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FLUID CONTROL SYSTEMS

SOLENOID VALVES

PROCESS ACTUATION

PROCESS VALVES

SENSORS

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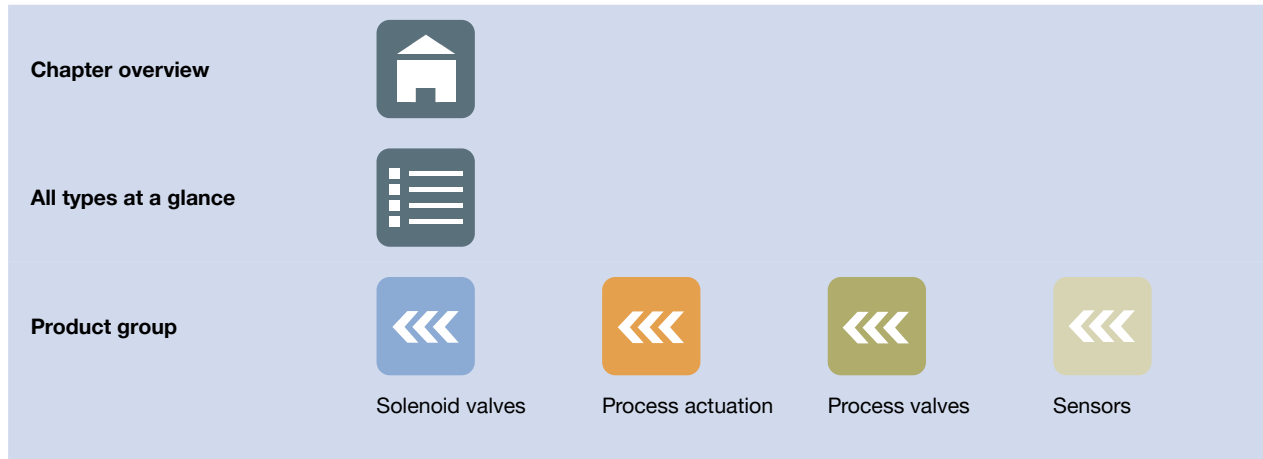
Explanation of this catalogue

Note

This catalogue represents only a part of the technical data and the available articles of the corresponding product. Further information can be found on our [website](#) ▶

Navigation within the catalogue

Using the elements described below, you can quickly navigate back and forth within the catalogue to your desired position:



How can we help you?

Do you need an overview of all **Bürkert product families**?

[Chapter overview](#) ▶

Are you looking for a **specific Type**?

[All types at a glance](#) ▶

Are you looking for a product of a **certain product family**?

[Product family Solenoid valves](#) ▶

Solenoid valves, Micro Fluidics and Proportional valves

[Product family Process actuation](#) ▶

Pneumatics and valve islands

[Product family Process valves](#) ▶

Diaphragm and seat valves as well as control systems

[Product family Sensors](#) ▶

Sensors for measuring liquids and gases as well as for media analysis



Solenoid valves ▶7

- Direct-acting
 - Plunger valves
 - Pivoted armature valves
 - Toggle valves
- Servo-assisted
 - Piston valves
 - Diaphragm valves

Micro Fluidics ▶ 91

- Rocker valves
- Flipper valves

Proportional valves ▶ 143

- Plunger
 - On valve seat
 - On servo piston

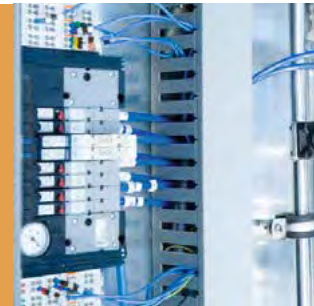
Control electronics ▶ 167

Cable plugs ▶ 173



Pneumatic valves ▶ 185

Valve islands ▶ 231



Diaphragm valves ▶249

- Manually-operated
- Pneumatic actuator
- Electric actuator
- Robolux Systems

Seat valves ▶313

- Pneumatic
- Electromotive

Control systems ▶ 361

Controls ▶ 367

- Positioner

Ball valve ▶ 435

Rotary actuators ▶469



Flow sensors ▶ 487

- Paddle-wheel
- Oval rotors
- Magnetic
- Ultrasonic
- Acoustic waves surface

Level sensors ▶ 595

- Oscillation
- Radar
- Ultrasonic
- Guided microwave

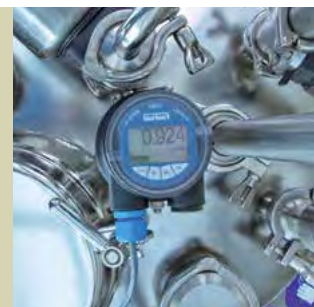
Analysis sensors ▶ 623

- pH/redox potential measurement
- Conductivity measurement

Pressure and temperature sensors ▶ 663

Mass Flow Controller / Meter ▶677

Controller/Transmitter ▶.. 733



Types Overview



Solenoid Valves..... 7	5470 E 193	8685 / 8686 385	S077 591
0121..... 9	5470 M 195	8690 / 8691 389	Level Sensors..... 595
0131..... 13	5470 R 199	8692..... 393	8110 / 8111 597
0142..... 19	5470 NAMUR / Ex i 203	8693..... 397	8112..... 601
0290..... 21	6012 / 6014 205	8694..... 401	8136..... 603
0330..... 23	6518..... 207	8695..... 405	8137 / 8138 607
0330 Ex 29	6519..... 209	8696..... 409	8177..... 611
0331 Flange..... 31	6519 Ex i..... 211	8697..... 413	8188..... 613
0331 P 35	6519 Ex m 213	8791..... 417	8189..... 619
2610..... 37	6519 NAMUR 215	8792..... 423	Analysis Sensors 623
5282..... 39	6519 NAMUR Ex i..... 217	8793..... 429	8202 ELEMENT 625
5404..... 43	6519 NAMUR Ex m/me.. 219	Ball Valves 435	8202 ELEMENT neutrino 629
6011..... 47	6524..... 221	2651..... 437	8220..... 633
6012..... 49	6525..... 225	2652 / 2655 439	8221..... 637
6013..... 51	6526 / 6527 227	2654..... 441	8222 ELEMENT 643
6014..... 57	Valve Islands 231	2654 Hygienic..... 443	8222 ELEMENT neutrino 647
6014 Ex mb 61	8640..... 233	2657..... 447	S022..... 651
6014 Ex ia..... 63	8644..... 239	2671..... 451	8228..... 659
6027..... 65	8647..... 243	2674..... 455	Pressure/Tem Sensor... 663
6240..... 71	8652..... 245	8804..... 459	8311..... 665
6213..... 73	Diaphragm Valves..... 249	8804 plastic 461	8316..... 669
6281..... 79	2030..... 251	8805..... 463	8323..... 671
6407..... 87	2031 forged 257	Rotary Actuators 469	8400..... 675
Micro Fluidics 91	2031 Tube Valve Body... 265	2051..... 471	MFC/MFM 677
0127..... 93	2033..... 269	2052..... 473	8006..... 679
6106..... 99	2036..... 271	3003..... 477	8626..... 683
6144..... 103	2063..... 273	3003 PS..... 481	8700..... 687
6164..... 107	2103 forged 279	3005..... 483	8701..... 691
6604..... 113	2103 Tube Valve Body... 283	Flow Sensors 487	8702..... 695
6606..... 115	2104..... 287	8011..... 491	8703..... 699
6624..... 119	2105..... 289	8012..... 495	8710..... 701
6626..... 125	3230..... 291	8020..... 499	8711..... 703
6628..... 129	3232..... 293	8025 Batch controller c.. 503	8712..... 707
6650..... 135	3233..... 295	8025 Batch controller re. 507	8713..... 711
6712..... 137	3233 Tube Valve Body... 301	8025 Flowmeter compa.. 511	8741..... 713
6724..... 139	3323..... 305	8025 Transmitter remote. 515	8742..... 717
7615..... 141	3363..... 309	8025 Transmitter UNI..... 517	8745..... 721
Electromagnetic Prop.. 143	Seat Valves 313	8026..... 519	8746..... 725
0355..... 145	2000 for Liquids..... 315	8030 / SE30..... 523	ME43 729
2836..... 147	2000 for Steam & Gases 317	SE30 525	ME44 731
2871..... 149	2006..... 319	8032 / SE32..... 527	Controller/Transmitter.. 733
2873..... 151	2100 321	SE32 529	8611..... 735
2875..... 153	2101 / 2012 331	8035 / SE35 Batch con .. 531	8619..... 739
3280..... 157	2106..... 333	SE35 Batch controller.... 533	8620..... 749
3285..... 159	2301..... 347	8035 / SE35 Flowmeter .. 537	
6024..... 161	3320..... 353	SE35 Transmitter 539	
6223..... 165	3321..... 355	8036 / SE36..... 541	
Control Electr. Electro.. 167	3360..... 357	SE30 Ex 543	
8605..... 169	3361..... 359	SE36 547	
Cable Plugs 173	2/2 Way Control Syst.... 361	8041..... 549	
2505..... 175	8802 GD-I/GD-J ELE..... 363	8045..... 553	
2507..... 177	8802 YG-I/YG-J ELE..... 365	8051 / 8055 / 8056 557	
2508 / 2509 / 2513 179	Controls 367	SE56 563	
2516..... 181	1060..... 369	8077..... 567	
Pneumatic Valves 185	1061..... 371	8081..... 569	
5413..... 187	8635..... 375	8098..... 573	
5420..... 191	8681..... 379	S020 579	
		S030 585	



Solenoid Valves Chapter Overview



[Overview for Solenoid valves ▶](#)

[Overview for Micro Fluidics ▶](#)

[Overview for Proportional Valves ▶](#)

[Overview for Control Electronics for Electromagnetic Proportional Valves ▶](#)

[Overview for Cable Plugs ▶](#)

Solenoid Valves Types Overview

Solenoid Valves.....	7
0121.....	9
0131.....	13
0142.....	19
0290.....	21
0330.....	23
0330 Ex	29
0331 Flange.....	31
0331 P	35
2610.....	37
5282.....	39
5404.....	43
6011.....	47
6012.....	49
6013.....	51
6014.....	57
6014 Ex mb	61
6014 Ex ia.....	63
6027.....	65
6240.....	71
6213.....	73
6281.....	79
6407.....	87
Micro Fluidics	91
0127.....	93
6106.....	99
6144.....	103
6164.....	107
6604.....	113
6606.....	115
6624.....	119
6626.....	125
6628.....	129
6650.....	135
6712.....	137
6724.....	139
7615.....	141
Electromagnetic Prop ..	143
0355.....	145
2836.....	147
2871.....	149
2873.....	151
2875.....	153
3280.....	157
3285.....	159
6024.....	161
6223.....	165
Control Electr. Electro..	167
8605.....	169
Cable Plugs	173
2505.....	175
2507.....	177
2508 / 2509 / 2513	179
2516.....	181

Overview for Solenoid Valves

Note: The following product overview does not show the complete product range of this catalogue. A complete overview can be found [here](#) ▶

Overview Solenoid Valves	Category	Type	Function	Required Δp [in bar]	Process connection ¹⁾	Pressure range [in bar] [in MPa]	Medium temperature [°C]	Diameter [DN in mm]
	Direct-acting plunger valves	6011 ▶	2/2	-	-	M5, G 1/8, NPT 1/8, SFB	0...21 0...2.1	-10...+100
6012 ▶		3/2	-	-	M5, G 1/8...1/4, PIC, NPT 1/8, SFB	0...10 0...1	-10...+100	1.2...2.0
6013 ▶		2/2	-	-	G 1/8...3/8, NPT 1/8...3/8, SFB	0...25 0...2.5	-10...+180	2...6
6014 ▶		3/2	-	-	G 1/8...1/4, NPT 1/8...1/4, SFB	0...16 0...1.6	-10...+120	1.5...3.0
6027 ▶		2/2	-	-	G 1/4...1/2, NPT 1/4...1/2	0...250 0...25	-40...+160	1.2...12
2610 ▶		2/2	-	-	G 1/4...1/2 NPT 1/4...1/2	0...10 0...1	-200...+180	6...10
Direct-acting pivoted armature valves	0330 ▶	2/2 3/2	-	-	G 1/4, NPT 1/8	0...16 0...1.6	-30...+90	2...4
	0331 ▶	2/2 3/2	-	-	SFB	0...16 0...1.6	-30...+90	2...3
	0121 ▶	2/2 3/2	-	-	G 1/4, G 3/8	0...4 0...0.4	-10...+90	2...8
Direct-acting toggle valves	0131 ▶	2/2 3/2	-	-	G 3/8...1/2	0...3 0...0.3	-30...+50	10...20
Servo-assisted piston valves	6240 ▶	2/2	-	-	G 1/4...1/2	0...250 0...25	-40...+160	6, 13
	5404 ▶	2/2	1.0	-	G 1/2...1, NPT 1/4...2, DIN flange	1...50 0.1...5	-10...+160	12...25
	6407 ▶	2/2	-	-	G 1/2...1, DIN flange	0...10 0...1	-20...+150	13...25
Servo-assisted diaphragm valves	6213EV ▶	2/2	-	-	G 1/4...2, NPT 3/8...1	0...10 0...1	-30...+120	10...40
	6281EV ▶	2/2	0.5	-	G 3/8...2, NPT 1/2...1	0.2...16 0.02...1.6	-30...+120	13...50
	0290 ▶	2/2	-	-	G 1/2...2, NPT 1/2...2 1/2, DIN flange	0...16 0...1.6	-30...+120	12...50
	5282 ▶	2/2	0.2	-	G 1/2...2 1/2, DIN flange	0.2...16 0.02...1.6	-30...+90	13...50

1) PIC = Push-in connection | SFB = Bürkert specific flange pattern

2) S = Standard | A = On request | N = Not available | 1 = Plastic version: Type 0142

3) Only as sealing material

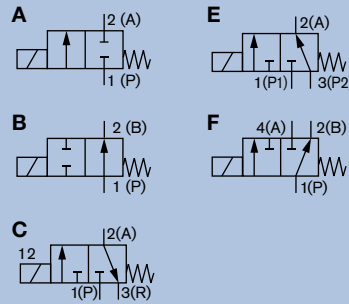
4) x = suitable | o = conditionally suitable | - = not suitable

Body material ²⁾			Seal material Diaphragm material ²⁾					Medium ⁴⁾				Forerunner Type	Special features and versions
Brass	Stainless steel	Plastic	NBR	EPDM	FKM	PTFE ³⁾	FFKM ³⁾	Neutral fluids	Contaminated fluids	Aggressive fluids	Neutral gases		
S	S	S	S	S	S	N	N	x	-	-	x	-	-
S	S	S	S	S	S	N	N	x	-	-	x	-	-
S	S	N	S	A	S	S	A	x	-	-	x	-	FFKM only as seat seal
S	S	S	S	A	S	A	A	x	-	-	x	-	PTFE only up to DN 2.0; FFKM only seat seal and DN 2.0
S	S	N	N	A	S	S	N	x	-	o	x	0285, 2200, 0243, 0255	-
S	S	N	N	N	N	S	N	x	-	x	x	-	Medium separated
S	S	N	S	A	S	N	A	x	x	x	x	0124, 0332, 0780, 0788	Medium separated
S	S	N	N	A	S	N	N	x	x	x	x	0125, 0333, 0780, 0788	Medium separated
N	S	S	N	A	S	N	S	x	x	x	x	0789	Up to DN 8, medium separated
S	N	S	N	S	S	N	N	x	x	x		0323, 0223	Medium separated
S	S	N	N	A	S	S	N	x	-	o	x	2400	
S	N	N	S	N	A	S	N	x	-	-	x	0404, 0406	Flange version in grey cast iron
S	N	N	N	N	N	S	N	x	-	-	x	0407	Flange version in grey cast iron, fixed coupled
S	S	N	S	S	S	N	N	x	-	-	x	-	Spring coupled
S	S	N	S	S	S	N	N	x	-	-	x	0280, 5281	-
S	S	N	S	S	S	N	N	x	-	-	x	-	Flange version in grey cast iron, fixed coupled
S	S	S1	S	S	S	N	N	x	x	x	x	-	Flange version in grey cast iron, pilot medium separated

2/2 or 3/2 way solenoid valve for aggressive medium

0121

- Direct-acting, media-separated valve with diameter of up to DN08
- Maintenance-free pivoted armature technology
- Vibration-proof, block screwed coil system
- Service-friendly, durable manual override
- Explosion proof version optional

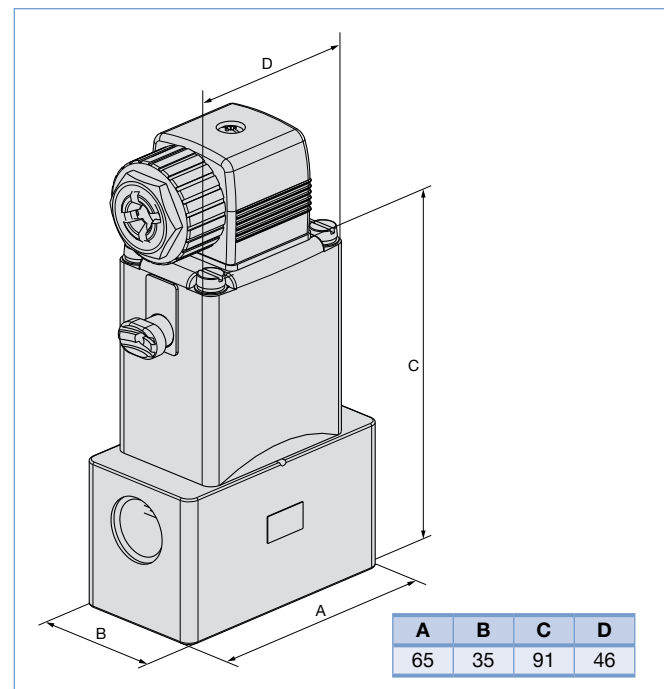


The 0121 valve is a direct-acting, media-separated pivoted armature valve. It is available in 3/2- and 2/2 way versions. As a 3/2 way version, it can be used as a distributor or mixing valve. Various diaphragm material combinations and methods of operation are available depending on the application. The housing offering includes stainless steel (316L), PTFE, and PVC versions. The solenoid coils are moulded with a chemically resistant epoxy. The 0121 is equipped with manual override for commissioning and testing. For reduced energy requirements, all coils can be delivered with electronic power reduction or as an impulse version. The switching status can be indicated with position feedback as a binary or NAMUR signal. In combination with a plug in accordance with DIN EN 175301-803 Form A, the valves satisfy protection class IP65/67 – in combination with a stainless steel or plastic housing NEMA 4X.

Technical data

General data	
Orifice	DN4.0...DN8.0
Available housing materials	PTFE PVC (resistant acc. to DIN 8062, 8061) PP (Polypropylen) PVDF Stainless steel 1.4401
Seal materials	FKM / FFKM / EPDM
Medium	
for FKM	Oxydizing acids and substances, hot oils with additives, salt solutions, waste gases
for FFKM	Aggressive fluids, hot air, hot oils, Aromate, ether, Esther, ketones (please note Bürkert chemical resistance chart).
for EPDM	Alkalis, acids up to medium concentration, alkaline washing- and bleaching lyes
All Materials	For more detailed information please consult the resistance chart
Medium temperature for body material	EPDM: -30...+70 °C FKM: -10...+70 °C PVDF oder PP FFKM: -10...+70 °C
Medium temperature for body material PTFE or VA	EPDM: -30...+90 °C FKM: -10...+90 °C FFKM: -10...+90 °C
Medium temperature for body material PVC	EPDM: -30...+50 °C FKM: -10...+50 °C FFKM: -10...+50 °C
Ambient temperature	Max. +50 °C
Viscosity	Max. 37 mm ² /s

Dimensions [mm]



Voltages	24 V DC, 24 V 50 Hz, 230 V 50 Hz, 120 V 60 Hz (others on request)
Voltage tolerance	± 10 %
Cycling rate	Max. 100/min with AC Max. 10/min for UC (high-capacity electronic)
Duty cycle for VA	100 %
Duty cycle bei PVDF, PP and PTFE	40 % ED (60 % intermittent operation) in 10 min with 8 W version 100 % ED with 5 W version or high-performance electronics (5 W version on request)
Duty cycle for PVC	With PVC 10 % ED (10 min) 100 % ED for version with high-performance electronics
Electrical connection	Tag connector acc. to DIN EN 175301-803 Form A for Cable plug Type 2508 (will be replaced with Type 2518)/2509 (Cable plug included in delivery, on request also with injected cable)
Protection class	IP65 with cable or cable plug

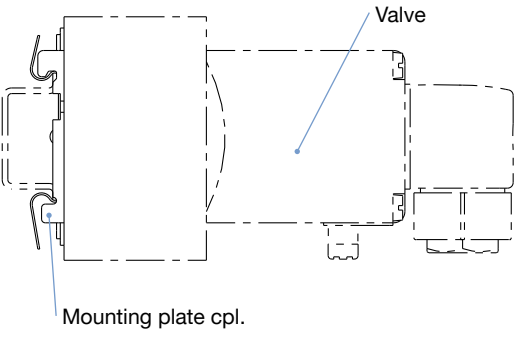
Technical data continued

Thermal insulation class of the coil	H
Installation	As required, preferably with actuator upright
Weight [kg]	
Material VA	0.9
Material PVDF, PP and PVC	0.38
Material PTFE	0.5

Power consumption standard					Response times ¹⁾			
Frequency: AC			Frequency: DC		Frequency: AC		Frequency: DC	
Inrush [VA]	Operation [VA]	Operation [W]	Cold [W]	Warm [W]	Opening [ms]	Closing [ms]	Opening [ms]	Closing [ms]
30	15	8	11	8	20	11	11	8

1) Measurement at the valve outlet 6 bar and +20 °C
 Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

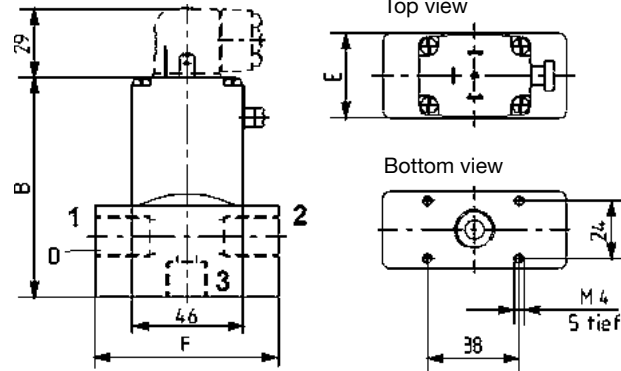
Accessories



Description	Article no.
Mounting plate cpl. for DIN rail mounting ²⁾	013253

2) Use only with 2/2 way globe valves

Dimensions [mm]



Body material	D	B	E	F
Stainless steel	G ¼	89	32	76
PVC	G ¾	91	35	65
PP	G ¾	91	35	65
PVDF	G ¾	91	35	70
PTFE	G ¾	91	35	76



Ordering chart

0121

Circuit function	Orifice [mm]	Power connection	Seal material	Body or seat material	Article no. per voltage/frequency [V/Hz]			
					024/DC	024/50	230/50	120/60
A ¹⁾ 2/2 way direct-acting solenoid valve, normally closed	4.0	G 3/8	FKM	PVC	049654	048940	047859	-
	4.0	G 3/8	EPDM	PVC	050795	050085	049267	-
	6.0	G 3/8	FKM	PVC	048749	049348	047810	049228
	6.0	G 3/8	EPDM	PVC	049337	049678	049291	-
	8.0	G 3/8	FKM	PVC	049697	052800	052302	-
	8.0	G 3/8	EPDM	PVC	048698	050967	050701	450543
	4.0	G 1/4	FKM	VA	055244	056934	052441	-
	4.0	G 1/4	EPDM	VA	136290	-	136292	-
	6.0	G 1/4	FKM	VA	040482	057086	054595	-
	6.0	G 1/4	EPDM	VA	049113	-	-	-
	4.0	G 3/8	EPDM	PP	049017	-	-	-
	6.0	G 3/8	EPDM	PP	052161	-	-	-
	4.0	G 3/8	FFKM ²⁾	PVDF	133109	-	079653	-
	4.0	G 3/8	FFKM ²⁾	PTFE	122632	-	077191	457453
	4.0	G 3/8	FFKM	PTFE	151733	-	136205	-
	4.0	G 3/8	FFKM	PTFE	132098	-	-	-
B ¹⁾ 2/2 way direct-acting solenoid valve, normally open	4.0	G 3/8	FKM	PVC	-	-	050158	-
	6.0	G 3/8	EPDM	PVC	135416	-	-	-
	4.0	G 3/8	FFKM	PTFE	132096	-	-	-
	6.0	G 3/8	FFKM	PTFE	132097	-	-	-
C 3/2 way direct-acting solenoid valve, normally closed	4.0	G 3/8	FKM	PVC	051701	-	-	-
	6.0	G 3/8	EPDM	PVC	-	-	051577	-
	4.0	G 3/8	FFKM	PTFE	-	-	130625	-
	4.0	G 3/8	FKM	PTFE	044771	-	-	-
	6.0	G 3/8	FFKM ²⁾	PTFE	131364	-	-	-
	4.0	G 1/4	EPDM	VA	-	-	135858	-
E 3/2 way mixing solenoid valve	4.0	G 1/4	FKM	VA	-	-	042457	-
	6.0	G 3/8	EPDM	PVC	048673	-	-	-
	4.0	G 3/8	FFKM ²⁾	PVDF	-	-	120402	-
	4.0	G 3/8	FFKM	PTFE	151715	-	130934	-
	4.0	G 3/8	FFKM ²⁾	PTFE	135028	-	-	-

Ordering chart continued

Circuit function	Orifice [mm]	Power connection	Seal material	Body or seat material	Article no. per voltage/frequency [V/Hz]			
					024/DC	024/50	230/50	120/60
F 3/2 way direct-acting, distribution solenoid valve	6.0	G 3/8	FKM	PVC	049533	052181	047916	-
	6.0	G 3/8	EPDM	PVC	040062	048760	050491	-
	4.0	G 3/8	FFKM ²⁾	PTFE	-	-	124239	-
	6.0	G 3/8	FFKM	PTFE	141134	-	-	-
	6.0	G 3/8	FKM	PTFE	051256	-	-	-

1) The listed Article no. and circuit functions have a housing with straight pass

2) Seal material seat seal is FFKM; Seal material seat O-ring FKM

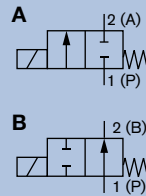
3) The listed Article no. are equipped with a high-performance coil (60 W-inrush, 3 W-operation) and injected cable

4) Cable plug is not part of the delivery

2/2 way Solenoid Valve for neutral media

0131

- Direct acting
- With hermetic isolation of fluid
- Lockable manual override as standard
- NC and NO circuit function
- Optional with electrical position feedback

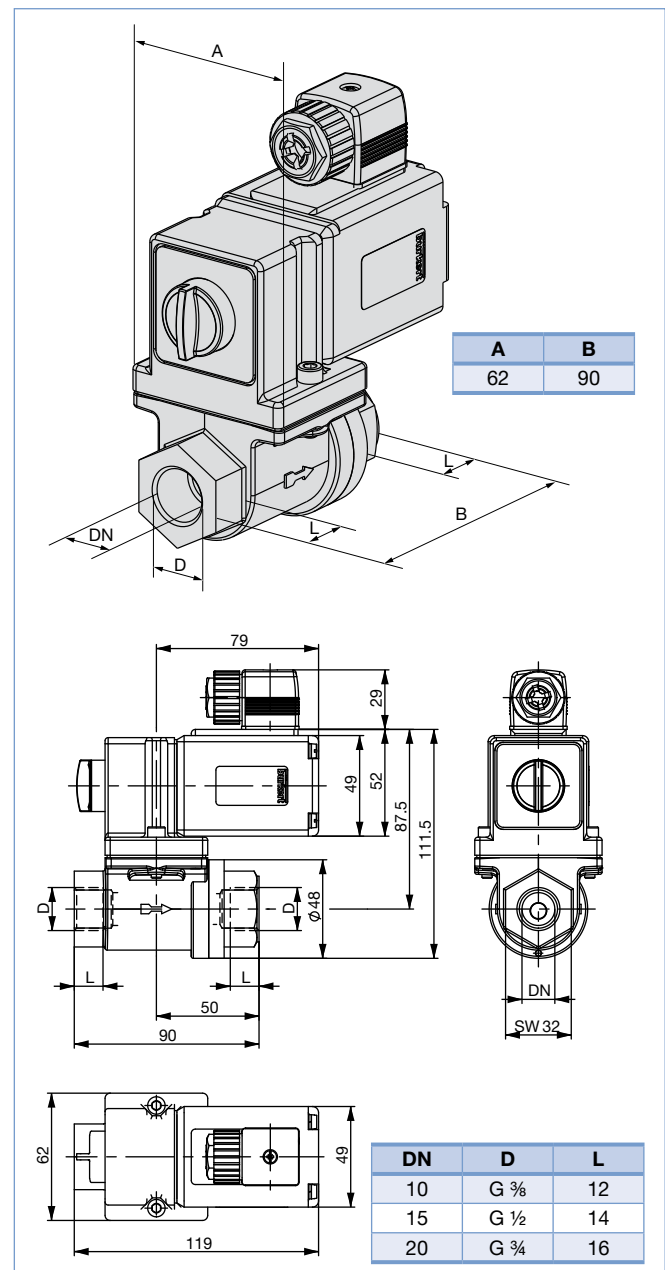


The direct-acting valve, Type 0131, is delivered with circuit function, normally closed or normally open. The solenoid actuator is separated from the medium by a double PTFE seal with a small ventilated space. The valve is used for shut-off, dosing, filling and ventilating medium where low pressures are applicable; also suitable for use in technical vacuum.

Technical data

Body material	Brass
Seal materials	NBR, FKM
Medium	
with NBR	Neutral liquids e.g. compressed air, water, hydraulic oil, oils and fats without additives, technical vacuum
with FKM	Hot air, per-solution, hot oil, oils with additives, technical Vacuum
Medium temperature	
with NBR	-10 °C...+90 °C
with FKM	-10 °C...+130 °C
Ambient temperature	Max. +50 °C
Viscosity	100...21 mm ² /s
Operating voltages	24 V/UC 230 V/50 Hz Other Voltages on request
Voltage tolerance	± 10 %
Cycling rate	Max. 6/min with UC
Duty cycle	ED 100 %
Electrical connection	Cable plug acc. to DIN EN 175301-803, Form A (included)
Protection class	IP65 with cable plug
Coil insulation class	H
Installation	As required, preferably with actuator upright
Response times [ms]	Measured at valve outlet at 6 bar and +20 °C. Opening: 10...20 Closing: 40...60 Pressure relief 0...90 % Pressure relief 100...10 %
Electrical power consumption	
Inrush	AC: 100 VA, UC: 100 W
Hold	AC: 48 VA (16 W), UC: 9 W

Dimensions [mm]



Ordering chart

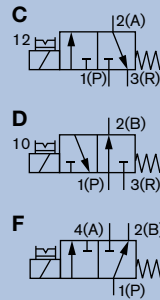
Circuit function	Orifice [mm]	Port connection	K _v value water [m ³ /h]	Pressure range [bar]	Seal material	Voltage/Frequency [V/Hz]	Article no.	
A 2/2 way direct-acting solenoid valve, normally closed	10	G 3/8	2	0...3	NBR	24/UC	057475	
						230/50	053059	
						FKM	24/UC	054053
							230/50	044502
					NBR	24/UC	054102	
						230/50	052221	
	15	G 1/2	4.5	0...1	NBR	24/UC	054102	
						230/50	052221	
						FKM	24/UC	025537
							230/50	040549
					NBR	24/UC	049751	
						230/50	048490	
20 ¹⁾	G 3/4	6	0...0.5	NBR	24/UC	049751		
					230/50	048490		
					FKM	24/UC	069752	
						230/50	048622	
				NBR	24/UC	059208		
					230/50	051685		
B 2/2 way direct-acting solenoid valve, normally open	10	G 3/8	2	0...2	NBR	24/UC	059208	
						230/50	051685	
					NBR	24/UC	058371	
						230/50	046466	
	FKM	230/50	046643					
		230/50	046643					
	20 ¹⁾	G 3/4	6	0...0.5	NBR	24/UC	050461	
						230/50	053807	
NBR					24/UC	050461		
					230/50	053807		

1) Versions with 20 mm nominal diameter are not suitable for vacuum

3/2 way Solenoid Valve for neutral medium

0131

- Direct acting
- With hermetic isolation of fluid
- With lockable manual override
- Universal functions
- Electrical feedback optional



The direct acting 3/2 way valve, Type 0131, is available in different circuit functions.

