## SIEMENS

## QUICK SEARCH CATALOGUE 2022

## SIRIUS Safety Integrated

siemens.com/safety


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## Product Guide

3SK1 Input Capability

| Type | Part number |  | Gate | Light Curtain | Two Hand Control | N/O Contacts (Gate Interlock) | Expandable Inputs using Device Connectors |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Standard with Relay Enabling Contacts | 3SK1111-*A**0 | $\checkmark$ | $\checkmark$ | $\checkmark$ | - | - | - |
| Standard with Solid State Enabling Contacts | 3SK1112-*BB40 | $\checkmark$ | $\checkmark$ | $\checkmark$ | - | - | - |
| Advanced with Relay Enabling Contacts | 3SK1121-*AB40 | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
|  | 3SK1121-*CB4* | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Advanced with Solid State Enabling Contacts | 3SK1120-*AB40 | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
|  | 3SK1122-*AB40 | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
|  | 3SK1122-*CB4* | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Input Sensor Expansion Unit | 3SK1220-1AB40 | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |

3SK1 Output Capability

| Type | Part number | Relay Enabling Contacts (n/o) | Solid State Enabling Contacts | Signal Contact ( $\mathrm{n} / \mathrm{c}$ ) | Delayed Relay Enabling Contacts | Delayed Solid State Enabling Contacts | Expandable Outputs Using device Connectors |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Standard with Relay Enabling Contacts | 3SK1111-*A**0 | 3 | 0 | 1 | 0 | 0 | - |
| Standard with Solid State Enabling Contacts | 3SK1112-*BB40 | 0 | 2 | 1 | 0 | 0 | - |
| Advanced with Relay Enabling Contacts | 3SK1121-*AB40 | 3 | 0 | 1 | 0 | 0 | $\checkmark$ |
|  | 3SK1121-*CB4* | 2 | 0 | 0 | 2 | 0 | $\checkmark$ |
| Advanced with Solid State Enabling Contacts | 3SK1120-*AB40 | 0 | 1 | 0 | 0 | 0 | $\checkmark$ |
|  | 3SK1122-*AB40 | 0 | 3 | 1 | 0 | 0 | $\checkmark$ |
|  | 3SK1122-*CB4* | 0 | 2 | 0 | 0 | 2 | $\checkmark$ |
| Output Expansion Unit | 3SK1211-*BB00 | 4 | 0 | 1 | $\star$ | 0 | - |
|  | 3SK1211-*BB40 | 4 | 0 | 1 | $\star$ | 0 | $\checkmark$ |
|  | 3SK1211-*BW20 | 4 | 0 | 1 | $\star$ | 0 | - |
|  | 3SK1213-*AB40 | 3 | 0 | 1 | $\star$ | 0 | - |
|  | 3SK1213-*AJ20 | 3 | 0 | 1 | $\star$ | 0 | $\checkmark$ |
|  | 3SK1213-*AL20 | 3 | 0 | 1 | $\star$ | 0 | - |

[^0]
## Product Guide

There are many facets to machine safety. And SIRIUS 3SK can always provide a solution.

SIRIUS 3SK is a highly streamlined product portfolio. The 3SK1 range has been developed to allow fast, simple implementation of the most common safety functions. More complex safety systems can be created using basic units from the new 3SK2 series.


Easy to parameterize - using DIP switches or a PC
Parameterizing safety functions with SIRIUS 3SK Safety Relays is an exceptionally simple process: you can use four DIP switches on the front panel (3SK1 units), or software (3SK2 units).

Software benefits at a glance

- Easy setup of complex safety applications using the drag and drop method
- Efficient commissioning using test mode, forcing and extensive diagnostics
- Faster preparation of documentation


## Safety Relays

SIRIUS 3SK1 Safety Relays


For application examples and circuit diagrams please refer to Page 28

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SIRIUS 3TK28 Safety Relays*

|  | Description: | Fig. | Order number | L Price f | Prod. group |
| :---: | :---: | :---: | :---: | :---: | :---: |
| sesese | Standstill monitoring safety relay, Cat. 4 / SIL 3 / PL e, IP20, screw terminal |  |  |  |  |
|  | - Suitable for three-phase motors, max. 690 V AC. <br> - Sensorless measuring principle (residual induction voltage principle). |  |  |  |  |
|  | $3 \mathrm{NO}+1 \mathrm{NC}$ release circuits, $1 \mathrm{CO}+1 \mathrm{DO}$ mess. output, sens. $20-400 \mathrm{mV}$, switch-off time adj. $0.2-6 \mathrm{sec}, 24 \mathrm{VDC}$ | 1 | 3TK2810-0BA01 | 657.19 | 41L |
|  | RPM / standstill monitoring safety relay with integrated gate monitoring function, SIL 3 / PL e, IP20, screw terminal |  |  |  |  |
| $6$ | - For PNP, NPN sensors and Cos/Sin, TTL / HTL encoders, inst. $1 \mathrm{~Hz}-400 \mathrm{kHz}$ <br> - Integrated gate monitoring function for connecting to gate (locking) switches |  |  |  |  |
|  | 2 NO release circuits, 2 NO mess. output, 1 encoder +2 sensor inputs, conn. to gate monitoring sw., 24 VDC | 2 | 3TK2810-1BA41 | 1062.57 | 41L |
|  | 2NO release circuits, 2 NO mess. output, 1 encoder +2 sensor inputs, conn. to gate mon. sw., 110-240V AC/DC | 2 | 3TK2810-1 KA41 | 1093.28 | 41L |
|  | Accessories for safety relays |  |  |  |  |
| 3 | Sealable cover against unauthorized changing of settings, for 3TK2820 safety relays | 3 | 3TK2820-0AA00 | 2.19 | 41L |
|  | Sealable cover against unauthorized changing of settings, for 3TK2826 safety relays | 3 | $\begin{aligned} & \text { 3TK2826-ODAOO- } \\ & \text { OHAO } \end{aligned}$ | 4.97 | 41L |
|  | Sealable cover against unauthorized changing of settings, for other 3TK28 modelsConnecting / copying cable for 3TK2810.1 rpm monitor to encoder (RJ 45-cross cable) | 3 | 3RP1902 | 3.31 | 41H |
|  |  |  | 3TK2810-0A | 25.55 | 41L |
|  | Adapter for connecting 15 -pole encoder to 3TK2810.1 rpm monitor |  | 3TK2810-1A | 77.39 | 41L |
|  | Adapter for connecting 25 -pole encoder to 3TK2810.1 rpm monitor |  | 3TK2810-1B | 85.99 | 41L |
|  | Safety connector |  |  |  |  |
|  | For mounting 2 contactors side by side in series for redundant switching. |  |  |  |  |
| 1-4 assembled | For SIRIUS contactors, series 3RT2.1, screw terminals (size S00) | 4 | 3RA2916-1A | 10.44 | 41B |
|  | For SIRIUS contactors, series 3RT2.2, screw terminals (size S0) | 4 | 3RA2926-1A | 10.44 | 41B |

## Paramaterisable Safety Relays

SIRIUS 3SK2* Safety Relays


Description:

| Basic Unit 3SK2 Series 10 F-DI, 2 F-DQ, 1 DQ, 24 V DC, 22.5 mm Screw connection |
| :--- |
| Basic Unit 3SK2 Series 10 F-DI, 2 F-DQ, 1 DQ, 24 V DC, 22.5 mm Spring-type connection |
| Basic Unit 3SK2 Series 10 F-DI, 2 F-DQ, 1 DQ, 24 V DC, 45 mm Screw connection |
| Basic Unit 3SK2 Series 10 F-DI, 2 F-DQ, 1 DQ, $24 \mathrm{VDC}, 45 \mathrm{~mm}$ Spring-type connection |
| Device connector, 22.5 mm |
| Device connector, 45 mm |
| Safety ES Standard Parameterisation software for $3 \mathrm{SK} 2+\mathrm{MSS}$, incl 1. floating licence |

## Accessories for 3SK2 safety relays

Diagnostic display for 3KS2 and MSS suitable for front mounting in panel or in switch box
(dimensions $60 \times 96 \mathrm{~mm}$ )
Door adapter for mounting in cubicle door
Connection cable (flat) for connecting 3SK2 or MSS to diagnostic display, 0.1 m
Connection cable (flat) for connecting 3SK2 or MSS to diagnostic display, 0.3 m
Connection cable (flat) for connecting 3SK2 or MSS to diagnostic display, 0.5 m
Conenction cable (round) for connecting 3SK2 or MSS to diagnostic display, 0.5 m
Connection cable (round) for connecting 3SK2 or MSS to diagnostic display, 1 m
Connection cable (round) for connecting 3SK2 or MSS to diagnostic display, 2.5 m
3SK2 \& MSS memory module spare part
USB Cable for connecting the 3SK2 to the PCIPG interface

| Fig. | Order number | L Price $£$ | Prod. group |
| :---: | :---: | :---: | :---: |
| 1 | 3SK2112-1AA10 | 236.31 | 41L |
| 2 | 3SK2112-2AA10 | 236.31 | 41L |
| 3 | 3SK2122-1AA10 | 347.49 | 41L |
| 4 | 3SK2122-2AA10 | 347.49 | 41L |
| 6 | $3 Z Y 1212-2 G A 00$ | 11.25 | 41L |
| 7 | $3 Z Y 1212-4 \mathrm{GA} 01$ | 13.73 | 41L |
| 5 | $\begin{gathered} 3 Z S 1316-5 C C 10- \\ \text { OYA5 } \end{gathered}$ | 423.88 | 42B |
| 8 | 3SK2611-3AA00 | 227.59 | 41L |
| 9 | 3UF7920-0AA00-0 | 15.09 | 42J |
| 10 | 3UF7931-OAA00-0 | 7.53 | 42J |
| 10 | 3UF7935-OAA00-0 | 9.90 | 42 J |
| 10 | 3UF7932-0AA00-0 | 11.60 | 42J |
| 11 | 3UF7932-OBA00-0 | 22.36 | 42J |
| 11 | 3UF7937-0BA00-0 | 25.06 | 42J |
| 11 | 3UF7933-0BA00-0 | 27.69 | 42J |
| 12 | 3RK3931-0AA00 | 23.52 | 42C |
| 13 | 3UF7941-OAA00-0 | 82.78 | 42J |

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## 3SK2 User-friendly safety relays



- Sirius 3SK2 with up to six safety functions that can be parameterized using software
- User-friendly software interface - create complex safety applications simply thanks to drag \& drop functionality
- Most compact software-parameterisable safety relay on the market

The Sirius 3SK2 safety relay from Siemens offers multiple safety functions in the smallest of spaces. Thanks to the user-friendly drag \& drop parameterization interface, it is simple to create safety functions that can be optionally expanded to include test and diagnostics functions. Sirius 3SK2 safety relays come in two different variants - the 22.5 -millimeter-wide device, which comes with up to four safety functions, is slimmer than any other softwareparameterisable safety relay currently available on the market, while the 45 -millimeter-wide device, which offers up to six safety functions, comes equipped with a diagnostics display. The functions of the 3SK2 fail-safe outputs can be assigned independently of each other.

