X/12

IP65 EN 60529 IEC 60529



dimensions shown are not binding
and may be changed without notice

CH..N - MA..N and MH..N - MF..N enclosures size “77.27” LS-TYPE version

inserts:			page:
CD	40	poles + ⏚	57
CT, CTS (10A) *)	40	poles + ⏚	64
CDD	72	poles + ⏚	70
CDS	27	poles + ⏚	80
CSH	16	poles + ⏚	93
CNE, CSE	16	poles + ⏚	106
CCE	16	poles + ⏚	112
CSS	16	poles + ⏚	124
CT, CTSE (16A) *)	16	poles + ⏚	132
CQE	32	poles + ⏚	140
CQEE	40	poles + ⏚	146
CMCE	6+2 (aux)	poles + ⏚	150
CMSH	6+2 (aux)	poles + ⏚	151
CP	6	poles + ⏚	162
CX	6/36 and 12/2	poles + ⏚	170-171
CX	4/0 and 4/2	poles + ⏚	172
MIXO	4	modules	179-215

***) only in the CHIN 16 enclosure**

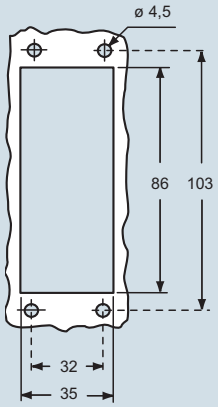
insert centre distance: **77,5 x 27 mm**

housings with double lever

hoods with 4 pegs

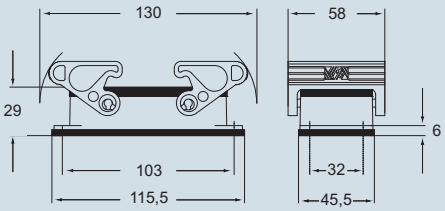
description	part No.	entry M	part No.	entry M
bulkhead mounting housing, with 2 levers	**CHIN 16**			
surface mounting housing, high construction, with 2 levers	**MAPN 16.32**	32		
with pegs, side entry			**MHON 16.32**	32
with pegs, side entry, high construction			**MFON 16.32**	32
with pegs, top entry			**MHVN 16.32**	32
with pegs, top entry, high construction			**MFVN 16.32**	32

panel cut-out for bulkhead mounting housing in mm

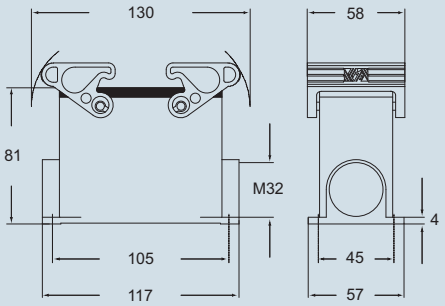


dimensions in mm

CHIN 16

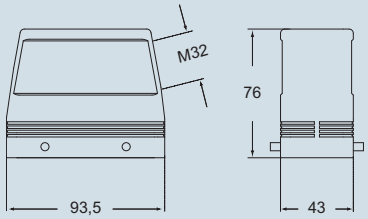


MAPN 16.32

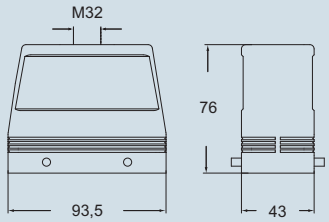


dimensions in mm

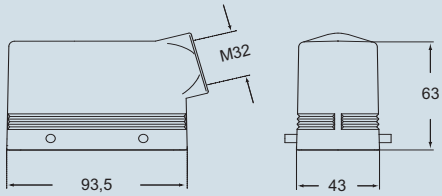
MFON 16.32



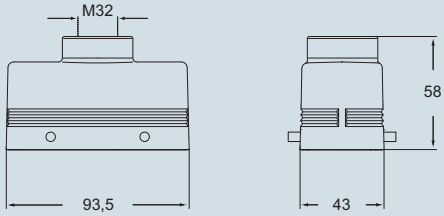
MFVN 16.32



MHON 16.32



MHVN 16.32



- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever (spare lever page 458)

c UL us Type 4/4X/12

EN 60529 IP65 IEC 60529

dimensions shown are not binding and may be changed without notice

inserts: page:

CD	40	poles + ⏚	57
CDD	72	poles + ⏚	70
CDS	27	poles + ⏚	80
CSH	16	poles + ⏚	93
CNE, CSE	16	poles + ⏚	106
CCE	16	poles + ⏚	112
CSS	16	poles + ⏚	124
CQE	32	poles + ⏚	140
CQEE	40	poles + ⏚	146
CMCE	6+2 (aux)	poles + ⏚	150
CMSH	6+2 (aux)	poles + ⏚	151
CP	6	poles + ⏚	162
CX	6/36 and 12/2	poles + ⏚	170-171
CX	4/0 and 4/2	poles + ⏚	172
MIXO	4	modules	179-215

insert centre distance:
77,5 x 27 mm

hoods with double lever

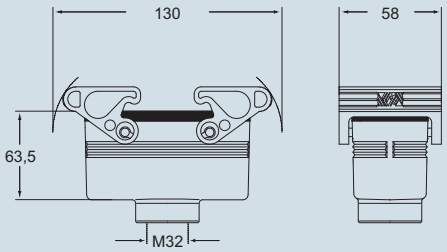
covers

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with 2 levers and gasket, top entry	**MHVN 16 G32**	32		
with 2 levers and gasket, top entry, high construction	**MFVN 16 G32**	32		
cover with pegs			**CHCN 16**	
cover with 2 levers				**CHCN 16 G**

- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever (spare lever page 458)

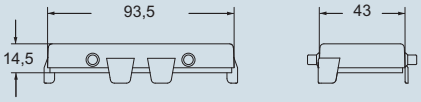
dimensions in mm

MHVN 16 G32

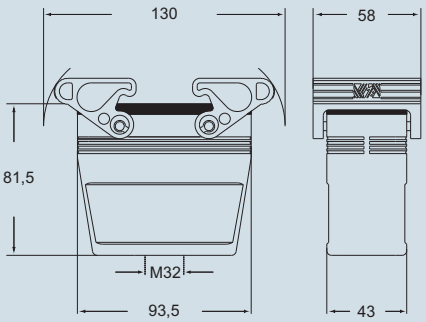


dimensions in mm

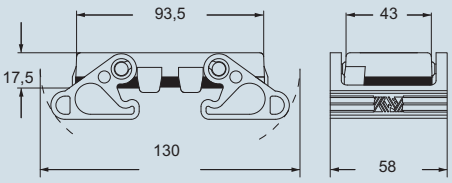
CHCN 16



MFVN 16 G32

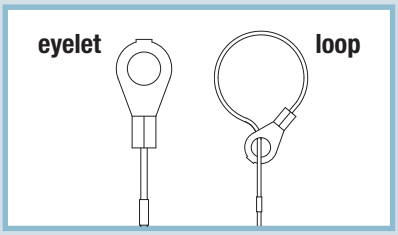


CHCN 16 G



Type 4/4X/12

EN 60529 IP65 IEC 60529



dimensions shown are not binding
and may be changed without notice

CH..N - MA..N and MH..N - MF..N enclosures size “104.27” LS-TYPE version

inserts: page:

CD	64	poles + ⏚	59
CT, CTS (10A) *)	64	poles + ⏚	65
CDD	108	poles + ⏚	72
CDS	42	poles + ⏚	81
CSH	24	poles + ⏚	94
CNE, CSE	24	poles + ⏚	107
CCE	24	poles + ⏚	113
CSS	24	poles + ⏚	125
CT, CTSE (16A) *)	24	poles + ⏚	133
CQE	46	poles + ⏚	141
CQEE	64	poles + ⏚	147
CMCE	10+2 (aux)	poles + ⏚	152
CMSH	10+2 (aux)	poles + ⏚	153
CX	4/8 and 6/6	poles + ⏚	173 and 175
MIXO	6	modules	179-215

***) only in the CHIN 24 enclosure**

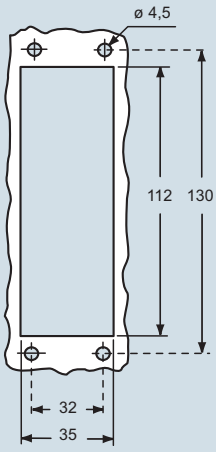
insert centre distance: **104 x 27 mm**

housings with double lever

hoods with 4 pegs

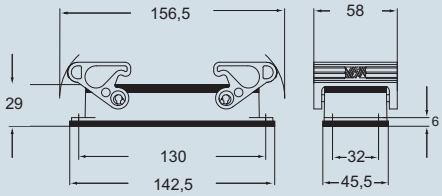
description	part No.	entry M	part No.	entry M
bulkhead mounting housing, with 2 levers	**CHIN 24**			
surface mounting housing, high construction, with 2 levers	**MAPN 24.32**	32		
with pegs, side entry			**MHON 24.32**	32
with pegs, side entry, high construction			**MFON 24.32**	32
with pegs, side entry			**MHVN 24.32**	32
with pegs, side entry, high construction			**MFVN 24.32**	32

panel cut-out for bulkhead mounting housing in mm

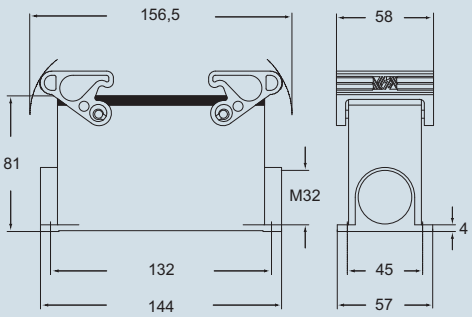


dimensions in mm

CHIN 24

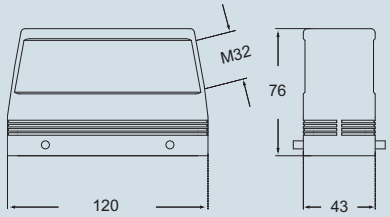


MAPN 24.32

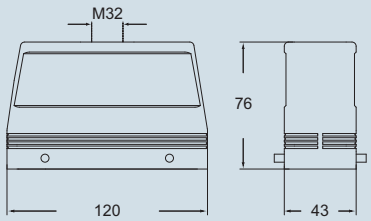


dimensions in mm

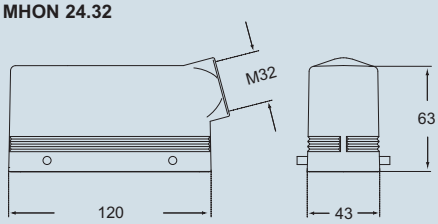
MFON 24.32



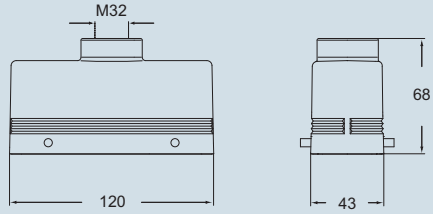
MFVN 24.32



MHON 24.32



MHVN 24.32



- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever (spare lever page 458)

c UL us Type 4/4X/12

EN 60529 IP65 IEC 60529

dimensions shown are not binding and may be changed without notice

inserts: page:

CD	64	poles + ⏚	59
CDD	108	poles + ⏚	72
CDS	42	poles + ⏚	81
CSH	24	poles + ⏚	94
CNE, CSE	24	poles + ⏚	107
CCE	24	poles + ⏚	113
CSS	24	poles + ⏚	125
CQE	46	poles + ⏚	141
CQEE	64	poles + ⏚	147
CMCE	10+2 (aux)	poles + ⏚	152
CMSH	10+2 (aux)	poles + ⏚	153
CX	4/8 and 6/6	poles + ⏚	173 and 175
MIXO	6	modules	179-215

insert centre distance:
104 x 27 mm

hoods with double lever

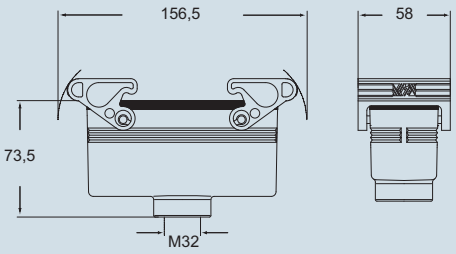
covers

description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
with 2 levers and gasket, top entry	**MHVN 24 G32**	32		
with 2 levers and gasket, top entry, high construction	**MFVN 24 G32**	32		
covers with pegs			**CHCN 24**	
covers with 2 levers				**CHCN 24 G**

- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever (spare lever page 458)

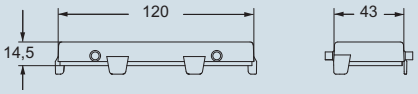
dimensions in mm

MHVN 24 G32

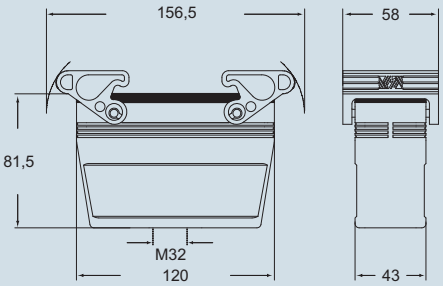


dimensions in mm

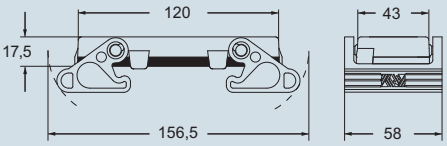
CHCN 24



MFVN 24 G32

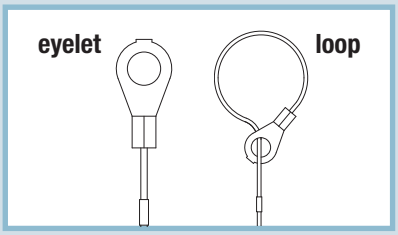


CHCN 24 G

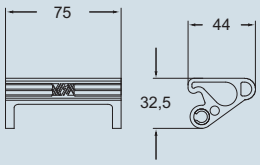
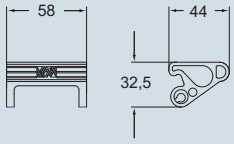


Type 4/4X/12

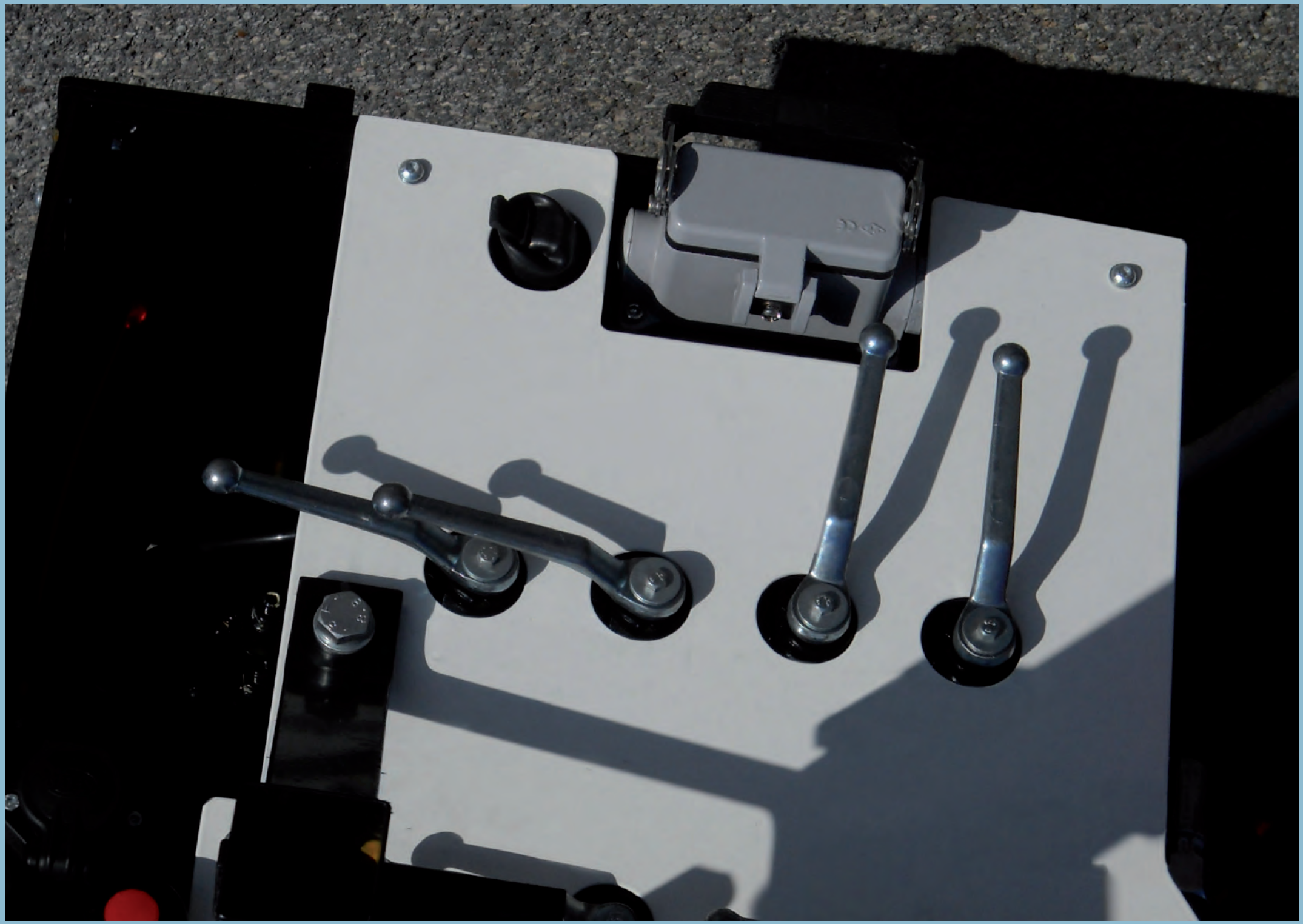
IP65 EN 60529 IEC 60529



dimensions shown are not binding
and may be changed without notice

	spare part lever	spare part lever
description	part No.	part No.
for “44.27” enclosures with levers	**CR 06 LN**	
for “57.27”, “77.27”, “104.27” enclosures with levers		**CR LN**
	dimensions in mm	dimensions in mm
	CR 06 LN	**CR LN**
		

dimensions shown are not binding
and may be changed without notice



COB series

Panel supports for multipole connectors

Use

The COB system makes it possible to use multipole connectors within electric panels without the traditional metallic enclosures as protection is assured by the electric panel itself or other container.

(**N.B.**: the connectors must not be handled live).

The COB system may be assembled in the three following ways:

- On panels with window snap fastening device **(Figure 1).**
- On DIN EN 60715 rails, both lengthways and crossways to the support **(Figure 2).**
- On fixed panels using screws **(Figure 2).**

The COB system offers the following advantages:

- Reduction in cost and space with respect to metallic enclosures and traditional terminal boards.
- Possibility of rewiring at the connector bench with connected devices.
- Easy wiring inspection and tests with coupled connectors, thanks to rear access to the inserts via the turnover device.
- Fast mounting in panels thanks to the snap fastening device on the DIN EN 60715 rails.
- Sturdy support structure, specific to the size of each insert and does not require any preparation.
- Broad passage for housing of conductor cables.
- Mobile parts prearranged for the clamping of bundles of conductors of multipolar cables to prevent contact with the connector contacts.

The COB system satisfies the most varied installation needs thanks to the interchangeability of the connector inserts. The inserts can be installed as per the following table:

Supports for connector inserts				
types	COB TCQ			
fixed	**COB 06 BC**	**COB 10 BC**	**COB 16 BC**	**COB 24 BC**
types	**COB TSF** and **COB TSFS**			
mobile	**COB 06 CMS**	**COB 10 CMS**	**COB 16 CMS**	**COB 24 CMS**
Insert centre distance				
mm	44 x 27	57 x 27	49.5 x 16 * 66 x 16 * 77.5 x 27	104 x 27
Insert series and polarity + ⏚				
CD			15 *, 25 *, 40	64
CDD	24	42	38 *, 72	108
CDA, CSAH			10 *, 16 *	
CDC			10 *, 16 *	
CDS	9	18	27	42
CCE	6	10	16	24
CQE	10	18	32	46
CQEE			40	64
CNE	6	10	16	24
CSH	6	10	16	24
CSE	6	10	16	24
CMCE		3 + 2	6 + 2	10 + 2 16 + 2
CME		3 + 2	6 + 2	10 + 2 16 + 2
CMSH		3 + 2	6 + 2	10 + 2
CP			6	
CX			4/0, 4/2 6/36 12/2	4/8 6/6
MIXO	2 modules	3 modules	4 modules	6 modules

* mounting via adaptor plates described on page 464

In addition, the COB..BC supports may house the ILME CR…AD1 and CR…AD2 series plates for the D-SUB inserts (microconnectors).

COB TCQ + **COB TSFS** (**COB...CMS**, alternative)

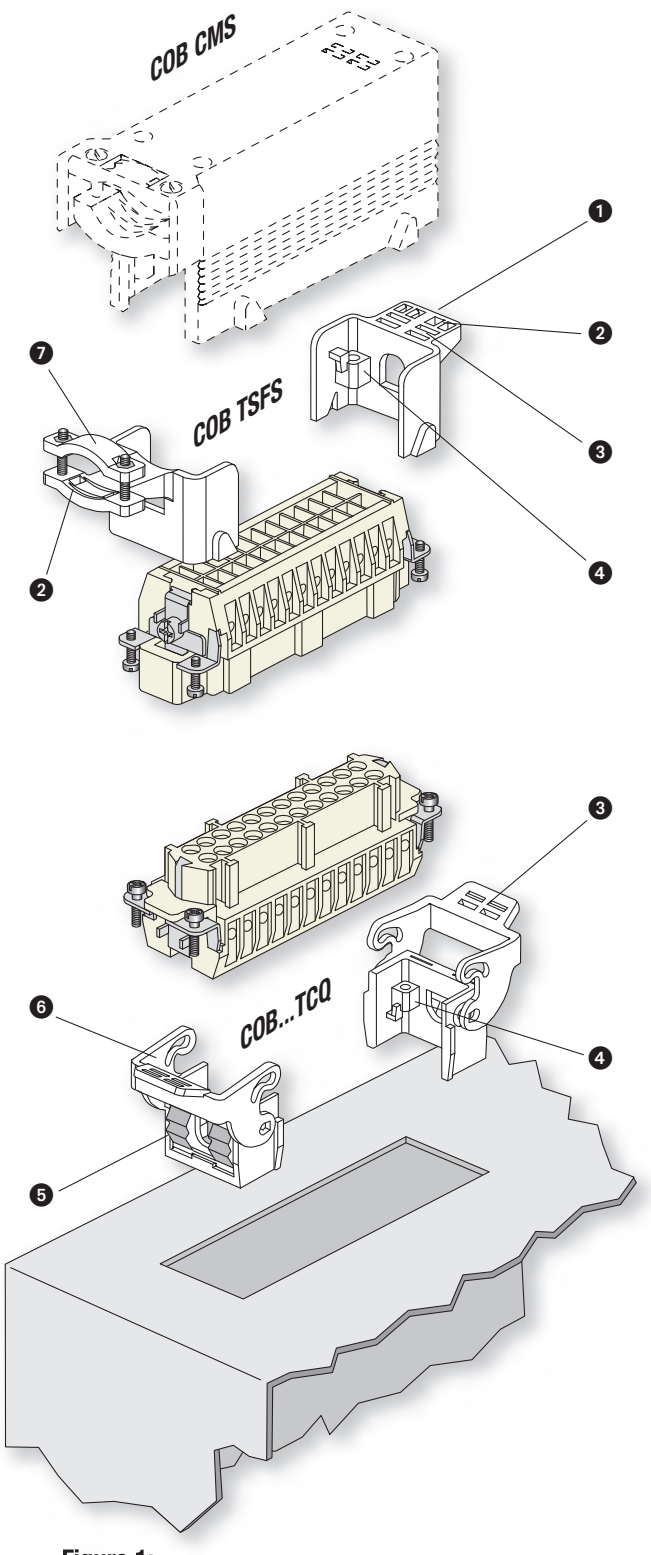


Figure 1:
- Snap fastening in window *, panels or control panels.

COB series

Panel supports for multipole connectors

Characteristics

❶ **COB, TSF** or **COB TSFS** insert support blocks (with cable clamp) for mobile mounting, in self-extinguishing thermoplastic material.

❷ Passage for cable support bands (from 2,2 to 4,8 mm).

❸ Locations for insertion of identification tags (size 9 x 20 mm).

❹ Threaded metallic inserts for fixing the inserts with normal screws and possibility of coded connection with the use of specific pins (ILME part: CR 20, CRM, CRF, CR 20 CX, CRM CX and CRF CX) when identical connectors are used.

❺ **COB TCQ** insert carrier block for window mounting in self-extinguishing thermoplastic material, with spring snap fastening.

❻ Locking device with levers in self-extinguishing thermoplastic material for insert coupling.

❼ Sturdy cable clamp for clamping multipolar cables with a diameter of up to 25 mm or bundles of unipolar conductors.

❽ **COB…CMS** enclosure for mobile mounting, in self-extinguishing thermoplastic material, IP20 protection rating.

❾ Free passage for mounting wired insert with conductor cables.

❿ Mobile blocks (in COB…BC kit) in self-extinguishing thermoplastic material, with quick release device for insert turnover, wiring operations, verifications and maintenance.

⓫ **COB…BC** panel support for bulkhead mounting in self-extinguishing thermoplastic material, sturdy block support structure, with broad passage for housing of conductor cables.

⓬ Holes for fixed fastening with screws without DIN EN 60715 rails.

⓭ Snap fastening on DIN EN 60715 rails, both lengthways and crossways to the support Figure.

⓮ Turnover pins that can be released and allow the use of prewired inserts.

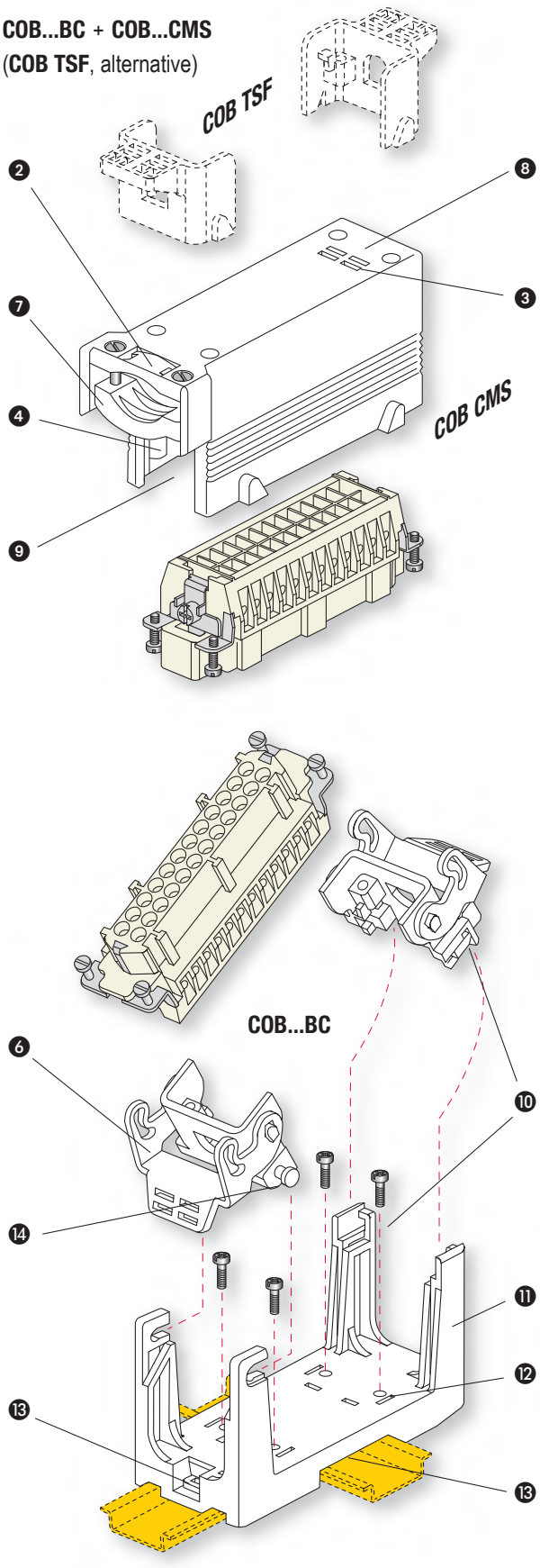


Figure 2:
- snap fastening on DIN EN 60715 rails both lengthways and crossways to the support
- installation in panels or control panels, with fixed fastening with screws.

COB panel supports for multipole connectors

inserts: page:

CD .....40, 64 poles + ⏚ 57 and 59
CDD ..... 24, 42, 72, 108 poles + ⏚ 67-72
CDS ..... 9, 18, 27, 42 poles + ⏚ 78-81
CSH ..... 6, 10, 16, 24 poles + ⏚ 91-94
CNE, CSE ..... 6, 10, 16, 24 poles + ⏚ 104-107
CCE ..... 6, 10, 16, 24 poles + ⏚ 110-113
CSS ..... 6, 10, 16, 24 poles + ⏚ 122-125
CQE..... 10, 18, 32, 46 poles + ⏚ 138-141
CQEE ..... 40, 64 poles + ⏚ 146-147
CMCE.... 3+^{2}, 6+^{2}, 10+^{2}, 16+^{2} poles + ⏚ 148-158
CME ..... 3+^{2}, 6+^{2}, 10+^{2}, 16+^{2} poles + ⏚ 149-159
CMSH ..... 3+^{2}, 6+^{2}, 10+^{2} poles + ⏚ 149-153
CP ..... 6 poles + ⏚ 162
CX..... 8/24, 6/36, 12/2 poles + ⏚ 169-171
CX ..... 4/0, 4/2, 4/8, 6/6 poles + ⏚ 172-175
MIXO..... 2, 3, 4, 6 modules 179-215

insert centre distance:
44 x 27 mm, 57 x 27 mm
77,5 x 27 mm, 104 x 27 mm

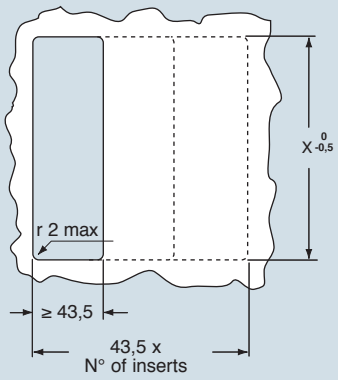
connector carrier for faceplate mounting in window *, snap fastening

connector carrier baseplate for mounting on DIN EN 60715 rail or fixed mounting using screws

description	part No.	part No.
kit with 2 elements, for coupling of inserts with screw fixing centre distance (short side = 27 mm)	**COB TCQ**	
kit comprising frame and mobile blocks, for insert coupling: - with screw fixing centre distance of 44 x 27 mm - with screw fixing centre distance of 57 x 27 mm - with screw fixing centre distance of 77,5 x 27 mm - with screw fixing centre distance of 104 x 27 mm		**COB 06 BC** **COB 10 BC** **COB 16 BC** **COB 24 BC**

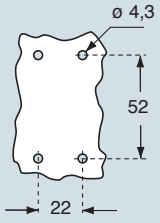
panel cut-out in mm

COB TCQ
window size on plate thickness 1,3-3 mm



for insert coupling:	X 0 -0,5
with centre distance 44 x 27 mm	65
with centre distance 57 x 27 mm	78
with centre distance 77.5 x 27 mm	98
with centre distance 104 x 27 mm	125

COB...BC

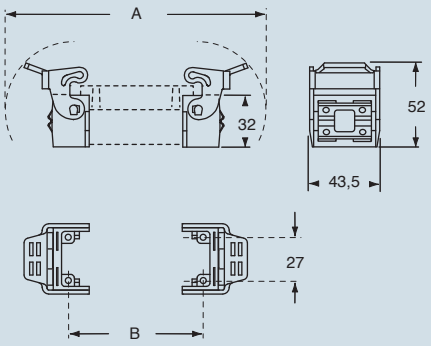


It is the responsibility of the installer to verify the continuity of the PE protective earth circuit ⏚ between the two halves of the connector.

dimensions shown are not binding
and may be changed without notice

dimensions in mm

COB TCQ

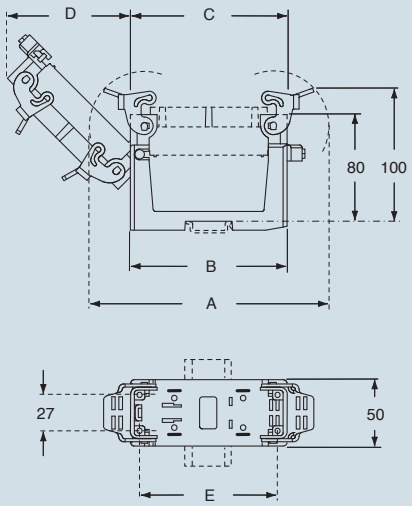


COB TCQ

for inserts	A	B
with centre distance 44 x 27 mm	120	44
with centre distance 57 x 27 mm	133	57
with centre distance 77.5 x 27 mm	153,5	77,5
with centre distance 104 x 27 mm	180	104

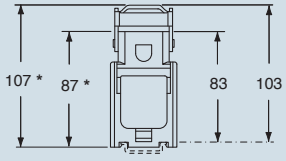
dimensions in mm

COB BC
overall dimensions with longitudinal DIN rails



part No.	A	B	C	D	E
COB 06 BC	120	91,5	58	50	44
COB 10 BC	133	91,5	71	59,5	57
COB 16 BC	153,5	91,5	91,5	74	77,5
COB 24 BC	180	118	118	93	104

overall dimensions without DIN rails (values with “asterisk”) overall dimensions with longitudinal DIN rails



COB panel supports for multipole connectors

inserts: page:

CD .....40, 64 poles + ⏚ 57 and 59
CDD ..... 24, 42, 72, 108 poles + ⏚ 67-72
CDS ..... 9, 18, 27, 42 poles + ⏚ 78-81
CSH ..... 6, 10, 16, 24 poles + ⏚ 91-94
CNE, CSE ..... 6, 10, 16, 24 poles + ⏚ 104-107
CCE ..... 6, 10, 16, 24 poles + ⏚ 110-113
CSS ..... 6, 10, 16, 24 poles + ⏚ 122-125
CQE..... 10, 18, 32, 46 poles + ⏚ 138-141
CQEE ..... 40, 64 poles + ⏚ 146-147
CMCE.... 3+^{2}, 6+^{2}, 10+^{2}, 16+^{2} poles + ⏚ 148-158
CME ..... 3+^{2}, 6+^{2}, 10+^{2}, 16+^{2} poles + ⏚ 149-159
CMSH ..... 3+^{2}, 6+^{2}, 10+^{2} poles + ⏚ 149-153
CP ..... 6 poles + ⏚ 162
CX..... 8/24, 6/36, 12/2 poles + ⏚ 169-171
CX ..... 4/0, 4/2, 4/8, 6/6 poles + ⏚ 172-175
MIXO..... 2, 3, 4, 6 modules 179-215

insert centre distance:
44 x 27 mm, 57 x 27 mm
77,5 x 27 mm, 104 x 27 mm

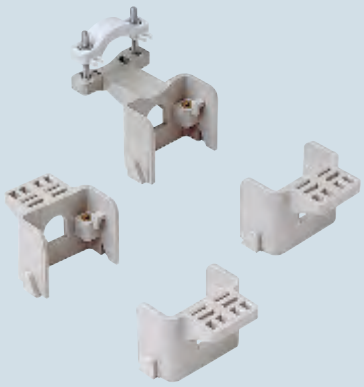
It is the responsibility of the installer to verify the continuity of the PE protective earth circuit ⏚ between the two halves of the connector.

Optional earth jumpers

see page 366

dimensions shown are not binding
and may be changed without notice

insert carrier blocks for mobile mounting



description

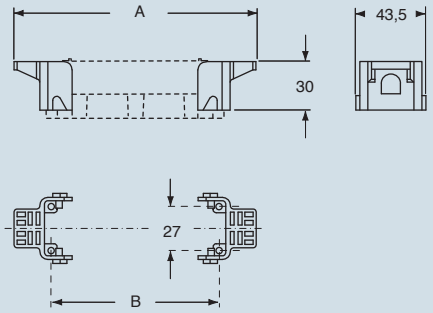
kit with 2 elements, for coupling of inserts
with screw fixing centre distance (short side = 27 mm)
- with handle for cable support bands
- with handle for cable support or cable clamp bands

part No.

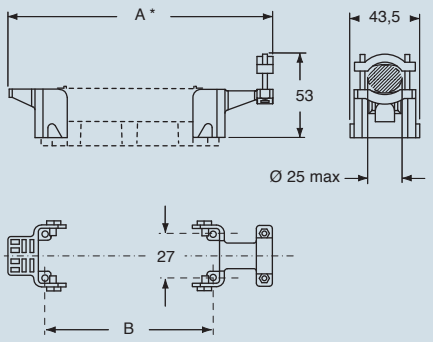
COB TSF
COB TSFS

dimensions in mm

COB TSF



COB TSFS



for inserts	A	A*	B
with centre distance of 44 x 27 mm	90	104	44
with centre distance of 57 x 27 mm	103	117	57
with centre distance of 77,5 x 27 mm	123,5	137,5	77,5
with centre distance of 104 x 27 mm	150	164	104

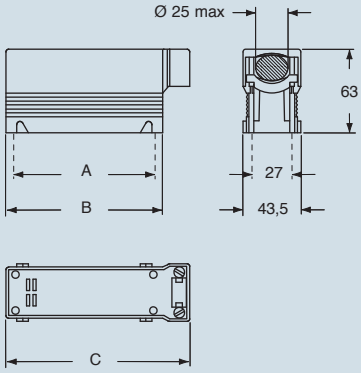
insert carrier insulated enclosures for mobile mounting

part No.

COB 06 CMS
COB 10 CMS
COB 16 CMS
COB 24 CMS

dimensions in mm

COB CMS



part No.	A	B	C
COB 06 CMS	44	58	74
COB 10 CMS	57	71	87
COB 16 CMS	77,5	91,5	107,5
COB 24 CMS	104	118	134

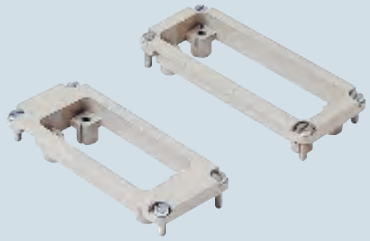
COB panel supports for multipole connectors

inserts: page:

CD ..... 15, 25 poles + ⏚ 55-56
CDD ..... 38 poles + ⏚ 68
CSAH..... 10, 16 poles + ⏚ 87-88
CDA ..... 10, 16 poles + ⏚ 98-100
CDC ..... 10, 16 poles + ⏚ 99-101
MIXO ..... 1 module 179-215

insert centre distance:
49,5 x 16 mm
66 x 16 mm

Adaptor plates for insert mounting



levers for coupling with metallic enclosures

description	part No.	part No.
mounting on COB series articles (see below) for 1 insert with centre distance of 49,5 x 16 mm	**CR 15/16**	
mounting on COB series articles (see below) for 1 insert with centre distance of 66 x 16 mm	**CR 25/16**	
kit with 2 elements, to be mounted instead of the standard levers to be coupled with: COB TCQ and COB...BC [1]		**COB L**

[1] They allow the mounting of aluminium hoods with 4 pegs, size 55.27, 77.27 and 104.27

Adaptor plates

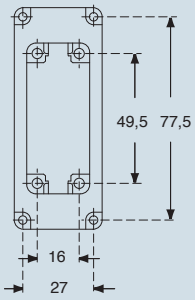
- They allow the inserting of inserts of "49.16" and "66.16" on the following COB series articles: COB TCQ, COB 16 BC, COB TSF, COB TSFS, COB 16 CMS

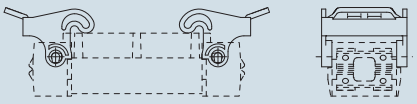
It is the responsibility of the installer to verify the continuity of the PE protective earth circuit ⏚ between the two halves of the connector.

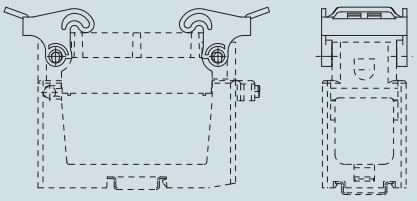
dimensions shown are not binding
and may be changed without notice

dimensions in mm

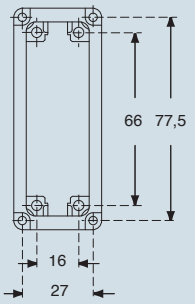
CR 15/16

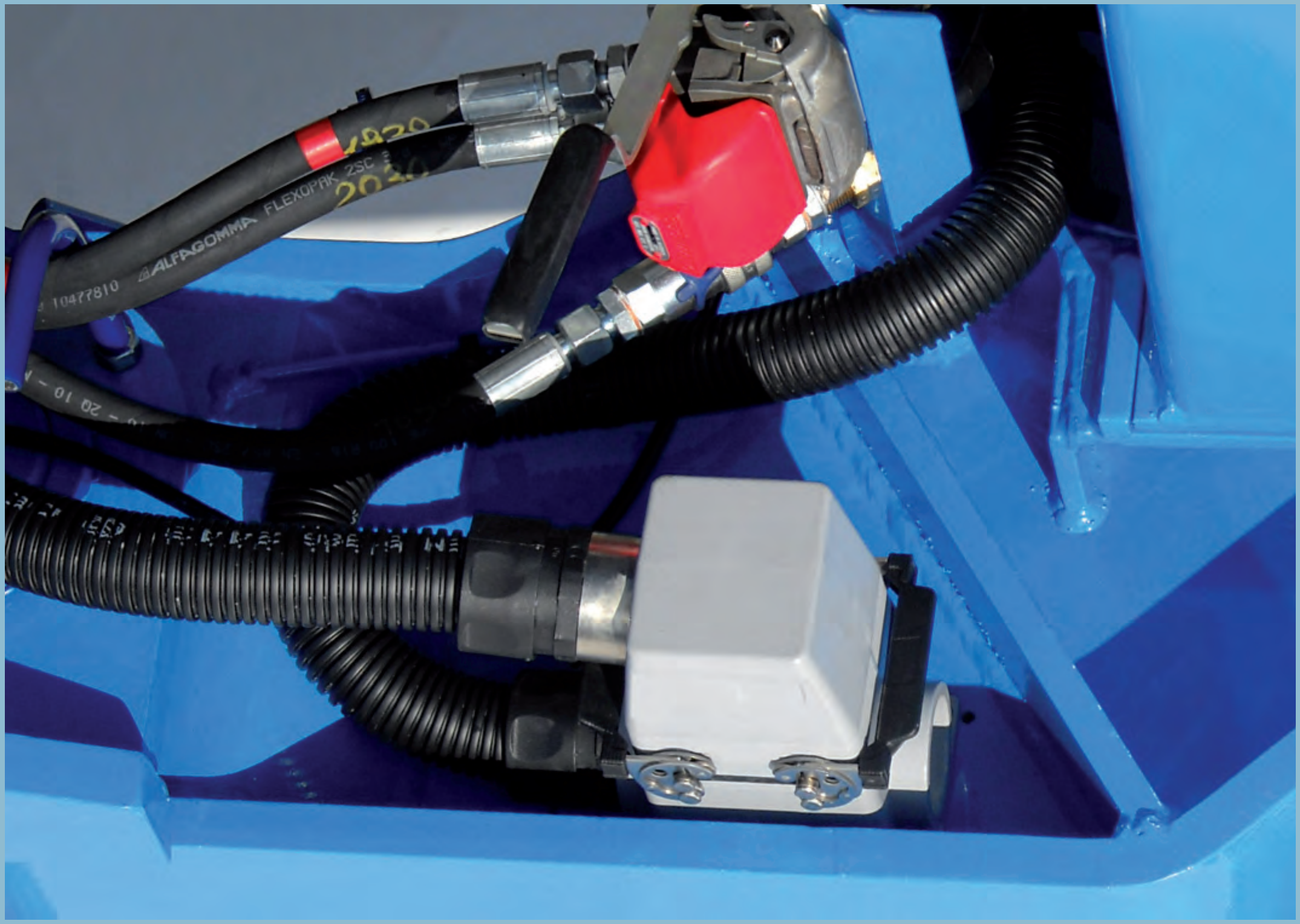






CR 25/16



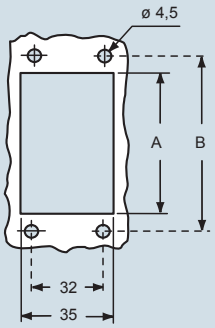

ALFAGOMMA FLEXOPAK 2SC

inserts:	page:
CD .....40, 64 poles + ⏚	57 and 59
CDD ..... 24, 42, 72, 108 poles + ⏚	67-72
CDS ..... 9, 18, 27, 42 poles + ⏚	78-81
CSH ..... 6, 10, 16, 24 poles + ⏚	91-94
CNE, CSE ..... 6, 10, 16, 24 poles + ⏚	104-107
CCE ..... 6, 10, 16, 24 poles + ⏚	110-113
CSS ..... 6, 10, 16, 24 poles + ⏚	122-125
CQE..... 10, 18, 32, 46 poles + ⏚	138-141
CQEE ..... 40, 64 poles + ⏚	146-147
CMCE.... 3+^{2}, 6+^{2}, 10+^{2}, 16+^{2} poles + ⏚	148-158
CME ..... 3+^{2}, 6+^{2}, 10+^{2}, 16+^{2} poles + ⏚	149-159
CMSH ..... 3+^{2}, 6+^{2}, 10+^{2} poles + ⏚	149-153
CP ..... 6 poles + ⏚	162
CX..... 8/24, 6/36, 12/2 poles + ⏚	169-171
CX ..... 4/0, 4/2, 4/8, 6/6 poles + ⏚	172-175
MIXO..... 2, 3, 4, 6 modules	179-215

insert centre distance:
44 x 27 mm, 57 x 27 mm
77,5 x 27 mm, 104 x 27 mm

[1] may be combined also with enclosures:
- surface mounting housings (CHP/MHP...)
- hoods with lever and gasket (LG)

panel cut-out for bulkhead mounting housings in mm



part No.	A	B
CHI 06 LCH - CHI 06 L - C7I 06 L	52	70
CHI 10 CH - CHI 10 - C7I 10	65	83
CHI 16 CH - CHI 16 - C7I 16	86	103
CHI 24 CH - CHI 24 - C7I 24	112	130

N.B.:
The enclosures ensure IP66 protection rating when mated and locked with the closing levers.

EN 60529 IP66 IEC 60529

dimensions shown are not binding
and may be changed without notice

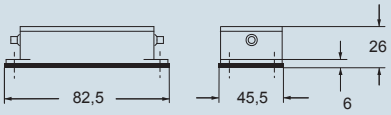
bulkhead mounting housings with 2 or 4 pegs

bulkhead mounting housings

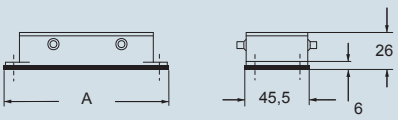
description	part No.	part No. C-TYPE	part No. C7
size “44.27”	**CHI 06 LCH**	**CHI 06 L**	**C7I 06 L**
size “57.27” [1]	**CHI 10 CH**	**CHI 10**	**C7I 10**
size “77.27” [1]	**CHI 16 CH**	**CHI 16**	**C7I 16**
size “104.27” [1]	**CHI 24 CH**	**CHI 24**	**C7I 24**

dimensions in mm

CHI LCH



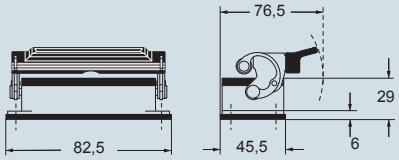
CHI C



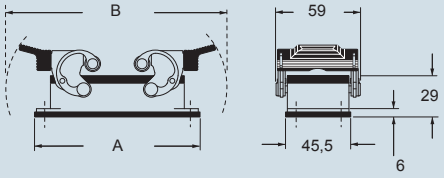
part No.	A
CHI 10 CH	95,5
CHI 16 CH	115,5
CHI 24 CH	142,5

dimensions in mm

CHI L

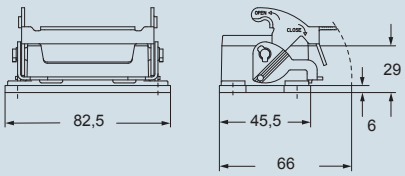


CHI

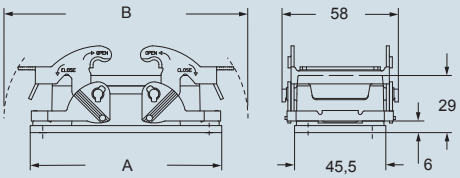


part No.	A	B
CHI 10	95,5	135
CHI 16	115,5	153
CHI 24	142,5	179,5

C7I L



C7I



part No.	A	B
C7I 10	95,5	122
C7I 16	115,5	142,5
C7I 24	142,5	169

inserts: page:

CD	64	poles + ⏚	59
CDD	108	poles + ⏚	72
CDS	42	poles + ⏚	81
CSH	24	poles + ⏚	94
CNE, CSE	24	poles + ⏚	104
CCE	24	poles + ⏚	113
CSS	24	poles + ⏚	125
CQE	46	poles + ⏚	141
CMCE	10+2 (aux)	poles + ⏚	152
CMSH	10+2 (aux)	poles + ⏚	153
CX	4/8 and 6/6	poles + ⏚	173 and 175
MIXO	6	modules	179-215

insert centre distance:
104 x 27 mm

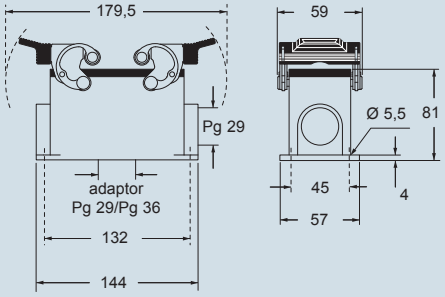
surface mounting housings with 2 levers, bottom entry

description	part No.	entry Pg
with levers, high construction, bottom entry with metal adaptor Pg 29 (hole)/Pg 36 (thread)	**CAP 24 G36**	36

N.B.:
The enclosures ensure IP66 protection rating when mated and locked with the closing levers.

dimensions in mm

CAP



EN 60529 IP66 IEC 60529

dimensions shown are not binding
and may be changed without notice

enclosures:

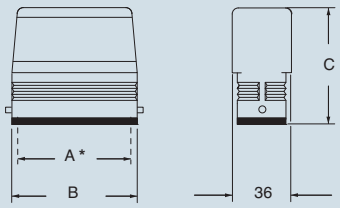
size “49.16” ..... **from page 230**
size “66.16” ..... **from page 233**
size “44.27” ..... **from page 240**
size “57.27” ..... **from page 244**
size “77.27” ..... **from page 250**
size “104.27” ..... **from page 258**

hoods without entry, to be pierced

description	part No. with 2 pegs	part No. with 4 pegs
with pegs for levers		
- used with enclosures size “49.16”	**CZAC 15 L**	
- used with enclosures size “66.16”	**CZAC 25 L**	
- used with enclosures size “66.40”		**CAC 50**
- used with enclosures size “44.27”	**CAC 06 L**	
- used with enclosures size “57.27”	**CAC 10 L**	**CAC 10**
- used with enclosures size “77.27”	**CAC 16 L**	**CAC 16**
- used with enclosures size “104.27”	**CAC 24 L**	**CAC 24**
- used with enclosures size “77.62”	**CAC 32 L**	**CAC 32**
- used with enclosures size “104.62”	**CAC 48 L**	

dimensions in mm

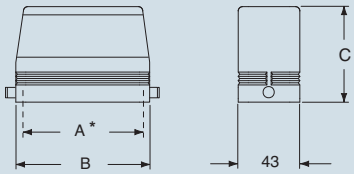
CZAC L



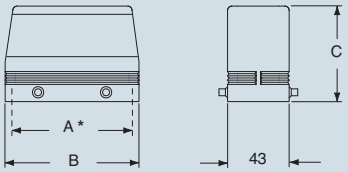
part No.	A *	B	C
CZAC 15 L	49,5	63	64,5
CZAC 25 L	66	79,5	70,5

* screw fixing centre distance

CAC L



CAC



part No.	A *	B	C
CAC 50	66	82	75
CAC 06 L	44	60	72
CAC 10 - CAC 10 L	57	73	70
CAC 16 - CAC 16 L	77,5	93,5	76
CAC 24 - CAC 24 L	104	120	76
CAC 32 - CAC 32 L	77,5	93,5	94
CAC 48 L	104	121	98

* screw fixing centre distance

c UL us Type 4/4X/12

dimensions shown are not binding
and may be changed without notice

Special design

inserts: page:

CDD	42	poles + ⏚	69
CDS	18	poles + ⏚	79
CSH	10	poles + ⏚	92
CNE, CSE	10	poles + ⏚	105
CCE	10	poles + ⏚	111
CSS	10	poles + ⏚	123
CQE	18	poles + ⏚	139
CMCE	3+2 (aux)	poles + ⏚	148
CMSH	3+2 (aux)	poles + ⏚	149
CX	8/24	poles + ⏚	169
MIXO	3	modules	179 - 215

insert centre distance:
57 x 27 mm

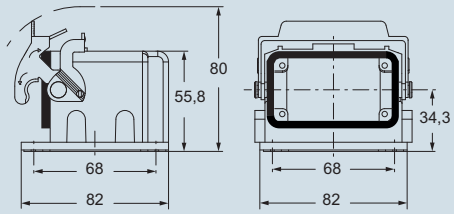
angled bulkhead mounting housings with single lever

lever in stainless steel

NEW

description	part No.
with lever, without cable gland entry [1) 3)]	**CVI 10 LA**
with lever, with cable gland entry, closed bulkhead [2)]	

dimensions in mm



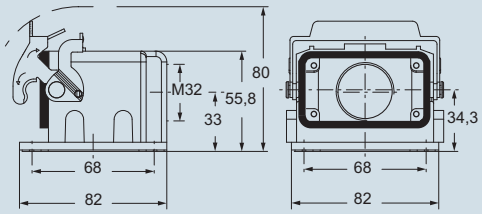
angled bulkhead mounting housings with single lever

lever in stainless steel

NEW

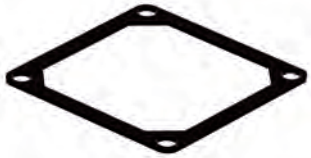
part No.	entry M
MVI 10 LAP32	32

dimensions in mm



[1)] Flange gasket to be purchased separately.
part No.: **CR 10 MO.**

CR 10 MO gasket



[2)] Be used only with a complete cable gland (to be purchased separately).
Versions with M25 or Pg 21 entry on request.

[3)] Kit with earthing contact, comprising a special screw and wire-terminals for 6 mm² earthing conductors (for the additional connection of the upper enclosure half) part No.: **CR MOT**

Hoods from page 246

N.B.:
The enclosures ensure IP66 protection rating when mated and locked with the closing lever.