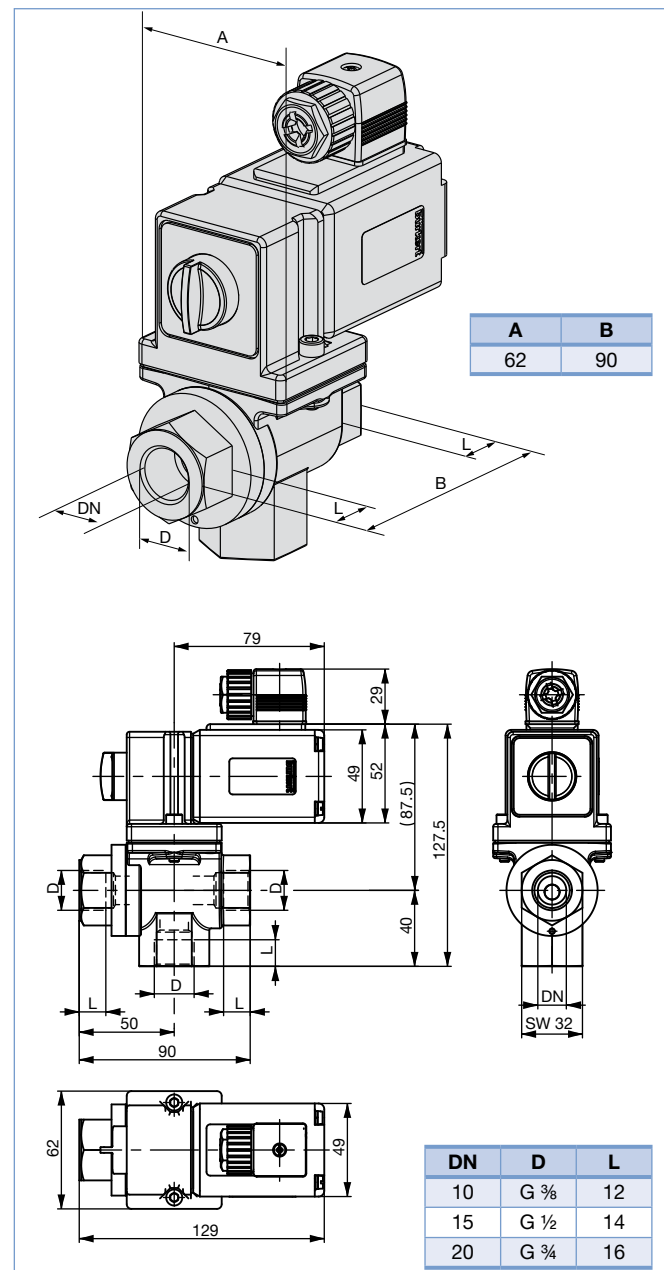
The solenoid actuator is separated by a double seal of PTFE with a ventilated clearance from Medium.

The valve is used for shut-off, dosing, filling, ventilating and distributing Medium with low pressures; also with technical Vacuum for DN10.

Technical data

Body material	Brass
Seal material	NBR (EPDM or FKM on request)
Medium	Neutral fluids such as e.g. compressed air, water, hydraulic oil, oils and fats without additives, technical vacuum
Medium temperature	-10 °C...+80 °C
Ambient temperature	Max +50 °C
Viscosity	100...15 mm ² /s
Operating voltage	24/230 V UC Other voltages on request
Voltage tolerance	± 10 %
Cycling rate	Max. 6/min with UC
Duty cycle	100 %
Electrical connection	Cable plug acc. to DIN EN 175301-803, Form A (included)
Protection class	IP65 with Cable Plug
Installation	As required, preferably with actuator upright
Response times [ms]	Measured at valve outlet with air at 6 bar and +20 °C
Opening	Pressure build-up 0...90 %, 10...20 ms
Closing	Pressure relief 100...10 %, 40...60 ms
Electrical power consumption	
Inrush	AC: 100 VA, UC: 100 W
Hold	AC: 48 VA (16 W), UC: 9 W

Dimensions [mm]



Ordering chart

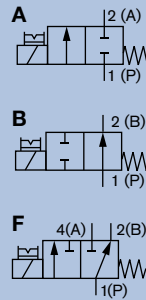
Circuit function	Orifice [mm]	Port connection	K _v value water [m ³ /h]	Pressure range [bar]	Voltage/frequency [V/Hz]	Article no.
All valves with manual override, brass body, NBR seal and cable plug						
C 3/2 way direct-acting solenoid valve, normally closed, with manual override	10	G 3/8	2	0...1	24/UC	048997
					230/UC	059302
	15 ¹⁾	G 1/2	4	0...0.5	24/UC	062737
					230/UC	062481
D 3/2 way direct-acting solenoid valve, normally open, with manual override	15 ¹⁾	G 1/2	4	0...0.5	24/UC	021964
F 3/2 way direct-acting, distribution solenoid valve, with manual override	10	G 3/8	2	0...1	24/UC	064025
					230/UC	062960
	15 ¹⁾	G 1/2	4	0...0.5	24/UC	058843
					230/UC	062124

1) Versions with orifice 15 mm are not suitable for vacuum

2/2 or 3/2 way PVC Solenoid Valve for aggressive Mediums

0131

- With hermetic isolation of fluid
- Insensitive to aggressive fluids
- Universal functions
- Lockable manual override as standard
- Simple installation and removal

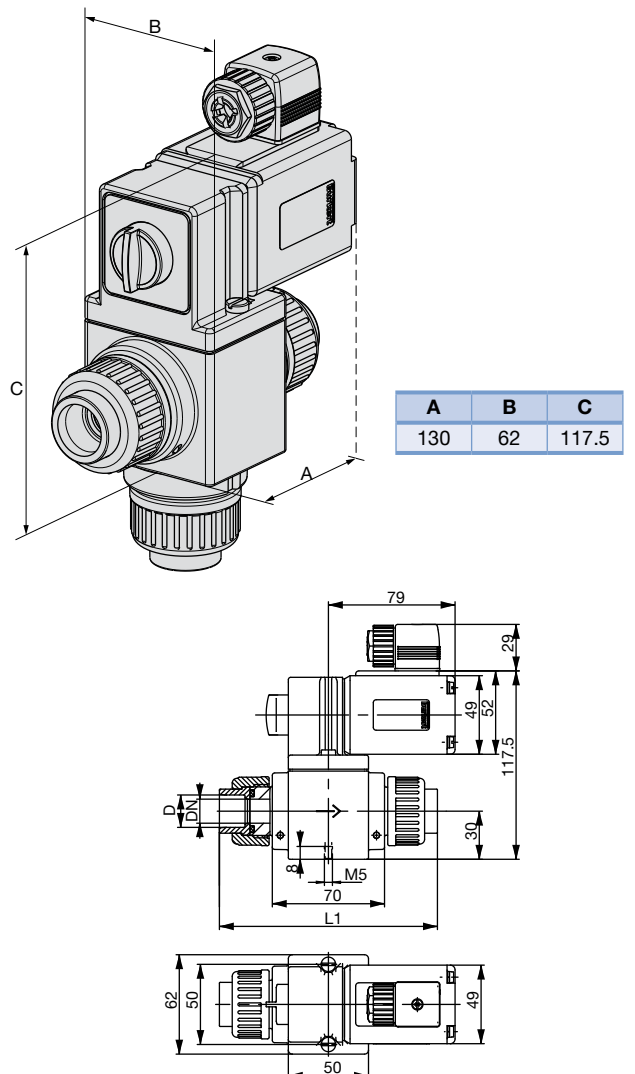


Type 0131 is a direct-acting 2/2- or 3/2 way solenoid valve with different circuit functions. The actuator is isolated from the fluid by a double seal made of PTFE. No fluid contact with metallic components.

Technical data

Orifice	DN10...DN20
Body material	PVC PVDF on request
Coil material	Epoxy
Coil isolation class	H
Seal material	EPDM, FKM
Medium	
EPDM	Alkalis, alkaline washing and bleaching lyes
FKM	Oxydizing acids and substances, salt solutions
Medium temperature	
Body + Seal (material combination)	
PVC/EPDM	-30 °C...+50 °C
PVC/FKM	-10 °C...+50 °C
Ambient temperature	Max. +50 °C
Viscosity	Max. 37 mm ² /s
Voltage tolerance	± 10 %
Cycling rate	ca. 100...150/min for AC Max. 6/min for UC
Duty cycle	100 % continuous rating
Electrical connection	Cable plug for Ø 7 mm cable, acc. to DIN EN 175301-803 Form A (supplied as standard)
Electrical power consumption	
Inrush	AC: 100...120 VA, UC: 100 W
Hold (hot coil)	AC: 32 VA (16 W), UC: 9 W
Protection class	IP65 with cable or cable plug
Installation	As required, preferably with actuator upright

Dimensions [mm]



A	B	C
130	62	117.5

DN	D (true union)	D (threaded)	L1
10	Ø 16.2	G 3/8 and G 1/2	130
15	Ø 20.2	G 1/2 and G 3/4	136
20	Ø 25.2	G 3/4	144

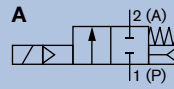
Ordering chart

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h]	Pressure range [bar]	Article no. per voltage/frequency [V/Hz]			
					230/UC	230/50	024/50	024/UC
Seal material EPDM								
A 2/2 way direct-acting solenoid valve, normally closed, with manual mode	G ½	10	2	0...3	-	056795 ☒	-	023759 ☒
	True union Ø 16 mm			0...3	-	050549 ☒	-	046949 ☒
	True union Ø 20 mm			0...3	-	056791 ☒	-	-
	G ½	15	4.5	0...1	-	054831 ☒	-	067832 ☒
	True union Ø 20 mm			0...1	168193 ☒	055423 ☒	051028 ☒	050809 ☒
	True union Ø 25 mm			0...0.5	-	051257 ☒	053992 ☒	045225 ☒
B 2/2 way direct-acting solenoid valve, normally open, with manual override	True union Ø 16 mm	10	2	0...2	-	017113 ☒	-	-
	True union Ø 25 mm	20	6	0...0.5	051748 ☒	-	-	-
F 3/2 way direct-acting, distribution solenoid valve, with manual override	True union Ø 16 mm	10	2	0...1	-	052546 ☒	064266 ☒	055770 ☒
	True union Ø 20 mm	15	4	0...0.5	-	052071 ☒	058279 ☒	049883 ☒
	True union Ø 25 mm	20	5	0...0.25	-	054564 ☒	040921 ☒	067076 ☒
Seal material FKM								
A 2/2 way direct-acting solenoid valve, normally closed, with manual mode	True union Ø 16 mm	10	2	0...3	-	050443 ☒	052953 ☒	047915 ☒
	True union Ø 20 mm			0...3	-	056789 ☒	055817 ☒	056060 ☒
	G ½	15	4.5	0...1	-	056663 ☒	-	047398 ☒
	True union Ø 20 mm			0...1	-	050787 ☒	051641 ☒	053882 ☒
	True union Ø 25 mm			0...0.5	-	051351 ☒	050551 ☒	056495 ☒
B 2/2 way direct-acting solenoid valve, normally open, with manual override	True union Ø 16 mm	10	2	0...2	-	053221 ☒	-	058361 ☒
F 3/2 way direct-acting, distribution solenoid valve, with manual override	G ¾	10	2	0...1	-	-	-	065194 ☒
	True union Ø 16 mm			0...1	-	052619 ☒	-	058362 ☒
	True union Ø 20 mm	15	4	0...0.5	-	050904 ☒	-	-
	True union Ø 25 mm			0...0.5	020687 ☒	-	-	-
	True union Ø 25 mm			0...0.25	-	066280 ☒	-	058363 ☒

2/2 way Solenoid Valve for aggressive media

0142

- Isolating diaphragm between the solenoid and fluid
- Non-metallic valve internals
- Pivoted armature, with lockable manual override
- Simple installation and removal



Servo-assisted solenoid valve with diaphragm, normally closed function. Hermetic isolation of fluid from the actuator. A minimum differential pressure of 0.5 bar is required to fully open the valve. Valves can be mounted or removed radially for a space-saving installation.

Technical Data

General data	
Orifice	DN15... D50
Body material	PVC, PVDF (on request)
Inner part valve	PVDF
Seal material	FKM, EPDM
Media	
with EPDM	Alkalis, alkaline washing and bleaching lyes
with FKM	Oxydizing acids and substances, salt solutions
Media temperature	
PVC-body	0 °C...+50 °C
PVDF-body	0 °C...+70 °C
Ambient temperature	
PVC-body	0 °C...+40 °C
PVDF-body	0 °C...+55 °C
Voltage tolerance	± 10 %
Duty cycle	100 % continuous rating
Electrical connection	Cable plug 2508 (will be replaced with Type 2518) for Ø 7 mm acc. to DIN EN 175301-803 Form A (supplied as standard)
Protection class	IP65 with cable plug
Coil insulation class	Class H
Port connection	True union
Installation	As required, preferably with actuator upright
Response times¹⁾	
Opening [ms]	100 ... 800
Closing [ms]	1000 ... 4000

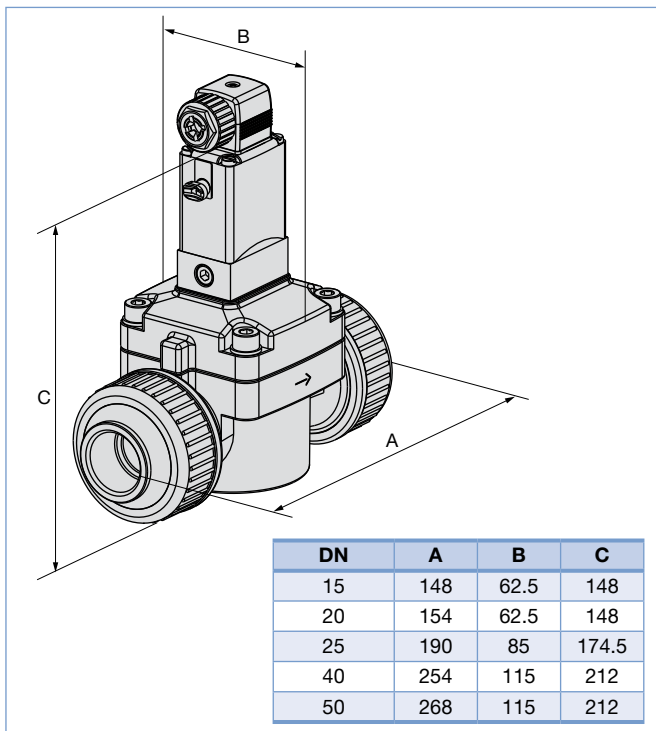
1) Measurement at the valve outlet 6 bar and +20 °C acc. to ISO 12238
Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

Power consumption			
Inrush		Hold (hot coil)	
AC [VA]	DC [W]	AC [VA/W]	DC [W]
20	5	11/5	5

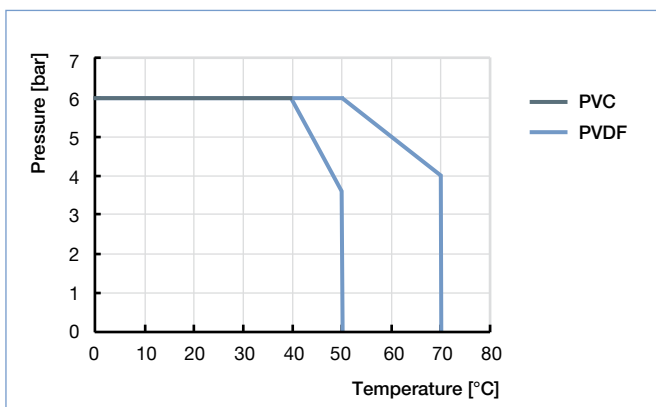
Options

- Further versions see data sheet or on request

Dimensions [mm]



Pressure Temperature chart for PVC and PVDF



Ordering Chart

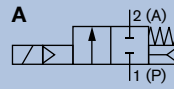
Circuit function	Port connection True union	Orifice (mm)	K _v value water [m³/h]	Pressure range [bar]	Body material	Article no. per voltage/frequency [V/Hz]	
						024/DC	230/50
A 2/2 way servo-controlled solenoid valve, normally closed	Seal material FKM						
	Ø 20	15	5	0.5...6	PVC	041938	041934
	Ø 25	20	6	0.5...6	PVC	042008	042005
	Ø 32	25	14	0.5...6	PVC	042079	042113
	Ø 40	32	16	0.5...6	PVC	042169	042133
	Ø 50	40	30	0.5...6	PVC	042198	042245
	Ø 63	50	36	0.5...6	PVC	042264	042262
	Seal material EPDM						
	Ø 20	15	5	0.5...6	PVC	041980	041911
	Ø 25	20	6	0.5...6	PVC	042045	041986
	Ø 32	25	14	0.5...6	PVC	042047	042126
	Ø 40	32	16	0.5...6	PVC	042183	042128
	Ø 50	40	30	0.5...6	PVC	042195	042247
	Ø 63	50	36	0.5...6	PVC	042266	042261

Note: Cable plug, see **Type 2508** ▶ (will be replaced with Type 2518)

Servo-assisted 2/2 way Diaphragm valve

0290

- Servo-assisted diaphragm with diameter of up to DN50
- Hard-coupled diaphragm opens without differential pressure
- Vibration-proof, block screwed coil system
- Damped design for quiet closing
- Energy-saving power reduction in all DC versions

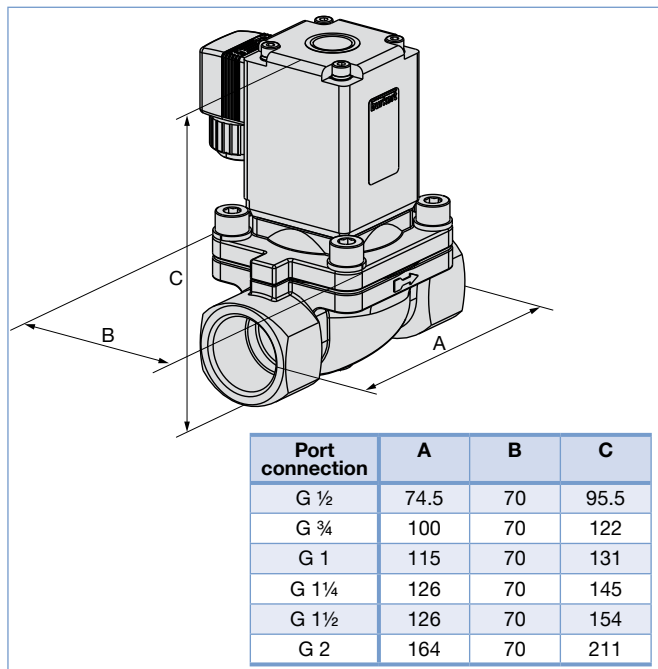


The 0290 valve is a servo-assisted solenoid valve of the S.EV series. The valve opens without differential pressure. The opening process is supported by the fixed coupling of the diaphragm to the plunger. In the process, the integrated 'soft-kick' function opens in a manner that is gentle on the material. Various diaphragm material combinations are available depending on the application. The housing offered is rounded out by a stainless steel and grey cast iron version. The solenoid coils are moulded with a chemically resistant epoxy. 'Kick and drop' electronics are moulded into all DC variants for reduced electrical power consumption. In combination with a plug in accordance with DIN EN 175301-803 Form A, the valves satisfy protection class IP65 – in combination with a stainless steel housing NEMA 4X.

Technical data

General data	
Orifice	DN12 ... DN50 mm
With approval acc. to DIN EN 161	DN12 ... DN25 mm
Body material	Brass, stainless steel 1.4581
Coil material	Epoxy
Coil insulation class	H
Internal parts of valve	Brass, stainless steel 1.4105, 1.4301
Seal material	NBR, FKM, EPDM
Media	
NBR	Neutral media, compressed air, water, hydraulic oil
FKM	Per-solutions, hot oils
EPDM	Oil and fat-free media e.g. hot water
NBR with approval acc. to DIN EN 161	Fuel gases of the 1st, 2nd and 3rd gas family
Media temperature¹⁾	
NBR	-10 °C...+80 °C
FKM	0 °C...+120 °C
EPDM	-30 °C...+120 °C
NBR with approval acc. to DIN EN 161	0 °C...+80 °C
Ambient temperature	
Max.	+55 °C
With approval acc. to DIN EN 161	0 °C...+55 °C
Voltage tolerance	±10 %
Duty cycle	100 % continuous cycle
Electrical connection	Cable plug 2508 (will be replaced with Type 2518) for Ø 7 mm cable, acc. to DIN EN 175301-803 Form A (supplied as standard)
Protection class	IP65 with cable plug
Installation	As required, preferably with actuator upright
Flow rate	Measured at +20 °C, 1 bar pressure at valve inlet and free outlet

Dimensions [mm]



Pressure values [bar] Overpressure to atmospheric pressure

1) Max. medium temperature for versions with high-performance electronics (encryption.../UC) is 90 °C.

Orifice [mm]	Power consumption				Response times ²⁾	
	Inrush AC [VA]	UC [W]	Hold AC [VA/W]	UC [W]	Opening [ms]	Closing [ms]
12	100	80	25/10	6	100	700
20	120	100	32/16	9	to 250	to 2000
25	120	100	32/16	9	300	700
32	120	100	32/16	9	to 1000	to 4000
40	120	100	32/16	9		
50	-	30	-	30		

2) Measurement at the valve outlet 6 bar and +20 °C
Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

Ordering chart

Circuit function	Port connection	Orifice	K _v value water [m ³ /h]	Pressure range [bar]	Diaphragm material	Article no. per voltage/frequency [V/Hz]				
						024/50	024/UC/DC ¹⁾	230/50	110/50	
Brass and stainless steel body, all valves with cable plugs										
A 2/2 way servo-controlled solenoid valve, normally closed	Brass body									
	G ½	12	1.8	0...16	NBR	043816	050294	044373	049500	
					FKM	048707	049229	042886	059240	
					EPDM	045931	049050	044816	049055	
	G ¾	20	6.5	0...16	NBR	058766	049518	045292	057127	
					FKM	053910	053674	049745	067973	
					EPDM	065033	058427	045290	069138	
	G 1	25	10.0	0...16	NBR	048171	053675	045293	053869	
					FKM	066270	066981	058627	067974	
					EPDM	054245	057155	045291	064887	
	G 1¼	32	16.0	0...12	NBR	085290	085291	052513	085292	
					FKM	120631	017457	087203	137478	
					EPDM	087204	072962	085259	073763	
	G 1½	40	16.0	0...12	NBR	085294	085295	085297	085296	
					FKM	228118	089619	087663	-	
					EPDM	073290	079629	087732	-	
	G 2	50	38.0	0...12	NBR	-	085299 ³⁾	085301 ²⁾	085300 ²⁾	
					EPDM	-	120104 ³⁾	077494 ²⁾	121308 ²⁾	
					FKM	-	120952 ³⁾	088551 ²⁾	-	
	Stainless steel body									
		G ½	12	1.8	0...16	NBR	043659	053595	043654	052358
						FKM	048708	049987	042888	058407
						EPDM	045765	048606	043553	049053
		G ¾	20	6.5	0...16	NBR	068338	018754	065121	-
						FKM	065362	066381	064701	066594
						EPDM	066460	059910	065025	025870
		G 1	25	10.0	0...16	NBR	068510	061974	065414	067696
						FKM	018121	065542	066125	069477
						EPDM	059890	018348	059901	054044
	Gas valve according to DIN EN 161, all valves with cable plugs						024/UC	230/50	230/UC	
A 2/2 way servo-controlled solenoid valve, normally closed	G ½	12	1.8	0...5	NBR	280855	266512	281001		
	G ¾	20	6.5			280877	266513	280878		
	G 1	25	10.0			280879	266515	280880		

1) The coil for UC power supply is provided with an integrated high power electronic. Please check sufficient power supply.

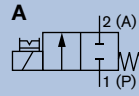
2) The valve is provided with a cable plug with integrated rectifier

3) Only DC

Pivot Operated 2/2 way Solenoid Valve in plastic

0330

- With separating diaphragm
- For aggressive media
- Also available for mounting on manifolds (Type 0331)
- Standard with lockable manual override



Direct-acting solenoid valve employing Bürkert's unique pivoted armature. A hermetic isolation is guaranteed against aggressive substances by the flexible diaphragm. Shown is the threaded version in precision moulded engineered polymer. The valve is also available in manifold mount as the Type 0331.

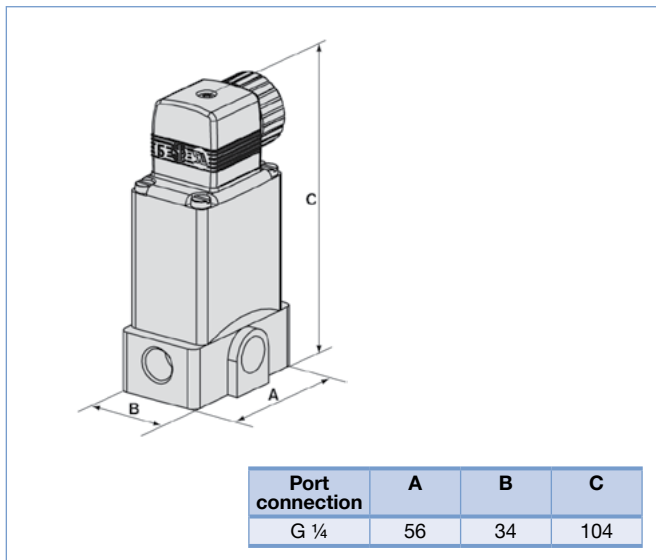
Technical data

General data	
Temperature media	-30 °C...+80 °C (EPDM) 0 °C...+80 °C (FKM)
Ambient temperature	+55 °C, max.
Voltage tolerance	± 10 %
Duty cycle	
Intermittent operation	40 % ED (30 min) with 8 W version
Continuous operation	100 % ED with 5 W version (on request)
Body material	PP or PVDF
Seal material	FKM or EPDM NBR and FFKM on request
Coil material	Epoxy (Class H)
Power consumption	DC: 8 W, AC: 30 VA (inrush), 15 VA (hold)
Protection class	IP65 with cable plug
Electrical connection	Cable plug 2508 (will be replaced with Type 2518) acc. to DIN EN 175301-803, Form A (included)

Orifice [mm]	Response times ¹⁾			
	AC Opening [ms]	AC Closing [ms]	DC Opening [ms]	DC Closing [ms]
2...4	8...15	8...15	10...20	10...20

¹⁾ Measurement at the valve outlet 6 bar and +20 °C
Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

Dimensions [mm]



Options

- 2/2 normally open
- 3/2 way version
- Electrical position indicator
- Impulse coil
- Flange version
- Vacuum version
- ATEX version
- International approvals
- 5 W coil
- Further versions see data sheet or on request

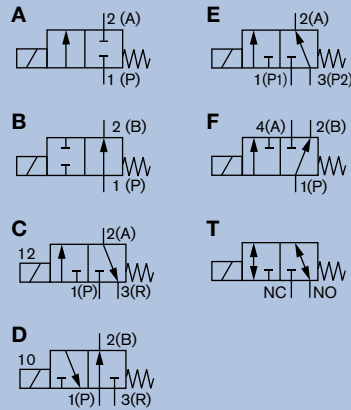
Ordering chart

Circuit function	Port connection	Orifice [mm]	K _v value [m ³ /h]	Pressure range [bar]		Seal material	Article no. voltage/frequency [V/Hz]		
				DC	AC		024 V DC	024 V AC	230 V AC
Normally closed (other versions on request)									
A 2/2 way direct-acting solenoid valve, normally closed, with manual mode	Polypropylene G ¼	3	0.25	0...8	0...10	EPDM	067214	022105	062398
						FKM	018410	088496	045653
		4	0.3	0...4	0...5	EPDM	021660	067731	063118
						FKM	062695	043005	063116
		5	0.4	0...3	0...4.5	EPDM	061321	054261	049969
						FKM	062624	067007	022619
	PVDF G ¼	3	0.25	0...8	0...10	EPDM	019224	122385	086873
						FKM	018188	020286	069006
		4	0.3	0...4	0...5	EPDM	057573	-	125507
						FKM	023472	069079	087837
		5	0.4	0...3	0...4.5	EPDM	120184	059802	130117
						FKM	064512	-	063786

Direct-acting 2/2 or 3/2 way pivoted armature valve

0330

- Direct-acting, media-separated valve with diameter of up to DN5
- Maintenance-free pivoted armature technology
- Vibration-proof, block screwed coil system
- Suitable for aggressive alkaline and acidic solutions
- Service-friendly, robust manual operation

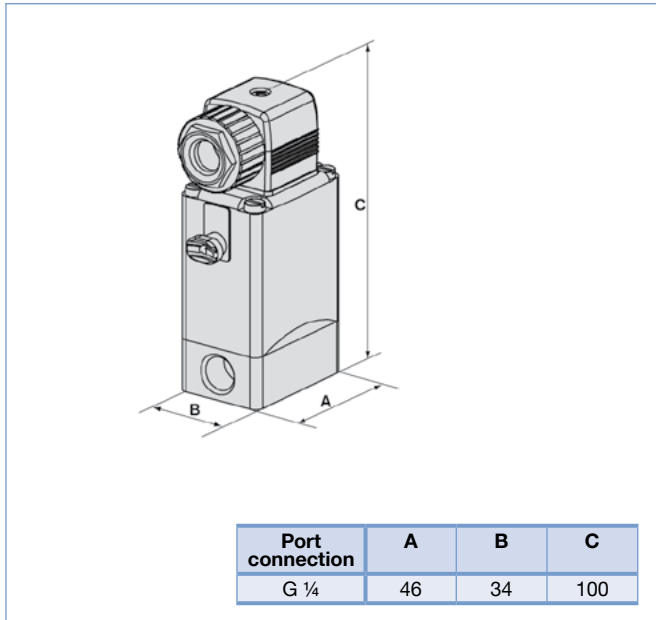


The 0330 valve is a direct-acting, media-separated pivoted armature valve. It is available in 3/2 and 2/2 way versions. As a 3/2 way version, it can be used as a distributor or mixing valve. Various diaphragm material combinations and methods of operation are available depending on the application. The standard brass housing satisfies all European drinking water requirements. Stainless steel (316), PVDF, and polypropylene housing versions complete the offering. The solenoid coils are moulded with a chemically resistant epoxy. The 0330 is equipped with manual override for commissioning and testing. For reduced energy requirements all coils can be delivered with electronic power reduction or as an impulse version. The switching status can be indicated with position feedback as a binary or NAMUR signal. In combination with a plug in accordance with DIN EN 175301-803 Form A, the valves satisfy protection class IP65/67 – in combination with a stainless steel or plastic housing NEMA 250 Cat. 4X.