Typical applications for Sirius 3SK2 devices include emergency stop pushbuttons, protective doors with tumblers, or material feeder systems with light barrier sensor technology. Additional safety applications are simple to implement for specific requirements. The fail-safe outputs can be supplemented in a modular fashion as required - even without additional wiring. Just like devices in the Sirius 3SK1 series, Sirius 3SK2 units are simple to combine with conventional industrial controls, for example, devices from the Sirius 3RM1 motor starter range can be simply integrated using device connectors.

## Motor Starters

Software Safety ES: Hardware and software advancement in programmes (Safety Relays continued)

Software Safety ES: Hardware and software structure in one program.



Getting started - even when things get tight SIRIUS 3RM1 Motor Starters


Space-saving systems require maximum efficiency and can pose significant challenges for system engineers. Systems and machinery are becoming increasingly compact and are expected to have smaller footprints, but at the same time they typically require more auxiliary drives. Because every inch counts in a control cabinet, SIRIUS 3RM1 Motor Starters are precisely tailored to meet these requirements and represent the solution for the development of cutting-edge and future-oriented systems.

Their innovative housing concept even received the internationally renowned if product design award 2013. It's easy to get started: The new motor starters are so narrow that they fit into the smallest space.

In brief: SIRIUS 3RM1 Motor Starters - multifunctional with a width of just 22.5 mm .

Direct or reversing starting - with SIRIUS 3RM1 Motor Starters, you can implement compact control cabinet solutions for small motors up to 3 kW.

## Motor Starters

In a width of just 22.5 mm there is now room for so many functions


## Narrow width

The motor starters are distinguished by their narrow width of just 22.5 mm . That saves room in the control cabinet and provides the ideal conditions for systems and machines with many small motors up to 3 kW .

Even subsequent expansions are easier to plan and implement: If more motors are needed in the system, thanks to their narrow width it's easy to add additional SIRIUS 3RM1 Motor Starters to the ones already installed in the control cabinet.

## Multifunctional

## Direct and reversing starters

Motor starters are available as direct starters or with a reversing starter function, all in a uniform housing design. The operation, configuration, and the width for both device types are identical.

## Overload protection

Every motor starter is equipped with integrated electronic overload protection. In other words, you no longer need a separate overload relay when you use these motor starters. The result is lower wiring costs, shorter installation time and more room on the DIN rail.

## Safe shutdown

To meet the requirements for safe shutdowns, SIRIUS 3RM1 Motor Starters are also available in a safety version. They can be used in combination with the modular safety relays to easily implement locally limited safety applications.

The motor starters for safe shutdowns are available as direct and reversing starters. They are certified in accordance with SIL 3/PL e Cat. 4.

SIRIUS 3RM1 Motor Starter - Order number overview


[^1]
## Failsafe Soft Starters

Power Contactors for Switching Motors - SIRIUS 3RT1

|  | Description: | Fig. | Order number | L Price $£$ | Prod. group |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | With two removable laterally mounted auxiliary switches (Busbar Control and auxiliary circuit: screw terminal) |  |  |  |  |
|  | SIRIUS soft starter 200-480 V $13 \mathrm{~A}, 5.5 \mathrm{Kw} 24 \mathrm{~V}$ AC/DC Screw terminals Fail-safe | 1 | 3RW5513-1HF04 | 802.50 | 42S |
|  | SIRIUS soft starter 200-480 V 18 A, 7.5Kw 24 V ACIDC Screw terminals Fail-safe | 1 | 3RW5514-1HF04 | 892.50 | 42 S |
|  | SIRIUS soft starter 200-480 V 25 A, 11 Kw 24 V ACIDC Screw terminals Fail-safe | 1 | 3RW5515-1HF04 | 990.00 | 42S |
|  |  | 1 | 3RW5516-1HF04 | 1102.50 | 42 S |
| 1 | SIRIUS soft starter 200-480 V 38 A, 18.5Kw 24 V AC/DC Screw terminals Fail-safe | 1 | 3RW5517-1HF04 | 1230.00 | 42 S |
|  | SIRIUS soft starter 200-480 V 47 A , 22 Kw 24 V ACIDC Screw terminals Fail-safe | 2 | 3RW5524-1HF04 | 1395.00 | 42 S |
|  | SIRIUS soft starter 200-480 V 63 A, 30Kw 24 V ACIDC Screw terminals Fail-safe | 2 | 3RW5525-1HF04 | 1552.50 | 42 S |
|  | SIRIUS soft starter 200-480 V 77 A, 37Kw 24 V ACIDC Screw terminals Fail-safe | 2 | 3RW5526-1HF04 | 1725.00 | 42S |
|  | SIRIUS soft starter 200-480 V $93 \mathrm{~A}, 45 \mathrm{Kw} 24 \mathrm{~V}$ ACIDC Screw terminals Fail-safe | 2 | 3RW5527-1HF04 | 1890.00 | 42S |

## 3RW55 Failsafe - Highlight Features

- Tested and certified solutions
- Savings on components and wiring
- Safe Torque Off (STO) disconnects power supply for motors with uncontrolled stopping
- Restart interlock prevents unwanted restarts



## Failsafe Soft Starters

## Failsafe soft starters with integrated Safe Torque Off (STO) - SIRIUS 3RW55

The integrated Safe Torque Off (STO) function in the new SIRIUS 3 RW55 Failsafe soft starter effectively ensures that the motor can no longer provide any torque-generated energy in the event of an emergency. The motor comes to a standstill and remains safely in this state until it is restarted (restart interlock). In this way STO facilitates risk-free working, even when the protective door is open, making it popular in processing machine applications and systems such as agitators or belt conveyors.

The SIRIUS 3RW55 Failsafe soft starter is certified according to ATEXIIECEx directives and ideal for starting explosion-proof motors. It can also be easily integrated into the Totally Integrated Automation Portal (TIA Portal).
Wiring example for SIL 1 and SIL 3 / PL e application:

Product characteristics/function
Automatic parameterization
Hybrid switching devices and three-phase motor control
Integration into TIA Portal - communication modules optional
Detachable HMI with color display, local interface, slot for micro SD card
Pump stop and torque control
Certified according to ATEXIIECEx directives
Fail-safe disconnection up to SIL 3/PL e - STO

## Performance features/benefits

Extremely easy commissioning and reliability even under changing load conditions

Minimum power loss and optimum/symmetrical motor control
Efficient configuration and maximum flexibility in automation engineering
Maximum flexibility with regard to user interface and intuitive menu guidance

Reduced mechanical loading and optimum pump stop control

Suitable for the starting of explosion-proof motors
Reduced costs and space requirements thanks to direct wiring of the EMERGENCY STOP mushroom pushbutton to the soft starter for SIL 1

## Contactor for safety applications

Power Contactors for Switching Motors - SIRIUS 3RT


[^2]
## Contactor for safety applications

## Power Contactors for Switching Motors - SIRIUS 3RT

The world's first contactor with maximum benefits in safety applications
The size S2 to S12 range of tried and tested contactors from 18.5 to 250 kW (AC-3, 400 V ) has been expanded to include versions suitable for direct control from fail-safe controllers, rendering the coupling level redundant. The new contactors are also available with non-removable, lateral auxiliary switches, enabling fulfilment of Swiss Accident Insurance Institute (SUVA) requirements.

The new contactors constitute the logical extension and further development of the SIRIUS modular system, serving to promote safe switching. They are the first contactors on the market to be equipped with an input for fail-safe signals. This makes it possible to attain SIL 2 and/or PL c with just one contactor and SIL 3 and/or PL e with two contactors in series according to IEC 62061 and ISO 13849-1.

The big advantage of this solution is that it saves on additional, possibly positively-driven coupling relays and makes evaluation of safety information considerably easier.

This reduction in coupling relays is also a huge plus point for non-safety applications. Whereas previously space, money and wiring expertise were required in order to operate contactors from 55 kW and higher using controllers, both functional and safety switching can now take place by direct activation.

Using the Safety Evaluation Tool you can quickly find the right contactor and safely configure your application.

## Example for SIL 2 and SIL 3 / PL e application - previously:



3RT1 in size S6 with standard or solid-state operating mechanism with PLC-IN

- Safety-related tripping only possible via coupling links and F-DQ
- Standard operating mechanism: operational switching via coupling links and F-DQ
- Solid-state operating mechanism: operational switching
with PLC-IN and DQ

Example for SIL 3 / PL e (left) and SIL 2 / PL c (right) application - new:


3RT1 in size 56 with standard or solid-state operating mechanism with fail-safe control input F-PLC-IN (e.g. 3RT1055-6SP36)

- Safety-related tripping and operational switching via F-PLC-IN and F-DQ
- SIL 2 / PLc possible with only one contactor



## Position switches and safety position switches

## Safety relays - SIRIUS 3SE5*

All Siemens position and safety position switches are suitable for both standard applications and machine safety applications (all contact elements have mechanically driven break contacts to IEC 60947-51)