Following flange versions available on request:
73 x 73, 78 x 78, 80 x 80, 98 x 98 mm

EN 60529 IP66 IEC 60529

dimensions shown are not binding
and may be changed without notice

enclosures:
size “77.27”
size “104.27”

Note:
cannot be used with T-TYPE series

cable passing hoods
degree of protection IP54

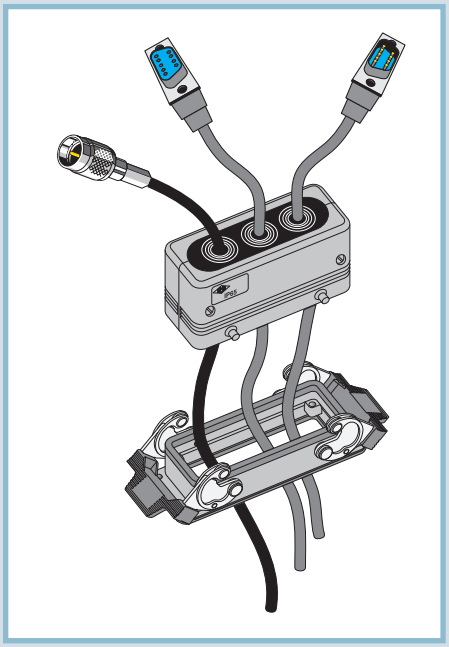
description	part No.	size
with pegs for two levers - 3 holes for round cables Ø 5 ÷ 13.5 mm - 4 holes for round cables Ø 5 ÷ 13.5 mm	**CYR 16.3** **CYR 24.4**	77.27 104.27

CYR enclosures for round cables

The CYR enclosures are used in installations that require a passage for round cables for data transmission (e.g. computers or PLC) via equipment such as command or control panels, ensuring a good condition of the cable connections.

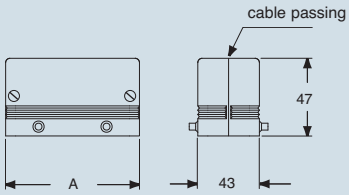
The enclosures are in two parts and have sealing gaskets to preserve the degree of protection of the equipment. The enclosures also contain a rapid cable block device.

The CYR 16.3 and 24.4 can be used with the **bulkhead mounting housings with 2 levers** respectively.



Type 12

dimensions in mm



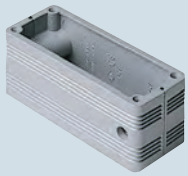
part No.	A	grommet entry	nr.	size
CYR 16.3	93,5	ø 5 / 13,5	3	77,27
CYR 24.4	120	ø 5 / 13,5	4	104,27

dimensions shown are not binding
and may be changed without notice

enclosures:
size “77.27”

Note:
cannot be used with T-TYPE series and IP68 series

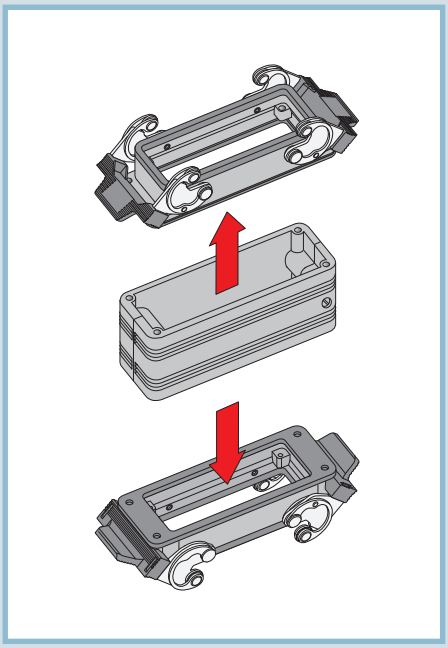
enclosures for in-line joints
degree of protection IP65



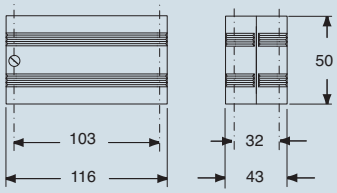
description	part No.
without housings (to be ordered separately) made in two halves	**CYG 16**

CYG 16 in-line joint
- The joint is made with the CYG 16 enclosure and two bulkhead housings “size 77.27” with one or two levers (to be ordered separately).
- The joint is ideal for use with extension connections and/or as adaptor.
- Made in two halves to facilitate conductor cabling.
- Two inserts in various combinations may be inserted in the joint (to be ordered separately):

● female/female inserts (as adaptor joint)
● male/male inserts (as adaptor joint)
● female/male inserts (as extension joint)



dimensions in mm



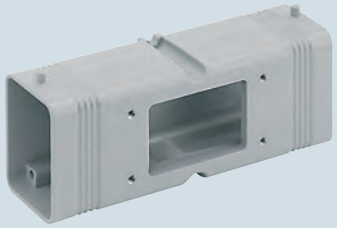
Type 4/4X/12

dimensions shown are not binding
and may be changed without notice

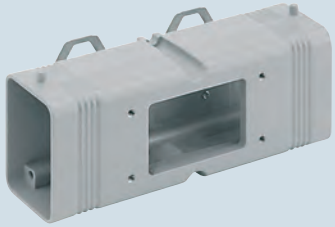
enclosures:
size “44.27”
size “57.27”

- degree of protection IP65
  (according to EN 60529)

1 branch-off T-BOX coupling



1 branch-off T-BOX coupling to be fitted on DIN rails



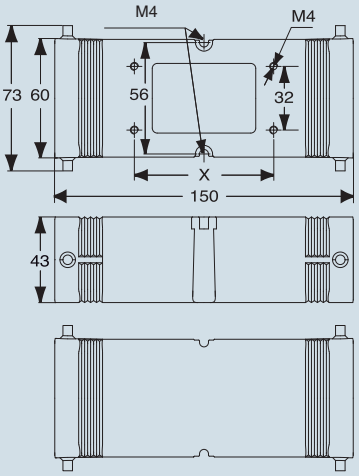
description	part No.	part No.
for 2 Ⓒ hoods with lever and gasket “44.27” size and one housing “44.27” Ⓐ size	**CYG 06H06**	
for 2 Ⓒ hoods with lever and gasket “44.27” size and one housing “57.27” Ⓐ size	**CYG 06H10**	
for 2 Ⓒ hoods with lever and gasket “44.27” size and one housing “44.27” Ⓐ size		**CYG 06H06D**
for 2 Ⓒ hoods with lever and gasket “44.27” size and one housing “57.27” Ⓐ size		**CYG 06H10D**

How to use the CYG 06H branch coupling

The cables are branched off by using the CYG 06H coupling in the 1 or 2 branch-off versions.
Multi-pole inserts “44.27” size can be fitted inside the two side recesses.
The entire unit can be used with one lever hoods complete with connector inserts.
The front faces can be fitted with “44.27” and/or “57.27” size bulkhead housings.
The coupling may also be used as an adapter by using a combination of different insert versions.
The CHC 06 LG cover may be used to close the coupling side faces.
In the branch-offs, the CSS series dual spring terminal inserts allow two wires to be connected without having to fit additional terminals inside the coupling.

dimensions in mm

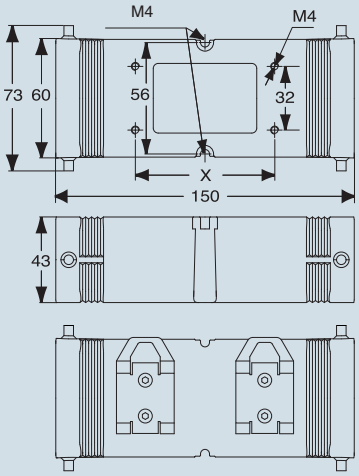
CYG...H06 / H10



part No.	X
CYG 06H06	70
CYG 06H10	83

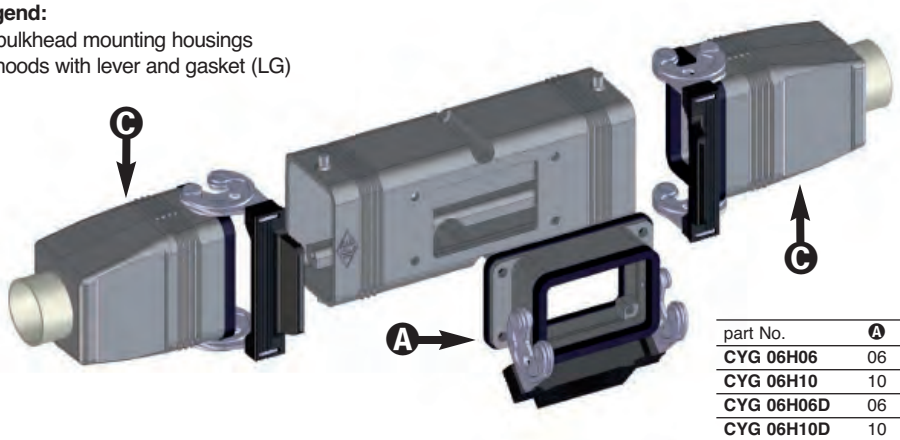
dimensions in mm

CYG...H06D / H10D



part No.	X
CYG 06H06D	70
CYG 06H10D	83

Legend:
Ⓐ bulkhead mounting housings
Ⓒ hoods with lever and gasket (LG)



part No.	Ⓐ	Ⓒ
CYG 06H06	06	06
CYG 06H10	10	06
CYG 06H06D	06	06
CYG 06H10D	10	06

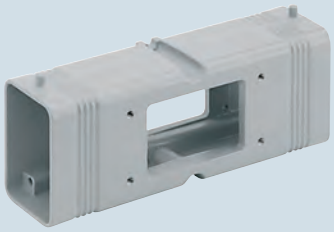
cULus Type 4/4X/12

dimensions shown are not binding
and may be changed without notice

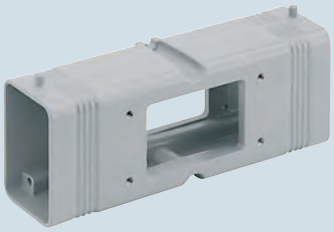
enclosures:
size “44.27”
size “57.27”

- degree of protection IP65
  (according to EN 60529)

2 branch-off T-BOX coupling



2 branch-off T-BOX coupling



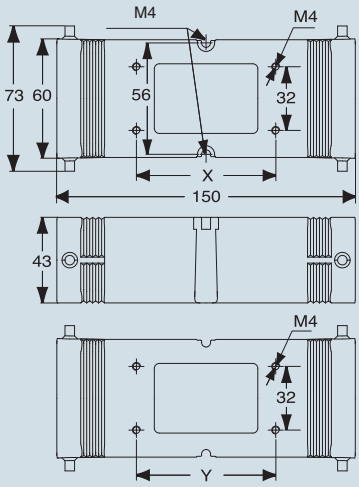
description	part No.	part No.
for 2 Ⓒ "44.27" size hoods with lever and gasket and 1 “44.27” Ⓑ size fixing side housing and one “57.27” Ⓐ size housing	**CYG 06H0610**	
for 2 Ⓒ "44.27" size hoods with lever and gasket and 1 “57.27” Ⓑ size fixing side housing and one “44.27” Ⓐ size enclosure	**CYG 06H1006**	
for 2 Ⓒ “44.27” size hoods with lever and gasket and two “44.27” Ⓐ and Ⓑ size housing		**CYG 06H0606**
for 2 Ⓒ “44.27” size hoods with lever and gasket and two “57.27” Ⓐ and Ⓑ size housing		**CYG 06H1010**

How to use the CYG 06H branch coupling

The cables are branched off by using the CYG 06H coupling in the 1 or 2 branch-off versions.
Multi-pole inserts “44.27” size can be fitted inside the two side recesses.
The entire unit can be used with one lever hoods complete with connector inserts.
The front faces can be fitted with “44.27” and/or “57.27” size bulkhead housings.
The coupling may also be used as an adapter by using a combination of different insert versions.
The CHC 06 LG cover may be used to close the coupling side faces.
In the branch-offs, the CSS series dual spring terminal inserts allow two wires to be connected without having to fit additional terminals inside the coupling.

dimensions in mm

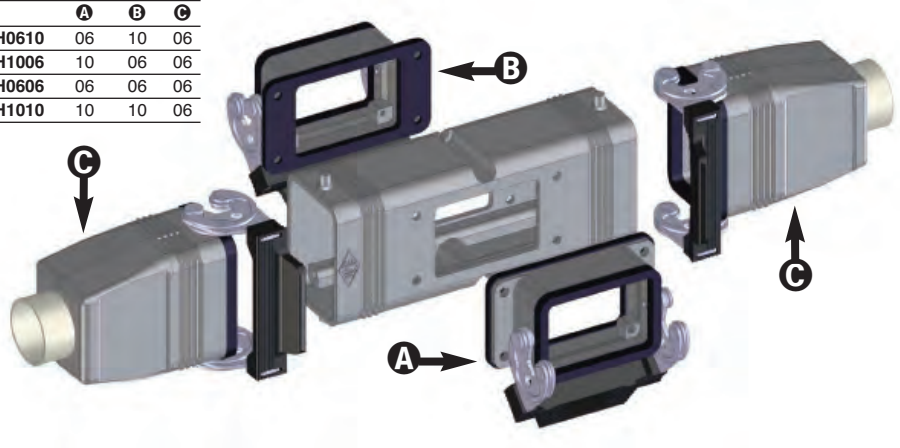
CYG...H0610 / H1006 and **CYG...H0606 / H1010**



part No.	X	Y
CYG 06H0610	83	70
CYG 06H1006	70	83
CYG 06H0606	70	70
CYG 06H1010	83	83

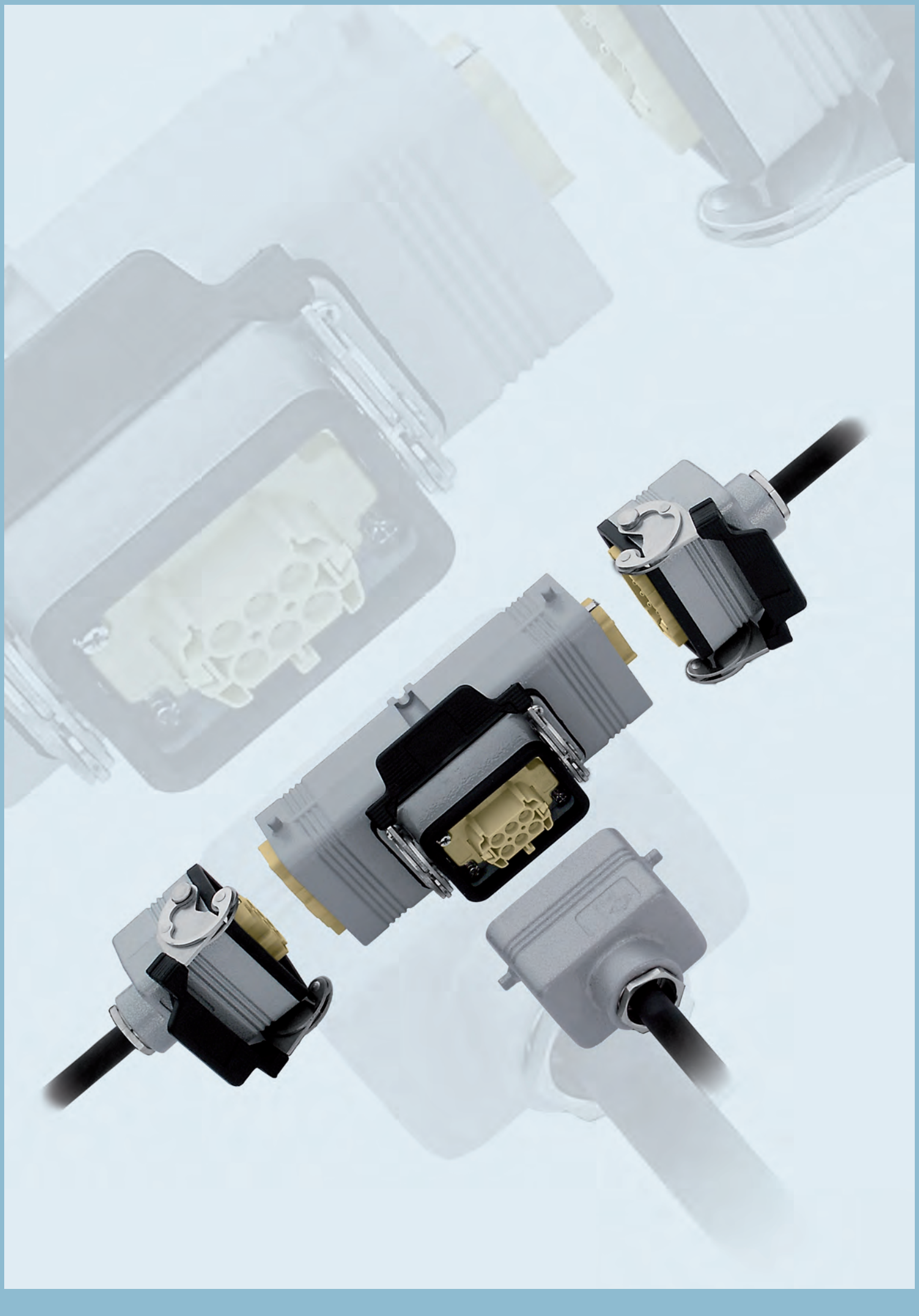
Legend:
Ⓐ bulkhead mounting housings
Ⓑ bulkhead mounting housings
Ⓒ hoods with lever and gasket (LG)

part No.	Ⓐ	Ⓑ	Ⓒ
CYG 06H0610	06	10	06
CYG 06H1006	10	06	06
CYG 06H0606	06	06	06
CYG 06H1010	10	10	06



c UL us Type 4/4X/12

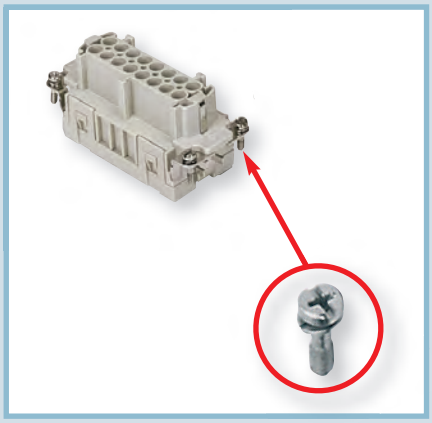
dimensions shown are not binding
and may be changed without notice

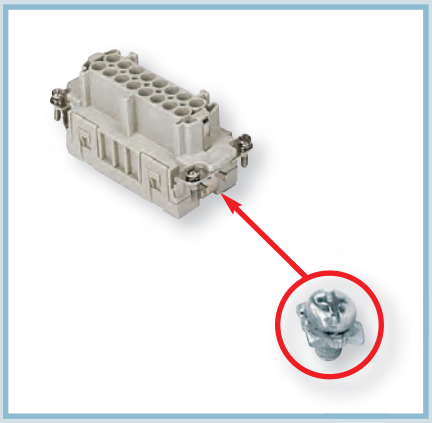


	panel fitted insert fastening screws	screws for second earth terminal
description	part No.	part No.
to be fitted instead of the current insert fastening screws	**CRIC M3 ***	
- for CDA/CDC, CSAH inserts - for CD 15/25, CDD 38 inserts - for CD 40/64, CDD 24/42/72/108, CQE, CNE, CSS, CX 8/24, CCE, CSE, CMSH, CME, CMCE, CSH, CDSH inserts - for CP, CX 12/2, CX 6/36, CX 4/0, CX 4/2 inserts		**CR VATG** **CR VDTG** **CR VNTG** **CR VPTG**

ILME will not be responsible for any different mounting applications.It is the responsibility of the installer to ensure the correct coupling and earth contact of the inserts.

* The approved method of mounting inserts is by fixing the four screws in an ILME enclosure or housing.

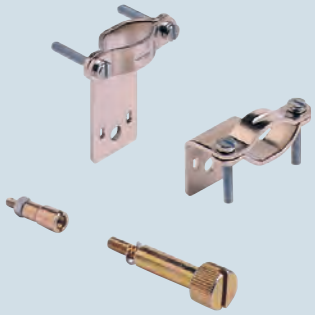




dimensions shown are not binding
and may be changed without notice

support for rail mounting DIN EN 60715

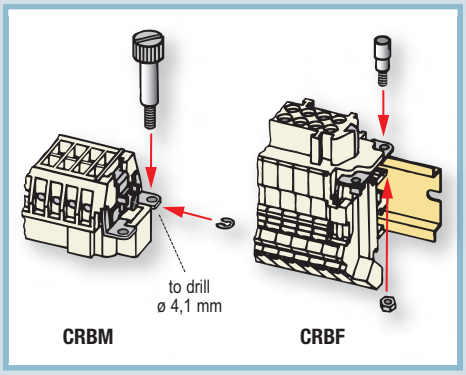
CT/CTS/CTSE inserts coupling screws cable-clamping plates



description	part No.	part No.
supports for CT, CTS, CTSE inserts	**CT APE**	
bush for CT, CTS, CTSE inserts screw pin for CD, CNE, CCE, CSE, CSH inserts		**CRBF** **CRBM**
straight cable clamping plate angled cable clamping plate		**CRAD** **CRAS**

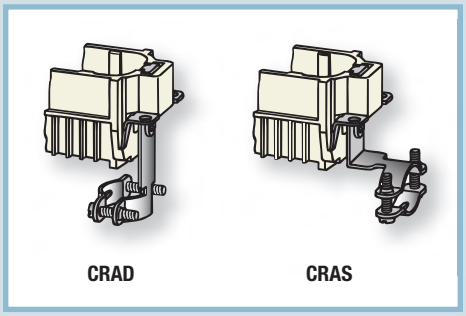
Coupling screws for CT/CTSE inserts

The use of CRBF (female) and CRBM (male) coupling screws is recommended to guarantee a stable and safe coupling between inserts (without enclosures) with terminal blocks and inserts without terminal blocks.



Use of cable-clamping plates

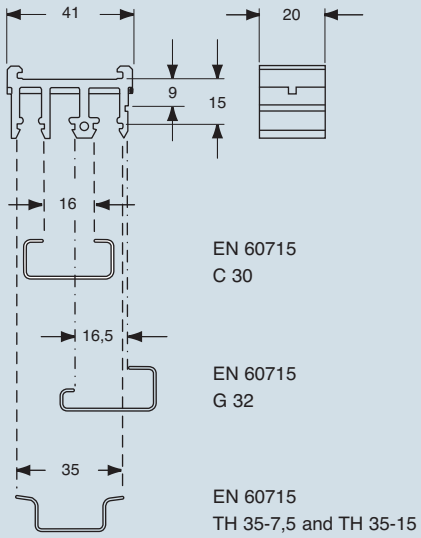
In accordance with the recommendations of standard IEC 60352-2, the weight of the conductor groups or multipolar cables must not cause any stress on the contacts inside the inserts. It is therefore advisable to use cable-clamping plates in those inserts without enclosures.



dimensions shown are not binding
and may be changed without notice

dimensions in mm

CT APE



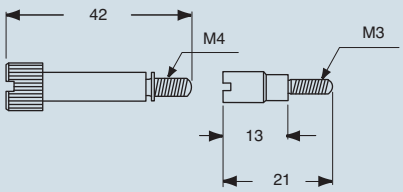
EN 60715
C 30

EN 60715
G 32

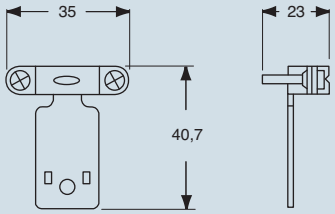
EN 60715
TH 35-7,5 and TH 35-15

dimensions in mm

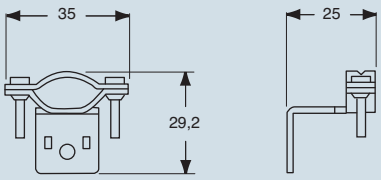
CRBM **CRBF**



CRAD



CRAS

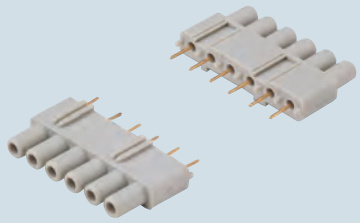


Note:
for conductor groups or cable with Ø min = 12 mm and Ø max = 23 mm

inserts: page:

CDD .....24 poles + ⏚ 67
CDD ..... 42 poles + ⏚ 69
CDD ..... 72 poles + ⏚ 70
CDD ..... 108 poles + ⏚ 72
CX ..... 8/24 poles + ⏚ 169
CX ..... 6/36 poles + ⏚ 170
CX 12 (MIXO) ..... 12 poles 194

interface for printed circuit



6A contacts for interface silver and gold plated

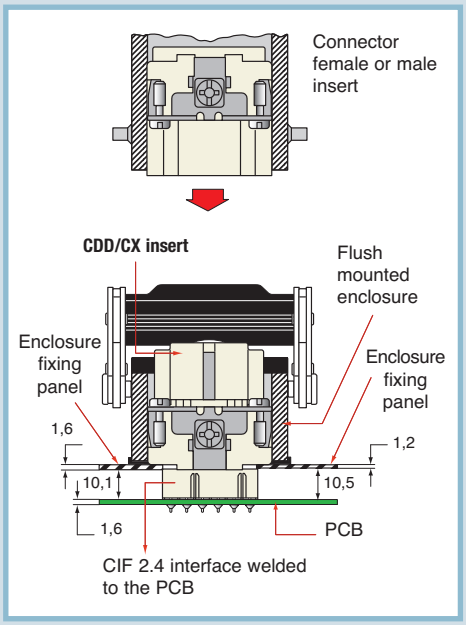
description	part No.	part No.	part No.
interface module with 6 female contacts (gold) - for up to 2,4 mm thick PCB	**CIF 2.4**		
interface module with 6 female contacts (silver) - for up to 2,4 mm thick PCB	**CIF 2.4 A**		
6A female contacts for female inserts with terminal Ø 1 mm		**CDFA 6A** silver plated	**CDFD 6A** gold plated
6A male contacts for male inserts with terminal Ø 1 mm		**CDMA 6A**	**CDMD 6A**

CIF interface

The interface block is made according to the multipole connector used by assembling a suitable number of CIF modules (see table).

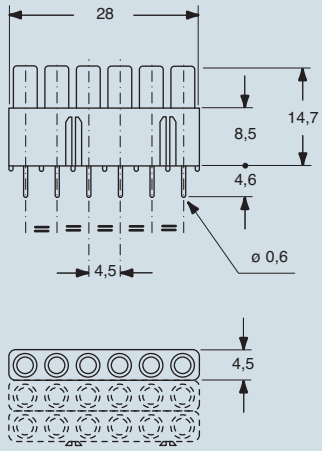
inserts serie	poles n°	modules "CIF" n°
CDD	24	4
CDD	42	7
CDD	72	12
CDD	108	18
CX	8/24	4
CX	6/36	6
CX (MIXO)	12	2

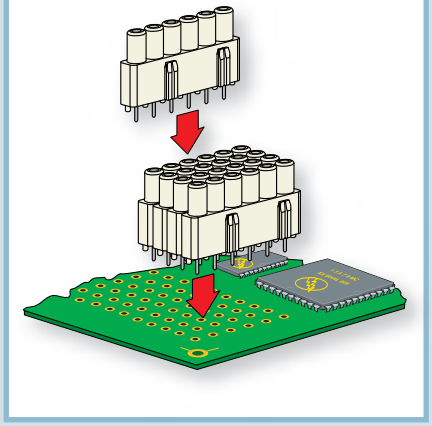
The block is then welded on the printed circuit on which the multipole connector (female or male) equipped with coupling contacts will then be inserted.



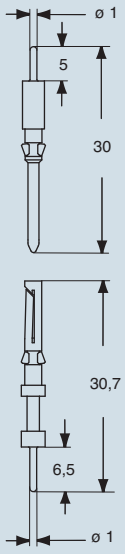
dimensions shown are not binding and may be changed without notice

dimensions in mm

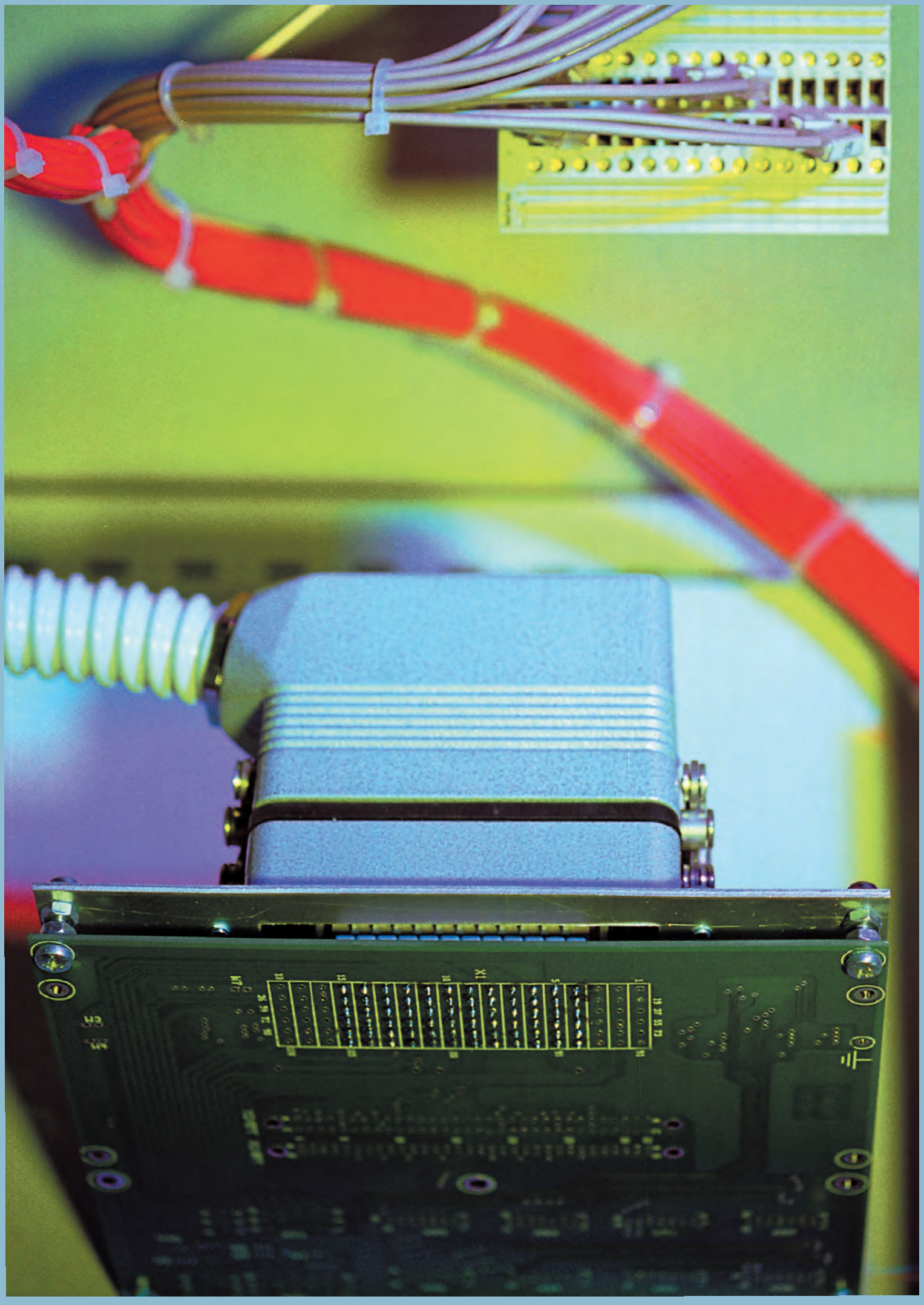




dimensions in mm



Accessories



inserts: page:

CDC ..... 10, 16 poles + ⏚ 99 and 101
CCE .. 6, 10, 16, 24, 32, 48 poles + ⏚ 110-115
CQE .. 10, 18, 32, 46, 64,92 poles + ⏚ 138-143
CQEE ..... 40,64 poles + ⏚ 146-147
CMCE . 3+2, 6+2, 10+2, 16+2, 12+4, 20+4, 32+4 .. poles + ⏚ 148-160
CQ ..... 5 poles + ⏚ 166
CX..... 8/24 poles + ⏚ 169
CX..... 6/6 poles + ⏚ 175
MIXO ..... (16A) 189-199

constantan (Cu Ni)
crimp contacts

iron (Fe)
crimp contacts

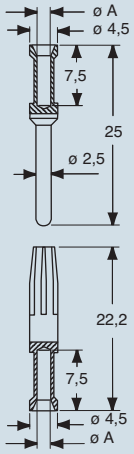
description	part No.	part No.
16A, 0,3 mm², AWG 22 female contacts	**CCFC 0.3**	**CCFF 0.3**
16A, 0,3 mm², AWG 22 male contacts	**CCMC 0.3**	**CCMF 0.3**
16A, 0,5 mm², AWG 20 female contacts	**CCFC 0.5**	**CCFF 0.5**
16A, 0,5 mm², AWG 20 male contacts	**CCMC 0.5**	**CCMF 0.5**

Note:
A mixed combination of standard Iron, Constantan and silver and gold plated contacts can be fitted in the same insert.

- for crimp contacts, see the crimp tool section (16A, CCF and CCM series contacts) pages 534, 538, 544, 546, 548
- for thermocouples compliant with DIN IEC 584 type J
- contact resistance ≤ 1 Ohm

dimensions in mm

CCF and **CCM**

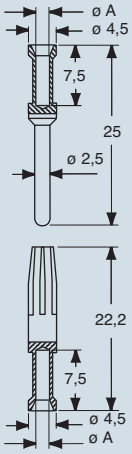


CCF and CCM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,3	1,1	7,5
0,5	1,1	7,5

dimensions in mm

CCF and **CCM**



CCF and CCM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,3	1,1	7,5
0,5	1,1	7,5

dimensions shown are not binding
and may be changed without notice

CD contacts 10A

insert:	page:
CD ..... (10A)	53-61
CDD ..... (10A)	67-74
CQ ..... (10A)	165 and 168
CX 8/**24** ..... (16A/10A)	169
CX 6/**36** ..... (10A)	170
CX 12/**2** ..... (10A)	171
MIXO ..... (10A)	185-203

10A crimp contacts
high thickness gold plating

NEW

10A crimp contacts
basic gold plated

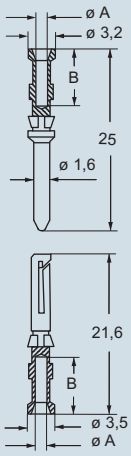
NEW

description	part No.	part No.
10A female contacts		
0,14-0,37 mm² AWG 26-22 identification No. 1	**CDF2D 0.3**	**CDFJD 0.3**
0,5 mm² AWG 20 identification No. 2	**CDF2D 0.5**	**CDFJD 0.5**
0,75 mm² AWG 18 identification No. ②	**CDF2D 0.7**	**CDFJD 0.7**
1,0 mm² AWG 18 identification No. 3	**CDF2D 1.0**	**CDFJD 1.0**
1,5 mm² AWG 16 identification No. 4	**CDF2D 1.5**	**CDFJD 1.5**
2,5 mm² AWG 14 identification No. 5	**CDF2D 2.5**	**CDFJD 2.5**
	gold plated	gold plated
10A male contacts		
0,14-0,37 mm² AWG 26-22 identification No. 1	**CDM2D 0.3**	**CDMJD 0.3**
0,5 mm² AWG 20 identification No. 2	**CDM2D 0.5**	**CDMJD 0.5**
0,75 mm² AWG 18 identification No. ②	**CDM2D 0.7**	**CDMJD 0.7**
1,0 mm² AWG 18 identification No. 3	**CDM2D 1.0**	**CDMJD 1.0**
1,5 mm² AWG 16 identification No. 4	**CDM2D 1.5**	**CDMJD 1.5**
2,5 mm² AWG 14 identification No. 5	**CDM2D 2.5**	**CDMJD 2.5**

The new gold plated contacts provide:
- corrosion resistance (according to EN 60068)
- mechanical life: ≥ 500 coupling cycles
- in compliance with EN 61984:2010-4, IEC 60512, EN 60352-2: 1994
- compliant to directive RoHS
- contact resistance: ≤ 3 mΩ
- certifications: UL

dimensions in mm

CDF2 and **CDM2**

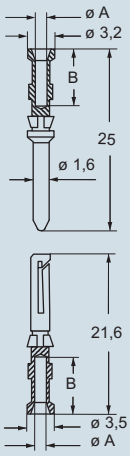


contacts CDF2 and CDM2

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

dimensions in mm

CDFJ and **CDMJ**



contacts CDFJ and CDMJ

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

dimensions shown are not binding
and may be changed without notice

insert:	page:
CDC ..... (16A)	99-103
CCE ..... (16A)	110-115
CQE ..... (16A)	138-143
CQEE ..... (16A)	146-147
CMCE ..... (16A)	148-160
CQ ..... (16A)	166-167
CX 8/24 ..... (16A/10A)	169
CX 6/**6** ..... (16A/10A)	175
MIXO ..... (16A)	189-199

16A crimp contacts
high thickness gold plating

NEW

16A crimp contacts
basic gold plated

NEW

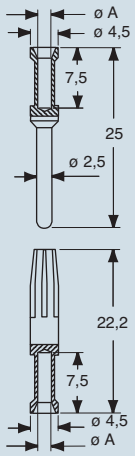
description			part No.	part No.
16A female contacts				
0,14-0,37 mm²	AWG 26-22	one groove	**CCF2D 0.3**	**CCFJD 0.3**
0,5 mm²	AWG 20	with no grooves	**CCF2D 0.5**	**CCFJD 0.5**
0,75 mm²	AWG 18	one groove (back side)	**CCF2D 0.7**	**CCFJD 0.7**
1,0 mm²	AWG 18	one groove	**CCF2D 1.0**	**CCFJD 1.0**
1,5 mm²	AWG 16	two grooves	**CCF2D 1.5**	**CCFJD 1.5**
2,5 mm²	AWG 14	three grooves	**CCF2D 2.5**	**CCFJD 2.5**
3,0 mm²	AWG 12	one wide groove	**CCF2D 3.0**	**CCFJD 3.0**
4,0 mm²	AWG 12	with no grooves	**CCF2D 4.0**	**CCFJD 4.0**
16A male contacts				
0,14-0,37 mm²	AWG 26-22	one groove	**CCM2D 0.3**	**CCMJD 0.3**
0,5 mm²	AWG 20	with no grooves	**CCM2D 0.5**	**CCMJD 0.5**
0,75 mm²	AWG 18	one groove (back side)	**CCM2D 0.7**	**CCMJD 0.7**
1,0 mm²	AWG 18	one groove	**CCM2D 1.0**	**CCMJD 1.0**
1,5 mm²	AWG 16	two grooves	**CCM2D 1.5**	**CCMJD 1.5**
2,5 mm²	AWG 14	three grooves	**CCM2D 2.5**	**CCMJD 2.5**
3,0 mm²	AWG 12	one wide groove	**CCM2D 3.0**	**CCMJD 3.0**
4,0 mm²	AWG 12	with no grooves	**CCM2D 4.0**	**CCMJD 4.0**

gold plated

The new gold plated contacts provide:
- corrosion resistance (according to EN 60068)
- mechanical life: ≥ 500 coupling cycles
- in compliance with EN 61984:2010-4, IEC 60512, EN 60352-2: 1994
- compliant to directive RoHS
- contact resistance: ≤ 1 mΩ
- certifications: UL

dimensions in mm

CCF2 and **CCM2**

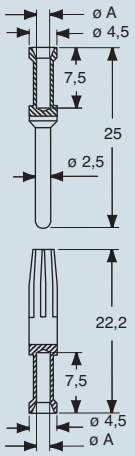


contacts CCF2 and CCM2

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3,0	2,55	7,5
4,0	2,85	7,5

dimensions in mm

CCFJ and **CCMJ**



contacts CCFJ and CCMJ

conductor section mm²	conductor slot ø A (mm)	conductors stripping length mm
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3,0	2,55	7,5
4,0	2,85	7,5

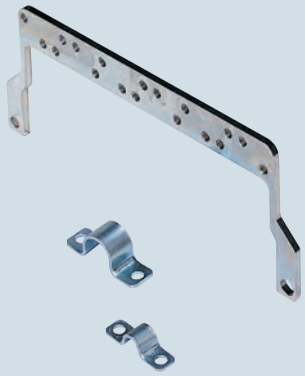
dimensions shown are not binding
and may be changed without notice

inserts:
MIXO series .....**from page** 180

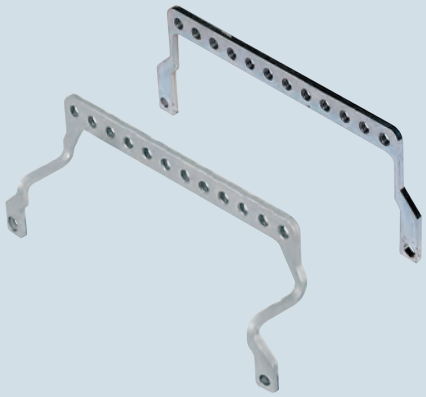
CX 01 YF/YM/YPEF/YPEM, CX 02 GF/M, CX 02 HF/M:
only with CR 24 ATD

N.B.:
size 44.27 and 57.27 cannot be used with T-TYPE series

ground terminals for shielded cables (for MIXO series)
clamps for cables Ø 5 mm and Ø 10 mm



anchorages for several earth connections cables (for MIXO series)



description	part No.	part No.
in zinc iron, to be mounted on MIXO frames in bulkhead mounting housings and high construction hoods - enclosures "44.27" and MIXO frames for 2 inserts - enclosures "57.27" and MIXO frames for 3 inserts - enclosures "77.27", "77.62" and MIXO frames for 4 inserts - enclosures "104.27", "104.62" and MIXO frames for 6 inserts	**CR 06 ST** **CR 10 ST** **CR 16 ST** **CR 24 ST**	
to be mounted on CR..ST ground terminals clamp for shielding cables Ø 5 mm clamp for shielding cables Ø 10 mm	**CR 05 CA** **CR 10 CA**	
in zinc iron, to be mounted on MIXO frames in bulkhead mounting housings and high construction hoods - enclosures "44.27" and MIXO frames for 2 inserts - enclosures "57.27" and MIXO frames for 3 inserts - enclosures "77.27", "77.62" and MIXO frames for 4 inserts - enclosures "104.27", "104.62" and MIXO frames for 6 inserts - enclosures "104.27", "104.62" and MIXO frames for 6 inserts		**CR 06 AT** **CR 10 AT** **CR 16 AT** **CR 24 AT** **CR 24 ATD**

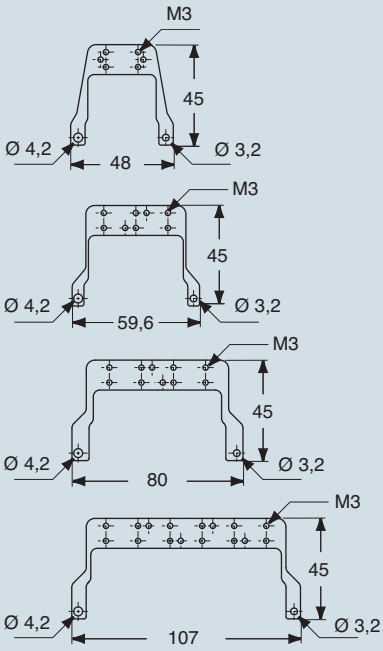
Anchorages CR .. ST are designed for installation on the frames of the MIXO modular connectors, for earth connecting the screening braid of shielded cables.

With the CR..ST anchorages we advise you to use high construction hoods top entry.

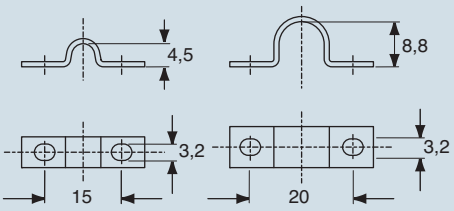
Anchorages CR .. AT / ATD are designed for installation on the frames of the MIXO modular connectors for earth connecting several cables.

dimensions in mm

CR...ST

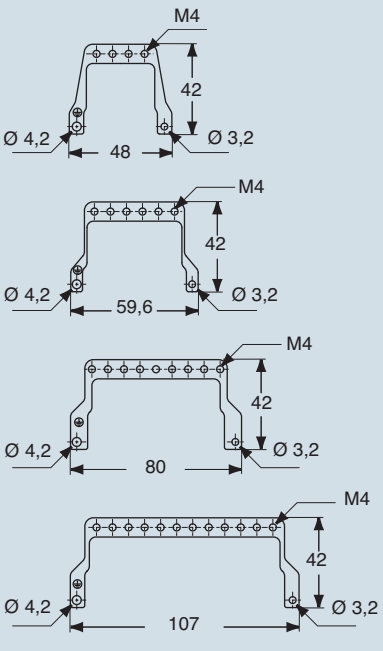


CR...CA

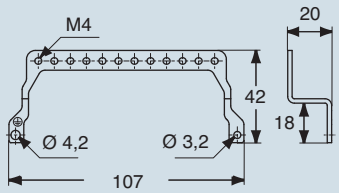


dimensions in mm

CR...AT



CR...ATD



dimensions shown are not binding
and may be changed without notice

inserts: page:

CD..... 40, 64 poles + ⏚ 57 and 59
CDD ..... 24, 42, 72, 108 poles + ⏚ 67-72
CDS ..... 9, 18, 27, 42 poles + ⏚ 78-81
CSH ..... 6, 10, 16, 24 poles + ⏚ 91-94
CNE, CSE.. 6, 10, 16, 24 poles + ⏚ 104-107
CCE ..... 6, 10, 16, 24 poles + ⏚ 110-113
CSS ..... 6, 10, 16, 24 poles + ⏚ 122-125
CQE ..... 10, 18, 32, 46 poles + ⏚ 138-141
CQEE ..... 40, 64 poles + ⏚ 146-147
CMSH 3+2, 6+2, 10+2 (aux) poles + ⏚ 149-153
CP..... 6 poles + ⏚ 162
CX ..... 8/24, 6/36, 12/2 poles + ⏚ 169-171

screw fixing centre distance:
44 x 27 mm, 57 x 27 mm,
77,5 x 27 mm, 104 x 27 mm

N.B.:
size 44.27 and 57.27 cannot be used with T-TYPE series

ground terminals for shielded cables and for several earth connections clamps for cables Ø 5 mm and Ø 10 mm

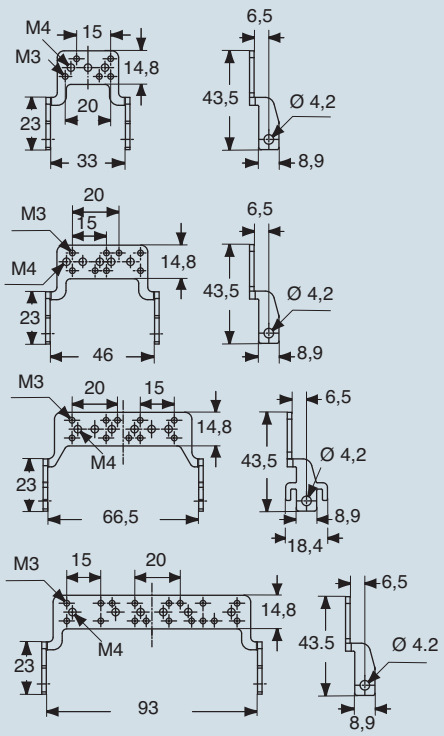
description	part No.
in zinc plated iron, to be fitted on connectors in bulkhead housings, high hoods and COB series enclosures	
- “44.27” enclosures and inserts	**CR 06 SC**
- ”57.27” enclosures and inserts *	**CR 10 SC**
- ”77.27”, ”77.62” enclosures and inserts	**CR 16 SC**
- ”104.27”, ”104.62” enclosures and inserts	**CR 24 SC**
- CSS ”104.27” enclosures and inserts **	**CR 24 SCA**
to be fitted on CR..SC anchors	
U-bolt for Ø 5 mm cable screening	**CR 05 CA**
U bolt for Ø 10 mm cable screening	**CR 10 CA**

* The high construction hoods with side entry cannot be used.

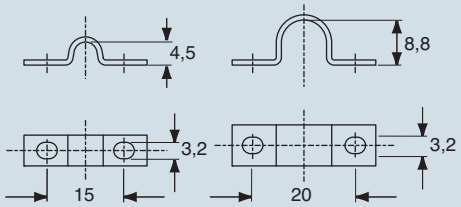
** Can be used only in bulkhead housings.

dimensions in mm

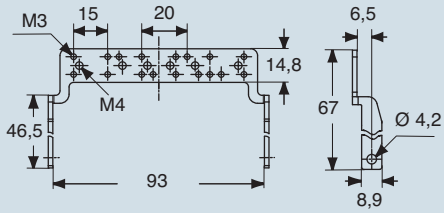
CR...SC



CR...CA



CR SCA



The CR... SC anchors are fitted on connectors for connecting to earth multiple cables and screened cables braids.

With the CR..SC anchorages, we advise you to use high construction hoods top entry.

dimensions shown are not binding
and may be changed without notice

The CR..FS series anchorages are employed for use of connector inner fittings (normal or MIXO modular) without enclosures and enable securing cables with clamps to prevent transmitting friction forces to contacts. CR..SS anchorages (with grip to facilitate detachment) are used for earth connecting several conductors and/or of the screen of shielded cables.

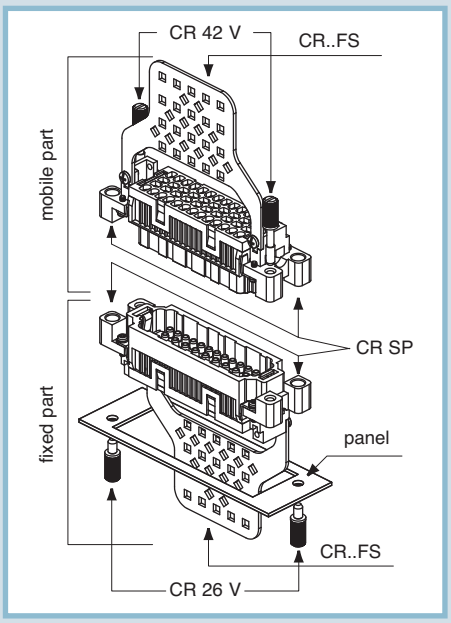
grip panels for cables outside enclosure equipped with fixing screws and rings

supports, screws and clamps for grip panels of cables outside enclosure

description	part No.	part No.
in zinc iron, to be mounted on: - inserts size "44.27" * and MIXO frames for 2 inserts - inserts size "57.27" * and MIXO frames for 3 inserts - inserts size "77.27" * and MIXO frames for 4 inserts - inserts size "104.27" * and MIXO frames for 6 inserts	 **CR 06 FS** **CR 10 FS** **CR 16 FS** **CR 24 FS**	
for shielded cables, to be mounted on: - inserts size "77.27" * and MIXO frames for 4 inserts - inserts size "104.27" * and MIXO frames for 6 inserts	 **CR 16 SS** **CR 24 SS**	
supports in die-cast zinc N° 2 pieces equipped with fixing screws and rings for earth connecting		**CR SP**
short screws in zinc iron, N° 2 pieces long screws in zinc iron, N° 2 pieces		**CR 26 V** **CR 42 V**
to be mounted on CR..SS anchorage clamp for shielding cables Ø 5 mm clamp for shielding cables Ø 10 mm		 **CR 05 CA** **CR 10 CA**

* Except CT, CTS, and CTSE

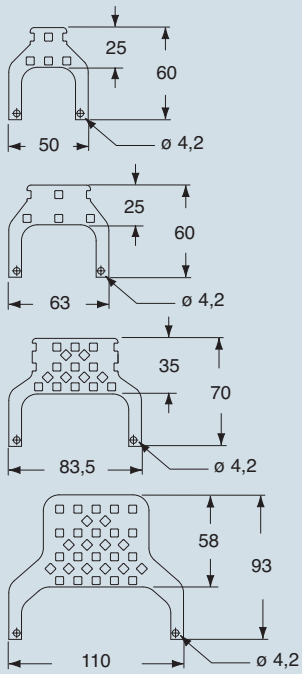
In the fixed part, a pair of CR SP supports is fitted on the connector, using its securing screws. A CR..FS or CR..SS anchorage is fitted on the supports, using the supplied securing screws and washers. All parts are secured on the rear panel with the pair of CR 26 V viton screws.
In the mobile part too, a pair of CR SP supports are fitted on the connector and a CR..FS or CR..SS anchorage is secured on it. The pair of CR 42 V screws fasten the mobile part to the fixed part.
Note: By unscrewing the CR 26 V panel screws, the whole assembly (mobile part + fixed part) can be removed from the panel for inspection.



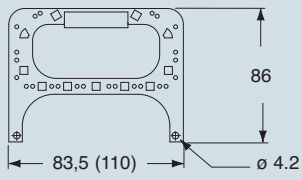
dimensions shown are not binding
and may be changed without notice

dimensions in mm

CR...FS

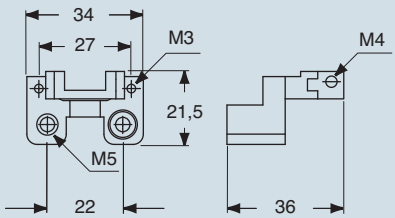


CR 16 SS (CR 24 SS)

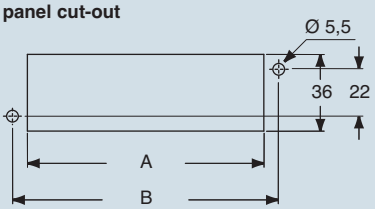


dimensions in mm

CR SP

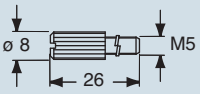


panel cut-out

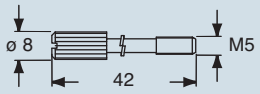


poles	06	10	16	24
A	52	65	85,5	112
B	65	78	98,5	125

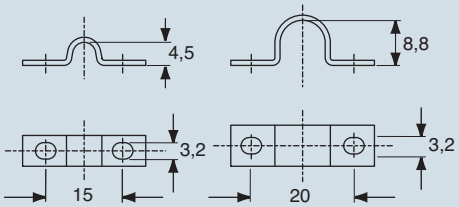
CR 26 V



CR 42 V



CR...CA



CR...DF self-centering floating frame

Technical specifications

- materials
  - floating frame, inserts: stainless steel
  - fixing screws: zinc-plated steel
- mechanical endurance: ≥ 500 cycles
- compensation range:
  - x axis: ± 1,5 mm
  - y axis: ± 1,5 mm

Caution:
- As the frames are floating, **the PE earthing connection of the metal surfaces on which they are mounted** (mounting bases) **must be performed separately** and cannot be done by connecting the PE earthing contact to the corresponding connector inserts.