Technical data

General data	
Available housing materials	Brass Stainless steel (1.4401) PP (Polypropylene) PVDF (Polyvinylfluoride)
Port connection	G 1/4 (NPT 1/4, Rc 1/4 and G 1/8 on request)
Seal material	EDPM / FKM / NBR (FFKM on request)
Medium	
NBR	Neutral medium such as compressed air, town gas, water, hydraulic oil, oils and fats without additives, oxygen
EPDM	Alkalis, acids to medium concentrations, alkaline washing and bleaching lyes
FKM	Oxydizing acids and substances, hot oils with additives, salt solutions, waste gases, oxygen
FFKM	Aggressive mediums, hot air, hot oils
All Materials	For more exact information please refer to our chemical resistance chart
Medium temperature	
for body material	NBR 0 °C...+80 °C
brass or stainless steel	EPDM -30 °C...+90 °C
steel	FKM 0 °C...+90 °C
	FFKM +5 °C...+90 °C
Medium temperature	
for body material	NBR 0 °C...+80 °C
PP or PVDF	EPDM -30 °C...+80 °C
	FKM 0 °C...+80 °C
	FFKM +5 °C...+80 °C
Viscosity	Max. 37 mm ² /s
Ambient temperature	Max. +55 °C

Dimensions [mm]



Voltages	24 V DC; 24 V 50 Hz; 230 V 50 Hz; (further voltages on request)
Voltage tolerance	± 10 %
Duty cycle for brass and stainless steel	100 %
Duty cycle for PP and PVDF	40 % ED (60 % intermittent operation) in 30 min for 8 W version 100 % ED for 5 W version (on request)
Electrical connection	Pin terminal acc. to DIN EN 175301-803 Form A for cable pug Type 2508 (will be replaced with Type 2518)/2509, included in delivery (also on request with moulded cable or terminal box)
Protection class	IP65 with Cable Plug
Coil insulation class	H
Installation	As required, preferably with actuator upright
Weight [kg]	
Metal body	0.47
Plastic housing	0.40

Technical data continued

Standard power consumption			Frequency DC		Response times ¹⁾				
Frequency AC			Frequency DC		Orifice	Frequency AC		Frequency DC	
Inrush [VA]	Hold [VA]	Operation [W]	Coldv [W]	Warm [W]	[mm]	Opening [ms]	Closing [ms]	Opening [ms]	Closing [ms]
30	15	8	11	8	2...4	8...15	8...15	10...20	10...20

1) Measurement at the valve outlet 6 bar and +20 °C
 Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

Ordering chart

Circuit function	Orifice [mm]	Seal Material	Housing or seat material	Article no. per voltage/frequency [V/Hz]		
				024/DC	024/50	230/50
2/2 way pivoted armature valve with connection thread G 1/4, manual override and cable plug Type 2508 (will be replaced with Type 2518)²⁾						
A 2/2 way direct-acting solenoid valve, normally closed	3	FKM	Brass	020293	022883	124909
	3	FKM	Stainless steel	020292	023984	024563
	3	FKM	PP	018410	088496	045653
	3	FKM	PVDF	018188	020286	069006
	3	NBR	Brass	020294	086553	024902
	3	EPDM	PP	067214	022105	062398
	4	FKM	Brass	024019	025246	124912
	4	FKM	Stainless steel	018276	018857	020873
	4	FKM	PP	062695	043005	063116
	4	FKM	PVDF	023472	069079	087837
	4	NBR	Brass	025084	-	046007
	4	EPDM	PP	021660	067731	063118
	4	EPDM	PVDF	057573	-	125507
	5	FKM	PP	062624	067007	022619
	5	FKM	PVDF	064512	-	063786
	5	EPDM	PP	061321	054261	049969
5	EPDM	PVDF	120184	059802	130117	
B 2/2 way direct-acting solenoid valve, normally open	3	FKM	Brass	141917	130146	141919
	4	FKM	Brass	141920	141921	141923
	3	FKM	Stainless steel	141928	141929	141931
	4	FKM	Stainless steel	141932	141933	141935

2) The listed ID numbers and circuit functions have a body with a straight channel

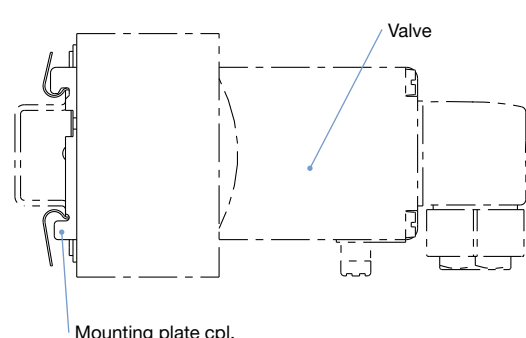
Ordering chart continued

0330

Circuit function	Orifice [mm]	Seal Material	Housing or seat material	Article no. per voltage/frequency [V/Hz]		
				024/DC	024/50	230/50
3/2 way pivoted armature valve with connection thread G 1/4, manual override and cable plug Type 2508 (will be replaced with Type 2518)						
C 3/2 way direct-acting solenoid valve, normally closed	2	NBR	Brass	041103	042129	041105
	3	NBR	Brass	041107	041108	041116
	3	FKM	Stainless steel	052344	045024	052059
	4	NBR	Brass	042218	042695	042329
	4	FKM	Stainless steel	050483	043324	050979
	4	FKM	PP	-	088420	-
	4	FKM	PVDF	055788	-	019078
	4	EPDM	PP	-	-	063625
D 3/2 way direct-acting solenoid valve, normally open	2	NBR	Brass	056984	041858	041137
	3	NBR	Brass	041139	041141	041147
	4	NBR	Brass	043129	042696	042903
E 3/2 way mixing solenoid valve	3	FKM	PP	069917	066230	022294
	3	EPDM	PP	078556	-	078559
	4	FKM	PP	061077	086921	053406
	4	FKM	PVDF	022340	020550	085599
	4	EPDM	PP	067160	044693	066033
F 3/2 way direct-acting, distribution solenoid valve	4	FKM	PP	020528	-	-
	4	EPDM	PP	-	-	066032
T 3/2 way direct-acting solenoid valve, flow direction optional	2	FKM	Brass	124922	138316	124925
	3	FKM	Brass	124927	124928	124930
	2	FKM	Stainless steel	124932	124933	124935
	3	FKM	Stainless steel	124937	124938	124940

Note: Further versions on request

Accessories

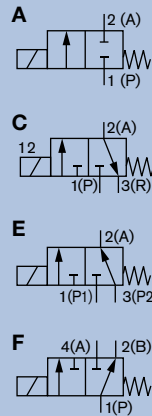


Description	Article no.
Mounting plate cpl. for DIN rail mounting	013253

2/2 or 3/2 way Pivoted Armature Solenoid Valve with Ex approval

0330 Ex

- Direct-acting with isolating diaphragm
- With lockable manual override
- For liquid, gaseous and aggressive media
- For slightly contaminated fluids
- Long service life, even in non-lube conditions

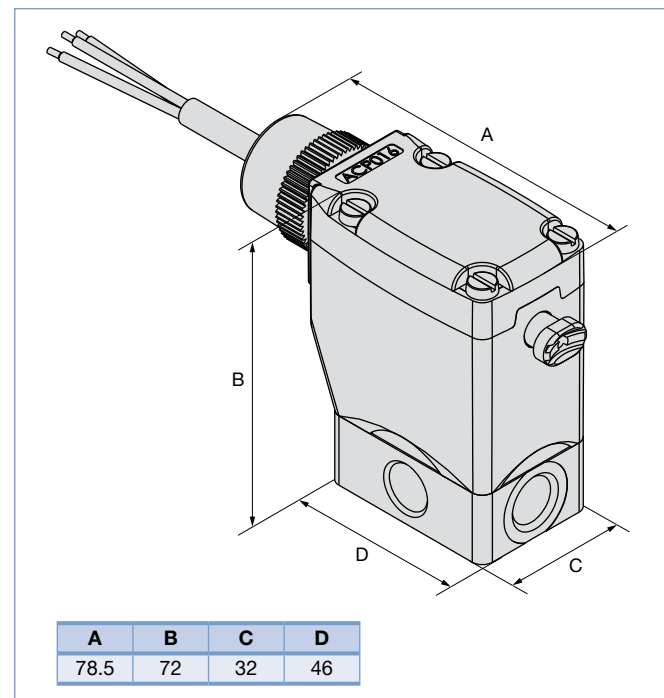


Type 0330 Ex is a direct-acting 2/2 or 3/2 way pivoted armature solenoid valve with Ex approval and high service life, even when run dry. It is suitable for neutral, abrasive and lightly contaminating media, with a stainless steel body for aggressive media.

Technical data

Orifice	DN3,0 and DN4,0	
Available body materials	Brass, stainless steel (1.4401), PP (Polypropylene), PVDF (Polyvinylfluoride)	
Seal materials	EDPM / FKM / FFKM / NBR	
Medium		
with NBR	Neutral medium such as compressed air, town gas, water, hydraulic oil, oils and fats without additives, oxygen	
with EPDM	Alkalis, acids to medium concentrations, alkaline washing and bleaching lyes	
with FKM	Oxydizing acids and substances, hot oils with additives, salt solutions, waste gases, oxygen	
with FFKM	Aggressive mediums, hot air, hot oils	
Medium temperature		
for body material	NBR	0 °C...+80 °C
brass or stainless steel	EPDM	-30 °C...+90 °C
	FKM	0 °C...+90 °C
	FFKM	+5 °C...+90 °C
Medium temperature		
for body material	NBR	0 °C...+80 °C
PP or PVDF	EPDM	-30 °C...+80 °C
	FKM	0 °C...+80 °C
	FFKM	+5 °C...+80 °C
Ambient temperature	Max. +55 °C	
Viscosity	Max. 37 mm ² /s	
Operating voltage	24 V, 230 V (further voltages on request)	
Voltage tolerance	± 10 %	
Frequency	AC/DC	
Cycle rate 1	Max. 20/min	
at medium temp. and at ambient temp.	to +70 °C to +40 °C	
Cycle rate 2	Max. 5/min	
at medium temp. and at ambient temp.	to +90 °C to +40 °C	
Duty cycle	100 %	
Electrical connection	Terminal box without safety fuse Moulded cable (For more detailed information, refer to the instruction manual ACP016, chapter 7.6.1) on request	
Power consumption	UC: 40 VA (inrush), 3 W (hold)	
Response times	Measured at valve outlet at 6 bar and +20 °C.	
Opening	Pressure relief 0...90 %, 30 ms	
Closing	Pressure relief 100...10 %, 40 ms	

Dimensions [mm]



Protection class	IP65
Ignition protection class	II 2 G Ex mb IIC T4 Gb II 2 D EX mb IIIC T130° Db
Certificate	EPS 16 ATEX 1 111 X IECEX EPS 16.0049X
Installation	As required, preferably with actuator upright

Options

- Further versions see data sheet or on request

Ordering chart

Circuit function	Orifice [mm]	Seal Material	Housing or seat material	Electrical connection	Article no. per voltage/frequency [V/Hz]	
					024/UC	230/UC
All devices with connection thread G ¼ and manual override						
A 2/2 way direct-acting solenoid valve, normally closed	3	NBR	MS	Terminal box	306165	306167
	3	NBR	MS	Cable	306005	306006
	3	FKM	Stainless steel	Terminal box	306168	306169
	3	FKM	Stainless steel	Cable	306007	306008
C 3/2 way direct-acting solenoid valve, normally closed	3	NBR	MS	Terminal box	304531	306149
	3	NBR	MS	Cable	305982	305985
	3	FKM	Stainless steel	Terminal box	306154	306164
	3	FKM	Stainless steel	Cable	306003	306004
E 3/2 way mixing solenoid valve	3	FKM	Stainless steel	Terminal box	306171	306157
	3	FKM	Stainless steel	Cable	306009	306010
F 3/2 way direct-acting, distribution solenoid valve	3	FKM	Stainless steel	Terminal box	306198	306172
	3	FKM	Stainless steel	Cable	306011	306012
	4	FKM	Stainless steel	Terminal box	306151	-
	4	FKM	Stainless steel	Cable	306050	-

Note: Further versions on request

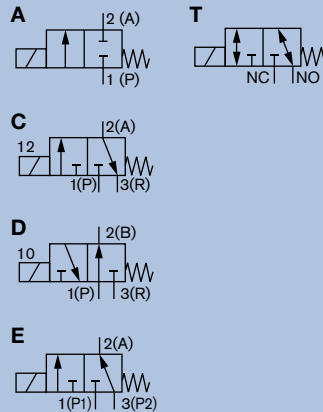
Accessories

Description	Ex Approvals		Article no
	Certification	Identification	
Ex-Cable glands (polyamide version included in delivery / surcharge applied for brass nickel plated version)			
Brass, nickelplated, 6...13 mm	IECEX PTB 13.0027X, PTB 04 ATEX 1112 X	II 2 D Ex tb IIIC Db IP68, II 2 G Ex e IIC Gb	773278
Polyamide, 7...13 mm	PTB 13 ATEX 1015 X, IECEX PTB 13.0034X	II 2 G Ex e IIC Gb, II 2 D Ex tb IIIC Db IP68	773277
Description			Article no
Special tool to turn the junction box (not included in delivery)			
Set SC02-AC10 Special wrench, service manual			293488

Direct-acting 2/2 or 3/2 way pivoted armature valve

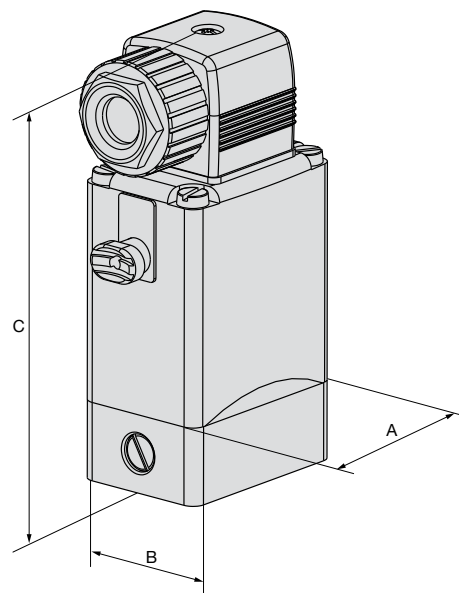
0331
Flange

- Direct-acting, media-separated valve with diameter of up to DN4
- Pilot valve with Bürkert-specific flange design (SFB)
- Maintenance-free pivoted armature technology
- Suitable for aggressive alkaline and acidic solutions
- Service-friendly, robust manual override



The 0331 valve is a direct-acting, media-separated pivoted armature valve. It is available in 3/2 and 2/2 way versions. As a 3/2 way version, it can be used as a distributor or mixing valve. Various diaphragm material combinations and methods of operation are available depending on the application. The standard brass housing satisfies all European drinking water requirements. Stainless steel (316L), PVDF, and polypropylene housing versions complete the offering. The solenoid coils are moulded with a chemically resistant epoxy. The 0331 is equipped with manual override for commissioning and testing. For reduced energy requirements all coils can be delivered with electronic power reduction or as an impulse version. The switching status can be indicated with position feedback as a binary or NAMUR signal. In combination with a plug in accordance with DIN EN 175301-803 Form A, the valves satisfy protection class IP65/67 – in combination with a stainless steel or plastic housing NEMA 4X.

Dimensions [mm]



Version	A	B	C
Metal body	46	34	100.2
Plastic body	46	34	101

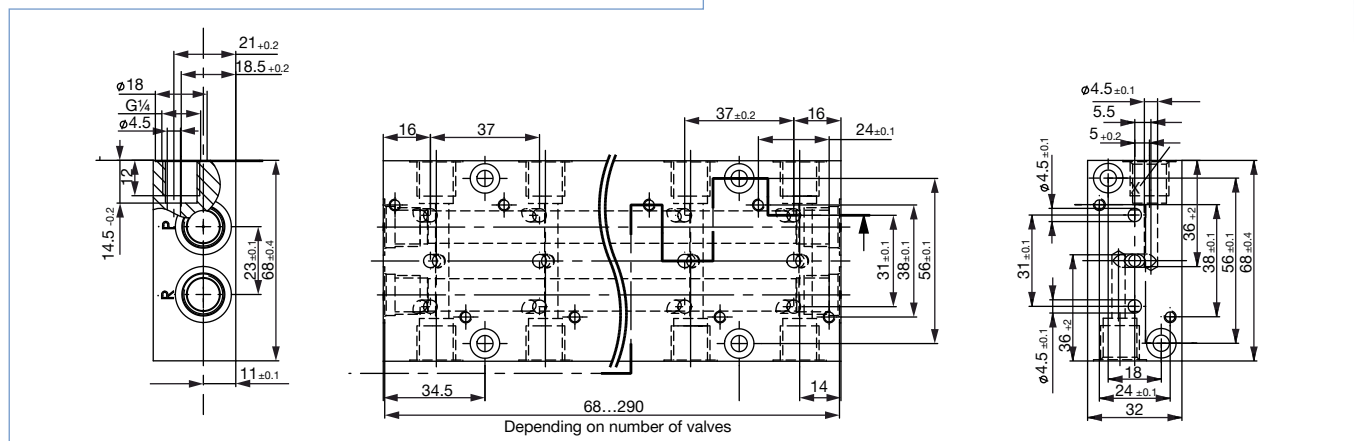
Technical data

General data

Available body material Brass
 Stainless steel (1.4401)
 PP (Polypropylene)
 PVDF (Polyvinyl fluoride)
 PEEK (on request)

Port connection Flange interface acc. to Bürkert standard

Manifolds



Technical data continued

Medium data	
for NBR	Neutral mediums such as compressed air, town gas, water, hydraulic oil, oils and greases without additives, oxygen
for EPDM	Alkalis, acids to medium concentrations, alkaline washing and bleaching lyes
for FKM	Oxidizing acids and substances, hot oils with additives, salt solutions, waste gases, oxygen
for FFKM	Aggressive mediums, hot air, hot oils
All materials	For more detailed information please refer to our compatibility chart
Medium temperature for body material	NBR 0 °C...+80 °C
Brass, Stainless Steel or PEEK	EPDM -30 °C...+90 °C
	FKM 0 °C...+90 °C
	FFKM +5 °C...+90 °C
Medium temperature for body material	NBR 0 °C...+80 °C
PP or PVDF	EPDM -30 °C...+80 °C
	FKM 0 °C...+80 °C
	FFKM +5 °C...+80 °C
Viscosity	Max. 37 mm ² /s
Ambient temperature	Max. +55 °C

Operating voltage	24 V 50 Hz; 110 V 50 Hz; 230 V 50 Hz 12 V DC; 24 V DC; (further voltages on request)
Voltage tolerance	+/-10 %
Duty cycle for brass and stainless steel	100 %
Duty cycle for	
PP	40 % ED (60 % intermittent operation) in 30 min for 8 W version
PVDF	100 % ED for 5 W version
PEEK	60 % ED (40 % intermittent operation) in 30 min for 8 W version
Electrical connection	Tag connector acc. to DIN EN 175301-803 Form A for cable plug Type 2508 (will be replaced with Type 2518)/2509 (on request also with moulded cable or terminal box)
Protection class	IP65 with cable plug
Coil thermal isolation class	H
Installation	As required, preferably with actuator upright
Weight [kg]	
Metal body	0.47
Plastic body	0.40

Ordering chart

Circuit function	Orifice [mm]	Seal Material	Body and seat material	Article no. per voltage/frequency [V/Hz]			
				024/DC	024/50	110/50	230/50
All devices with manual override and cable plug Type 2508 (will be replaced with Type 2518)							
A 2/2 way direct-acting solenoid valve, normally closed	4	FKM	Polypropylene	088352	-	-	020278
C 3/2 way direct-acting solenoid valve, normally closed	2	NBR	Brass	041183	041184	044989	041188
	2	FKM	Stainless steel	048354	-	-	-
	2	EPDM	PVDF	-	-	-	130301
	3	NBR	Brass	041195	041198	041203	041209
	3	FKM	Stainless steel	045796	-	-	-
D 3/2 way direct-acting solenoid valve, normally open	2	NBR	Brass	041234	041235	041798	041242
	2	EPDM	PVDF	079663	-	-	-
	2	FKM	PVDF	-	-	-	078859
	3	NBR	Brass	041247	041248	041531	041254
E 3/2 way mixing solenoid valve	2	NBR	Brass	042061	042799	040064	041265
	3	NBR	Brass	042980	043104	046843	041270
	3	EPDM	Polypropylene	021892	-	-	-
T 3/2 way direct-acting solenoid valve, flow direction optional	2	FKM	Brass	124953	124954	124955	124956
	3	FKM	Brass	124958	124959	124960	124961



Ordering chart for flange valve manifolds and accessories

0331
Flange

Number of valve positions [mm]	Length A	Hole spacing B [mm]	Material, aluminum anodized	Article no.	
				Material, stainless steel	Material, brass
Manifolds (the plates connecting thread is G ¼)					
1	32	–	005043	on request	on request
2	69	–	005045	on request	612071
3	106	37	005366	on request	on request
4	143	74	005294	658925	006324
5	180	111	005295	on request	on request
6	217	148	005296	on request	006326
7	254	185	005403	on request	on request
8	291	222	006074	on request	–

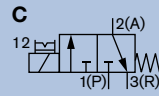
Accessories

Manifolds	Material	Seal material	Article no.
Covering plate (for empty valve places)	Stainless steel	FKM	265294
Covering plate (for empty valve places)	Aluminium anodized	NBR	005625
Nipple (for connecting the collecting ducts of 2 manifolds)	Steel lined	FKM	005049
Nipple (for connecting the collecting ducts of 2 manifolds)	Stainless steel	FKM	007376
Nipple (for connecting the manifolds; connecting duct is closed)	Steel lined	NBR	006049

3/2 way Solenoid Valve with banjo coupler and bolt for direct mounting to pneumatic actuators

0331 P

- Robust pivot operated solenoid valve with manual override
- Direct and quick mounting on process valves
- Fast-acting
- For neutral gases and compressed air
- Long service life, even in non-lube conditions



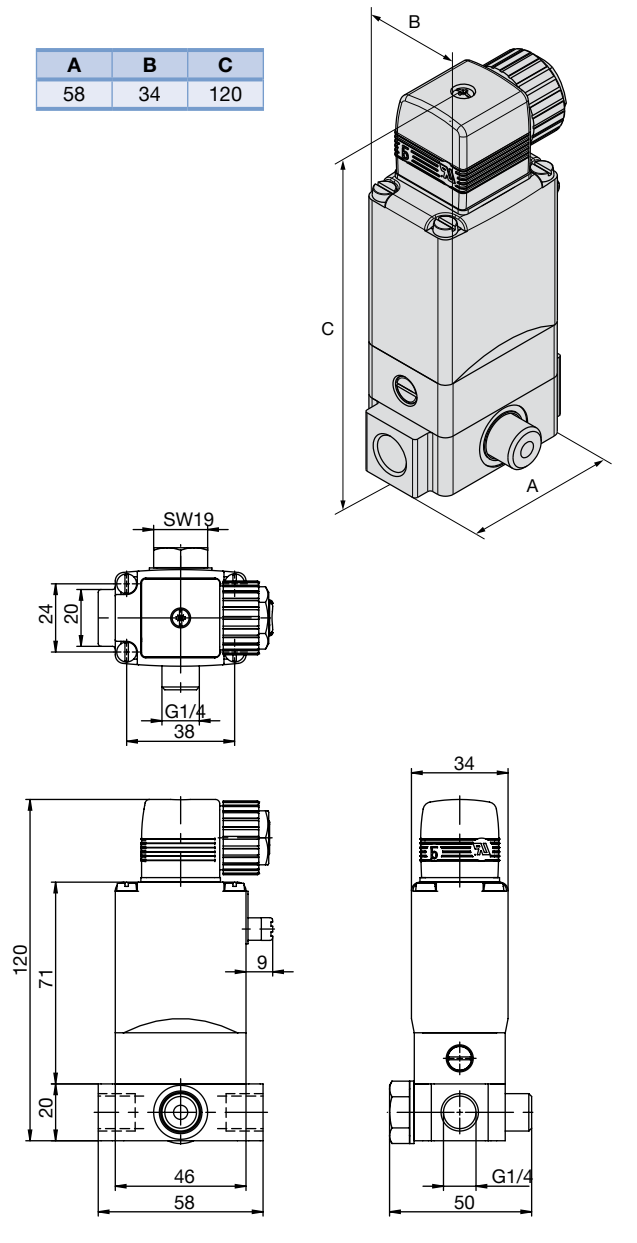
In Type 0331 P the magnetic system and the Medium chamber are separated from one another by a separating diaphragm system. The valve is fast acting and has a long service life, even when run dry.

Technical data

General data			
Orifice	DN2.0...DN3.0		
Body and seat materials	Brass		
Coil material	Epoxy		
Coil insulation class	H		
Seal material	NBR, FKM, EPDM		
Medium			
NBR	Neutral Medium such as compressed air, water, hydraulic oil		
FKM	Hot air		
EPDM (on request)	Oil and fat-free Medium		
Medium temperature			
NBR	0 °C...+80 °C		
FKM	0 °C...+90 °C		
EPDM	-30 °C...+90 °C		
Ambient temperature			
Max. +55 °C (min. temperature see Medium temperature)			
Viscosity	Max. 37 mm ² /s		
Voltage tolerance	± 10 %		
Duty cycle	100 % continuous rating		
Electrical connection	Tag connector acc. to DIN EN 175301-803 Form A (previously DIN 43650) for cable plug Type 2508 (will be replaced with Type 2518) (supplied as standard)		
Protection class	IP65 with cable plug		
Installation	A s required, preferably with actuator upright		
Response times¹⁾			
AC opening/closing	8...15 ms		
DC opening/closing	10...20 ms		
1) Measurement at the valve outlet 6 bar and +20 °C Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %			
Power consumption			
Inrush		Hold (hot coil)	
AC [VA]	DC [W]	AC [VA/W]	DC [W]
30	8	15/8	8

Dimensions [mm]

A	B	C
58	34	120



Ordering chart

Circuit function	Port connection	Orifice [mm]	Pressure range [bar] ¹⁾	Seal Material	Body and seat material	Article no. per voltage/frequency [V/Hz]			
						024/DC	024/50	110/50	230/50
All devices with manual override and manifold (banjo version)									
C	G ¼	02.0	0...16	NBR	Brass	041191	-	-	041192
3/2 way	G ¼	03.0	0...10	NBR	Brass	041217	041219	041223	041228
direct-acting solenoid valve, normally closed, with manual override	G ¼	03.0	0...10	FKM	Brass	041231	-	-	041233

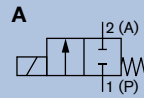
1) Please be aware that the above valves cannot be used for vacuum

Note: Cable plug, see **Type 2508** ▶ (will be replaced with Type 2518)

2/2 way Solenoid Valve for low and high temperatures

2610

- Medium separation
- Metal bellow system in stainless steel
- High quality PTFE seat seal
- Medium temperature -200 °C to +180 °C
- Energy saving „Kick and Drop” electronic

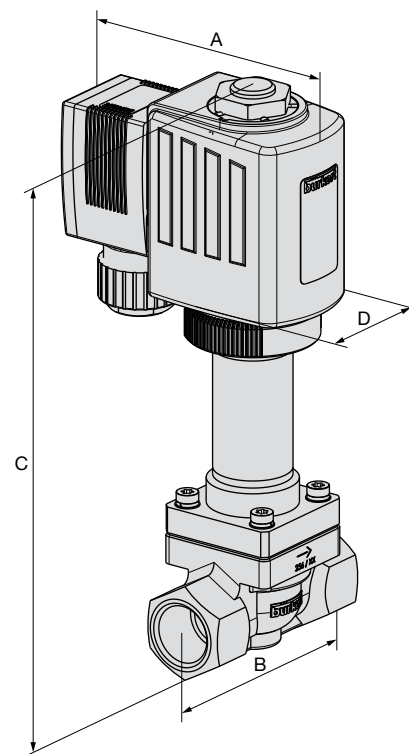


The direct-acting valve, Type 2610, is delivered with a normally closed circuit function. The thermal isolation of the coil and housing by means of stainless steel bellows allows the extreme medium temperature. In this way condensation or an unacceptable heating up of the coil is avoided. The supplied cable head contains a „kick and drop” electronic that supports the opening phase and afterwards reduction of the opening holding power.

Technical data

Body material	Brass with stainless steel seat 1.4581 Stainless steel body and stainless steel seat 1.4581
Metal bellows	Stainless steel 1.4541
Seal material	PTFE
Medium	Neutral gases and liquids
Medium temperature	-200 °C...+180 °C
Ambient temperature	Max. +50 °C
Viscosity	Approx. 21 mm ² /s
Operating voltages	24/110 V UC 220...230 V UC
Voltage tolerance	Max. ±10 %
Cycling rate	10/min
Power consumption	Kick and Drop electronic 72/4 W
Duty cycle	Continuous operation 100 % ED
Electrical connection	Cable plug acc. to DIN EN 175301-803, Type 2508 (will be replaced with Type 2518), for Ø 7 mm cable (included in delivery)
Protection class	IP65 with cable plug
Installation position	As required, preferably with actuator upright
Weight	1.1 kg
Response times	Measured at valve outlet at 6 bar and +20 °C
Opening	100...200 ms, pressure relief 0...90 %
Closing	300...500 ms, pressure relief 100...10 %

Dimensions [mm]

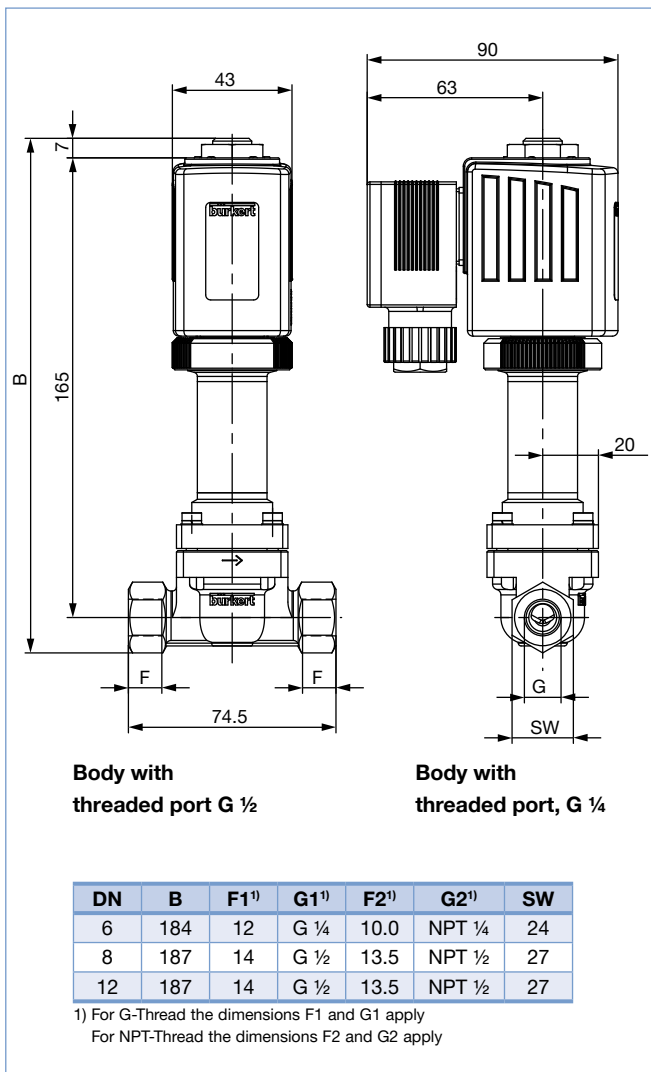


DN	A	B	C	D
6	90	74.5	184	43
8	90	74.5	187	43
12	90	74.5	187	43

Options

- Further versions see data sheet or on request

Dimensions [mm]



Ordering chart

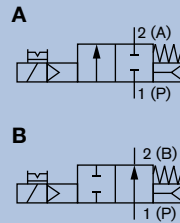
Circuit function	Orifice [mm]	Port connection	K _v value [m ³ /h]	Pressure range [bar]	Voltage/frequency V/Hz	Article no.
A 2/2 way solenoid valve, direct-acting, normally closed	6	G ¼	0.8	0...10	024/UC	167737
	6	G ¼	0.8	0...10	230/UC	167739
	8	G ½	0.9	0...10	024/UC	167740
	8	G ½	0.9	0...10	230/UC	167742
	12	G ½	1.8	0...3.5	024/UC	167743
	12	G ½	1.8	0...3.5	230/UC	167745

Note: Cable plug, see **Type 2508** ► (will be replaced with Type 2518)

Servo-assisted 2/2 way valve diaphragm valve

5282

- Servo-assisted diaphragm valve with diameter of up to DN65
- Separating diaphragm for aggressive and contaminated media
- Closing and opening times can be individually adjusted
- Explosion proof version (Cat.2)
- Service-friendly manual override

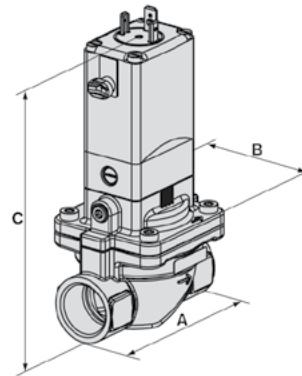


The 5282 valve is a servo-assisted diaphragm valve. A minimum differential pressure is required for the valve to function. Various diaphragm material combinations and methods of operation are available depending on the application. The standard brass housing satisfies all European drinking water requirements. The housing offering is completed with stainless steel and grey cast iron versions. The 3/2 way pilot valve can be easily converted from NC to NO functioning principle by rotating it on the armature. The solenoid coils are moulded with a chemically resistant epoxy. The 5282 is equipped with manual override for commissioning and testing. In combination with a plug in accordance with DIN EN 175301-803 Form A and stainless steel housing the valves satisfy protection class NEMA 4X.

Technical data

Orifice	DN13...DN65
Body material	
Threaded port	Brass acc. to DIN EN 50930-6 Stainless steel 1.4581
Flange	Stainless steel 1.4541, cast iron on request
Coil encapsulation material	Epoxy
Coil insulation class	H
Seal material	NBR, EPDM, FKM
Medium	
NBR	Neutral fluid, such as compressed air, water, hydraulic oil,
EPDM	Oil and fat-free fluid, e.g. alkaline solutions, hot water
FKM	Hot air, peracetic acid, hot oil
Medium temperature	
NBR	0 °C...+80 °C
EPDM	-25 °C...+90 °C
FKM	0 °C...+90 °C
Ambient temperature	Max. +55 °C
Voltage tolerance	±10 %
Duty cycle	100 % continuous rating
Electrical connection	
Standard	Cable plug 2508 (will be replaced with Type 2518) acc. DIN EN 175301-803 Form A (not included)
EX	With moulded-in cable 3 m long, 3 × 0.75 mm ² With terminal box
Protection class	IP65 with cable plug acc. to DIN EN 175301-803 Form A NEMA 4X units with stainless steel housing IP65 with cable or terminal box

Dimensions [mm]



DN	Port connection	A	B	C
13	G ½	65	40	123
20	G ¾	100	60	131
25	G 1	115	70	142
32	G 1¼	126	85	147
40	G 1½	126	85	156
50	G 2	164	115	177.5
65	G 2½	180	115	185

Ignition protection class (ATEX and IECEx version)

With cable	II 2G Ex mb IIC Gb II 2D Ex mb IIIC T130 °C Db
With terminal box	II 2G Ex eb mb IIC T4 Gb II 2D Ex mb tb IIIC T130 °C Db

Installation As required, preferably connected upright

Options

- Further versions see data sheet or on request

Ordering chart

Circuit function	Port connection	Orifice [mm]	K _v value water ¹⁾ [m ³ /h]	Nominal pressure ²⁾ [bar]	Weight [kg]	Article no. per voltage/frequency [V/Hz]		
						024/DC	024/50...60	230/50...60
Brass body, threaded port, with manual override, without cable plug								
A 2/2 way servo-controlled solenoid valve, normally closed, with manual override	Brass body, threaded port, seal material NBR							
	G ½	13	4	0.2...10	0.95	134430	134431	134433
	G ¾	20	6.5	0.2...10	1.4	134434	134435	134437
B 2/2 way servo-controlled solenoid valve, normally open, with manual override	G 1	25	10	0.2...10	1.85	134438	134439	134441
	G 1¼	32	20	0.2...10	2.6	134442	134443	134445
	G 1½	40	20	0.2...10	3.05	134446	134447	134449
	G 2	50	40	0.2...10	5.15	134450	134451	134453
	G 2½	65	40	0.2...10	5.9	134454	134455	134457
	Brass body, threaded port, seal material EPDM							
	G ½	13	4	0.2...10	0.95	134458	134459	134461
G ¾	20	6.5	0.2...10	1.4	134462	134463	134465	
G 1	25	10	0.2...10	1.85	134466	134467	134469	
G 1¼	32	20	0.2...10	2.6	134470	134471	134473	
G 1½	40	20	0.2...10	3.05	134474	134475	134477	
G 2	50	40	0.2...10	5.15	134478	134479	134481	
G 2½	65	40	0.2...10	5.9	134482	134483	134485	
Brass body, threaded port, seal material FKM								
G ½	13	4	0.2...10	0.95	134486	134487	134489	
G ¾	20	6.5	0.2...10	1.4	134490	134491	134493	
G 1	25	10	0.2...10	1.85	134494	134495	134497	
G 1¼	32	20	0.2...10	2.6	134498	134499	134501	
G 1½	40	20	0.2...10	3.05	134502	134503	134505	
G 2	50	40	0.2...10	5.15	134506	134507	134509	
G 2½	65	40	0.2...10	5.9	134510	134511	134513	

1) Measured at +20 °C, 1 bar pressure at valve inlet and free outlet, a differential pressure of 0.5 bar is required to open the full orifice.