## Position switches and safety position switches



Accessories for 3SE5 position switches*

|  | Description: | Fig. | Order number | LPrice f | Prod. group |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Levers for small standard switches to EN 50047: |  |  |  |  |
|  | Plunger lever with stainless plunger | , | 3SE5000-0AB01 | 5.63 | 41K |
| 133 | Plastic plunger lever, with 10 mm plastic roller, type C to EN 50047 | 2 | 3SE5000-0AD03 | 4.54 | 41K |
|  | Plastic plunger lever, with 10 mm stainless steel roller, type C to EN 50047 | 2 | 3SE5000-OAD04 | 11.55 | 41K |
|  | Metal roller lever, with 13 mm plastic roller, type E to EN 50047 | 3 | 3SE5000-OAE10 | 7.27 | 41K |
|  | Stainless steel roller lever, with 13 mm stainless steel roller, type E to EN 50047 | 3 | 3SE5000-OAE13 | 17.75 | 41K |
| 45 | Plastic actuator head, with round spindle, for twist lever type A to EN 50047 (excl. twist lever) | 4 | 3SE5000-0AK00 | 5.39 | 41K |
|  | Metal twist lever, with 19 mm plastic roller, type A to EN 50047 | 5 | 3SE5000-0AA21 | 3.01 | 41K |
|  | Stainless steel twist lever, with stainless steel 19 mm roller, type A to EN 50047 | 5 | 3SE5000-0AA32 | 11.98 | 41K |
|  | Levers for large standard switches to EN 50041: |  |  |  |  |
| 6 | Metal plunger lever, stainless steel plunger, type B to EN 50041 | 6 | 3SE5000-0AC02 | 15.54 | 41K |
|  | Metal plunger lever, with 13 mm stainless steel roller, type C to EN 50041 | 7 | 3SE5000-OADO2 | 19.78 | 41K |
|  | Metal roller lever, with 22 mm plastic roller, type E to EN 50041 | 8 | 3SE5000-0AE01 | 13.64 | 41K |
|  | Stainless steel roller lever, with 22 mm stainless steel roller, type E to EN 50041 | 8 | 3SE5000-0AE04 | 24.20 | 41K |
|  | Metal actuator head with round spindle, for twist lever type A to EN 50041 (excl. twist lever) | 9 | 3SE5000-0AH00 | 14.37 | 41K |
|  | Metal twist lever, with 22 mm plastic roller, type A to EN 50041 | 10 | 3SE5000-0AA01 | 3.82 | 41K |
|  | Stainless steel twist lever, with stainless steel 22 mm roller, type A to EN 50041 | 10 | 3SE5000-OAA12 | 12.78 | 41K |
|  | Other levers/accessories: |  |  |  |  |
|  | Metal twist lever, with 22 mm plastic roller, adjustable length | 11 | 3SE5000-0AA50 | 6.33 | 41K |
|  | Stainless steel twist lever, with 22 mm stainless steel roller, adjustable length | 11 | 3SE5000-0AA53 | 15.23 | 41K |
|  | Spring lever with plastic top | 12 | 3SE5000-0AR01 | 13.45 | 41K |
|  | Spring lever with stainless steel top | 12 | 3SE5000-OAR02 | 20.82 | 41K |
|  | Aluminium actuator rod, adjustable length | 13 | 3SE5000-0AA80 | 7.80 | 41 K |
| $11$$12$ | Plastic actuator rod, adjustable length | 13 | 3SE5000-0AA82 | 8.91 | 41K |
|  | Contact block 1NO +1 NC , slide contacts | 14 | 3SE5000-OBA00 | 13.02 | 41K |
|  | Contact block $11 \mathrm{NO}+1 \mathrm{NC}$, snap-action contacts | 14 | 3SE5000-OCA00 | 12.16 | 41K |
|  | Contact block $11 \mathrm{NO}+2 \mathrm{NC}$, slide contacts | 15 | 3SE5000-0KA00 | 14.56 | 41K |
|  | Contact block $11 \mathrm{NO}+2 \mathrm{NC}$, snap-action contacts | 15 | 3SE5000-OLA00 | 13.70 | 41K |
|  | LED cover, electric blue colour, plastic, for position switch 31 mm wide (EN 50047), 24 VDC | 16 | 3SE5230-1AA00 | 16.52 | 41K |
|  | LED cover, yellow colour, plastic, for safety position switch 31 mm wide (EN 50047), 24 VDC |  | 3SE5230-0AA00-1AGO | 2.41 | 41K |
|  | LED cover, yellow colour, plastic, for safety position switch 31 mm wide (EN 50047), 24 VDC |  | 3SE5230-1AA00-1AGO | 16.52 | 41K |
|  | LED cover, electric blue colour, metal, for position switch 40 mm wide (EN 50041), 24 VDC |  | 3SE5110-1AA00 | 17.26 | 41K |
|  | LED cover, yellow colour, metal, for safety position switch 40 mm wide (EN 50041), 24 VDC |  | 3SE5110-0AA00-1AGO | 3.25 | 41K |
| $16 \quad 17$ | LED cover, yellow colour, metal, for safety position switch 40 mm wide (EN 50041), 24 VDC | 17 | 3SE5110-1AA00-1AGO | 17.26 | 41K |

## Position switches and safety position switches

## Position switches with moulded cables - SIRIUS 3SE5*

|  | Description: | Fig. | Order number | L Price f | Prod. group |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Metal position switch IP67, enclosure 30mm wide, 1 1NO+1NC snap-action contact, 10A (AC15): |  |  |  |  |
| $\begin{array}{lll}1 & 2 & 3\end{array}$ | Metal plunger, 2 m moulded cable ( $5 \times 0.75 \mathrm{mm2}$ ), with side cable exit | 1 | 3SE5413-0CC20-1EA2 | 37.28 | 41K |
| $\therefore \rightarrow \frac{n}{a} \cdot \frac{B}{6}$ | Metal plunger, 5 m moulded cable ( $5 \times 0.75 \mathrm{~mm} 2$ ), with side cable exit | 1 | 3SE5413-0CC20-1EA5 | 47.17 | 41K |
|  | Metal plunger, M12 plug connector on side of enclosure | 2 | 3SE5413-OCC20-1EB1 | 39.98 | 41 K |
|  | Metal plunger with central fixing (M12), 2 m moulded cable ( $5 \times 0.75 \mathrm{~mm} 2$ ), with side cable exit | 3 | 3SE5413-0CC21-1EA2 | 41.89 | 41K |
| 5 | Metal plunger with rubber seal, 2 m moulded cable ( $5 \times 0.75 \mathrm{~mm} 2$ ), with side cable exit | 4 | 3SE5413-0CC22-1EA2 | 41.89 | 41K |
|  | Plunger with roller, 2 m moulded cable with side cable exit | 5 | 3SE5413-OCD20-1EA2 | 39.12 | 41K |
|  | Plunger with roller, 5 m moulded cable with side cable exit | 5 | 3SE5413-0CD20-1EA5 | 49.14 | 41K |
|  | Plunger with roller, M12 plug connector on side of enclosure | 6 | 3SE5413-0CD20-1EB1 | 41.89 | 41K |
|  | Plunger with roller and central fixing (M12), 2 m moulded cable ( $5 \times 0.75 \mathrm{~mm} 2$ ), with side cable exit | 7 | 3SE5413-0CD21-1EA2 | 49.87 | 41K |
|  | Plunger with roller twisted $90^{\circ}, 2 \mathrm{~m}$ moulded cable with side cable exit | 8 | 3SE5413-OCD23-1EA2 | 39.12 | 41 K |
|  | Twist lever with roller, 2 m moulded cable with side cable exit | 9 | 3SE5413-0CN20-1EA2 | 40.97 | 41K |
|  | Twist lever with roller, 5 m moulded cable with side cable exit | 9 | 3SE5413-OCN20-1EA5 | 50.92 | 41K |
|  | Twist lever with roller, M12 plug connector on side of enclosure | 10 | 3SE5413-OCN20-1EB1 | 43.61 | 41K |
| 11 | Metal position switch, IP67, enclosure 40 mm wide, 1NO+1NC snap-action contact, 10A (AC15): |  |  |  |  |
|  | Metal plunger, 2 m moulded cable ( $5 \times 0.75 \mathrm{mm2}$ ), with bottom cable exit | 11 | 3SE5423-0CC20-1EA2 | 45.51 | 41K |
|  | Metal plunger, M12 plug connector on bottom of enclosure | 12 | 3SE5423-OCC20-1EB1 | 48.28 | 41K |
|  | Metal plunger with central fixing (M12), 2 m moulded cable ( $5 \times 0.75 \mathrm{~mm} 2$ ), with bottom cable exit | 13 | 3SE5423-0CC21-1EA2 | 51.84 | 41K |
|  | Metal plunger with rubber seal, 2 m moulded cable ( $5 \times 0.75 \mathrm{~mm}$ ) , with bottom cable exit | 14 | 3SE5423-0CC22-1EA2 | 49.87 | 41K |
|  | Plunger with roller, 2 m moulded cable with bottom cable exit | 15 | 3SE5423-0CD20-1EA2 | 47.23 | 41K |
|  | Plunger with roller, M12 plug connector on bottom of enclosure | 16 | 3SE5423-OCD20-1EB1 | 48.28 | 41K |
|  | Plunger with roller and central fixing (M12), 2 m moulded cable ( $5 \times 0.75 \mathrm{~mm}$ ) , with bottom cable exit |  | 3SE5423-0CD21-1EA2 | 58.23 | 41K |
|  | Twist lever with roller, 2 m moulded cable with bottom cable exit | 17 | 3SE5423-0CN20-1EA2 | 49.20 | 41 K |
|  | Twist lever with roller, M12 plug connector on bottom of enclosure | 18 | 3SE5423-0CN20-1EB1 | 51.90 | 41K |

## Position switches without enclosure - SIRIUS 3SE5*

|  |  | Description: | Fig. | Order number | L Price $£$ | Prod. group |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Position switches without enclosure, plastic, IP20 / IP10, 30mm wide, with Teflon operating plunger, 6A (AC15): |  |  |  |  |
| 1 | 2 | 1NO+1NC, slide contacts, IP20 | 1 | 3SE5250-OBC05 | 17.14 | 41K |
|  |  | 1NO+1NC, snap-action contacts, IP20 | 1 | 3SE5250-0CC05 | 16.15 | 41K |
|  |  | 1NO+2NC, slide contacts, IP20 | 2 | 3SE5250-OKC05 | 17.20 | 41K |
|  |  | $1 \mathrm{NO}+2 \mathrm{NC}$, snap-action contacts, IP20 | 2 | 3SE5250-OLC05 | 17.01 | 41K |