Note:
- The supply includes 1 frame and 4 shoulder screws with cylindrical head and notch to fix the frame in place.

self-centering floating frame

NEW

description	part No.
in stainless steel, to be mounted on:	
- inserts size ”44.27” * and MIXO frames for 2 inserts	**CR 06 DF**
- inserts size ”57.27” * and MIXO frames for 3 inserts	**CR 10 DF**
- inserts size ”77.27” * and MIXO frames for 4 inserts	**CR 16 DF**
- inserts size ”104.27” * and MIXO frames for 6 inserts	**CR 24 DF**

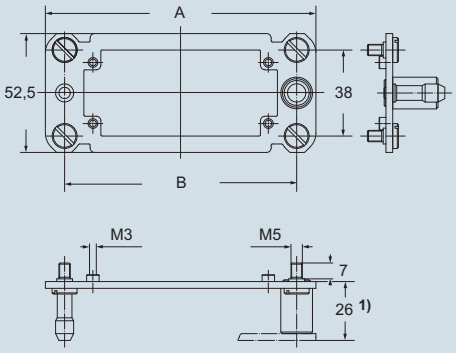
* Except CT, CTS and CTSE

For use with MIXO inserts CX 04 X, please contact ILME SpA.

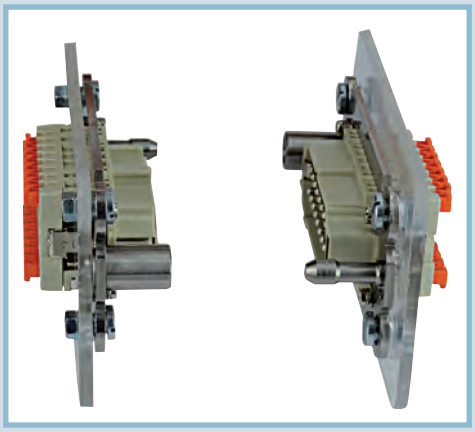
Characteristics

- Suitable, depending on size, for all MIXO connector inserts and frames, except series CT, CTS and CTSE.
- Designed to be used in the transportation, printing and power electronic industries (for example boxes for rack cabinets) and in all industrial applications that require, during assembly or maintenance, the connection of connectors without possibility of controlling the alignment.
- Enables the **self-centering coupling of two corresponding** connectors without the use of enclosures; they freely move on their base plate (± 1,5 mm on both axes) ensuring the **alignment of the coupling**.

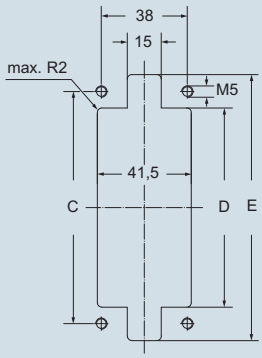
dimensions in mm



1) distance for electric and fibre optic contacts: max 27 mm
distance for pneumatic contacts: max 26,5 mm



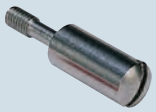
panel cut-out in mm



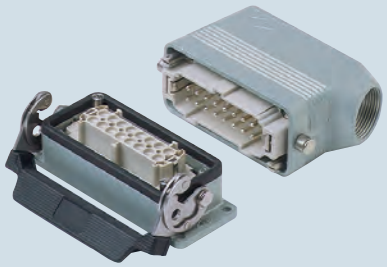
part No.	A	B	C	D	E
CR 06 DF	86	69	69	54,5	84
CR 10 DF	99	82	82	67,5	97
CR 16 DF	119,5	102,5	102,5	88	117,5
CR 24 DF	146	129	129	114,5	144

dimensions shown are not binding
and may be changed without notice

single code pins for 6 codings



selectivity using single code pins

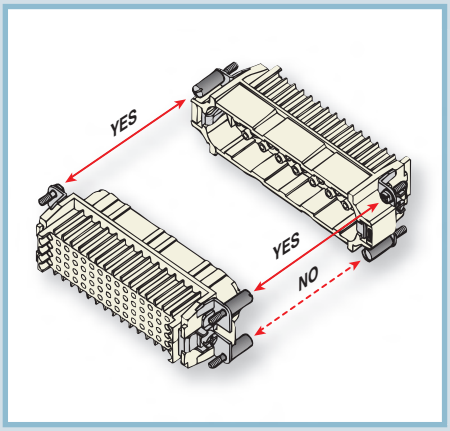


description	part No.	part No.
single code pin (not for MIXO inserts)	stainless steel **CR 20**	zinc plated iron **CR 20 D**
single code pin (for MIXO inserts only)	stainless steel **CR 20 CX**	zinc plated iron **CR 20 CX D**

CR 20/CR 20 D and CR 20 CX/CR 20 CX D code pins

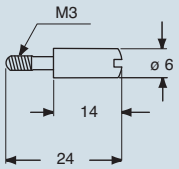
Each series of connector inserts is made in such a way as to make incorrect coupling between inserts of different series impossible.
When a number of identical connectors with different functions are mounted closely together these must be selected in such a way as to prevent the coupling of a mobile part on a non-corresponding fixed part and consequent damage and breakdown.

Code pins are supplied to apply in place of the normal insert fastening screws (see example below). In this way the coupling of identical connectors is assured. The combination of code pins makes it possible to obtain a high number of selective couplings.

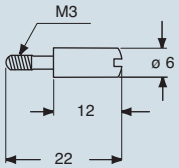


dimensions in mm

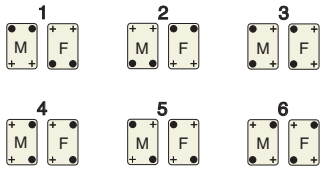
CR 20 / CR 20 D



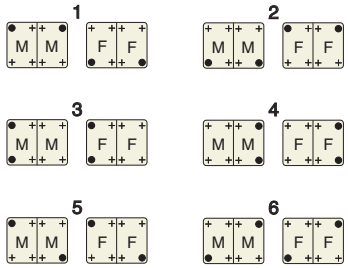
CR 20 CX / CR 20 CX D



Application with single insert



Application with double inserts

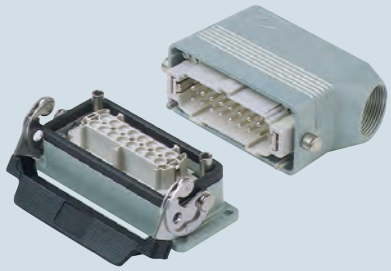


● code pin (CR 20/CR 20 D and CR 20 CX/CR 20 CX D)
\+ normal fixing screw
M = male insert
F = female insert

dimensions shown are not binding and may be changed without notice

double coding and guide pins, for 16 codes

selection is made by using double coding and guide pins

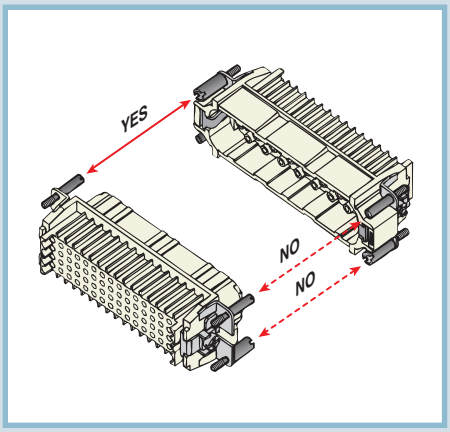


description	part No.	part No.
double coding pins (excluding MIXO inserts) - male pin - female pin	stainless steel **CRM** **CRF**	zinc plated iron **CRM D** **CRF D**
double code pins (for MIXO inserts only) - male pin - female pin	stainless steel **CRM CX** **CRF CX**	zinc plated iron **CRM CX D** **CRF CX D**

Code pins
- CRM/CRM D and CRF/CRF D
- CRM CX/CRM CX D and CRF CX/CRF CX D

Each series of connector inserts is made in such a way as to make incorrect coupling between inserts of different series impossible.
When a number of identical connectors with different functions are mounted closely together these must be selected in such a way as to prevent the coupling of a mobile part on a non-corresponding fixed part and consequent damage and breakdown.

Code pins are supplied to apply in place of the normal insert fastening screws (see example below). In this way the coupling of identical connectors is assured. The combination of code pins makes it possible to obtain a high number of selective couplings.

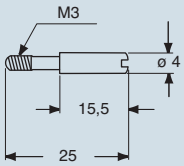


Even when coding is not required, it is recommended to use CRM and CRF pins with CD and CDD inserts to reduce movements when fitting and removing the connectors and to avoid contact damages.
Within this scope, the standard DIN 43 652 requires a maximum angular longitudinal fluctuation of ± 5°.

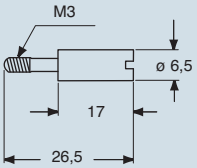
dimensions shown are not binding
and may be changed without notice

dimensions in mm

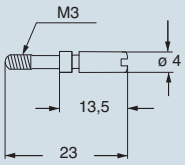
CRM / CRM D



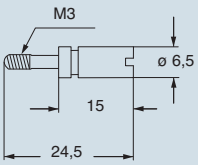
CRF / CRF D



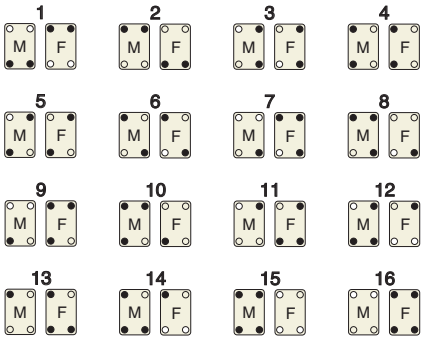
CRM CX / CRM CX D



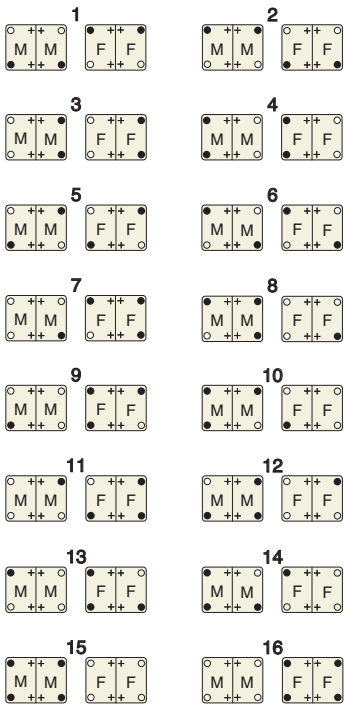
CRF CX / CRF CX D



Application with single insert



Application with double inserts



● female code pin
(CRF/CRF D and CRF CX/CRF CX D)
○ male code pin
(CRM/CRM D and CRM CX/CRM CX D)
\+ normal fixing screw
M = male insert
F = female insert

coding and guide pins, for 72 codes

description	part No.	part No.
double coding pins (excluding MIXO inserts) - male pin - female pin - single code pin	stainless steel **CRM** **CRF** **CR 72**	zinc plated iron **CRM D** **CRF D** **CR 72 D**
double coding pins (for MIXO inserts only) - male pin - female pin - single code pin	stainless steel **CRM CX** **CRF CX** **CR 72 CX**	zinc plated iron **CRM CX D** **CRF CX D** **CR 72 CX D**

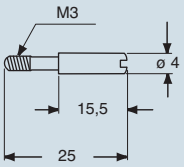
Code pins
- CRM/CRM D, CRF/CRF D and CR 72/CR 72 D
- CRM CX/CRM CX D, CRF CX/CRF CX D and CR 72 CX/CR 72 CX D

Each series of connector inserts is made in such a way as to make incorrect coupling between inserts of different series impossible.
When a number of identical connectors with different functions are mounted closely together these must be selected in such a way as to prevent the coupling of a mobile part on a non-corresponding fixed part and consequent damage and breakdown.

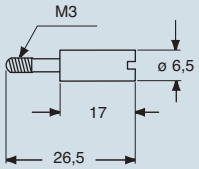
Code pins are supplied to apply in place of the normal insert fastening screws.
In this way the coupling of identical connectors is assured.
The combination of code pins makes it possible to obtain a high number of selective couplings.

dimensions in mm

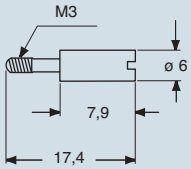
CRM / CRM D



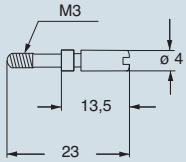
CRF / CRF D



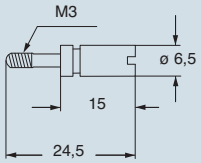
CR 72 / CR 72 D



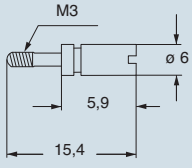
CRM CX / CRM CX D



CRF CX / CRF CX D

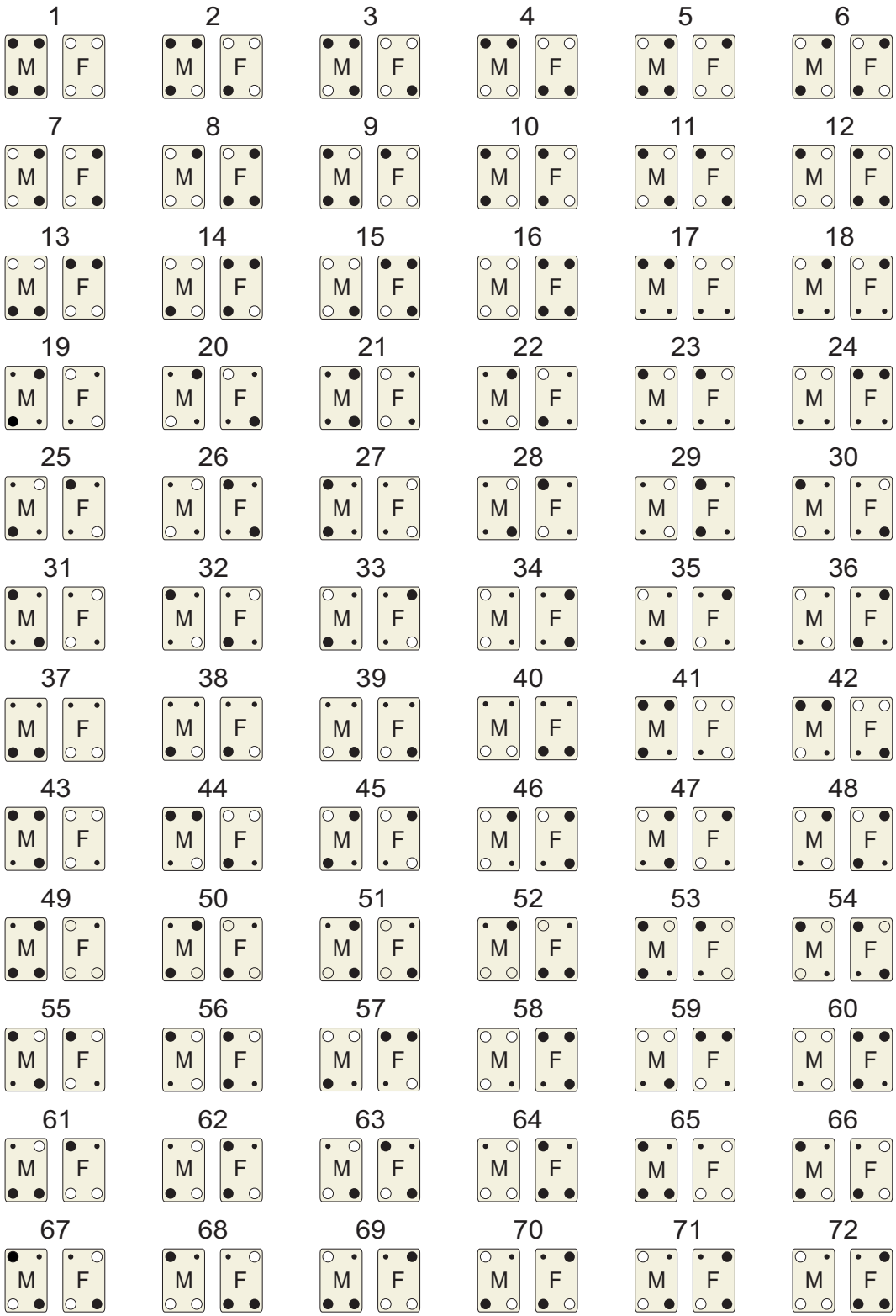


CR 72 CX / CR 72 CX D



dimensions shown are not binding
and may be changed without notice

Coding selection using the three coding pins



- ● female code pin (CRF/CRF D and CRF CX/CRF CX D)
- ○ male code pin (CRM/CRM D and CRM CX/CRM CX D)
- • single code pin (CR 72/CR 72 D and CR 72 CX/CR 72 CX D)

M = male insert
F = female insert

plain coding pins for CK / CKS 03 inserts

NEW

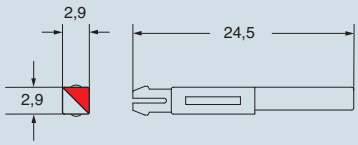
plain coding pins for CK / CKS 04 inserts

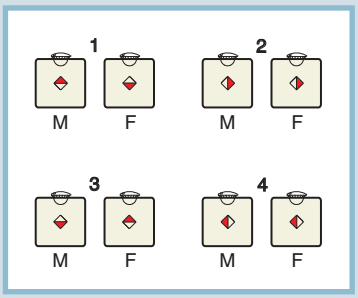
NEW

description	part No.	part No.	part No.
coding pins for CK/CKS 03 inserts	**CR K03**		
coding pins for CK/CKS 04 inserts		red **CR K04R**	yellow **CR K04G**

dimensions in mm

CR K03

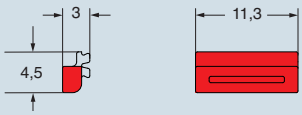




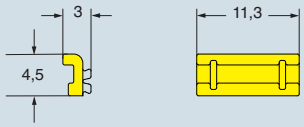
M = male insert
F = female insert

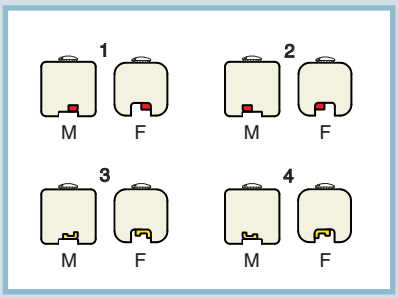
dimensions in mm

CR K04R



CR K04G





M = male insert
F = female insert

dimensions shown are not binding
and may be changed without notice

plain coding pins for crimp inserts

plain coding pins for CQ 12 inserts

description	part No.	part No.
coding pins for CDC, CQ, CQE, CCE, CMCE, MIXO (16A) inserts - pin to be inserted into one contact cavity of the female insert instead of the crimp contact, the corrisponding contact cavity of the male insert must be left empty	**CR CPQ**	
coding pins for CD and CDD inserts - plastic pin, to be inserted into one contact cavity of the female insert instead of a crimp contact, the corrisponding contact cavity of the male insert must be left empty	**CR CP**	
coding pins for CQ 12 inserts		**CR Q12**

Code pins

Each series of connector inserts is made in such a way as to make incorrect coupling between inserts of different series impossible.
When a number of identical connectors with different functions are mounted closely together these must be selected in such a way as to prevent the coupling of a mobile part on a non-corresponding fixed part and consequent damage and breakdown.

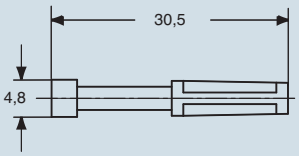
Within this scope, special coding pins have been manufactured in order to restrict or avoid mating identical multiple connectors.
By combining multiple coding pins, a high number of selected matings can be produced.

CR Q12

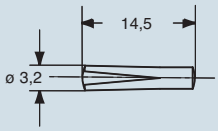
dimensions shown are not binding
and may be changed without notice

dimensions in mm

CR CPQ

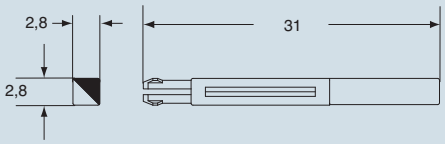


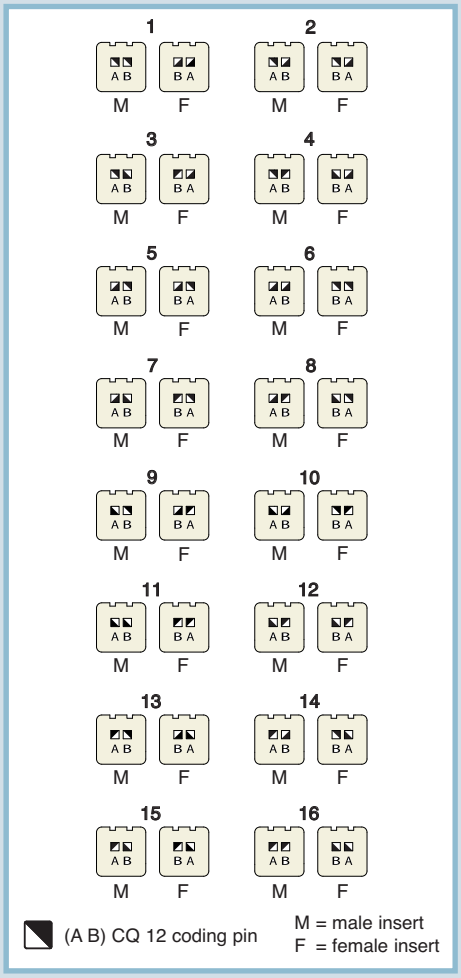
CR CP



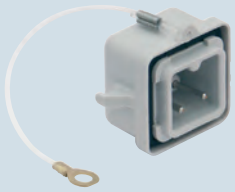
dimensions in mm

CR Q12





terminal connector
for CKF/CKSF 03 inserts

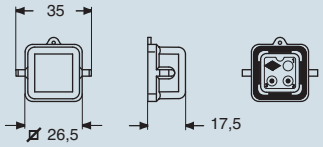


description	part No.
with pegs and seal, connects pole 2 with pole 3	**CKM 03 T1**
with pegs and seal, connects pole 1 with pole 2	**CKM 03 T3**

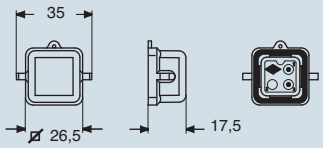
When the terminal connector is mated with a CKF/CKSF 03 insert (complete with an enclosure with lever), it performs a dual function:
- connects two socket insert poles
- acts as a cover (IP65 protection rating compliant with EN 60529 standard, with lever closed).

dimensions in mm

CKM 03 T1



CKM 03 T3

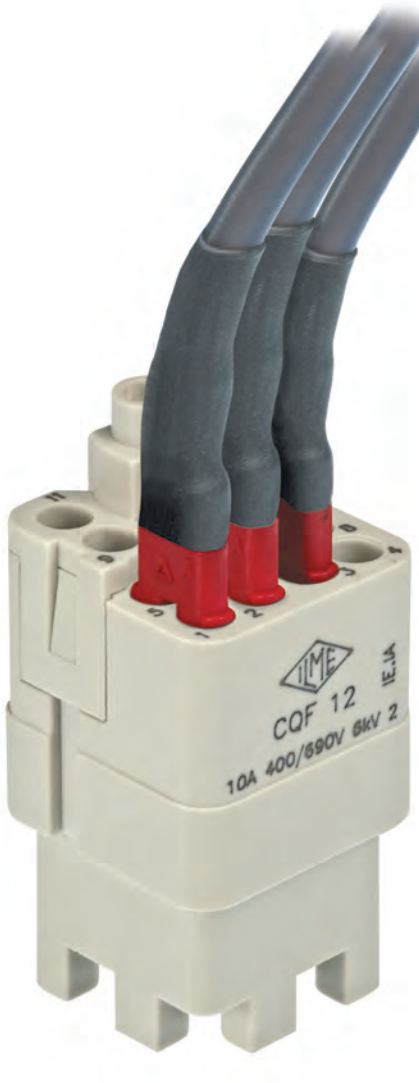


- interconnected male contacts

dimensions shown are not binding
and may be changed without notice

Bridges

for delta or star connection



CR bridges for delta or star connection

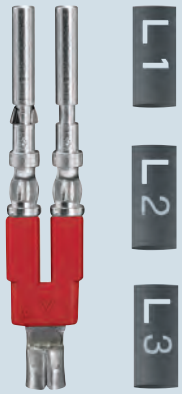
inserts:

CQF * ..... 12 poles + ⏚
CDDF ..... 24, 42, 72 (144), 108 (216) poles + ⏚

* for enclosures C-TYPE series (CKA/MKA ..I/VS) only

For wires with cross-section ranging from 1,5 to 2,5 mm² (16-14 AWG), crimp connection with **CRPZ** pliers (model CEMBRE IDT) and **CRD** matrix.

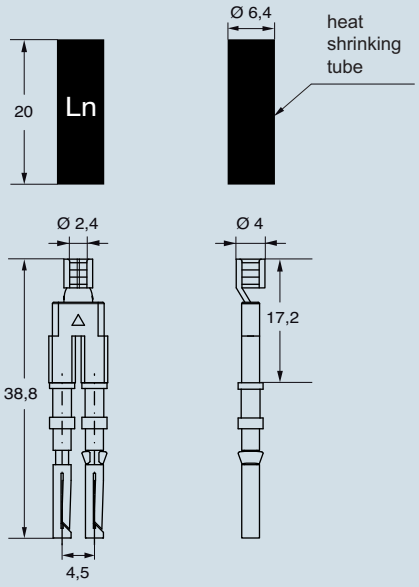
bridges for delta connection



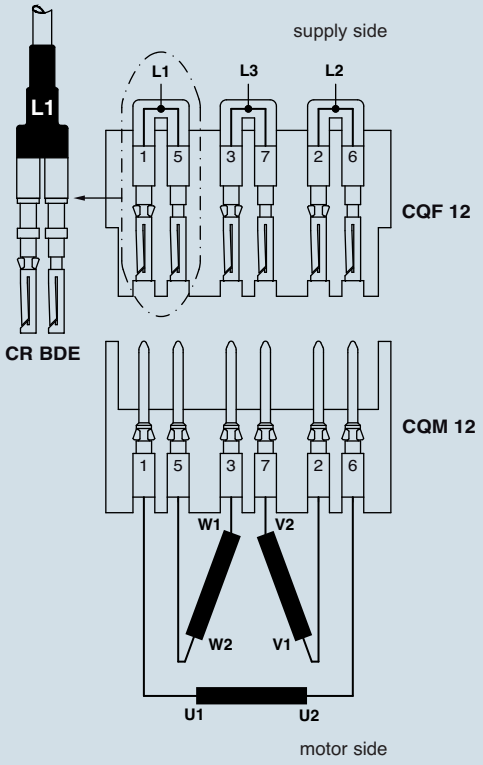
description	Part No.
bridge with 2 female 10A contacts, silver plated and open type crimp barrel	**CR BDE**

NOTE:
The typical use of the product requires three bridges each with its shrinking tube with L1 / L2 / L3 marking to identify the phases in the wiring.

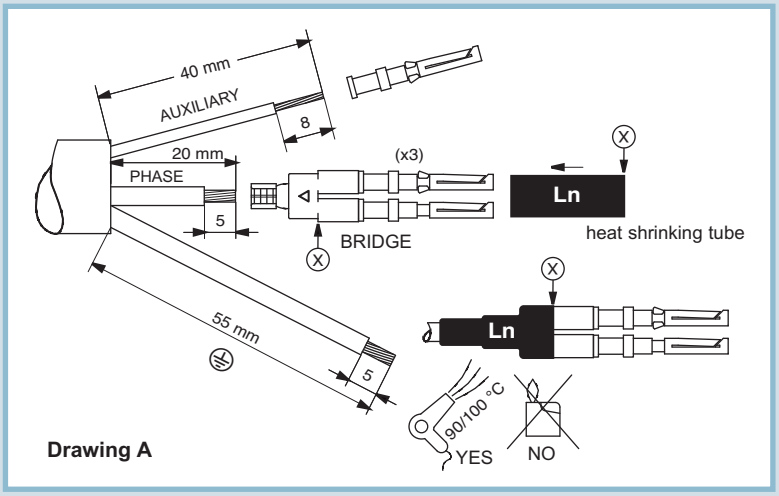
dimensions in mm



Example of DELTA connection using inserts CQ 12

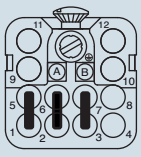


1 - Cut and strip the wires as shown in **Drawing A.**
2 - Crimp the contacts on the auxiliary wires and the bridge end to the phase. wires (3 units) using CRPZ pliers and CRD matrix (position 2,5).
3 - Insert the insulating heat shrinking tubes on the bridges, their end must be aligned with the position Ⓧ. Then heat them at 90/100 °C till they shrink over the wires.
4 - Insert the 3 bridges according to the **Drawing B.**



Drawing A

Drawing B



CQF 12
(termination side)

1-5	BRIDGE L1 (winding U1/W2)
2-6	BRIDGE L2 (winding V1/U2)
3-7	BRIDGE L3 (winding W1/V2)
4	auxiliary circuit
8	auxiliary circuit
9	auxiliary circuit
10	auxiliary circuit
11	auxiliary circuit
12	auxiliary circuit
⏚	protective earth

dimensions shown are not binding
and may be changed without notice

CR bridges for delta or star connection

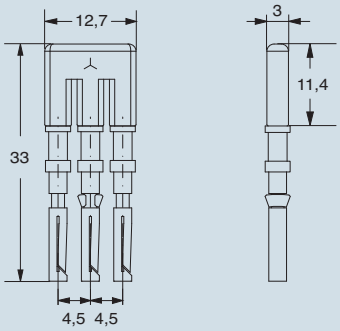
inserts:

CQF ..... 12 poles + ⏚
CDDF ..... 24, 42, 72 (144), 108 (216) poles + ⏚

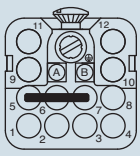
bridges for star connection

description	Part No.
bridge with 3 female 10A contacts, silver plated	**CR BST**

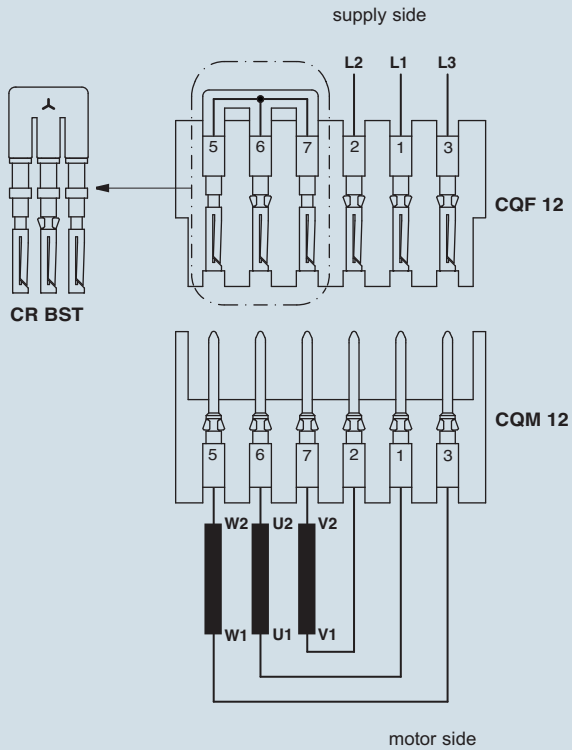
dimensions in mm



Example of STAR connection using inserts CQ 12



CQF 12
(termination side)



5-6-7	BRIDGE W2-U2-V2
1	L1
2	L2
3	L3
4	auxiliary circuit
8	auxiliary circuit
9	auxiliary circuit
10	auxiliary circuit
11	auxiliary circuit
12	auxiliary circuit
⏚	protective earth

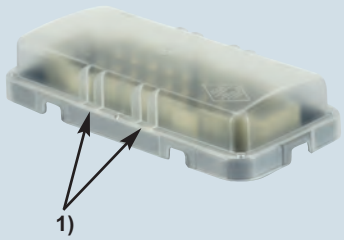
dimensions shown are not binding
and may be changed without notice

Accessories

enclosures:
size “44.27”, “57.27”, “77.27”, “104.27”

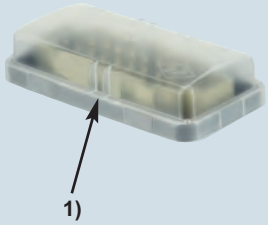
for versions:
- **C-TYPE IP65/IP66**
- **C7 IP67 stainless steel lever**
- **V-TYPE IP65/IP66 stainless steel lever**
- **BIG hoods**
- **W-TYPE for aggressive environments**
- **EMC**
- **180 °C**
- **central lever**
- **insulated 830V**
- **LS-TYPE**

dust protection cover



NEW

painting protection cover 2)



NEW

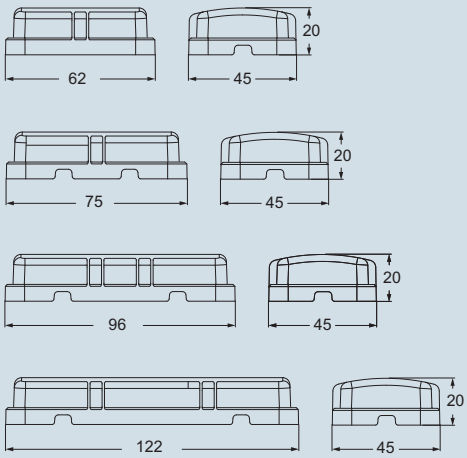
description	part No.	part No.
for housings and hoods with 1 or 2 levers, with 2 or 4 pegs - size “44.27” - size “57.27” - size “77.27” - size “104.27”	**CHCP 06** **CHCP 10** **CHCP 16** **CHCP 24**	**CHCP 10 V**

1) Possibility of using cable ties to increase the retention of the insulating cover on the hood.

2) For housings and hoods with gasket only.

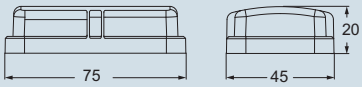
dimensions in mm

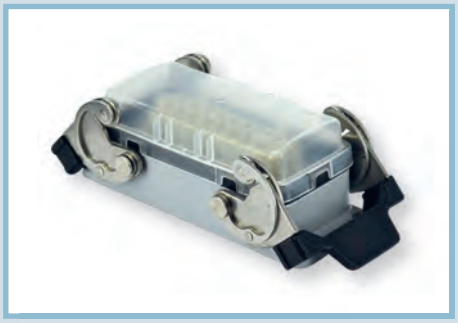
CHCP



dimensions in mm

CHCP 10 V





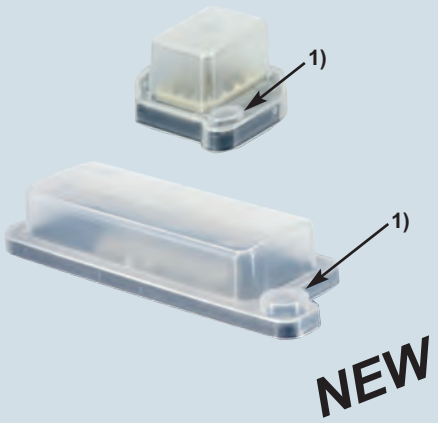
dimensions shown are not binding
and may be changed without notice

Accessories

for versions:
- **IP68:**
  size “21.21”, “44.27”, “57.27”, “77.27”, “104.27”

dust protection cover, for housings

dust protection cover, for hoods



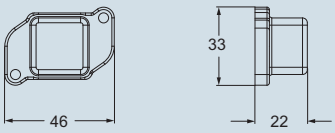
description	part No.	part No.
for housings and hoods - size “21.21” - size “44.27” - size “57.27” - size “77.27” - size “104.27”	**CGKCP FX** **CGCP 06 FX** **CGCP 10 FX** **CGCP 16 FX** **CGCP 24 FX**	**CGKCP MB** **CGCP 06 MB** **CGCP 10 MB** **CGCP 16 MB** **CGCP 24 MB**

1) Possibility of using cable ties to increase the retention of the insulating cover on the hood.

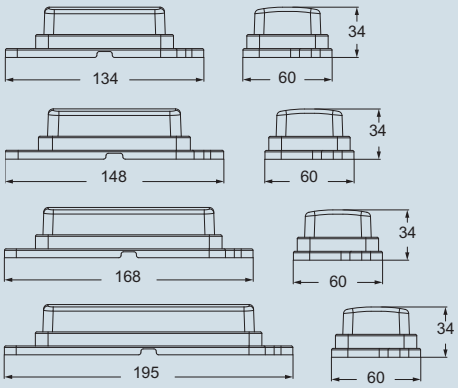
2) Possibility to fix by screw:
- CGKCP FX: 2xM3
- CGCP FX: 2xM6

dimensions in mm

CGKCP FX

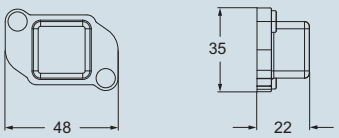


CGCP FX

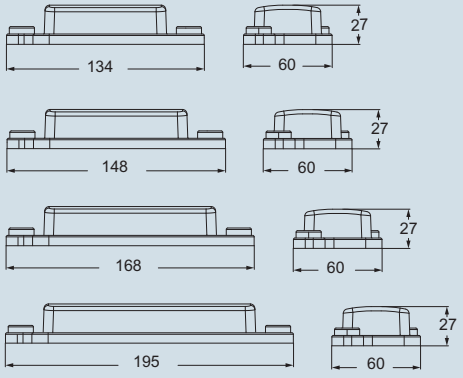


dimensions in mm

CGKCP MB



CGCP MB



dimensions shown are not binding
and may be changed without notice

insert joining block

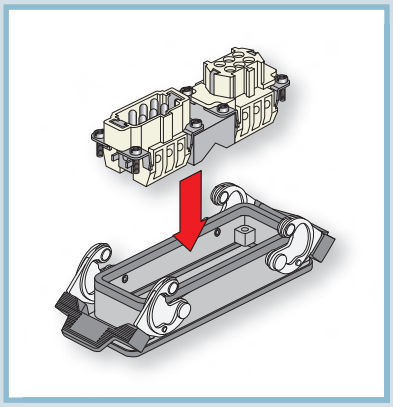
metal replacement handles

description	part No.	part No.
made of die cast aluminium alloy to mate two inserts (see below)	**CBGF**	
to replace thermoplastic handles 2 component kit for dual lever enclosures [1]		**CR TM-1**

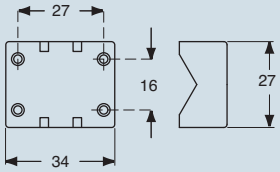
[1] can only be used on dual lever enclosures sizes 57.27, 77.27 and 104.27

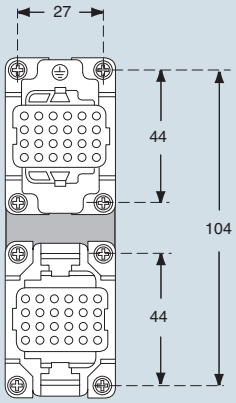
CBGF combination block

- Allows two “44.27 size” inserts to be inserted in “104.27 size” enclosures and on the following COB series items:
  COB TCQ, COB 24 BC, COB TSF, COB TSFS, COB 24 CMS
- Allows female contacts and male contacts in the same enclosure or mounting
- Allows mixed type contacts in the same enclosure or mounting (for example, 6 poles 16A CNEF + 24 poles 10A CDDF)



dimensions in mm





enclosures:
size “104.27” ..... **from page** 258

panel supports:
COB ..... **page** 462 - 463

inserts with screw fixing centre distance:
(2x) 44 x 27 mm

C-TYPE enclosures
(with two levers only):
size “57.27” ..... **from page** 244
size “77.27” ..... **from page** 250
size “104.27” ..... **from page** 258

dimensions shown are not binding
and may be changed without notice

enclosures:
size “104.27” ..... **from page** 258

temporary protection cover for transportation

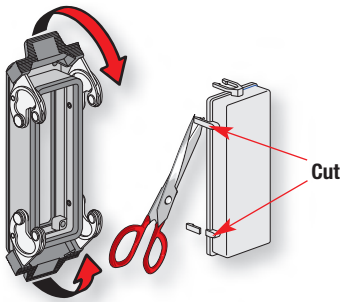
pliers for uncoupling connectors

description	part No.	part No.
for housings and hoods - with 1 or 2 levers, with 2 or 4 pegs	**CPT 24** *	
for housings and hoods - with 2 levers and 4 pegs		**CPES**

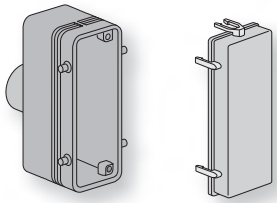
* Cannot be used with T-TYPE series

USE

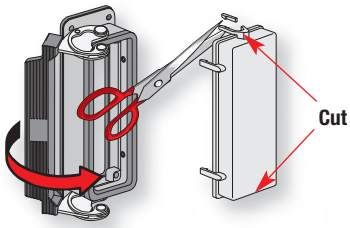
CPT 24 for enclosures with 2 levers



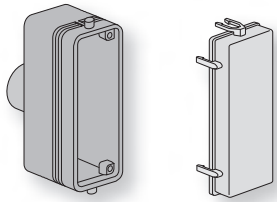
CPT 24 for enclosures with 4 pegs



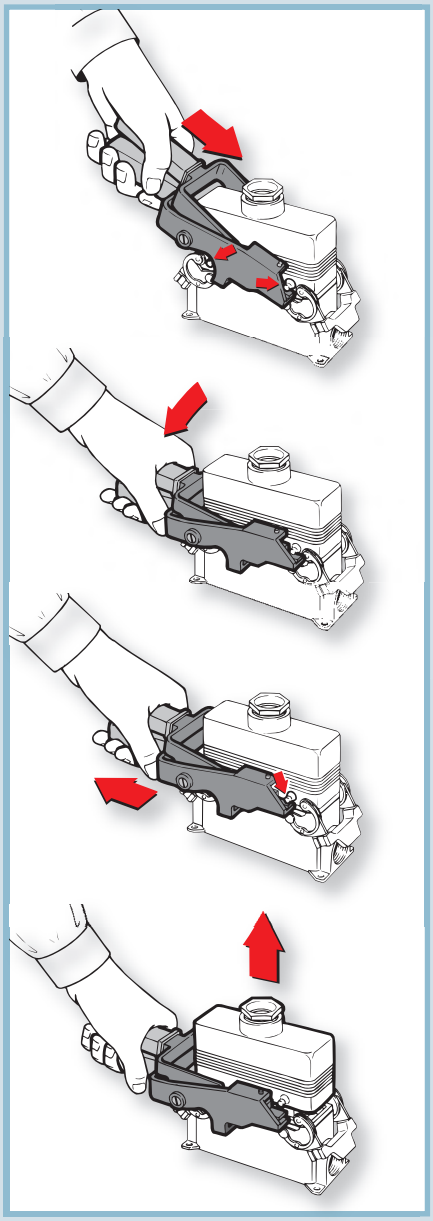
CPT 24 for enclosures with 1 lever



CPT 24 for enclosures with 2 pegs



USE

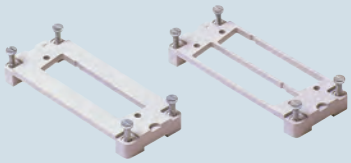


enclosures:
size “49.16” ..... **from page** 230
size “66.16” ..... **from page** 233
size “44.27” ..... **from page** 240
size “57.27” ..... **from page** 244
size “77.27” ..... **from page** 250

Use M3 passing screws tightened with nut and washer (not included).
Verify connection continuity of coupled connectors

plates for D-Sub inserts (IEC 60807-2) CZ / MZ / MZF enclosures

plates for D-Sub inserts (IEC 60807-2) CH / CA and MH / MA / MF enclosures



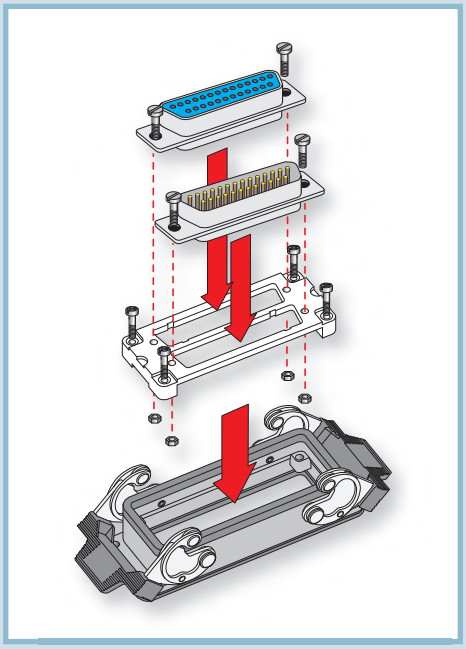
description	part No.	for enclosures size	part No.	for enclosures size
for 1 D-Sub insert 9 poles (not included)	**CR 09 AD**	“49.16”	**CR 09 AD1**	“44.27”
for 1 D-Sub insert 15 poles (not included)	**CR 15 AD**	“49.16”	**CR 15 AD1**	“44.27”
for 1 D-Sub insert 25 poles (not included)	**CR 25 AD**	“49.16”	**CR 25 AD1**	“57.27”
for 1 D-Sub insert 37 poles (not included)	**CR 37 AD**	“66.16”	**CR 37 AD1**	“77.27”
for 1 D-Sub insert 50 poles (not included)	**CR 50 AD**	“66.16”	**CR 50 AD1**	“77.27”
for 2 D-Sub inserts 9 poles (not included)			**CR 09 AD2**	“44.27”
for 2 D-Sub inserts 15 poles (not included)			**CR 15 AD2**	“44.27”
for 2 D-Sub inserts 25 poles (not included)			**CR 25 AD2**	“57.27”
for 2 D-Sub inserts 37 poles (not included)			**CR 37 AD2**	“77.27”
for 2 D-Sub inserts 50 poles (not included)			**CR 50 AD2**	“77.27”

Plates CR…AD, CR…AD1 and CR…AD2
For machinery or command equipment that need connection with programming and control electronic devices. The plate housings have notches for the rear insertion of cabled D-Sub inserts.

CR…AD
mounting on bulkhead housings and hoods
one-way mounting in bulkhead housings or hoods.

CR…AD1 and CR…AD2
mounting on bulkhead housings (Figure 1)
The D-Sub connector must be mounted on the side marked with the letter “A“

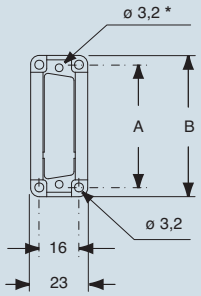
mounting on hoods (Figure 2)
The D-Sub connector must be mounted on the side marked with the letter “T“



dimensions shown are not binding and may be changed without notice

dimensions in mm

CR...AD



*** For passing screws type M3**

The electrical continuity is guaranteed only if mounted in our enclosures.

part No.	A	B
CR 09 AD	49,5	56,5
CR 15 AD	49,5	56,5
CR 25 AD	49,5	56,5
CR 37 AD	66	73,5
CR 50 AD	66	73,5

dimensions in mm

CR...AD1

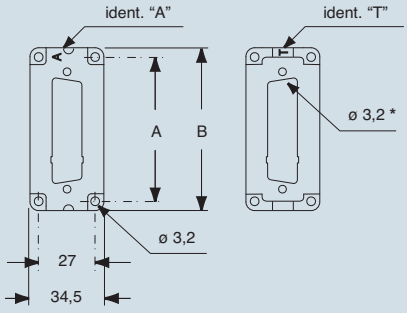


Figure 1 **Figure 2**

CR...AD2

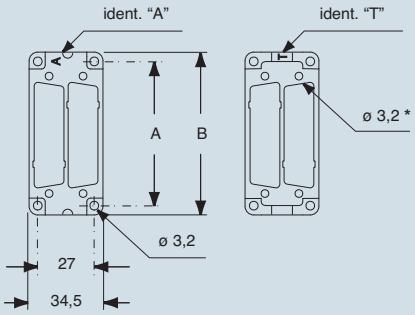


Figure 1 **Figure 2**

*** For passing screws type M3**

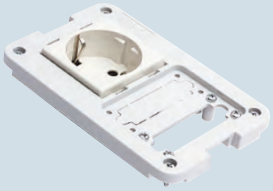
part No.	A	B
CR 09 AD1 / 2	44	51,5
CR 15 AD1 / 2	44	51,5
CR 25 AD1 / 2	57	64,5
CR 37 AD1 / 2	77,5	85
CR 50 AD1 / 2	77,5	85

enclosures *): page:
size “104.62”

C-TYPE IP65/IP66 271

*) normally bulkhead type

kit for control equipment plate only



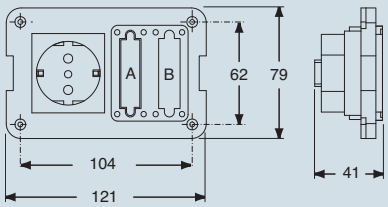
kit for control equipment plate with enclosure

description	part No.	for enclosure	part No.
with Schuko® socket 16A and 2 seats for: CR 09 AD, CR 15 AD, CR 25 AD plates	**SDS**	CHI 48 LS	
with Schuko® socket 16A and 2 seats for: CR 09 AD, CR 15 AD, CR 25 AD plates			**CHSDS**

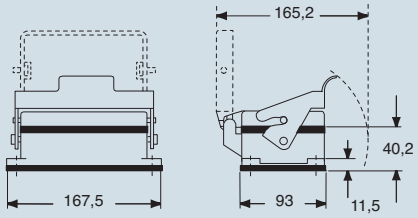
Kit for control equipment

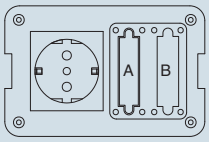
For machinery or command equipment that need connection with programming and control electronic devices.
The kit includes the Schuko® socket and 2 seats for the CR…AD plates (not included) for D-SUB inserts (not included).
Personal computers, notebooks or printers can be power supplied using a 16A socket.
Monitors, printers and other peripheral devices may be interfaced using D-SUB connectors

dimensions in mm



dimensions in mm





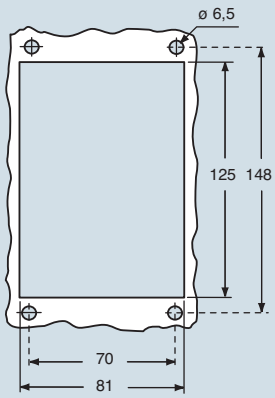
CR…AD plates usable

part No.	
CR 09 AD	for 1 D-SUB insert 9 poles (not included)
CR 15 AD	for 1 D-SUB insert 15 poles (not included)
CR 25 AD	for 1 D-SUB insert 25 poles (not included)

Closed seat “A” for use with one insert only.
The closing is achieved by means of a plastic membrane that can easily be removed if the second seat is required.