2) Pressure values [bar]: Overpressure to the atmospheric pressure

Note: Cable plug, see **Type 2508** ▶ (will be replaced with Type 2518)

Delivered as circuit function A. Change to circuit function B by turning the pilot drive by 180° (only for 10 bar version).

Ordering chart continued

Circuit function	Port connection	Orifice [mm]	K _v value water ¹⁾ [m ³ /h]	Nominal pressure ²⁾ [bar]	Weight [kg]	Article no. per voltage/frequency [V/Hz]			
						024/DC	024/50...60	230/50...60	
Stainless steel body, threaded port or flange, with manual override, without cable plug									
5282 A 2/2 way servo-controlled solenoid valve, normally closed, with manual override	Stainless steel, threaded port, seal material NBR								
	G ½	13	4	0.2...10	0.91	281976	281979	281981	
	G ¾	20	6.5	0.2...10	1.4	137142	137143	137145	
	G 1	25	10	0.2...10	1.8	137146	137147	137149	
	B 2/2 way servo-controlled solenoid valve, normally open, with manual override	G 1¼	32	20	0.2...10	2.25	137150	137151	137153
		G 1½	40	20	0.2...10	2.7	137154	137155	137157
		G 2	50	40	0.2...10	4.8	137158	137159	137161
	Stainless steel, threaded port, seal material FKM								
	G ½	13	4	0.2...10	0.91	220291	220292	220294	
	G ¾	20	6.5	0.2...10	1.4	134518	134519	134521	
	G 1	25	10	0.2...10	1.8	134522	134523	134525	
	G 1¼	32	20	0.2...10	2.25	134526	134527	134529	
G 1½	40	20	0.2...10	2.7	134530	134531	134533		
G 2	50	40	0.2...10	4.8	134534	134535	134537		
Stainless steel, threaded port, seal material EPDM									
G ½	13	4	0.2...10	0.91	220297	220298	220300		
G ¾	20	6.5	0.2...10	1.4	145709	on request	141714		
G 1	25	10	0.2...10	1.8	141078	93909807	146160		
G 1¼	32	20	0.2...10	2.25	438559	on request	147803		
G 1½	40	20	0.2...10	2.7	141667	on request	139823		
G 2	50	40	0.2...10	4.8	141075	on request	146530		
Stainless steel flange acc. DIN EN 1092-1 with FKM									
Flange	25	10	0.2...10	3.65	134554	134555	134557		
Flange	32	20	0.2...10	6.45	134558	134559	134561		
Flange	40	20	0.2...10	7.05	134562	134563	134565		
Flange	50	40	0.2...10	10.5	134566	134567	134569		
Stainless steel flange acc. DIN EN 1092-1 with EPDM									
Flange	25	10	0.2...10	3.65	134570	134571	134573		
Flange	32	20	0.2...10	6.45	134574	134575	134577		
Flange	40	20	0.2...10	7.05	134578	134579	134581		
Flange	50	40	0.2...10	10.5	134582	134583	134585		

1) Measured at +20 °C, 1 bar pressure at valve inlet and free outlet, a differential pressure of 0.5 bar is required to open the full orifice.

2) Pressure values [bar]: Overpressure to the atmospheric pressure

Note: Cable plug, see **Type 2508** ▶ (will be replaced with Type 2518)

Delivered as circuit function A. Change to circuit function B by turning the pilot drive by 180° (only for 10 bar version).

Ordering chart continued

Circuit function	Port connection	Orifice [mm]	K _v value water ¹⁾ [m ³ /h]	Pressure range ²⁾ [bar]	Article no. per Voltage [V/Hz] Seal	
					024/UC	230/UC
Explosion-proof version with manual override, FKM seal and terminal box (without safety fuse)						
A 2/2 way servo-controlled solenoid valve, normally closed, with manual override	Brass - Threaded body, seal material FKM					
	G 1/2	13	4	0.5...10	308686	308714
	G 3/4	20	6.5	0.5...10	308704	308731
B 2/2 way servo-controlled solenoid valve, normally open, with manual override	G 1	25	10	0.5...10	308705	308710
	G 1 1/4	32	20	0.5...10	on request	on request
	G 1 1/2	40	20	0.5...10	314375	308702
	G 2	50	40	0.5...10	on request	on request
	Stainless steel - Threaded body, seal material FKM					
	G 1/2	13	4	0.5...10	308716	308738
	G 1/2	20	5	0.5...10	308677	308708
	G 3/4	20	6.5	0.5...10	308706	308709
	G 1	25	10	0.5...10	308688	308733
	G 1 1/4	32	20	0.5...10	on request	315307
G 1 1/2	40	20	0.5...10	313855	313857	
G 2	50	40	0.5...10	on request	312632	
Explosion-proof version with manual override, NBR seal and moulded-in cable, 3 m						
A 2/2 way servo-controlled solenoid valve, normally closed, with manual override	Brass - Threaded body, seal material NBR					
	G 1/2	13	4	0.5...10	307168	307171
	G 3/4	20	6.5	0.5...10	307188	307192
B 2/2 way servo-controlled solenoid valve, normally open, with manual override	G 1	25	10	0.5...10	307204	307212
	G 1 1/4	32	20	0.5...10	307224	307226
	G 1 1/2	40	20	0.5...10	307236	307237
	G 2	50	40	0.5...10	307243	307245
	G 2 1/2	65	40	0.5...10	on request	307250

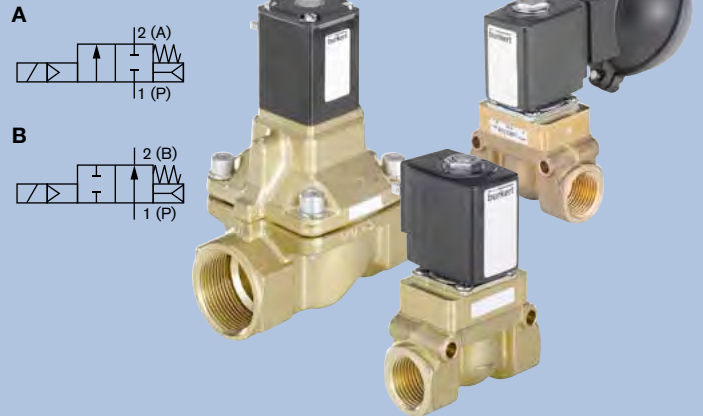
1) Measured at +20 °C, 1 bar pressure at valve inlet and free outlet, a differential pressure of 0.5 bar is required to open the full orifice.
2) Pressure values [bar]: Overpressure to the atmospheric pressure

Note: Delivered as circuit function A. Change to circuit function B by turning the pilot drive by 180° (only for 10 bar version).

Servo-assisted 2/2 way piston valve

5404

- Servo-assisted piston valve with diameter of up to DN50
- Vibration-proof, screwed coil system
- Moulded housing with high surface quality
- Explosion proof versions
- Suitable for gas and steam applications

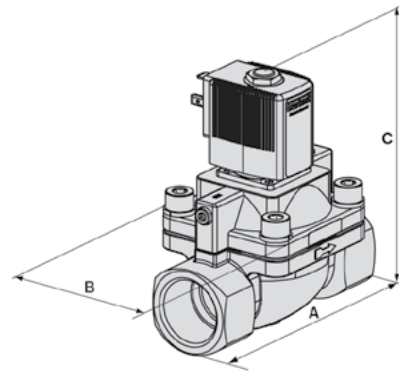


The 5404 valve is a servo-assisted piston valve available in both NC and NO versions. A minimum differential pressure is required for the valve switching function. The standard brass housing satisfies all European drinking water requirements. The solenoid coils are moulded with high-quality polyamide. For reduced energy requirement, all coils can be delivered with electronic power reduction. In combination with a plug in accordance with DIN EN 175301-803 Form A, the valves satisfy protection class IP65.

Technical data

General data		
Orifice	DN12...DN50	
Body material	Brass	
Coil material	Epoxy resin (Polyamide on request)	
Coil insulation class	H (B on request)	
Valve internals	Stainless steel, brass	
Seal material	PTFE seat seal + FKM PTFE seat seal + Graphite steam version PTFE seat seal + EPDM on request	
Medium	Neutral mediums, compressed air, water, hydraulic oil and steam	
Medium temperature		
Standard	-10 °C...+110 °C	
Steam version	Up to 160 °C see Temperature Derating Diagram (from -40 °C on request)	
Ambient temperature	-10 °C...+55 °C (from -40 °C on request)	
Voltage tolerance	± 10 %	
Duty cycle	100 % continuous rating	
Electrical connection	Tag connector acc. to DIN EN 175301 – 803 Form A	
Protection class	IP65 with cable plug (IP67 on request)	
Ignition protection class		
ATEX	PTB 14 ATEX 2023 X II 2G Ex mb IIC T4 Gb II 2D Ex mb IIIC T130 °C Db PTB 15 ATEX 1011U	
IECEX	IECEX PTB 14,0049 X Ex mb IIC T4 Gb Ex mb IIIC T130 °C Db PTB 15,0037U	
Installation	As required, preferably with actuator upright	
Response times		
Opening [ms]		
Closing [ms]		
DN12...DN25	20...400	100...1500
DN32...DN50	200...1500	1000...3000

Dimensions [mm]



Port connection	A	B	C
Standard version DN12, 20, 25			
G ½	65	33	96,5
G ¾	100	60	109
G 1	115	70	119
Standard version DN32, 50			
G 1¼	126	85	161
G 1½	126	85	170
G 2	164	115	198

Technical data continued




















Electrical power consumption			
Inrush AC [VA]	Hold AC (hot coil) [VA]	[W]	Hold DC (hot/cold coil) [W]
Circuit function A DN12...DN25 (not in combination with high pressure MX13)			
24	14	8	8/9.5
Circuit function B DN12...DN25			
24	16	7	8/9.5
ATEX/IECEx version			
9	9		9
Circuit function A DN32...DN50 and DN12 as high pressure MX13			
24	16	10	12/13







Ordering chart

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h]	Pressure range for liquids [bar]	Pressure range for gases [bar]	Article no. per voltage/frequency [V/Hz]		
						024/DC	024/50	230/50
Standard version DN12...DN50 (other versions on request)								
Seals PTFE+FKM								
A 2/2 way servo-controlled solenoid valve, normally closed	G ½	12	2	1...50	1...50	308501	177853	308502
	G ¾	20	7	1...25	1...32	308503	-	-
				1...25	1...40	-	308504	308505
	G 1	25	10	1...25	1...32	308506	-	-
				1...25	1...40	-	308507	308508
	G 1¼	32	18	1...16	1...16	122579	-	-
				1...25	1...25	-	085337	085340
	G 1½	40	18	1...16	1...16	085343	-	-
				1...25	1...25	-	085342	085345
	G 2	50	36	1...8	1...8	307475	-	-
1...20				1...20	-	307476	085350	
B 2/2 way servo-controlled solenoid valve, normally open	G ½	12	2	1...32	1...32	309022	301170	295636
	G ¾	20	7	1...25	1...25	303209	295276	295651
	G 1	25	10	1...25	1...25	295660	308120	301740

Ordering chart continued

5404

Steam version NA07, DN13...DN40 (other versions on request)								
Seals PTFE+Graphite								
A 2/2 way servo-controlled solenoid valve, normally closed	G ½	13	3.7	1...5	Brass	307267 	-	-
				1...12	Brass	-	307269 	307276 
	G ¾	20	7	1...5	Brass	307286 	-	-
				1...12	Brass	-	307284 	307326 
	G 1	25	10	1...5	Brass	307342 	-	-
				1...12	Brass	-	307343 	307351 
	Flange acc. to DIN EN 1902-1	25	10	1...5	GG 25	307354 	-	-
				1...12	GG 25	-	on request	307344 
	G 1¼	32	18	1...4	Brass	316584 	-	-
				1...12	Brass	-	316580 	316579 
	Flange acc. to DIN EN 1902-1	32	18	1...4	GG 25	on request	-	-
				1...12	GG 25	-	on request	316583 
	G 1½	40	18	1...4	Brass	316592 	-	-
				1...12	Brass	-	316586 	316588 
	Flange acc. to DIN EN 1902-1	40	18	1...4	GG 25	on request	-	-
				1...12	GG 25	-	on request	316591 

Circuit function	Port connection	Orifice [mm]	K _v value water [m³/h]	Pressure range for liquids [bar]	Pressure range for gases [bar]	Article no. per voltage/frequency [V/Hz]		
						024/DC	024/50	230/50
High pressure version MX13 (other versions on request)								
Seals PTFE+FKM								
A 2/2 way servo-controlled solenoid valve, normally closed	G ½	12	2	1...80	1...80	304191 	304193 	304194 
Discharge valve for compressor systems CF05 (other version on request)								
Seals PTFE+FKM								
B 2/2 way servo-controlled solenoid valve, normally open	G ½	12	2	1...40	1...40	301723 	308781 	308783 

1) High shut off levels may occur with liquids and high differential pressure!

Ordering chart continued

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h]	Pressure range for liquids [bar]	Pressure range for gases [bar]	Article no. per voltage/frequency [V/Hz]	
						024/DC	230/UC
ATEX/IECEX cable (other versions on request)							
Seals PTFE+FKM							
A 2/2 way servo-controlled solenoid valve, normally closed	G ½	12	2	1...50	1...50	278117 𐀀	278118 𐀀
	G ¾	20	7	1...25	1...32	285858 𐀀	278121 𐀀
	G 1	25	10	1...25	1...32	290175 𐀀	300215 𐀀
B 2/2 way servo-controlled solenoid valve, normally open	G ½	12	2	1...32	1...32	278123 𐀀	278124 𐀀
	G ¾	20	7	1...25	1...25	307455 𐀀	307456 𐀀
	G 1	25	10	1...25	1...25	305468 𐀀	307458 𐀀
ATEX/IECEX terminal box (other versions on request)							
Seals PTFE+FKM							
A 2/2 way servo-controlled solenoid valve, normally closed	G ½	12	2	1...50	1...50	289362 𐀀	289371 𐀀
	G ¾	20	7	1...25	1...32	307460 𐀀	307461 𐀀
	G 1	25	10	1...25	1...32	307463 𐀀	307465 𐀀
B 2/2 way servo-controlled solenoid valve, normally open	G ½	12	2	1...32	1...32	307466 𐀀	307467 𐀀
	G ¾	20	7	1...25	1...25	307468 𐀀	307469 𐀀
	G 1	25	10	1...25	1...25	307471 𐀀	307473 𐀀

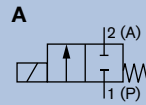
Note: The pressure values for liquid media are shown on the rating plate!

The cable plug has to be ordered separately, see **Type 2508** ▶ (will be replaced with Type 2518)

Direct-acting 2/2 way plunger valve

6011

- Direct-acting and compact small-format valve with diameter of up to DN2.4
- Vibration-proof, bolted coil system
- Simple and quick flange or manifold installation
- Quick coupling (push-in fitting) for plug-in hose connections



Valve 6011 is a direct-acting plunger valve. The stopper and plunger guide tube are welded together to enhance pressure resistance and leak-tightness. Various seal material combinations are available depending on the application. A Bürkert-specific flange design (SFB) enables space-saving arrangement of valves on a manifold. Push-in fittings can be selected for flexible hose connection. The coils are moulded with polyamide. In combination with a plug in accordance with DIN EN 175301-803 Form B or C, the valves satisfy protection class IP65.

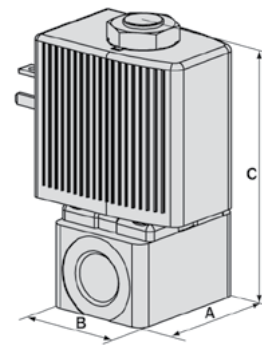
Technical data

General data	
Temperature media	-10 °C...+100 °C
Ambient temperature	+55 °C, max.
Body material	Brass or stainless steel 1.4305
Seal material	FKM
Coil material	Epoxy (Class H)
Viscosity	Max. 21 mm ² /s
Voltage tolerance	± 10 %
Duty cycle	
Single valve	100 % continuous rating
for block mounting on a manifold	Intermittent operation 60 % (30 min) or with 2 W coil (on request)
Power consumption	DC: 4 W, AC: 9 VA (inrush), 6 VA (hold)
Protection class	IP65 (with cable plug)
Electrical connection	Cable plug Type 2507 Form B (not included)

Orifice [mm]	Response times ¹⁾	
	Opening [ms]	Closing [ms]
1.2	7...10	10...15
1.6	7...10	10...15
2.0	7...12	7...12
2.4	7...12	7...12

1) Measurement at the valve outlet 6 bar and +20 °C
 Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

Dimensions [mm]



Port connection	A	B	C
G 1/8	25	20	50.5

Ordering charts

Circuit function	Port connection	Orifice [mm]	K _v value [m ³ /h]	Pressure range [bar]		Article no. voltage/frequency [V/Hz]		
				DC	AC	024/DC	024/50	230/50
Brass								
A 2/2 way direct-acting solenoid valve, normally closed	sub-base	1.2	0.045	0...12	0...21	163521	–	163524
	G 1/8	1.6	0.06	0...6	0...12	163499	163500	163502
	sub-base					163525	163526	163528
	G 1/8	2	0.11	0...4.5	0...8	163503	163504	163506
	sub-base					163529	163530	163532
	G 1/8	2.4	0.13	0...3	0...6	161193	163507	161194
	sub-base					163533	163534	163536
Stainless steel								
A 2/2 way direct-acting solenoid valve, normally closed	G 1/8	1.6	0.06	0...6	0...12	163509	163510	163512
	sub-base					163537	–	–
	G 1/8	2	0.11	0...4.5	0...8	163513	163514	163516
	sub-base					163541	–	–
	G 1/8	2.4	0.13	0...3	0...6	163517	163518	163520

Note: Cable plug, see **Type 2507** ▶

Accessories

Material	No. of valve connections	Article no.
Manifolds		
Aluminium anodised	1	005312
	2	005355
	3	005313
	4	005314
	5	005315
	6	005316
	7	005893
	8	005166
	9	005241
	10	005819
	11	005242
	12	005222

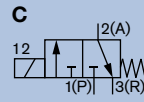
Accessories for manifold

Description	Feature	Article no.
Blanking plug	with seal ring, G 1/8	005041
Covering plate	for unused valves	005100

Plunger valve 3/2 way direct-acting

6012

- Direct-acting, compact small-format valve with diameter of up to DN1.6
- Screwed coil system
- Banjo threaded connection for direct mounting on pneumatic valves
- Simple and quick push-in, flange, or manifold installation
- Service-friendly manual override



Direct-acting 3/2 way solenoid valve, normally closed (normally open on request). Threaded valve or Flange for neutral gases and liquids; also suitable for technical vacuum.

Technical data

General data	
Temperature media	-10 °C...+100 °C
Ambient temperature	+55 °C, max.
Viscosity	Max. 21 mm ² /s
Voltage tolerance	± 10 %
Duty cycle	
Single valve	100 % continuous rating
for block assembly on multiple manifold	Intermittent operation 60 % (30 min) With 2 W coil 100 % (on request)
Body material	Brass, polyamide (PA), stainless steel 1.4305
Seal material	FKM
Coil material	Epoxy (Class H)
Power consumption	DC: 4 W, AC: 9 VA (inrush), 6 VA (hold)
Protection class	IP65 (with cable plug)
Electrical connection	<ul style="list-style-type: none"> • Acc. to DIN EN 175301-803³⁾ Form C for cable plug Type 2516 • Acc. to DIN 43650 Form B (Industrial standard) for cable plug Type 2507 (not included) • Flying leads on request

Orifice [mm]	Power consumption		Response times ¹⁾	
	Inrush	Hold	Opening [ms]	Closing [ms]
1.2	9 VA	6 VA (4 W)	7...10	9...12
1.6	4 W	4 W	7...12	7...12

1) Measurement at the valve outlet 6 bar and +20 °C

Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

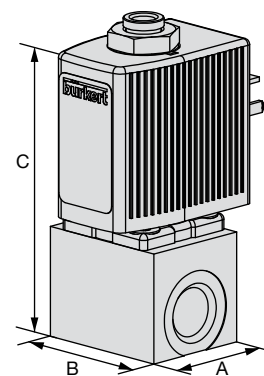
2) Previously DIN 43650

Options

- Stainless steel body
- P-connection, normally open
- 3/2 way user defined flow direction
- 2 W version

Other versions see data sheet or on request

Dimensions [mm]



Port is M5 fitting.

Port connection	A	B	C
G 1/8	20	25	57.1

Ordering chart

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h]	Pressure range [bar]	Article no. voltage/frequency [V/Hz]		
					024/DC	024/50	230/50
Threaded version, brass body without manual override							
C 3/2 way direct-acting solenoid valve, normally closed	G 1/8	1.2	0.045	0...10	161904	163577	163579
		1.6	0.06	0...6	163580	163581	163583
Threaded version, brass body with manual override							
C 3/2 way direct-acting solenoid valve, normally closed	G 1/8	1.2	0.045	0...10	163584	163585	163587
		1.6	0.06	0...6	163588	163589	163591

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h]	Pressure range [bar] ¹⁾	Voltage/frequency [V/Hz]	Article no. Brass body without manual override	Article no. Stainless steel body without manual override	Article no. PA body with manual override
Flange version								
C 3/2 way direct-acting solenoid valve, normally closed	sub-base	1.2	0.045	0...10	024/DC	163600	–	161063
					024/50	163601	–	163616
					230/50	163603	–	163618
		1.6	0.06	0...6	024/DC	163604	163612	163619
					024/50	163605	163613	163620
					230/50	217634	163615	163622

1) Pressure values [bar]: Measured as overpressure to the atmospheric pressure

Note: Cable plug, see **Type 2507** ▶

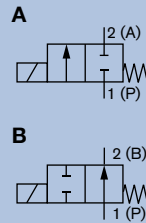
Accessories

Description	No. of valve places	Article no.
Manifolds		
Aluminium, anodized	1	005312
	2	005355
	3	005313
	4	005314
	5	005315
	6	005316
	7	005893
	8	005166
	9	005241
	10	005819
	11	005242
	12	005222
Accessories for manifold		
Blanking plug	with seal ring, G 1/8	005041
Covering plate	for unused valves	005100

Plunger valve 2/2 way direct-acting

6013

- Direct-acting and compact valve up to diameter of DN6.0
- Vibration-proof, bolted coil system
- Increased leak-tightness with welded plunger guide tube
- Explosion proof versions
- Energy-saving pulse versions



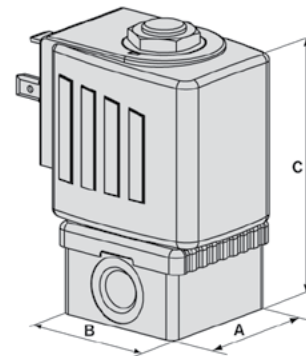
Valve 6013 is a direct-acting plunger valve. The stopper and plunger guide tube are welded together to enhance pressure resistance and leak-tightness. Various seal material combinations are available depending on the application. A Bürkert-specific flange design (SFB) enables space-saving arrangement of valves on a manifold. The coils are moulded with polyamide or with chemically resistant epoxy. Pulse coils and 'Kick and Drop' electronics are available for overexcitation (plug 2511) for the reduction of electrical power consumption during operation. Optional manual actuation enables quick commissioning and easy maintenance. In combination with a plug in accordance with DIN EN 175301-803 Form A, the valves satisfy protection class IP65. Stainless steel valves satisfy NEMA 4X.

Technical data

Body material	
Type 6013	Brass, stainless steel 1.4305
Type 6013 A	Brass, stainless steel 1.4305
Seal material	
	FKM, PTFE/Graphite (EPDM on request)
Analysis version	
Type 6013 A	Silicon, oil and fat free version Tightness > 10...4 mbar l/s
Limit value for residual carbon	
Type 6013 A	< 0.2 mg/dm ²
Medium	
Type 6013	• Technical vacuum • Neutral gases and liquids (e.g. compressed air, water, hydraulic oil)
Type 6013 A	• Neutral medium, which does not attack the body and seal materials
Medium temperature	
FKM	-10 °C...+100 °C (PA coil) till 120 °C (Epoxy coil)
PTFE/Graphite	-40 °C...+180 °C (see chemical resistance chart)
FKM, Circuit function B	-10 °C...100 °C (AC) - 10...120 °C (DC)
Ambient temperature	
	Max. +55 °C
Viscosity	
	Max. 21 mm ² /s
Port connection	
Type 6013	G 1/8, G 1/4, G 3/8, sub-base (SFB)
Type 6013 A	G 1/8, G 1/4
Operating voltage	
Type 6013	24 V DC, 24 V/50 Hz, 230 V/50 Hz
Type 6013 A	24 V DC, 230 V/50 Hz (other voltages on request)
Voltage tolerance	
	± 10 %
Duty cycle/single valve	
With block assembly on manifold	100 % continuous rating Intermittent operation 60 % (30 min) or with 5 W coil on request
Electrical connection	
	Tag connector acc. to DIN EN 175301-803 Form A for cable plug Type 2508 (will be replaced with Type 2518). Included in delivery. ATEX/IECEx version with 3 m moulded cable

Dimensions [mm]

Standard version



Port connection	A	B	C
G 1/8	32.6	35	65.8
G 1/4	49	35	71.8

Installation	As required, preferably with actuator upright	
Assembly	No oils, fats or silicone to be used during installation	
Protection class	IP65 with cable plug, ATEX/IECEx junction box version and cable connection version	
Ignition protection class		
Coils with fixed cable outlet	ATEX	PTB 14 ATEX 2023 X II 2G Ex mb IIC T4 Gb II 2D Ex mb IIIC T130 °C Db
	IECEx	IECEx PTB 14.0049 X Ex mb IIC T4 Gb Ex mb IIIC T130 °C Db
Assembly of the coil and the junction box	ATEX	EPS 16 ATEX 1046 X II 2G Ex eb mb IIC T4 Gb II 2D Ex mb tb IIIC T130 °C Db
	IECEx	IECEx EPS 16.0021 X Ex eb mb IIC T4 Gb Ex mb tb IIIC T130 °C Db
Coil insulation class	Polyamide class B Epoxy class H	

Ordering chart

Circuit function	Orifice [mm]	Port connection	K _v value water [m ³ /h] ¹⁾	Coil power [W]	Pressure range [bar] ²⁾	Voltage/Frequency [V/Hz]	Article no. brass body FKM Seal	Article no. Stainless steel body, FKM seal
Standard version								
with FKM seal, brass or stainless steel body (class B)								
A 2/2 way direct-acting solenoid valve, normally closed	2.0	G ⅜	0.12	8	0...12	024/DC	134237	134233
					0...25	024/50	132865	134234
					0...25	230/50	134239	134236
		G ¼	0.12	8	0...12	024/DC	137537	137533
					0...25	024/50	137538	137534
					0...25	230/50	137540	137536
		sub-base (SFB)	0.12	8	0...12	024/DC	134244	-
					0...25	024/50	134245	-
					0...25	230/50	134247	-
	2.5	G ⅜	0.16	8	0...10	024/DC	134240	-
					0...16	024/50	134241	-
					0...16	230/50	134243	-
	3.0	G ⅜	0.23	8	0...6	024/DC	126091	126078
					0...10	024/50	126092	126079
					0...10	230/50	126094	126081
		G ¼	0.23	8	0...6	024/DC	125301	125317
					0...10	024/50	125302	126082
					0...10	230/50	125304	126084
		G ⅝	0.23	10	0...8	024/DC	134248	-
					0...14	024/50	134249	-
					0...14	230/50	134251	-
	4.0	G ¼	0.30	8	0...1.5	024/DC	125306	125318
					0...4	024/50	125307	125319
					0...4	230/50	125309	125320
		G ⅝	0.30	10	0...2.5	024/DC	134252	-
					0...6	024/50	134253	-
					0...6	230/50	134255	-
	6.0	G ¼	0.55	8	0...0.5	024/DC	125311	126086
					0...1.5	024/50	125312	126087
					0...1.5	230/50	125314	126089

Ordering chart continued

6013

Circuit function	Orifice [mm]	Port connection	K _v value water [m ³ /h] ¹⁾	Coil power [W]	Pressure range [bar] ²⁾	Voltage/Frequency [V/Hz]	Article no. brass body FKM Seal	Article no. Stainless steel body, FKM seal	
with FKM seal, brass or stainless steel body (class B)									
A 2/2 way direct-acting solenoid valve, normally closed	6.0	G 3/8	0.55	10	0...0.75	024/DC	134256	-	
					0...2.5	024/50	134257	-	
					0...2.5	230/50	134259	-	
High temperature applications (-40 °C...+180 °C)									
PTFE seat seal, brass body (class H)									
A 2/2 way direct-acting solenoid valve, normally closed	2.0	G 1/4	0.12	8	0...12	024/DC	136015		
					0...25	024/50	136016		
					0...25	230/50	136018		
	3.0	G 1/4	0.23	10	0...6	024/DC	136019		
					0...10	024/50	136020		
					0...10	230/50	136022		
					G 3/8	0...8	024/DC	136023	
						0...14	024/50	136024	
						0...14	230/50	136026	
FKM seal, brass body (class H)									
B 2/2 way direct-acting solenoid valve, normally open	2.0	G 1/8	0.12	0...16	8	24/DC	213543		
					7	230/50	213550		
	3.0	G 1/8	0.23	0...8	8	24/DC	213545		
					7	230/50	213551		
					G 1/4	8	24/DC	213546	
						7	230/50	213552	
	4.0	G 1/4	0.3	0...4	8	024/DC	213548		
					7	230/50	213553		
	6.0	G 1/4	0.55	0...2	8	024/DC	213549		
					7	230/50	213554		

 1) Measured at +20 °C, 1 bar²⁾ pressure at valve inlet and free outlet..

2) Measured as overpressure to the atmospheric pressure

Ordering chart continued

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h] ¹⁾	Pressure range [bar] ²⁾	Power consumption DC (hot/cold coil) [W]	Article no. per voltage [V]	
						012/DC	024/DC
Impulse valves							
Seal material FKM, brass body (class H)							
A 2/2 way direct-acting solenoid valve, normally closed	Sub-base (SFB)	2.0	0.12	0...16	7	209266	209272
		2.5	0.16	0...10	7	209267	209273
		3.0	0.23	0...6	7	209268	209274
	G 1/8	2.0	0.12	0...16	7	209269	209275
		2.5	0.16	0...10	7	209270	209276
		3.0	0.23	0...6	7	209271	209277

Circuit function	Orifice [mm]	Port connection	K _v value water [m ³ /h] ¹⁾	Pressure range [bar] ²⁾	Coil power [W]	Voltage/Frequency [V/Hz]	Article no.
Analysis valves							
Seal material FKM and brass body (class B)							
A 2/2 way direct-acting solenoid valve, normally closed	2.0	G 1/8	0.12	0...12	8	24/DC	137826
				0...25		230/50	137827
	2.5	G 1/8	0.16	0...10	8	24/DC	137828
				0...16		230/50	137829
	3.0	G 1/4	0.23	0...6	8	24/DC	137830
				0...10		230/50	137831
4.0	G 1/4	0.30	0...1.5	8	24/DC	137832	
			0...4		230/50	137833	
Seal material FKM and stainless steel body (class B)							
A 2/2 way direct-acting solenoid valve, normally closed	2.0	G 1/8	0.12	0...12	8	24/DC	137818
				0...25		230/50	137819
	2.0	G 1/4	0.12	0...12	8	24/DC	137820
				0...25		230/50	137821
	3.0	G 1/4	0.23	0...6	8	24/DC	137822
				0...10		230/50	137823
4.0	G 1/4	0.30	0...1.5	8	24/DC	137824	
			0...4		230/50	137825	

1) Measured at +20 °C, 1 bar²⁾ pressure at valve inlet and free outlet..