## Gate locking switches

Gate locking switches - SIRIUS 3SE5*


## Gate monitoring \& Cable-operated switches

## Gate monitoring switches - SIRIUS 3SE5*



Cable-operated switches - SIRIUS 3SE7*


| Description: | Fig. | Order number | L Price f | Prod. group |
| :---: | :---: | :---: | :---: | :---: |
| Metal cable-operated switch IP65/IP67, 1xM20 cable entry, snap-action contact, 6A (AC15): |  |  |  |  |
| Cable length max. 10 m , with release function, $1 \mathrm{NO}+2 \mathrm{NC}$, enclosure with yellow cover | 1 | 3SE7120-18H00 | 157.24 | 41K |
| Cable length max. 25 m , with release function, $1 \mathrm{NO}+1 \mathrm{NC}$ | 2 | 3SE7150-18D00 | 143.11 | 41K |
| Cable length max. 25 m , with release function, $1 \mathrm{NO}+2 \mathrm{NC}$, enclosure with yellow covert | 1 | 3SE7150-18H00 | 157.24 | 41K |
| Cable length max. 50 m , with release function, $1 \mathrm{NO}+1 \mathrm{NC}$ | 3 | 3SE7140-18D00 | 332.90 | 41K |
| Cable length max. 50 m , with release function, 2 NC | 3 | 3SE7140-18F00 | 332.90 | 41K |
| Cable length max. 75 m , with release function and emergency-stop button, 1NO+3NC | 4 | 3SE7141-1EG10 | 286.22 | 41K |
| Cable length max. $2 \times 75 \mathrm{~m}$, with release function, $2 \mathrm{NO}+2 \mathrm{NC}$ | 5 | 3SE7160-1AE00 | 355.01 | 41K |
| Accessories for cable-operated switches: |  |  |  |  |
| Steel cable with red plastic sleeve, 4 mm diameter, length 10 m . | 6 | 3SE7910-3AA | 49.20 | 41K |
| Steel cable with red plastic sleeve, 4 mm diameter, length 20 m . | 6 | 3SE7910-3AC | 97.66 | 41K |
| Steel cable with red plastic sleeve, 4 mm diameter, length 50 m . | 6 | 3SE7910-3AH | 243.84 | 41K |
| Cable clamp (duplex), suitable for 4 mm cable (min. order 4 pcs) | 7 | 3SE7941-1AC | 8.91 | 41K |
| Pretensioning spring 35 N (max.cable length $2 \times 50 \mathrm{~m}$ ) | 8 | 3SE7931-1AD | 21.13 | 41K |
| Pretensioning spring 35 N (max. cable length $2 \times 75 \mathrm{~m}$ ) | 8 | 3SE7931-1AE | 24.02 | 41K |
| Turnbuckle, M6x60 | 9 | 3SE7950-1AB | 10.38 | 41K |
| Cable pulley, suitable for 4 mm cable | 10 | 3SE7921-1AC | 11.55 | 41K |
| Cable mount (U shape), incl. nuts | 11 | 3SE7921-1AA | 2.74 | 41K |
| Cable mount (eye bolt), M8, incl. nut | 12 | 3SE7920-1AB | 7.00 | 41K |
| Cable mount (eye bolt), M6, incl. 2 nuts | 13 | 3SE7922-1AB | 7.12 | 41K |
| Thimble, suitable for 4 mm cable ( min . order 4 pcs ) | 14 | 3SE7930-1AD | 1.66 | 41K |
| Snap hook, $50 \mathrm{~mm} \times 5 \mathrm{~mm}$ packaging as set (2 units) | 15 | 3SE7932-1AC | 17.20 | 41K |

[^3]
## Cable-operated assembly instructions

## Cable pretensions and operating forces



## Cable lengths up to 25 m



Cable lengths up to 50 m


Cable lengths up to $2 \times 75 \mathrm{~m}$


## Hinge Switches

Hinge switches-SIRIUS 3SE5*


| Description: | Fig. | Order number | L Price $£$ | Prod. group |
| :---: | :---: | :---: | :---: | :---: |
| Plastic hinge switch, IP65, enclosure 31 mm wide (EN 50047) $1 \times \mathrm{M} 20$ cable entry, 1NO+2NC snap-action contact, 6A (AC15): |  |  |  |  |
| Hinge switch, hollow pin, opening angle $10^{\circ}$ |  | 3SE5232-OLU21 | 32.37 | 41 K |
| Hinge switch, solid pin, opening angle $10^{\circ}$ | 1 | 3SE5232-OLU22 | 32.37 | 41 K |
| Metal hinge switch, IP67, enclosure 40 mm wide (EN 50041), $1 \times \mathrm{M} 20$ cable entry, 1NO+2NC snap-action contact, 6A (AC15): |  |  |  |  |
| Hinge switch, hollow pin, opening angle $10^{\circ}$ | 2 | 3SE5112-OLU21 | 40.84 | 41 K |
| Hinge switch, solid pin, opening angle $10^{\circ}$ |  | 3SE5112-OLU22 | 47.29 | 41K |
| Plastic hinge switch integrated into aluminium hinge, IP65 $2 \times \mathrm{M} 20$ cable entry, 1NO +2 NC slide contact, 2A (AC15): |  |  |  |  |
| Hinge switch, hollow pin, opening angle $4^{\circ}$. Supply includes 2 nd hinge and fasteners | 3 | 3SE2283-0GA43 | 146.18 | 41K |

Foot switches - SIRIUS 3SE29*


Two-hand operation consoles - SIRIUS 3SU1*


Signalling columns - SIRIUS 8WD


```
Acoustic element 8WD44
Light element 8WD44
AS-Interface adapter element 8WD4428-0BD/8WD4428-OBE
Connection element for bracket, base and floor mounting 8WD4408-0AB/8WD4408-0AE
Connection element for pipe mounting 8WD4408-0AA/8WD4408-0AD
Bracket for wall mounting 8WD4308-0CA
Bracket for wall mounting (two-side) 8WD4308-0CB
Connection for socket 8WD4308-0DD
Bracket for base mounting 8WD4408-0CD
Pipe 8WD42/8WD43
Foot with pipe 8WD4308-0DA
Foot with pipe mounting 8WD4308-0DB
Foot for pipe mounting (>400 mm) 8WD4308-0DC
Foldaway foot for pipe mounting 8WD4408-0DF
Connection socket (magnetic mounting) 8WD4308-0DE
Bracket for foot mounting 8WD4408-0CC
```


## Signalling Columns

Signalling columns - SIRIUS 8WD*

Signalling columns, small design (50mm diameter): see catalogue: IC 102018 catalogue


## Non-contact Safety Switches

Non-contact Safety Switches - SIRIUS 3SE6*


| Description: | Fig. | Order number | L Price $£$ | Prod. group |
| :---: | :---: | :---: | :---: | :---: |
| Plastic safety magnets, IP67: |  |  |  |  |
| Switch block for door hinge left, $26 \times 36 \mathrm{~mm}, 1 \mathrm{NO}+1 \mathrm{NC}, \mathrm{M} 8$ plug connector | 1 | 3SE6616-3CA01 | 74.32 | 41K |
| Switch block for door hinge left, $26 \times 36 \mathrm{~mm}, 2 \mathrm{NC}, \mathrm{M} 8$ plug connector | 1 | 3SE6617-3CA01 | 74.32 | 41 K |
| Switch block for door hinge left, $26 \times 36 \mathrm{~mm}, 2 \mathrm{NC}, 3 \mathrm{~m}$ cable | 2 | 3SE6617-3CA04 | 73.09 | 41K |
| Switch block for door hinge right, $26 \times 36 \mathrm{~mm}, 1 \mathrm{NO}+1 \mathrm{NC}, \mathrm{M} 8$ plug connector | 3 | 3SE6626-3CA01 | 74.32 | 41 K |
| Switch block for door hinge right, $26 \times 36 \mathrm{~mm}, 2 \mathrm{NC}, \mathrm{M} 8$ plug connector | 3 | 3SE6627-3CA01 | 74.32 | 41 K |
| Switch block for door hinge right, $26 \times 36 \mathrm{~mm}, 2 \mathrm{NC}, 3 \mathrm{~m}$ cable | 4 | 3SE6627-3CA04 | 73.09 | 41 K |
| Switching magnet, $26 \times 36 \mathrm{~mm}$ hinge left | 5 | 3SE6714-3CA | 14.25 | 41 K |
| Switching magnet, $26 \times 36 \mathrm{~mm}$ hinge right | 6 | 3SE6724-3CA | 14.25 | 41 K |
| Switching magnet, $25 \times 88 \mathrm{~mm}$, coded | 7-8 | 3SE6704-2BA | 15.23 | 41K |
| Switch block, $25 \times 88 \mathrm{~mm}, 1 \mathrm{NO}+1 \mathrm{NC}, 3 \mathrm{~m}$ cable | 9 | 3SE6605-2BA | 49.14 | 41 K |
| Switch block, $25 \times 88 \mathrm{~mm}, 2 \mathrm{NC}, 3 \mathrm{~m}$ cable | 9 | 3SE6604-2BA | 62.65 | 41K |
| Switch block, $25 \times 88 \mathrm{~mm}, 1 \mathrm{NO}+1 \mathrm{NC}, \mathrm{M} 8$ plug connector | 9 | 3SE6605-2BA01 | 64.49 | 41 K |
| Switch block, $25 \times 88 \mathrm{~mm}, 2 \mathrm{NC}$, M8 plug connector | 9 | 3SE6604-2BA01 | 78.00 | 41 K |
| Switching magnet, $25 \times 33 \mathrm{~mm}$, coded | 9 | 3SE6704-3BA | 15.23 | 41 K |
| Switch block, $25 \times 33 \mathrm{~mm}, 1 \mathrm{NO}+1 \mathrm{NC}, 3 \mathrm{~m}$ cable | 10 | 3SE6605-3BA | 49.14 | 41 K |
| Switching magnet, round 30 mm , coded | 11 | 3SE6704-1BA | 21.50 | 41K |
| Switch block, round $30 \mathrm{~mm}, 1 \mathrm{NO}+1 \mathrm{NC}, 3 \mathrm{~m}$ cable | 12 | 3SE6605-1BA | 54.30 | 41K |
| Accessories for safety magnets: |  |  |  |  |
| Fill-up element $25 \times 88 \mathrm{~mm}$ | 13 | 3SX3260 | 8.84 | 41K |
| Fill-up element $25 \times 33 \mathrm{~mm}$ | 14 | 3SX3261 | 8.84 | 41K |
| Non-Contact RFID Safety Switches |  |  |  |  |
| Family coded, M12 plug | 15 | 3SE6315-0BB01 | 124.68 | 41K |
| Family coded, M12 plug with magnetic latching | 15 | 3SE6315-1BB01 | 181.19 | 41K |
| Individually coded, Multiple teach-in capability, M12 plug | 15 | 3SE6315-0BB02 | 184.26 | 41K |
| Individually coded, Multiple teach-in capability, M12 plug with magnetic latching | 15 | 3SE6315-1BB02 | 230.33 | 41K |
| Individually coded, Single teach-in capability, M12 plug | 15 | 3SE6315-OBB03 | 201.46 | 41 K |
| Individually coded, Single teach-in capability, M12 plug with magnetic latching | 15 | 3SE6315-1BB03 | 251.21 | 41K |
| RFID actuator standard | 16 | 3SE6310-OBC01 | 23.95 | 41K |
| RFID actuator with magnetic latching 18 N | 16 | 3SE6310-1BC01 | 78.00 | 41K |
| Non-contact Safety Switch Accessories |  |  |  |  |
| 8 Pin Cable, M12,3m | 17 | 3SX5601-2GA03 | 29.73 | 41K |
| 8 Pin Cable, M12, 10 m | 17 | 3SX5601-2GA10 | 42.93 | 41K |
| M8 Coupling with connecting cable 5 m long, for M8 Connector 4-Pole, for 3SE66 | 18 | 3SX5601-3GA05 | 24.38 | 41K |
| Coupling with connecting cable 5 m long, with 8 mm catch connecto, 6 -pole for 3SE66 | 19 | 3SX5601-4GA05 | 30.65 | 41K |
| Couple Gland M20 | 20 | 3SX5601-1A | 5.31 | 41K |