CR.. AD plates to be ordered separately

housing panel cut-out in mm



dimensions shown are not binding
and may be changed without notice

enclosures:

size “44.27” ..... **from page** 240
size “57.27” ..... **from page** 244
size “77.27” ..... **from page** 250
size “104.27” ..... **from page** 258

24 pole closure or reduction plate

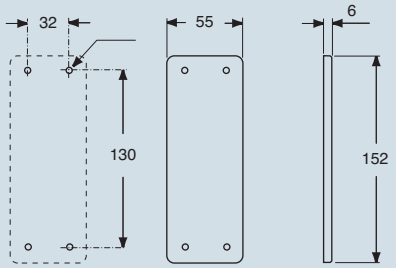
extraction tool for MIXO BUS connectors

description	part No.	part No.
in autoextinguishing thermoplastic resin with gasket in vinil-nitrile elastomer	**CRH 24**	
in self-extinguishing thermoplastic resin with gasket in vinil-nitrile elastomer - for bulkhead mounting housings * size “44.27” - for bulkhead mounting housings * size “57.27” - for bulkhead mounting housings * size “77.27” - for bulkhead mounting housings * size “104.27”	 **CRZ 06** **CRZ 10** **CRZ 16** **CRZ 24**	
for the extraction of the BUS shielded connectors from the MIXO BUS insert		**CX BES**

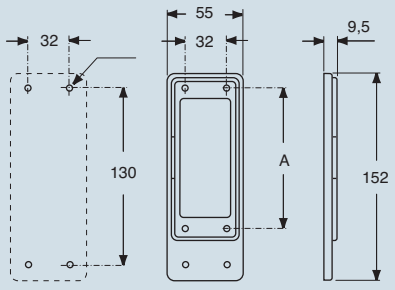
* Cannot be used with T-TYPE series and IP68 series

dimensions in mm

CRH 24



CRZ



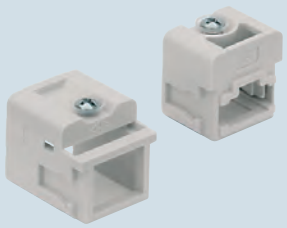
CRZ	A
06	70
10	83
16	103
24	130

dimensions shown are not binding
and may be changed without notice

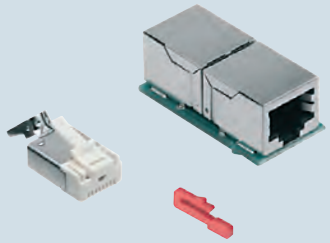
enclosures: page:
size “21.21”

insulating type ..... 526 - 527
(CK IN, CKG/MKG VN/VAN)
metallic type ..... 528 - 529
(CKAX I, CKAG/MKAG V/VA)
IP68 ..... 416 - 418
(CGK I, CGK/MGK V)

adaptor for RJ45 connectors



RJ45 connectors



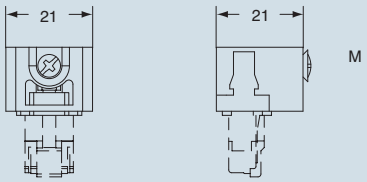
description	part No.	part No.
without RJ45 connector (to be ordered separately) - adapter for RJ45 female connector in fixed enclosures	**CJ KF**	
- RJ45 female connector with 8 data contacts - RJ45 female connector with 8 data contacts / 2 power contacts		**CX 8 JF *** **CX 8/2 JF ***
without RJ45 connector (to be ordered separately) - adapter for RJ45 male connector [1]	**CJ KM**	
- RJ45 male connector with 4 data contacts - RJ45 male connector with 4 data contacts / 2 power contacts - RJ45 male connector with 6 data contacts / 2 power contacts - RJ45 male connector with 8 data contacts - RJ45 male connector, 4 data contacts cat. 5e profiNET©		**CX 4 JM** **CX 4/2 JM** **CX 6/2 JM** **CX 8 JM** **CX 4E JM**

[1] to be used with hoods

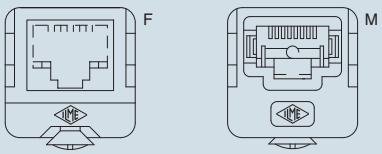
* 4 pole version on request, part No. **CX 4 JF** and **CX 4/2 JF** with “crossover” link

RJ45 connector features:
- RJ45 insert, Class 5 Ethernet
- rated current: 2,1A at 70 °C
- rated voltage: 50VDC / 35VAC
- IDC terminals:
  for 0,22 mm² (AWG 24/7) data contacts **CX 4 JM**
  for 0,14 mm² (AWG 26/7) or 0,22 mm² (AWG 24/7) data contacts **CX 4/2 JM**
  for 0,34 mm² (AWG 22/7) or 0,38 mm² (AWG 22/19) power contacts
  for 0,14 mm² (AWG 26/7) data contacts **CX 6/2 JM**
  for 0,25 mm² (AWG 23/19) power contacts
  for 0,14 mm² (AWG 26/7) data contacts **CX 8 JM**
  for 0,34 mm² (AWG 22/7) data contacts **CX 4E JM**
- /7 = 7-strands wire
  /19 = 19-strands wire
- $Ø_{max}$ insulating conductors 1 mm (data), 1,4 mm (power and CX 4E JM)
- $Ø_{max}$ complete cable 7 mm (CX 8 JM: 6,9 mm)
- temperature range: from -40°C to 120 °C
- nickel plated brass screening
- insert coding pin: **CR KC**
- self-extinguishing properties: to UL 94V-0
- crimp pliers: **CJPZ Y**
- screened cable stripper: **CJST**
- for crimping a male connector, see the crimp tool section page 553

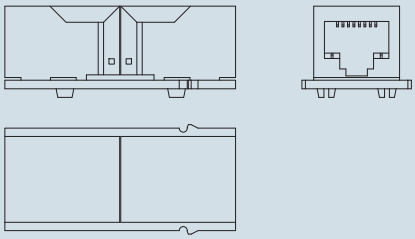
dimensions in mm
CJ KF, CJ KM



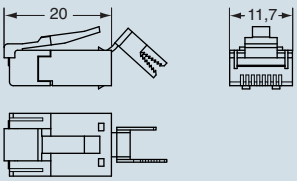
contacts side (front view)



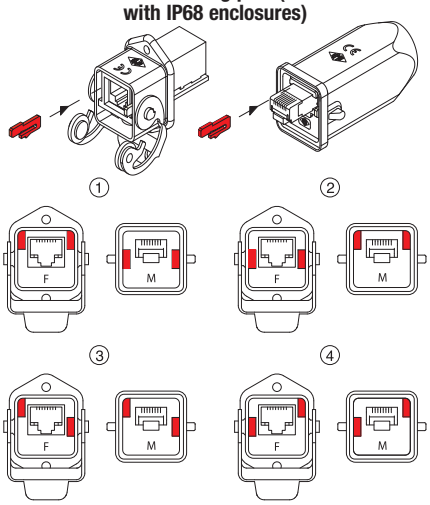
dimensions in mm
CX 4 JF, CX 4/2 JF, CX 8 JF, CX 8/2 JF



CX 4 JM, CX 4E JM, CX 4/2 JM, CX 6/2 JM, CX 8 JM



How to use CR KC coding pins (cannot be used with IP68 enclosures)



dimensions shown are not binding
and may be changed without notice

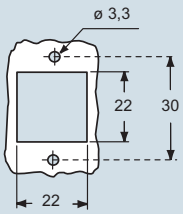
- IP65 / IP67 degree of protection (EN 60529)
- insert RJ45, Class 5 Ethernet
- rated current: 2.1A at 70 °C
- rated voltage: 50V DC / 35V AC
- temperature limit: -40 °C, +120 °C
- nickel-plated brass screening
- insert code pin: CR KC
- self-extinguishing: UL 94V-0
- insulating enclosures in black self-extinguishing thermoplastic material
- hoods with cable gland
- female insert with two connected entries

IP65 / IP67 connector in bulkhead housing, female inserts

patch cord with 2 RJ45 connectors, male inserts

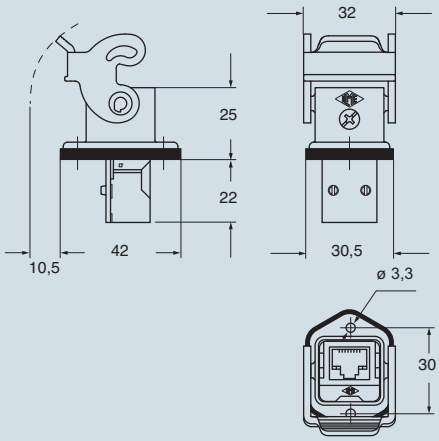
description	part No.	part No.	(L) metre
connector in insulating enclosure and insert with 8 data contacts	**CJZ 8 IN**		
connector in metal enclosure and insert with 8 data contacts	**CJZA 8 I**		
RJ45 connector 8 data contacts, in insulating enclosure		**CWK 2 J2M8** **CWK 5 J2M8** **CWK 10 J2M8**	2 5 10
RJ45 connector 8 data contacts, in metal enclosure		**CWKA 2 J2M8** **CWKA 5 J2M8** **CWKA 10J2M8**	2 5 10

panel cut-out for bulkhead mounting housings in mm

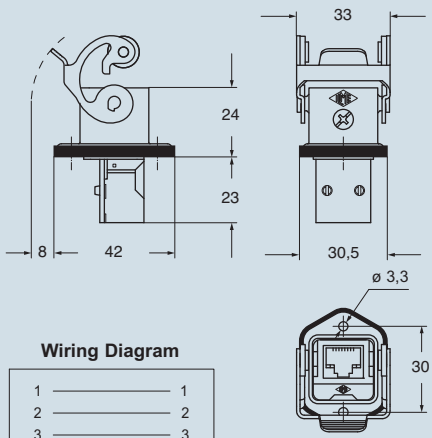


dimensions in mm

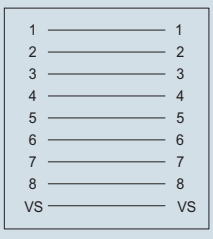
CJZ IN



CJZA I

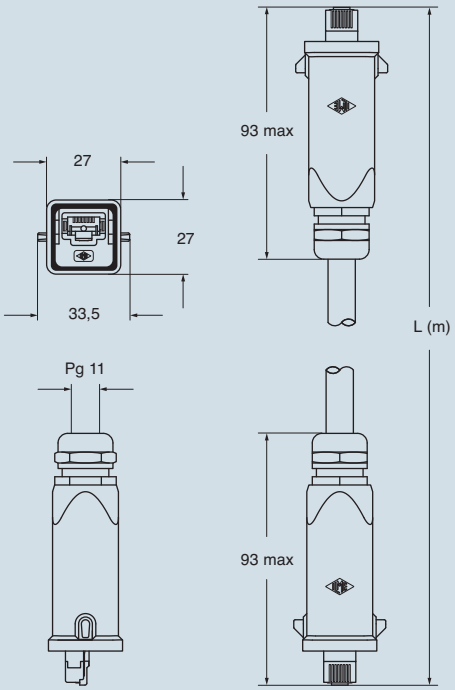


Wiring Diagram

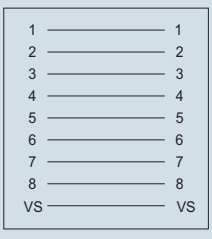


dimensions in mm

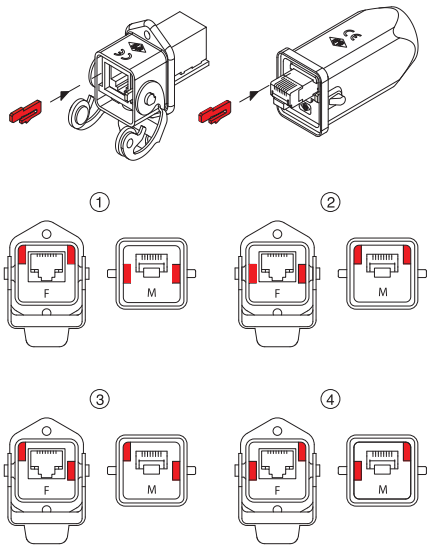
CWK J2M8 and **CWKA J2M8**



Wiring Diagram



CR KC code pins



dimensions shown are not binding and may be changed without notice

Accessories

Allows two complete portable RJ45 connectors to be joined, IP65/IP67 version

insulated version coupling, for RJ45 connectors

metal version coupling, for RJ45 connectors

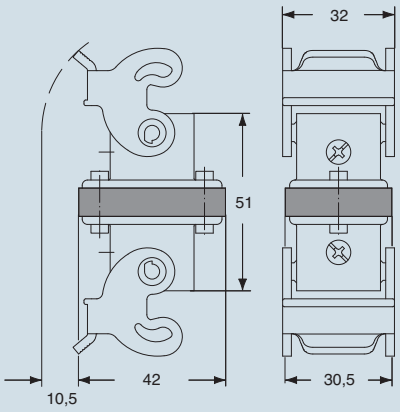
description	part No.	part No.
- female RJ45 coupling, 8 data contacts - female RJ45 coupling, 8 data contacts / 2 power contacts	**CYG 8 JF *** **CYG 8/2 JF ***	
- female RJ45 coupling, 8 data contacts - female RJ45 coupling, 8 data contacts / 2 power contacts		**CYG 8 JFA *** **CYG 8/2 JFA ***

RJ45 connector features:
- RJ45, Class 5 connector
- nominal current: 2.1A at 70 °C
- nominal voltage: 50VDC / 35VAC
- temperature range: from -40 °C to +120 °C
- nickel plated brass screening
- insert coding pin: **CR KC**
- self-extinguishing properties: to UL 94V-0
- die cast zinc alloy metal enclosures
- black self-extinguishing thermoplastic insulated enclosures.

* 4 pole version on request, part No. **CYG 4 JF, CYG 4/2 JF, CYG 4 JFA** and **CYG 4/2 JFA** with "crossover" link

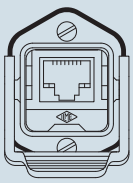
dimensions in mm

CYG 4 JF, CYG 4/2 JF, CYG 8 JF, CYG 8/2 JF



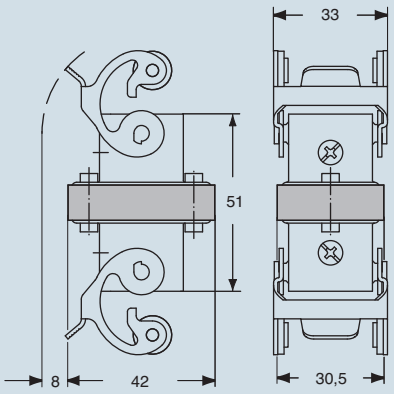
contacts side (front view)

side with reference arrow ▲



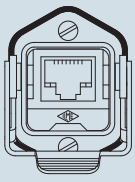
dimensions in mm

CYG 4 JFA, CYG 4/2 JFA, CYG 8 JFA, CYG 8/2 JFA



contacts side (front view)

side with reference arrow ▲



dimensions shown are not binding and may be changed without notice

enclosures: page:
size "21.21"

insulating type ..... 526 - 527
(CK IN, CKG/MKG VN/VAN *)

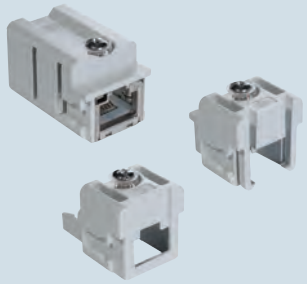
metallic type
(CKAX I, CKAX/MKAX IAP/AP/VG) 223 and 528
(CKAG/MKAG V/VA *) 529

IP68 ..... 416 - 418
(CGK I, CGK/MGK IAP, CGK/MGK V)

*) angled enclosures cannot be used with CX 8 J6IM

- characteristics according to EN 61984:
  1A 50V 0,8kV 3
- insulation resistance: ≥ 10 GΩ
- made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- temperature range: from -40 °C to +70 °C
- we recommend to fix the cable with cable tie

adapters for RJ45 male connectors, RJ45 female connectors



NEW

RJ45 male connectors, crimp IDC termination

NEW

description	part No.	part No.
- socket insert with 1 RJ45 female connector, - plug inserts for 1 RJ45 male crimp connector, 8 data contacts (without RJ45 connector, to be ordered separately) - plug insert for 1 RJ45 male IDC connector, 8 data contacts (without RJ45 connector, to be ordered separately)	**CJK 8FT** **CJK 8MT** **CJK 8IMT**	
- RJ45 male crimp connector, 8 data contacts - RJ45 male IDC connector, 8 data contacts		**CX 8 J6M** **CX 8 J6IM**

CJK 8FT technical data:
- RJ45 female insert, Cat. 6 Class E_A
- shielding housing: zinc diecast
- housing finish: nickel-plated
- current carrying capacity at 50 °C: 1A
- adequate for Power over Ethernet: PoE according to IEEE 802.3af
- connectors: IEC 60603-7-5
- adequate for 10 Gigabit Ethernet: 10 Gigabit Ethernet acc. to IEEE 802.3an
- custom-designed cabling systems: PROFINET Installation Guideline
- generic cabling systems: ANSI/TIA/EIA-568-C.2 ISO/IEC 11801 EN50173-1 ISO/IEC 24702 EN 61918
- Class E_A (channel): ISO/IEC 11801, EN 50173-1

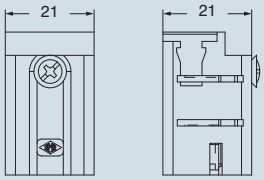
CX 8 J6M technical data:
- RJ45 male crimp connectors Cat. 6_A
- crimp pliers: **CJPZ T**
- screened cable stripper: **CJST**
- Cu-conductor diameter solid: 0,40 - 0,51 mm (AWG 26/1 - 24/1) stranded: 0,46 - 0,61 mm (AWG 27/7 - 24/7)
- insulation diameter: 0,85 - 1,05 mm
- cable diameter: 5,0 - 6,6 mm
- connectors: IEC 60603-7-51
- 10 Gigabit Ethernet acc. to IEEE 802.3an: adequate for 10 Gigabit Ethernet
- category 6_A: ISO/IEC 11801; EN 50173-1
- Class E_A: ISO/IEC 11801; EN 50173-1
- Category 6_A: ANSI/TIA/EIA-568-C.2

CX 8 J6IM technical data:
- RJ45 male IDC connectors Cat. 6 Class E_A
- Cu-conductor diameter solid: 0,41 - 0,64 mm (AWG 26/1 - 22/1) stranded: 0,48 - 0,76 mm (AWG 26/7 - 22/7)
- insulation diameter: 0,85 - 1,6 mm
- cable diameter: 5,5 - 7,3 mm
- connectors: IEC 60603-7-5
- category 6_A: ISO/IEC 11801; DIN EN 50173-1
- wrenches pliers for CX 8 J6IM: **CJPW K**
- 10 Gigabit Ethernet acc. to IEEE 802.3an: adequate for 10 Gigabit Ethernet
- Class E_A: ISO/IEC 11801; EN 50173-1
- Category 6: ANSI/TIA/EIA-568-C.2
- custom-designed cabling systems: according to PROFINET Installation Guideline

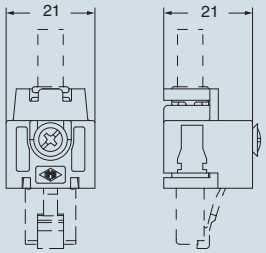
dimensions shown are not binding and may be changed without notice

dimensions in mm

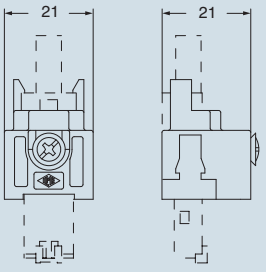
CJK 8FT



CJK 8MT [1]



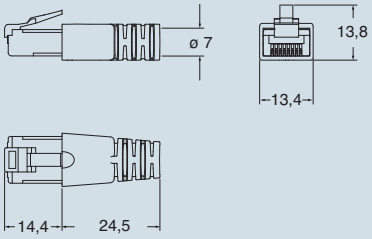
CJK 8IMT [1]



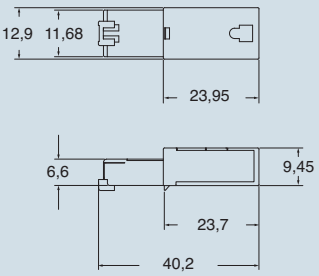
[1] to be used with hoods

dimensions in mm

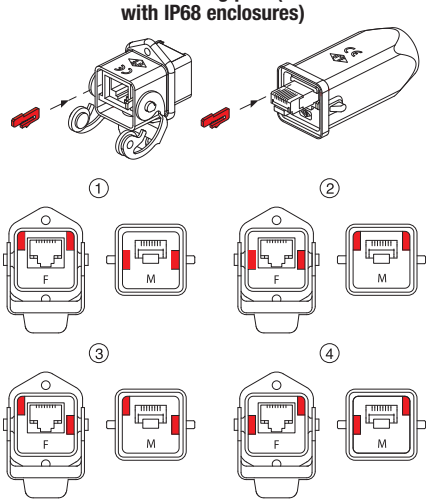
CX 8 J6M (can be used with CJK 8MT)



CX 8 J6IM (can be used with CJK 8IMT)



How to use CR KC coding pins (cannot be used with IP68 enclosures)



CW patch cord RJ45

with 2 RJ45 male connectors

NEW

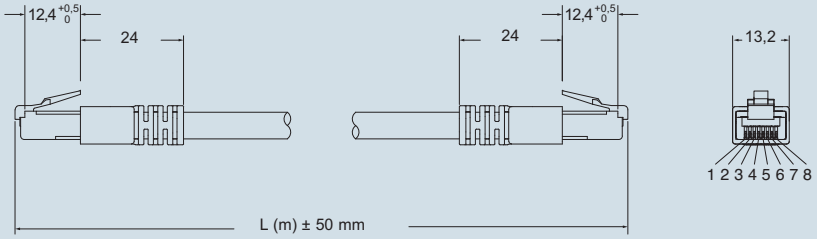
description	part No.	(L) meter
RJ45 male connector with 8 data contacts	**CW 1 J2M87**	1
	CW 2 J2M87	2
	CW 3 J2M87	3
	CW 5 J2M87	5
	CW 7.5J2M87	7,5
	CW 10 J2M87	10
	CW 15 J2M87	15

RJ45 patch cord technical data:
- S/FTP Cat. 7 PUR
- temperature range: from -40 °C ÷ +75 °C
- nickel plated brass screening
- green RAL 6018 colour

Can be used with:
- MIXO RJ45 **CX 01 J8M** male inserts
- **CJK 8MT** adaptors

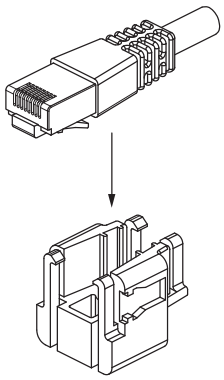
dimensions in mm

CW...J2M87

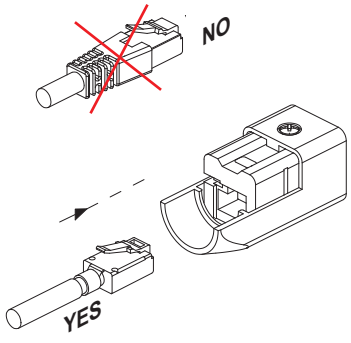


Wiring Diagram

CJK 8MT male assembly



CJK 8FT to be used in VG or IAP enclosures with male crimp version



dimensions shown are not binding
and may be changed without notice

Accessories

CLK series

Main features

Adaptor CLK 04 SC

The new adaptor **CLK 04 SC** enables use of **fibre optic SC contacts**, up to 4 SC contacts per connector, for indoor or outdoor heavy duty industrial applications, with ILME connector enclosures size "21.21" series **CKA** (IP66/IP67, metallic, both C-TYPE, grey-painted, for normal environments, and W-TYPE black-painted, for aggressive environments, only the hood models provided with sealing gasket), series **CGK/ MGK** (IP66/IP68, metallic, either Pg or metric-threaded cable outlet) and series **CK** (IP66/IP67, insulating, only the hood models provided with sealing gasket).

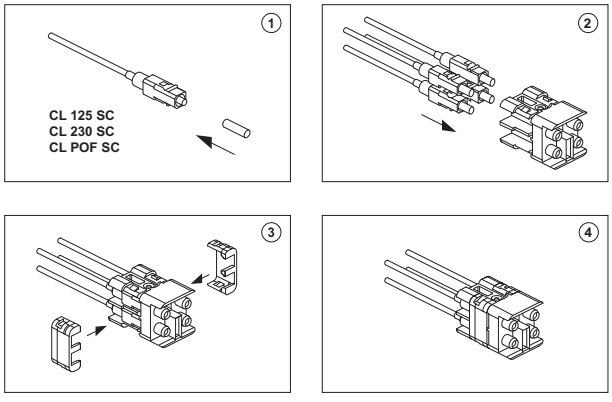
The **fibre optic SC contacts** (genderless, to be purchased separately) are available both for multi-mode fibres (50/125 µm or 62,5/125 µm) and single-mode fibre (9/125 µm).
The fibre optic SC contacts are also available for the hard-clad silica (HCS) or polymer-clad fibre (PCF) 200/230 µm fibre optic cables and for the less demanding, with shorter transmission distance covered, but more cost effective POF Ø 1 mm applications, available with crimp technique version (crimping tool required).

NOTE
Due to the higher skill and training required to produce an effectively performing fibre optic junction for a single-mode type fibre-optic cable than for a multi-mode one, dedicated contacts for single-mode are available only upon request. Contact our Commercial Department for a quotation. It is more practical in such case to equip the CLK 04 SC adaptor with ready-to-use fibre optic patch cords.
Quick assembly technique version (tool-less) for POF Ø 1 mm cables are also available only upon request, please send inquiry to our Commercial Department.

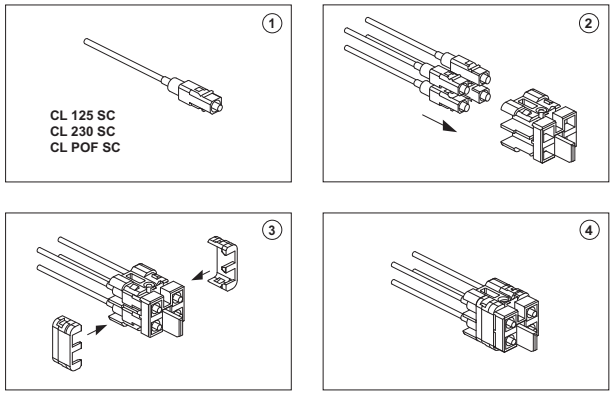
The female adaptor inserts are provided with 4 **ceramic** (zirconia) type **split alignment sleeves**, for minimal insertion loss (e.g. critical network connections) and best suitable for single-mode F/O cable connections. As optional accessory, **metallic** (phosphor bronze) **split alignment sleeves** are also available for more durable (less prone to cracking) applications, but less demanding precision alignment, thus most suitable for multi-mode fibre applications.

Part No. of adaptor inserts		CLK 04 SC
No. of seats/poles	seats for optical contacts	4
ambient temperature limit (°C)	min	-40
	max	+70
degree of protection	with enclosures (according to type)	IP66/IP67, IP66/IP68, IP69
conductor connections		crimp
mechanical endurance (rating cycles)		≥ 500
self-extinguishing capacity UL 94		V0

FEMALE



MALE



CLK adaptors

4 seats for fibre optic SC contacts

enclosures: page:
size "21.21"

insulating type ..... 526 - 527
(CK IN, CKG/MKG VN)

metallic type
(CKAX I, CKAX/MKAX IAP/AP/VG) 223 and 528
(CKAG/MKAG V) 529

IP68 ..... 416 - 418
(CGK I, CGK/MGK IAP, CGK/MGK V)

adaptor insert for SC connectors

NEW

crimp FO contacts

NEW

description	part No.	part No.
adaptor insert with seats for 4 SC contacts - female insert, with ceramic sleeve - female insert, with metallic sleeve - male insert	**CLK 04 SCF** **CLK 04 SCF-H** **CLK 04 SCM**	
SC contact for GI FIBRE 50/125 µm or 62.5/125 µm SC contact for 1 mm ø POF		**CL 125 SC** **CL POF SC**

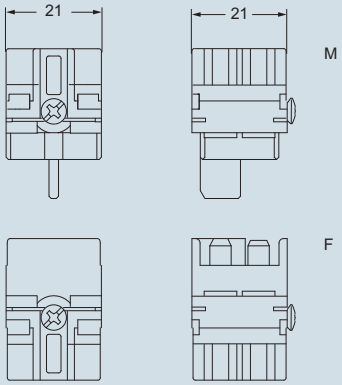
- adaptor insert fitted with fixing screw and gasket, suitable for installation in enclosures
- adaptor insert designed to be used with SC contacts
- SC contact for SI FIBRE (HCS®) 200/230 µm: **CL 230 SC** (on request)

- base equipment for SC contact GI FIBRE:
  CLKZ 125 SC
  If this application is required, please contact ILME SpA.

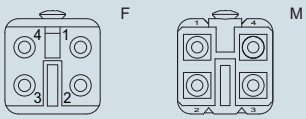
- supplementary set for POF:
  CLKZ POF
  (to be ordered with CLKZ 125 SC)
  If this application is required, please contact ILME SpA.

dimensions in mm

CLK 04 SCF, CLK 04 SCM

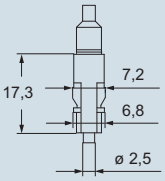


contacts side (front view)

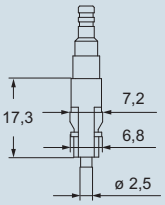


dimensions in mm

CL 125 SC



CL POF SC



dimensions shown are not binding
and may be changed without notice

Accessories

CW SC patch cord

FO SC duplex patch cords

SC duplex patch cord

NEW

SC duplex patch cord

NEW

description	part No.	(L) meter	part No.	(L) meter
SC duplex patch cord, GL fibre E9/125 (YELLOW)	**CW 1 SC9** **CW 2 SC9** **CW 3 SC9** **CW 5 SC9** **CW 10 SC9**	1 2 3 5 10		
SC duplex patch cord, GL fibre G50/125 (ORANGE)			**CW 1 SC50** **CW 2 SC50** **CW 3 SC50** **CW 5 SC50** **CW 10 SC50**	1 2 3 5 10
SC duplex connector, GL fibre G62,5/125 (ORANGE)			**CW 1 SC62** **CW 2 SC62** **CW 3 SC62** **CW 5 SC62** **CW 10 SC62**	1 2 3 5 10

- operating temperature: from -5 °C ÷ +55 °C
- storage temperature: from -30 °C ÷ +70 °C
- installation temperature: from -5 °C ÷ +50 °C
- flame retardancy: IEC 60332-1
- halogen-free acc. to: IEC 60754-2.

dimensions shown are not binding
and may be changed without notice

CX BD series

Main features

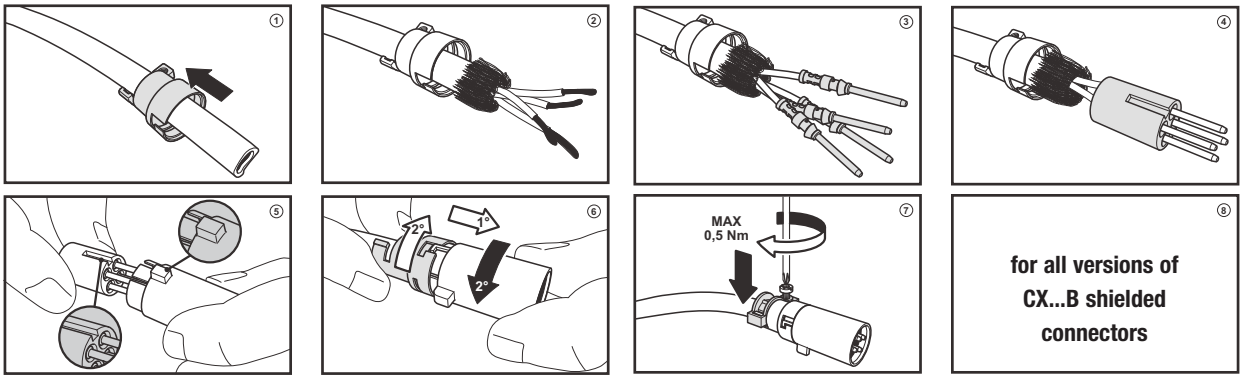
To be able to use round shielded connectors series MIXO BUS (multiaxial, for balanced cables with multiple pairs) or coaxial connectors (for coaxial cables) even in compact enclosures size “21.21” **CKA/MKA** or **CGK/MGK**, it is necessary to purchase the new **adaptor insert CX 1/2 BD**.

This insert can be used to to assemble MIXO coaxial connectors part No. **CX 01 BM/BF** for coaxial cables with a typical impedance of 75 Ω and **CX 01 BCM/BCF** for coaxial cables with a typical impedance of 50 Ω , or **MIXO BUS CX 04 BM/BF** multiaxial shielded connectors with 4 poles + shield and the new **CX 08 BM/BF** shielded connectors with 8 poles + shield, in addition to providing **seats for 2 additional optional contacts** series CD for the connection of a SELV (very low safety voltage) supply line.
The connector section of this adaptor has rated values compliant with standard EN 61984 and equivalent to **10A 50V 0,8kV**.
Adaptor insert **CX 1/2 BDM/BDF** is fitted with multiaxial and coaxial MIXO BUS shielded connectors and is designed to be used only with the models specified below of the following enclosures: **CKA/MKA** (IP66/IP67) or **CGK/MGK** (IP66/IP68) **with gasket**. The cable shielding is electrically separated from the earthing connection of the metal enclosure. If used with MIXO BUS CX 04 BM/BF shielded connectors, the connector is able to support all field bus protocols with 4 conductors.
MIXO BUS multiaxial and coaxial connectors are compatible with shielded cables with a section ranging from 3 mm and 9,5 mm.
The operating temperature for connectors resulting from the use of CX 1/2 BD adaptor inserts is -40 °C / +70 °C.

Part No. of adaptor inserts		**CX 1/2 BD**
No. of seats/poles	seats for shielded connector [1]	1
	seats for auxiliary contacts	2
rated current [2]	shielded connector	depending on type: 5A, 10A, 16A
	auxiliary contacts	10A
EN 61984 pollution degree 3	rated voltage	50V
	rated impulse withstand voltage	0,8kV
	pollution degree	3
UL 1977 / CSA C22.2 N°187.3	rated voltage (a.c./d.c.)	50V
contact resistance	shielded connector	depending on the type of contact used
	auxiliary contacts	≤ 3 mΩ
insulation resistance		≥ 10 GΩ
ambient temperature limit (°C)	min	-40
	max	+70
degree of protection	with enclosures (according to type)	IP66/IP67, IP66/IP68, IP69
	without enclosures	IP20
conductor connections		crimp
conductor section	shielded connector (mm^2/AWG)	depending on the type of contact used
	auxiliary contacts (mm^2)	0,14÷2,5
	auxiliary contacts (AWG)	26÷14
conductors stripping lenght		depending of contact
mechanical endurance (rating cycles)		≥ 500
self-extinguishing capacity UL 94		V0

1) Depending on the selected shielded connector, which must be ordered separately, the number of poles + shield could be 1 (coaxial connectors), 4 (4-way multiaxial connector for 2 pairs) or 8 (8-way multiple connector, for example for 4 pairs).

2) It is generally necessary to refer to the loading curves of the inserts to determine the actual operating current limit for a specific ambient temperature.
These curves are not required for MIXO BUS / coaxial shielded connectors, because these are signal connectors designed to be used by the transmission protocols to transmit currents in fractions of amperes.
The current capacity specified is the maximum current traditionally assigned to contacts, not the one assigned to the shielded connector when in use.



adaptors inserts 1 seat for shielded connector + 2 aux contacts 10A - 50V

enclosures: page:
size "21.21"

metallic type
(CKAX I, CKAX/MKAX IAP/AP/VG) 223 and 528
(CKAG/MKAG V) 529

IP68 ..... 416 - 418
(CGK I, CGK/MGK IAP, CGK/MGK V)

adaptor insert for shielded connectors

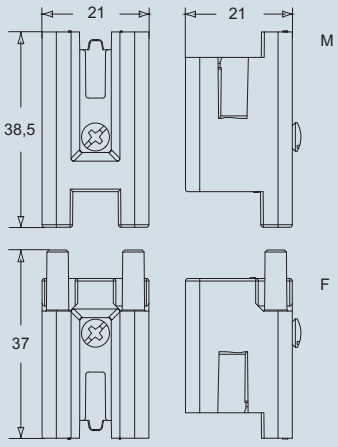
10A crimp contacts, silver or gold plated

description	part No.	part No.	part No.
adaptor insert with seats for 1 shielded connector + 2 aux contacts 10A - female insert, 1 seat for BUS connector and 2 seats for 10A female contacts (CDF) - male insert, 1 seat for BUS connector and 2 seats for 10A male contacts (CDM)	**CX 1/2 BDF** **CX 1/2 BDM**		
10A female contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5 10A male contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5** **CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5**	**CDFD 0.3** **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5** **CDMD 0.3** **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5**

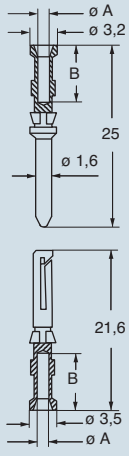
silver plated | **gold plated 1)**

- characteristics according to EN 61984:
  adaptor insert CX 1/2 BD (2 aux contacts)
  10A 50V 0,8kV 3
- certifications: cUL (UL for USA and Canada)
- for contact crimping, see the crimp tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- extraction tool for BUS/coax shielded connectors from adaptor insert CX 1/2 BD part No. CX BES see page 502
- contact resistance adaptor insert, 2 aux contacts: ≤ 3 mΩ
- adaptor insert fitted with fixing screw and gasket, suitable for installation in enclosures
- adaptor insert designed to be used with CX 01 BF/M, CX 04 BF/M; CX 08 BF/M and CX01 BCF/M shielded connectors

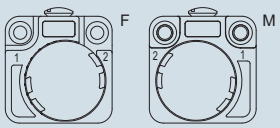
dimensions in mm
CX 1/2 BDF, CX 1/2 BDM



dimensions in mm
CDF and **CDM**



contacts side (front view)



CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

dimensions shown are not binding
and may be changed without notice

- characteristics according to EN 61984:
  shielded connector
  10A 50V 0,8kV 3
- for contact crimping, see the crimp tool section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548
- extraction tool for BUS/coax shielded connectors from adaptor insert CX 1/2 BD part No. CX BES see page 502
- contact resistance
  shielded connector CX 04 B: ≤ 3 mΩ
  coaxial connector CX 01 B: ≤ 3 mΩ
- coaxial connector CX 01 B **cables with a typical impedance of 75 Ω**
- CX 04 B multiaxial connector for STP cables with 2 pairs and terminations compliant with EN 50173-1 Cat. 5 (100 MHz), compatible with 4-wire field bus protocols

shielded connectors

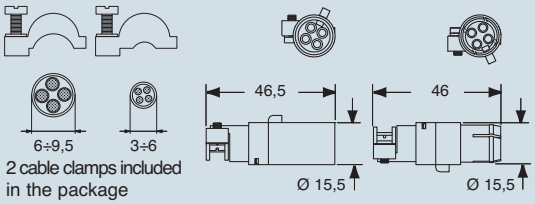
10A crimp contacts, silver or gold plated

description	part No.	part No.	part No.
shielded BUS multi axial connectors, 4 poles + shield - female insert, 4 contact seats 10A (CDF) + shield - male insert, 4 contact seats 10A (CDM) + shield	**CX 04 BF** **CX 04 BM**		
shielded BUS coaxial connectors, 1 pole + shield - female insert, 1 contact seat 10A (CDF) + shield - male insert, 1 contact seat 10A (CDM) + shield	**CX 01 BF** **CX 01 BM**		
10A female contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5**	**CDFD 0.3** **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5**
10A male contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5**	**CDMD 0.3** **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5**

silver plated | **gold plated 1)**

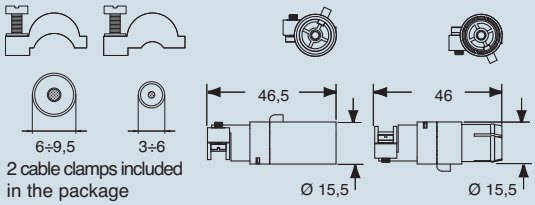
dimensions in mm

CX 04 BF, CX 04 BM



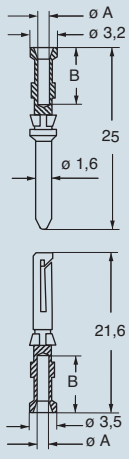
2 cable clamps included in the package

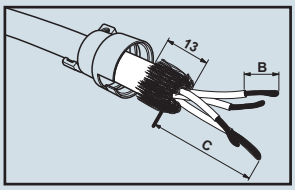
CX 01 BF, CX 01 BM

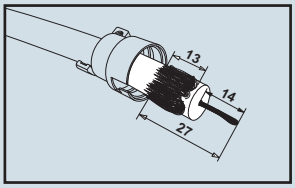


2 cable clamps included in the package

CDF and **CDM**







cable clamp	C (mm)
3÷6	20
6÷9,5	25

CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0.37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

dimensions shown are not binding and may be changed without notice

- characteristics according to EN 61984:
  CX 08 B shielded connector
  5A 50V 0,8kV 3
- contact resistance
  CX 08 B shielded connector: ≤ 4 mΩ
- max. Ø of insulation for contacts CI series (CX 08 B shielded connector): 2,4 mm
- for crimp 5A contacts CI series using: CIPZ D crimping tool + CITP D turret head
- insertion / removal tool contacts CI series: part No CIES

shielded connectors

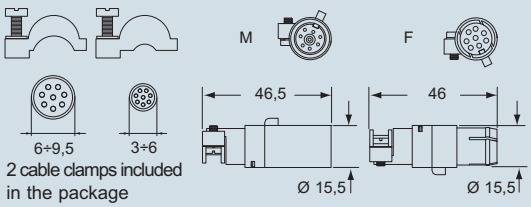
5A crimp contacts, gold plated

description	part No.	part No.
shielded BUS multi axial connectors, 8 poles + shield - female insert, 8 contact seats 5A (CIF) + shield - male insert, 8 contact seats 5A (CIM) + shield	**CX 08 BF** **CX 08 BM**	
5A female crimp contacts 0,08-0,21 mm² AWG 28-24 0,13-0,33 mm² AWG 26-22 0,33-0,52 mm² AWG 22-20		**CIFD 0.2** **CIFD 0.3** **CIFD 0.5**
5A male crimp contacts 0,08-0,21 mm² AWG 28-24 0,13-0,33 mm² AWG 26-22 0,33-0,52 mm² AWG 22-20		**CIMD 0.2** **CIMD 0.3** **CIMD 0.5**

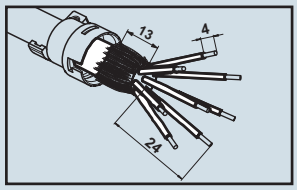
gold plated

dimensions in mm

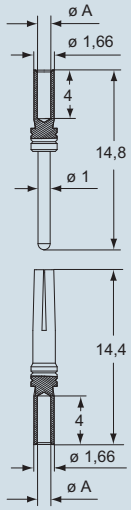
CX 08 BF, CX 08 BM



2 cable clamps included in the package



CIF and **CIM**



CIF, CIM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length (mm)
0,08-0,21	0,64	4
0,13-0,33	0,90	4
0,33-0,52	1,12	4

dimensions shown are not binding
and may be changed without notice

- characteristics according to EN 61984:
  CX 01 BC shielded connector
  16A 50V 0,8kV 3
- for information on the crimping of contacts series CC (CX 01 BC shielded connector) and on the insertion / removal tools, see the section related to crimping tools (16A contacts, CCF and CCM series) on pages 534, 538, 544, 546, 548
- contact resistance
  CX 01 BC shielded connector: ≤ 1 mΩ
- CX 01 BC shielded connector for **cable with a typical impedance of 50 Ω**

shielded connectors

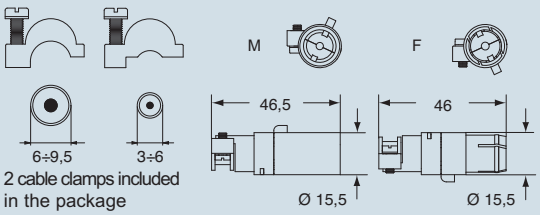
16A crimp contacts, silver or gold plated

description			part No.	part No.	part No.
shielded BUS coaxial connectors, 1 pole + shield - female insert, 1 contact seat 16A (CCF) + shield - male insert, 1 contact seat 16A (CCM) + shield			**CX 01 BCF** **CX 01 BCM**		
16A female contacts					
0,14-0,37 mm²	AWG 26-22	one groove		**CCFA 0.3**	**CCFD 0.3**
0,5 mm²	AWG 20	with no grooves		**CCFA 0.5**	**CCFD 0.5**
0,75 mm²	AWG 18	one groove (back side)		**CCFA 0.7**	**CCFD 0.7**
1 mm²	AWG 18	one groove		**CCFA 1.0**	**CCFD 1.0**
1,5 mm²	AWG 16	two grooves		**CCFA 1.5**	**CCFD 1.5**
2,5 mm²	AWG 14	three grooves		**CCFA 2.5**	**CCFD 2.5**
3 mm²	AWG 12	one wide groove		**CCFA 3.0**	**CCFD 3.0**
4 mm²	AWG 12	with no grooves		**CCFA 4.0**	**CCFD 4.0**
16A male contacts					
0,14-0,37 mm²	AWG 26-22	one groove		**CCMA 0.3**	**CCMD 0.3**
0,5 mm²	AWG 20	with no grooves		**CCMA 0.5**	**CCMD 0.5**
0,75 mm²	AWG 18	one groove (back side)		**CCMA 0.7**	**CCMD 0.7**
1 mm²	AWG 18	one groove		**CCMA 1.0**	**CCMD 1.0**
1,5 mm²	AWG 16	two grooves		**CCMA 1.5**	**CCMD 1.5**
2,5 mm²	AWG 14	three grooves		**CCMA 2.5**	**CCMD 2.5**
3 mm²	AWG 12	one wide groove		**CCMA 3.0**	**CCMD 3.0**
4 mm²	AWG 12	with no grooves		**CCMA 4.0**	**CCMD 4.0**

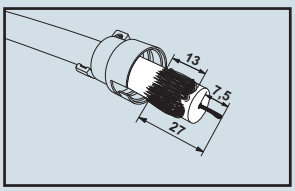
silver plated | **gold plated 1)**

dimensions in mm

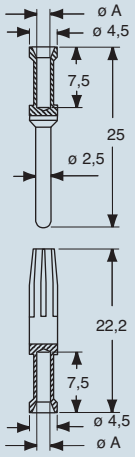
CX 01 BCF, CX 01 BCM



2 cable clamps included in the package



CCF and **CCM**



CCF and CCM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length (mm)
0,14-0.37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

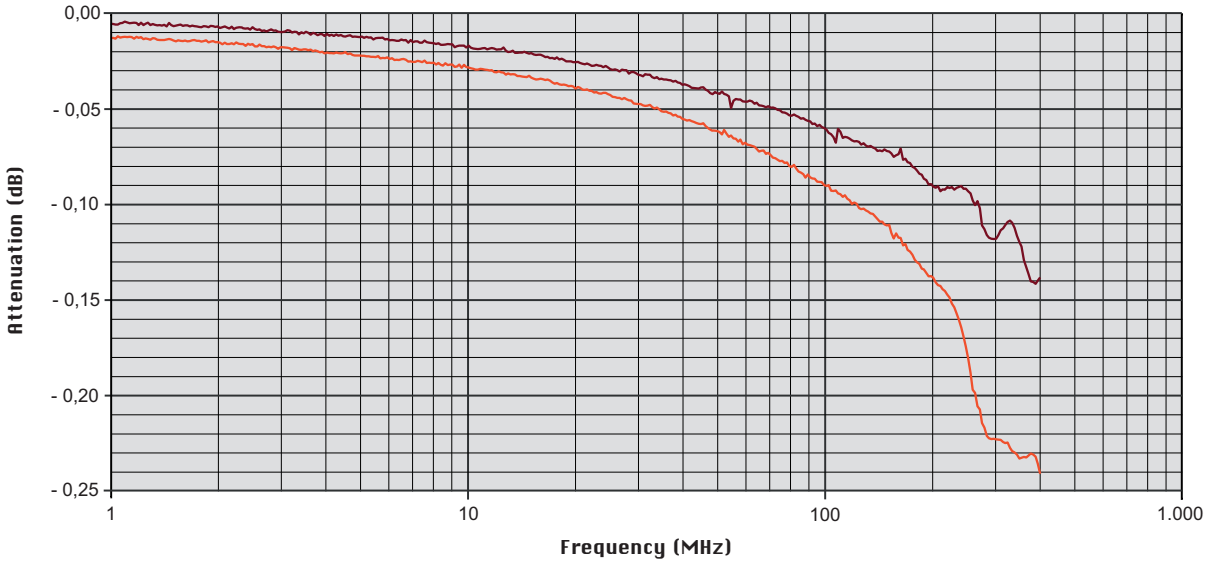
1) basic or high thickness gold plating page 481

dimensions shown are not binding and may be changed without notice

Test performed in accordance with IEC/EN 60512-25-2 (2002), 4.1.3.2 (coaxial cable only) and 4.2.2.2 (coaxial cable and connector).

Attenuation (insertion loss)

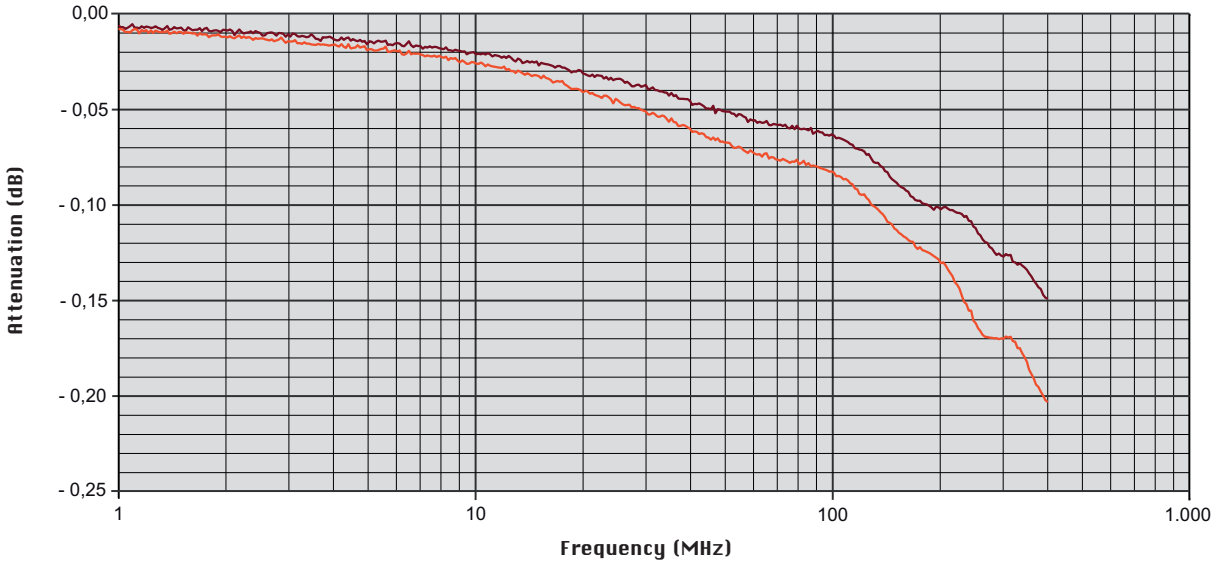
50 ohm coaxial connector (CX 01 BCF / BCM)



— RG 213/U cable and CX 01 BC connector (50 ohm)
— RG 213/U cable (50 ohm)

Attenuation (insertion loss)

75 ohm coaxial connector (CX 01 BF / BM)



— RG 11 A/U cable and CX 01 B connector (75 ohm)
— RG 11 A/U cable (75 ohm)

DESINA®

DESINA®

Main features

Connectors compliant with DESINA® standard

DESINA® (which stands for **DE**centralised and Standardised **IN**st**A**llation technology) is an innovative installation concept behind a study headed by the German manufacturers of machine tools association (VDW), with the co-operation of users (including German automotive manufacturers) and component manufacturers, which has led to the introduction of a specification aimed to standardise electrical, hydraulic and pneumatic components and their interconnection on common platform for CNC controlled machine tools and manufacturing lines.
In the last few years, the DESINA® specification has been successfully enclosed in the ISO TC 184/SC 1 "Industrial automation systems and integration / Physical device control" as an ISO standard.
This work has recently been completed, and the following standards have now become available:

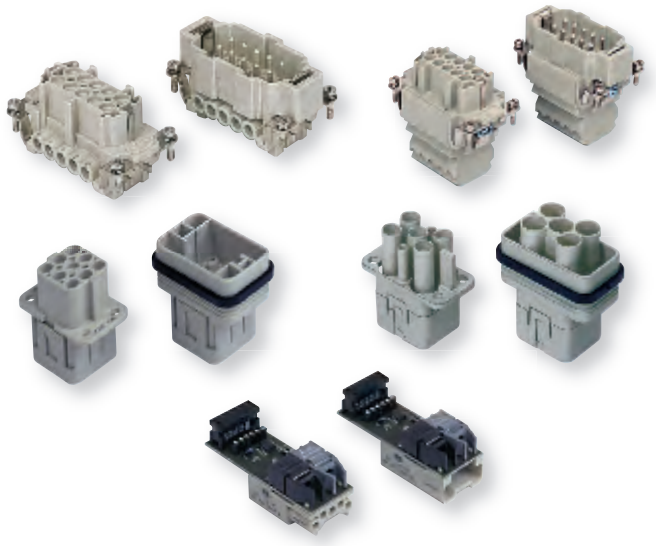
ISO 23570-1 Industrial automation systems and integration – Distributed installation in industrial applications: Part 1 – Sensors and actuators.
ISO 23570-2 Industrial automation systems and integration – Distributed installation in industrial applications: Part 2 – Hybrid communication bus.
ISO 23570-3 Industrial automation systems and integration – Distributed installation in industrial applications: Part 3 – Power distribution bus.

Normally, production systems are controlled by various field buses available on the market such as PROFIBUS, CAN, INTERBUS, etc. DESINA® decentralised approach and interface and connector standardisation, which allows a single distributed control system to be independent from the bus communication protocol selected by the final user, ensure lower installation costs.
The availability of diagnostic capabilities in all the system components ensures a speedier diagnosis in the event of faults and an easier and quicker reset operation, which may be carried out by less specialised staff. DESINA® connection topology requires a **control bus** and a **power bus**.

The hybrid (optical/electrical) control bus provides a serial connection for the devices by using a cable consisting of two fibre optics and four power lines. The devices are fitted with 2 hybrid connectors (and matching flush mounted enclosures) for bus entry and exit. The hybrid connectors include an interface circuit which turns the TX electrical signal to optical signal with TTL levels and the RX signal from optical to electrical signal with TTL levels.
In other words, the interface is independent from the selected field bus protocol, and simply converts the electrical signals into optical signals and vice versa; by doing so, the physical connection between the devices can be used for different bus protocols and can reach a 50 m range by using POF plastic fibres or 300 m by using HCS® fibreglass (Hard Clad Silica – Spectran Corporation registered trademark). The highest baud rate is 12 Mbit/s, compatible with the most advanced field buses.
Another variance is also available, which is based on transmitting data on a pair of screened copper cables (instead of fibre optics); in this case, however, the system can only be used for PROFIBUS or CAN buses with RS 485 TX signals.
In both cases, the connector is fitted with housings for 5, 10A auxiliary contacts (CD series crimp contacts), which allow all connected devices to receive a permanent direct voltage of 24V (to supply circuits) and a 24V non permanent power supply (only used to open the contactors after operating an emergency switch or a safety switch), as well as a contact available for an optional earth.

The **power bus** provides a serial connection for drives, controls and power supplies and, more specifically, is suitable to supply power to motors and to their control units.
The standard connector to control motors is the **CQM/F 08** which, with 8 poles + ⏚ 16A 500V, and CC series crimp contacts, not only provides a power connection, but also connects the motor brake and safety thermistor.
Another variant is available in the same sizes as the enclosure: **CQM/F 04/2** featuring 4 poles + ⏚ 40A 400/690V and 2, 10A 250V auxiliaries.
For the motor side connection, the connector **CNEM/F 10** (10P + ⏚ 16A 500V 6kV 3, with screw terminals) should be used; with the option to make a star or a delta connection on the connector, the **CSSM/F 10** connector (10P + ⏚ 16A 500V 6kV 3, with spring terminals, two per pole) should be used.
ILME connectors are manufactured to DESINA® specifications and in compliance with ISO 23570-2 and 23570-3 standards.

ISO 23570-3 standard and DESINA® specification compliant



DESINA®

Main features

Hybrid socket and plug connectors for field buses compliant with DESINA® specifications and with ISO 23570-2 standard

The hybrid connectors for field buses are listed below:	**electrical auxiliary female contacts**	**electrical auxiliary male contacts**
- optical field bus **plug**	**CXL 2/4 PF** (for plastic fibre optics POF) **CXL 2/4 PFH** (for glass fibre optics HCS®)	**CXL 2/4 PM** (for plastic fibre optics POF) **CXL 2/4 PMH** (for glass fibre optics HCS®)
- optical field bus **socket**	**CXL 2/4 SF**	**CXL 2/4 SM**

The hybrid inserts for **socket** type optical field buses can only be fitted inside **fixed enclosures**.
The **plug** types, on the other hand, can only be fitted inside **free enclosures (hoods)**.

The enclosures and matching accessories available are listed below:

Construction details	Material: **PLASTIC**	Material: **METAL**
- fixed, flush mounted enclosure:	**CK 03 IN**	**CKAX 03 I**
- free enclosures (hoods), top entry:	**CKG 03 VN** (Pg 11) **MKG VN20** (M 20)	**CKAG 03 V** (Pg 11) **MKAG V20** (M 20)
- free enclosures (hoods), side entry:	**CKG 03 VAN** (Pg 11) **MKG VAN20** (M 20)	**CKAG 03 VA** (Pg 11) **MKAG VA20** (M 20)
- cover:	**CKG 03 CN**	**CKAG 03 C**

The portable enclosures and the covers are fitted with an additional seal in order to achieve the versatile **IP65/IP67** degree of protection according to IEC/EN 60529. With these accessories the enclosures also achieve the **IP69** degree of protection (tightness to high pressure and temperature water jets) according to the same standard. The full versatile degree of protection becomes therefore **IP65/IP67/IP69**. The **IPX9** test is identical with that of former German standard DIN 40050-9 (IP69K) currently specified by **ISO 20653** for use on board road vehicles.

1 Specifications

1.1 Interface
hybrid electrical-optical connector insert consisting of 2 connectors for fibre optics and 4 contacts for electrical wires; an interface circuit built into the optical socket converts the electrical signals into optical signals and vice versa.