2) Measured as overpressure to the atmospheric pressure

Note: The cable plug has to be ordered separately, see **Type 2508** ► (will be replaced with Type 2518)



Ordering chart continued

Circuit function	Orifice [mm]	Port connection	K _v value water [m ³ /h]	Coil effective power [W]	Pressure range [bar]	Voltage/Frequency [V/Hz]	Article no.		
							Brass body	Stainless steel body	
ATEX/IECEX cable versions									
Ex m T4 approved with seal material FKM and molded cable (3 m), single mounting only									
A 2/2 way direct-acting solenoid valve, normally closed	2.0	sub-base (SFB)	0.11	7	0...6	24/UC	278607	278614	
						230/UC	278608	on request	
		G 1/8	0.12	9	0...10	24/UC	278592	278584	
						230/UC	on request	278585	
		G 1/4	0.12	9	0...10	24/UC	278605	278601	
						230/UC	278606	278603	
	2.5	G 1/8	0.16	9	0...8	24/UC	278593	on request	
						230/UC	on request	on request	
	3.0	G 1/8	0.23	9	0...5	24/UC	on request	278586	
						230/UC	on request	on request	
		G 1/4	0.23	9	0...5	24/UC	278594	278587	
						230/UC	278596	278589	
	4.0	G 1/4	0.30	9	0...1.2	24/UC	278597	278590	
						230/UC	on request	278591	
	6.0	G 1/4	0.55	9	0...0.4	24/UC	278598	278604	
						230/UC	278599	on request	
	ATEX/IECEX junction box versions								
	Ex m T4 approved with seal material FKM and junction box, single mounting only								
A 2/2 way direct-acting solenoid valve, normally closed	1.5	sub-base (SFB)	0.08	9	0...16	24/UC	288424	on request	
						2	G 1/8	0.12	0...10
	G 1/4	0.12	9	0...10	230/UC	288431			
					24/UC	288433	288439		
	230/UC	0.12	9	0...10	24/UC	288435	288441		
					230/UC	288435	288441		
	3	G 1/8	0.23	9	0...5	24/UC	297741	on request	
						230/UC	on request	on request	
		G 1/4	0.23	9	0...5	24/UC	on request	288449	
						230/UC	on request	288451	
	4	G 1/4	0.3	9	0...1.2	24/UC	288452	288453	
						230/UC	on request	288455	
6	G 1/4	0.55	9	0...0.4	24/UC	288456	288459		
					230/UC	288457	288460		

Note: The maximum fluid temperature must not in any case exceed the permissible temperature class (T4 135 °C, 100 °C T5, T6 85 °C), minus 5 K).

Accessories

Description	Voltage	Article no.
Cable plug Type 2508 (will be replaced with Type 2518) acc. to DIN 175301-803 Form A - see Type 2508 ▶		
without circuitry (standard), without cable	0...250 V AC/DC	008376
with LED	12...24 V AC/DC	008360
with LED and varistor	12...24 V AC/DC	008367
with LED and varistor	200...240 V AC/DC	008369
with inverter ¹⁾	24 V AC/DC	on request
Cable plug Type 2513 acc. to DIN EN 175301-803 Form A²⁾ - see Type 2513 ▶		
Cable length, 12000 mm	max. 230 V AC/DC	260893
Cable length, 5000 mm	max. 230 V AC/DC	260892
Cable length, 3000 mm	max. 230 V AC/DC	260891
Cable length, 300 mm	max. 230 V AC/DC	260890

1) The inverter plug contains an electronic, which especially enables the electric 3 wire control. Input for 3 wire technology, common "-" polarity, two split "+" polarity. Output suitable for impulse version for Type 6013/6014

2) Meets the requirements of ATEX category 3 GD

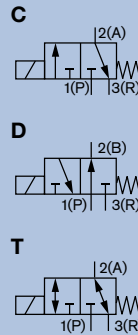
Description	Ex Approvals		Article no
	Certification	Identification	
Ex-Cable glands (polyamide version included in delivery / surcharge applied for brass nickel plated version)			
Brass, nickelplated, 6...13 mm	IECEX PTB 13.0027X, PTB 04 ATEX 1112 X	II 2 D Ex tb IIIC Db IP68, II 2 G Ex e IIC Gb	773278
Polyamide, 7...13 mm	PTB 13 ATEX 1015 X, IECEX PTB 13.0034X	II 2 G Ex e IIC Gb, II 2 D Ex tb IIIC Db IP68	773277

Description	Article no
Special tool to turn the junction box (not included in delivery)	
Set SC02-AC10 Special wrench, service manual	293488

Plunger valve 3/2 way direct-acting

6014

- Direct-acting, compact valve with diameter of up to DN2.5
- Vibration-proof, bolted coil system
- Service-friendly manual override
- Energy-saving pulse versions



Direct-acting 3/2 way, normally closed or normally open solenoid valve. It is for neutral gases and liquids and it is also suitable for technical vacuum.

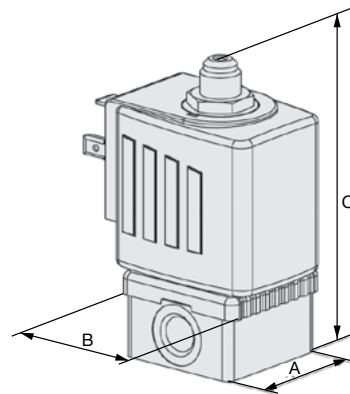
Technical data

General data	
Body material	Brass or stainless steel, polyamide (sub-base)
Seal material	FKM (EPDM on request)
Medium	Neutral gases and fluids (e.g. compressed air, town gas, natural gas, water, hydraulic oil, petrol). Suitable for technical vacuum
Medium temperature	
Polyamide coil (FKM seal)	-10 °C...+100 °C (PA coil) to 120 °C Epoxy coil
Ambient temperature	Max. +55 °C
Viscosity	Max. 21 mm ² /s
Port connection	G 1/8, G 1/4, sub-base (SFB)
Operating voltage	24 V DC, 24 V/50 Hz, 230 V/50 Hz (other voltages on request)
Voltage tolerance	±10 %
Duty cycle/single valve Assembly	100 % continuous rating Intermittent operation 60 % (30 min) or with 5 W coil (on request)
Electrical connection	DIN EN 175301-803 Form A for Cable Plug, Type 2508 (will be replaced with Type 2518). Included in delivery. ATEX/IECEX version with 3 m moulded cable
Installation	As required, preferably with actuator upright
Protection class	IP65 with cable plug, ATEX/IECEX junction box version and cable connection version NEMA 4x with cable plug 2508 (will be replaced with Type 2518) or 2509 only for stainless steel versions (other versions on request)
Coil insulation class	Polyamide class B (Epoxy class H on request)
Coil material	Polyamide (Epoxy on request)
Orifice	DN1.5...DN2.5

Orifice [mm]	Power consumption		Response times ¹⁾	
	Inrush AC	Hold AC	Opening [ms]	Closing [ms]
1.5	24 VA	17 VA (8 W)	10...15	15...20
2.0	24 VA	17 VA (8 W)	10...15	15...20
2.5	24 VA	17 VA (8 W)	15...20	10...22

1) Measurement at the valve outlet 6 bar and +20 °C
Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

Dimensions [mm]



Port connection	A	B	C
G 1/8	32	35	73.3
G 1/4	46	35	78.3

Options

- Cable plug with LED and varistor
- Impulse version
- Oxygen version
- Vacuum version
- Analysis version
- Hazardous area approvals
- Explosion-proof version
- Further circuit functions
- SIL - certificated
- UL and CSA approvals

Ordering chart

Circuit function	Orifice [mm]	Port connection	K _v value water [m ³ /h] ¹⁾	Pressure range [bar] ²⁾	Effective coil power [W]	Article no. per voltage / frequency		
						024/DC	024/50	230/50
Threaded valves with FKM seal, (class B)								
Brass body								
C 3/2 way direct-acting solenoid valve, normally closed	1.5	G 1/8	0.07	0...16	8	125329	125331	125332
	2.0	G 1/8	0.11	0...10	8	125333	125334	125336
		G 1/4	0.11	0...10	8	125348	126138	126140
	2.5	G 1/8	0.16	0...6	8	125341	125340	125342
		G 1/4	0.16	0...6	8	126142	126143	126145
D 3/2 way direct-acting solenoid valve, normally open	1.5	G 1/8	0.07	0...16	8	126195	126196	125355
	2.0	G 1/8	0.11	0...10	8	125357	125358	125360
		G 1/4	0.11	0...10	8	126198	126199	126201
	2.5	G 1/8	0.16	0...6	8	125363	126202	126204
		G 1/4	0.16	0...6	8	126205	126206	126208
T 3/2 way direct-acting solenoid valve, flow direction optional	1.5	G 1/8	0.07	0...7	8	126150	126151	126153
With manual override								
C 3/2 way direct-acting solenoid valve, normally closed	2.0	G 1/8	0.11	0...10	8	125337	125338	125339
		G 1/4	0.11	0...10	8	125349	126147	126149
D 3/2 way direct-acting solenoid valve, normally open	2.0	G 1/8	0.11	0...10	8	126209	125361	126211
		G 1/4	0.11	0...10	8	126212	126213	126215
Stainless steel body								
C 3/2 way direct-acting solenoid valve, normally closed	1.5	G 1/8	0.07	0...16	8	126216	126217	126219
	2.0	G 1/8	0.11	0...10	8	126220	126221	126223
		G 1/4	0.11	0...10	8	126224	126225	126227
T 3/2 way direct-acting solenoid valve, flow direction optional	1.5	G 1/8	0.07	0...7	8	126228	126229	126231

1) Measured at +20 °C, 1 bar²⁾ pressure difference

2) Measured as overpressure to the atmospheric pressure



Ordering chart continued

6014

Circuit function	Orifice [mm]	K _v value water [m ³ /h] ¹⁾	Pressure range [bar] ²⁾	Effective coil power [W]	Article no. per voltage / frequency		
					024/DC	024/50	230/50
With FKM seal and sub-base body (SFB), (class B)							
Brass body							
C 3/2 way direct-acting solenoid valve, normally closed	1.5	0.07	0 ... 16	8	126154	126155	125366
	2.0	0.11	0 ... 10	8	125367	125368	125370
D 3/2 way direct-acting solenoid valve, normally open	2.0	0.11	0 ... 10	8	126161	126162	125383
With manual override							
C 3/2 way direct-acting solenoid valve, normally closed	1.5	0.07	0 ... 10	5	126403	126404	126406
	1.5	0.07	0 ... 16	8	126157	126158	126160
	2.0	0.11	0 ... 6	5	126407	126408	126410
	2.0	0.11	0 ... 10	8	125371	125372	125374
Polyamide body material							
C 3/2 way direct-acting solenoid valve, normally closed	1.5	0.07	0 ... 10	5	126390	126391	126393
With manual override							
C 3/2 way valve, NC	1.5	0.07	0 ... 10	5	126396	126397	126399










Circuit function	Port connection		Orifice [mm]	K _v value water [m ³ /h] ¹⁾	Pressure range [bar] ²⁾	Power consumption DC (hot/cold coil) [W]	Article no. per voltage [V]	
							012/DC	024/DC
Impulse valve with FKM seal material and brass body (class H)								
C 3/2 way direct-acting solenoid valve, normally closed	Threaded port	G 1/8	1.5	0.07	0 ... 16	7	209280	209284
			2.0	0.11	0 ... 10	7	209281	209285
	Sub-base (SFB)		1.5	0.07	0 ... 16	7	209278	209282
			2.0	0.11	0 ... 10	7	209279	209283

1) Measured at +20 °C, 1 bar²⁾ pressure difference

2) Measured as overpressure to the atmospheric pressure

Note: Cable plug, see **Type 2508** ▶ (will be replaced with Type 2518)

Accessories

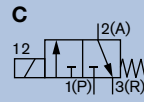
Features				Article no.
Single manifold				
in aluminium black anodized				005020 
Multiple manifold				
in aluminium	Hole spacing A [mm]	Total length B [mm]	Hole spacing C [mm]	
2 valves	57	65	-	005023 
3 valves	90	98	-	005286 
4 valves	123	131	-	005287 
5 valves	156	164	57	005035 
6 valves	189	197	57	005038 
8 valves	255	263	90	005386 
10 valves	321	329	90	005764 
Covering plate with plugs and O-ring, for closing off unused valve positions				005630 

Manifolds in Brass or stainless steel on request.

3/2 way Solenoid Valve with Ex approval

6014 Ex mb

- 3 way direct-acting valve
- High cycling rate
- Compact design
- Push-over coil



The 6014 Ex valve corresponds to the 6014 standard unit, but with an Ex coil and a moulded-on cable (available on request with terminal box). The valve is available as a sub-base or as a threaded port model.

Technical data

General data	
Orifice	DN1.5...DN2.0
Body material	Brass, stainless steel 1.4305
Seal material	FKM
Medium temperature	The maximum fluid temperature must not in any case exceed the permissible temperature class (T4 135 °C, 100 °C T5, T6 85 °C), of minus 5 K.
Ambient temperature	
Single mounting	-10 °C...+55 °C
Manifold assembly	-10 °C... +40 °C
Voltage tolerance	±10 %
Duty cycle / single valve Assembly	100 % continuous rating Intermittent operation 60 % (30 min) or with 5 W coil (on request)
Electrical connection	ATEX/IECEX version with 3 m moulded cable
Protection class	IP65 with cable plug, ATEX/IECEX terminal box version and cable connection version
Approval for coils with fixed cable outlet	ATEX: PTB 14 ATEX 2023 X II 2G Ex mb IIC T4 Gb II 2D Ex mb IIIC T135 °C Db IECEX: IECEX PTB 14.0049 X Ex mb IIC T4 Gb Ex mb IIIC T135 °C Db

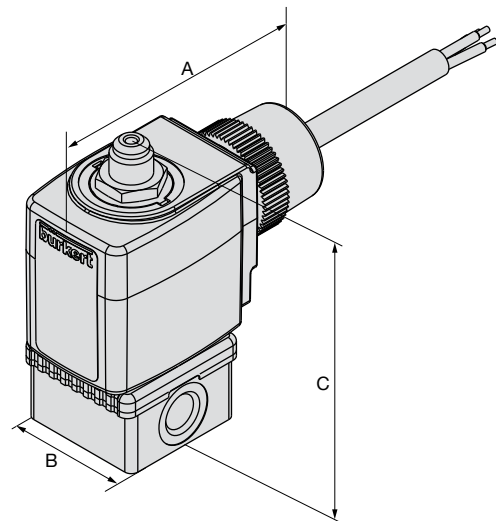
Response times ¹⁾	
Opening [ms]	Closing [ms]
10	15
to	to
15	20

¹⁾ Measurement at the valve outlet 6 bar and +20 °C
Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

Options

- SIL certificate
- Further versions see data sheet or on request

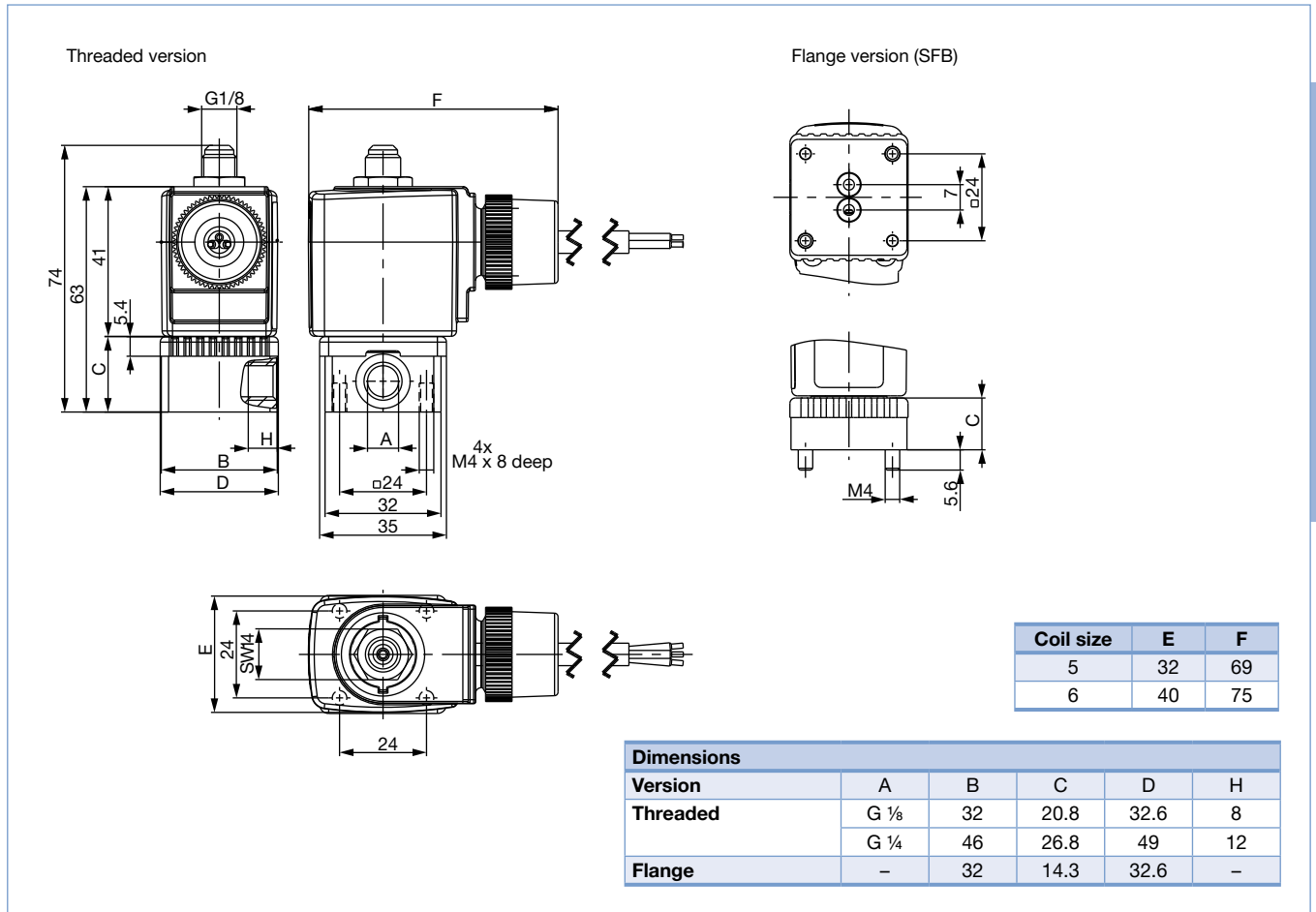
Dimensions [mm]



Coil size	A
5	69
6	75

Version	B	C
Thread G 1/8	32.6	74
G 1/4	49	74
Flange	32.6	74

Dimensions [mm]



Ordering chart

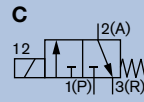
Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h]	Pressure range [bar]	Body material	Nominal power consumption [W]	Voltage/frequency [V/Hz]	Article no. without manual override	Article no. with manual override
Version according to Ex m II T4, valves with sub-base connection (SFB), cable outlet downwards, approved for manifold mounting									
C 3/2 way direct-act- ing solenoid valve, normally closed	Sub-base (SFB)	1.5	0.07	0...10	Brass	7	024/UC	-	278655
							230/UC	-	278656
	Sub-base (SFB)	2	0.11	0...6	Brass	7	024/UC	-	278658
							230/UC	-	278659
Version acc. to Ex m II T4, valves with threaded ports, cable outlet downwards, for single mounting only									
C 3/2 way direct-act- ing solenoid valve, normally closed	G 1/8	2	0.11	0...10	Brass	9	024/UC	278637	278645
							230/UC	278638	278646
					Stainless steel	9	024/UC	278660	-
							230/UC	278661	-
	G 1/4	2	0.11	0...10	Brass	9	024/UC	278639	278647
							230/UC	278641	278649
					Stainless steel	9	024/UC	278662	-
							230/UC	278663	-

Note: For flange version – manifolds, see **Type 6014** ▶

3/2 way Ex ia Solenoid Valve for pneumatic applications

6014 Ex ia

- Direct-acting
- Intrinsically-safe operation
- Compact design
- Push-over coil system
- Threaded port and sub-base port in brass or stainless steel



The direct-acting, intrinsically safe 6014 Ex ia valve consists of a metal body and a push-over coil with tag connectors on the side. Type 6014 Ex ia can be used in a wide variety of ways, as a single valve, as a pilot valve or grouped together in blocks. The valve is also suitable for technical vacuum.

Technical data

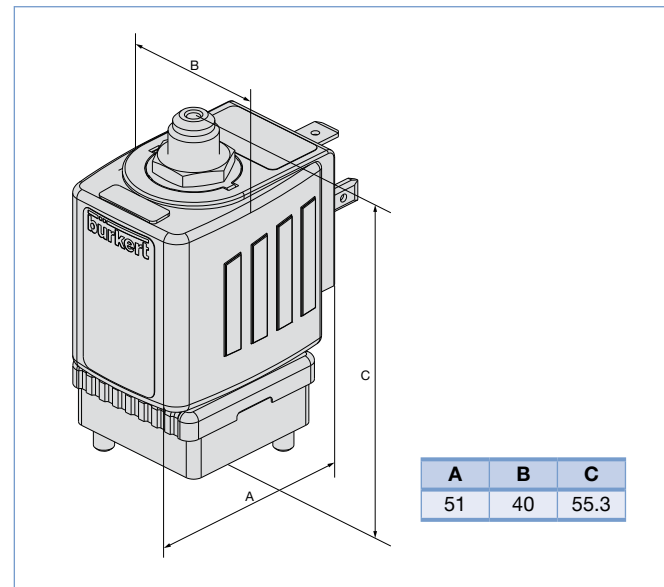
General data	
Orifice	DN0.9
Port connection	Sub-base/Threaded port
Body material	Stainless steel or brass
Metal parts	Stainless steel 1.4305
Seal material	FKM
Medium	Neutral gases and fluids (e.g. compressed air, town gas, natural gas, water, hydraulic oil, petrol). Suitable for technical vacuum
Medium temperature	-10 °C...+100 °C
Ambient temperature	-10 °C...+65 °C for T6 -10 °C...+75 °C for T5 on request
Electrical connection	DIN EN 175301-803 Form A for Cable Plug, Type 2508 (will be replaced with Type 2518) (see Ordering chart for accessories)
Protection class	IP65 with cable plug, NEMA 4x with cable plug 2508 (will be replaced with Type 2518) or 2509 only for stainless steel versions (other versions on request)
Ignition protection class	ATEX: PTB 01 ATEX 2101 0102 II 2G Ex i IIC T6 Gb II 2D Ex i IIIC T85 °C Db IECEX: PTB IECEX 12,0040 II 2G Ex i IIC T6 Gb II 2D Ex i IIIC T85 °C Db

Orifice [mm]	Response times ¹⁾	
	Opening [ms]	Closing [ms]
0.9	20	22

¹⁾ Measurement at the valve outlet 6 bar and +20 °C
Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

Function values for switching valve		
	at +20 °C	at +55 °C
Minimum switching current	30 mA	30 mA
Nominal resistance coil	310 Ω	360 Ω
Minimum terminal voltage	9,3 V	10,8 V

Dimensions [mm]

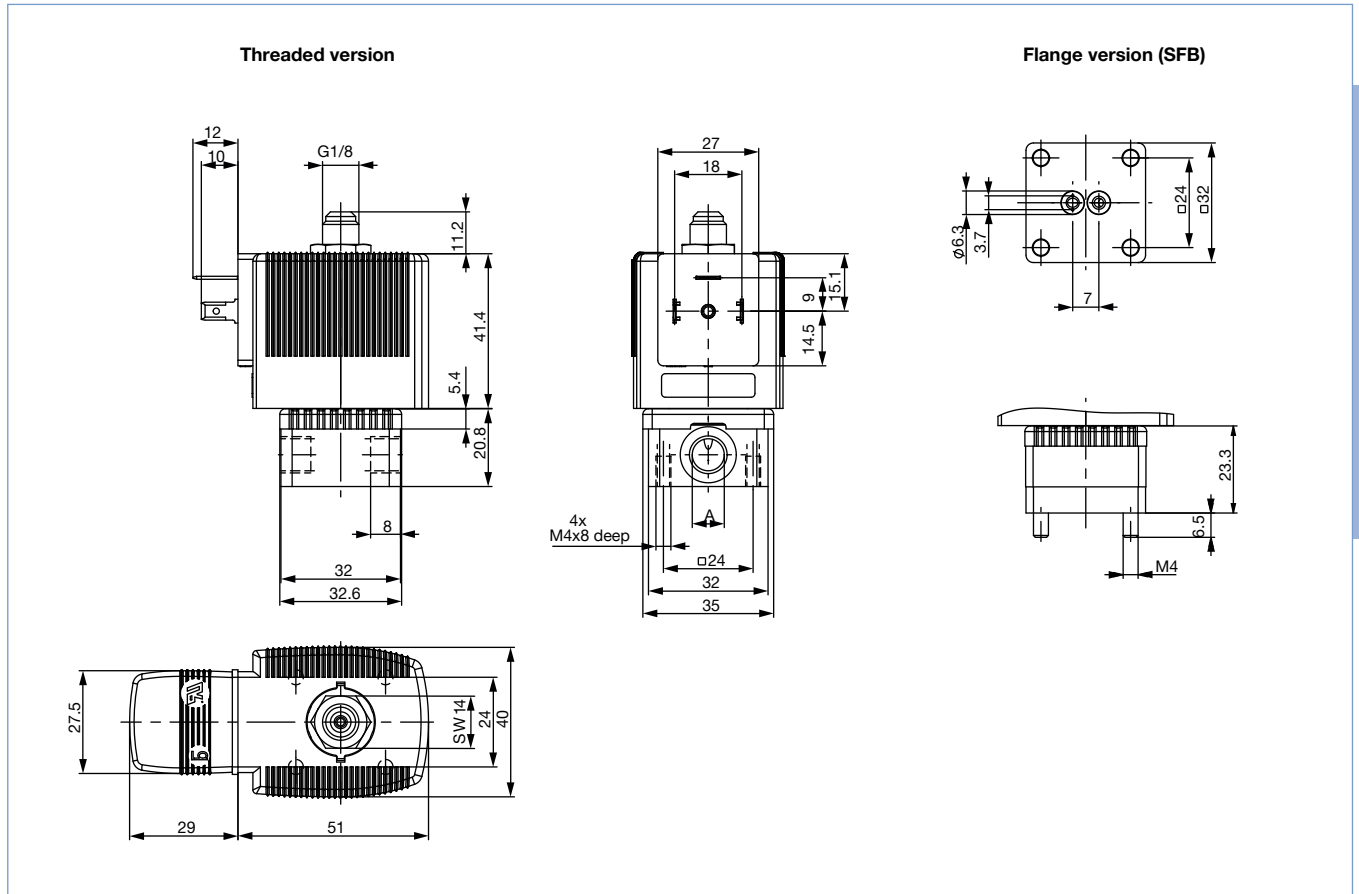


Options

- Further versions see data sheet or on request

Max. allowable values acc. to the certificate of conformity	
Ui	28 V
Ii	120 mA
Pi	1,1 W
Ambient temperature	+60 °C at T6 +75 °C at T5

Dimensions [mm]



Ordering chart

Circuit function	Orifice [mm]	Q _{Nn} -value air [l/min]	Seal material	Pressure range [bar]	Body material	Port connection	Article no. without manual override
6014 valve; Ex ia II T6 with FKM seal material only for approved single mounting, cable plug acc. to DIN EN 175301-803 Form A, ambient temperature from -10 °C to 60 °C for T6, -10... -75 °C for T5							
C 3/2 way direct-acting solenoid valve, normally closed	0.9	30	FKM	Vacuum to 10	Stainless steel	Bürkert sub-base (SFB)	144540
						Threaded port G 1/8	147226
					Brass	Bürkert sub-base (SFB)	147227
						Threaded port G 1/8	146214

The maximum fluid temperature must not in any case exceed the permissible temperature class (T4 135 °C, 100 °C T5, T6 85 °C), minus 5 K.

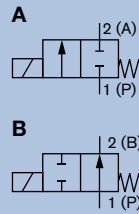
Accessories

Description	Article no.
Stainless steel cap nut, for additional protection of the exhaust air channel from damp penetration	649554
Cable plug Type 2508 (will be replaced with Type 2518) acc. to DIN EN 175301-803 (previously DIN 43650) with blue compression gland nut	438574

Direct-acting 2/2 way plunger valve

6027

- Direct-acting, powerful valve with diameter of up to DN13
- Vibration-proof, bolted coil system
- Increased leak-tightness with welded plunger guide tube
- Explosion proof versions
- High pressure variants for gases and liquids



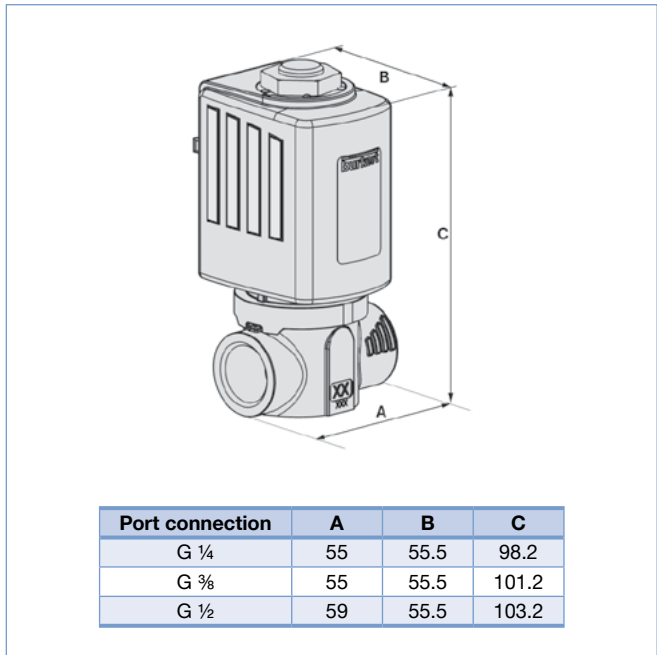
Valve 6027 is a direct-acting plunger valve. The stopper and plunger guide tube are welded together to enhance pressure resistance and leak-tightness. Various seal material combinations are available depending on the application. The coils are moulded with chemically resistant epoxy. An optional sliding ring bearing increases the service life with dry gases. Special seal technology is used for high-pressure applications. In combination with a plug in accordance with DIN EN 175301-803 Form A, the valves satisfy protection class IP65. Stainless steel valves satisfy NEMA 4X.