Flush mount (emergency-stop) pushbuttons \& signalling lamps - SIRIUS 3SU1


| Description: | Fig. | Order number | L Price $£$ | Prod. group |
| :---: | :---: | :---: | :---: | :---: |
| Emergency-stop pushbuttons, plastic, flush mount, round 22mm, IP69K: <br> (Delivery excl. contact block and holder. Consult pushbutton accessories for contact blocks needed.) |  |  |  |  |
| Emergency-stop pushbutton, plastic, 40 mm dia., turn to unlatch | 1 | 3SU1000-1 HB2O-OAAO | 17.44 | 41J |
| Emergency-stop pushbutton, plastic, 60 mm dia., turn to unlatch | 2 | $3 \mathrm{SU1000-1JB20-0AAO}$ | 19.66 | 41J |
| Emergency-stop pushbutton, plastic, 40 mm dia., with CES lock, turn to unlatch | 3 | 3SU1000-1 HR20-OAAO | 54.16 | 41J |
| Emergency-stop pushbutton, plastic, 40 mm dia., pull to unlatch | 4 | 3SU1000-1 HA20-0AAO | 16.05 | 41J |
| Illuminated Emergency-stop pushbutton, plastic, 40 mm dia., turn to unlatch | 5 | 3SU1001-1HB2O-OAAO | 20.73 | 41J |

[^4]
## Pushbuttons \& signalling lamps - flush mount

Flush mount (emergency-stop) pushbuttons \& signalling lamps - SIRIUS 3SU1* (continued)


Description:
Fig.
Pushbuttons/signalling lamps, plastic, flush mount, round 22mm, IP69K:
Pushbutton, flat, plastic, black
Pushbutton, flat, plastic, red
Pushbutton, flat, plastic, yellow
Pushbutton, flat, plastic, green
Pushbutton, flat, plastic, blue
Pushbutton, flat, plastic, white
Pushbutton, flat, plastic, clear
Illuminated pushbutton, flat, plastic, red
Illuminated pushbutton, flat, plastic, yellow
Illuminated pushbutton, flat, plastic, green
Illuminated pushbutton, flat, plastic, blue
Illuminated pushbutton, flat, plastic, white
Illuminated pushbutton, flat, plastic, clear
Selector switch, plastic, black, white, 2 positions, latching, O/I
Selector switch, plastic, black, white, 2 positions, momentary contact type, 0 /I
Selector switch, plastic, black, white, 3 positions, latching, I/ O / II
Selector switch, plastic, black, white, 3 positions, momentary contact type, / / 0 /II
Key switch, CES, plastic, latching, $\mathrm{O} / \mathrm{I}$, key removable in 2 positions

| Fig. | Order number | L Price $£$ | Prod. group |
| :---: | :---: | :---: | :---: |
| 6 | 3SU1000-0AB10-0AAO | 3.86 | 41J |
| 7 | 3 3U1000-0AB20-0AAO | 3.86 | 41J |
| 8 | 3SU1000-0AB30-0AAO | 3.86 | 41J |
| 9 | 3 UU1000-0AB40-0AAO | 3.86 | 41J |
| 10 | 3 UU1000-0AB50-0AA0 | 3.86 | 41J |
| 11 | $3 \mathrm{SU1000-0AB60-0AA0}$ | 3.86 | 41J |
| 12 | 3SU1000-0AB70-0AAO | 3.86 | 41J |
| 13 | 3SU1001-OAB20-0AAO | 5.30 | 41J |
| 14 | 3SU1001-0AB30-0AA0 | 5.30 | 41J |
| 15 | 3SU1001-0AB40-0AA0 | 5.30 | 41J |
| 16 | 3SU1001-0AB50-0AA0 | 5.30 | 41J |
| 17 | 3SU1001-0AB60-0AA0 | 5.30 | 41J |
| 18 | 3SU1001-0AB70-0AAO | 5.30 | 41J |
| 19 | 3 3U1002-2BF60-0AAO | 8.22 | 41J |
| 19 | 3SU1002-2BC60-0AAO | 8.22 | 41J |
| 19 | 3SU1002-2BL60-0AAO | 8.22 | 41J |
| 19 | 3SU1002-2BM60-0AAO | 8.22 | 41J |
| 20 | 3SU1000-5BF11-0AAO | 49.17 | 41J |
| blocks needed.) |  |  |  |
| 21 | 3SU1001-3AB42-0AK0 | 9.10 | 41J |
| 22 | 3SU1001-3AB61-0AK0 | 9.10 | 41J |

Illuminated twin pushbuttons, plastic, flush mount, round 22 mm , IP69K:
(Delivery excl. contact block and holder. Consult pushbutton accessories for contact blocks needed.)

| Illuminated twin pushbuttons, flat, plastic, green/red, 2 pos., 1/ O | 21 | 3SU1001-3AB42-0AK0 | 9.10 | 41 J |
| :--- | :--- | :--- | :--- | :--- |
| Illuminated twin pushbuttons, flat, plastic, white/black, 2 pos., 1/ O | 22 | 3SU1001-3AB61-0AK0 | 9.10 | 41 J |

## Emergency-stop pushbuttons, metal, flush mount, 22mm, IP69K:

(Delivery excl. contact block and holder. Consult pushbutton accessories for contact blocks needed.)
Emergency-stop pushbutton, metal, 40 mm dia., turn to unlatch
Emergency-stop pushbutton, metal, 60 mm dia., turn to unlatch
Emergency-stop pushbutton, metal, 40 mm dia., with CES lock, turn to unlatch
Emergency pushbutton, metal, 40 mm dia., pull to unlatch
Illuminated Emergency-stop pushbutton, metal, 40 mm dia., turn to unlatch

| 23 | $3 S U 1050-1$ HB20-OAAO | 17.63 | 41 J |
| :---: | :---: | :---: | :---: |
| 24 | 3 SU1050-1JB20-OAAO | 19.59 | 41 J |
| 25 | 3 SU1050-1HR20-OAAO | 58.97 | 41 J |
| 26 | 3 SU1050-1HA20-OAAO | 17.63 | 41 J |
| 27 | $3 S U 1051-1$ HB20-OAAO | 22.06 | 41 J |

Pushbuttons/signalling lamps, metal, flush mount, round 22mm, IP69K:
(Delivery excl. contact block and holder. Consult pushbutton accessories for contact blocks needed.)

## Pushbutton, flat, metal, black

Pushbutton, flat, metal, red
Pushbutton, flat, metal, yellow
Pushbutton, flat, metal, green
Pushbutton, flat, metal, blue
Pushbutton, flat, metal, white
Pushbutton, flat, metal, clear
Illuminated pushbutton, flat, metal, red
Illuminated pushbutton, flat, metal, yellow
Illuminated pushbutton, flat, metal, green
Illuminated pushbutton, flat, metal, blue
Illuminated pushbutton, flat, metal, white
Illuminated pushbutton, flat, metal, clear
Selector switch can be illuminated, metal, black, white, 2 positions, latching, 0 / I
Selector switch can be illuminated, metal, black, white, 2 positions, momentary contact type, $0 / 1$
Selector switch can be illuminated, metal, black, white, 3 positions, latching, / / 0 / II Selector switch can be illuminated, metal, black, white, 3 positions, momentary contact type, 1/O / II
Key switch, CES, metal, latching, O II, key removable in 2 positions

| 28 | $3 S U 1050-0 A B 10-0 A A O$ | 4.96 | 41 J |
| :---: | :---: | :---: | :---: |
| 29 | $3 S U 1050-0 A B 20-0 A A O$ | 4.96 | 41 J |
| 30 | $3 S U 1050-0 A B 30-0 A A O$ | 4.96 | 41 J |
| 31 | $3 S U 1050-0 A B 40-0 A A O$ | 4.96 | 41 J |
| 32 | $3 S U 1050-0 A B 50-0 A A 0$ | 4.96 | 41 J |
| 33 | $3 S U 1050-0 A B 60-0 A A 0$ | 4.96 | 41 J |
| 34 | $3 S U 1050-0 A B 70-0 A A 0$ | 4.96 | 41 J |
| 35 | $3 S U 1051-0 A B 20-0 A A O$ | 5.98 | 41 J |
| 36 | $3 S U 1051-0 A B 30-0 A A O$ | 5.98 | 41 J |
| 37 | $3 S U 1051-0 A B 40-0 A A O$ | 5.98 | 41 J |
| 38 | $3 S U 1051-0 A B 50-0 A A 0$ | 5.98 | 41 J |
| 39 | $3 S U 1051-0 A B 60-0 A A 0$ | 5.98 | 41 J |
| 40 | $3 S U 1051-0 A B 70-0 A A 0$ | 5.98 | 41 J |
| 41 | $3 S U 1052-2 B F 60-0 A A 0$ | 9.16 | 41 J |
| 41 | $3 S U 1052-2 B C 60-0 A A 0$ | 9.16 | 41 J |
| 41 | $3 S U 1052-2 B L 60-0 A A 0$ | 9.16 | 41 J |
| 41 | $3 S U 1052-2 B M 60-0 A A 0$ | 9.16 | 41 J |
| 42 | $3 S U 1050-5 B F 11-0 A A 0$ | 53.28 | 41 J |

## Pushbuttons \& signalling lamps - flush mount

Flush mount (emergency-stop) pushbuttons \& signalling lamps - SIRIUS 3SU1* (continued)

Pushbuttons and signalling lamps, round 16 mm : see catalogue: IC 102019 catalogue


| Description: | Fig. | Order number | L Price $£$ | Prod. group |
| :---: | :---: | :---: | :---: | :---: |
| Indicator lamps, plastic, front panel, round 22mm, IP69K: <br> (Delivery excl. contact block and holder. Consult pushbutton accessories for contact blocks needed.) |  |  |  |  |
| Indicator lights with smooth lens, plastic, red | 43 | 3SU1001-6AA20-0AA0 | 3.07 | 41J |
| Indicator lights with smooth lens, plastic, yellow | 44 | 3SU1001-6AA30-0AA0 | 3.07 | 41J |
| Indicator lights with smooth lens, plastic, green | 45 | 3SU1001-6AA40-0AA0 | 3.07 | 41J |
| Indicator lights with smooth lens, plastic, blue | 46 | 3SU1001-6AA50-0AA0 | 3.07 | 41J |
| Indicator lights with smooth lens, plastic, white | 47 | 3SU1001-6AA60-0AAO | 3.07 | 41J |
| Indicator lights with smooth lens, plastic, clear | 48 | 3SU1001-6AA70-0AA0 | 3.07 | 41J |