1.2 Optical parts

transmitter (T):	Agilent (HP) Versatile Link HFBR-1525, or equivalent
receiver (R):	Agilent (HP) Versatile Link HFBR-2525, or equivalent
male optical contact:	Agilent (HP) Versatile Link HFBR-4531, or equivalent, Simplex snap-in type (without crimping) for POF plastic fibre optics; HFBR-4521, or equivalent, crimp contact, for HCS® glass fibre optics

note: POF is a plastic fibre optic with a 1000 µm diameter for red light and wavelength = 660 nm.
HCS® is a Hard Clad Silica glass fibre optic with a 200 µm diameter for red light with wavelength = 660 nm.
Optical parts: laser class I

1.3 Electrical contacts
4 maximum current 10A, gold or silver plated brass crimp contacts, cable section 0,14...2,5 mm² (CD series); live wire end female. Nominal voltage 24V.
Electrical data in compliance with EN 61984: **10A 25V 0.8kV 3**

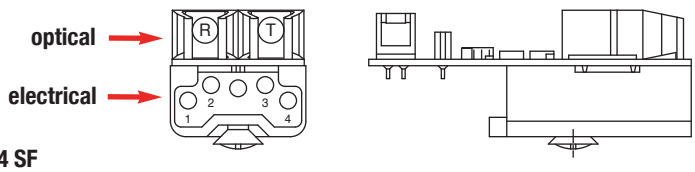
1.4 Degrees of protection: IP65/IP67/IP69 according to EN 60529 (if a cable clamp with IP67/IP69 rating is used).
1.5 Temperature range: -40 °C / +70 °C
1.6 Data transmission/reception rate (Data rate): up to 12 Mbit/s

2 Designation of auxiliary electrical contacts

designation of auxiliary electrical contacts (male and female) in the hybrid socket connector with optical TX system:

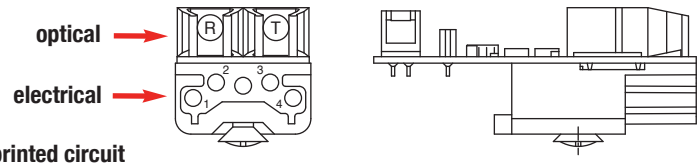
Socket connector with male auxiliary electrical contacts CXL 2/4 SM

Pos.	Function
1:	+ 24V not switched
2:	0V (reference for contact 1)
3:	0V (reference for contact 4)
4:	+ 24V switched



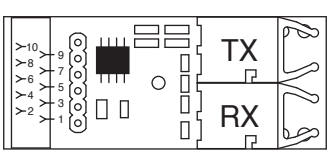
Socket connector with female auxiliary electrical contacts CXL 2/4 SF

Pos.	Function
1:	+ 24V not switched
2:	0V (reference for contact 1)
3:	0V (reference for contact 4)
4:	+ 24V switched



Insulation displacement connector (IDC) for ribbon flat cable on printed circuit

Pos.	Function	Pos.	Function
1:	earth	6:	TXD
2:	RXD	7:	earth
3:	RXD	8:	+5V DC
4:	earth	9:	+5V DC
5:	TXD	10:	earth



The contacts in the hybrid socket connector are numbered in a clockwise direction.
With reference to this, the contacts in the field bus hybrid plug connector are numbered anticlockwise.
"R" Data reception (beam exit)
"T" Data transmission (beam entry).

DESINA®

Main features

Socket and plug connectors for power buses compliant with DESINA® specifications and with ISO 23570-3 standard

The connector inserts on the power bus for a motor controller are as follows: - **CQM 08** plug
- **CQF 08** socket

The connector inserts for the motor controller may be fitted inside the following enclosures:

Construction details	Material: **PLASTIC**
- bulkhead mounting, straight, fixed enclosure:	**CQ 08 I**
- bulkhead mounting, angled, fixed enclosure:	**CQ 08 IA**
- bulkhead mounting, angled, fixed enclosure, rear entry:	**CQ 08 IAP**
- free enclosure (hood), top entry:	**CQ 08 V**
- free enclosure (hood), side entry:	**CQ 08 VA**
- free enclosure (hood), top entry and lever:	**CQ 08 VG**
- free enclosure (hood), side and top entry:	**MQ 08 VO225**
- socket cover:	**CQ 08 C**
- plug cover:	**CQ 08 CA**

The **CQ/MQ 08 …** enclosures and covers once complete and fitted with suitably rated cable gland or conduit fitting ensure the versatile **IP65/IP67** degree of protection according to IEC/EN 60529. With these accessories the enclosures also achieve the **IP69** degree of protection (tightness to high pressure and temperature water jets) according to the same standard. The full versatile degree of protection becomes therefore **IP65/IP67/IP69**. The **IPX9** test is identical with that of former German standard DIN 40050-9 (IP69K) currently specified by **ISO 20653** for use on board road vehicles.

1 Specifications

1.1 Connection: 9 contacts (8 + ⏚)
The male connectors (plugs) are used for termination of connecting cables; the female connectors (sockets) are fitted on the motor controller.

1.2 Electrical contacts: 9 maximum current 10A, gold or silver plated crimp contacts, cable section 0,5...2,5 mm² (20 AWG -14 AWG) CC series.

1.3 Degrees of protection: IP65/IP67/IP69 according to EN 60529 (if a cable clamp with IP67/IP69 rating is used).

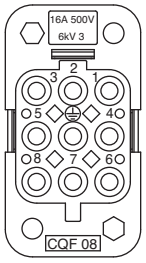
1.4 Temperature range: -40 °C / +125 °C

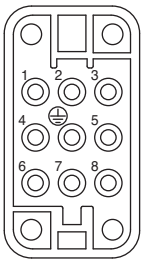
1.5 Electrical data compliant with EN 61984: **16A 500V 6kV 3**

1.6 Self extinguishing properties: 94V-0 compliant with UL 94 standard
glow-wire 960 °C compliant with IEC/EN 60695-2-11 standard

2 Designation of contacts
The designation of contacts for motor controller outlet is as follows:

contact	designation
1	line L1
2	
3	line L3
4	brake (0 V)
5	temperature sensor
6	brake (+24V c.c.)
7	line L2
8	temperature sensor
PE	protective earth





Socket and plug connectors for power buses in compliance with DESINA® specifications and with ISO 23570-3 standard

The connector inserts on the power bus for a motor controller are as follows: - **CQM 04/2** plug
- **CQF 04/2** socket

These connector inserts can be fitted inside the following enclosures:

Construction details	Material: **PLASTIC**
- bulkhead mounting, straight, fixed enclosure:	**CQ 08 I**
- bulkhead mounting, angled, fixed enclosure:	**CQ 08 IA**
- bulkhead mounting, angled, fixed enclosure, rear entry:	**CQ 08 IAP**
- free enclosure (hood), top entry:	**CQ 08 V**
- free enclosure (hood), side entry:	**CQ 08 VA**
- free enclosure (hood), top entry and lever:	**CQ 08 VG**
- free enclosure (hood), side and top entry:	**MQ 08 VO225**
- socket cover:	**CQ 08 C**
- plug cover:	**CQ 08 CA**

The **CQ/MQ 08 …** enclosures and covers once complete and fitted with suitably rated cable gland or conduit fitting ensure the versatile **IP65/IP67** degree of protection according to IEC/EN 60529. With these accessories the enclosures also achieve the **IP69** degree of protection (tightness to high pressure and temperature water jets) according to the same standard. The full versatile degree of protection becomes therefore **IP65/IP67/IP69**. The **IPX9** test is identical with that of former German standard DIN 40050-9 (IP69K) currently specified by **ISO 20653** for use on board road vehicles.

1 Specifications

1.1 Connection: 5 (4 + ⏚) power contacts + 2 auxiliary contacts
The male connectors (plugs) are used for termination of connecting cables; the female connectors (sockets) are fitted on the motor controller.

1.2 Electrical contacts: 5 maximum current 40A (3P+N+⏚) gold or silver plated crimp contacts, cable section 1,5...6 mm² (16 AWG -10 AWG) CX series.
2 maximum current 10A, gold or silver plated crimp contacts, cable section 0,14...2,5 mm² (26 AWG -14 AWG) CD series.

1.3 Degrees of protection: IP65/IP67/IP69 according to EN 60529 (if a cable clamp with IP67/IP69 rating is used).

1.4 Temperature range: -40 °C / +125 °C

1.5 Electrical data compliant with EN 61984: **40A 400/690V 6kV 3**.

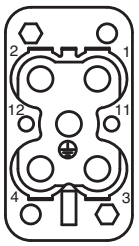
DESINA®

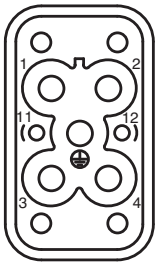
Main features

1.6 Self extinguishing properties
94V-0 compliant with UL 94 standard
glow-wire 960 °C compliant with IEC/EN 60695-2-11 standard

2 Designation of contacts
The designation of contacts for motor controller outlet is as follows:

contact	designation
1	line L1
2	line L2
3	line L3
4	neutral
PE	protective earth
11	aux
12	aux





Socket and plug connectors for power buses compliant with DESINA® specifications and with ISO 23570-3 standard

The connector inserts on the power bus for a motor controller are as follows:

	screw type with cover	spring type dual terminal for pole
- plug	**CNEM 10 T**	**CSSM 10**
- socket	**CNEF 10 T**	**CSSF 10**

To be installed in the enclosures illustrated in this catalogue or equivalent, with single lever (directed towards the motor).

The enclosures once complete and fitted with suitably rated cable gland or conduit fitting ensure the versatile **IP65/IP67** degree of protection according to IEC/EN 60529. With these accessories the enclosures also achieve the **IP69** degree of protection (tightness to high pressure and temperature water jets) according to the same standard. The full versatile degree of protection becomes therefore **IP65/IP67/IP69**. The **IPX9** test is identical with that of former German standard DIN 40050-9 (IP69K) currently specified by **ISO 20653** for use on board road vehicles.

1 Specifications

1.1 Connection
10 contacts + ⏚

1.2 Electrical contacts
10 screw type contacts (CNE series) or spring type (CSS series), maximum current 16A, silver plated, wire section 0,5...2,5 mm² (20 AWG -14 AWG)

1.3 Degrees of protection
IP65/IP67/IP69 according to EN 60529 (if a cable clamp with IP67/IP69 rating is used).

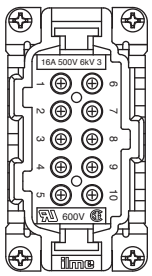
1.4 Temperature range
-40 °C / +125 °C

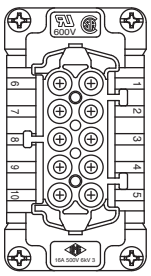
1.5 Electrical data
compliant with EN 61984: **16A 500V 6kV 3**

1.6 Self extinguishing properties
94V-0 compliant with UL 94 standard
glow-wire 960 °C compliant with IEC/EN 60695-2-11 standard

2 Designation of contacts
The designation of contacts for motor connector is as follows:

contact	designation
1	winding U1 - L1
2	winding V1 - L2
3	winding W1 - L3
4	brake (0 V)
5	brake (+24V cc)
6	winding W2
7	winding U2
8	winding V2
9	temperature sensor
10	temperature sensor
PE	protective earth





DESINA®

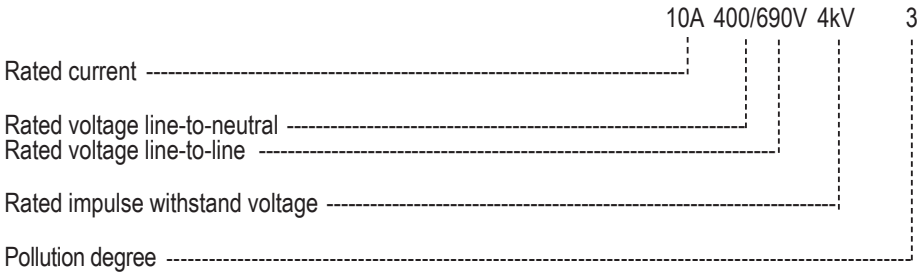
Feature of inserts for multipole connectors

inserts series code	No. of poles main contacts	auxiliary contacts	EN 61984 (2001-11) pollution degree 3 rated voltage	rated impulse withstand voltage	pollution degree	EN 61984 (2001-11) pollution degree 2 rated voltage	rated impulse withstand voltage	pollution degree	certification UL/CSA rated voltage AC or DC
CXL 2/4	**2**		contacts for plastic fibre optics (POF) Ø 1mm						
		4 (+⏚)	25V	0,8kV	3				50V
CXL 2/4...H	**2**		contacts for HCS® fibre optics Ø 200 µm						
		4 (+⏚)	25V	0,8kV	3				50V
CQ 08	**8** (+⏚)	---	500V	6kV	3	400/690V	6kV	2	600V
CQ 04/2	**4**	---	400/690V	6kV	3				600V
		2	250V	4kV	3				600V
CNE	**10** (+⏚)	---	500V	6kV	3	400/690V	6kV	2	600V

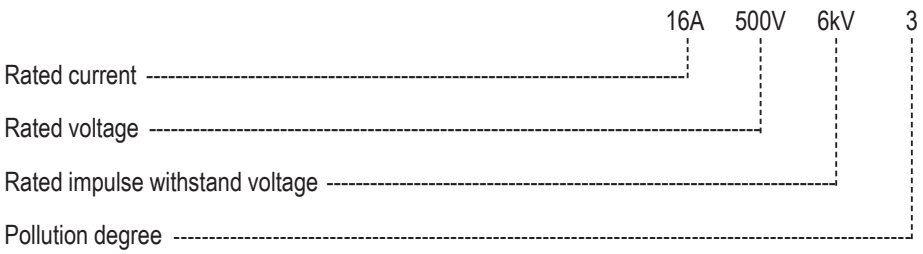
Nominal Data

Nominal data complies with requirements of EN 61984 standard.

Marking example to be applied only in a mains power supply with insulated neutral or with neutral to earth in a corner (see Table 5, EN 61984):



Marking example to be applied in any mains power supplies, including those with insulated neutral and the delta power supplies with earth in a corner (see Table 5, EN 61984):



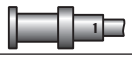
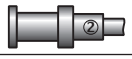
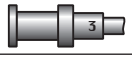
DESINA®

Feature of inserts for multipole connectors

inserts series / code	max rated current [1]	contact resistance ≤	insulation resistance ≥	ambient temperature limit (°C) min	ambient temperature limit (°C) max	protection rating: with enclosures	protection rating: without enclosures	wirer connection [2]: screw	spring	connection block at 45°	crimp	snap-in	certifications
CXL 2/4	---	---	---	-40	+70	IP65/IP67	IP20					✓	
	10A	3 mΩ	10 GΩ	-40	+70	IP65/IP67	IP20				✓		cUL[A], UL, EAC
CXL 2/4...H	---	---	---	-40	+70	IP65/IP67	IP20				✓		
	10A	3 mΩ	10 GΩ	-40	+70	IP65/IP67	IP20				✓		cUL[A], UL, EAC
CQ 08	16A	1 mΩ	10 GΩ	-40	+125	IP65/IP67	IP20				✓		cUL[A], CSA, CCC, EAC
CQ 04/2	40A 10A	0,3 mΩ 3 mΩ	10 GΩ 10 GΩ	-40	+125	IP65/IP67	IP20				✓		cUL[A], CSA, EAC
CNE	16A	1 mΩ	10 GΩ	-40	+125	IP65	IP20	✓					cUL[A], CSA, CCC, DNV-GL, EAC

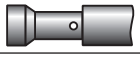
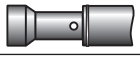
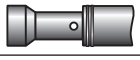
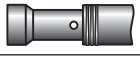
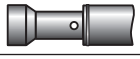
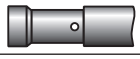
1) See the insert load curves to establish the actual maximum operating current according to the ambient temperature
2) For the wire electrical connection data, see from page 30
A) UL for USA and Canada

10A max contacts - CD serie

conductor section (mm²)	AWG	identification number
0,14 - 0,37	26 - 22	
0,5	20	
0,75	18	
1	18	
1,5	16	
2,5	14	

Contacts can be supplied in the silver or gold plated version

16A max contacts - CC serie

conductor section (mm²)	AWG	throat identification
0,14 - 0,37	26 - 22	
0,5	20	
0,75	18	
1	18	
1,5	16	
2,5	14	
3,0	12	
4	12	

Contacts can be supplied in the silver or gold plated version.
Male contacts can also be supplied in the "advanced" version and iron/constantan contacts for thermocouples type J.

40A max contacts - CX serie

conductor section (mm²)	AWG	identification
1,5	16	hole Ø 1,75 mm
2,5	14	hole Ø 2,25 mm
4	12	hole Ø 2,85 mm
6	10	hole Ø 3,5 mm

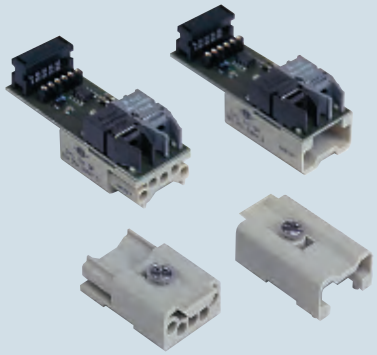
Contacts are supplied in the silver plated version only

CXL 2 pole fibre optics + 4 poles 10A max - 25V/0,8kV/3 + ⏚ optional

enclosures:
size "21.21" page:
insulating type ..... 526 - 527
metallic type ..... 528 - 529

ISO 23570-3 standard and DESINA® specification compliant

inserts, crimp connections



10A crimp contacts silver and gold plated

description	part No.	part No.	part No.
inserts for fixed enclosures, complete with electro-optical interface * without contacts (to be ordered separately)			
socket inserts for female contacts	**CXL 2/4 SF**		
plug inserts for male contacts	**CXL 2/4 SM**		
without electro-optical interface for fixed enclosures without contacts (to be ordered separately)			
socket inserts for female contacts	**CXL SF**		
plug inserts for male contacts	**CXL SM**		

10A female contacts

0,14-0,37 mm²	AWG 26-22	identification No. 1	**CDFA 0.3**	**CDFD 0.3**
0,5 mm²	AWG 20	identification No. 2	**CDFA 0.5**	**CDFD 0.5**
0,75 mm²	AWG 18	identification No. ②	**CDFA 0.7**	**CDFD 0.7**
1 mm²	AWG 18	identification No. 3	**CDFA 1.0**	**CDFD 1.0**
1,5 mm²	AWG 16	identification No. 4	**CDFA 1.5**	**CDFD 1.5**
2,5 mm²	AWG 14	identification No. 5	**CDFA 2.5**	**CDFD 2.5**

10A male contacts

0,14-0,37 mm²	AWG 26-22	identification No. 1	**CDMA 0.3**	**CDMD 0.3**
0,5 mm²	AWG 20	identification No. 2	**CDMA 0.5**	**CDMD 0.5**
0,75 mm²	AWG 18	identification No. ②	**CDMA 0.7**	**CDMD 0.7**
1 mm²	AWG 18	identification No. 3	**CDMA 1.0**	**CDMD 1.0**
1,5 mm²	AWG 16	identification No. 4	**CDMA 1.5**	**CDMD 1.5**
2,5 mm²	AWG 14	identification No. 5	**CDMA 2.5**	**CDMD 2.5**

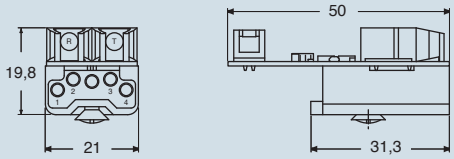
silver plated | **gold plated 1)**

* fitted with IDC connector for TTL to bus connection ribbon cable

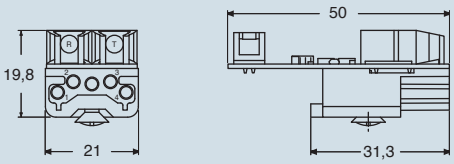
- data baud rate: up to 12 MBit/s
- temperature range: from -40 °C to +70 °C
- for crimp contacts, see the crimp tools section (10A contacts, CDF and CDM series) on pages 534, 538, 544, 546, 548

dimensions in mm

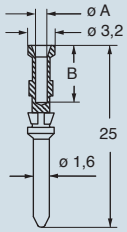
CXL 2/4 SM

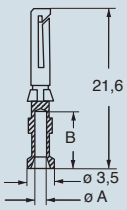


CXL 2/4 SF



dimensions in mm





CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

dimensions shown are not binding and may be changed without notice

Accessories

CXL 2 pole fibre optics + 4 poles 10A max - 25V/0,8kV/3 + ⏚ optional

enclosures:
size "21.21" page:
insulating type ..... 526 - 527
metallic type ..... 528 - 529

ISO 23570-3 standard and DESINA® specification compliant

inserts, snap-in (POF)
or crimp (HCS®) optical connection
electrical crimp connection

10A crimp contacts
silver and gold plated

description	part No.	part No.	part No.
inserts for portable enclosures with: 4 + 1 crimp 1,5 mm² contacts (included) + 2 snap on contacts for 1 mm [1] plastic (POF) fibre optics socket inserts with CDFA 1.5 female contacts plug inserts with CDMA 1.5 male contacts	**CXL 2/4 PF** **CXL 2/4 PM**		
inserts for portable enclosures with: 4 + 1 crimp 1,5 mm² contacts (included) + 2 crimp contacts for 0,2 mm [2] HCS® fibre optics socket inserts with CDFA 1.5 female contacts plug inserts with CDMA 1.5 male contacts	**CXL 2/4 PFH** **CXL 2/4 PMH**		
inserts for portable enclosures with: 4 + 1 crimp contacts (not included – CDF and CDM series) + 2 snap on or HCS® fibre optic contacts (not included) [3] socket inserts with female contacts plug inserts with male contacts	**CXL PF** **CXL PM**		
10A female contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5 10A male contacts 0,14-0,37 mm² AWG 26-22 identification No. 1 0,5 mm² AWG 20 identification No. 2 0,75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1,5 mm² AWG 16 identification No. 4 2,5 mm² AWG 14 identification No. 5		**CDFA 0.3** **CDFA 0.5** **CDFA 0.7** **CDFA 1.0** **CDFA 1.5** **CDFA 2.5** **silver plated** **CDMA 0.3** **CDMA 0.5** **CDMA 0.7** **CDMA 1.0** **CDMA 1.5** **CDMA 2.5**	**CDFD 0.3** **CDFD 0.5** **CDFD 0.7** **CDFD 1.0** **CDFD 1.5** **CDFD 2.5** **gold plated 1)** **CDMD 0.3** **CDMD 0.5** **CDMD 0.7** **CDMD 1.0** **CDMD 1.5** **CDMD 2.5**

® HARD CLAD SILICA (SpecTran Corporation registered trademark)

[1] for POF fibre preparation, the polishing kit Agitent HFBR-4593 (CXL POL) is available on request

[2] for HCS® connection preparation, the Crimp & Clear cabling kit (without glue or polishing kit) for simplex connectors for 200/300 µm HCS® fibre optics is available on request.
The (CXL KCC) kit consists of:
- No. 1 scissors for kevlar cutting
- No. 1 cable stripper
- No. 1 fibre stripper
- No. 1 calibrated pliers
- No. 1 precision fibre optics cutter with diamond blade.
- All accessories are stored in a hard carrying case

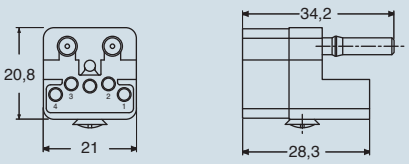
[3] see data on page 519

- temperature range: from -40°C to +70°C
- for crimp contacts, see the crimp tools section (10A contacts, CDF and CDM series)on pages 534, 538, 544, 546, 548

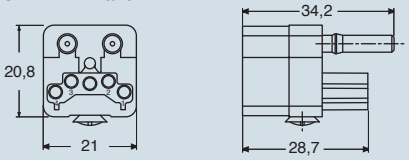
dimensions shown are not binding
and may be changed without notice

dimensions in mm

CXL 2/4 PM and **PMH**

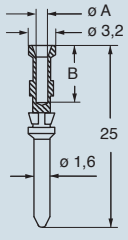


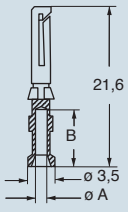
CXL 2/4 PF and **PFH**



- 8 mm wire stripping
- POF 7 mm fibre stripping

dimensions in mm





CDF and CDM contacts

conductor section	conductor slot	conductors stripping length
mm²	ø A (mm)	B (mm)
0,14-0.37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

1) basic or high thickness gold plating page 480

Accessories

inserts: page:

CJ KF 503
CJK 8FT 506

CLK 04 SC 509

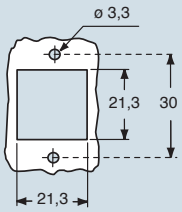
CXL 2/4 SF..... 524
CXL 2/4 SM..... 524
CXL SF..... 524
CXL SM..... 524

bulkhead mounting housings

cover

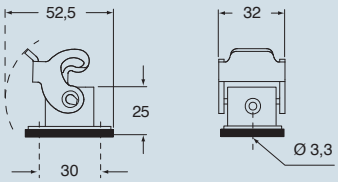
description	part No.	part No.
with lever	**CK 03 IN** (black)	
with pegs and gasket		**CKG 03 CN** (black)

panel cut-out for enclosures, in mm



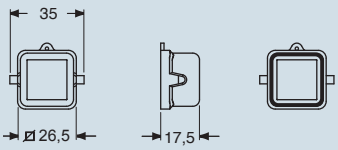
dimensions in mm

CK IN

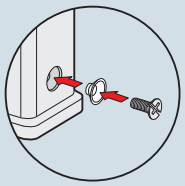


dimensions in mm

CKG CN



Note:
CXL, CJ K and CLK inserts are already supplied with seal and screw, which ensure IP66/IP67 protection rating.



Type 4/4X/12

dimensions shown are not binding
and may be changed without notice

inserts: page:

CJ KM 503
CJK 8MT 506
CJK 8IMT * 506

CLK 04 SC * 509

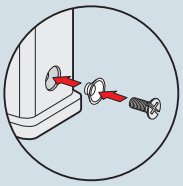
CXL 2/4 PF 525
CXL 2/4 PFH 525
CXL 2/4 PM 525
CXL 2/4 PMH 525
CXL PF 525
CXL PM 525

* cannot be used with angled enclosures
(part No. CKG 03 VA / MKG VA20)

hoods

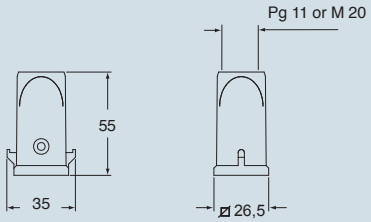
description	part No. (entry - Pg 11)		part No. (entry - M 20)	
with pegs and gasket, top entry	**CKG 03 VN**	(black)	**MKG VN20**	(black)
with pegs and gasket, side entry	**CKG 03 VAN**	(black)	**MKG VAN20**	(black)

Note:
CXL, CJ K and CLK inserts are already supplied with seal and screw, which ensure IP66/IP67 protection rating.

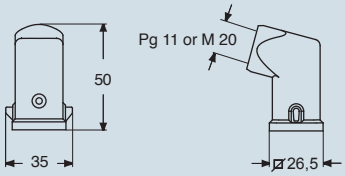


dimensions in mm

CKG VN and **MKG VN**



CKG VAN and **MKG VAN**



Type 4/4X/12

dimensions shown are not binding
and may be changed without notice

inserts: page:

CJ KF 503
CJK 8FT 506

CLK 04 SC 509

CX 1/2 BD 512

CXL 2/4 SF..... 524
CXL 2/4 SM..... 524
CXL SF..... 524
CXL SM..... 524

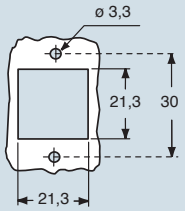
bulkhead mounting housings cover

bulkhead mounting housings with cover

NEW

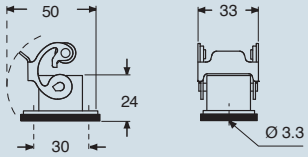
description	part No.	part No.
with stainless steel lever	**CKAX 03 I**	
with pegs and gasket	**CKAG 03 C**	
with stainless steel lever, for female inserts		**CKAX 03 ILS**

panel cut-out for enclosures, in mm

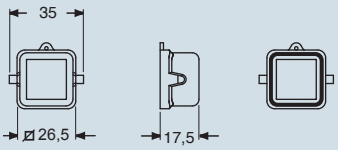


dimensions in mm

CKAX I

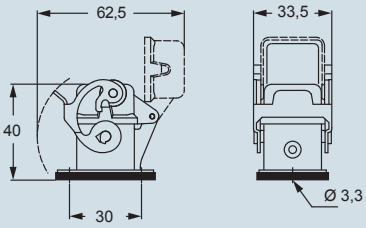


CKAG C

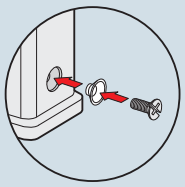


dimensions in mm

CKAX ILS



Note:
CXL, CX 1/2 BD, CJ K and CLK inserts are already supplied with seal and screw, which ensure IP66/IP67 protection rating



c UL us Type 4/4X/12

dimensions shown are not binding and may be changed without notice

inserts: page:

CJ KM 503
CJK 8MT 506
CJK 8IMT * 506

CLK 04 SC * 509

CX 1/2 BD * 512

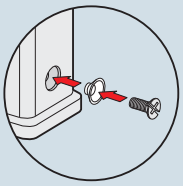
CXL 2/4 PF 525
CXL 2/4 PFH 525
CXL 2/4 PM 525
CXL 2/4 PMH 525
CXL PF 525
CXL PM 525

* cannot be used with angled enclosures
(part No. CKAG 03 VA / MKAG VA20)

hoods

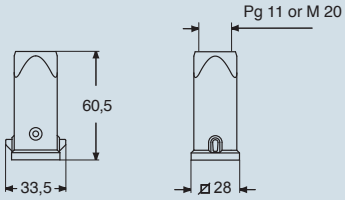
description	part No. (entry - Pg 11)	part No. (entry - M 20)
with pegs and gasket, top entry	**CKAG 03 V**	**MKAG V20**
with pegs and gasket, side entry	**CKAG 03 VA**	**MKAG VA20**

Note:
CXL, CX 1/2 BD, CJ K and CLK inserts are already supplied with seal and screw, which ensure IP66/IP67 protection rating

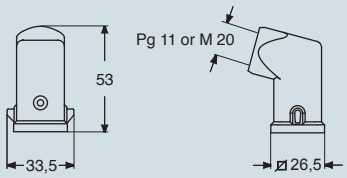


dimensions in mm

CKAG V and **MKAG V**



CKAG VA and **MKAG VA**



cULus Type 4/4X/12

dimensions shown are not binding
and may be changed without notice

Crimping tools

Tools and accessories for crimp contacts

The crimping concept

The crimp connection is an irreversible connection between one or two conductors and a crimp contact. The crimp connection is obtained by pinching or pressing the contact metal - or shaft - firmly with the crimping tool.
A good crimp connection is provided by a suitable combination between the crimping base, the crimping part of the contact metal, i.e. the crimp contact, firmly with and the section of the conductor.
These comments refer to crimped connections carried out with copper flexible conductors in class 5 (flexible) or 6 (extra flexible) according to standards IEC 60228 and IEC 60228-A (Italian standard CEI 20-29).
Solid copper conductors (class 1) or in other materials (aluminium, iron, etc) often require special precautions for contacts and for crimping tools, to be agreed with the manufacturer. The main technical advantages provided by crimping connections over soldered connections are:

- The process does not use heat and does not require materials.
- Perfect connection is acquired that is intrinsic with cold soldering.
- No degradation of the elastic characteristics of the female contacts (a problem that arises with soldering temperatures).
- No health risks connected with the use of heavy metals or fumes generated from the soldering process.
- Preservation of the conductor's flexibility immediately upon connection.
- No conductors with burned, discoloured or overheated insulating material.
- Excellent reproducibility of the performances of the electrical and mechanical connections.
- Facilitated production controls.

Other advantages obtained by crimping connections over screw terminal connections are:

- Less drop of currency in the connector contacts.
- High stability in time even in the presence of vibrations.
- High duration in presence of corrosion (gastight).
- Individual insertion of the contacts in the connector (it is possible to eliminate unnecessary contacts).
- Less time required for connection.
- Possibility of pre-production of the terminated conductors with crimp contacts.
- Easy substitution of individual contacts during maintenance.
- Possibility of selectively isolating the circuits during maintenance via the extraction of the contacts from the connector.

The crimped connections for wire sections up to 10 mm^2 are covered by the EN 60352-2:2006 European standard equivalent to the IEC 60352-2 Issue 2 (2006-02) international standard.
The **EN 60352-2** standard also includes a practical guide, which lists the following main points.
The quality of a crimped connection is mainly affected by the quality of materials used and by the condition of the crimp contact (in particular the crimp shaft) and wire surfaces.
To ensure a good quality crimped connection, an essential parameter is the wire mechanical retention in the contact. The standard makes a distinction between the closed crimp shaft, inherently stronger, and the open crimp shaft. ILME crimp contacts are closed crimp shaft contacts, with inspection hole which ensures a higher mechanical performance compared to the open shaft crimp contacts, such as better mechanical sturdiness and stability during operation.
They have been machine turned, thus ensuring a better electrical performance (better conductivity). 2002 Amendment 2 of the previous IEC standard issue controversially unified the minimum resistance to tensile stress values established for open shaft contacts (curve B of old Figure 5) and closed shaft contacts (curve A of old Figure 5) by lowering them to the values (shown in curve B), which can be achieved by open shaft crimp contacts. This has controversially relaxed the suitability requirements both for closed crimp shaft, typically large, machine turned and for crimp tools specially made for these contacts. Several industries continue to prefer the higher performance ensured by closed shaft crimp contacts, the only ones to ensure the higher resistance to tensile stress values believed to be essential for the most demanding industrial applications. Therefore, ILME continues to refer to curve A of Figure 5 illustrated in the EN 60352-2 (1994) standard: ILME closed shaft crimp contacts, used with flexible copper wires, featuring a section included in the ranges shown and correctly crimped with the recommended tools, ensure breakage resistant connections at least equal to the values shown in the table shown below (for reference, the corresponding R_t/S unified tensile stress load value is also shown [N/mm^2]).

Section S		**Resistance to traction R_t**	**R_t/S**
AWG	mm^2	(N)	(N/mm^2)
26	0,12	18	150
-	0,14	21	150
24	0,22	33	150
-	0,25	37,5	150
22	0,32	48	150
-	0,37	55,5	150
20	(0,6)	75	150
-	0,75	112,5	150
18	(0,82)	125	150
-	1	150	150
16	(1,3)	195	150
-	1,5	220	147
14	(2,1)	300	143
-	2,5	325	130
12	(3,3)	430	130
-	4	500	125
10	(5,3)	635	120
-	6	650	108
7	10	1000	100
		(1300)	*(130)*
-	16	*1650*	*103*
-	25	*2300*	*92*
-	35	*2800*	*80*
	50	*3300*	*66*
-	70	*3900*	*56*

NOTE - For 10 mm^2 wire sections, the resistance to tensile stress shown in *italics* are those specified in the NF F 61-030 standard (for 10 mm^2, the value in brackets).

The basic criteria used for the resistance to tensile stress values required by EN 60352-2 standard is that such resistance is at least equal to 60% of the breakage unified load of the same annealed copper wire.
This applies to wire sections up to about 1,5 mm^2; above this section, the ratio is slightly lower as retention is also affected by friction, which increases linearly with the housing diameter, whilst the section increases by the square.
IEC/EN 60352-2 standard, which targets the electronics industry, restricts its requirements to crimp connections for wires with a maximum section of 10 mm^2. For sections higher than 10 mm^2, up to 70 mm^2, the standard to refer to is the NF F 61-030 (1989) French standard which relates to electrical connectors to be used on board of railway rolling stock, in particular for large crimp contacts, such as those manufactured by ILME.

NOTE - Alternatively, for wire sections between 35 mm^2 and 300 mm^2, EN 61238-1:2003 standard can be referred to. This standard requires constant R_t/S values equal to 60 N/mm^2, lower than those established by the above mentioned French standard.

Crimping tools

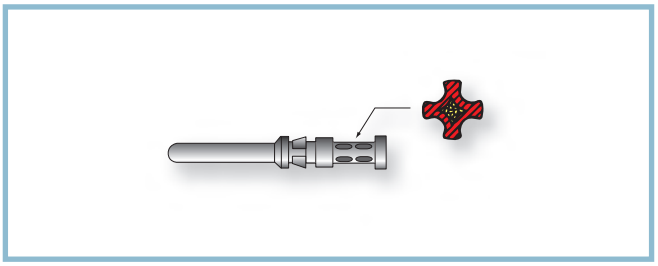
Tools and accessories for crimp contacts

Selecting the crimping tool and relevant controls

When you have selected quality crimp contacts and conductors, the next step and most important step is to select the correct work tool. The practical guide of standard EN 60352-2 provides the following recommendations on the subject. They list some of the ideal requirements for crimping tools, some optional characteristics, but, above all, they provide a preview of the indispensable controls:

a) The crimping tools and the contacts used must be supplied by the same manufacturer, otherwise the user must assume all responsibility for the quality and reliability of the crimp connections.
b) The crimping tools must function correctly and provide a correct crimp without damage to the pin or the component to crimp.
c) In order to obtain a reliable crimp connection, a crimping device with a mechanism that controls the entire crimping cycle must be used. At the end of the crimping cycle the handles and the ratchet must return to the open position.
d) In all cases the crimping operation must be made in one single phase, with no further interventions.
e) The removable parts of the tool such as the crimping dies and the locators must be designed in such a way as to make it possible to be inserted within the tool only in the correct manner.
f) The tools must be supplied with the appropriate means for a correct positioning of the pins to be crimped and of the conductors during crimping.
g) The tools must be designed in such a way so that only the necessary adjustments may be made.
h) The action of the tool must be such that both the pin to be crimped and the fixture of the isolation (when present) are respectively crimped or compressed with a single action.
i) The design of the tool must ensure that the dies for a particular tool may be interchangeable within tools of the same type.
If they are not interchangeable, the identification of tools for which they are suitable must be marked on the dies.
j) The tools may be designed so as to produce a marking or coding of the die on the pin to be crimped so that the crimping may be checked for verification of the correct die.
k) The design of the tool must allow the verification of the dies with gauges to measure wear. The gauge verification method must be that specified by the manufacturer of the tools.

With suitable flexible copper conductors, the crimping tool proposed by ILME gives 8 impression crimp (see figure) in conformity with standard EN 60352-2. Periodic control of the wear of the crimping matrixes can be carried out with the appropriate "go - no go" gauges (purchased separately). For extra operational details, consult the following pages on tools, and the relevant instruction sheets and/or use and maintenance manuals.



The manual and automatic crimping tools selected by ILME are carefully designed to ensure symmetrical deformation of the crimping area of the contact and wire, by means of their own, internal high pressure forming parts. The positioner ensures that the wire and crimp contact meet in the appropriate part of the tool. Sprung mechanisms built into the tools ensure that the contacts are not inserted in the tool before the indenters are fully open, and that the tool does not open before the crimping process has been completed.

The **CCPZ MIL** (for 10A and 16A crimp contacts) and **CXPZ D** (for 40A crimp contacts) manual crimping tools are suitable for use when compressed air sources are unavailable, for low or medium-low work loads.
The **CCPZ RN** (for 10A, 16A and 40A crimp contacts) manual crimping tool is also suitable for for low or medium-low work loads.
The **CCPZP** pneumatic crimping bench tool without automatic positioner (for 10A and 16A crimp contacts) is suitable for use in the workshop (where compressed air is available) for high or medium-high work loads. Using the same manual crimping tool turrets it is possible to change rapidly from crimping on male contacts to crimping on female contacts of the same series (10A and 16A).
The **CCPZPA** pneumatic crimping bench tool with automatic positioner (for 10A and 16A crimp contacts) is suitable for workshop jobs (where compressed air is available) for medium-high or high work loads. It is recommended in particular for crimping high quantities of contacts that are the same type or have the same section, thus saving a significant amount of time thanks to automatic operation and reduced operator fatigue. Where the type or kind of contact must be changed frequently, it is preferred to use the version without automatic positioner.
The **CXPZP D** pneumatic crimping bench tool without automatic positioner (for 40A crimp contacts) is suitable for use in the workshop (where compressed air is available) for high or medium-high work loads. By using the same positioners as those of manual crimper CXPZ D, the size of a contact can be rapidly changed with one of the same type. However, the positioner must be changed in order to change over from male to female contacts.
The semiautomatic stripping-crimping machine, type **ZFU-CD**, is suitable to be used in workshops (where an electrical or pneumatic power supply is available) and for heavy work loads. It enables to produce large amounts of crimped connections in less time because of the possibility of simultaneously carrying out stripping and crimping operations. The contact and tool replacement operations, which are minimized because of the preset programs that can be stored and customized by the user, require the production to be programmed to reduce downtime. When a sequential processing is required despite the economic advantages offered by the above-described solution, it is preferable to use pneumatic bench pliers without the above-described positioner or one of the manual pliers.
In any case, the quality of the results from the crimping tools, combined with the ILME crimp contacts, is identical and at the highest market levels, exceeding the requirements of the standard EN 60352-2.
Although the crimping appliances and tools suggested here include a set of control automatisms and mechanisms, which prevent the chief misunderstandings and errors, the operator is advised to always take care not to work in inappropriate conditions.

Crimping tools

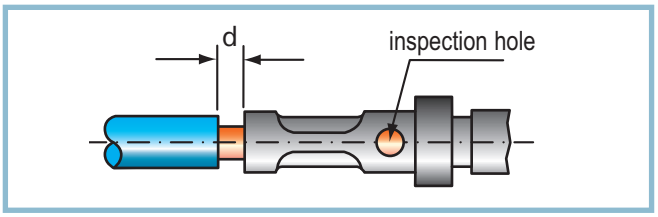
Crimping

The crimping operation

The practical guide in standard EN 60352-2 supplies further general information regarding crimp contacts for multipole connectors.

1. Insertion of the conductor in the crimp contacts
The conductor must be correctly positioned in the pin to be crimped.
The crimping indentations must be correctly positioned on the foot to be crimped. There must be sufficient space, in conformity with the manufacturer's instructions, between the end of the insulating material of the conductor and the pin to be crimped ("d").
As a general rule, the stripping length is equal to the pin insertion depth + 1 mm (for sections up to 1 mm²) and + 2 mm (for sections from 1 to 10 mm²) *. When using closed crimp pins with an inspection hole, the crimp conductor must be visible through the inspection holes.

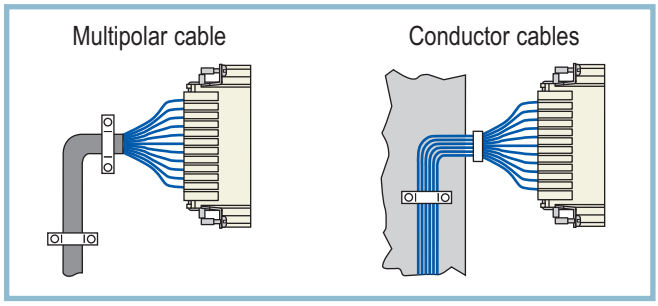
* Keeping the conductor strands visible above the contact collar enables you to check correct strippping, i.e. make sure no strands have been cut. This also ensures a certain flexibility for the connection, by not transmitting to the contact any flexure stresses caused by installation. However, in practice, some operators give priority to insulation, by reducing to zero the gap between cable insulation and the contact collar.



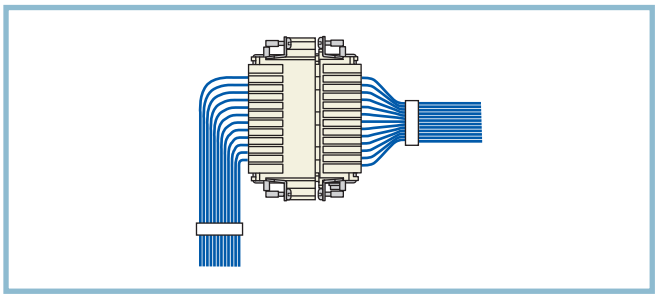
2. Insertion of crimped contacts in the connector insert
It is recommended that the crimped contacts be perfectly straight and inserted within the contact slots in a single operation and without excessive force until a clicking sound is heard. The correct retention of the contact should be verified with a light pulling of the wire. Non alignment of the crimped contacts must be avoided because this could cause possible loosening of the retention springs and consequently jeopardise the retention of the contact in the insert. For small section conductors (≤ 0,35 mm²) or for specific application, the use of the insertion tool specified by the manufacturer is recommended.

3. Removal of inserted contacts
In the case of incorrect insertion or wiring substitution, inserted contacts may only be removed using the removal tools specified by the manufacturer.

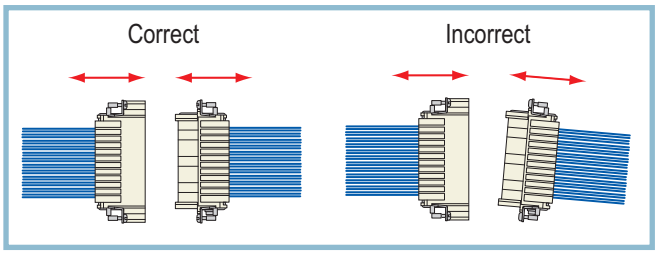
4. Mounting and flexure of multiwired bundles or multipolar cables with crimp contacts
Bundles of conductors or multipolar cables with crimp contacts for multipole connectors must not cause stress to the inserted contacts with their weight as this would cause the contacts to bend over to the coupling area of the connectors and consequently damage them. The connectors must therefore be provided with cable clamps or the conductor bundles or multipolar cables must be mounted as described in the figures herebelow.



If the conductor bundles or the multipolar cables have to be immediately folded over on the back of the connector insert, it is recommended not to use any mechanical force in the axial direction with respect to the coupled contacts. The figure herebelow shows a correct bending and clamping of the multiwire bundles using the crimp contacts.



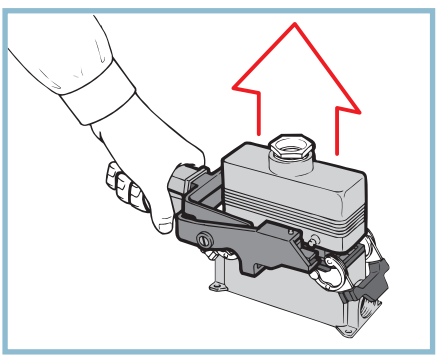
5. Coupling and uncoupling of multipolar connectors with crimp contacts
In order to prevent stress on the crimp contacts, the connectors must be coupled and uncoupled in the axial direction with respect to the contacts, without touching the conductor bundles or cables.
Standard DIN 43652 (incorporated into specification EN 175301-801) that applies to the ILME inserts of the CD series (this recommendation is also valid for the CDD series) prescribes a maximum deflection from the axis of ± 5° on the greater side and ± 2° on the smaller side.



To keep the play within this limit, especially during the uncoupling phase, guide pins CRM and CRF may be used. The use of ILME pliers (code number CPES) is recommended for the uncoupling operations for CD inserts (64 poles) and CDD inserts (108 poles). The pliers work on the fulcrum and lever principle and perform the following main tasks:

I - Reduce effort and coupling times to the minimum, even when working in the most impractical and inaccessible points.
II - Perform the uncoupling of multipolar connectors in full conformity of standard DIN 43652 (now EN 175301-801).

The pliers allow the extraction of the inserts to be made perfectly axially with respect to the contacts, evenly distributing the pressure on four points (housing pins).



tools and accessories for crimp contacts

for contacts of insert series:	page:
CD ..... (10A)	53-61
CDD ..... (10A)	67-74
CDC ..... (16A)	99-103
CCE ..... (16A)	110-115
CQE ..... (16A)	138-143
CQEE..... (16A)	146-147
CMCE ..... (16A)	148-160
CQ ..... (10A/16A)	165-168
CX 8/24 ..... (16A/10A)	169
CX 6/36 * ..... (10A)	170
CX 12/2 * ..... (10A)	171
CX 6/6 * ..... (16A)	175
MIXO ..... (10A/16A)	185-203

* the underlined polarities indicate those contacts that require the tools shown in this page

manual crimping tool
turret heads - gauge

insertion tool - removal tools - replacement tip

description	part No.	part No.
crimping tool for **10A** and **16A** contacts DANIELS AF8 model (turret excluded)	**CCPZ MIL**	
turret heads (see note) - for **10A** contacts (CDF and CDM series) - for **16A** contacts (CCF and CCM series)	**CCTP 10** **CCTP 16**	
"go / no go" control gauge to verify indenter closure (see note)	**CCPNP**	
insertion tool for insertion of the contacts into the inserts for crimped contacts up to 0,75 mm²		**CCINA**
removal tools for the extraction of contacts from the inserts - for **10A** contacts [1] - for **16A** contacts [2]		**CCES** **CQES**
replacement tip for CCES removal tool		**CCPR RN**

[1] for CQ, CD, CDD, CX inserts (10A auxiliary contacts) and MIXO module (10A)
[2] for CQ, CQE, CQEE, CCE, CMCE inserts (excluded 16+2), MIXO module (16A), CX6/6 (16A) and CDC. For CMCE (16+2), CX inserts (contacts 16A insert CX 8/24) using a flat 3 mm screwdriver.

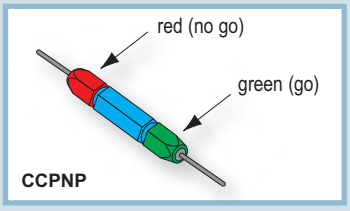
Notes:

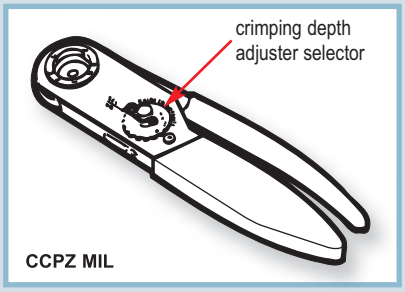
Positioning turret
conforms to international standard MIL-C-22520/1

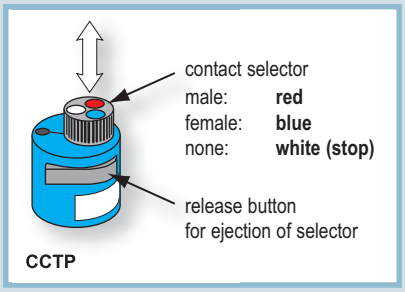
- An interchangeable and indispensable accessory of the CCPZ MIL crimping tool, it precisely positions the contact where crimping is performed. Each series of contacts requires its own turret.

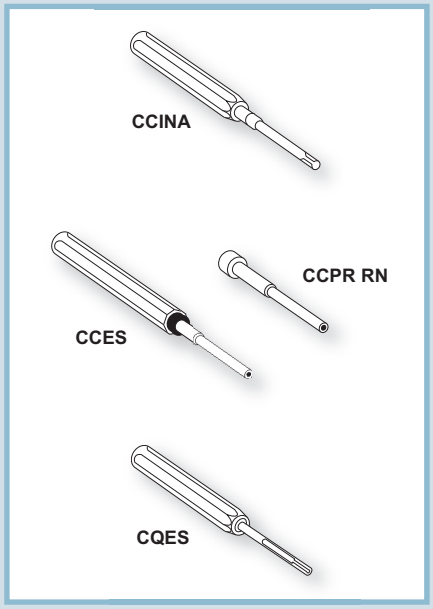
"go / no go" control gauge
conforms with international standard MIL-C-22520/3

- A tool used to periodically check that the crimping tool meets standard requirements.









CCMA - CCFA CCMD - CCFD	0,14 mm²	0,25 mm²	0,34 mm²	0,5 mm²	0,75 mm²	1,0 mm²	1,5 mm²	2,5 mm²	3,0 mm²	4,0 mm²	condutor section	
red	blue											
male	female	26	24	22	20	18	17	16	14	12	12	AWG
0,3	0,3	5	5	6								crimping depth adjuster selector: CCTP 16
0,5	0,5		6	6	7							
0,7	0,7			6	6	7						
1,0	1,0			6	6	7	7					
1,5	1,5				6	7	7	8				
2,5	2,5					6	6	7	7			
3,0	3,0							6	7	7		
4,0	4,0									7	8	

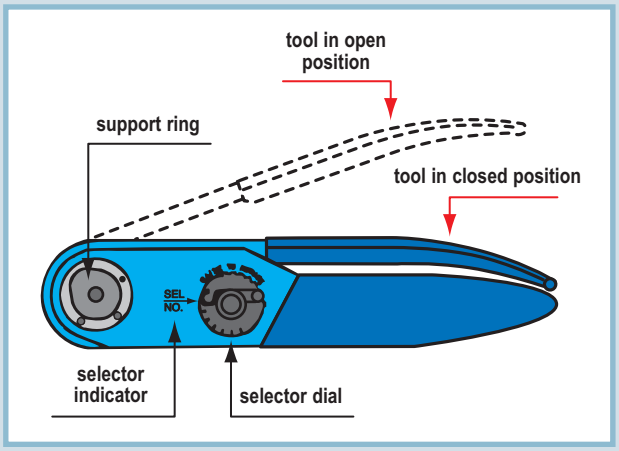
CDMA - CDFA CDMD - CDFD	0,14 mm²	0,25 mm²	0,34 mm²	0,5 mm²	0,75 mm²	1,0 mm²	1,5 mm²	2,5 mm²	conductor section	
red	blue									
male	female	26	24	22	20	18	17	16	14	AWG
0,3	0,3	5	5	6						crimping depth adjuster selector: CCTP 10
0,5	05				6					
0,7	0,7					6				
1,0	1,0						6			
1,5	1,5							7		
2,5	2,5								7	

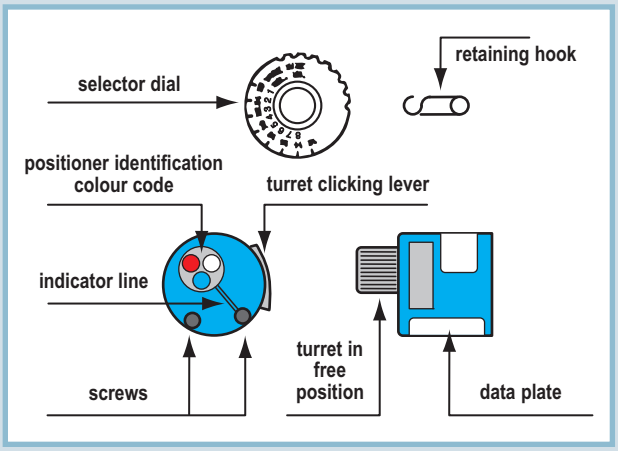
General specifications
The CCPZ MIL crimping tool conforms to the international standard MIL-C-22520/1. Crimping is performed with 8 pressure points. The tool is equipped with a geared mechanism to control the complete crimping cycle.
The tool must be equipped with an interchangeable turret (CCTP) according to the series of contacts to be crimped.

Crimping range
Wire section: dimension from 0,12 mm² (26 AWG) to 4 mm² (12 AWG).

Caution!
The handle of the tool must be in the open position when the turret is installed, disassembled or opened. If not, the turret and the crimping tool may be damaged.