Technical data

General data	
Port connection	G ¼, G ⅜, G ½, G ⅝ (NPT and Rc on request)
Orifice	DN1.0...DN13.0
Body material	Brass or stainless steel 1.4404 (316L)
Coil material	Epoxy
Coil insulation class	Epoxy class H
Medium	Vacuum, neutral gases and liquids (e.g. compressed air, town gas, natural gas, water, hydraulic oil, petrol) and slightly aggressive medium
Medium resistance according to material combination	Hot liquids and steam
Viscosity	Max. 21 mm ² /sec
Seal material combination and medium temperature	
Seat seal/external seal	
Circuit function	Normally Closed (NC) Normally Open (NO)
FKM/FKM	-10 °C...+140 °C -10 °C...+100 °C
PEEK/FKM	-10 °C...+80 °C -10 °C...+80 °C
PTFE/PEEK	-40 °C...+140 °C -40 °C...+100 °C
NBR/NBR	-10 °C...+80 °C
Ambient temperature	Max. 55 °C
Voltage tolerance	± 10 %
Duty cycle / single valve	100 % continuous rating
Electrical connection	Acc. to DIN EN 175301-803 Form A for cable plug Type 2508 (will be replaced with Type 2518). Not included in delivery. See ordering chat for accessories
Protection class	IP65 with cable plug
Installation	As required, preferably with actuator upright

Power consumption				
Orifice	Inrush AC	Hold AC (hot coil)		DC (hot/cold coil)
[mm]	[VA]	[VA]	[W]	[W]
2.0...12.0	105	37	16	16 / 21

Dimensions [mm]



Response times ¹⁾				
Orifice [mm]	Response times AC		Response times DC	
	Opening [ms]	Closing [ms]	Opening [ms]	Closing [ms]
1.0...13.0	10...30	50...80	20...30	50...80

¹⁾ Measurement at the valve outlet 6 bar and +20 °C
Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

Options

- ATEX approval
- Higher pressures for gaseous medium to 100 bar
- Oxygen versions
- High temperature version up to +180 °C
- Further versions see data sheet or on request

Ordering chart

Circuit function	Port connection	Orifice [mm]	K _v value water [m³/h]	Max. medium pressure [bar]						Article no. acc. to voltage/frequency [V/Hz]		
				Water		Oil		Air		24/DC	24/50	230/50
				DC	AC	DC	AC	DC	AC			
Standard version elastomer seal up to 30 bar												
Housing material brass, G-inner thread, seal material FKM/FKM												
A 2/2 way direct-acting solenoid valve, normally closed	G ¼	3.0	0.28	0...30	0...25	0...30	0...25	0...30	0...25	178295	178296	178297
		4.0	0.54	0...12	0...16	0...12	0...16	0...12	0...16	178299	178300	178301
		5.0	0.73	0...6	0...10	0...6	0...10	0...6	0...10	178303	178304	178305
		6.0	0.95	0...3	0...6	0...3	0...6	0...3	0...6	178307	178308	178309
	G ⅜	3.0	0.28	0...30	0...25	0...30	0...25	0...30	0...25	178311	178312	178313
		4.0	0.54	0...12	0...16	0...12	0...16	0...12	0...16	178315	178316	178317
		5.0	0.73	0...6	0...10	0...6	0...10	0...6	0...10	178319	178320	178321
		6.0	0.95	0...3	0...6	0...3	0...6	0...3	0...6	178323	178324	178325
		8.0	1.6	0...1	0...3	0...1	0...3	0...1	0...3	178327	178328	178329
	G ½	6.0	0.95	0...3	0...6	0...3	0...6	0...3	0...6	178331	178332	178333
		8.0	1.6	0...1	0...3	0...1	0...3	0...1	0...3	178335	178336	178337
		10.0	1.8	0...0.4	0...2	0...0.4	0...2	0...0.4	0...2	178339	178340	178341
	B 2/2 way direct-acting solenoid valve, normally open	G ¼	3.0	0.28	0...16	0...16	0...16	0...16	0...16	0...16	211914	228487
4.0			0.54	0...10	0...10	0...10	0...10	0...10	0...10	208623	228489	228490
6.0			0.95	0...6	0...6	0...6	0...6	0...6	0...6	211915	on request	227530
G ⅜		6.0	0.95	0...6	0...6	0...6	0...6	0...6	0...6	228497	228498	228499
		8.0	1.6	0...3	0...3	0...3	0...3	0...3	0...3	228500	228501	228502
G ½		8.0	1.6	0...3	0...3	0...3	0...3	0...3	0...3	211916	228503	228504
	10.0	1.8	0...2	0...2	0...2	0...2	0...2	0...2	210436	219530	210438	
Housing material stainless steel, G-inner thread, seal material FKM/FKM												
A 2/2 way direct-acting solenoid valve, normally closed	G ¼	3.0	0.28	0...30	0...25	0...30	0...25	0...30	0...25	178239	178240	178241
		4.0	0.54	0...12	0...16	0...12	0...16	0...12	0...16	178243	178244	178245
		5.0	0.73	0...6	0...10	0...6	0...10	0...6	0...10	178247	178248	178249
		6.0	0.95	0...3	0...6	0...3	0...6	0...3	0...6	178251	178252	178253
	G ⅜	3.0	0.28	0...30	0...25	0...30	0...25	0...30	0...25	178255	178256	178257
		4.0	0.54	0...12	0...16	0...12	0...16	0...12	0...16	178259	178260	178261
		5.0	0.73	0...6	0...10	0...6	0...10	0...6	0...10	178263	178264	178265
		6.0	0.95	0...3	0...6	0...3	0...6	0...3	0...6	178267	178268	178269
		8.0	1.6	0...1	0...3	0...1	0...3	0...1	0...3	178271	178272	178273



Ordering chart continued

6027

Circuit function	Port connection	Orifice [mm]	K _v value water [m³/h]	Max. medium pressure [bar]						Article no. acc. to voltage/frequency [V/Hz]		
				Water		Oil		Air		24/DC	24/50	230/50
				DC	AC	DC	AC	DC	AC			
Housing material stainless steel, G-inner thread, seal material FKM/FKM												
A 2/2 way direct-acting solenoid valve, normally closed	G ½	6.0	0.95	0...3	0...6	0...3	0...6	0...3	0...6	178275	178276	178277
		8.0	1.6	0...1	0...3	0...1	0...3	0...1	0...3	178279	178280	178281
		10.0	1.8	0...0.4	0...2	0...0.4	0...2	0...0.4	0...2	178283	178284	178285
		12.0	2	0...0.2	0...1.2	0...0.2	0...1.2	0...0.2	0...1.2	178287	178288	178289
B 2/2 way direct-acting solenoid valve, normally open	G ¼	3.0	0.28	0...16	0...16	0...16	0...16	0...16	0...16	230243	230244	230245
		4.0	0.54	0...10	0...10	0...10	0...10	0...10	0...10	230246	230247	230248
		6.0	0.95	0...6	0...6	0...6	0...6	0...6	0...6	230255	230256	230257
	G ⅜	6.0	0.95	0...6	0...6	0...6	0...6	0...6	0...6	230255	230256	230257
		8.0	1.6	0...3	0...3	0...3	0...3	0...3	0...3	230258	230259	230260
	G ½	8.0	1.6	0...3	0...3	0...3	0...3	0...3	0...3	230261	230262	230263
		10.0	1.8	0...2	0...2	0...2	0...2	0...2	0...2	225248	230264	230265
		12.0	2	0...1	0...1	0...1	0...1	0...1	0...1	210441	230266	210321

Note: Further versions with alternative voltages, NPT- or Rc-inner thread, seal material EPDM/EPDM on request.

Circuit function	Port connection	Orifice [mm]	K _v value water [m³/h]	Max. medium pressure [bar]						Article no. acc. to voltage/frequency [V/Hz]		
				Water		Oil		Air		24/DC	24/50	230/50
				DC	AC	DC	AC	DC	AC			
Standard version pendulum seal up to 100 bar												
Housing material brass, G-inner thread, seal material PTFE/PEEK												
A 2/2 way direct-acting solenoid valve, normally closed	G ¼	2.0	0.14	0...100	0...75	0...100	0...75	0...100	0...75	on request	on request	on request
		3.0	0.28	0...60	0...50	0...60	0...50	0...60	0...50	262435	on request	on request
		4.0	0.54	0...20	0...30	0...20	0...30	0...20	0...30	206367	on request	319934
		6.0	0.95	0...5	0...12	0...5	0...12	0...5	0...12	257403	on request	on request
	G ⅜	4.0	0.54	0...20	0...30	0...20	0...30	0...20	0...30	263995	on request	317310
		6.0	0.95	0...5	0...12	0...5	0...12	0...5	0...12	187966	on request	208842
		8.0	1.6	0...1	0...5	0...1	0...5	0...1	0...5	293606	on request	on request
	G ½	6.0	0.95	0...5	0...12	0...5	0...12	0...5	0...12	260425	on request	on request
		8.0	1.6	0...1	0...5	0...1	0...5	0...1	0...5	254796	on request	on request
		10.0	1.8	0...0.4	0...2	0...0.4	0...2	0...0.4	0...2	255365	on request	on request

Ordering chart continued

Circuit function	Port connection	Orifice [mm]	K _v value water [m³/h]	Max. medium pressure [bar]						Article no. acc. to voltage/frequency [V/Hz]			
				Water		Oil		Air		24/DC	24/50	230/50	
				DC	AC	DC	AC	DC	AC				
Housing material brass, G-inner thread, seal material PTFE/PEEK													
B 2/2 way direct-acting solenoid valve, normally open	G ¼	2.0	0.14	0...30	0...16	0...16	0...16	0...16	0...16	0...16	on request	on request	on request
		3.0	0.28	0...16	0...10	0...10	0...10	0...10	0...10	0...10	214561	on request	231075
		4.0	0.54	0...10	0...6	0...6	0...6	0...6	0...6	0...6	299424	on request	on request
	G ⅜	6.0	0.95	0...6	0...2	0...2	0...2	0...2	0...2	0...2	317174	on request	on request
		4.0	0.54	0...10	0...6	0...6	0...6	0...6	0...6	0...6	263993	on request	on request
		6.0	0.95	0...6	0...2	0...2	0...2	0...2	0...2	0...2	251443	on request	on request
	G ½	6.0	0.95	0...6	0...2	0...2	0...2	0...2	0...2	0...2	254762	on request	on request
	G-inner thread, seal material PTFE/PEEK												
A 2/2 way direct-acting solenoid valve, normally closed	G ¼	2.0	0.14	0...100	0...75	0...100	0...75	0...100	0...75	184689	271441	184690	
		3.0	0.28	0...60	0...50	0...60	0...50	0...60	0...50	247937	on request	on request	
		4.0	0.54	0...20	0...30	0...20	0...30	0...20	0...30	184692	230667	184693	
		6.0	0.95	0...5	0...12	0...5	0...12	0...5	0...12	300077	on request	304305	
	G ⅜	4.0	0.54	0...20	0...30	0...20	0...30	0...20	0...30	292674	on request	on request	
		6.0	0.95	0...5	0...12	0...5	0...12	0...5	0...12	184695	202757	184696	
		8.0	1.6	0...1	0...5	0...1	0...5	0...1	0...5	184698	on request	184699	
	G ½	6.0	0.95	0...5	0...12	0...5	0...12	0...5	0...12	259348	on request	280481	
		8.0	1.6	0...1	0...5	0...1	0...5	0...1	0...5	271411	on request	on request	
		10.0	1.8	0...0.4	0...2	0...0.4	0...2	0...0.4	0...2	184701	on request	184702	
		12.0	2	0...0.2	0...1.2	0...0.2	0...1.2	0...0.2	0...1.2	184704	227982	184705	
	B 2/2 way direct-acting solenoid valve, normally open	G ¼	2.0	0.14	0...30	0...16	0...16	0...16	0...16	0...16	on request	on request	on request
3.0			0.28	0...16	0...10	0...10	0...10	0...10	0...10	256088	on request	255406	
4.0			0.54	0...10	0...6	0...6	0...6	0...6	0...6	242618	on request	223726	
6.0			0.95	0...6	0...2	0...2	0...2	0...2	0...2	299913	on request	on request	
G ⅜		4.0	0.54	0...10	0...6	0...6	0...6	0...6	0...6	on request	on request	on request	
		6.0	0.95	0...6	0...2	0...2	0...2	0...2	0...2	267659	316119	239314	
G ½		6.0	0.95	0...6	0...2	0...2	0...2	0...2	0...2	on request	on request	on request	

Note: Further versions with alternative voltages, NPT- or Rc-inner thread, seal material PTFE/FKM or PTFE/EPDM on request.



Accessories

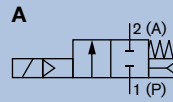
Description	Voltage	Article no.
Cable plug Type 2508 (will be replaced by Type 2518) acc. to DIN 175301-803 Form A – see Type 2508 ▶		
without circuitry (standard), without cable	0...250 V AC/DC	008376
with LED	12...24 V AC/DC	008360
with LED	200...240 V AC/DC	008362
with LED and varistor	12...24 V AC/DC	008367
with LED and varistor	200...240 V AC/DC	008369
with rectifier, LED and varistor	12...24 V AC/DC	008363
Cable plug Type 2513 acc. to DIN EN 175301-803 Form A – see Type 2513 ▶		
Cable length, 12000 mm	max. 230 V AC/DC	260893
Cable length, 5000 mm	max. 230 V AC/DC	260892
Cable length, 3000 mm	max. 230 V AC/DC	260891
Cable length, 300 mm	max. 230 V AC/DC	260890

6027

Servo-assisted 2/2 way piston valve

6240

- Servo-assisted and compact piston valve with diameter of up to DN13
- Vibration-resistant , screwed coil system
- Increased leak-tightness with welded plunger guiding tube
- Safe opening with hard-coupled piston system
- Explosion proof versions optional

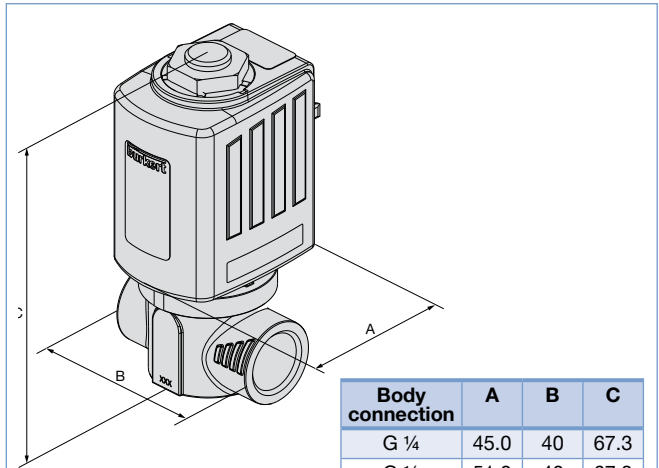


The 6240 valve is a servo-assisted plunger valve. The stopper and plunger guiding tube are welded together to enhance pressure resistance and leak-tightness. Various seal material combinations are available depending on the application. The housing design and surface quality enable maximum flow rates. The coils are moulded with chemically resistant epoxy. An optional sliding ring bearings increases the life cycle with dry gases. ‚Kick and Drop‘ electronics are available for over-excitation (plug 2511) and reduced electrical power consumption in operation. In combination with a plug in accordance with DIN EN 175301-803 Form A, the valves satisfy protection class IP65. Stainless steel valves satisfy NEMA 4X.

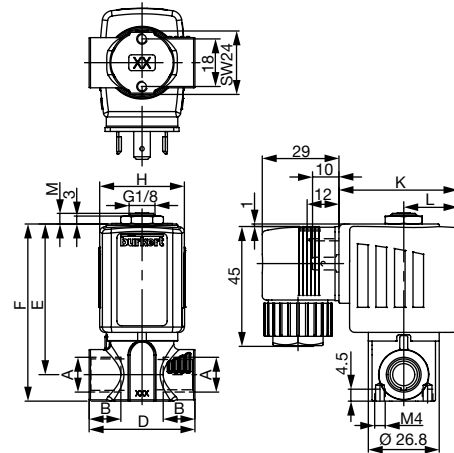
Technical data

General data	
Port connections	G ¼, G ½, G ½ (NPT and Rc on request)
Orifice	DN6, DN12
Body material	Brass, Stainless steel
Coil material	Epoxy
Coil insulation class	Class H
Seal material combination and medium temperature	
Seat seal/external seal	
Standard	
FKM/FKM	-10 °C...+140 °C
EPDM/EPDM	-30 °C...+120 °C (on request)
PTFE/FKM	-10 °C...+140 °C (on request)
Standard high temp.	
PTFE/PEEK DN6	-40 °C...+180 °C
PTFE/PEEK DN12	-40 °C...+140 °C
Medium	Neutral gases and liquids, such as e.g. compressed air, water, hydraulic oil, steam and hot mediums
High temperature version	
Viscosity	max. 21 mm ² /sec
Medium temperature	
FKM	-10 °C...+140 °C
PTFE/PEEK DN6	-40 °C...+180 °C
PTFE/PEEK DN12	-40 °C...+140 °C
EPDM	-30 °C to +120 °C (on request)
Ambient temperature	max. 55 °C
Voltage tolerance	± 10 %
Duty cycle	100 % continuous rating
Electrical connection	Tag connector acc. DIN EN 175301-803 Form A for cable plug Type 2508 (will be replaced with Type 2518) (not included in the delivery)
Protection class	IP65 with cable plug, ATEX/IECEx junction box version and cable connection version NEMA 4x with cable plug 2508 (will be replaced with Type 2518) or 2509 only for stainless steel versions (other versions on request)
Installation	As required, preferably with actuator upright

Dimensions [mm]



Body connection	A	B	C
G ¼	45.0	40	67.3
G ¼	51.0	40	67.3
G ⅜	45.0	50	70.3
G ⅜	51.0	50	70.3
G ½	55.5	55	103.0



A Body connection	B	D	E	F	M	H	K	L
G ¼	12	40	57.3	67.3	3.7	32	45.0	20.5
G ¼	12	40	57.3	67.3	3.7	40	51.0	23.5
G ⅜	12	50	58.3	70.3	3.7	32	45.0	20.5
G ⅜	12	50	58.3	70.3	3.7	40	51.0	23.5
G ½	12	55	89.0	103.0	7.5	42	55.5	27.0

Technical data continued

Power consumption									
Coil size [mm]	AC			DC		ATEX/IECEx AC/DC Nominal power [W]	KD-Coil AC/DC		
	Inrush [VA]	Hold [VA]	[W]	Cold [W]	Warm [W]		Cold Inrush [W] 500 ms	Hold [W]	Warm Hold [W]
32 (5)	32	18	8	12	10	–	–	–	–
40 (6)	40	23	10	14	12	9	–	–	–
42 (K)	150	37	16	21	16	12	85	8.5	7
65 (L)	–	–	–	28	21	20	–	–	–

KD coil AC/DC

"Kick and Drop" coil (KD coil): Integrated electronics for short-term power increase and reduction in dual coil technology

Response times ¹⁾		
Version	Opening [ms]	Closing [ms]
Standard DN6	10...20	40...50
Standard DN12	20...40	80...100
Steam version DN13	80...100	200...300
High pressure MX3	100...200	300...500

1) Measurement at the valve outlet 6 bar and +20 °C

Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

Ordering chart

Standard version, all valves with FKM seal								
Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h]	Pressure range [bar] ²⁾	Coil size [mm]	Article no. per voltage/frequency [V/Hz]		
						024/DC	024/50	230/50
A 2/2 way servo-controlled solenoid valve, normally closed	FKM seal							
	Brass body							
	G ¼	6	0.6	0...16	32	177800	177801	177802
	G ½	6	0.6	0...16	32	177803	177804	177805
	Stainless steel body							
G ¼	6	0.6	0...16	32	177806	177807	177808	
G ½	12	2.2	0...16	42	238632	238633	238634	

High temperature version, all valves with PTFE/PEEK seal, without cable plug								
Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h]	Pressure range [bar] ²⁾	Coil size [mm]	Article no. per voltage/frequency [V/Hz]		
						024/DC	024/50	230/50
A 2/2 way servo-controlled solenoid valve, normally closed	PTFE/Graphite seal							
	2/2 way servo-controlled solenoid valve, normally closed							
	G ¼	6	0.6	0...16	32	184739	184740	184741
G ½	12	2.2	0...25	42	238638	238639	238640	

High pressure version, all valves with PTFE/FKM seal, without cable plug									
Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h]	Pressure range [bar] ²⁾		Coil size [mm]	Article no. per voltage/frequency [V/Hz]		
				liquid medium	gaseous medium		024/DC	024/50	230/50
A 2/2 way servo-controlled solenoid valve, normally closed	PTFE/FKM seal								
	Brass body								
	G ¼	6	0.6	0...25	0...40	40	184742	184743	184744
G ½	6	0.6	0...25	0...40	40	184745	184746	184747	

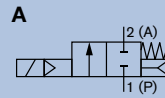
2) Overpressure to the atmospheric pressure

Note: Cable plug, see **Type 2508** (will be replaced with Type 2518)

Servo-assisted 2/2 way diaphragm valve

6213 EV

- Servo-assisted diaphragm with diameter of up to DN40
- Spring coupled diaphragm opens without differential pressure in the HP00 version
- Vibration-proof, screwed coil system
- Damped design for quiet closing
- Compact construction with high flow rate

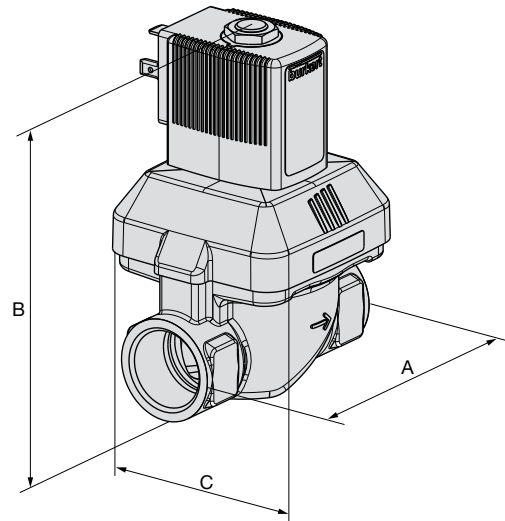


The 6213 EV valve is a servo-assisted solenoid valve of the S.EV series. The spring coupling of the diaphragm supports the opening process of the valve. In its standard version, the valve is suitable for use in liquids. A minimum differential pressure is required for complete opening. A special version (HP00) which opens the valve without differential pressure is available for gas and vacuum applications. Various diaphragm material combinations are available depending on the application. The standard brass housing satisfies all European drinking water requirements. Lead-free or dezincification-resistant brass types are available for other markets. The housing offering is rounded out by a stainless steel version. For reduced energy requirement, all coils can be delivered with electronic power reduction. In combination with a plug in accordance with DIN EN 175301-803 Form A, the valves satisfy protection class IP65 – in combination with a stainless steel housing NEMA 4X.

Technical data

General data	
Orifice	Standard DN10 ... DN40 HP00: DN13 ... DN20
Body material	Brass acc. to DIN EN 50930-6, Stainless steel 1.4408 (316), Nickel-plated brass (5 µm) on request, Gunmetal (external thread)
Inner part of valve	
Brass body	Brass, stainless steel and PPS
Stainless steel body	Stainless steel and PPS
Seal material	NBR, FKM, EPDM
Medium	
NBR	Neutral fluids, water, hydraulic oil, oil without additives
FKM	Per-solutions, hot oils with additives
EPDM	Oil and fat-free fluids and gases
Ambient temperature	Max. +55 °C
Medium viscosity	Max. 21 mm ² /s
Medium temperature	
NBR	-10 °C...+80 °C
FKM	0 °C...+90 °C with polyamide coil 0 °C...+120 °C with epoxy coil
EPDM	-30 °C...+90 °C with polyamide coil -30 °C...+100 °C with epoxy coil
Voltages	Standard 024/DC, 024/50, 230/50 (further voltages on request) HP00: 024/DC, 24 V (50...60 Hz), 230 V (50...60 Hz)
Voltage tolerance	± 10 %

Dimensions [mm]



AC coil, 32 mm

DN	A	B	C
10	50	78.4	36
		78.4	
13	50/55	82.9	44.5
		65	
20	80	109.4	65
		116.4	

AC coil, 42 mm /

DC coil 65 mm

DN	A	B	C
40	132	193.3	104.5
		126	
25	95	166.3	77
		95	
40	132	193.3	104.5
		126	
25	95	166.3	77
		95	

DC coil, 40 mm

DN	A	B	C
10	50	78.4	36
		78.4	
13	50/55	82.9	44.5
		65	
20	80	109.8	65
		116.8	

Technical data continued

Duty cycle	100 % continuous rating; KD coil 50 % max. rating 6 circuit switches/minute
Electrical connection	Tag connector acc. to DIN EN 175301-803 Form A
Protection class	IP65 with cable plug
Installation	As required, preferably with actuator upright
Response times¹⁾	0.1...4 seconds (depending on orifice and differential pressure)

1) Measurement at the valve outlet 6 bar and +20 °C
Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

Options

- Further versions see data sheet or on request

Orifice DN	Port connection	Coil size width [mm]		Power consumption ²⁾			Insulation class coil ³⁾		Weight [kg]	
		AC	DC	Inrush AC [VA]	Hold (hot coil) AC [VA/W]	DC [W]	Seal material FKM	Seal material NBR and EPDM	Brass coil AC	Brass coil DC
Power consumption										
10	G ¼, G ⅜	32	40	34	14/8	10 (11)	H	B	0.33	0.41
10	G ½	32	40	34	14/8	10 (11)	H	B	0.37	0.44
13	G ½	32	40	36	14/8	10 (11)	H	B	0.46	0.54
13	G ¾	32	40	36	14/8	10 (11)	H	B	0.49	0.57
20	G ¾	32	40	38	14/8	10 (11)	H	B	0.74	0.82
20	G 1	32	40	38	14/8	10 (11)	H	B	0.95	1.03
25	G 1	42	65	150	37/16	28 (29)	H	H	1.6	2.2
25	G 1¼	42	65	150	37/16	28 (29)	H	H	1.7	2.3
40	G 1¼	42	65	190	37/16	28 (29)	H	H	3.2	3.7
40	G 1½	42	65	190	37/16	28 (29)	H	H	3.2	3.7
40	G 2	42	65	190	37/16	28 (29)	H	H	3.38	3.9

HP00 - Power consumption

13	G ½	42	125	37/16	16 (21)	H	H	0.80	0.81
13	G ¾	42	125	37/16	16 (21)	H	H	0.86	0.87
20	G ¾	42	140	37/16	16 (21)	H	H	1.13	1.14
20	G 1	42	140	37/16	16 (21)	H	H	1.30	1.31

2) Values in brackets applies at coil temperature 20 °C

3) H Epoxy coil, B Polyamide coil

Ordering chart

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h] ^{4) 7)}	Pressure range [bar] ⁵⁾	Weight [kg] (DC) ⁶⁾	Article no. per voltage/frequency [V/Hz]		
						024/DC	024/50	230/50
Valves with brass body, DN10...DN40								
A Brass body, NBR Diaphragm, polyamide coil, medium temperature - 10...+80 °C								
2/2 way servo-controlled solenoid valve, normally closed	G ¼	10	1.3	0...10	0.3 (0.5)	221674 ☒	221675 ☒	221677 ☒
	G ⅜	10	1.9	0...10	0.3 (0.5)	221598 ☒	221599 ☒	221601 ☒
	G ½	10	1.9	0...10	0.4 (0.5)	221606 ☒	221607 ☒	221609 ☒
	G ½	13	3.6	0...10	0.4 (0.5)	221602 ☒	221603 ☒	221605 ☒
	G ¾	13	3.6	0...10	0.5 (0.6)	221618 ☒	221619 ☒	221621 ☒
	G ¾	20	8.3	0...10	0.7 (0.8)	221630 ☒	221631 ☒	221633 ☒
	G 1	20	8.3	0...10	0.9 (1.0)	221634 ☒	221635 ☒	221637 ☒
Brass body, NBR Diaphragm, epoxy coil, medium temperature - 10...+80 °C								
	G 1	25	11	0...10	1.6 (2.2)	227533 ☒	221725 ☒	221728 ☒
	G 1¼	25	11	0...10	1.7 (2.3)	227534 ☒	221729 ☒	221732 ☒
	G 1¼	40	23	0...10	2.9 (3.4)	270903 ☒	270895 ☒	270899 ☒
	G 1½	40	30	0...10	3.2 (3.7)	227539 ☒	221750 ☒	221753 ☒
	G 2	40	30	0...10	3.4 (3.9)	227541 ☒	221754 ☒	221757 ☒

Ordering chart continued

6213 EV

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h] ^(4) 7)	Pressure range [bar] ⁵⁾	Weight [kg] (DC) ⁶⁾	Article no. per voltage/frequency [V/Hz]		
						024/DC	024/50	230/50
A 2/2 way servo-controlled solenoid valve, normally closed	Brass body, FKM Diaphragm, epoxy coil, medium temperature 0 °C...120 °C							
	G ¼	10	1.3	0...10	0.3 (0.5)	221678	221679	221681
	G ¾	10	1.9	0...10	0.3 (0.5)	221610	221611	221613
	G ½	10	1.9	0...10	0.4 (0.5)	221614	221615	221617
	G ½	13	3.6	0...10	0.4 (0.5)	221622	221623	221625
	G ¾	13	3.6	0...10	0.5 (0.6)	221626	221627	221629
	G ¾	20	8.3	0...10	0.7 (0.8)	221638	221639	221641
	G 1	20	8.3	0...10	0.9 (1.0)	221642	221643	221645
	G 1	25	11	0...10	1.6 (2.2)	227537	221733	221736
	G 1¼	25	11	0...10	1.7 (2.3)	227538	221737	221740
	G 1¼	40	23	0...10	2.9 (3.4)	270905	270906	270908
	G 1½	40	30	0...10	3.2 (3.7)	227544	227724	227726
	G 2	40	30	0...10	3.4 (3.9)	227545	227728	227730
	Brass body, EPDM Diaphragm, polyamide coil, medium temperature -30 °C...+90 °C							
	G ¼	10	1.3	0...10	0.3 (0.4)	221670	221671	221673
	G ¾	10	1.9	0...10	0.3 (0.4)	221646	221647	221649
	G ½	10	1.9	0...10	0.4 (0.5)	221650	221651	221653
	G ½	13	3.6	0...10	0.4 (0.5)	221654	221655	221657
	G ¾	13	3.6	0...10	0.5 (0.6)	221658	221659	221661
	G ¾	20	8.3	0...10	0.7 (0.8)	221662	221663	221665
	G 1	20	8.3	0...10	0.9 (1.0)	221666	221667	221669
	Brass body, EPDM Diaphragm, epoxy coil, medium temperature -30 °C...+100 °C							
	G 1	25	11	0...10	1.6 (2.2)	227535	221717	221720
	G 1¼	25	11	0...10	1.7 (2.3)	227536	221721	221724
	G 1¼	40	23	0...10	2.9 (3.4)	270904	270890	270894
	G 1½	40	30	0...10	3.2 (3.7)	227542	221741	221745
	G 2	40	30	0...10	3.4 (3.9)	227543	221746	221749
	Gunmetal housing with external thread, EPDM Diaphragm, epoxy coil, medium temperature -30 °C...+100 °C⁵⁾							
	G ½	10	1.9	0...10	0.4	311670	311674	311679
	G ¾	13	3.6	0...10	0.6	311681	311684	311688
	G 1	20	8.3	0...10	1.1	311691	311693	311696

Ordering chart continued

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h] ⁴⁾	Pressure range [bar] ⁵⁾	Weight [kg] (DC)	Article no. per voltage/frequency [V/Hz]		
						024/DC	024/50...60	230/50...60
HPOO version, DN13...DN20								
A 2/2 way servo-controlled solenoid valve, normally closed	Brass body, FKM Diaphragm, epoxy coil, medium temperature 0 °C...+ 120 °C							
	G ½	13	3.6	0...10	0.8	221706	221705	231574
	G ¾	20	8.3	0...10	1.3	221712	221711	221713
	G 1	20	8.3	0...10	1.4	221715	221714	221716
	Brass body, EPDM Diaphragm, epoxy coil, medium temperature - 30 °C...+ 100 °C							
	G ½	13	3.6	0...10	0.8	221694	221693	221695
	G ¾	20	8.3	0...10	1.3	208422	221699	189592
	G 1	20	8.3	0...10	1.4	221703	221702	221704
	Gunmetal housing with external thread, EPDM Diaphragm, epoxy coil, medium temperature - 30 °C...+ 100 °C⁸⁾							
	G ¾	13	3.6	0...10	0.6	312248	312249	312250
	G 1	20	8.3	0...10	1.3	312247	312244	312246

- 4) Measured at + 20 °C, 1 bar⁶⁾ pressure at valve inlet and free outlet
 5) Pressure data [bar]: Overpressure with respect to atmospheric pressure
 6) The values in brackets regarding the weight apply to the DC version
 7) A minimum differential pressure of 0.5 bar is required for full (100 %) opening
 8) Approved for drinking water according to KTW and W270

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h] ^{1) 4)}	Pressure range [bar] ²⁾	Weight [kg] (DC) ³⁾	Article no. per voltage/frequency [V/Hz]		
						024/DC	024/50	230/50
Valves with Stainless steel body, DN10...DN40								
A 2/2 way servo-controlled solenoid valve, normally closed	Stainless steel body, NBR Diaphragm, polyamide coil, medium temperature - 10 °C...80 °C							
	G ¾	10	1.9	0...10	0.3 (0.4)	222150	222151	222152
	G ½	13	3.6	0...10	0.4 (0.5)	222156	222157	222158
	G ¾	20	8.3	0...10	0.7 (0.8)	222168	222169	222170
	G 1	20	8.3	0...10	0.9 (1.0)	222171	222172	222173
	Stainless steel body, NBR Diaphragm, epoxy coil, medium temperature - 10 °C...+ 80 °C							
	G 1	25	11	0...10	1.6 (2.2)	227546	228429	222193
	G 1¼	25	11	0...10	1.7 (2.3)	227547	228432	222197
	G 1½	40	30	0...10	3.2 (3.7)	227552	228435	222201
	G 2	40	30	0...10	3.4 (3.9)	227554	228438	222205



Ordering chart continued

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h] ^(1,4)	Pressure range [bar] ⁽²⁾	Weight [kg] (DC) ⁽³⁾	Article no. per voltage/frequency [V/Hz]		
						024/DC	024/50	230/50
6213 EV A 2/2 way servo-controlled solenoid valve, normally closed	Stainless steel body, FKM Diaphragm, epoxy coil, medium temperature 0...120 °C							
	G 3/8	10	1.9	0...10	0.3 (0.4)	221758	221759	221761
	G 1/2	13	3.6	0...10	0.4 (0.5)	221762	221763	221765
	G 3/4	20	8.3	0...10	0.7 (0.8)	222122	222123	222125
	G 1	20	8.3	0...10	0.9 (1.0)	222126	222127	222129
	G 1	25	11	0...10	1.6 (2.2)	227550	228430	222143
	G 1 1/4	25	11	0...10	1.7 (2.3)	227551	228433	222145
	G 1 1/2	40	30	0...10	3.2 (3.7)	227557	228436	222147
	G 2	40	30	0...10	3.4 (3.9)	227558	228439	222149
	Stainless steel-body, EPDM Diaphragm, polyamide coil, medium temperature -30...+90 °C							
	G 3/8	10	1.9	0...10	0.3 (0.4)	222153	222154	222155
	G 1/2	13	3.6	0...10	0.4 (0.5)	222159	222160	222161
	G 3/4	20	8.3	0...10	0.7 (0.8)	222174	222175	222176
	G 1	20	8.3	0...10	0.9 (1.0)	222177	222178	222179
	Stainless steel-body, EPDM Diaphragm, epoxy coil, medium temperature -30...+100 °C							
	G 1	25	11	0...10	1.6 (2.2)	227548	228431	222195
	G 1 1/4	25	11	0...10	1.7 (2.3)	227549	228434	222199
	G 1 1/2	40	30	0...10	3.2 (3.7)	227555	228437	222203
	G 2	40	30	0...10	3.4 (3.9)	227556	228440	222207

Ordering chart continued

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h] ¹⁾	Pressure range [bar] ²⁾	Weight [kg] (DC)	Article no. per voltage/frequency [V/Hz]		
						024/DC	024/50...60	230/50...60
HPOO version, DN13...DN20								
A 2/2 way servo-controlled solenoid valve, normally closed	Stainless steel body, FKM Diaphragm, epoxy coil, medium temperature 0...+120 °C							
	G ½	13	3.6	0...10	0.8	208694	220585	205351
	G ¾	20	8.3	0...10	1.3	222137	222136	222138
	G 1	20	8.3	0...10	1.4	222140	222139	222141
	Stainless steel-body, EPDM Diaphragm, epoxy coil, medium temperature -30...+100 °C							
	G ½	13	3.6	0...10	0.8	213132	222166	220584
	G ¾	20	8.3	0...10	1.3	222186	222187	222188
G 1	20	8.3	0...10	1.4	222189	222190	222191	

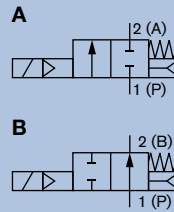
- 1) Measured at +20 °C, 1 bar²⁾ pressure at valve inlet and free outlet.
 2) Pressure data [bar]: Overpressure with respect to atmospheric pressure.
 3) The values in brackets regarding the weight apply to the DC version.
 4) A minimum differential pressure of 0.5 bar is required for full (100%) opening.