Indicator lamps, metal, front panel, round 22 mm , IP69K:
(Delivery excl. contact block and holder. Consult pushbutton accessories for contact blocks needed.) Indicator lights with smooth lens, metal, red Indicator lights with smooth lens, metal, yellow Indicator lights with smooth lens, metal, green Indicator lights with smooth lens, metal, blue Indicator lights with smooth lens, metal, white
Indicator lights with smooth lens, metal, clear

| 49 | $3 S U 1051-6 A A 20-0 A A O$ | 3.59 | 41 J |
| :--- | :--- | :--- | :--- |
| 50 | 3SU1051-6AA30-0AAO | 3.59 | 41 J |
| 51 | 3SU1051-6AA40-0AAO | 3.59 | 41 J |
| 52 | $3 S U 1051-6 A A 50-0 A A O$ | 3.59 | 41 J |
| 53 | $3 S U 1051-6 A A 60-0 A A O$ | 3.59 | 41 J |
| 54 | $3 S U 1051-6 A A 70-0 A A 0$ | 3.59 | 41 J |


| Description: | Fig. | Order number | L Price $£$ | Prod. group |
| :---: | :---: | :---: | :---: | :---: |
| Accessories for front panel pushbuttons/signalling lamps: |  |  |  |  |
| Contact block 1NC, screw terminals (sold in multiple of 5) | 55 | 3SU1400-1AA10-1CA0 | 3.92 | 41J |
| Contact block 1NO, screw terminals (sold in multiple of 5) | 55 | 3SU1400-1AA10-1BAO | 3.92 | 41J |
| Contact block 1NC, screw terminals | 55 | $\begin{gathered} \text { 3SU1400-1AA10-1CAO- } \\ \text { ZX01 } \end{gathered}$ | 4.70 | 41J |
| Contact block 1NO, screw terminals | 55 | $\begin{gathered} \text { 3SU1400-1AA10-1BAO- } \\ \text { ZX01 } \end{gathered}$ | 4.70 | 41J |
| Contact block 1NC + 1NC, screw terminals | 56 | 3 SU1400-1AA10-1FA0 | 6.38 | 41J |
| Contact block 2NO, screw terminals | 56 | $3 \mathrm{SU1400-1AA10-1DA0}$ | 8.85 | 41J |
| Contact block 2NC, screw terminals | 56 | 3 SU1400-1AA10-1EAO | 8.85 | 41J |
| Contact block with mounting monitoring 1NC, screw terminals | 57 | $3 \mathrm{SU1400-1AA10-1HA0}$ | 9.48 | 41J |
| Yellow backing plate for emergency stop, round 80 mm (sticker), w/o inscription | 58 | 3SU1900-0BC31-0AAO | 4.38 | 41J |
| Yellow backing plate for emerg. stop, round 75 mm (sticker), 4 language (EN/DE/IT/SP) | 58 | 3SU1900-OBC31-ONBO | 4.89 | 41J |
| LED Module with integrated LED, yellow, 24 V AC / DC, screw terminals (sold in multiple of 5) | 59 | 3SU1401-1BB30-1AAO | 6.32 | 41J |
| LED Module with integrated LED, red, $24 \mathrm{~V} \mathrm{AC} \mathrm{I} \mathrm{DC} ,\mathrm{screw} \mathrm{terminals} \mathrm{(sold} \mathrm{in} \mathrm{multiple} \mathrm{of} \mathrm{5)}$ | 59 | 3SU1401-1BB20-1AAO | 6.32 | 41J |
| LED Module with integrated LED, green, 24 V AC / DC, screw terminals (sold in multiple of 5) | 59 | 3SU1401-1BB40-1AAO | 6.32 | 41J |
| LED Module with integrated LED, blue, $24 \mathrm{VAC} / \mathrm{DC}$, screw terminals (sold in multiple of 5) | 59 | $3 \mathrm{SU1401-1BB50-1AAO}$ | 6.32 | 41J |
| LED Module with integrated LED, white, 24 V AC / DC, screw terminals (sold in multiple of 5) | 59 | 3SU1401-1BB60-1AAO | 6.32 | 41J |
| LED Module with integrated LED, yellow, 24 V AC / DC, screw terminals | 59 | $\begin{gathered} \text { 3SU1401-1BB30-1AAO- } \\ \text { ZX01 } \end{gathered}$ | 7.58 | 41J |
| LED Module with integrated LED, red, $24 \mathrm{~V} \mathrm{AC} \mathrm{/} \mathrm{DC}$, | 59 | $\begin{gathered} \text { 3SU1401-1BB20-1AAO- } \\ \text { ZX01 } \end{gathered}$ | 7.58 | 41J |
| LED Module with integrated LED, green, $24 \mathrm{~V} \mathrm{AC} \mathrm{/} \mathrm{DC}$, | 59 | $\begin{gathered} 3 S U 1401-1 \text { BB40-1AAO- } \\ \text { ZX01 } \end{gathered}$ | 7.58 | 41J |
| LED Module with integrated LED, blue, 24 V AC I DC, screw terminals | 59 | $\begin{gathered} \text { 3SU1401-1BB50-1AAO- } \\ \text { ZX01 } \end{gathered}$ | 7.58 | 41J |
| LED Module with integrated LED, white, 24 V AC / DC, screw terminals | 59 | $\begin{gathered} 3 S U 1401-1 \text { BB60-1AAO- } \\ \text { ZX01 } \end{gathered}$ | 7.58 | 41J |
| LED Module with integrated LED, yellow, 110 V AC , screw terminals | 59 | 3 3U1401-1BC30-1AAO | 10.55 | 41J |
| LED Module with integrated LED, red, 110 V AC, screw terminals | 59 | $3 \mathrm{SU1401-1BC20-1AAO}$ | 10.55 | 41J |
| LED Module with integrated LED, green, 110 V AC, screw terminals | 59 | $3 \mathrm{SU1401-1BC40-1AAO}$ | 10.55 | 41J |
| LED Module with integrated LED, blue, 110 V AC, screw terminals | 59 | 3 3U1401-1BC50-1AAO | 10.55 | 41J |
| LED Module with integrated LED, white, 110 V AC, screw terminals | 59 | 3 3U1401-1BC60-1AAO | 10.55 | 41J |
| LED Module with integrated LED, yellow, 230 V AC , screw terminals | 59 | 3SU1401-1BF30-1AA0 | 10.55 | 41J |
| LED Module with integrated LED, red, 230 V AC, screw terminals | 59 | $3 S U 1401-1 \mathrm{BF} 20-1 \mathrm{AAO}$ | 10.55 | 41J |
| LED Module with integrated LED, green, 230 V AC, screw terminals | 59 | $3 \mathrm{SU1401-1BF40-1AAO}$ | 10.55 | 41J |
| LED Module with integrated LED, blue, 230 V AC, screw terminals | 59 | 3 UU1401-1BF50-1AAO | 10.55 | 41J |
| LED Module with integrated LED, white, 230 V AC, screw terminals | 59 | 3SU1401-1BF60-1AAO | 10.55 | 41J |
| LED modules for front panel mounting: ATEX Zone 1-2: intrinsic safety: |  |  |  |  |
| LED Module with integrated LED, yellow, 24 V AC / DC, screw terminals | 59 | 3SU1401-1BB30-1AA2 | 15.42 | 41J |
| LED Module with integrated LED, red, 24 V AC I DC, screw terminals | 59 | 3SU1401-1BB20-1AA2 | 15.42 | 41J |
| LED Module with integrated LED, green, 24 V AC I DC, screw terminals | 59 | 3SU1401-1BB40-1AA2 | 15.42 | 41J |
| LED Module with integrated LED, blue, 24 V AC I DC, screw terminals | 59 | 3SU1401-1BB50-1AA2 | 15.42 | 41J |
| LED Module with integrated LED, white, 24 V AC I DC, screw terminals | 59 | 3SU1401-1BB60-1AA2 | 15.42 | 41J |

*Contact blocks are stackable.

## Pushbutton enclosures - surface mount

## Holders for pushbuttons \& signalling lamps - SIRIUS 3SU1



| Description: |
| :--- |
| Accessories for flush-mount pushbuttons/signalling lamps: |
| Holder for 3 modules, plastic (sold in multiple of 5 ) |
| Holder for 3 modules, universal (sold in multiple of 5 ) |
| Holder for 3 modules, metal (sold in multiple of 5) |
| Holder for 3 modules, plastic |
| Holder for 3 modules, universal |
| Holder for 3 modules, metal |


| Fig. |  |
| ---: | ---: |
| 60 | $3 S U$ |
| 61 | $3 S U$ |
| 62 | $3 S U$ |
| 60 | 3 |
| 61 | 3 |
| 62 | 3 |


| Holder for 3 modules, plastic (sold in multiple of 5) | 60 | 3SU1500-OAA10-0AAO | 1.89 | 41J |
| :---: | :---: | :---: | :---: | :---: |
| Holder for 3 modules, universal (sold in multiple of 5) | 61 | 3SU1550-OAA10-0AAO | 2.72 | 41J |
| Holder for 3 modules, metal (sold in multiple of 5 ) | 62 | 3SU1510-OAA10-0AAO | 4.13 | 41J |
| Holder for 3 modules, plastic | 60 | $\begin{aligned} & \text { 3SU1500-0AA10- } \\ & \text { OAAO-ZX01 } \end{aligned}$ | 2.36 | 41J |
| Holder for 3 modules, universal | 61 | $\begin{aligned} & \text { 3SU1550-0AA10- } \\ & \text { OAAO-ZX01 } \end{aligned}$ | 3.27 | 41J |
| Holder for 3 modules, metal | 62 | 3SU1510-0AA10- <br> OAAO-ZX01 | 4.95 | 41J |

Surface mount (emergency-stop) pushbutton enclosures - SIRIUS 3SU1
Loose pushbuttons/signalling lamps for fitting into the pushbutton enclosures can be found on page 21 under "Flush mount (emergency-stop) pushbuttons \& signalling lamps".