CCTP turret installation
1. The crimping tool must be in the open position.
2. Press the clicking lever that releases the turret in the adjustment position.
3. Position the previously selected CCTP turret on the support ring located on the crimping tool (matching the special pin on the base of the turret with the corresponding hole on the support ring), aligning the tapped holes with the socket head screws.
4. With the CCTP turret positioned against the support ring, tighten the socket head screws with the 3.5 mm Allen wrench (supplied with the kit).
5. Refer to the data plate on the CCTP turret. From the colour code column, select the colour of the positioner that corresponds to the appropriate code and dimension of the contact to be crimped.
6. With the CCTP turret in the adjustment position, turn the turret until the colour-coded positioner is aligned with the indicator line. Press the turret until it clicks into the connected position.
7. Refer to the data plate on the CCTP turret. From the column indicating the proper conductor section, determine the number that corresponds to the contact being used.
8. Remove the retaining hook from the crimping tool selector dial. Lift the selector dial and turn it until the selector number is aligned with the indicator (SEL.NO.). Replace the retaining hook (if necessary).





Crimping instructions
1. Insert the contact and the prepared conductor through the opening of the indenter in the turret positioner.
2. Tighten the crimping tool handle until the stop gear is released. The tool will return to the open position.
3. Check the position of the crimping on the contact crimping foot. Ideally, the crimping should be between the inspection hole and the top edge of the crimping foot. The head of the contact should not be squared and the inspection hole should be intact.

Crimping tool maintenance
No maintenance is required. However, it is good practice to keep the indenter tips free from residual deposits of the coloured band (some types of crimp contacts as per MIL standards are identified by coloured bands in the crimping area) and any other debris. A metal brush may be used for this purpose.
The following is strongly recommended:

1. DO NOT immerse the tools in a solution to clean them.
2. DO NOT brush oil in the tools to lubricate them.
3. DO NOT try to disassemble the tool or repair it.

This is a high-precision manual crimping tool and must be used as such.
For automatic crimping operations refer to the CCPZP and/or CCPZPA crimping tool models.

Removing the CCPT turret
With the crimping tool in the open position, to disassemble the turret, loosen the socket head screws using the 3.5 mm Allen wrench (supplied with the kit).
After the threads are released from the support ring, pull off the turret with a straight movement.

Instructions to check calibration
The operations to check the crimping tool must be carried out with the selector dial in position 4 and the CCPNP gauge. **ATTENTION! Do not crimp the gauge.**

Calibration check
Put the crimping tool in the completely closed position.

"GO" - Insert the end (green) of the gauge as shown **(Fig. 1).**
The gauge must pass freely between the indenter tips.

"NO GO" - Insert the end (red) of the gauge as shown **(Fig. 2).**
The gauge should not pass through the opening.

Gauge	tool selector pos. No.	Ø A ± 0,00254 mm (GO) green	Ø B ± 0,00254 mm (NO GO) red
CCPNP	**4**	0,991 (mm)	1,118 (mm)

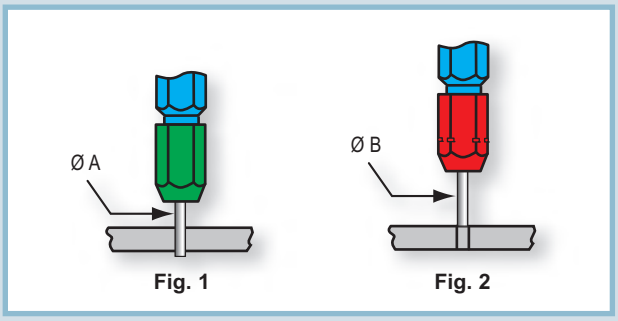


Fig. 1 Fig. 2

tools and accessories for crimp contacts

for contacts of insert series:	page:
CX 6/36 * ..... (40A)	170
CX 12/2 * ..... (40A)	171
MIXO ..... (40A)	184-188

* the underlined polarities indicate those contacts that require the tools shown in this page.

manual crimping tool **)
turret heads - gauge

removal tool

description	part No.	part No.
crimping tool for **40A** DANIELS M309 model (turret excluded)	**CXPZ D**	
turret heads (see note) - for male contacts **40A** - for female contacts **40A**	**CXTP 40 M** **CXTP 40 F**	
"go / no go" control gauge to vertify indenter closure (see note)	**CXPNP**	
removal tool for the extraction of contacts from the inserts - for **40A** contacts		**CXES**

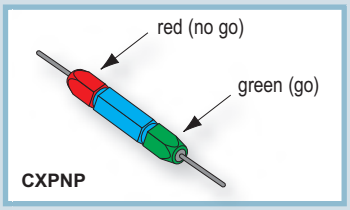
Notes:

Positioning turret

- An interchangeable and indispensable accessory of the CXPZ D crimping tool, it precisely positions the contact where crimping is performed. Each series of contacts (male or female) requires its own turret.

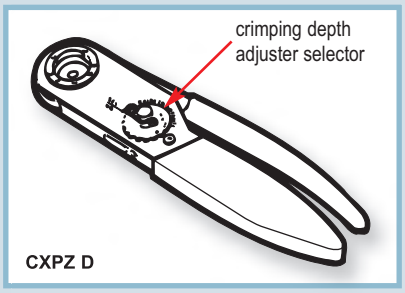
"go / no go" control gauge

- A tool used to periodically check that the crimping tool meets standard requirements.

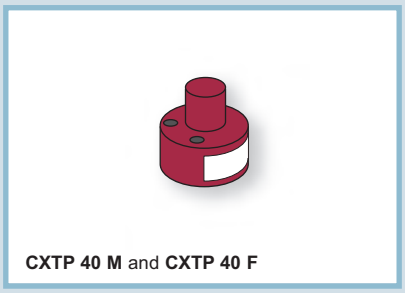


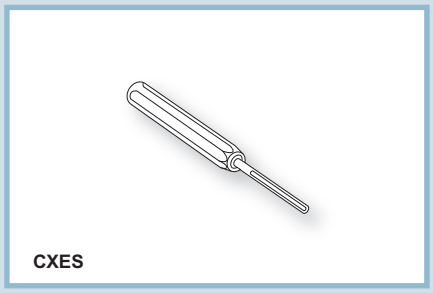
CXPNP

****)** On request is possible to supply the pneumatic crimping tool version (part. No. **CXPZP D**), please contact us for further details.



CXPZ D


CXTP 40 M and **CXTP 40 F**

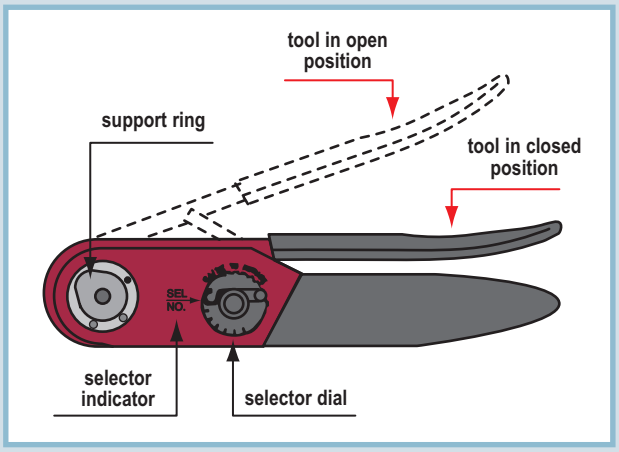

CXES

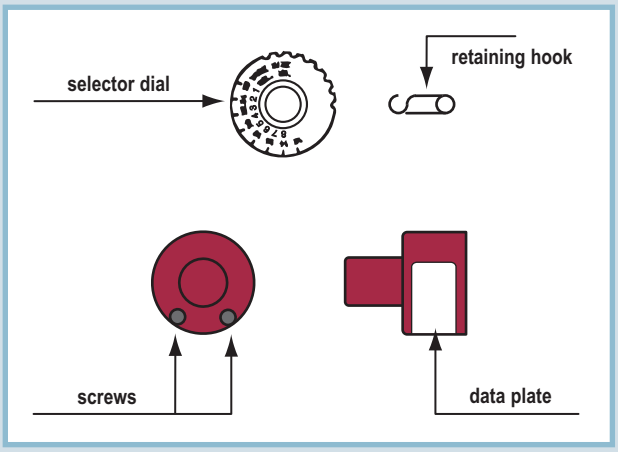
General specifications
The CXPZ D crimping tool performed with 8 pressure points. The tool is equipped with a geared mechanism to control the complete crimping cycle.
The tool must be equipped with an interchangeable turret (CXTP) according to the series of contacts to be crimped.

Crimping range
Wire section:
dimension from 1,5 mm² (16 AWG) to 6 mm² (10 AWG)

Caution!
The handle of the tool must be in the open position when the turret is installed, disassembled or opened. If not, the turret and the crimping tool may be damaged.

CXTP turret installation
1. The crimping tool must be in the open position.
2. Choose the turret to be used, according to the contacts that should be crimped (male or female).
3. Position the previously selected CXTP turret on the support ring located on the crimping tool (matching the special pin on the base of the turret with the corresponding hole on the support ring), aligning the tapped holes with the socket head screws.
4. With the CXTP turret positioned against the support ring, tighten the socket head screws with the 3.5 mm Allen wrench (supplied with the kit).
5. Refer to the data plate on the CXTP turret. From the column indicating the proper conductor section, determine the number that corresponds to the contact being used.
6. Remove the retaining hook from the crimping tool selector dial. Lift the selector dial and turn it until the selector number is aligned with the indicator (SEL.NO.). Replace the retaining hook (if necessary).





Crimping instructions
1. Insert the contact and the prepared conductor through the opening of the indenter in the turret positioner.
2. Tighten the crimping tool handle until the stop gear is released. The tool will return to the open position.
3. Check the position of the crimping on the contact crimping foot. Ideally, the crimping should be between the inspection hole and the top edge of the crimping foot. The head of the contact should not be squared and the inspection hole should be intact.

Crimping tool maintenance
No maintenance is required. However, it is good practice to keep the indenter tips free from residual deposits of the coloured band (some types of crimp contacts as per MIL standards are identified by coloured bands in the crimping area) and any other debris. A metal brush may be used for this purpose.
The following is strongly recommended:

1. DO NOT immerse the tools in a solution to clean them.
2. DO NOT brush oil in the tools to lubricate them.
3. DO NOT try to disassemble the tool or repair it.

This is a high-precision manual crimping tool and must be used as such.

Removing the CXPT turret
With the crimping tool in the open position, to disassemble the turret, loosen the socket head screws using the 3,5 mm Allen wrench (supplied with the kit).
After the threads are released from the support ring, pull off the turret with a straight movement.

Instructions to check calibration
The operations to check the crimping tool must be carried out with the selector dial in position 4 and the CCPNP gauge. **ATTENTION! Do not crimp the gauge.**

Calibration check
Put the crimping tool in the completely closed position.

"GO" - Insert the end (green) of the gauge as shown **(Fig. 1).**
The gauge must pass freely between the indenter tips.

"NO GO" - Insert the end (red) of the gauge as shown **(Fig. 2).**
The gauge should not pass through the opening.

Gauge	tool selector pos. No.	Ø A ± 0,00254 mm (GO) green	Ø B ± 0,00254 mm (NO GO) red
CXPNP	**4**	1,549 (mm)	1,676 (mm)

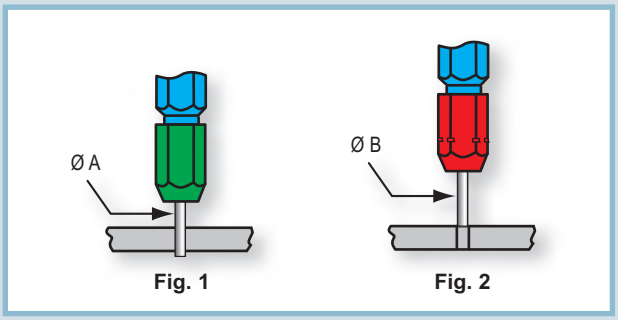


Fig. 1 Fig. 2

for contacts of insert series:	page:
CD ..... (10A)	53-61
CDD ..... (10A)	67-74
CDC ..... (16A)	99-103
CCE ..... (16A)	110-115
CQE ..... (16A)	138-143
CQEE..... (16A)	146-147
CMCE ..... (16A)	148-160
CQ ..... (10A/16A)	165-168
CX 8/24 ..... (16A/10A)	169
CX 6/36 ..... (40A/10A)	170
CX 12/2 ..... (40A/10A)	171
CX 6/6 * ..... (16A)	175
MIXO.... (40A/16A/10A)	184-203

* the underlined polarities indicate those contacts that require the tools shown in this page

manual crimping tool gauge

insertion tool - removal tools - replacement tip

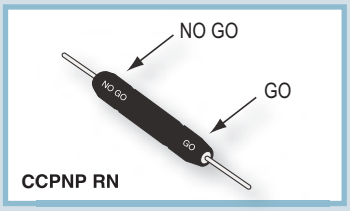
description	part No.	part No.
crimping tool for **10A, 16A and 40A** contacts RENNSTEIG model (turret included)	**CCPZ RN**	
"go / no go" control gauge to verify indenter closure (see note)	**CCPNP RN**	
insertion tool for insertion of the contacts into the inserts for crimped contacts up to 0.75 mm²		**CCINA**
removal tools for the extraction of contacts from the inserts - for **10A** contacts [1] - for **16A** contacts [2] - for **40A** contacts [3] and cables Ø < 5 mm - for **40A** contacts [4] and cables Ø < 7,5 mm		**CCES** **CQES** **CXES** **CXES-10**
replacement tip for CCES removal tool		**CCPR RN**

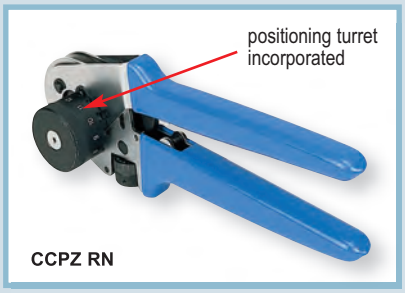
[1] for CQ, CD, CDD, CX inserts (10A auxiliary contacts) and MIXO module (10A)
[2] for CQ, CQE, CQEE, CCE, CMCE inserts (excluded 16+2), MIXO module (16A), CX6/6 (16A) and CDC. For CMCE (16+2), CX inserts (contacts 16A insert CX 8/24) using a flat 3 mm screwdriver.
[3] for CX inserts (40A contacts) and MIXO module (40A)
[4] for MIXO module CX 03 4B and contacts 10 mm²

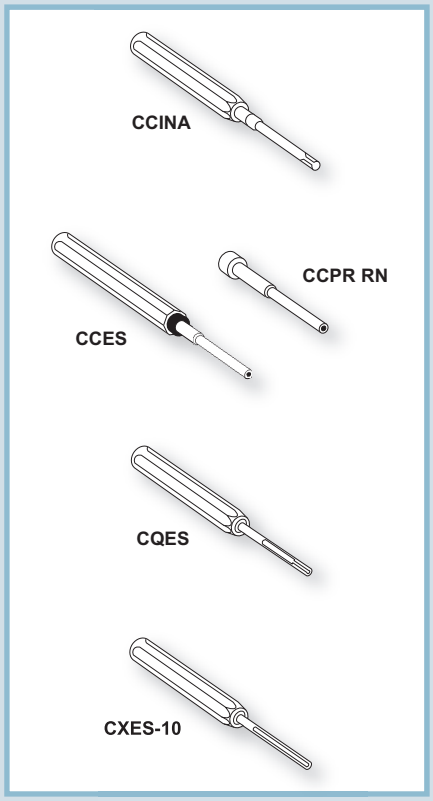
Notes:

"go / no go" control gauge

- A tool used to periodically check that the crimping tool meets standard requirements.





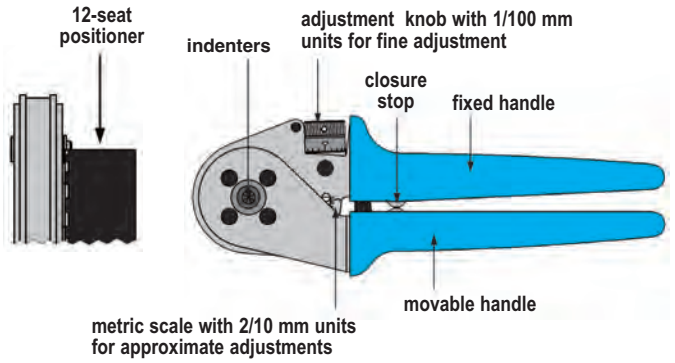


General specifications

The CCPZ RN crimping tool crimps with 8 pressure points, obtaining similar results to the prescriptions of standard MIL-C-22520/1. The tool has a geared mechanism for controlling the complete crimping cycle, and houses a positioning turret with 12 positions, six of which can be used for positioning the ILME male and female crimping contacts of series CD (10A max), CC (16A max) and CX (40A max).

Crimping range

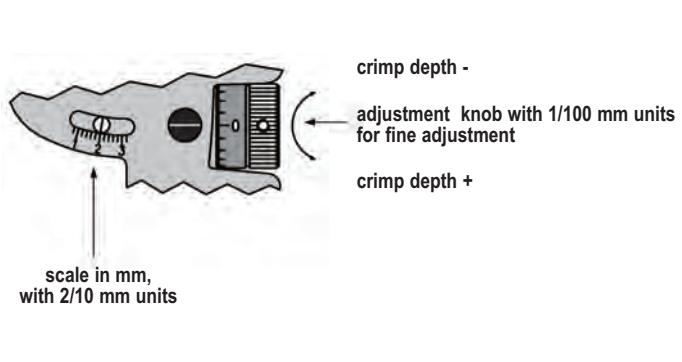
Wire section: dimension from 0,14 mm² (26 AWG) to 10 mm² (8 AWG)



Adjustment of crimp depth

Crimp depth to be adjusted ad follows:
the adjustment knob should be turned clockwise to reduce crimping depth, and anti-clockwise to increase it.

Adjustment tolerances:
- 1 scale mark on the knob = adjustment of 1/100 mm (0,01 mm);
- 1 complete rotation of knob = adjustment of 2/10 mm (0,2 mm, this indication can be read on the knob and on the approximate scale);
- 5 knob rotations = adjustment of 1,0 mm (this indication can be read on the scale).



Description of tool

Crimping tool components: a first mobile handle, with a precision stop mechanism with teeth and an opening limiting guide; a second fixed handle with metric scale (units of 2/10 mm); an adjustment system with fine step adjustments of 1/100 mm; four indenters; a 12-seat positioner, fully rotating through 360° for accurate positioning of contacts. A reference table engraved on the tool surface provides the positioner (POS) number and crimping depth (SET) to select according to the type and size of the ILME contact (the crimping tool can be set to any crimping depth which may be required by the contact manufacturer).

Crimping instructions

The reference matrix on the crimping tool indicates the correct seat of the positioner (POS M1, F2, M3, F4, M5, F6) to select, and the crimping depth (SET) to adjust for the contact to be crimped. The contact is inserted through the crimper entry hole on the opposite side of the positioner. The contact is closed by closing the handles in the first stop position, in order to prevent the contact coming out off the crimper and to facilitate fitting the conductor in the contact. The precision stop mechanism with teeth ensures consistently precise crimps, by forcing the crimper to close completely and finish the crimping cycle before the crimper can be re-opened.

Adjustment tool

Positioner seat = M1 (male) - F2 (female)

CDMA/D (male) CDFA/D (female)	Section (mm²)	Crimp depth (mm)
0,3	0,14	1,3
	0,25	
	0,37	
0,5	0,5	1,55
0,7	0,75	1,55
1,0	1,0	1,55
1,5	1,5	1,55
2,5	2,5	1,55

Positioner seat = M3 (male) - F4 (female)

CCMA/D (male) CCFA/D (female)	Section (mm²)	Crimp depth (mm)
0,3	0,14	1,2
0,3	0,25-0,37	1,3
0,5	0,5	1,55
0,7	0,75	1,55
1,0	1,0	1,55
1,5	1,5	1,8
2,5	2,5	1,8
3,0	3,0	1,9
4,0	4,0	2,0

Positioner seat = M4 (male) - F6 (female)

CXMA/D (male) CXFA/D (female)	Section (mm²)	Crimp depth (mm)
1,5	1,5	1,55
2,5	2,5	1,8
4,0	4,0	2,0
6,0	6,0	2,5
10,0	10,0	2,3

Maintenance and repair

Keep the crimping tool clean and store it correctly when not in use. The joints need to be lubricated periodically, and the pin stop circular clips must always stay in position. This is a high precision crimping tool and must be used as such.

Calibration check

The crimping tool is adjusted in the manufacturer's plant. To ensure correct calibration, we advise you to check the tool with a gauge every working day.
This is easily done with the CCPNP RN cylindrical gauge in the 2,0 mm Ø position.
ATTENTION!: Do not crimp the gauge.
Crimping depth of 2 mm can be adjusted with the adjustment knob (scale marked on "2", screw indicator on "0" as shown in the above figure).

Put the crimping tool in the completely position.

"GO" - Insert the end of the gauge as shown **(Fig. 1)**.
The gauge must pass freely between the indenter tips.

"NO GO" - Insert the end of the gauge as shown **(Fig. 2)**.
The gauge should not pass through the opening.

Gauge	tool selector pos. No.	Ø A GO	Ø B NO GO
CCPNP RN	**2**	1,94 (mm)	2,06 (mm)

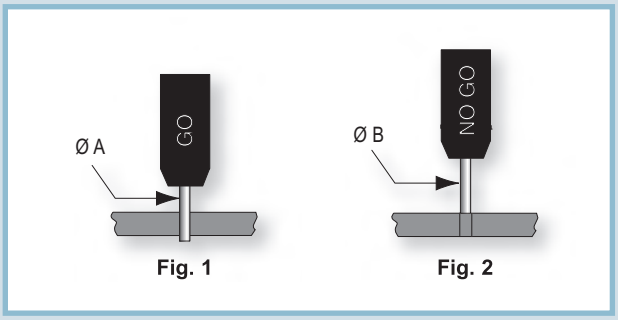


Fig. 1 Fig. 2

for contacts of insert series:	page:
MIXO (CI contacts, 25 poles)	196
MIXO (CI contacts, 8 poles)	198 and 514

manual crimping tool
turret head

insertion / removal tool

description	part No.	part No.
crimping tool for **CI** contacts DANIELS AFM8 model (turret excluded)	**CIPZ D**	
turret head - for **CI** contacts (CIFD and CIMD series)	**CITP D**	
insertion tool: for insertion of the contacts into the inserts, and removal tool: for the extraction of contacts from the inserts - for **CI** contacts (CIFD and CIMD series)		**CIES**

N.B.:
CITP D turret head (to be ordered separately)

for contacts of insert series:	page:
MIXO..... (D-SUB)	206

manual crimping tool
turret head

insertion / removal tool

description	part No.	part No.
crimping tool for **5A** contacts DANIELS AFM8 model (turret excluded)	**CIPZ D**	
turret head - for **5A** D-SUB contacts (CIVFD and CIVMD series)	**CIVTP D**	
insertion tool: for insertion of the contacts into the inserts, and removal tool: for the extraction of contacts from the inserts - for **5A** D-SUB contacts (CIVFD and CIVMD series)		**CIVES**

N.B.:
CIVTP D turret head (to be ordered separately)

tools and accessories for crimp contacts

for contacts of insert series:	page:
CX 6/6 ..... (100A)	175
MIXO ..... (200A/100A/70A)	180-183

manual crimping tool
crimp matrixes

removal tool

description	part No.	part No.
crimping tool for **70A/100A/200A** series contacts basic tool mod. CEMBRE HT 45 excluding crimp matrixes and locators	**CPPZ C** *	
crimp matrixes - for CX7 contacts with 10 mm² (AWG 8 - 7) section - for CX7 contacts with 16 mm² (AWG 6 - 5) section - for CX7 contacts with 25 mm² (AWG 4 - 3) section	 **CGD 10 C** **CGD 16 C** **CGD 25 C**	
crimp matrixes - for CG contacts with 10 mm² (AWG 8 - 7) section - for CG contacts with 16 mm² (AWG 6 - 5) section - for CG contacts with 25 mm² (AWG 4 - 3) section - for CG contacts with 35 mm² (AWG 2) section	 **CGD 10 C** **CGD 16 C** **CGD 25 C** **CGD 35 C**	
crimp matrixes - for CY contacts section 16 mm² (AWG 6) - for CY contacts section 25 mm² (AWG 4) and section 35 mm² (AWG 2) - for CY contacts section 50 mm² (AWG 1) - for CY contacts section 70 mm² (AWG 2/0)	 **CGD 25 C** **CYD 35 C** **CYD 50 C** **CYD 70 C**	
locator - for CX7 contacts - for CG contacts - for CY contacts	 **CX7PZ LOC** **CGPZ LOC** **CYPZ LOC**	
removal tool for 70A CX7 series contact		**C7ES**

NOTE:
For **CGMA 35** and **CGFA 35** contacts, and their corresponding **CGD 35 C** matrix pair, the contact may be inserted even after closing the head.

* Part No. **CPPZ CF:**
Manual crimping tool carrying case (CGPZ VLG) complete with crimp matrixes (CGD/CYD), locator (CX7PZ LOC, CGPZ LOC, CYPZ LOC) and removal tool (C7ES).

part No.	punching	contacts	mm²	AWG min (mm²)	AWG max (mm²)
CGD 10 C	ME 2	**CX7MA 10, CX7FA 10**	10	8 (8,4)	7 (10,6)
CGD 16 C	ME 3	**CX7MA 16, CX7FA 16**	16	6 (13,3)	5 (16,8)
CGD 25 C	ME 5	**CX7MA 25, CX7FA 25**	25	4 (21,2)	3 (26,7)

part No.	punching	contacts	mm²	AWG min (mm²)	AWG max (mm²)
CGD 10 C	ME 2	**CGMA 10, CGFA 10**	10	8 (8,4)	7 (10,6)
CGD 16 C	ME 3	**CGMA 16, CGFA 16** **CGT 16**	16	6 (13,3)	5 (16,8)
CGD 25 C	ME 5	**CGMA 25, CGFA 25**	25	4 (21,2)	3 (26,7)
CGD 35 C	ME 7	**CGMA 35, CGFA 35**	35	-	2 (33,6)

part No.	punching	contacts	mm²	AWG (mm²)
CGD 25 C	ME 5	**CYMA 16, CYFA 16**	16	6 (13,3)
CYD 35 C	ME 9	**CYMA 25, CYFA 25**	25	4 (21,2)
		CYMA 35, CYFA 35	35	2 (33,6)
CYD 50 C	ME 12	**CYMA 50, CYFA 50**	50	1 (42,4)
CYD 70 C	ME 17	**CYMA 70, CYFA 70**	70	2/0 (67,4)

General specifications

The **CPPZ C** crimping tool are a hydraulically operated tool suitable for manually crimping contact series (70A/100A/200A max) removable crimp contacts which may be used in **MIXO** series type **CX7, CG, CY** and **CGT 16** adaptor.
By using a suitable, hexagonal footprint crimp matrix pair, these pliers allow crimped connections to be made which conform to the highest quality standards.
The main features of these pliers are listed below:
- Scope of application: suitable for crimping wire terminals for up to 150 mm² flexible copper wires.
- Force developed: 50 kN (6 tons)
- Nominal operating pressure: 600 bar (8.600 psi)
- Dimensions: length 346 mm (13,6")
  width (locked moving handle) 130 mm (5,1")
  width (free moving handle) 250 mm (9,8")
- Weight: (without matrixes and without ILME locator) 2,0 kg (4,4 lbs)
- Recommended oil: AGIP ARNICA 32 or SHELL TELLUS OIL TX 32 or equivalent
- Other features: please read the user and maintenance manual supplied with the tool.

The pliers are equipped with a locator specifically designed for ILME crimp contacts to be mounted on the moving part of the pliers head by means of the Allen screw provided.
NOTE: It is possible to use the CPPZ C pliers with the CX7 70A, CG 100A and CY 200A contact series, by simply fitting the CX7PZ LOC, CGPZ LOC or CYPZ LOC locator and crimping matrixes to be purchased separately.
WARNING: For crimping the CGT 16 adaptor, the crimp locating operation must be carried out by the user.

User instructions

1) Preliminary operations
According to requirements, the pliers can be fitted with one or more pairs of crimp matrixes selected from the matrixes listed in the catalogue, to crimp the contacts shown in the table page 542.

NOTE:
The crimp contacts are only suitable for crimping flexible copper wires featuring a nominal section shown in the table with the crimp matrixes shown in the table. Any contacts – wires – matrixes combination which does not conform to these instructions is not physically possible (ex: using 35 mm² contacts with CGD 25 C matrixes is not possible because the pliers head would not close) or produces non conforming crimped connections or not usable in the MIXO series.

Open the tool head by moving the matrix supporting hook (22) outwards until the matrix support (21) is released.
With reference to Figures 1 and 2, select a pair of matrixes suitable to the type of contact and insert them in the housings: one in the matrix support (21), the other one in the matrix pusher support (26). (NB: the two matrixes of each pair are the same).
Insert the contact by resting it in the locator with the tip forward, then close the head.
The contact crimp housing will be accessible in the mouth between the matrixes.

Remove the moving handle (36) by removing the handle locking belt from the handle.
Before carrying out the next operations, make sure the head is fully closed to avoid damages.
The pliers head can rotate by 180° in relation to the body, thus allowing the operator to work in the most comfortable position.
WARNING: do not force the head by trying to rotate it when the tool is under pressure.

2) Approaching the matrixes
If possible closing the dies, rest the pliers head on a work top, then move the moving handle to start moving the matrixes closer to the contact, then carry on moving them until the contact is locked between the matrixes.
Push the correctly stripped and suitable long (**15 mm**) wire all the way in the contact (or the CGT adaptor) crimp housing by carefully checking that the braids are fully compacted, are not damaged and, above all, are all fully inserted.
Correctly pushing the contact in the locator ensures that the matrixes are exactly in the right area to compress (the contact crimp shaft centre). Make sure that the locator is free from any residue which would alter the position of the contact.
For crimping the CGT 16 earth adaptor, manually locate the area to be crimped between the matrixes. If necessary, re-open the matrixes by following the instructions described in paragraph 4 and reposition the contact.

3) Crimping
Continue to operate the moving handle (pumping): the piston will gradually move forward until the matrixes come into contact.
Continue the pumping action until the maximum pressure valve clicks in.

4) Releasing the dies
Fully press the pressure release lever (50) located on the pliers pumping body until the piston goes back and the matrixes open.
To remove the crimped contact, re-open the pliers head.

5) Storage
Fully return the piston as described in paragraph 4, then lock the moving handle in position by using the belt provided.

Cleaning and maintenance
The tool is very sturdy and does not required any special care; a correct operation is ensured by following a few simple precautions.
The tool is supplied with a user and maintenance manual, which gives all detailed instructions. Read this manual before use.

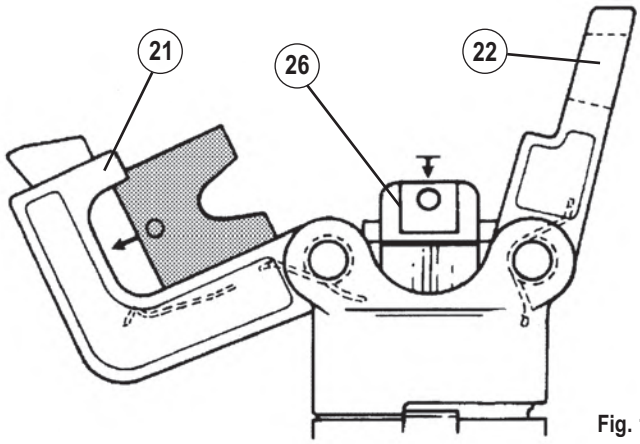


Fig. 1

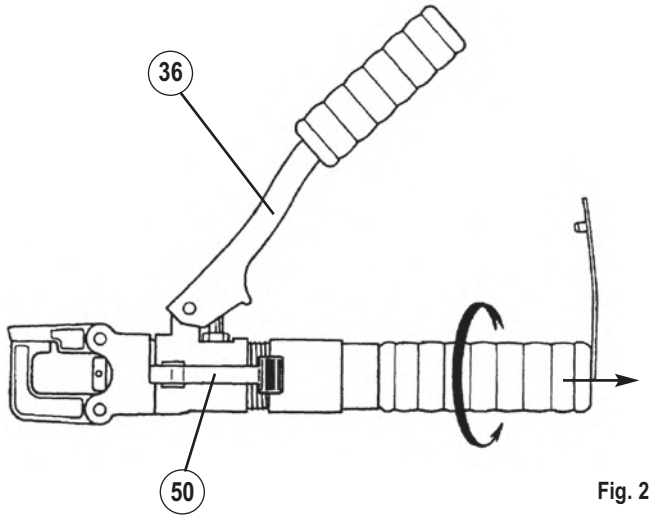


Fig. 2

CGPZ VLG carrying case

for CPPZ * crimping tool
- dimensions 445 x 290 x h 95 mm
- weight 1,2 kg
houses 20 pairs of matrixes

* to store the CPPZ crimping tool inside the carrying case, turn the pliers head by 180° so that the locator becomes visible.

for contacts of insert series: page:

CD ..... (10A) 53-61
CDD ..... (10A) 67-74
CDC ..... (16A) 99-103
CCE ..... (16A) 110-115
CQE ..... (16A) 138-143
CQEE..... (16A) 146-147
CMCE ..... (16A) 148-160
CQ ..... (10A/16A) 165-168
CX 8/24 ..... (16A/10A) 169
CX 6/36 * ..... (10A) 170
CX 12/2 * ..... (10A) 171
CX 6/6 * ..... (16A) 175
MIXO ..... (10A/16A) 185-203

* the underlined polarities indicate those contacts that require the tools shown in this page

pneumatic crimping tool
turret heads - gauge

insertion tool - removal tools - replacement tip

description	part No.	part No.
pneumatic crimping tool for **10A** and **16A** contacts model DANIELS WA27F (turret excluded)	**CCPZP**	
turret heads (see note) - for **10A** contacts (CDF and CDM series) - for **16A** contacts (CCF and CCM series)	**CCTP 10** **CCTP 16**	
support for CCPZP pneumatic crimping tool	**CCSPZP**	
pneumatic foot valve	**CCVPP**	
"go / no go" control gauge to verify indenter closure (see note)	**CCPNP**	
insertion tool for insertion of the contacts into the inserts for crimped contacts up to 0,75 mm²		**CCINA**
removal tools for the extraction of contacts from the inserts - for **10A** contacts [1] - for **16A** contacts [2]		**CCES** **CQES**
replacement tip for CCES removal tool		**CCPR RN**

[1] for CQ, CD, CDD, CX inserts (10A auxiliary contacts) and MIXO module (10A)
[2] for CQ, CQE, CQEE, CCE, CMCE inserts (excluded 16+2), MIXO module (16A), CX6/6 (16A) and CDC. For CMCE (16+2), CX inserts (contacts 16A insert CX 8/24) using a flat 3 mm screwdriver.

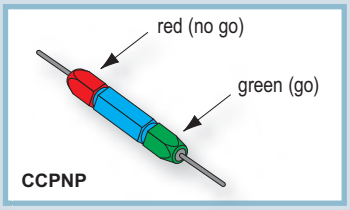
Notes:

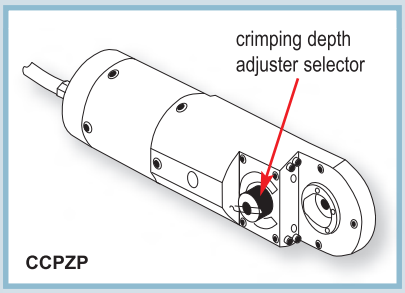
Positioning turret
conforms to international standard MIL-C-22520/1

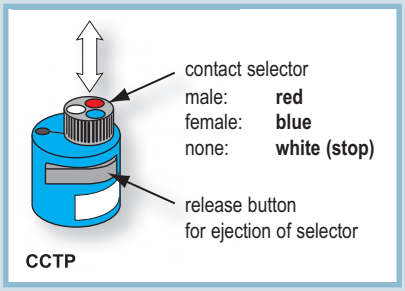
- An interchangeable and indispensable accessory of the CCPZP crimping tool, it precisely positions the contact where crimping is performed. Each series of contacts requires its own turret.

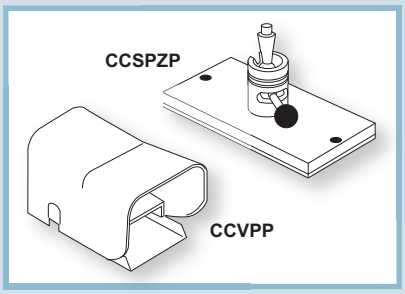
"go / no go" control gauge
conforms to international standard MIL-C-22520/3

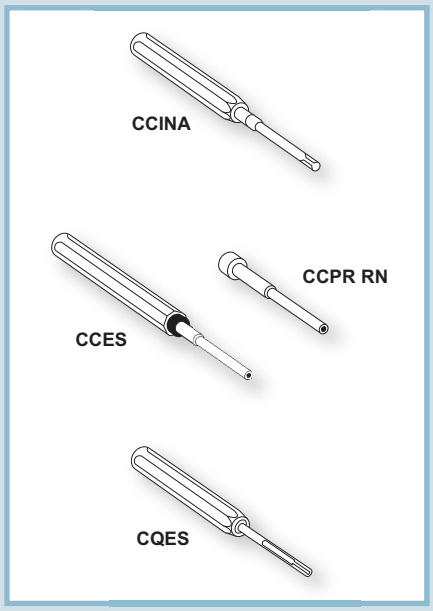
- A tool used to periodically check that the crimping tool meets standard requirements.







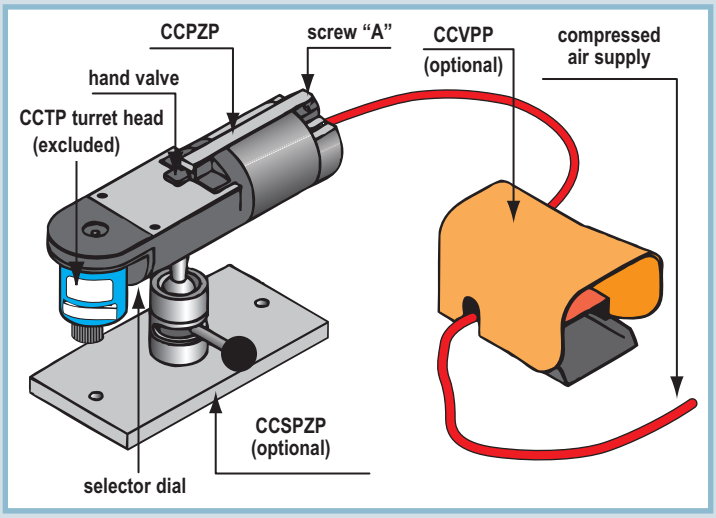




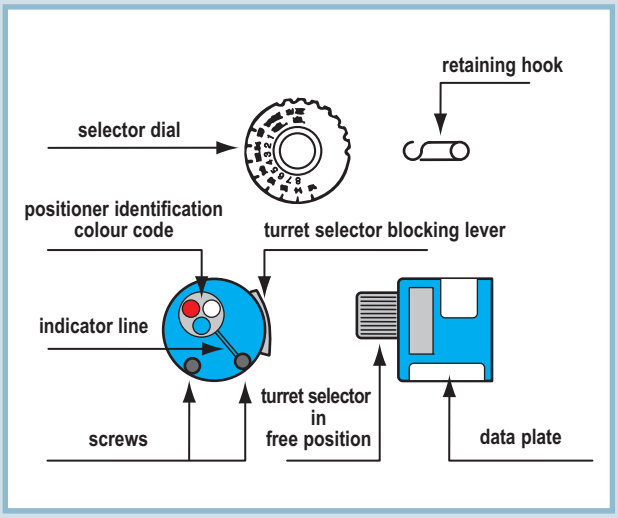
General specifications
This is the pneumatic version of the crimping tool. Crimping is performed with 8 pressure points. The tool is equipped with a geared mechanism to control the complete crimping cycle.
The tool must be equipped with an interchangeable turret (CCTP) according to the series of contacts to be crimped.
It is possible to use a hand valve (located on the crimping tool) or a foot valve (optional). The tool operating pressure is 5,5 - 8,3 bar. It is recommended to utilise a lubrication, adjustment and air filtering unit.

Crimping range
Wire section: dimension from 0.12 mm² (26 AWG) to 4 mm² (12 AWG).

Operation with foot valve (optional)
Connect the foot valve between the compressed air source and the tool air inlet.
Lower the hand valve and stop it in the lowered position with the stop screw (A) using a 1,5 mm Allen wrench.



CCTP turret installation
1. Position the previously selected CCTP turret on the support ring located on the crimping tool (matching the special pin on the base of the turret with the corresponding hole on the support ring), aligning the tapped holes with the socket head screws.
2. With the CCTP turret positioned against the support ring, tighten the socket head screws with the 3.5 mm Allen wrench (supplied with the kit).
3. Refer to the data plate on the CCTP turret. From the colour code column, select the colour of the positioner that corresponds to the appropriate code and dimension of the contact to be crimped.
4. With the CCTP turret in the adjustment position, turn the turret selector until the colour-coded positioner is aligned with the indicator line. Press the turret until it clicks into the connected position.
5. Refer to the data plate on the CCTP turret. From the column indicating the proper conductor section, determine the number that corresponds to the contact being used.
6. Remove the retaining hook from the crimping tool selector dial. Lift the selector dial and turn it until the selector number is aligned with the indicator (SEL.NO.). Replace the retaining hook (if necessary).



Checking the crimping complete cycle control mechanism
Correct operation can be checked based on the following procedure:
1. Install a CCTP turret.
2. Reduce the pressure to 1 bar.
3. Using a contact that corresponds to the installed turret, with size 0,5, and a wire with section 0.5 mm², use the crimping tool, referring to the crimping instructions. The indenters will not reach the fully closed position and the contact will be internally blocked if the geared mechanism is operating correctly.
4. To release the partially crimped contact, increase the air pressure of the line to 5,5 - 8,3 bar and again use the crimping tool. It will then complete the crimping, allowing the indenters to return to the fully open position.

Crimping instructions
1. Insert the contact and the prepared conductor through the opening of the indenter in the turret positioner.
2. Activate the hand valve or the optional foot valve. Once crimping has been completed, the tool will return to the open position.
3. Check the position of the crimping on the contact crimping foot. Ideally, the crimping should be between the inspection hole and the top edge of the crimping foot. The head of the contact should not be squared and the inspection hole should be intact.

Crimping tool maintenance
No maintenance is required. However, it is good practice to keep the indenter tips free from residual deposits of the coloured band (some types of crimp contacts as per MIL standards are identified by coloured bands in the crimping area) and any other debris. A metal brush may be used for this purpose.
The following is strongly recommended:

1. DO NOT immerse the tools in a solution to clean them.
2. DO NOT brush oil in the tools to lubricate them.
3. DO NOT try to disassemble the tool or repair it.

This is a high-precision crimping tool and must be used as such.

Removing the CCPT turret
With the crimping tool in the open position, to disassemble the turret, loosen the socket head screws using the 3,5 mm Allen wrench (supplied with the kit). After the threads are released from the support ring, pull off the turret with a straight movement.

Releasing a partially crimped contact
To release a partially crimped contact, do the following:
1. Increase the air pressure to 8.5 bar and use the crimping tool. If the increase in air pressure does not release the contact, do the following.
2. Turn the selector dial clockwise to the highest lockable setting (the selector dial must be in the blocked position before continuing). Use the crimping tool.
3. If it does not release after several attempts, contact the ILME offices.

Instructions to check calibration
The operations to check the crimping tool must be carried out with the selector dial in position 4 and the CCPNP gauge. **CAUTION! Do not crimp the gauge.**

Calibration check
Put the crimping tool in the completely closed position.

"GO" - Insert the end (green) of the gauge as shown **(Fig. 1).**
The gauge must pass freely between the indenter tips.

"NO GO" - Insert the end (red) of the gauge as shown **(Fig. 2).**
The gauge should not pass through the opening.

Gauge	tool selector pos. No.	Ø A ± 0,00254 mm (GO) green	Ø B ± 0,00254 mm (NO GO) red
CCPNP	**4**	0,991 (mm)	1,118 (mm)

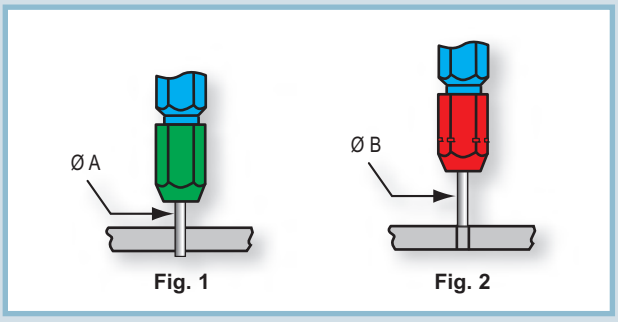
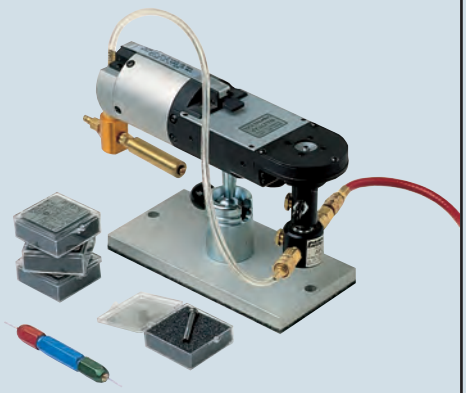


Fig. 1 Fig. 2

for contacts of insert series:	page:
CD ..... (10A)	53-61
CDD ..... (10A)	67-74
CDC ..... (16A)	99-103
CCE ..... (16A)	110-115
CQE ..... (16A)	138-143
CQEE..... (16A)	146-147
CMCE ..... (16A)	148-160
CQ ..... (10A/16A)	165-168
CX 8/24 ..... (16A/10A)	169
CX 6/36 * ..... (10A)	170
CX 12/2 * ..... (10A)	171
CX 6/6 * ..... (16A)	175
MIXO ..... (10A/16A)	185-203

* the underlined polarities indicate those contacts that require the tools shown in this page

pneumatic crimping tool with automatic positioner - inserts - gauge



insertion tool - removal tools - replacement tip

description	part No.	part No.
crimping tool with automatic positioner model DANIELS WA27FAP (inserts excluded)	**CCPZPA**	
positioner inserts (see note) - male contacts **10A** (CDM series) - female contacts **10A** (CDF series)	**CCTPADM** **CCTPADF**	
- male contacts **16A** (CCM series) - female contacts **16A** (CCF series)	**CCTPACM** **CCTPACF**	
"go / no go" control gauge to verify indenter closure (see note)	**CCPNP**	
insertion tool for insertion of the contacts into the inserts for crimped contacts up to 0.75 mm²		**CCINA**
removal tools for the extraction of contacts from the inserts - for **10A** contacts [1] - for **16A** contacts [2]		**CCES** **CQES**
replacement tip for CCES removal tool		**CCPR RN**

[1] for CQ, CD, CDD, CX inserts (10A auxiliary contacts) and MIXO module (10A)

[2] for CQ, CQE, CQEE, CCE, CMCE inserts (excluded 16+2), MIXO module (16A), CX6/6 (16A) and CDC. For CMCE (16+2), CX inserts (contacts 16A insert CX 8/24) using a flat 3 mm screwdriver.

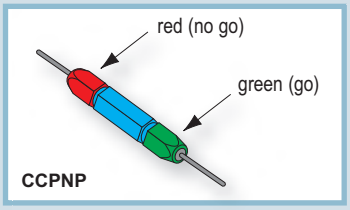
Notes:

Positioner inserts

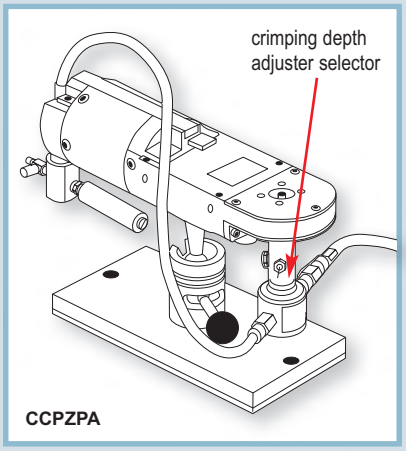
- Interchangeable and indispensable accessories of the CCPZPA crimping tool precisely position the contact where crimping is performed.
  Each contact requires its own positioner insert selected according to the type of contact (10A or 16A) and the kind (male or female).

"go / no go" control gauge
conforms with international standard MIL-C-22520/3

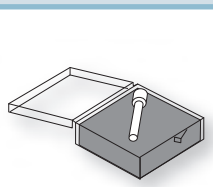
- A tool used to periodically check that the crimping tool meets standard requirements.

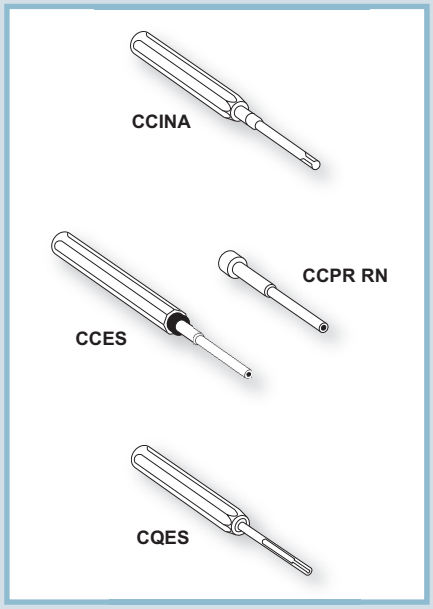


CCPNP



CCPZPA


CCTPADM and **CCTPADF**
CCTPACM and **CCTPACF**



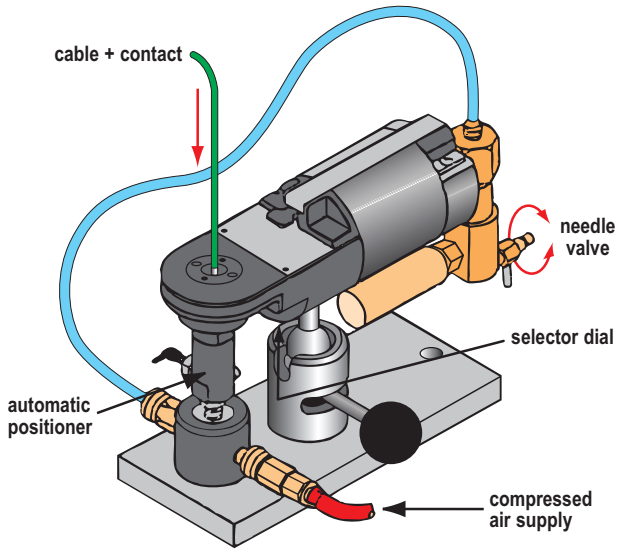
General specifications

This is the pneumatic version of the manual crimping tool. Crimping is performed with 8 pressure points. The tool is equipped with a geared mechanism to control the complete crimping cycle. Thanks to the automatic positioner it is possible to crimp simply by inserting the uncrimped contact + wire into the tool crimping cavity.
It is also necessary to order the interchangeable positioner inserts relative to the series of contacts to be crimped.
The tool operating pressure is 5,5 - 8,3 bar. It is recommended to utilise a lubrication, adjustment and air filtering unit.

Crimping range

Wire section: dimension from 0,12 mm² (26 AWG) to 4 mm² (12 AWG).

Fig. A (complete crimping tool)



Checking the crimping complete cycle control mechanism

Correct operation can be checked based on the following procedure:
1. Reduce the pressure to 1 bar.
2. Using a contact that corresponds to the installed positioner, with size 0,5, and a wire with section 0,5 mm², use the crimping tool, referring to the crimping instructions. The indenters will not reach the fully closed position and the contact will be internally blocked if the geared mechanism is operating correctly.
3. To release the partially crimped contact, increase the air pressure of the line to 5,5 - 8,3 bar and again use the crimping tool. It will then complete the crimping, allowing the indenters to return to the fully open position.

Crimping instructions

1. To obtain the suitable selector number, refer to the data plate located on the cover of the positioner insert case, and adjust the selector dial as specified.
2. Insert the contact and the prepared conductor through the opening of the indenter in the crimping tool casing **(Fig. A)**.
3. Exert slight pressure until the crimping tool automatically crimps the contact. **CAUTION: Wire sections less than 0,34 mm² (24 AWG) up to 0,08 mm² (28 AWG) or equivalent are not sufficiently rigid, so that it may be rather difficult to push the contact + wire.**
4. Check the position of the crimping on the contact crimping foot. Ideally, the crimping should be between the inspection hole and the top edge of the crimping foot. The head of the contact should not be squared and the inspection hole should be intact.

Crimping tool maintenance

No maintenance is required. However, it is good practice to keep the indenter tips free from residual deposits of the coloured band (some types of crimp contacts as per MIL standards are identified by coloured bands in the crimping area) and any other debris. A metal brush may be used for this purpose.
The following is strongly recommended:

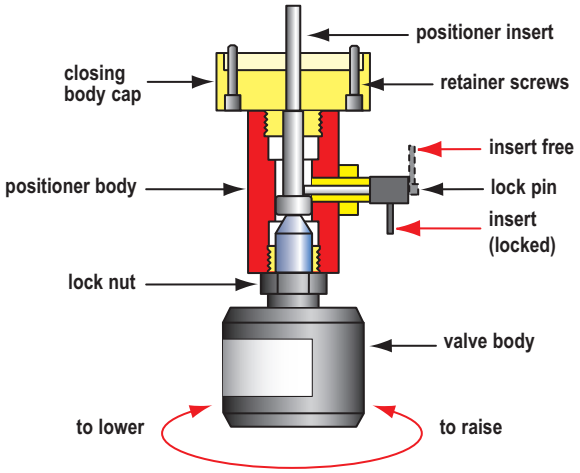
1. DO NOT immerse the tools in a solution to clean them.
2. DO NOT brush oil in the tools to lubricate them.
3. DO NOT try to disassemble the tool or repair it.

This is a high-precision crimping tool and must be used as such.

Installation or replacement of a positioner insert

1. Disconnect the workshop compressed air source.
2. Disconnect the air hoses from the automatic positioner (rapid connectors).
3. Remove the connection screws, using the 3,5 mm Allen wrench (supplied with the kit), to separate the automatic positioner from the crimping tool.
4. Unscrew the positioner closing housing.
5. Install or replace the proper positioner insert in the positioner housing, replacing the underlying spring.
6. Reverse the operations, as described from point 4 to point 1.

Fig. B (automatic positioner)



Crimping position adjustment (Fig. B)

1. Release the automatic positioner from the crimping tool body (see points 1 and 2 “Installation replacement of a positioner insert”).
2. While holding the positioner body in position using a 19 mm wrench, loosen the lock nut with a 14 mm wrench.
3. Push the positioner insert toward the bottom and lock it using the lock pin.
4. If the pin doesn’t lock, unscrew the valve body toward the bottom.
5. With the pin locked, tighten the valve body toward the top until it strikes against the positioner insert.
6. While maintaining that position, tighten the lock nut.
7. Replace and connect the positioner on the crimping tool.
8. Release the lock pin in the “free” position.