Note: Cable plug, see **Type 2508** ▶ (will be replaced with Type 2518)

Servo-assisted 2/2 way diaphragm valve

6281 EV

- Servo-assisted diaphragm with diameter of up to DN50
- Vibration-proof, central screwed coil system
- Damped design for quiet closing
- Service-friendly manual override
- Explosion-proof versions optional



The 6281 valve is a servo-assisted solenoid valve of the S.EV series. A minimum differential pressure is always required for the function of the valve. Various diaphragm material combinations and methods of operation are available depending on the application. The standard brass housing satisfies all European drinking water requirements. Dezincification-resistant brass is available for other markets. The housing offering is rounded out by a stainless steel version. For reduced energy requirement, all coils can be delivered with electronic power reduction. The valve can be equipped with manual override for easy maintenance and commissioning. In combination with a plug in accordance with DIN EN 175301-803 Form A, the valves satisfy protection class IP65 – in combination with a stainless steel housing NEMA 4X.

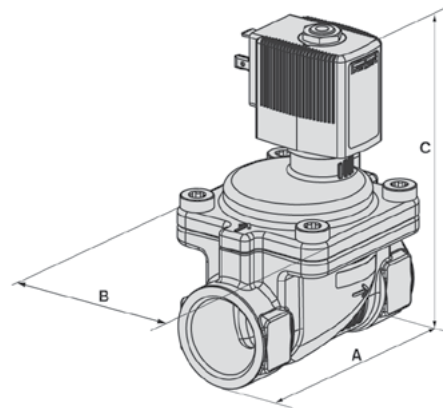
Technical data

Orifice	DN10...DN50
Body material	Brass acc. to DIN EN 50930-6 Stainless steel (dezincification resistant on request)
Inner part of valve	Stainless steel, Brass, Plastic (PPS)
Seal material	NBR, EPDM, FKM
Media	
NBR	Neutral fluids, e.g. compressed air, water
EPDM	Oil and fat-free fluids, hot water, acetone, aqueous alkali solution
FKM	Hot air, per-solution
Ambient temperature	max. +55 °C
Media temperature	
NBR	-10 °C...+80 °C
EPDM	-30 °C...+90 °C (with epoxy coil to +100 °C)
FKM	0 °C...+90 °C (with epoxy coil to +120 °C)
Voltages	024/DC, 024/50...60, 230/50...60
Voltage tolerance	±10 %
Duty cycle	100 % continuous rating
Electrical connection	Tag connector acc. to DIN EN 175301-803 Form A (previously DIN 43650) for cable plug Type 2508 (will be replaced with Type 2518). Not included.
Protection class	IP65 with cable plug IP65 with cable connection and junction box in combination with ATEX (on request)
Installation	As required, preferably with actuator upright
Response times²⁾	0.1...4 seconds (depending on orifice and differential pressure)
Coil isolation class	Polyamide class B Epoxy class H

²⁾ Measured at valve outlet at 6 bar and +20 °C.

Opening: pressure build-up 0...90%, closing: pressure decay 100...10%

Dimensions [mm]



DN	Port connection	A	B	C
10	G ¼	50	32	94.1
	G ⅜			
	G ½	50		98.6
	G ¾	50		94.6
	G 1	55		99.1
13	G ¾	58	42	104.6
	G 1	65		109.1
	G 1 ¼	65		115.6
20	G 1 ¼	80	60	122.6
	G 1 ½	80		127.1
25	G 1 ½	95	70	136.6
	G 2	95		145.1
	G 2 ½	126		155.6
40	G 2	126	99	166.6
	G 2 ½	132		154.9
	G 3	164		162.1
50	G 3	164	115	154.9
	G 3 ½	179		162.1

Options

- Further versions see data sheet or on request





















































































Technical data continued

Ignition protection class			Ignition protection class		
Coils with fixed cable outlet	ATEX	PTB 14 ATEX 2023 X II 2G Ex mb IIC T4 Gb II 2D Ex mb IIIC T130 °C Db	Assembly of the coil and the junction box	ATEX	EPS 16 ATEX 1046 X II 2G Ex eb mb IIC T4 Gb II 2D Ex mb tb IIIC T130 °C Db
	IECEX	IECEX PTB 14.0049 X Ex mb IIC T4 Gb Ex mb IIIC T130 °C Db		IECEX	IECEX EPS 16.0021 X Ex eb mb IIC T4 Gb Ex mb tb IIIC T130 °C Db

Ordering chart

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h]	Pressure range [bar]	Weight [kg]	Article no. per voltage/frequency [V/Hz]		
						024/DC	024/50...60	230/50...60
Circuit function A (normally closed, normally closed), Brass body								
A Seal material NBR, Polyamide coil, Medium temperature - 10 °C...+ 80 °C								
2/2 way servo-controlled solenoid valve, normally closed	G ¼	10	1.5	0.2...16	0.43	322499	322500	322501
	G ⅜	10	1.9	0.2...16	0.4	322502	322503	322504
	G ⅜	13	3.8	0.2...16	0.58	221841	221842	221843
	G ½	13	3.8	0.2...16	0.54	221844	221845	221846
	G ¾	13	3.8	0.2...16	0.59	221847	221848	221849
	G ¾	20	8.5	0.2...16	0.89	221850	221851	221852
	G 1	20	8.5	0.2...16	1	221853	221854	221855
	G 1	25	12	0.2...16	1.3	221856	221857	221858
	G 1¼	25	12	0.2...16	1.5	221859	221860	221861
	G 1¼	40	23	0.2...16	2.7	270131	268550	270132
	G 1½	40	30	0.2...16	3	221862	221863	221864
	G 2	40	30	0.2...16	3.2	221865	221866	221867
	G 2	50	40	0.2...16	4.5	253156	253157	253158
G 2½	50	40	0.2...16	5.2	253159	253160	253161	
A Seal material NBR, Polyamide coil, Medium temperature - 10 °C...+ 80 °C, with manual override								
2/2 way servo-controlled solenoid valve, normally closed	G ¼	10	1.5	0.2...16	0.43	322505	322506	322507
	G ⅜	10	1.9	0.2...16	0.4	322508	322509	322510
	G ½	13	3.8	0.2...16	0.54	221952	-	221953
	G ¾	13	3.8	0.2...16	0.59	221954	-	221955
	G ¾	20	8.5	0.2...16	0.89	221956	-	221957
	G 1	20	8.5	0.2...16	1	221958	-	221959
	G 1	25	12	0.2...16	1.3	221960	-	221961
	G 1¼	25	12	0.2...16	1.5	221962	-	221963
	G 1¼	40	23	0.2...16	2.7	270142	-	270143
	G 1½	40	30	0.2...16	3	221964	-	221965
	G 2	40	30	0.2...16	3.2	221966	-	221967

Ordering chart continued

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h]	Pressure range [bar]	Weight [kg]	Article no. per voltage/frequency [V/Hz]			
						024/DC	024/50...60	230/50...60	
Circuit function A (normally closed, normally closed), Brass body									
6281 EV A 2/2 way servo-controlled solenoid valve, normally closed	Seal material FKM, Epoxy coil, Medium temperature 0 °C...+ 120 °C								
	G ¼	10	1.5	0.2...16	0.43	322511 	322512 	322513 	
	G ¾	10	1.9	0.2...16	0.4	322514 	322515 	322516 	
	G ¾	13	3.8	0.2...16	0.58	221868 	221869 	221870 	
	G ½	13	3.8	0.2...16	0.54	221871 	221872 	221873 	
	G ¾	13	3.8	0.2...16	0.59	221874 	221875 	221876 	
	G ¾	20	8.5	0.2...16	0.89	221877 	221878 	221879 	
	G 1	20	8.5	0.2...16	1	221880 	221881 	221882 	
	G 1	25	12	0.2...16	1.3	221883 	221884 	221885 	
	G 1¼	25	12	0.2...16	1.5	221886 	221887 	221888 	
	G 1¼	40	23	0.2...16	2.7	270133 	270134 	270135 	
	G 1½	40	30	0.2...16	3	221889 	221890 	221891 	
	G 2	40	30	0.2...16	3.2	221892 	221893 	221894 	
	G 2	50	40	0.2...16	4.5	253168 	253169 	253170 	
	G 2½	50	40	0.2...16	5.2	253171 	253172 	253173 	
	Seal material EPDM, Polyamide coil, Medium temperature -30 °C...+ 90 °C								
	G ¼	10	1.5	0.2...16	0.43	322517 	322518 	322519 	
	G ¾	10	1.9	0.2...16	0.4	322520 	322521 	322522 	
	G ¾	13	3.8	0.2...16	0.58	221895 	221896 	221897 	
	G ½	13	3.8	0.2...16	0.54	221898 	221899 	221900 	
	G ¾	13	3.8	0.2...16	0.59	221901 	221902 	221903 	
	G ¾	20	8.5	0.2...16	0.89	221904 	221905 	221906 	
	G 1	20	8.5	0.2...16	1	221907 	221908 	221909 	
	G 1	25	12	0.2...16	1.3	221910 	221911 	221912 	
	G 1¼	25	12	0.2...16	1.5	221913 	221914 	221915 	
	G 1¼	40	23	0.2...16	2.7	270136 	270137 	270138 	
	G 1½	40	30	0.2...16	3	221916 	221917 	221918 	
	G 2	40	30	0.2...16	3.2	221919 	221920 	221921 	
G 2	50 ¹⁾	40	0.2...16	4.5	253162 	253163 	253164 		
G 2½	50 ¹⁾	40	0.2...16	5.2	253165 	253166 	253167 		

1) Drinking water approved acc. to KTW and W270.

Ordering chart continued

Circuit function	Port connection	Orifice [mm]	K _v value water [m³/h]	Pressure range [bar]	Weight [kg]	Article no. per voltage/frequency [V/Hz]		
						024/DC	024/50...60	230/50...60
Circuit function B (normally open, normally open), Brass body								
B	Seal material NBR, Epoxy coil, Medium temperature - 10 °C...+ 80 °C							
2/2 way servo-controlled solenoid valve, normally open	G ¼	10	1.5	0.2...16	0.43	322523	322524	322525
	G ¾	10	1.9	0.2...16	0.4	322526	322527	322528
	G ¾	13	3.8	0.2...16	0.58	221923	221924	221925
	G ½	13	3.8	0.2...16	0.54	221926	221928	221929
	G ¾	13	3.8	0.2...16	0.59	221930	221931	221933
	G ¾	20	8.5	0.2...16	0.89	221934	221935	221936
	G 1	20	8.5	0.2...16	1	221937	221938	221939
	G 1	25	12	0.2...16	1.3	221940	221941	221942
	G 1¼	25	12	0.2...16	1.5	221943	221944	221945
	G 1¼	40	23	0.2...16	2.7	270139	270140	270141
	G 1½	40	30	0.2...16	3	221946	221947	221948
	G 2	40	30	0.2...16	3.2	221949	221950	221951
	G 2	50	40	0.2...16	4.5	253174	253175	253176
	G 2½	50	40	0.2...16	5.2	253177	253178	253179
Circuit function A (normally closed, normally closed), Stainless steel body								
A	Seal material NBR, Polyamide coil, Medium temperature - 10 °C...+ 80 °C							
2/2 way servo-controlled solenoid valve, normally closed	G ¼	10	1.5	0.2...16	0.43	322529	322530	322531
	G ¾	10	1.9	0.2...16	0.4	322532	322533	322534
	G ½	13	3.8	0.2...16	0.54	221968	221969	221970
	G ¾	20	8.5	0.2...16	0.86	221971	221972	221973
	G 1	20	8.5	0.2...16	0.97	221974	221975	221976
	G 1	25	12	0.2...16	1.3	221977	221978	221979
	G 1¼	25	12	0.2...16	1.4	221980	221981	221982
	G 1½	40	30	0.2...16	2.8	221983	221984	221985
	G 2	40	30	0.2...16	3	221986	221987	221988

Ordering chart continued

6281 EV

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h]	Pressure range [bar]	Weight [kg]	Article no. per voltage/frequency [V/Hz]		
						024/DC	024/50...60	230/50...60
A 2/2 way servo-controlled solenoid valve, normally closed	Seal material FKM, Epoxy coil, Medium temperature 0 °C...+ 120 °C							
	G ¼	10	1.5	0.2...16	0.43	322535	322536	322537
	G ⅜	10	1.9	0.2...16	0.4	322538	322539	322540
	G ½	13	3.8	0.2...16	0.54	221989	221990	221991
	G ¾	20	8.5	0.2...16	0.86	221992	221993	221994
	G 1	20	8.5	0.2...16	0.97	221995	221996	221997
	G 1	25	12	0.2...16	1.3	221998	221999	222000
	G 1¼	25	12	0.2...16	1.4	222001	222002	222003
	G 1½	40	30	0.2...16	2.8	222004	222005	222006
	G 2	40	30	0.2...16	3	222007	222008	222009
	Seal material FKM, Epoxy coil, Medium temperature 0 °C...+ 120 °C, with manual override							
	G ¼	10	1.5	0.2...16	0.43	323894	-	323968
	G ⅜	10	1.9	0.2...16	0.4	323971	-	323972
	G ½	13	3.8	0.2...16	0.54	323973	-	323975
	G ¾	20	8.5	0.2...16	0.86	323977	-	323978
	G 1	25	12	0.2...16	1.3	323979	-	323980
	G 1¼	25	1.4	0.2...16	1.4	323982	-	323984
	G 1½	40	30	0.2...16	2.8	323986	-	323987
	G 2	40	30	0.2...16	3	323988	-	323989
	Seal material EPDM, Polyamide coil, Medium temperature -30 °C...+ 90 °C							
	G ¼	10	1.5	0.2...16	0.43	322541	322542	322543
	G ⅜	10	1.9	0.2...16	0.4	322544	322545	322546
	G ½	13	3.8	0.2...16	0.54	222010	222011	222012
	G ¾	20	8.5	0.2...16	0.86	222013	222014	222015
	G 1	20	8.5	0.2...16	0.97	222016	222017	222018
	G 1	25	12	0.2...16	1.3	222019	222020	222021
	G 1¼	25	12	0.2...16	1.4	222022	222023	222024
	G 1½	40	30	0.2...16	2.8	222025	222026	222027
G 2	40	30	0.2...16	3	222028	222029	222031	

Ordering chart continued

Circuit function	Port connection	Orifice [mm]	K _v value water [m³/h]	Pressure range [bar]	Weight [kg]	Article no. per voltage/frequency [V/Hz]		
						024/DC	024/50...60	230/50...60
Circuit function B (normally open, normally open), Stainless steel body								
B	Seal material FKM, Epoxy coil, Medium temperature 0 °C...+ 120 °C							
2/2 way servo-controlled solenoid valve, normally open	G ¼	10	1.5	0.2...16	0.43	322547	322548	322549
	G ⅜	10	1.9	0.2...16	0.4	322550	322551	322552
	G ½	13	3.8	0.2...16	0.54	228387	228388	228389
	G ¾	20	8.5	0.2...16	0.86	228390	228391	228392
	G 1	25	12	0.2...16	1.3	228393	228394	228395
	G 1¼	25	12	0.2...16	1.4	228396	228397	228398
	G 1½	40	30	0.2...16	2.8	228399	228400	228401
	G 2	40	30	0.2...16	3	228402	228403	228404

Note: Cable plug, see **Type 2508** ▶ (will be replaced with Type 2518)

Accessories

Description	Voltage	Article no.
Cable plug Type 2508 (will be replaced with Type 2518) acc. to DIN 175301-803 Form A – see Type 2508 ▶		
without circuitry (standard), without cable	0...250 V AC/DC	008376
Cable plug Type 2513 acc. to DIN EN 175301-803 Form A¹⁾ – see Type 2513 ▶		
Cable length, 12000 mm	max. 230 V AC/DC	260893
Cable length, 5000 mm	max. 230 V AC/DC	260892
Cable length, 3000 mm	max. 230 V AC/DC	260891
Cable length, 300 mm	max. 230 V AC/DC	260890

1) Meets the requirements of ATEX category 3 GD

Note: The delivery of a cable plug includes the flat seal and the fixing screw.



6281 EV

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h]	Pressure range [bar]	Weight [kg]	Article no. per voltage/frequency [V/Hz]	
						024/UC	230/UC
ATEX/IECEx cable versions – electrical connection with 3 m cable							
A 2/2 way servo-controlled solenoid valve, normally closed ¹⁾	Seal material NBR, Brass body, Medium temperature - 10 ... + 80 °C						
	G ¼	10	1.5	0.2...16	0.62	322553 𐀀	322554 𐀀
	G ⅜	10	1.9	0.2...16	0.59	322555 𐀀	322556 𐀀
	G ½	13	3.8	0.2...16	0.84	277539 𐀀	277535 𐀀
	G ¾	20	8.5	0.2...16	1.2	278095 𐀀	278097 𐀀
	G 1	25	12	0.2...16	1.7	277543 𐀀	277540 𐀀
	G 1¼	25	12	0.2...16	1.8	278103 𐀀	278105 𐀀
	G 1¼	40	23	0.2...16	3.0	279557 𐀀	279558 𐀀
	G 1½	40	30	0.2...16	3.3	278106 𐀀	278107 𐀀
	G 2	40	30	0.2...16	3.5	278191 𐀀	278250 𐀀
	G 2	50	40	0.2...16	4.8	278109 𐀀	278112 𐀀
	G 2½	50	40	0.2...16	5.5	278248 𐀀	278249 𐀀
	Seal material FKM, Stainless steel body, Medium temperature 0 ... + 90 °C						
	G ¼	10	1.5	0.2...16	0.62	322557 𐀀	322558 𐀀
	G ⅜	10	1.9	0.2...16	0.59	322559 𐀀	322560 𐀀
	G ½	13	3.8	0.2...16	0.84	277545 𐀀	277544 𐀀
	G ¾	20	8.5	0.2...16	1.2	278187 𐀀	278188 𐀀
	G 1	25	12	0.2...16	1.6	277547 𐀀	277546 𐀀
	G 1¼	25	12	0.2...16	1.7	278251 𐀀	278252 𐀀
	G 1½	40	30	0.2...16	3.1	278193 𐀀	278194 𐀀
G 2	40	30	0.2...16	3.3	278253 𐀀	278254 𐀀	
ATEX/IECEx junction box versions – electrical connection with junction box							
A 2/2 way servo-controlled solenoid valve, normally closed ¹⁾	Seal material NBR, Brass body, Medium temperature - 10 ... + 80 °C						
	G ¼	10	1.5	0.2...16	0.62	322561 𐀀	322562 𐀀
	G ⅜	10	1.9	0.2...16	0.59	322563 𐀀	322564 𐀀
	G ½	13	3.8	0.2...16	0.84	289544 𐀀	289550 𐀀
	G ¾	20	8.5	0.2...16	1.2	289560 𐀀	289561 𐀀
	G 1	25	12	0.2...16	1.7	289565 𐀀	289568 𐀀
	G 1¼	25	12	0.2...16	1.8	289571 𐀀	289572 𐀀
	G 1¼	40	23	0.2...16	3.0	289575 𐀀	289576 𐀀
	G 1½	40	30	0.2...16	3.3	289577 𐀀	289579 𐀀
	G 2	40	30	0.2...16	3.5	289583 𐀀	289584 𐀀
	G 2	50	40	0.2...16	4.8	289587 𐀀	289591 𐀀

Ordering chart continued

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h]	Pressure range [bar]	Weight [kg]	Article no. per voltage/frequency [V/Hz]	
						024/UC	230/UC
Seal material FKM, Stainless steel body, Medium temperature 0 ... +90 °C							
A 2/2 way servo-controlled solenoid valve, normally closed ¹⁾	G ¼	10	1.5	0.2...16	0.62	322565	322566
	G ⅝	10	1.9	0.2...16	0.59	322567	322568
	G ½	13	3.8	0.2...16	0.84	289556	289557
	G ¾	20	8.5	0.2...16	1.2	289562	289563
	G 1	25	12	0.2...16	1.6	289569	289570
	G 1¼	25	12	0.2...16	1.7	289573	289574
	G 1½	40	30	0.2...16	3.1	289580	289581
	G 2	40	30	0.2...16	3.3	289585	289586

1) Only with Epoxy coil available

Note: The maximum fluid temperature must not in any case exceed the permissible temperature class (T4 135 °C, 100 °C T5, T6 85 °C), minus 5 K.

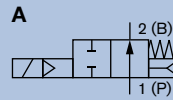
Accessories

Description	Ex Approvals		Article no
	Certification	Identification	
Ex-Cable glands (polyamide version included in delivery / surcharge applied for brass nickel plated version)			
Brass, nickelplated, 6...13 mm	IECEX PTB 13.0027X, PTB 04 ATEX 1112 X	II 2 D Ex tb IIIC Db IP68, II 2 G Ex e IIC Gb	773278
Polyamide, 7...13 mm	PTB 13 ATEX 1015 X, IECEX PTB 13.0034X	II 2 G Ex e IIC Gb, II 2 D Ex tb IIIC Db IP68	773277
Description			Article no
Special tool to turn the junction box (not included in delivery)			
Set SC02-AC10 Special wrench, service manual			293488

Servo-assisted 2/2 way piston valve

6407

- Servo-assisted piston valve up to diameter DN25
- Safe opening with hard-coupled piston system without differential pressure
- Vibration-resistant, push-over coil
- Explosion-proof versions
- Energy-saving double coil technology with Kick and Drop electronics



Type 6407 is a servo-assisted piston valve. The fix coupling between pilot valve and piston provides an opening of the valve without differential pressure.

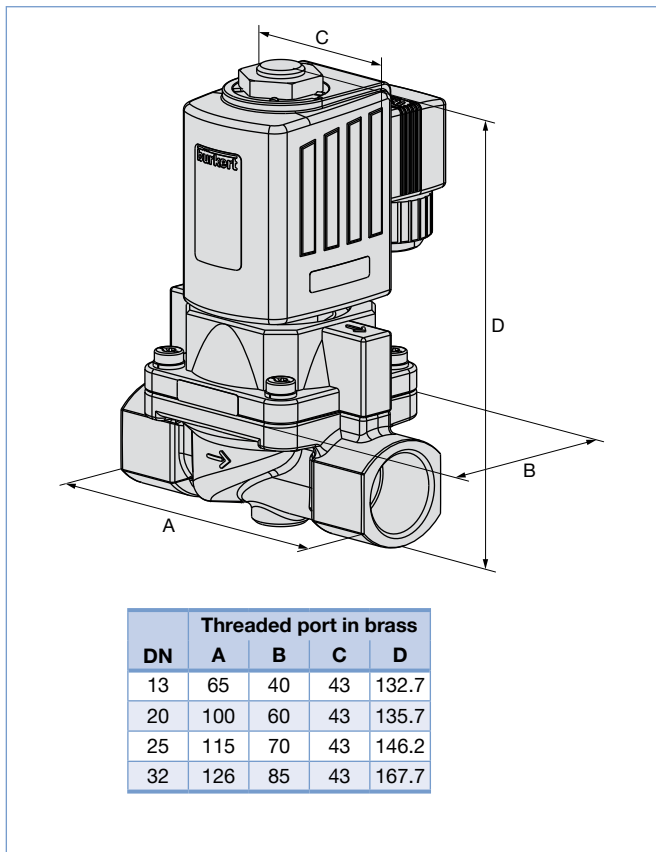
As a piston valve 6407 is particular applicable for media like gas and steam. As well as liquids with low temperature under 0 °C. The stopper and plunger guiding tube are welded together to enhance pressure resistance and leak-tightness. Various seal material combinations are available depending on the application. The coils are moulded with chemically resistant epoxy.

To reduce power consumption in operation coils with "Kick and Drop" (KD) electronics (double coil technology) are available. In combination with a plug in accordance to DIN EN 175301-803 Form A, the valves satisfy protection class IP65.

Technical data

Orifice	DN13...DN50
Body material	Brass
Coil material	Epoxy
Coil insulation class	H
Seal material	PTFE/graphite
Media	Neutral gases and liquid media (e.g. compressed air, water, hydraulic oil) hot water and steam
Media temperature	
Standard	
PTFE + Graphit	-40 °C...150 °C
PTFE + FKM	-10 °C...120 °C
Steam version	
PTFE + Graphit	0 °C...150 °C
PTFE + FKM	0 °C...120 °C
ATEX/IECEx version	-10 °C...90 °C
Ambient temperature	
Standard	
PTFE + Graphit	-40 °C...45 °C
PTFE + FKM	-10 °C...55 °C
Steam version	
PTFE + Graphit	0 °C...45 °C
PTFE + FKM	0 °C...55 °C
ATEX/IECEx version	-10 °C...40 °C
Viscosity	Max. 21 mm ² /s
Voltage tolerance	± 10 %
Duty cycle	100 % continuous rating; KD coil max. 6 switching cycles/minute
Electrical connection	Cable plug for cable Ø 7 mm, acc. to DIN EN 175301-803 Form A (not included in delivery)

Dimensions [mm]



Protection class	IP65 with cable plug
Installation	As required, preferably with actuator upright

Options

- Further versions see datasheet or on request

Ordering chart

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h] ¹⁾	Pressure range [bar] ²⁾	Max. media temperature [°C]	Coil size [mm]	Article no. per voltage/frequency [V/Hz]			
							024/DC	024/50	230/50	
Standard version										
DN13...DN32, Brass body, seal PTFE+Graphite										
A 2/2 way servo-controlled solenoid valve, normally closed	G ½	13	3.7	0...10	150	42	332166 ☒	332164 ☒	332165 ☒	
							-	332167 ☒	332168 ☒	
	G ¾	20	5.6	0...10	150	42	332169 ☒	-	-	
							-	332170 ☒	332172 ☒	
	G 1	25	10.0	0...10	150	42	332171 ☒	-	-	
							-	332173 ☒	332174 ☒	
	G 1¼	32	16.0	0...10	150	42	332176 ☒	-	-	
							-	332177 ☒	332178 ☒	
	G 1½	32	16.0	0...10	150	42	332179 ☒	-	-	
							-	-	-	
	Steam version with valve seat in stainless steel									
	DN13...DN32, Brass body, seal PTFE+Graphite									
A 2/2 way servo-controlled solenoid valve, normally closed	G ½	13	3.7	0...10	150	42	320877 ☒	320859 ☒	320856 ☒	
							-	320861 ☒	320857 ☒	
	G ¾	20	5.6	0...10	150	42	320878 ☒	-	-	
							-	320862 ☒	320858 ☒	
	G 1	25	10.0	0...10	150	42	320879 ☒	-	-	
							-	330406 ☒	330401 ☒	
	G 1¼	32	16.0	0...10	150	42	330420 ☒	-	-	
							-	330427 ☒	330429 ☒	
	G 1½	32	16.0	0...10	150	42	330435 ☒	-	-	
							-	-	-	
	Steam version with KD-coil cURus (UL-recognized) coil approval									
	DN13...DN32, Brass body, seal combination PTFE/Graphite									
A 2/2 way servo-controlled solenoid valve, normally closed	NPT ½	13	3.7	0...10	150	42	320874 ☒	320863 ☒	320866 ☒	
							320875 ☒	320864 ☒	320867 ☒	
	NPT ¾	20	5.6	0...10	150	42	320876 ☒	320865 ☒	320868 ☒	
							330421 ☒	330425 ☒	330426 ☒	
	NPT 1	25	10.0	0...10	150	42	330442 ☒	330443 ☒	330444 ☒	
							-	-	-	
NPT 1¼	32	16.0	0...10	150	42	-	-	-		
						-	-	-		
NPT 1½	32	16.0	0...10	150	42	-	-	-		
						-	-	-		

Ordering chart continued

6407

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h] ¹⁾	Pressure range [bar] ²⁾	Max. media temperature [°C]	Coil size [mm]	Article no. per voltage/frequency [V/Hz]		
							024/DC	024/50	230/50
Dampfausführung mit DC-Spule cURus (UL-recognized) Spulenzulassung									
DN13...DN32, Messinggehäuse, Dichtungskombination PTFE/Graphit									
A 2/2 way servo-controlled solenoid valve, normally closed	NPT ½	13	3.7	0...10	140	42	324978	-	-
	NPT ¾	20	5.6	0...10	140	65	324979	-	-
	NPT 1	25	10.0	0...10	140	65	324980	-	-
	NPT 1¼	32	16.0	0...10	140	65	332519	-	-
	NPT 1½	32	16.0	0...10	140	65	332520	-	-

1) Measured at +20 °C, 1 bar²⁾ pressure at valve inlet and free outlet.

2) Pressure data [bar]: Overpressure with respect to atmospheric pressure

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h] ³⁾	Pressure range [bar] ⁴⁾	Max. media temperature [°C]	Coil size [mm]	Article no. per voltage/frequency [V/Hz]	
							024/DC	230/UC ⁵⁾
Standard version								
DN50, Brass body, seal combination PTFE/FKM								
A 2/2 way servo-controlled solenoid valve, normally closed	G 2	50	36.0	0...10	150	72	332162	332163
	G 2½	50	36.0	0...10	150	72	332160	332161
Steam version with valve seat in stainless steel								
DN50, Brass body, seal combination PTFE/FKM								
A 2/2 way servo-controlled solenoid valve, normally closed	G 2	50	36.0	0...10	150	72	332149	332156

3) Measured at +20 °C, 1 bar⁴⁾ pressure at valve inlet and free outlet.

4) Pressure data [bar]: Overpressure with respect to atmospheric pressure

5) For versions with external rectifier the cable plug is included in the delivery.

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h] ⁶⁾	Pressure range [bar] ⁷⁾	Max. media temperature [°C]	Coil size [mm]	Article no. per voltage/frequency [V/Hz]	
							024/DC	230/UC
Valves with ATEX/IECEX with 3 meter cable								
Brass body, seal combination PTFE/FKM								
A 2/2 way servo-controlled solenoid valve, normally closed	G ½	13	3.7	0...10	90	42	326054	320872
	G ¾	20	5.6	0...10	90	65	331566	331567
	G 1	25	10	0...10	90	65	331568	331570
Valves with ATEX/IECEX terminal connection box								
Brass body, seal combination PTFE/FKM								
A 2/2 way servo-controlled solenoid valve, normally closed	G ½	13	3.7	0...10	90	42	326055	326057
	G ¾	20	5.6	0...10	90	65	331571	331572
	G 1	25	10	0...10	90	65	331574	331575

6) Measured at +20 °C, 1 bar⁷⁾ pressure at valve inlet and free outlet.