## Pushbuttons with Profinet

Profinet gateway - SIRIUS 3SU1


| Description: | Fig. | Order number | L Price $£$ | Prod. group |
| :---: | :---: | :---: | :---: | :---: |
| Profinet Interface Modules |  |  |  |  |
| Standard IM, 24 V DC, 1-20 TMs connectable, screw terminals | 1 | 3SU1400-1LK10-1AA1 | 210.46 | 41J |
| Standard IM, 24 V DC, 1-20 TMs connectable, 4 DI, 1 DQ, 1 AI, screw terminals | 2 | 3SU1400-1LK10-1BA1 | 285.66 | 41J |
| Fail-safe IM F, 24 V DC, 1-20 TMs connectable, 4 DI, 1 DQ, 1 Al , screw terminals | 3 | 3SU1400-1LL10-1BA1 | 328.64 | 41J |
| Profinet terminal modules |  |  |  |  |
| "Commands" TM with 2 spring contacts | 4 | 3SU1400-1MA10-1BA1 | 31.66 | 41J |
| "Commands and LED" TM with 2 spring contacts and integrated red LED | 5 | 3SU1401-1MC20-1CA1 | 33.18 | 41J |
| "Commands and LED" TM with 2 spring contacts and integrated yellow LED | 5 | 3SU1401-1MC30-1CA1 | 33.18 | 41J |
| "Commands and LED" TM with 2 spring contacts and integrated green LED | 5 | 3SU1401-1MC40-1CA1 | 33.18 | 41J |
| "Commands and LED" TM with 2 spring contacts and integrated blue LED | 5 | 3SU1401-1MC50-1CA1 | 33.18 | 41J |
| "Commands and LED" TM with 2 spring contacts and integrated white LED | 5 | 3SU1401-1MC60-1CA1 | 33.18 | 41J |
| "Commands and LED" TM with 2 spring contacts and integrated amber LED | 5 | 3SU1401-1MC00-1CA1 | 33.18 | 41J |
| "LED" TM with integrated red LED | 6 | 3SU1401-1ME20-1DA1 | 30.72 | 41J |
| "LED" TM with integrated yellow LED | 6 | 3SU1401-1ME30-1DA1 | 30.72 | 41J |
| "LED" TM with integrated green LED | 6 | 3SU1401-1ME40-1DA1 | 30.72 | 41J |
| "LED" TM with integrated blue LED | 6 | 3SU1401-1ME50-1DA1 | 30.72 | 41J |
| "LED" TM with integrated white LED | 6 | 3SU1401-1ME60-1DA1 | 30.72 | 41J |
| "LED" TM with integrated amber LED | 6 | 3SU1401-1ME00-1DA1 | 30.72 | 41J |
| Accessories |  |  |  |  |
| Memory module for storage of configuration data, optional for IM, included for IM F | 7 | 3RK3931-0AA00 | 23.52 | 42C |
| LED module, red, only illuminated for IM/IM F and SIRIUS ACT | 8 | 3SU1401-3BA20-5AAO | 14.92 | 41J |
| LED module, yellow, only illuminated for IM/IM F and SIRIUS ACT | 8 | 3SU1401-3BA30-5AAO | 14.92 | 41J |
| LED module, green, only illuminated for IM/IM F and SIRIUS ACT | 8 | $3 S U 1401-3 B A 40-5 A A 0$ | 14.92 | 41J |
| LED module, blue, only illuminated for IM/IM F and SIRIUS ACT | 8 | 3SU1401-3BA50-5AAO | 14.92 | 41J |
| LED module, white, only illuminated for IM/IM F and SIRIUS ACT | 8 | 3SU1401-3BA60-5AAO | 14.92 | 41J |
| LED module, amber, only illuminated for IM/IM F and SIRIUS ACT | 8 | 3SU1401-3BA00-5AAO | 14.92 | 41J |
| Flat ribbon cable, 7 -core, cable length 5 m | 9 | 3SU1900-OKQ80-0AA0 | 8.03 | 41J |
| Flat ribbon cable, 7-core, cable length 10 m | 9 | 3SU1900-0KP80-0AAO | 16.05 | 41J |

## Communication via Profinet Advantages

- Reduced wiring time - fewer sources of error during installation and commissioning
- Modular and plug-in design of all components
- No addressing of individual push buttons and command points required - only one IP address for up to 21 devices
- Diagnostics and Paramterization via the TIA-Portal
- Safety Integrated - making it possible to integrate safety technology; e.g. emergency stop with safetyrelated Interface Module via PROFIsafe communication
- Easy replacement of memory modules without programming knowledge


[^5]
## Pushbuttons with Profinet

## Profinet gateway - SIRIUS 3SU1

Communication is one of the strong points of SIRIUS ACT: Besides the standard wiring, you can also connect the push buttons and signaling devices directly to the controller in the field or cabinet via PROFINET, AS-Interface and IO-Link. In this way, you can reduce wiring time and effort, minimize error sources and have more flexibility when you need to make modifications. Engineering in the Totally Integrated Automation Portal (TIA Portal) provides additional diagnostics and parameterization options. SIRIUS ACT push buttons and indicator lights - convincing in design, performance, ruggedness and handling. Enabling you to get things going.

Top performance thanks to strong communication
SIRIUS ACT with PROFINET connects push buttons and signaling devices directly with the controller and HMI devices via PROFINET - including safety functions, with engineering and commissioning being simplified no end by the TIA Portal. Additional benefits include uniform data management, shorter downtimes thanks to faster fault diagnostics and option handling, which can be used to flexibly design plants and systems and even modify them during operation.
Detailed installation information available at: siemens.com/sirius-act-profinet-manual

## SIRIUS ACT PROFINET

All devices that are not safety-related can be integrated easily with the interface module (IM).

1. CPU
2. Standard Interfacemodul
3. Terminalmodul


## SIRIUS ACT PROFINET/PROFIsafe

If there is a safety-related SIRIUS ACT device (e.g. EMERGENCY STOP up to SIL 3) in the application, it can be integrated easily via the fail-safe interface module (IM F). If safety-related, then connection to IM F.

1. CPU
2. Fail-safe Interfacemodul
3. Terminalmodul


## System Overview - Flexible for all types of applications

Components:
Max. Cable length between Moduls:
Total cable length (IM - TM):
Power Supply:
E-Stop:

1 Interfacemodul + max. 20 Terminalmoduls
1 Meter
10 Meters
24 V DC
if needed, only on the first position on the Fail-safe version

## Application examples \& reference materials

```
Sensor wiring
```

Parameter definitions depending on the sensor wiring

| Slide switch |  | Description | Typical circuit |
| :---: | :---: | :---: | :---: |
| AUTO | MONITORED |  | Basic unit 3SK1 Standard relay |
|  | $\checkmark$ | EMERGENCY STOP, single-channel, with monitored start | 1 and 2 |
| $\checkmark$ |  | EMERGENCY STOP, single-channel, with autostart | 3 and 4 |
|  | $\checkmark$ | Two-channel, with cross-circuit detection, with monitored start | 5 |
| $\checkmark$ |  | Two-channel, with cross-circuit detection, with autostart | 6 |
| $\checkmark$ |  | Sensors with solid-state outputs, without crosscircuit detection, with autostart | 7 |


| DIP switch |  |  |  | Description | Typical circuit |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 2 | 3 | 4 |  | Basic units 3SK1 Standard / Advanced |
| right | right | right | - | $1 \times$ two-channel, with cross-circuit detection, with monitored start | 8 |
| left | right | right | - | $1 \times$ two-channel, with cross-circuit detection with autostart | 9 |
| right | left | right | - | Electronic sensor, without cross-circuit detection, with monitored start | 10 |
| left | left | right | - | Electronic sensor, without cross-circuit detection, with autostart | 11 |
| right | left | left | - | $2 \times$ single-channel, without cross-circuit detection, with monitored start | 12 |
| left relevan | left | left | - | 2 x single-channel, without cross-circuit detection, with autostart | 13 |


| DIP switch |  |  |  | Description | Typical circuit |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 2 | 3 | 4 |  | Basic units 3SK1 Advanced |
| right | right | right | - | 1NC/1NO sensor, with cross-circuit detection, with monitored start | 14 |
| left | right | right | - | 1NC/1NO sensor, with cross-circuit detection, with autostart | 15 |
| left | right | right | - | Two-hand operation, with cross-circuit detection, with autostart | 16 |

## Typical circuits for basic unit 3SK1111 Standard relay

The black fields show the positions of the switches. Here, "Autostart" in each case.


## Typical circuits

Typical circuit 1: Single-channel, with monitored start


Typical circuit 2: Single-channel, with monitored start


## Typical circuits

Typical circuit 3: single-channel, with autostart


Typical circuit 4: single-channel, with autostart


## Typical circuits

Typical circuit 5: EMERGENCY STOP two-channel, with cross-circuit detection, with monitored start


Typical circuit 6: Two-channel, with cross-circuit detection, with autostart


## Typical circuits

Typical circuit 7: Sensors with solid-state outputs, without cross-circuit detection, with autostart


Typical circuits for 3SK1 Standard solid-state basic units or 3SK1 Advanced basic units

Typical circuit 8: EMERGENCY STOP two-channel, with cross-circuit detection, with monitored start


## Typical circuits

Typical circuit 9: Two-channel, with cross-circuit detection, with autostart


Typical circuit 10: Electronic sensor, 2-channel, without cross-circuit detection, with monitored start


## Typical circuits

Typical circuit 11: Electronic sensor, two-channel, without cross-circuit detection, with autostart

|  |  | - Autostart <br> - Without cross-circuit detection <br> - 1 x two-channel <br> - Sensor: 2-channel non-floating <br> - 3SK1112 Standard solid-state and 3SK112 Advanced |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | DIP switch |  |  |  |
| $\square \square$ |  | 1 | 2 | 3 | 4 |
| Autostart / Monitored Start |  | OFF left | $\begin{aligned} & \text { OFF } \\ & \text { left } \end{aligned}$ | ON right | - |
| $\square 2$ Cross fault detection OFF / ON $\square 32$ single-ch. sensors / 1 double-ch. sensor |  | Up to PL in accordance with ISO 13849-1 |  |  | e |
| $\square$ Startup Test yes / no <br> (O) SET/RESET |  | Up to Safety Integrity Level (SILCL) to IEC 62061 |  |  | 3 |
| $\dot{\mathrm{A}} 2$ |  |  |  |  |  |

Note: Single-channel connection - If only one single-channel sensor is used, the other sensor circuit must be jumper

Typical circuit 12: $2 \times$ single-channel, without cross-circuit detection, with monitored start


## Typical circuits

Typical circuit 13: $2 x$ single-channel, without cross-circuit detection, with autostart


## Typical circuits for 3SK1 Advanced basic units only

Typical circuit 14: 1NC/1NO sensor, with cross-circuit detection, with monitored start


## Typical circuits

15 Typical circuit 15: 1NC/1NO sensor, with cross-circuit detection, with autostart

|  |  | - Autostart <br> - With cross-circuit detection <br> - $1 \times$ two-channel <br> - Jumper T1/PAR for NC/NO evaluation <br> - Sensor: NC/NO sensor <br> - 3SK112 Advanced |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | DIP switch |  |  |  |
|  |  | 1 | 2 | 3 | 4 |
|  |  | OFF left | ON right | ON right | - |
|  |  | PL in accordance with ISO 13849-1 |  |  | e |
|  |  | Safety Integrity Level (SILCL) to IEC61508 |  |  | 3 |
| $\overline{\mathrm{A}} 2$ |  |  |  |  |  |

16 Typical circuit 16: Two-hand operation, with cross-circuit detection, with autostart


## Safety is a SIRIUS business: More than just evaluation

The products of the SIRIUS Safety portfolio are part of Safety Integrated. The resulting advantage for users is enormous, because everything fits together here.

## Products

ET 200SP motor starter:
Switching motors safety integrated

The SIMATIC ET 200SP decentralized I/O system stands for innovative and highly flexible switchgear control. With the Safety variant of the ET 200SP motor starter up to 5.5 kW , safety is always integrated. Whether controlling or switching, starting or monitoring, you can rely on ET 200SP. Thanks to its high-performance and compact design, you save even more space in the control cabinet and benefit from versatile functionality in the control of your system.