Instructions to check calibration

The operations to check the crimping tool must be carried out with the selector dial in position 4 and the CCPNP gauge. **CAUTION! Do not crimp the gauge.**

Calibration check

1. Disconnect the compressed air.
2. Push the positioner insert toward the bottom and lock it using the lock pin.
3. Reconnect the compressed air.
4. Turn the needle valve counterclockwise to open the air supply **(Fig. A)**.
5. The indenters will extend and remain in the extracted position until the valve is closed.
6. Check using the gauge, referring to the “go / no go” instructions reported below.
7. When the calibration check has been completed, close the needle valve turning it clockwise **(Fig. A)**.
8. Put the lock pin in the “free” position.

“GO” - Insert the end (green) of the gauge as shown **(Fig. 1).**
The gauge must pass freely between the indenter tips.

“NO GO” - Insert the end (red) of the gauge as shown **(Fig. 2).**
The gauge should not pass through the opening.

Gauge	tool selector pos. No.	Ø A ± 0,00254 mm (GO) green	Ø B ± 0,00254 mm (NO GO) red
CCPNP	**4**	0,991 (mm)	1,118 (mm)

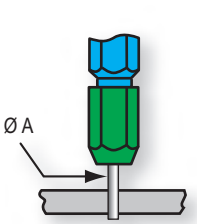


Fig. 1

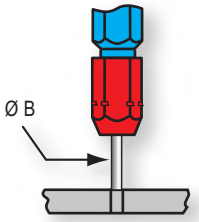


Fig. 2

tools and accessories for crimp contacts

for contacts of insert series:	page:
CD ..... (10A)	53-61
CDD ..... (10A)	67-74
CDC ..... (16A)	99-103
CCE ..... (16A)	110-115
CQE ..... (16A)	138-143
CQEE..... (16A)	146-147
CMCE ..... (16A)	148-160
CQ ..... (10A/16A)	165-168
CX 8/24 ..... (16A/10A)	169
CX 6/36 * ..... (10A)	170
CX 12/2 * ..... (10A)	171
CX 6/6 * ..... (16A)	175
MIXO ..... (10A/16A)	185-203

* the underlined polarities indicate those contacts that require the tools shown in this page

stripping - crimping machine

insertion tool - removal tools - replacement tip

description	part No.	part No.
stripping, crimping machine Zoller+Fröhlich AM-03 Universal model	**ZFU-CD**	
insertion tool for insertion of the contacts into the inserts for crimped contacts up to 0.75 mm²		**CCINA**
removal tools for the extraction of contacts from the inserts - for **10A** contacts [1] - for **16A** contacts [2]		**CCES** **CQES**
replacement tip for CCES removal tool		**CCPR RN**

1) for CQ, CD, CDD, CX inserts (10A auxiliary contacts) and MIXO module (10A)
2) for CQ, CQE, CQEE, CCE, CMCE inserts (excluded 16+2), MIXO module (16A). For CX 6/6 (16A) and CDC. CMCE (16+2), CX inserts (16A contacts CX 8/24 insert) a 3 mm flat screwdriver should be used

Technical specifications

Drive .....electro-pneumatic
Electric feeder 230V/50Hz
Absorbed power 120VA
Fuse (on the system filter module) .....2 x 2 A mT
Air operating pressure .....5.5 bar
Air consumption .....2 nl/cycle
Flexible conductors in conformity with.....IEC 60228 class 5
Rated section .....0,34-2,5 mm² (22 AWG-14 AWG)
Feeding length .....52 mm
Contacts .....loose, turned
Contact breaker .....see list of tools
Feeding .....vibrating conveyor
Crimping form.....4/8 ratchets
Cycle time .....2,5 s - 3 s
Continuous sound level .....< 70 dB (A)
Dimensions (l x d x h).....(530 x 500 x 480) mm
Colour.....blue, RAL 5012
Weight.....40 Kg

Tools list

contacts	CD... (10A max)						CC... (16A max)				
conductor section (mm²)	0,34	0,5	0,75	1,0	1,5	2,5	0,5	0,75	1,0	1,5	2,5
AWG (approximate)	22	20	18	18	16	14	20	18	18	16	14
feeding bowl/male	A						B (M)				
feeding bowl/female							B (F)				
feeding tube	A						B				
wire holder	0,34	0,5-1,5				2,5	0,5-1,5				2,5
starting unit	AB						AB				
stripping blades	V-shaped blades						V-shaped blades				
rear blade spacers left/right	0,5 mm / 1,0 mm						0,5 mm / 1,0 mm				
contact holder / pins	A (M)						B				
contact holder / bushes	A (F)										
contact stop	A						B				

Preset stripping and contact crimping programs

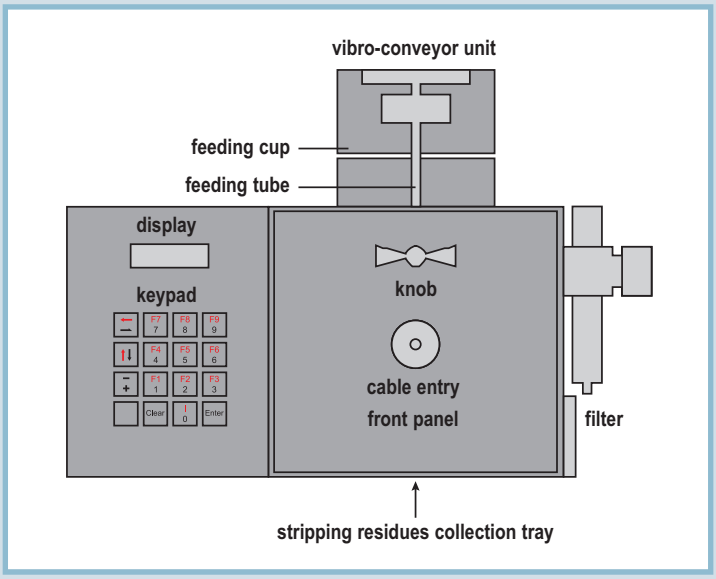
contacts	CD... (10A max)						CC... (16A max)				
conductor section (mm²)	0,34	0,5	0,75	1,0	1,5	2,5	0,5	0,75	1,0	1,5	2,5
AWG (approximate)	22	20	18	18	16	14	20	18	18	16	14
Program number	1A	2A	3A	4A	5A	6A	7B	8B	9B	10B	11B
stripping position (mm)	0,75	1,00	1,20	1,30	1,40	1,70	1,00	1,20	1,30	1,40	1,70
crimping position	1,30	1,35	1,40	1,50	1,55	1,60	1,40	1,40	1,50	1,55	1,70

Supplied with the following accessories:

- 1 vibrating conveyor feeder bowl for CD contact series
- 1 vibrating conveyor feeder bowl for male CC contact series
- 1 vibrating conveyor feeder bowl for female CC contact series
- 1 feeder tube (contact passage from vibrating conveyor to machine) for CD contact series
- 1 feeder tube (contact passage from vibrating conveyor to machine) for CC contact series
- 1 contact holder (in crimping position) for male CD contact series
- 1 contact holder (in crimping position) for female CD contact series
- 1 contact holder (in crimping position) for CC contact series
- 1 contact stop for CD contact series
- 1 contact stop for CC contact series
- 1 wire holder for 0.34 mm² cables
- 1 wire holder for 0.5 to 1.5 mm² cables
- 1 wire holder for 2.5 mm² cables
- 1 “GO / NO GO” control gauge
- 1 Allen wrench for setup operations
- 1 set of spacers to regulate the stripping length
- 1 removal tool to extract contacts from the crimping chamber

General specifications

The Zoller+Fröhlich AM-03 Universal stripping-crimping machine is a semi-automatic, electro-pneumatically operated bench machine used to quickly and reliably strip flexible copper wires and to crimp loose, turned crimp male and female, **CD** series (10A max) and **CC** series (16A max) contacts in a single run.
The contacts are automatically fed by means of a vibro-conveyor unit fitted on the top section of the machine.
The machine carries out the crimping operation with four, eight pressure point indenters, in compliance with the requirements set out in the MIL-C-22520/1 standard.
The stripping depth and crimping depth adjustment is controlled by a software controlled motor. Up to 50 different combinations may be stored and retrieved from the program; these combinations are useful, for example, to meet different requirements related to the wire insulator type and thickness.
The adjustment and programming operations are carried out by using the keypad located on the front panel. The LCD display shows all the functions, the main information and any errors.
The machine is fitted with devices used to check that the crimping cycle has been completed.
The general safety instructions described in the machine user and maintenance manual must be followed and the use of the machine should only be restricted to qualified and trained personnel.



Crimping range

Wire section: from 0,34 mm² (AWG 26) to 2,5 mm² (AWG 14).

Description of the machine

To ensure a correct operation, the machine must be positioned on a hard bench, which does not amplify the effects of the internal movements occurring inside the machine.
The machine consists of a vibrator which loads the contacts, of a tube which feeds the contacts and of a motorised wire stripping and contact crimping unit.
For each type and size of contact, the machine is provided with a factory stored preset program (see the machine user manual), which may be customised at any time.
The program allows the user to: load, edit and save a program, as well as check/edit the stripping length and depth and the crimping depth.
Warning: when the machine is switched on, the working program is always the last program used.
The machine electronics adjustment is carried out by means of the keypad.
Select one of the 12 programs (see table on page 548) according to the contact used *.
Each program stores the stripping and crimping depth.
The stripping depth is the measurement in mm of how much the stripping blades must penetrate the insulator to strip it off, and depends on the type of cable used.
The crimping depth is the measurement in mm of how much the four indenters must penetrate the contact at the end of the crimping operation.
This depth depends on the size and shape of the contact (crimp shaft thickness) and determines the quality of the crimping operation in terms of gas tightness and resistance to tensile stress.

*** Note:**
The machine also has a 12C program suitable for 10A, 2,5 mm² crimp contacts with 6 mm stripping length.
This program is therefore unsuitable for ILME CD series contacts (stripping length 8 mm).

Operational setups

The tool carrier carriage may be accessed by opening the front door, by anticlockwise rotation of the knob, which releases the pressure from all the valves.
For tool selection, see table on page 548.

- For CD series male and female crimp contacts (10A max), the feeding cup A must be fitted onto the machine, whilst for CC series crimp contacts (16A max) feeding cup B (M) for male contacts and B (F) for female contacts must be used.
- The feeding tubes to be fitted are A for CD series contacts and B for CC series contacts respectively.
- The wire holders which support the wire during the stripping stage feature three different sizes for CD contacts and two sizes for CC contacts.
- The contact holders are two (A (M) for male contacts and A (F) for female contacts) for CD series contacts, according to the different rear diameter between male and female contacts in this series, whilst there is only one holder (B) for CC series contacts.
- The contact holder is A for CD series contacts and B for CC series contacts.

Feeding the wire

The wire must be cut straight and the single braids must not be bent or pulled apart; in particular, the first 4cm must be perfectly straight.

Checking the stripping depth:

The machine can be operated simply as a stripping machine by disabling the crimping operation.
Please refer to the machine user manual.

Maintenance and repairs

Stripping residues collection tray: empty the tray approximately every 2000 cycles (the frequency depends on the sizes of the stripped wire and on the stripping length).
Pneumatically controlled maintenance unit: regularly drain any water that may have collected. The trap may be cleaned with water. To remove the trap, simply disconnect the air supply. The filter unit may be unscrewed for cleaning purposes, then immerged in a cleaning agent (such as petrol or oil), thoroughly washed and dried.

Checking the calibration values

The correct calibration of the machine must be periodically checked by using the “GO / NO GO” caliper supplied as standard with the machine, by following the procedure described in the machine user and maintenance manual.

for contacts series: page:

CX PLF/PLM 209
CX MLF/MLM 209

manual crimping tool

polishing disc - polish paper - removal tool jacket stripper and fibre stripper cable cutter

description	part No.	part No.
crimping tool for POF **CX PL** and MOST **CX ML** contacts RENNSTEIG model *	**CLPZ R**	
polishing disc (RATIOPLAST 910 PS 0SC 00 001) - for POF ** and MOST *** contacts		**CLDL**
polish paper: - grain size 1000 (RATIOPLAST 910 PB 001 00 001) - grain size 4000 (RATIOPLAST 910 PB 001 40 250)		**CLC1** **CLC4**
removal tool for the extraction of contacts from the CX L inserts		**CLES**
- jacket stripper (RATIOPLAST 910 AZ 001 00 PA1) for POF ** and MOST *** fibre optic with PA jacket - fibre stripper (RATIOPLAST 910 AB 001 00 001) for POF ** fibre optic		**CLSG** **CLSP**
cable cutter (RATIOPLAST 910 SW 001 00 001) for Ø 2,3 mm max, for POF ** and MOST *** fibre optic		**CLTE**

* on request tool **CLPZ** RATIOPLAST 910 CZ 001 00 008 for contacts POF **/MOST *** crimping on the back
** **POF = POLYMER OPTICAL FIBRE**
*** **MOST = MEDIA ORIENTED SYSTEM TRANSPORT**

Note:
as alternative to crimping please use glue UHU PLUS ENDFEST 300 (BICOMPONENT), part No. "**CL GL**" (provide a strain relief by cable glands)
1) mix the two components on a sheet (just a drop/each)
2) the stripped ca. 5 mm POF ** (that means the inner fibre) has to be dipped in the glue (just 5 mm)
3) the POF ** has to be pushed now in the contact/ferrule
4) min. one night to hard/dry the glue
5) finally the POF ** has to be polished (polishing disc)

General specifications

Strip the fibre about 12 mm for male contact and about 15 mm for female contact (see Figures 1 and 2).

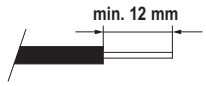


Fig. 1 - Example of cable stripping for male crimp contact

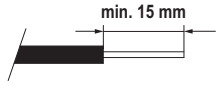


Fig. 2 - Example of cable stripping for female crimp contact

Crimping instructions

- The data sheet for crimping tool **CLPZ R** explains how the crimping tool works and how to adjust the crimping depth and locator for the contacts to be crimped. Position the turret on 3, push and turn of 90° the knob of turret. Adjust the crimping depth on 2 (unscrew the allen screw, after adjusting refix the screw).
  For the female contact: unscrew the back of the contact, pull out the internal central part; on Figure 3 is indicated the crimping area (front part of contact).
  For male contact: crimp the front part of contact.
- Push the stripped fiber as far as possible into the contact sleeve so that it protrudes approx. 1 mm from the tip of the contact.

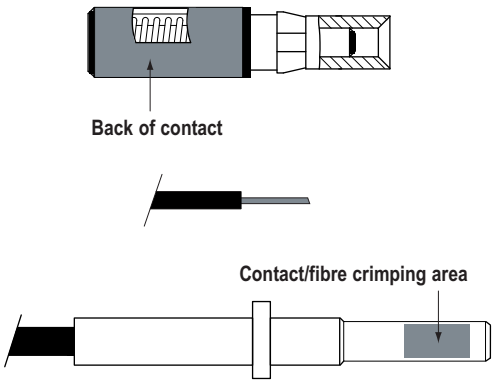


Fig. 3 - Female contact/fibre crimping area

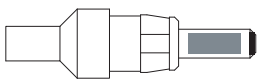
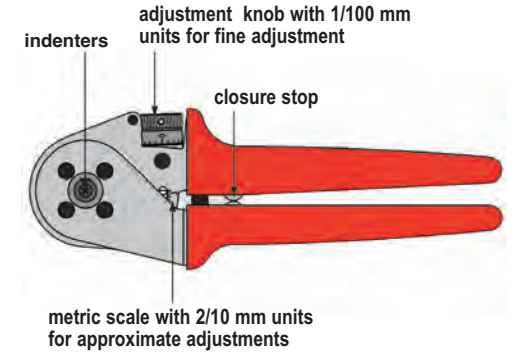


Fig. 4 - Male contact/fibre crimping area

- Insert the contact together with the fibre optic cable as far as possible into the crimping opening of the crimping tool (**CLPZ R**, see Figure 5) while applying gentle pressure to the fibre optic cable and connector, close the tool until you hear it disengages.



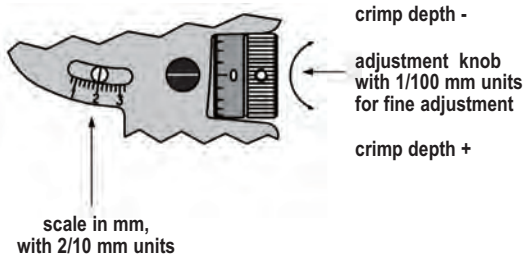


Fig. 5 - Manual crimping tool

Finishing the front surface

- Insert the contact into the polishing disc (**CLDL**) as shown in Figure 6.
  Work on a smooth surface (such as a sheet of glass), use grade 1000 polishing paper to grind off the protruding fibre and polish it with grade 4000 polishing paper.
- Wipe away any residue remaining after grinding.
  The best optical attenuation values are achieved when a wet grinding method is used.

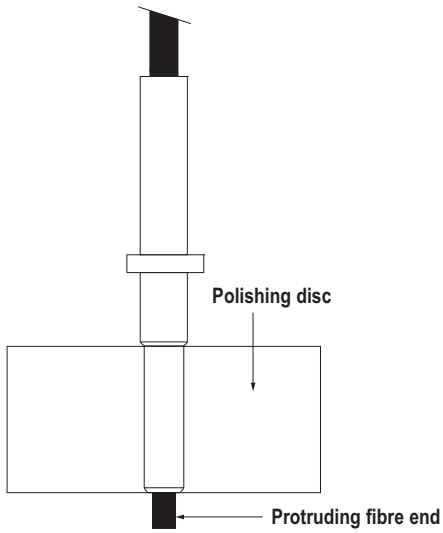


Fig. 6 - Polishing Disc with Guide for Connector Sleeve

Final mounting instructions

Screw the back female part contact.
Put inside the insert CX 04 LF/ CX 04 LM.

tools and accessories for crimp contacts

for contacts series: page:

CX 50 F/M 210
CX 75 F/M 210

manual crimping tool

removal tool

description	part No.	part No.
crimping tool for **CX 50 F/M** and **CX 75 F/M** coaxial contacts	**COPZ**	
removal tool for the extraction of contacts from the CX L inserts		**CLES**

Crimping instructions
1) Strip the cable as per drawing (page 210).
2) Crimp the central contact of coaxial connector in the correct crimping area with the position 0,7 of crimping tool COPZ.
3) Insert the central contact in the coaxial connector, put the braid shield around the back cylinder of contact.
4) Insert the brass back end on the braid shield.
5) Crimp the ferrule with position 3,25 of crimping tool COPZ.

We recommend the use of code pins CRF CX / CRM CX.

As alternative to crimping, it is possible to solder the central contact.

CX 50 F/M and CX 75 F/M coaxial contacts

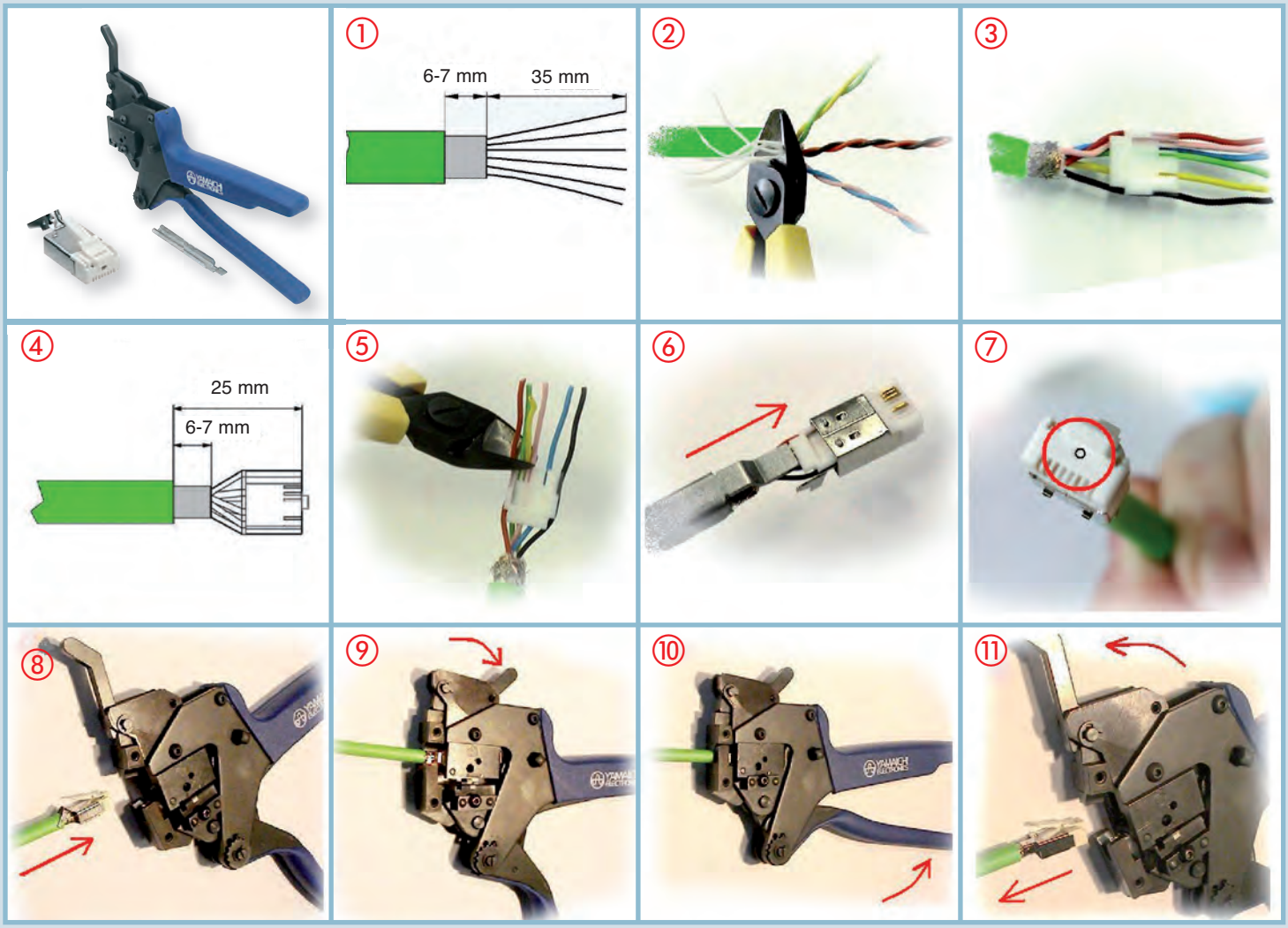
for insert series:	page:
CJ ..... (RJ45)	503
MIXO ..... (RJ45)	202-203

manual crimp pliers

shielded cable stripper

description	part No.	part No.
RJ45 CJ series plug insert crimp pliers basic tool YAMAICHI Y-ContTool-11 mod. with plug insert inserter	**CJPZ Y**	
Y-ContTool-20 cable stripper cuts the cable sheath and releases the wires in a single operation		**CJST**

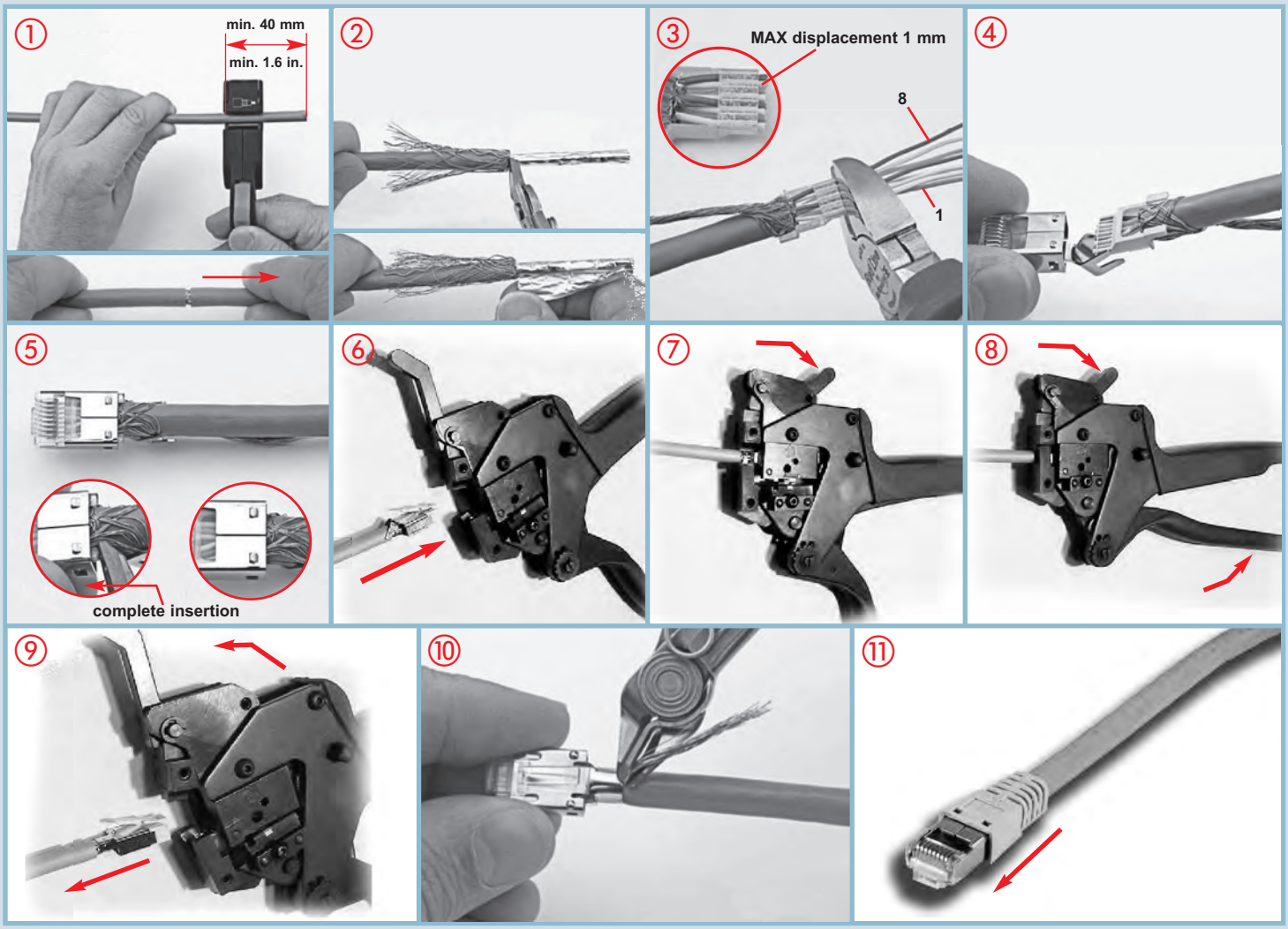
How to use the RJ45 plug insert crimp pliers



inserts:	page:	manual crimp pliers	shielded cable stripper
MIXO (RJ45) CX 8 J6M	200		

description	part No.	part No.
RJ45 CJ series plug insert crimp pliers	**CJPZ T**	
cable stripper cuts the cable sheath and releases the wires in a single operation		**CJST**

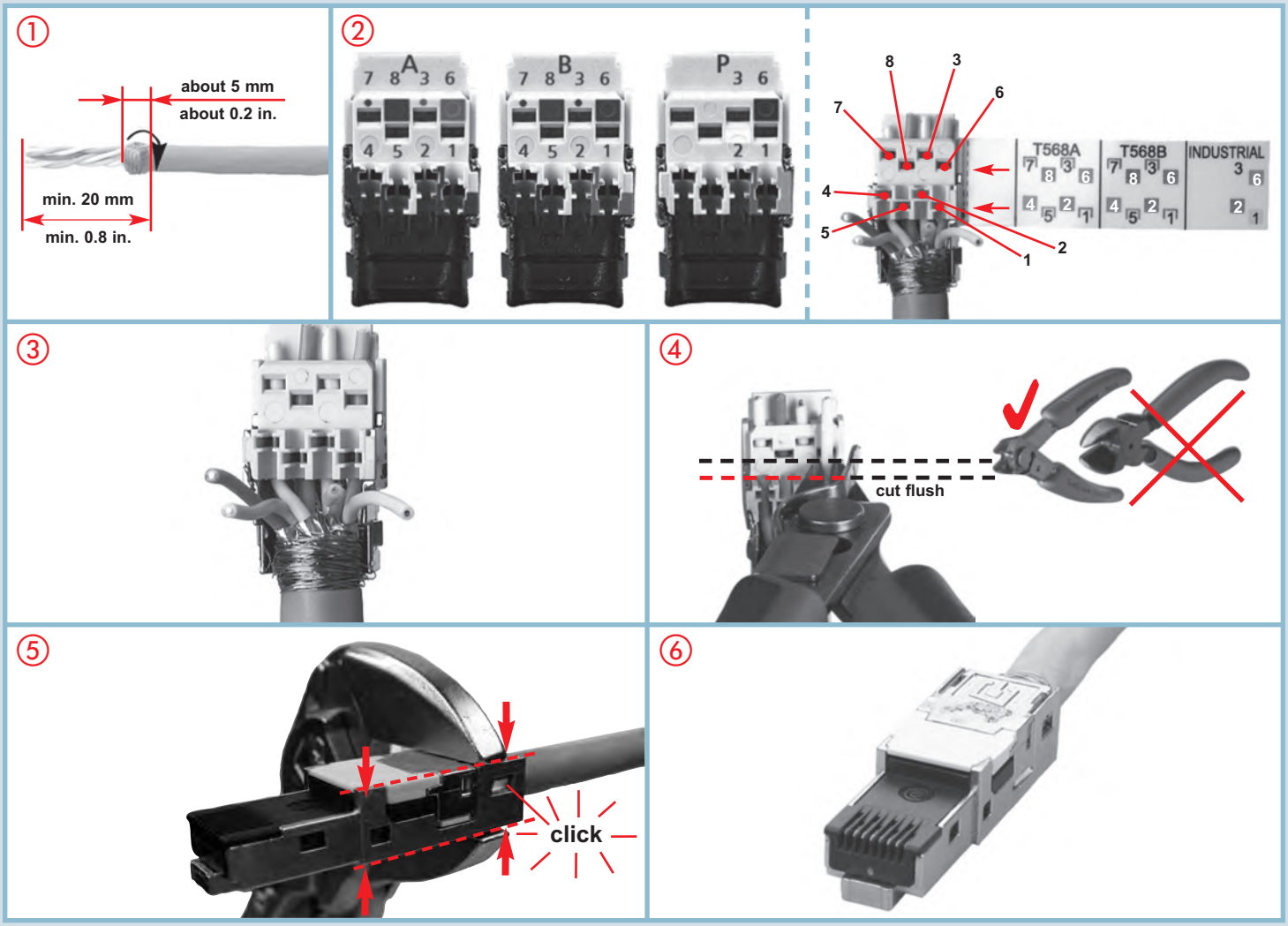
How to use the RJ45 plug insert crimp pliers



inserts:	page:
MIXO (RJ45) CX 8 J6IM	200

manual IDC pliers

description	part No.
wrenches pliers for CX 8 J6IM	**CJPW K**



Connection					Application			
RJ45 PIN No.	Colour Code T568 A	Colour Code T568 B	DIN 47100	Industrial PROFINET	10BT/ 100BT	1 Gigabit 10 Gigabit Ethernet	Token Ring ISDN/So	Upo/TEL
1	WH-GN	WH-OG	WH	YE	•	•		
2	GN	OG	BN	OG	•	•		
3	WH-OG	WH-GN	GN	WH	•	•	•	
4	BU	BU	YE	-		•	•	•
5	WH-BU	WH-BU	GY	-		•	•	•
6	OG	GN	PK	BU	•	•	•	
7	WH-BN	WH-BN	BU	-		•		
8	BN	BN	RD	-		•		

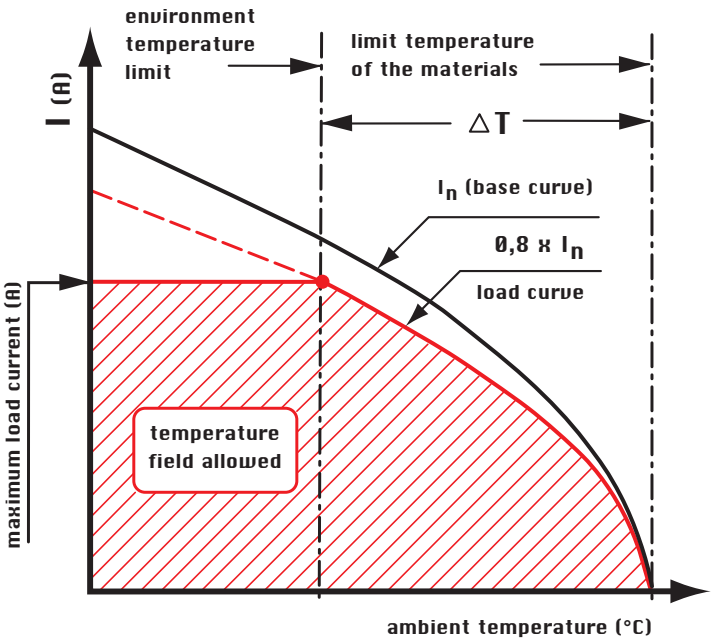
Legend

BN = brown
BU = blue
GN = green
GY = grey
OG = orange
PK = pink
RD = red
WH = white
YE = yellow

general

Load curves

The permitted current carrying capacity for connectors is variable: it becomes lower with the increase of the number of poles and of the ambient temperature in which the connector is installed and it depends upon the thermal properties of the material used for the contacts and the insulating parts including those of the type of conductor used.
The current carrying capacity is obtained from the load curves which are constructed according to standard IEC 60512-5-2 for currents circulating simultaneously in all poles.
The limit current curves express current values that determine the achievement of the upper limit temperature of the materials. The choice of the permanent load applicable on the contacts must be made within the field of operation possible delimited by the above mentioned curves.
Since use of connectors at the limit values of their characteristics is not recommended, the **base curve** is de-rated. The reduction of the load currents to 80% defines the correction curve where both the maximum permissible contact resistances and the inaccuracy of the temperature measurements are sufficiently taken into consideration.
The correction curve represents the final **limit current curve (load curve)** as defined by standard IEC 60512-5-2. It therefore bears in consideration the differences between the various connector inserts, as well as errors in the temperature measurements.
All the load curves presented here below include the correction.



Legend:

Maximum load current (A):
value for which the connector reaches the upper limit temperature of the material at the corresponding ambient temperature intersected on the load curve.

Upper limit temperature of the materials:
value determined by the characteristics of the material used. The sum of the environmental temperature and the increase of the ΔT (temperature rise) caused by the current flow must not exceed the limit temperature of the materials.

Environment temperature limit:
the environmental conditions must not exceed this value. It may be known and determines the maximum load current, or it may be directly obtained from the load curve.

Base curve:
set of current and temperature values obtained from laboratory tests and influenced by the connector's characteristics (number of poles, construction shape, thermal conductivity of the materials, etc.) and the cross-section of the conductor used.

Load curve (limit current curve):
obtained from the base curve via the safety coefficient.

ΔT (temperature rise):
temperature rise produced by a permanent current circulating through all the poles of a connector coupling; difference between the upper limit temperature of the material and the ambient temperature obtained on the limit current curve.

CK and CKD series
CKS series

curves

diagram CK and CKD 03 poles

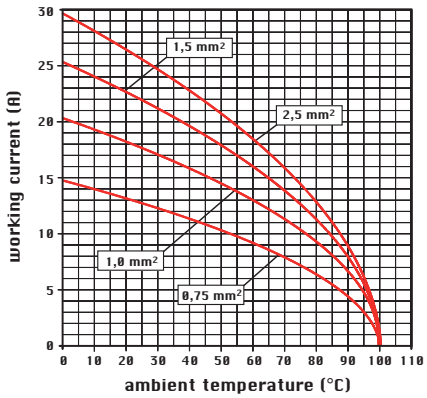


diagram CK and CKD 04 poles

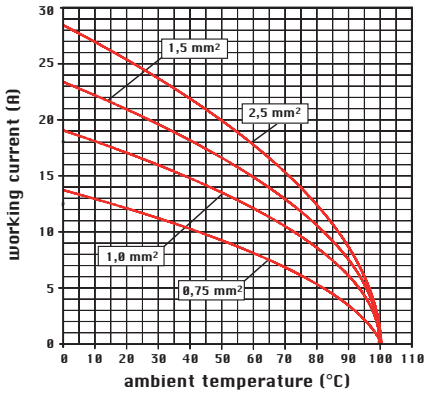


diagram CKS 03 poles

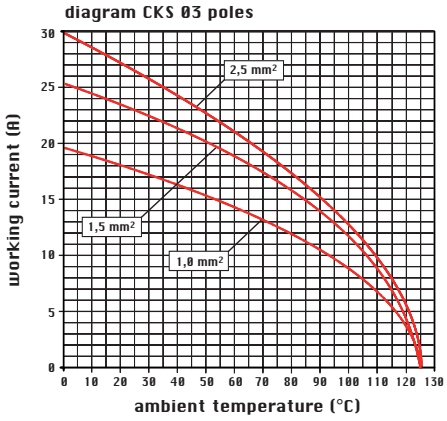
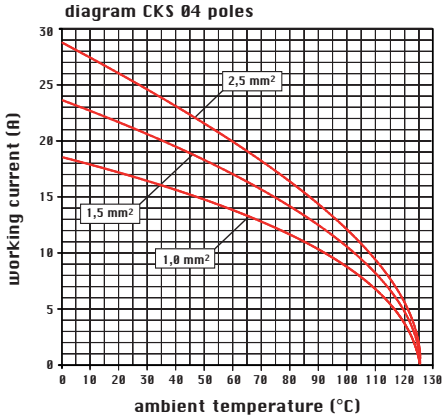


diagram CKS 04 poles



Load curves

CK...RY series
CD series

curves

diagram CK...RY 03 poles

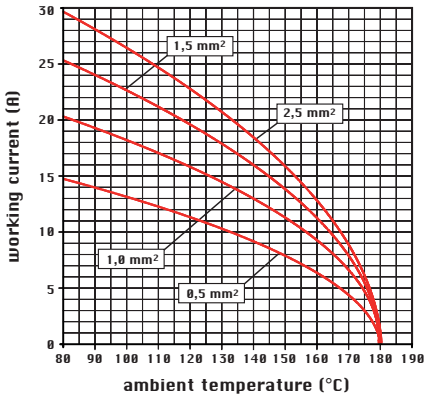


diagram CK...RY 04 poles

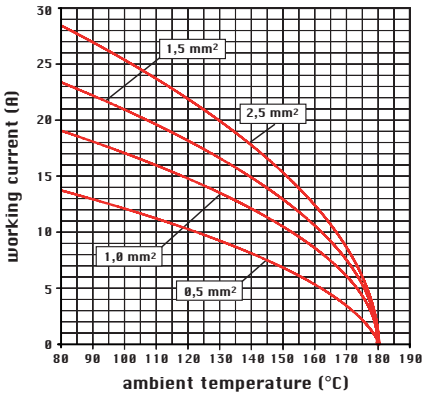
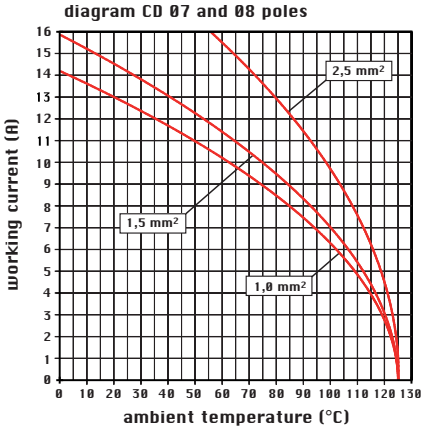


diagram CD 07 and 08 poles



CD series

curves

diagram CD 15 poles

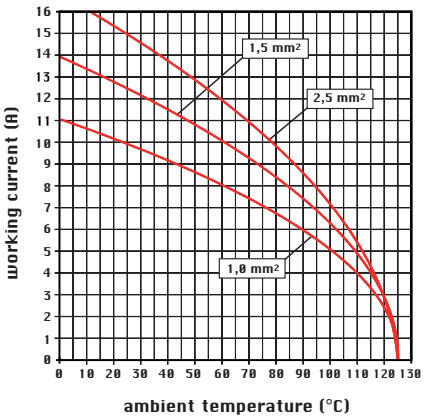


diagram CD 25 and 50 poles

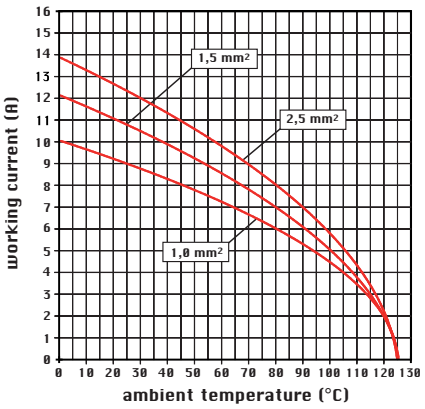


diagram CD 40 and 80 poles

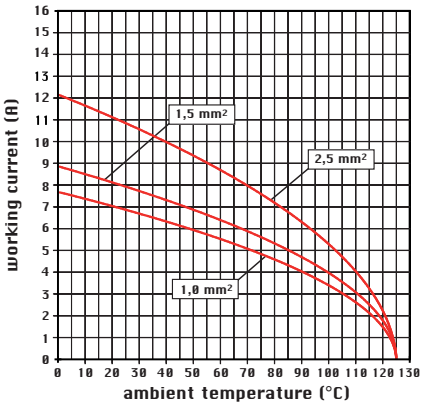
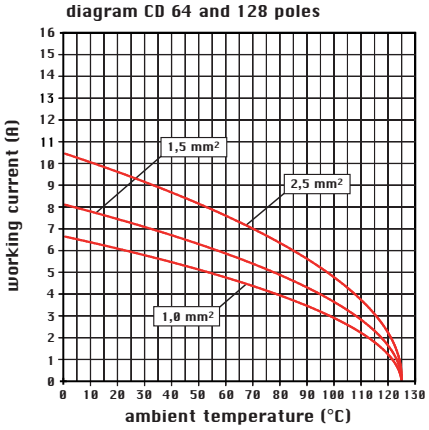


diagram CD 64 and 128 poles



CT and CTS (10A) series

curves

diagram CT and CTS 40 poles

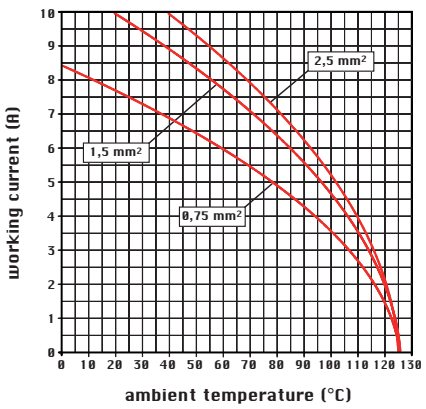
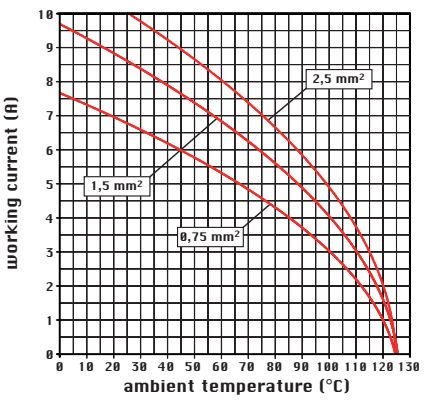


diagram CT and CTS 64 poles



CDD series

curves

diagram CDD 24 poles

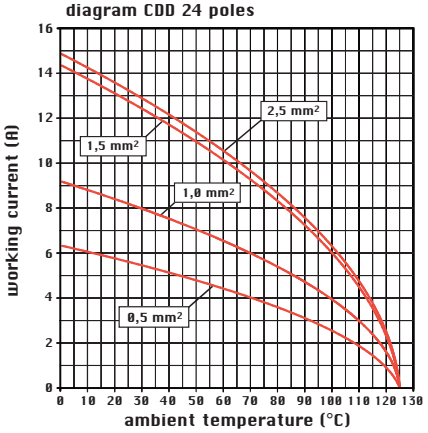


diagram CDD 38 and 76 poles

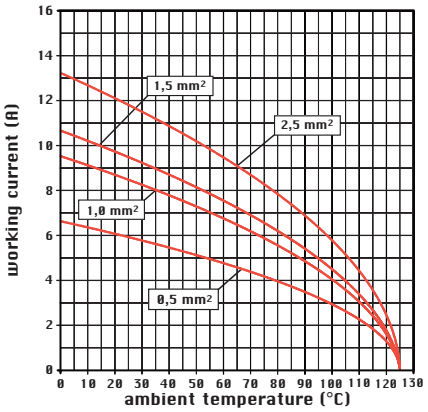


diagram CDD 42 poles

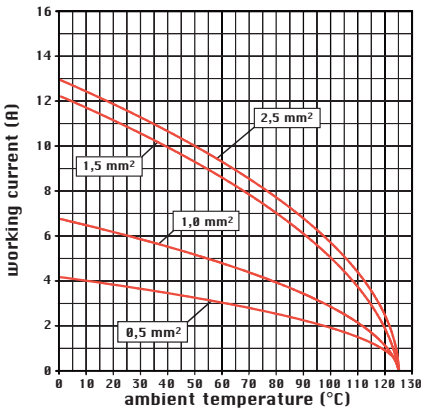
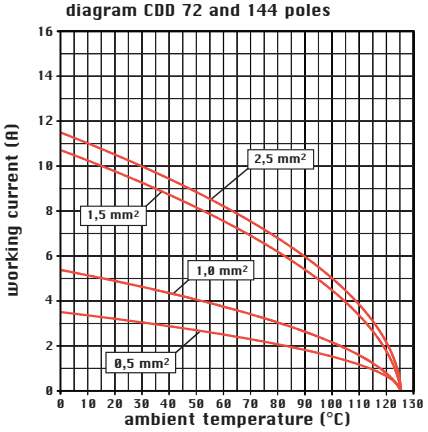


diagram CDD 72 and 144 poles



CDD series
CDS series

curves

diagram CDD 108 and 216 poles

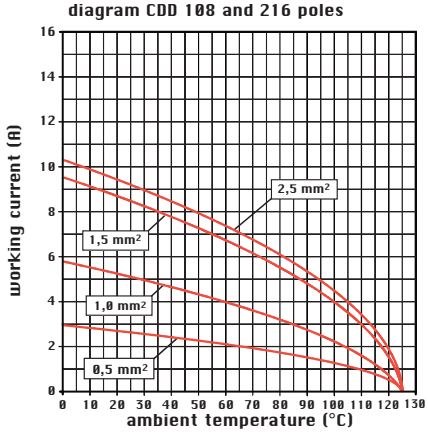


diagram CDS 09 poles

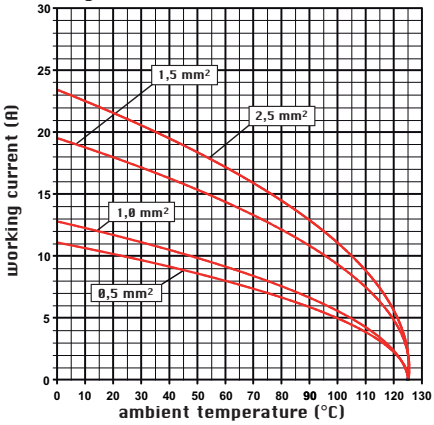


diagram CDS 18 poles

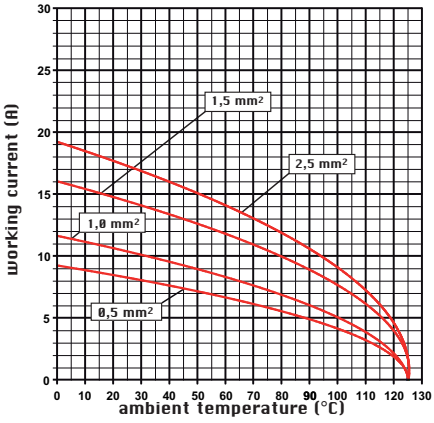
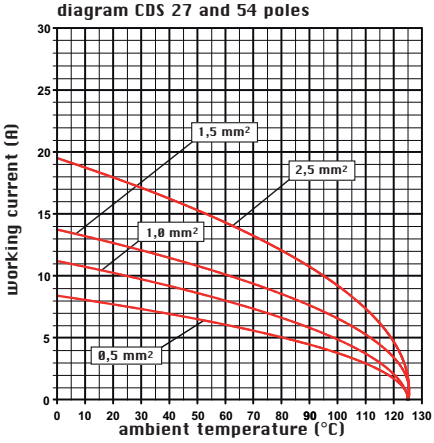


diagram CDS 27 and 54 poles



CDS series
CSAH series

curves

diagram CDS 42 and 84 poles

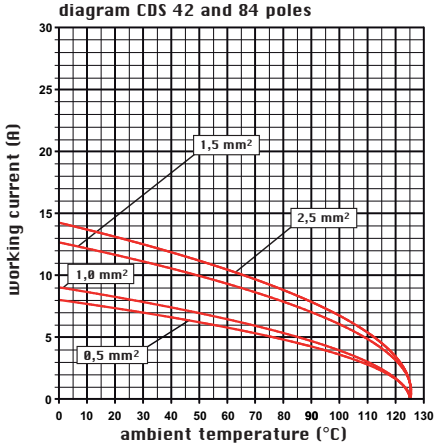


diagram CSAH 10 poles

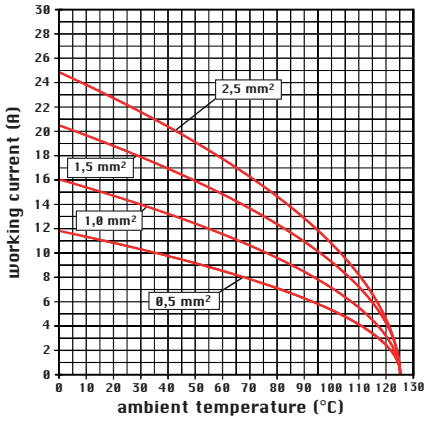
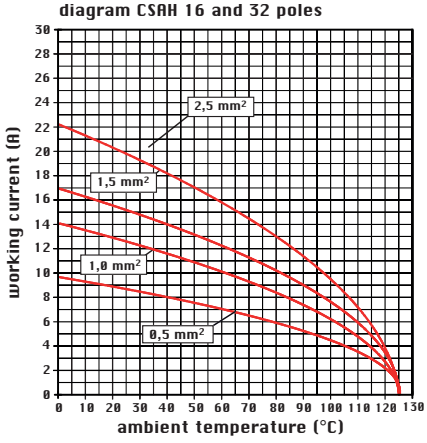


diagram CSAH 16 and 32 poles



CSH and CSE series

curves

diagram CSH and CSE 06 poles

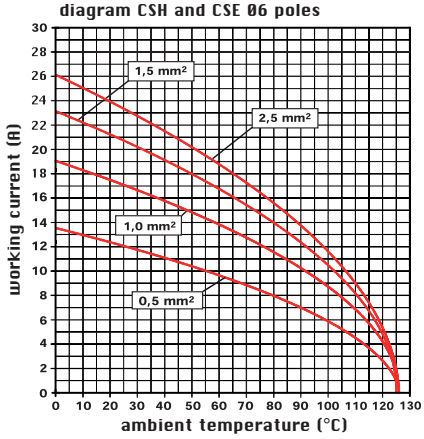


diagram CSH and CSE 10 poles

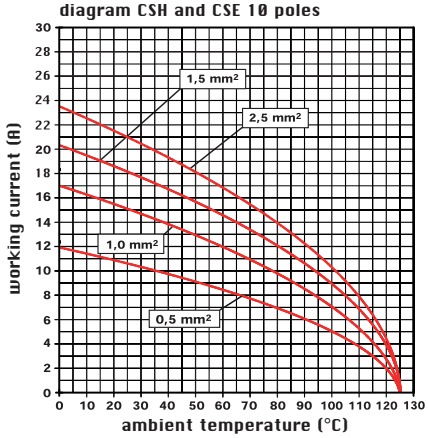


diagram CSH and CSE 16 and 32 poles

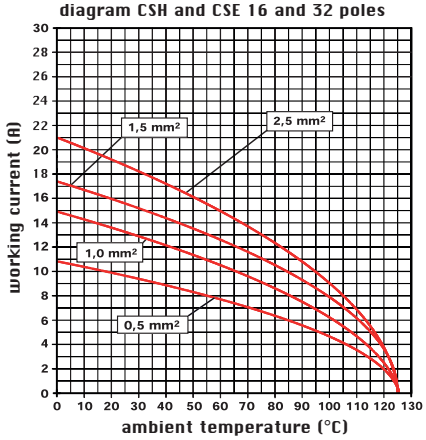
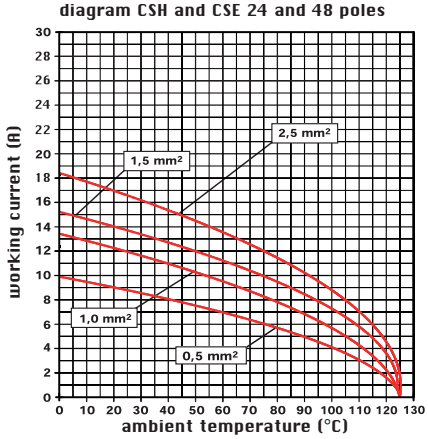


diagram CSH and CSE 24 and 48 poles



CDA and CDC series

curves

diagram CDA and CDC 10 poles

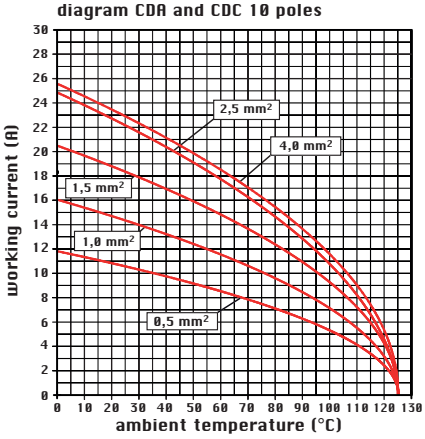
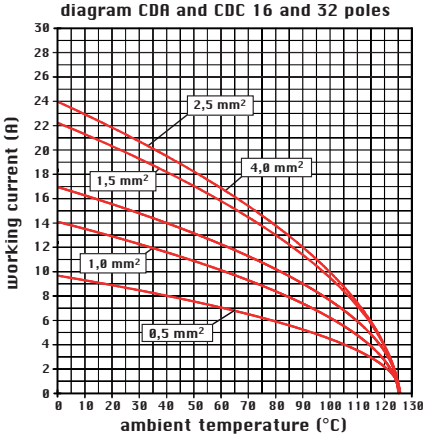