3SE position and safety switches Detecting hazards absolutely reliably

SIRIUS sensing devices precisely detect motion sequences around machines and systems in almost any application. Whether for position detection, motion limitation of certain machine parts, or in safety circuits: Our sensing devices have command over the large variety of information in the field, even under the harshest conditions. For seamless monitoring, we also offer a comprehensive range of non-contact sensors.

## SIRIUS ACT with PROFINET

Connecting an emergency stop to the control system - more efficient than ever before

When it comes to communication, SIRIUS ACT performs exceptionally : In addition to the standard wiring, you can also connect the command and signaling devices (e.g., the emergency stop control device) directly to the control system - in the field or control cabinet, via PROFINET or PROFIsafe. This reduces your wiring effort, thus minimizing sources of error. In addition, you gain more flexibility when it comes to changes.


3TK2810 speed and standstill monitors
Monitoring motors
SIRIUS 3TK2810 carries out continuous standstill and speed monitoring in machines and systems. Using simple parameterization and constant diagnostics, troubleshooting can be carried out quickly at any time - often before any associated system standstill has occurred.


## Services \& Support

## Safety Evaluation Tool <br> Checking safety engineering - online

The Safety Evaluation Tool for standards IEC 62061 and ISO 13849-1 takes you directly to your goal. This TÜV-approved online tool helps you to quickly and reliably evaluate the safety functions of your machine.


## Training

Continuing education - from trainers with first-hand knowledge

Siemens offers you a comprehensive range of training courses from basic knowledge to expert know-how in functional safety.


Safety application manual S.I.A.M.

Know-how for building applications

Using simple wiring examples, S.I.A.M. provides you with insight into the fundamental safety requirements in the production industry.



## Functional Safety

Safety Lifecycle Services for the Manufacturing Industry*

## Our support

At Siemens we offer you an effective means right from the start of preventing faults inherent in processes and of keeping an efficient, verified record of functional \& operational safety. Through inspections, documentation, consulting and defining remedial measures, we assist you in meeting the current safety requirements most effectively.


## Support from Design to Upgrade

At Siemens we know the topic of functional safety involves much more than just installing SIL certified hardware and software components. It requires expert knowledge that is up-to-date with the latest technologies, standards and guidelines:

- Before creating a machine, the machine manufacturer carries out a risk analysis while observing all of the relevant standards. This shows what risks the machine poses and how they must be countered
- The risk analysis reveals which components are needed for making the hazardous zones safe. The safety must be verified so that the machine receives its CE marking
- The operator must observe the occupational health \& safety guidelines - as well as the documentation for following the machinery directive (supply of machinery safety regulations) that the machine manufacturer must produce
- If maintenance is required, it must be performed quickly in order to keep downtimes and standstills as short as possible. If a fault does occur, it must be eliminated as soon as possible or with only the shortest possible interruptions
- In order to bring existing plants up to the state of the art of safety engineering, expansion or modernisation measures are necessary



## Our Range of Services

- Management and assessment of functional safety and audits
- Planning and design of the SLC (safety plan)
- Hazard and risk assessment (EN ISO 12100)
- SIL /PL assessments
- Safety Requirements Specification (SRS)
- Support in planning and design of controls
- Assessment of safety logic programming against best practice
- Verification (e.g. SIL verification, H/W \& S/W audit)


## Benefits

- Standardised processes for faster and safer project implementation and commissioning
- Comprehensive package of services from risk identification and verification to plant start-up and modernisation.
- Uniform verification and validation documentation
- Independent competent team
- Detailed safety application examples

Safer Plants are more Profitable Plants*


At Siemens, we recognise that Functional safety is about more than just installing SIL-certified hardware and software components. It requires expert knowledge that is up-to-date with the latest technologies, standards and guidelines.

Plant operators who use Safety Instrumented Systems (SIS) to help reduce risk - including chemical plants, refineries and combustion facilities - must implement a system for the management of functional safety, to ensure that they have reduced risk to and acceptable level.

We understand the importance of effective Functional Safety Management (FSM). By ensuring that all Safety Lifecycle phases are properly planned, undertaken and verified we can be certain that the desired safety integrity level (SIL) targets are met. We can provide a range of services to help you implement a functional safety management system or to identify and address gaps in your existing systems. We can also provide additional technical expertise to help identify hazards, analyse risk and assess SIL requirements.

## Our Range of Services

- Management and assessment of functional safety and audits
- Planning and design of the Safety Lifecycle (safety planning)
- Hazard and safety assessment facilitation (HAZID, HAZOP)
- Allocation of safety functions to protection layers
- SIL Assessments (Risk Graph, LOPA)
- Safety Requirement Specifications (SRS)


## Benefits

- Standardised processes for faster and safer project implementation and commissioning
- Uniform verification and validation documentation
- Interdisciplinary team of experts with process and automation know-how leading to reduced development time and costs.
- Tailor-made safety concepts giving accelerated plant acceptance

Errors which are not identified in the early stages of a project are often very complex and expensive to correct later on. We can help you avoid systematic errors in all project phases with our standardised engineering guidelines and verification templates.

## Failsafe products

AS-interface-ASIsafe machine safety*


## AS-interface: Simple, safe and uniform

- Industrial communication with the AS interface field bus IO system
- Waterproof system solutions (IP65/67)
- Easy assembly
- Failsafe technology integrating seamlessly up to PL e/ SIL 3 / Cat. 4

Designs and comprehensive technical information about AS interface and ASIsafe can be found:

- In the Industrial Communication catalogue: IKPI 2015, section 6
- In the Safety Integrated catalogue: SI 102014
- On the internet: www.siemens.nl/AS-interface

Failsafe motor management system*


## SIMOCODE-pro V 3UF7: Complete motor management system with integrated failsafe technology

- Motor control
- Thermal overload protection
- Integration of failsafe technology for safe motor disconnection up to PL e / SIL 3 / Cat. 4

Designs and comprehensive technical information about SIMOCODE can be found: - In the Industrial Control catalogue: IC 102021

## SIMATIC failsafe controllers*



## SIMATIC automation system with integrated failsafe technology:

- Standard and failsafe automation in one PLC up to PL e/ SIL 3
- Failsafe HMI panels
- Failsafe communication, even via WLAN
- Use of open-standard field buses PROFIBUS and PROFINET

Designs and comprehensive technical information can be found:

- In the Safety Integrated catalogue: SI 102014


## SINAMICS failsafe drives*



[^6]
## Safety tool, functional examples \& B10 values

Safety Evaluation Tool: Safe machine concepts without detours


## Safety Evaluation Tool: Online SIL (EN 62061) and PL (EN ISO 13849) calculation for safety functions

> The free Safety Evaluation Tool (SET) for the IEC 62061 and ISO 13849-1 standards gets you directly to your goal. This online tool supports the fast and reliable assessment of your machine's safety functions. As a result, you are provided with a standard-compliant report that can be integrated in the machine documentation as a proof of safety. Simply download the TIA selection tool using the link below, in the tool simply choose to add new device and select safety evaluation.

For more information, or to get going immediately with the Safety Evaluation Functional connection examples for machine safety applications (Functional Examples)


## Siemens makes designing easy with fully worked-out

 examples of machine safety applicationsThe Functional Examples comprise of:

- Description of the safety function
- Hardware structure and software program
- Connection diagrams
- Fully worked-out and motivated SIL and PL calculations of the safety function.

For further functional connection examples (downloadable) please visit our machine safety website: www.siemens.com/safety and look under 'Functional Examples'.

## B10 values of SIRIUS components

Comprehensive information about machine safety standards can be found in the brochure: "Functional safety of machines and production plants - Simple implementation of the European Machine Directive". For more information about standards, you can also visit our special site for machine safety: www.siemens.com/safety

## SIRIUS - standard B10 values of electromechanical components

Electromechanical components are subject to wear and tear. The risk of failure of electromechanical components can be calculated with the B10 value and the operating cycle. The B10 value is expressed in the number of switching cycles. This is the number of switching cycles during which $10 \%$ of the specimens failed during a durability test.

In accordance with ISO 13849-2 (annex D), ISO/FDIS13849-1:2005 (annex C) and EN62061 (annex D, failure rates of electrical/electromechanical components) the B10 values must be defined for electromechanical components.

| Siemens SIRIUS product group Electromechanical components) |  | Normal B10 values (switching cycles) | Percentage dangerous failure |
| :---: | :---: | :---: | :---: |
| Emergency stop switches (with mechanically forced break contacts) | Turn to unlatch | 100,000 | 20\% |
|  | Pull to unlatch | 30,000 | 20\% |
| Cable-operated switches for emergency stop function (with mechanically forced break contacts) |  | 1,000,000 | 20\% |
| Standard position switches (with mechanically forced break contacts) |  | 10,000,000 | 20\% |
| Position switches with separate actuator/key switch (with mechanically forced break contacts) |  | 1,000,000 | 20\% |
| Position switches with electromagnetic locking (with mechanically forced break contacts) |  | 1,000,000 | 20\% |
| Hinge switches (with mechanically forced break contacts) |  | 1,000,000 | 20\% |
| Pushbutton switches (with mechanically forced break contacts) |  | 10,000,000 | 20\% |
| Contactors/motor starters (with mechanically linked or mirrored contacts) |  | 1,000,000 | 20\% |

## Siemens plc

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[^0]:    $\checkmark$ Version compatible
    Version not compatible

    * Enabling circuits can be set to time delayed if used in conjunction with a time delayed base unit

[^1]:    1) Base 4-pin with AC 400 V ; the concrete start-up and rated data of the motor should be taken into consideration for the selection
    2) Operation of ohmic loads with a maximum of 10 A
    3) Mixed connection technology: control circuit implemented as a push-in spring-loaded connection and main circuit as a screw-type connection
[^2]:    * For all standard low-voltage equipment please refer to our SIRIUS Shortform catalogue 2022.

[^3]:    *For more models and comprehensive technical information, please see the Industrial Controls catalogue: IC 10 2021. For the latest information, visit the Industry Mall: www.siemens.com/industrymallgb

[^4]:    *For more models and comprehensive technical information, please see the Industrial Controls catalogue: IC 10 2021. For the latest information, visit the Industry Mall: www.siemens.com/industrymall/gb

[^5]:    *You can find all information at::www.siemens.com/sirius-act-profinet or visit the Industry Mall: www.siemens.com/industrymall/gb. Technical specifications: www siemens.com/sios.

[^6]:    SINAMICS drive technology with integrated failsafe functionality

    - Failsafe functionality fully integrated in drive up to PL d/ SIL 2
    - Sensorless/encoderless measuring principle
    - Single or multi-axis control
    - Use of open-standard field buses PROFIBUS and PROFINET

    Designs and comprehensive technical information can be found:

    - In the Safety Integrated catalogue: SI 102014