diagram CDA and CDC 16 and 32 poles



CNE and CCE series

curves

diagram CNE and CCE 06 poles

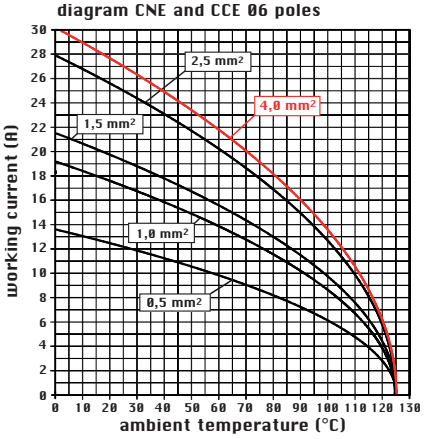


diagram CNE and CCE 10 poles

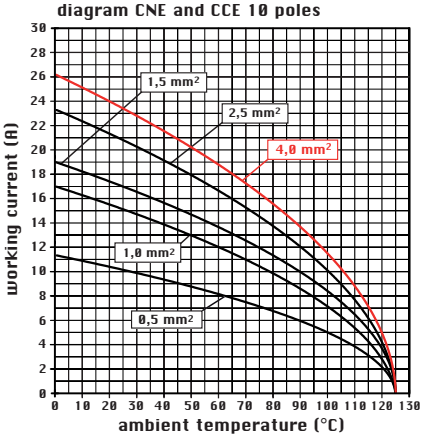


diagram CNE and CCE 16 and 32 poles

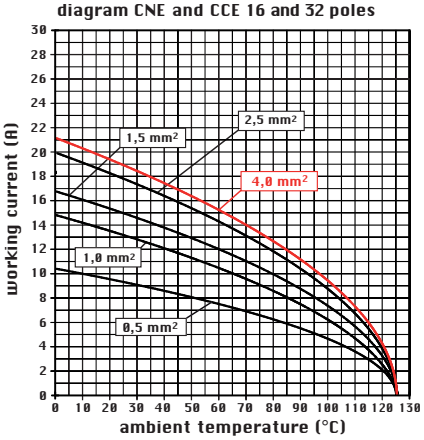
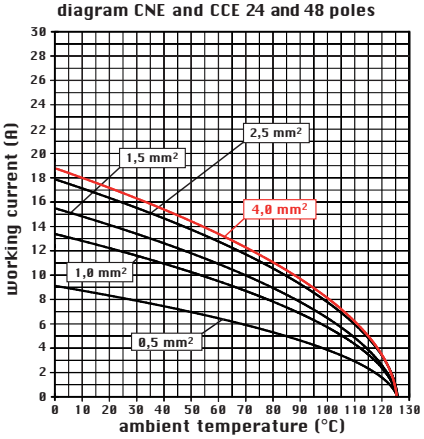


diagram CNE and CCE 24 and 48 poles



CNE..RY series

curves

diagram CNE..RY 06 poles

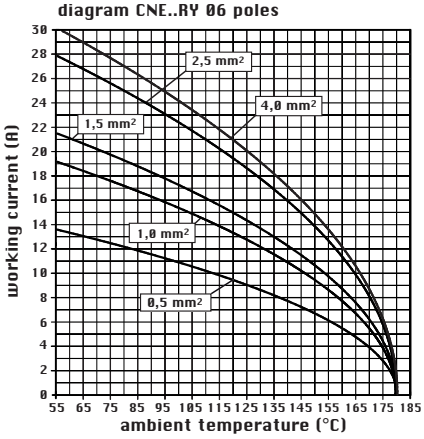


diagram CNE..RY 10 poles

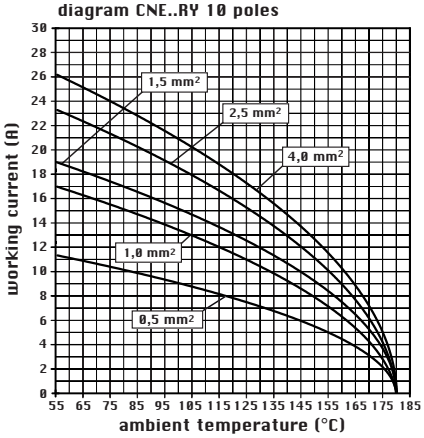


diagram CNE..RY 16 poles

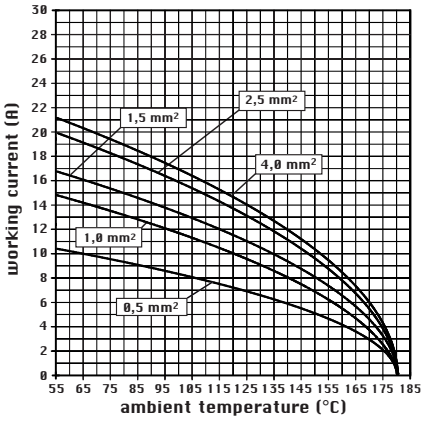
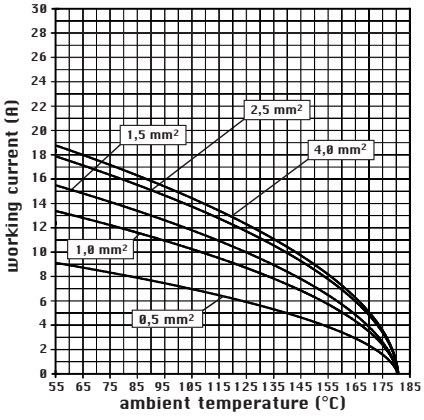


diagram CNE..RY 24 and 48 poles



CSS series

curves

diagram CSS 06 poles

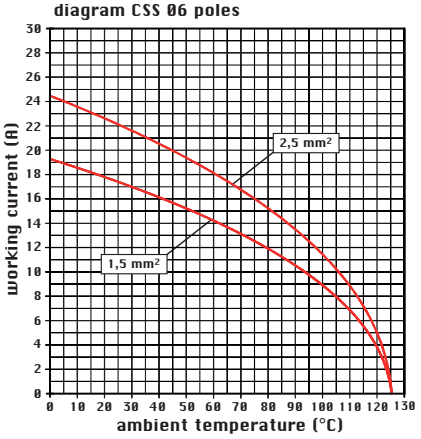


diagram CSS 10 poles

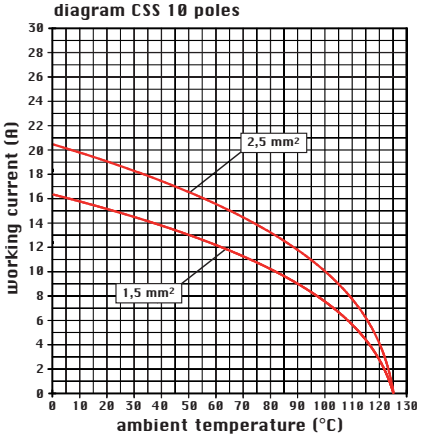


diagram CSS 16 and 32 poles

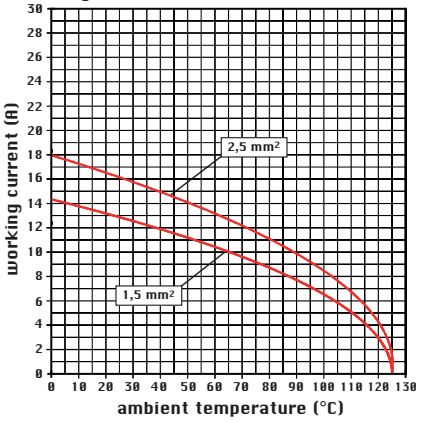
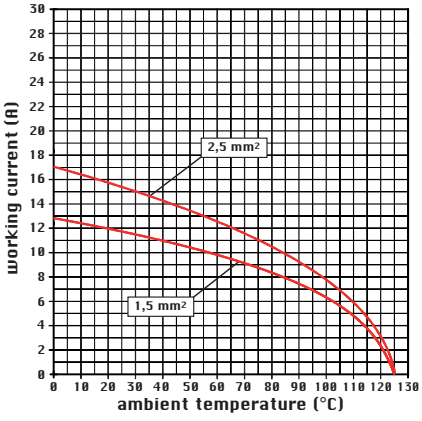


diagram CSS 24 and 48 poles



CT (16A) series

curves

diagram CT 06 poles

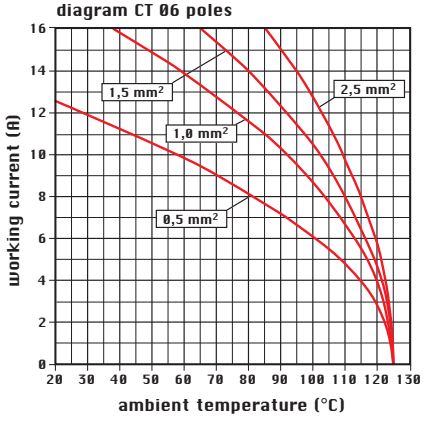


diagram CT 10 poles

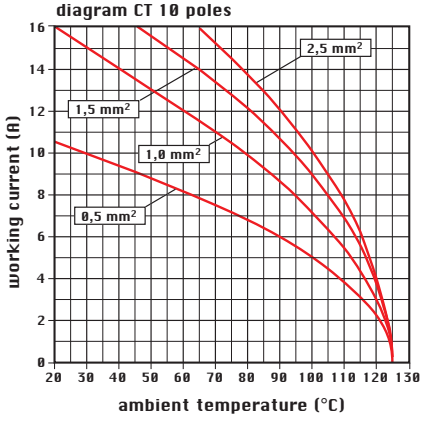


diagram CT 16 poles

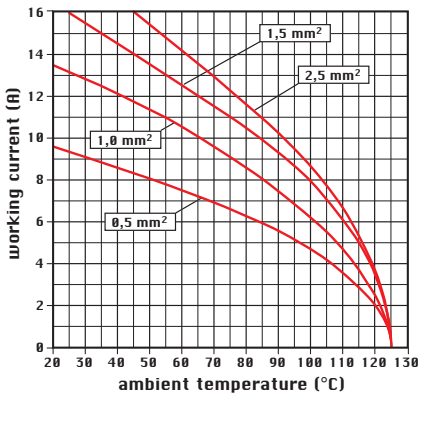
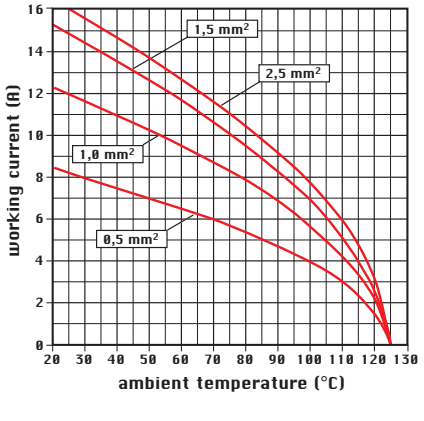


diagram CT 24 poles



CTSE (16A) series

curves

diagram CTSE 06 poles

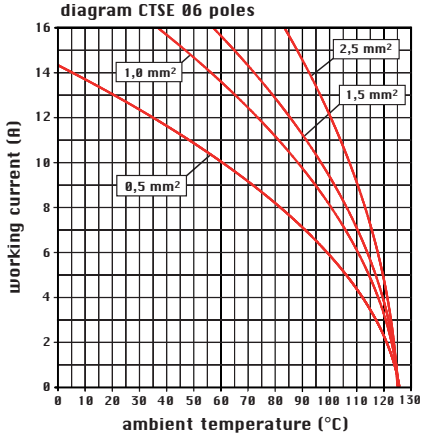


diagram CTSE 10 poles

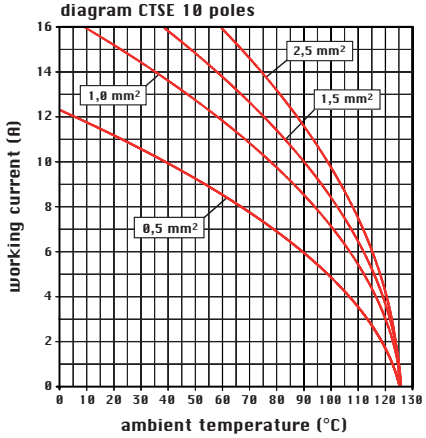


diagram CTSE 16 and 32 poles

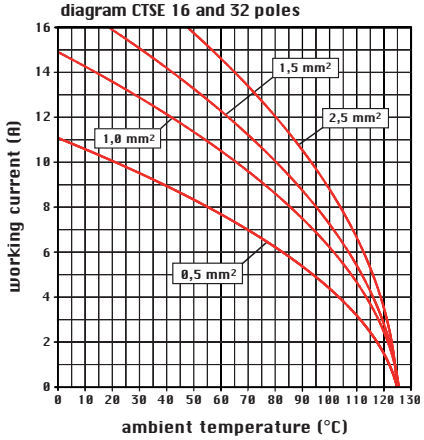
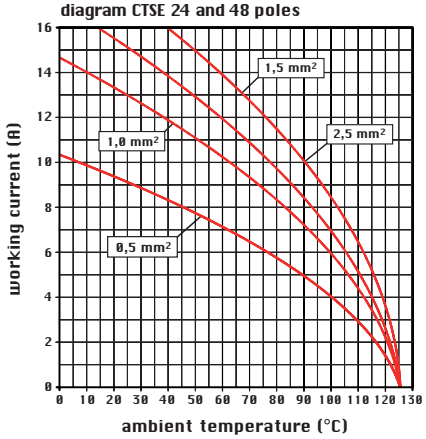


diagram CTSE 24 and 48 poles



CQE series

curves

diagram CQE 10 poles

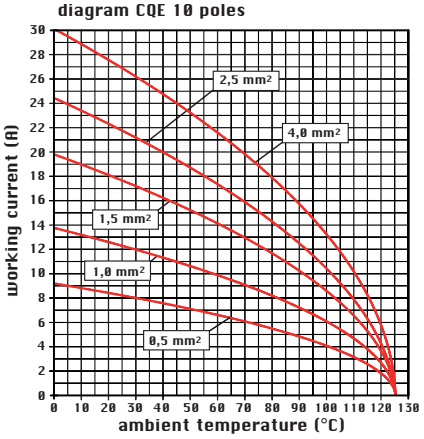


diagram CQE 18 poles

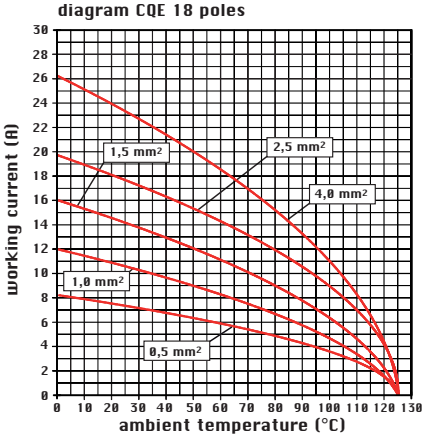


diagram CQE 32 and 64 poles

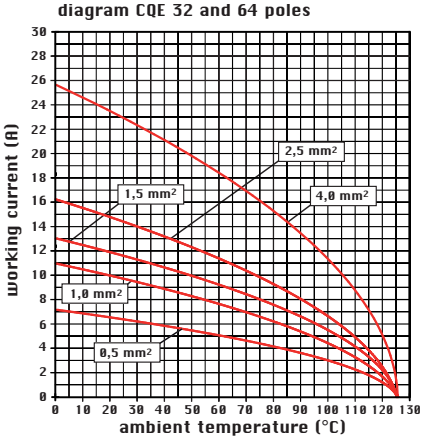
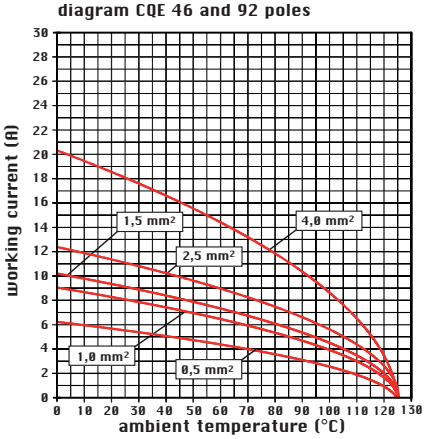


diagram CQE 46 and 92 poles



CQEE series

curves

diagram CQEE 40 poles

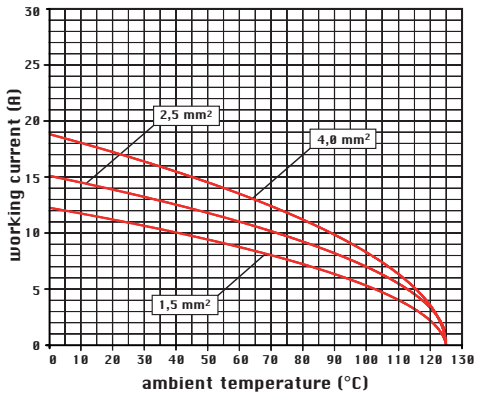
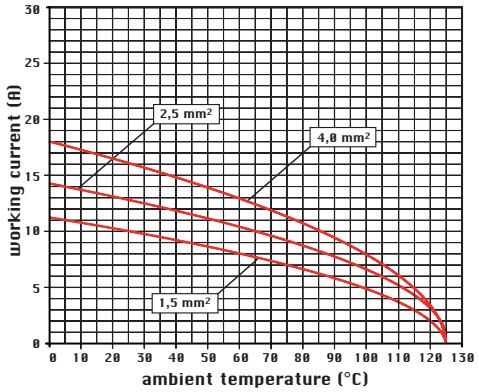


diagram CQEE 64 poles



CMCE and CME series

curves

diagram CMCE and CME 03 poles

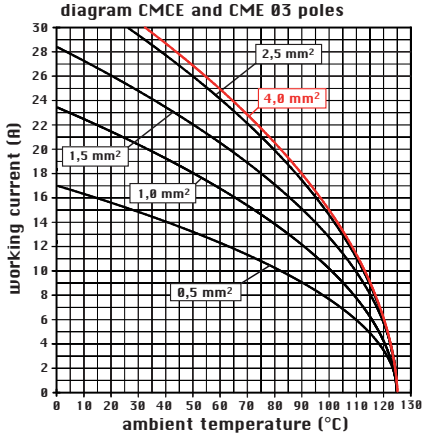


diagram CMCE and CME 06 and 12 poles

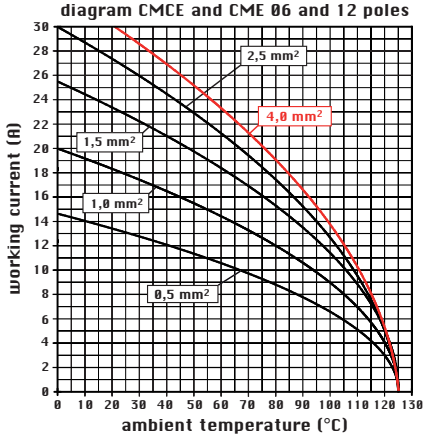


diagram CMCE and CME 10 and 20 poles

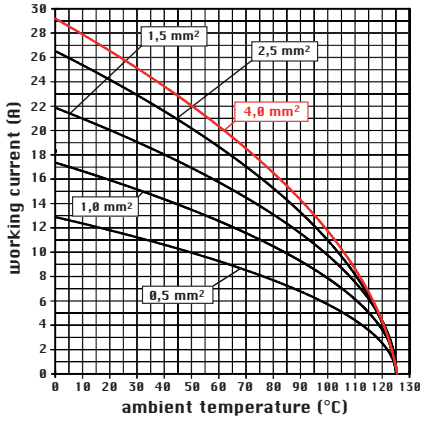
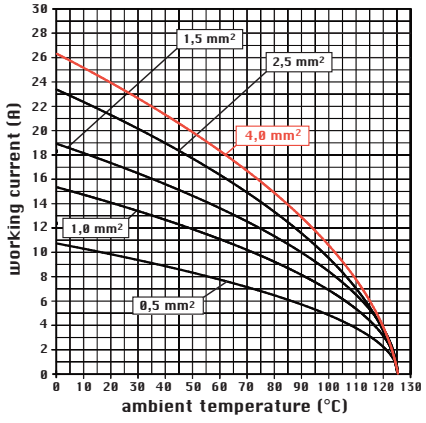


diagram CMCE and CME 16 and 32 poles



CMSH series

curves

diagram CMSH 03 poles

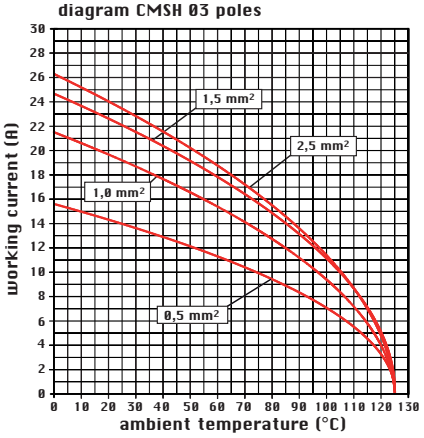


diagram CMSH 06 and 12 poles

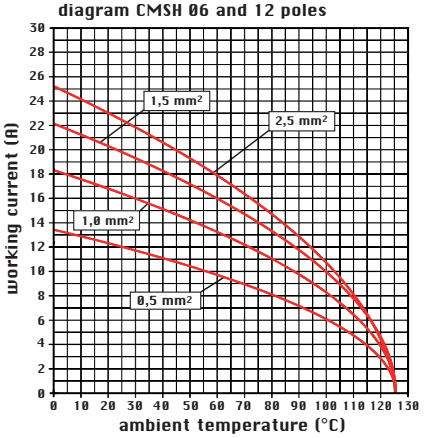
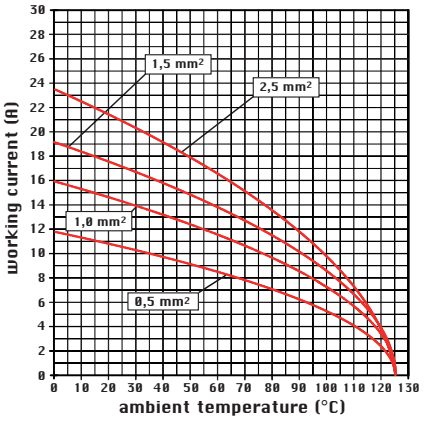


diagram CMSH 10 and 20 poles



CP series
CP..RY series

curves

diagram CP 06 and 12 poles

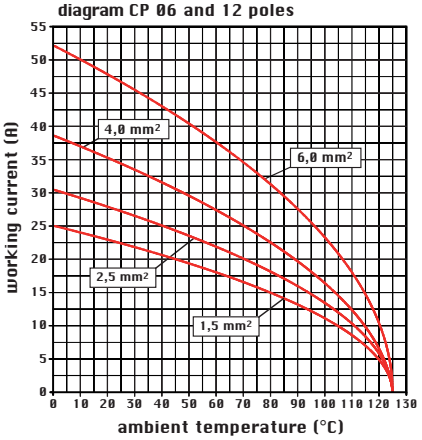
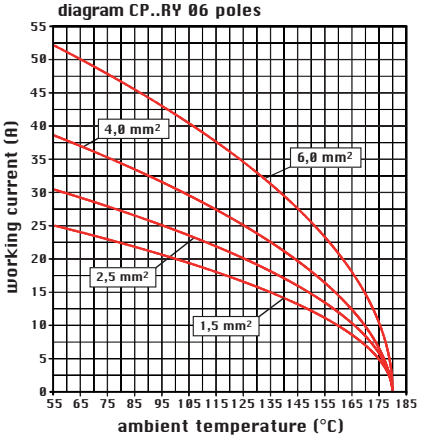


diagram CP..RY 06 poles



CQ series

curves

diagram CQ 12 poles

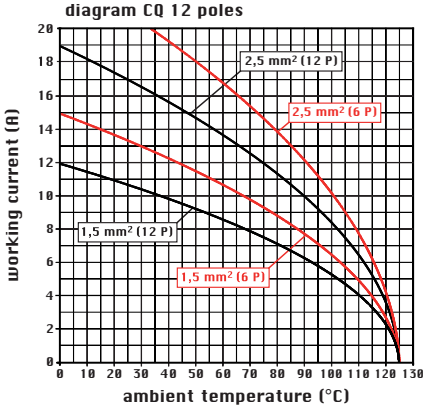


diagram CQ 05 poles

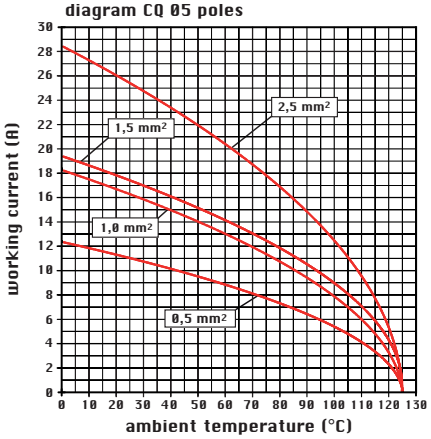


diagram CQ 08 poles

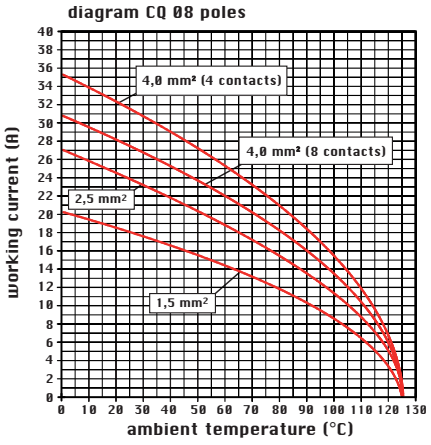
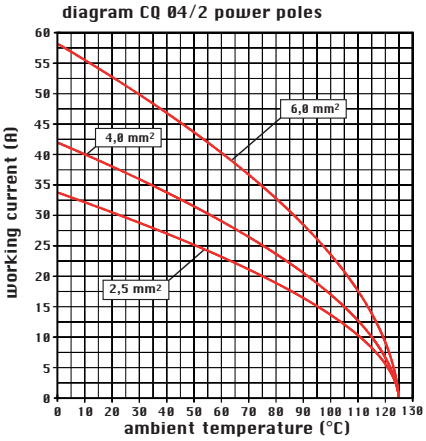


diagram CQ 04/2 power poles



CX 8/24 series
CX 6/36 series

curves

diagram CX 8/24 power poles

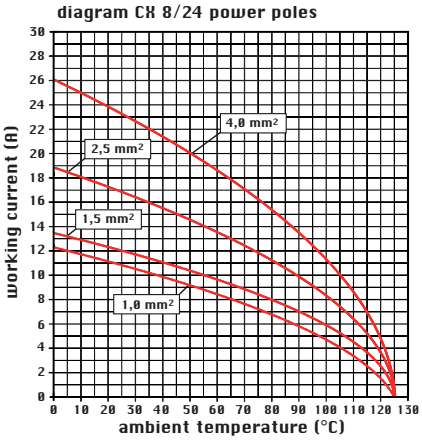
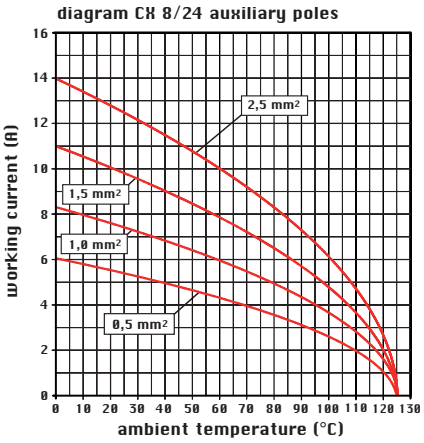


diagram CX 8/24 auxiliary poles

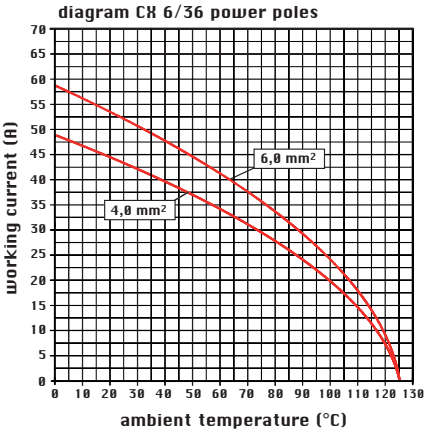


Note: for connector with power poles and auxiliary poles simultaneously loaded in the combinations

power poles	auxiliary poles
4,0 mm²	2,5 mm²
2,5 mm²	1,5 mm²
1,5 mm²	1,0 mm²
1,0 mm²	0,5 mm²

with power / auxiliary current ratios = 1,6 / 1

diagram CX 6/36 power poles



CX 12/2 series
CX 4/0 and CX 4/0 RY series

curves

diagram CX 12/2 power poles

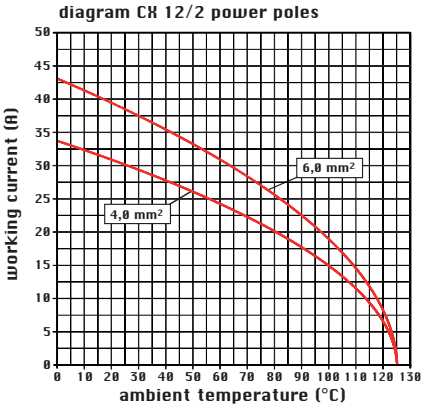


diagram CX 4/0 poles

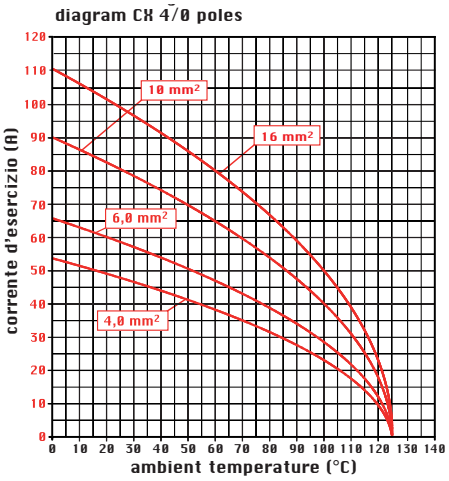
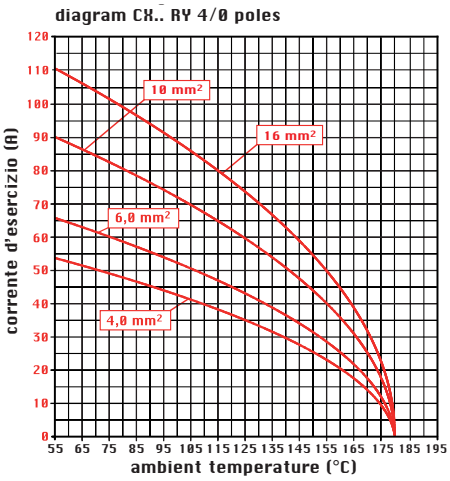


diagram CX.. RY 4/0 poles



Load curves

CX 4/2 series

curves

diagram CX 4/2 poles

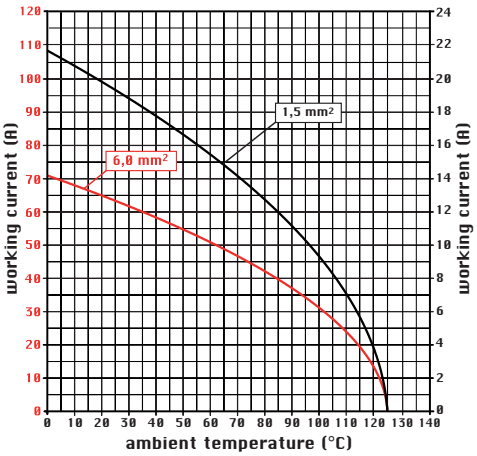


diagram CX 4/2 poles

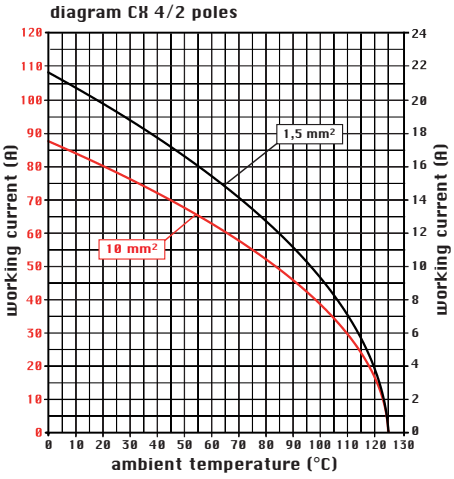
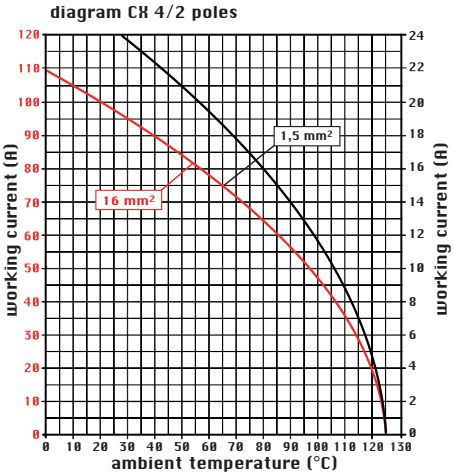


diagram CX 4/2 poles



CX 4/2 RY series
CX 4/8 series

curves

diagram CX..RY 4/2 poles

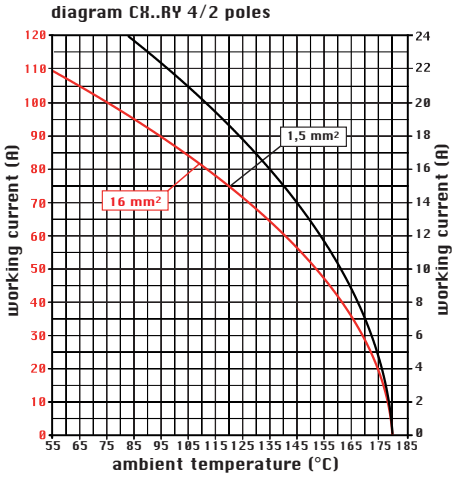


diagram CX 4/8 poles

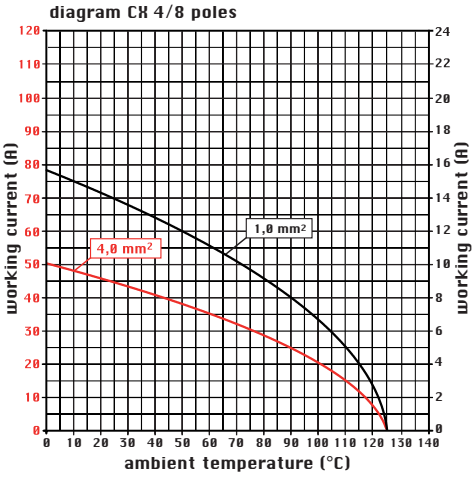
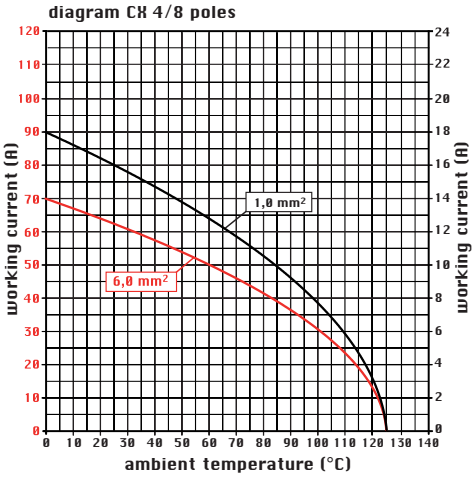


diagram CX 4/8 poles



CX 4/8 series
CX 4/8 RY series

curves

diagram CX 4/8 poles

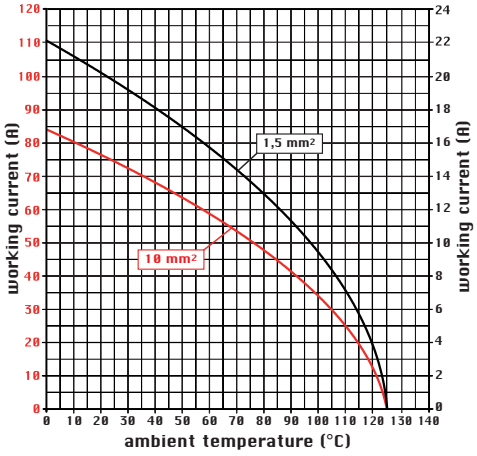


diagram CX 4/8 poles

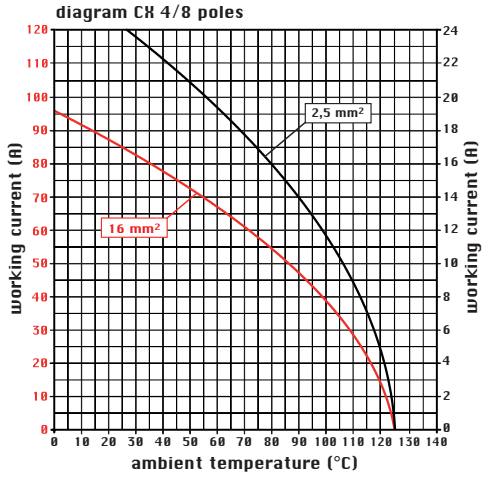
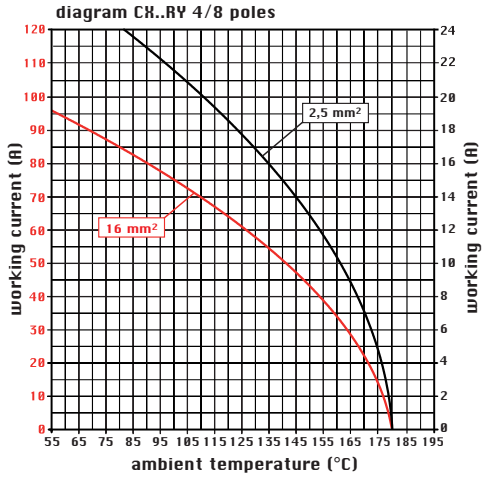


diagram CX..RY 4/8 poles



CX 6/6 series
MIXO (CX 01, CX 02) series

curves

diagram CX 6/6 poles

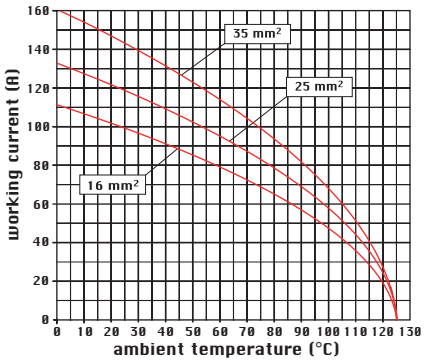


diagram CX 01 Y - 1 pole (MIXO 200A)

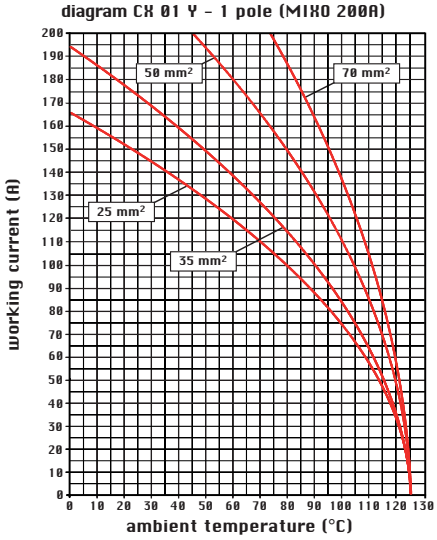


diagram CX 02 poles (MIXO 100A)

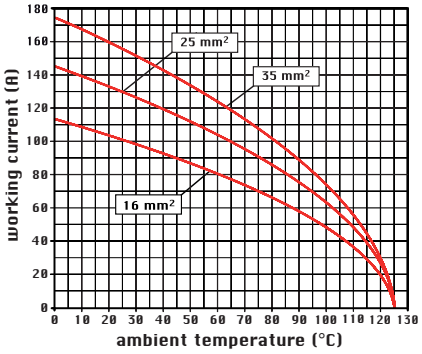
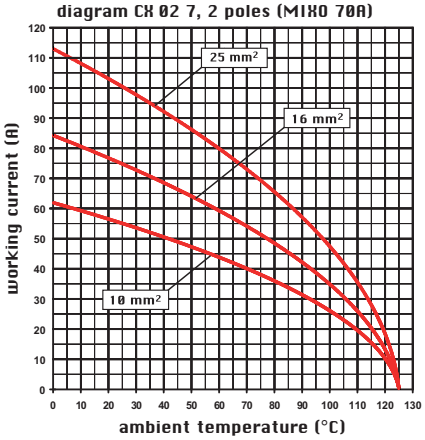


diagram CX 02 7, 2 poles (MIXO 70A)



MIXO (CX 02 4A/B, CX 3/4, CX 03, CX 03 4B) series

curves

diagram CX 02 4A/B poles

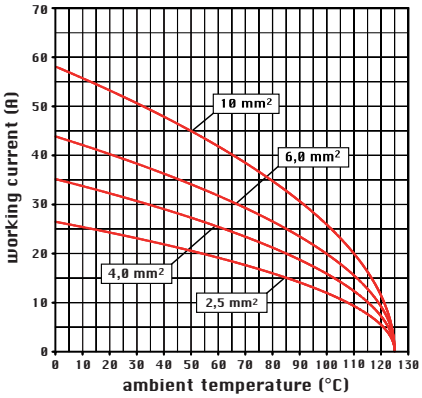


diagram CX 3/4 poles

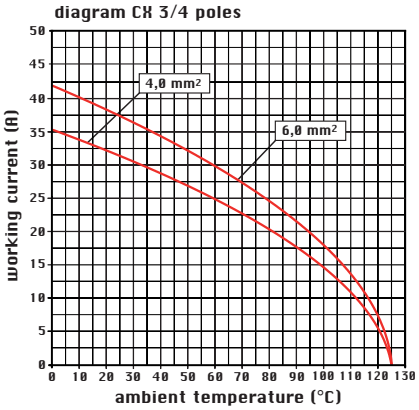


diagram CX 03 poles

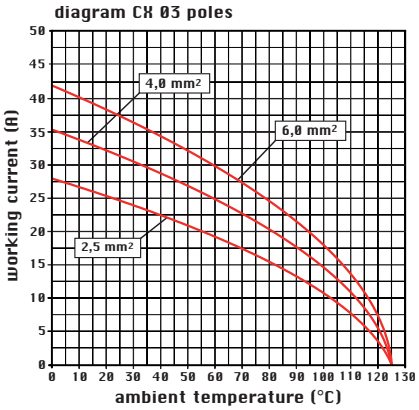
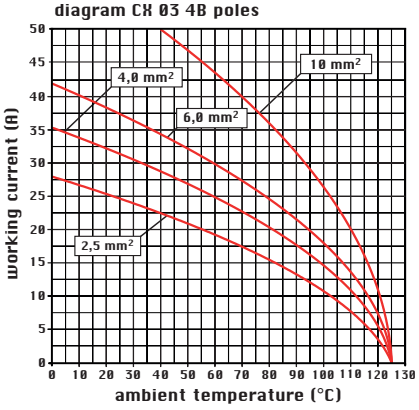


diagram CX 03 4B poles



MIXO (CX 04, CX 06, CX 08, CX 20) series

curves

diagram CX 04 poles

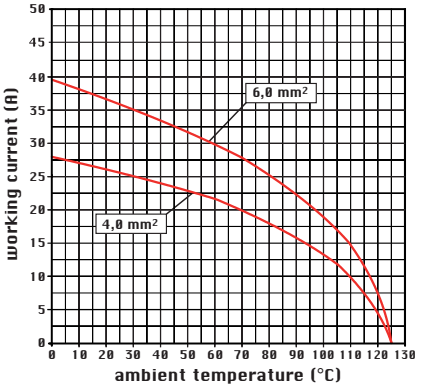


diagram CX 06 poles

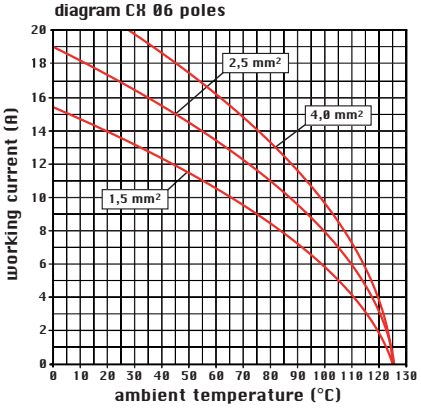


diagram CX 08 poles

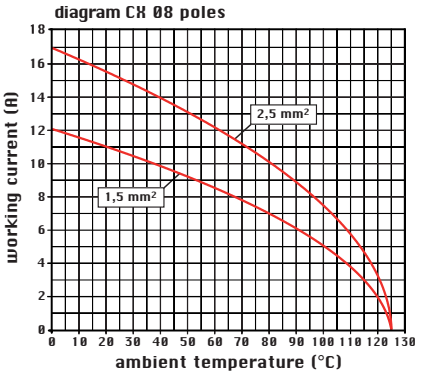
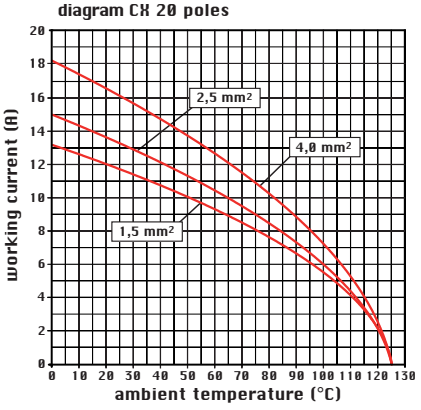


diagram CX 20 poles



MIXO (CX 05, CX 12, CX 17, CX 25) series

curves

diagram CX 05 poles

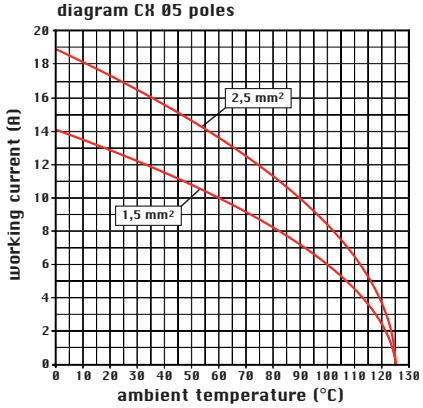


diagram CX 12 poles

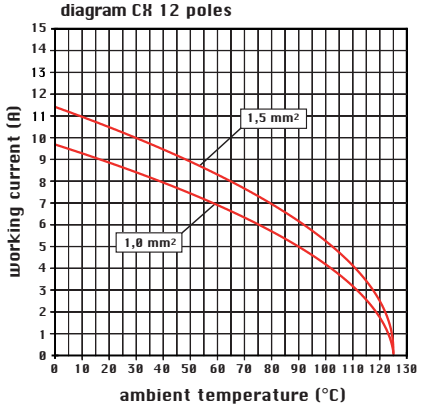


diagram CX 17 poles

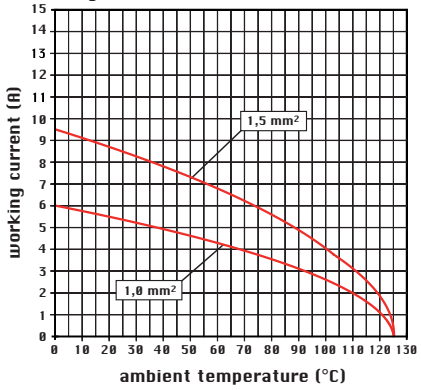
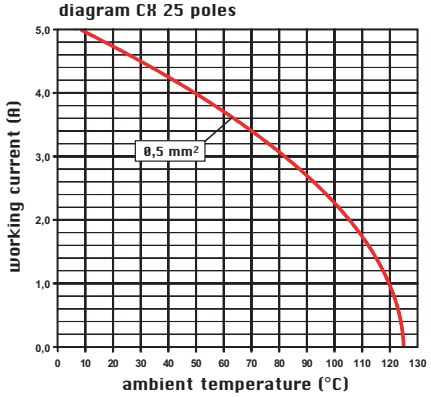


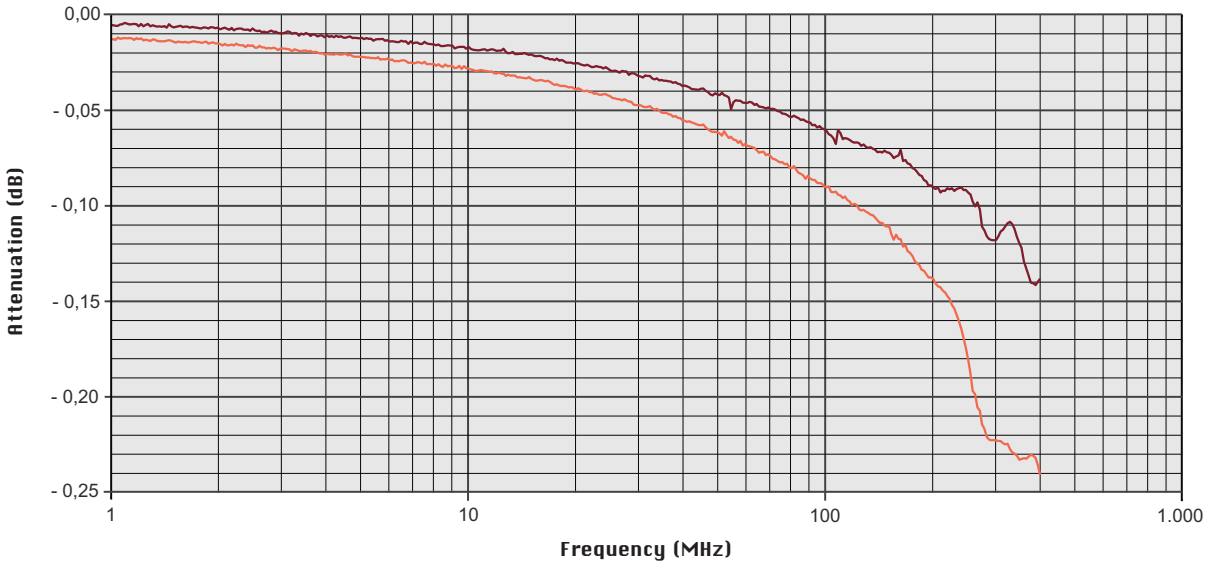
diagram CX 25 poles



Load curves

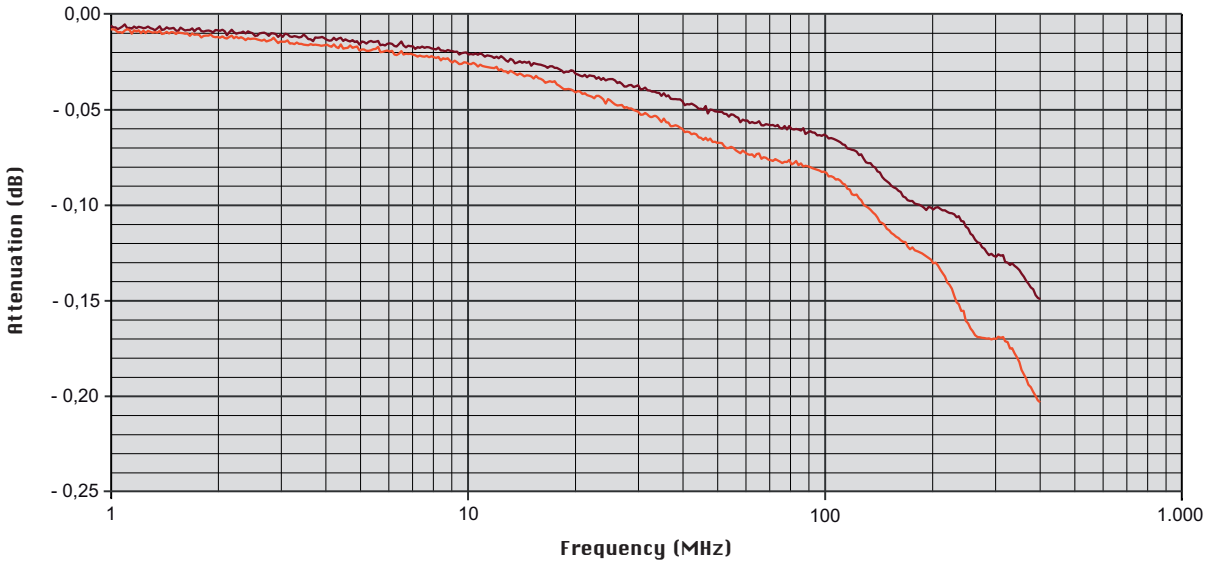
Test performed in accordance with IEC/EN 60512-25-2 (2002), 4.1.3.2 (coaxial cable only) and 4.2.2.2 (coaxial cable and connector).

Attenuation (insertion loss)
50 ohm coaxial connector (CX 01 BCF / BCM)



— RG 213/U cable and CX 01 BC connector (50 ohm)
— RG 213/U cable (50 ohm)

Attenuation (insertion loss)
75 ohm coaxial connector (CX 01 BF / BM)



— RG 11 A/U cable and CX 01 B connector (75 ohm)
— RG 11 A/U cable (75 ohm)

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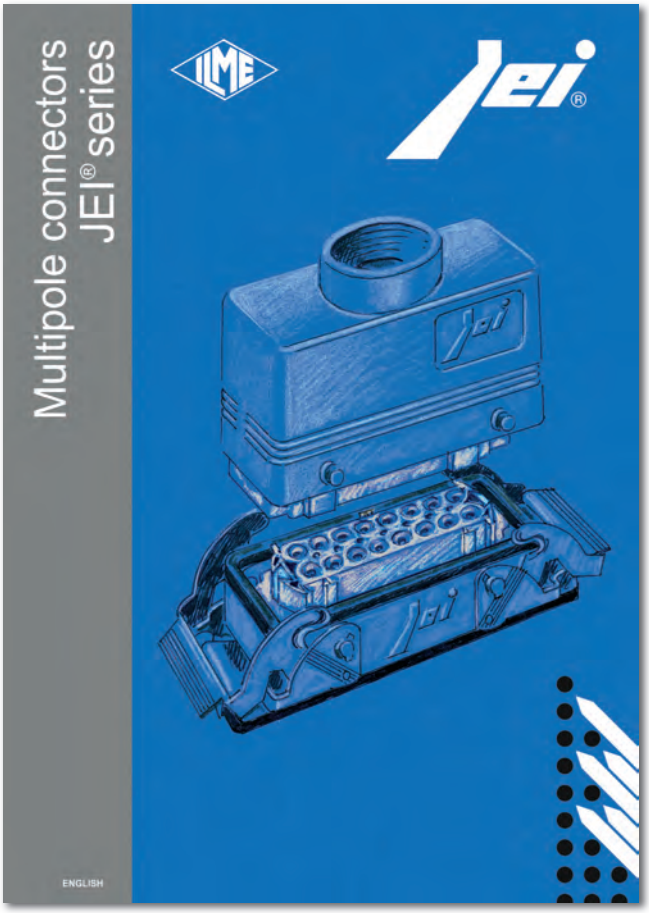

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