7) Pressure data [bar]: Overpressure with respect to atmospheric pressure

Accessories

Description	Voltage	Article no.
Cable plug Type 2508 (will be replaced with Type 2518) acc. to DIN 175301-803 Form A – see Type 2508 ▶		
without circuitry (standard), without cable	0...250 V AC/DC	008376
with LED	12...24 V AC/DC	008360
with LED	200...240 V AC/DC	008362
with LED and varistor	12...24 V AC/DC	008367
with LED and varistor	200...240 V AC/DC	008369
with rectifier, LED and varistor	12...24 V AC/DC	008363

Description	Ex Approvals		Article no.
	Certification	Identification	
Ex-Cable glands (polyamide version included in delivery / surcharge applied for brass nickel plated version)			
Brass, nickelplated, 6...13 mm	IECEX PTB 13.0027X, PTB 04 ATEX 1112 X	II 2 D Ex tb IIIC Db IP68, II 2 G Ex e IIC Gb	773278
Polyamide, 7...13 mm	PTB 13 ATEX 1015 X, IECEX PTB 13.0034X	II 2 G Ex e IIC Gb, II 2 D Ex tb IIIC Db IP68	773277

Description	Article no.
Special tool to turn the junction box (not included in delivery)	
Set SC02-AC10 Special wrench, service manual	293488

Overview for Micro Fluidics

Note: The following product overview does not show the complete product range of this catalogue. A complete overview can be found [here](#) ▶

Overview Micro Fluidics	Category	Type	Function	Width [in mm]	Process connection ¹⁾	Pressure range [in bar] [in MPa]	Medium temperature [°C]	Diameter [DN in mm]
	Direct-acting rocker valves	0127 ▶	3/2	3/2	16	G 1/8, NPT 1/8, UNF 1/4 - 28 SFB	0...6 0...0.6	-10...+55
6624 ▶		3/2	3/2	10	UNF 1/4 - 28, hose connection, SFB	0...5 0...0.5	-10...+55	0.8...1.6
6106 ▶		3/2	3/2	16	SFB	0...10 0...1	-10...+55	0.9 and 1.2
6626 ▶		3/2	3/2	16	G 1/8, UNF 5/16 - 24, hose connection, SFB	0...5 0...0.5	-10...+50	2.0 and 3.0
6628 ▶		3/2	3/2	22	G 1/8, NPT 1/8, PIC, hose connection, SFB	0...5 0...0.5	-10...+55	2.0 and 3.0
Direct-acting flipper valves	6650 ▶	3/2	3/2	4.5	SFB	0...7 0...0.7	+15...+55	0.4 and 0.8
	6144 ▶	3/2	3/2	10	SFB	0...7 0...0.7	0...+55	0.6
Pneumatic cartridge solenoid valve	6164 ▶	3/2	3/2	11	Cartridge connection	1,5...9	-20...+55	0.5...1.2
Whisper Valve	6712 ▶	2/2	2/2	7	Flange	0...5	0...+55	0.4 and 0.8
	6724 ▶	3/2	3/2	8.9	Flange, UNF 1/4" - 28	Vacuum up to 5	0...+50	0.8 and 1.2
Micro dosing unit	7615 ▶	Self-priming dosing unit	Self-priming dosing unit	28.8	Flange, UNF 1/4" - 28	1	+5...60	-

1) PIC = Push-in connection | SFB = Bürkert specific flange pattern

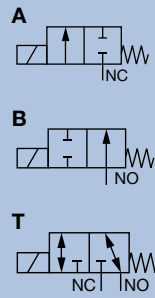
2) S = Standard | A = On request | N = Not available

Body material ²⁾			Seal material Diaphragm material ²⁾					Medium ²⁾			
Brass	Stainless steel	Plastic	NBR	EPDM	FKM	PTFE*	FFKM*	Neutral fluids	Contaminated fluids	Aggressive fluids	Neutral gases
N	N	S	N	S	S	S	S	S	S	S	S
N	N	S	N	S	S	N	S	S	S	S	S
N	N	S	S	N	S	N	N	N	N	N	S
N	N	S	N	S	S	N	S	S	S	S	S
N	N	S	N	S	S	N	S	S	S	S	S
N	N	S	N	N	N	N	S	S	S	S	S
N	N	S	N	S	S	N	N	S	N	N	S
N	N	S	N	N	S	N	N	N	N	N	S
N	N	S	N	S	S	N	S	S	N	S	S
N	N	S	N	S	S	N	S	S	N	S	S
N	N	S	N	A	N	N	S	S	N	S	N

2/2 or 3/2 way Miniature Rocker Solenoid Valve

0127

- For maximum chemical resistance requirements
- Compact design with 16 mm width and C_v ratings up to 0.058
- Proven reliability since 1993
- Flexible design for custom manifold assemblies
- High back pressure tightness, excellent cleanability and 100 % duty cycle



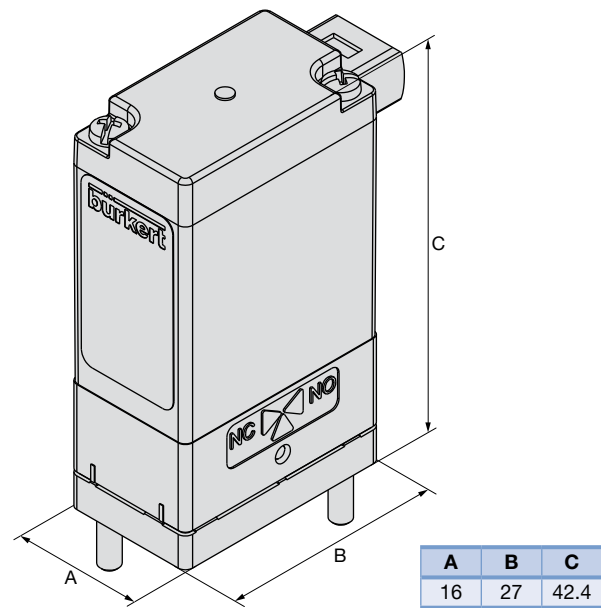
Bürkerts solenoid valve Type 0127 is considered the pioneer in the controlling of fluids in the microfluidic industry. The valve has been launched in the earlier 90th and has been further developed and improved to meet the increased requirements of the market. The use of the rocker technology, which operates the diaphragm between the actuator and media, ensures a very reliable and precise switching of smallest volumes. And still today this valve is a benchmark in its industry. A high variety of different diaphragm and housing materials as well as different housing and electrical connectors the valve Type 0127 was designed for the use in laboratories, medical- and analysis technology. Beyond medical industry it is also used for applications within other industries, for example ink-jet printers and vending machines.

Technical data

Orifice [mm]	DN0.8...DN1.6 (for details see ordering chart)
Body material	PEEK, PVDF, ETFE, PPS
Seal material	FFKM, FKM, EPDM
Media	Resistant to neutral and aggressive liquids and gases (see Burkert chemical resistance chart)
Media temperature	-10 °C...55 °C ¹⁾
Ambient temperature	Max. 55 °C
Service life	10.000.000 (according to laboratory endurance test with FKM and EPDM) ²⁾
Internal volumes	
with sub-base	starting at 44 µl
with G 1/8 and NPT 1/8	starting at 100 µl
with UNF 1/4-28	starting at 25 µl
with tube spigot on request	starting at 33 µl < 10 µl ³⁾
Port connection	Bürkert sub-base (16 x 27 mm), G 1/8, NPT 1/8, UNF 1/4 - 28, tube connection
Electrical connection	Cable plug Type 1054 Two FEP-leads 0.2 mm ² , length 500 mm Rectangular cable plug, Type 2505 ⁴⁾
Operating voltage	12/24 V DC; 24 V UC; other voltages on request
Voltage tolerance	± 10 %
Power consumption	3.4 W
Duty cycle	100 % continuous rating Manifold mounting If media or ambient temperatures are above +40 °C: intermittent operation 40 % (10 min)
Installation	As required, preferably with actuator upright

Dimensions [mm]

Manifold mount version with rectangular plug



Protection class	IP54 with flying leads and single cable plug IP40 with Rectangular plug
Response times	Measured at valve outlet with air at 2 bar and +20 °C According to ISO 12238:2001; Open Approx. 25 ms (Pressure rise 0...10 %) Closing Approx. 25 ms (Pressure drop 100...90 %)

- 1) Temperature may vary depending on orifice and seal material. For further information see datasheet.
- 2) Life expectancy depends on media, temperature, pressure, seal material, individual application conditions.
- 3) The internal volume can vary depending on the housing. For further information see datasheet.
- 4) Other electric connectors and other cable lengths upon request.

Options

- Further versions see datasheet or on request

Application examples



Detailed medium temperature (depending on material and orifice)

	Orifice	Seal material	Temperature range
Media temperature	DN0.8	FFKM	+5 °C...+50 °C
	DN0.8	FKM	0 °C...+50 °C
	DN0.8	EPDM	-5 °C...+50 °C
	DN1.2 & 1.6	FFKM	+10 °C...+50 °C
	DN1.2 & 1.6	FKM	+5 °C...+50 °C
	DN1.2 & 1.6	EPDM	0 °C...+50 °C
Media temperature with limitation on switching time and life expectancy	DN0.8	FFKM	0 °C...+50 °C
	DN0.8	FKM	-5 °C...+55 °C
	DN0.8	EPDM	-10 °C...+50 °C
	DN1.2 & 1.6	FFKM	+5 °C...+50 °C
	DN1.2 & 1.6 ¹⁾	FKM	0 °C...+55 °C
	DN1.2 & 1.6	EPDM	-5 °C...+50 °C




























1) Upon request up to -15 °C available.

Detailed internal volume (depending on fluid housing)

Body	2 way low dead volume		2 way		3 way	
	fluid chamber	total	fluid chamber	total	fluid chamber	total
sub-base	44 µl	54 µl	97 µl	106 µl	90 µl	106 µl
G 1/8, NPT 1/8	-	-	100 µl	211 µl	92 µl	229 µl
UNF 1/4-28	25 µl	69 µl	55 µl	79 µl	54 µl	95 µl
tube connection	33 µl	112 µl	62 µl	142 µl	69 µl	185 µl

Ordering chart

0127

Circuit function	Orifice [mm]	Port connection	K _v value water [m ³ /h]	C _v value [gal/min]	Q _{Nn} value air [l/min]	Pressure range [bar] ¹⁾	Seal material	Fluid housing material	Electrical connection	Voltage/frequency [V/Hz] ²⁾	Article no.							
A 2/2 way direct-acting solenoid valve, normally closed	0.8	Sub-base	0.015	0.017	16	0...6	FFKM	PEEK	leads, 0.5 m	24/DC	276699 							
							FKM	PPS	leads, 0.5 m	24/DC	264327 							
							EPDM	PPS	rectangular plug	24/DC	276701 							
	1.0	UNF ¼-28	0.02	0.023	22	0...2 ³⁾	FFKM	ETFE	leads, 0.5 m	12/DC	457785 							
									rectangular plug	24/DC	276702 							
A 2/2 way direct-acting solenoid valve, normally closed	1.2	Sub-base	0.03	0.035	32	0...5	FFKM	PEEK	leads, 0.5 m	24/DC	276703 							
									rectangular plug	24/DC	276710 							
							FKM	PPS	leads, 0.5 m	24/DC	276718 							
									EPDM	PPS	cable plug	24/DC	276728 					
	UNF ¼-28	0.025	0.029	27	0...5	FFKM	PEEK	leads, 0.5 m	12/DC	244706 								
								1.5	UNF ¼-28	0.03	0.035	33	0...2 ³⁾	FFKM	ETFE	leads, 0.5 m	24/DC	120680 
	rectangular plug	24/DC	276733 															
	cable plug	24/UC	136366 															
	1.6	G ⅜	0.05	0.058	54	0...2	FFKM	PVDF	leads, 0.5	24/DC	120677 							
									rectangular plug	24/DC	272153 							
		NPT ⅜	0.05	0.058	54	0...2	FFKM	PVDF	rectangular plug	24/DC	272160 							
		UNF ¼-28	0.03	0.035	33	0...2	FFKM	PEEK	leads, 0.5 m	24/DC	463551 							
		Sub-base	0.045	0.052	49	0...2	FFKM	PVDF	leads, 0.5 m	24/DC	276738 							
									PEEK	leads, 0.5 m	24/DC	242451 						
		FKM	PPS	rectangular plug	24/DC	273398 												
				EPDM	PPS	rectangular plug	12/DC	276746 										
	Tube connection	0.045	0.052	49	0...2 ³⁾	FFKM	PVDF	leads, 0.5 m	24/DC	455390 								
rectangular plug								24/DC	272154 									
B 2/2 way direct-acting solenoid valve, normally open	1.5	UNF ¼-28	0.03	0.035	33	0...2	FFKM	ETFE	leads, 0.5 m	24/DC	120681 							
	1.6	G ⅜	0.05	0.058	54	0...2	FFKM	PVDF	leads, 0.5 m	24/DC	120678 							
									Tube connection	0.045	0.052	49	0...2 ³⁾	FFKM	PVDF	leads, 0.5 m	24/DC	120684 
									Sub-base	0.045	0.052	49	0...2	EPDM	PPS	rectangular plug	24/DC	276747 

Ordering chart continued

Circuit function	Orifice [mm]	Port connection	K _v value water [m ³ /h]	C _v value [gal/min]	Q _{Nn} value air [l/min]	Pressure range [bar] ¹⁾	Seal material	Fluid housing material	Electrical connection	Voltage/frequency [V/Hz] ²⁾	Article no.							
T 3/2 way direct-acting solenoid valve, flow direction optional	0.8	Sub-base	0.015	0.017	16	0...6	FFKM	PEEK	leads, 0.5 m	24/DC	276748							
							FKM	PPS	rectangular plug	24/DC	276749							
							EPDM	PPS	rectangular plug	24/DC	276750							
	1.0	UNF 1/4-28	0.02	0.023	22	0...2	FFKM	ETFE	leads, 0.5 m	24/UC	214280							
									rectangular plug	24/DC	276751							
T 3/2 way direct-acting solenoid valve, flow direction optional	1.2	Sub-base	0.03	0.035	32	0...5	FFKM	PEEK	leads, 0.5 m	24/DC	276753							
									rectangular plug	24/DC	276754							
									FKM	PPS	leads, 0.5 m	24/DC	276756					
							EPDM	PPS	rectangular plug	24/DC	276758							
									UNF 1/4-28	0.025	0.029	27	0...5	FFKM	PEEK	cable plug	24/DC	269045
									1.5	UNF 1/4-28	0.03	0.035	33	0...2	FFKM	ETFE	leads, 0.5	24/DC
							rectangular plug	24/DC									272158	
							cable plug	24/UC									079901	
							1.6	G 1/8	0.05	0.058	54	0...2	FFKM	PVDF	leads, 0.5 m	24/DC	120679	
	rectangular plug	24/DC	272156															
	NPT 1/8	0.05	0.058	54	0...2	FFKM									PVDF	leads, 0.5 m	24/DC	121781
	UNF 1/4-28	0.03	0.035	33	0...2	FFKM		PEEK	rectangular plug	24/DC	262461							
									Sub-base	0.045	0.052	49	0...2	FFKM	PVDF	rectangular plug	24/DC	273853
																PEEK	leads, 0.5 m	24/DC
	FKM	PPS	rectangular plug	24/DC	271604													
			EPDM	PPS	rectangular plug	24/DC		276759										
					Tube connection	0.045		0.052	49	0...2	FFKM	PVDF	leads, 0.5 m	24/DC	120685			
	rectangular plug	24/DC	272157															

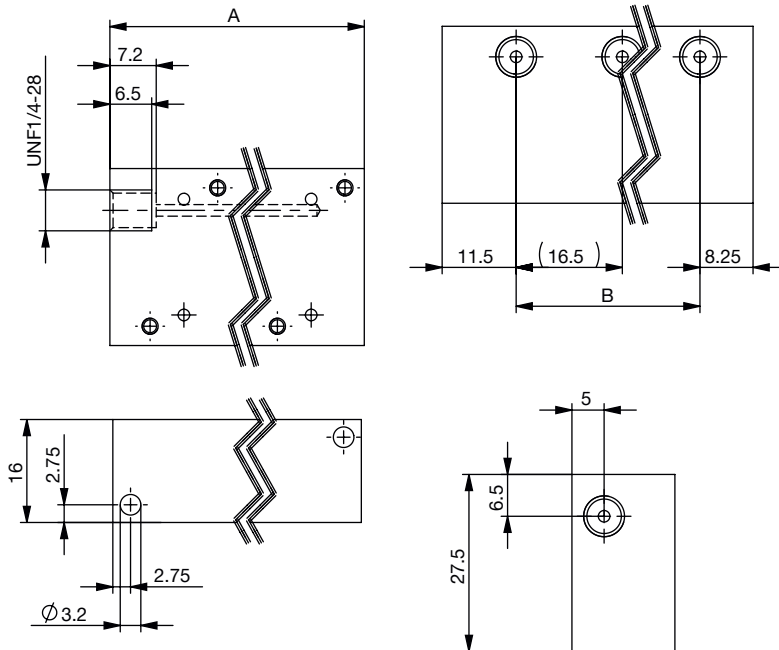
1) Overpressure with respect to atmospheric pressure. On request different pressure ranges available.

2) In universal Current (UC) are rectifier, LED and varistor integrated. Other voltages on request.

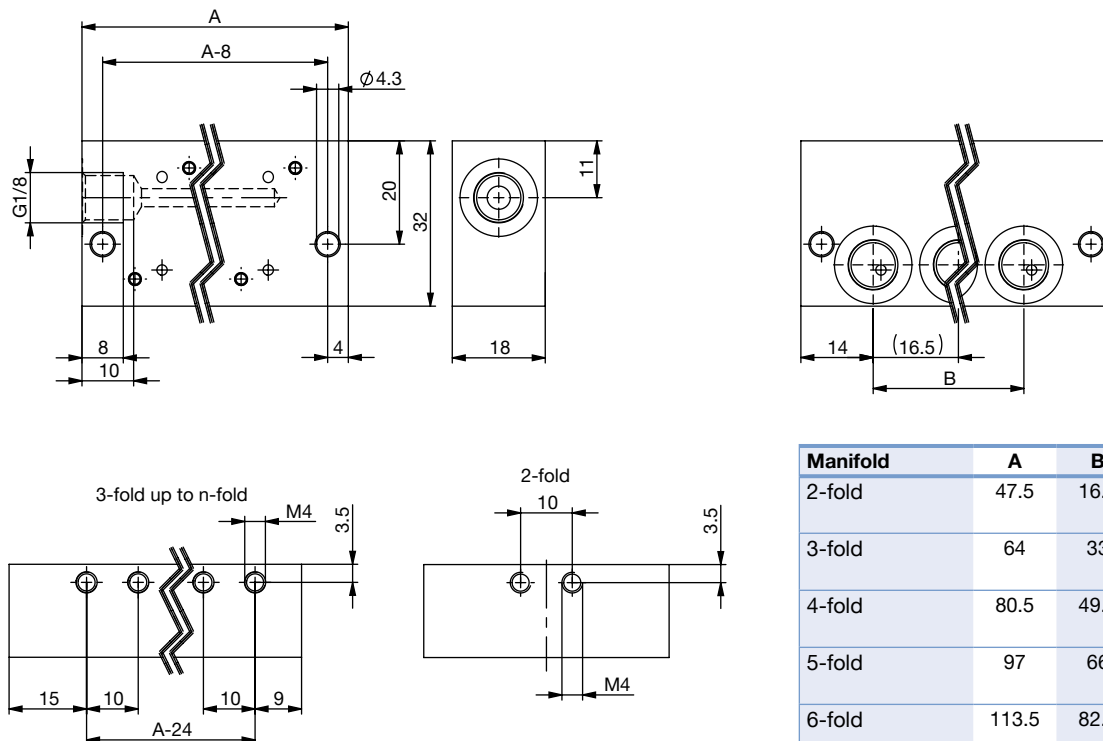
3) Low dead-volume version, maximum back pressure 1 bar.

Accessories

Description	Article no.
Cable plug type 1054 (without cable)	006699
Cable plug type 1054 with 3 m cable	413552
Rectangular plug type 2505 with 3 m cable	252572
Rectangular plug type 2505 with 300 mm flying leads	262346

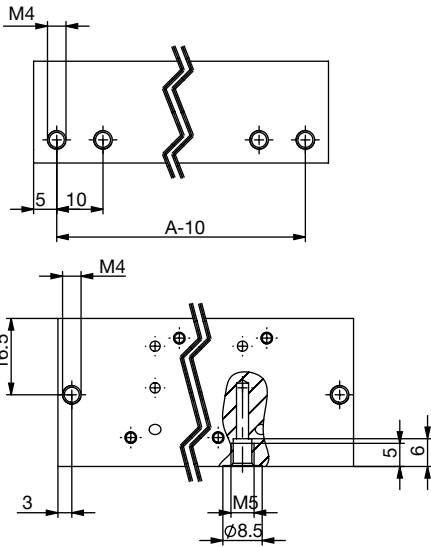
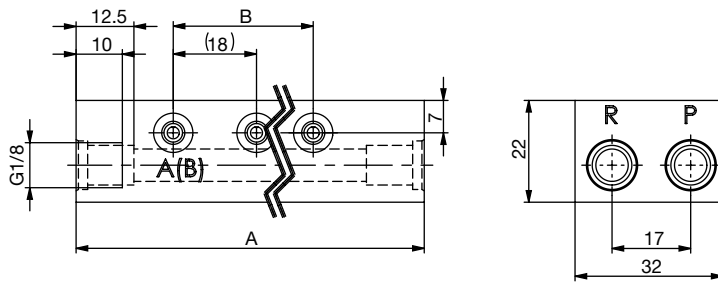
Manifolds in PEEK for Bürkert flange interface 16×27 2 way [mm]


Manifold	A	B	Article no.
2-fold	36.25	16.5	651506
3-fold	52.75	33	651510
4-fold	69.25	49.5	651507
5-fold	85.75	66	651508
6-fold	102.25	82.5	651509
7-fold	118.75	99	651521
8-fold	135.25	115.5	651522

Manifolds in PPS for Bürkert flange interface 16×27 2 way [mm]


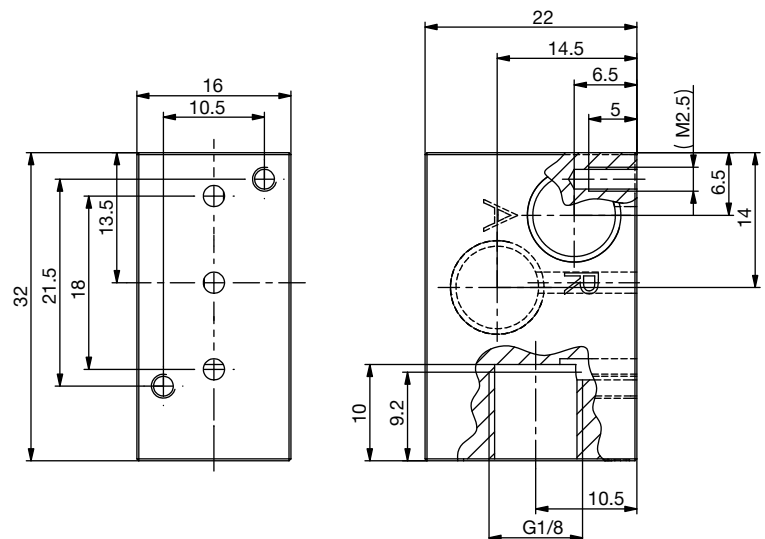
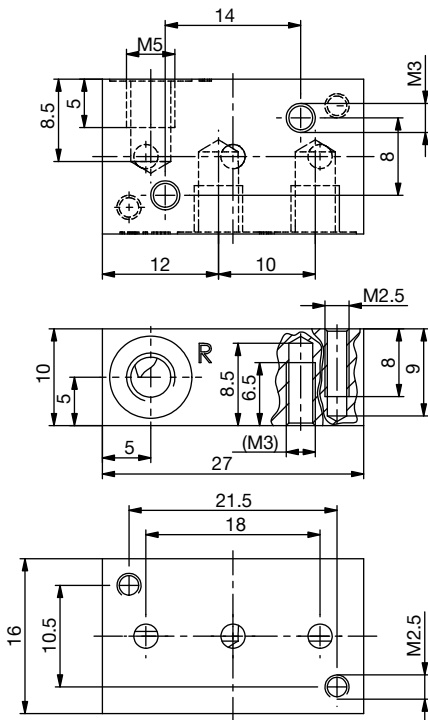
Manifold	A	B	Article no.
2-fold	47.5	16.5	675628
3-fold	64	33	675629
4-fold	80.5	49.5	675630
5-fold	97	66	675631
6-fold	113.5	82.5	675632
7-fold	130	99	675633
8-fold	146.5	115.5	675634
9-fold	163	132	675635
10-fold	179.5	148.5	675636

Manifolds in aluminium for Bürkert flange interface 16×27 3 way [mm]



Manifold	A	B	Article no.
2-fold	63	18	658695
3-fold	81	36	658696
4-fold	99	54	658697
5-fold	117	72	658698
6-fold	135	90	658699
8-fold	171	126	658700
10-fold	207	162	658701
12-fold	243	198	658703

Single manifolds in aluminium for Bürkert flange interface 16×27 [mm]



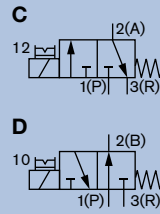
Manifold	Article no.
made from aluminium, black anodized, Port connection M5	623873

Manifold	Article no.
made from aluminium, black anodized, Port connection M5	634917

3/2 way Miniature Rocker Solenoid Valve for pneumatic systems

6106

- Direct-acting
- High cycling rate
- Reduced power consumption
- With manual override
- CNOMO and Bürkert flange interface



The direct-acting rocker solenoid valve, Type 6106, is especially designed for neutral gaseous mediums.

The valves are generally equipped with a DC coil. When using an AC power source, use an appliance with A rectifier.

The heat input in the medium is minimal, because the housing is separated from the coil by a stainless steel plate.

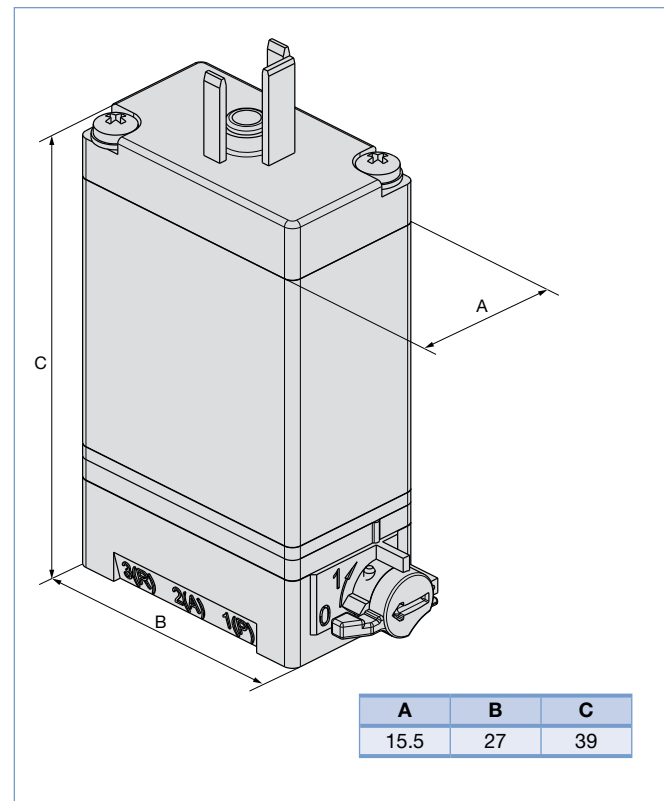
The valves can be mounted directly or also single or manifold mounted. They are used for dosing, filling, mixing and distributing small quantities of medium.

Technical data

Orifice	DN0.9 and DN1.2, other on request
Body material	PA (polyamide)
Seal material	FKM
Media	Compressed air, neutral gases (5 µm filtering) technical vacuum
Media temperature	-10 °C...+55 °C
Ambient temperature	-10 °C...+55 °C
Port connection	Bürkert flange below, CNOMO flange sideways
Operating voltages	220...240 V DC, 24 V DC, other voltages on request
Voltage tolerance	±10 %
Power consumption	See ordering chart
Cycling rate	Approx. 1000/min
Duty cycle	100 % continuous rating
Electrical connection	Tag connector sideways acc. to DIN EN 175301-803 (previously DIN 43650) for cable plug, Form C, other options on request (not included)
Protection class	IP20 with tag connector, IP65 with cable plug
Installation	As required, preferably with actuator upwards
Response times¹⁾	Acc. ISO 12238:2001; Measured at valve outlet at 6.3 bar and +20 °C
Opening	Approx. 25 ms (pressure rise 0...10 %)
Closing	Approx. 25 ms (pressure drop 100...10 %)

¹⁾ Measurement at the valve outlet 6 bar and +20 °C
Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

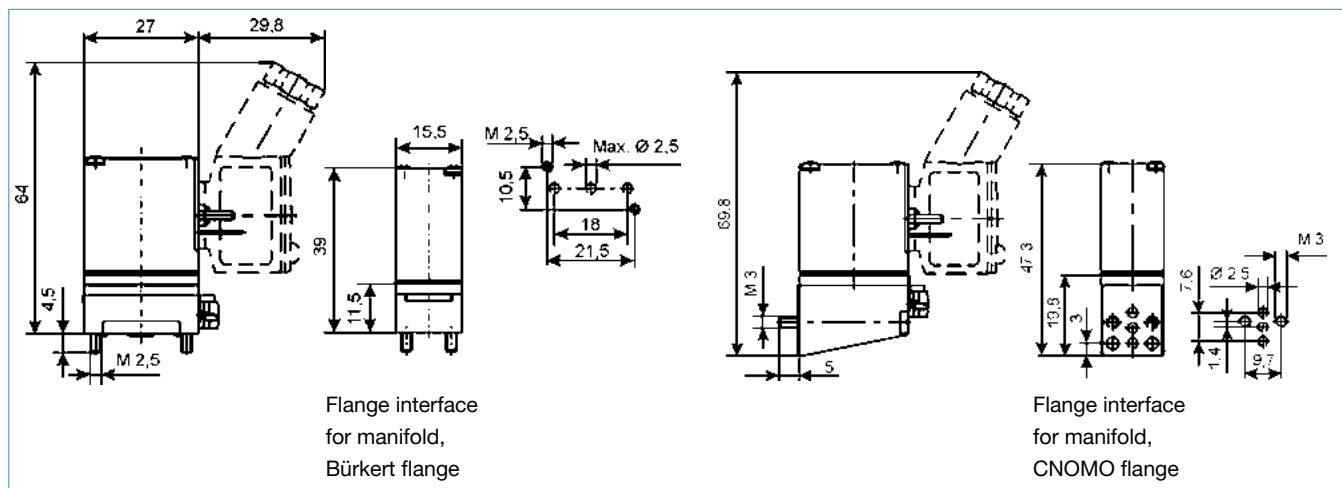
Dimensions [mm]



Options

- Further versions see data sheet or on request

Dimensions [mm]



Ordering chart

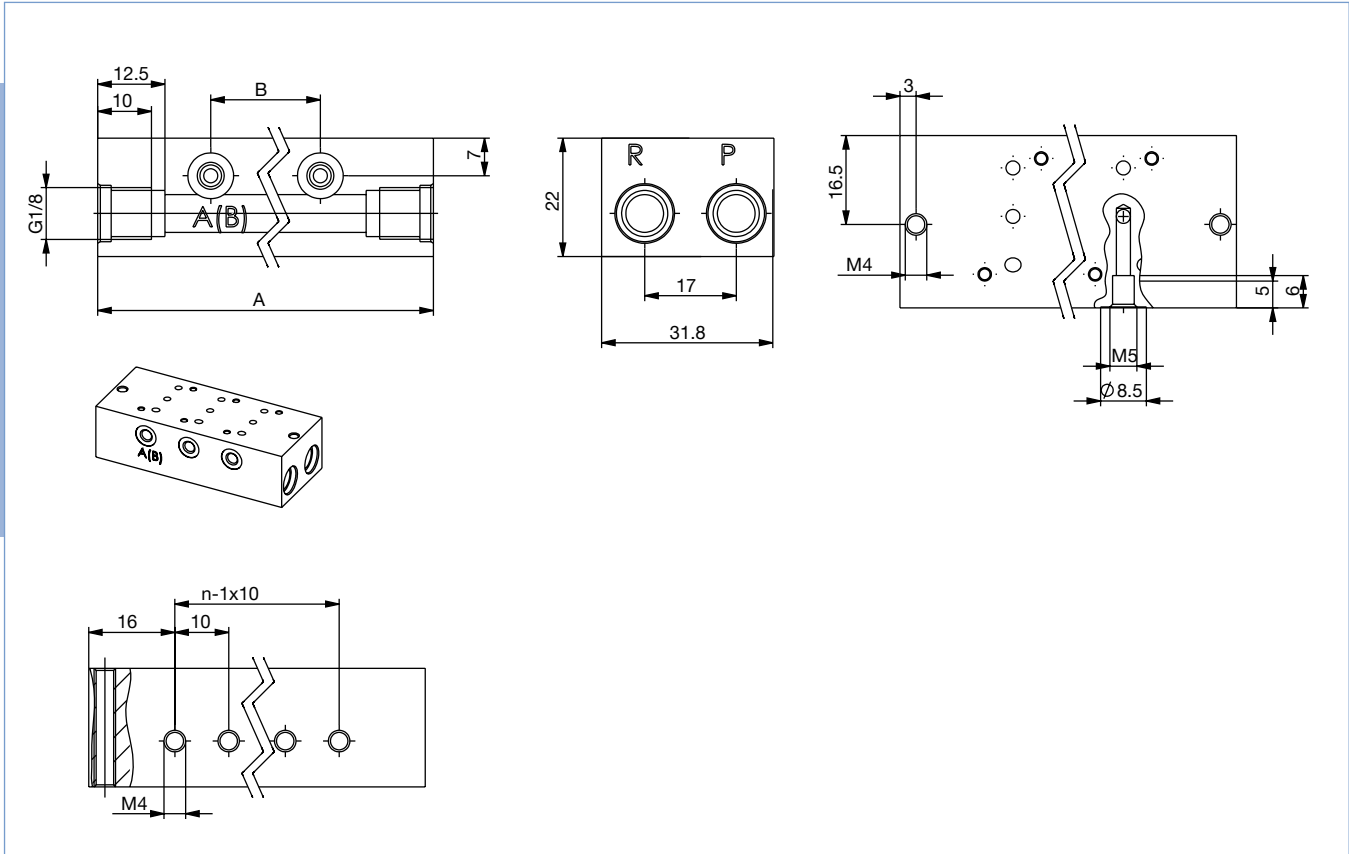
Circuit function All circuit functions monostable	Port connection	Orifice [mm]	Q _{Nn} value air 1 → 2 [l/min]	Q _{Nn} value air 2 → 3 [l/min]	Pressure range [bar]	Power consumption [W]	Article no. per voltage/frequency [V/Hz]	
							024/DC ¹⁾	220...240/DC ¹⁾
All valves with manual override, tag connector sideways, mounting screws and flange seal, without cable plug								
C 3/2 way direct-acting solenoid valve, normally closed, with manual override	Bürkert flange	0.9	22	25	Vac.-8	1	126417	-
	Bürkert flange	1.2	40	47	Vac.-10	2	126411	-
		3	-	-	-	-	-	126413
D 3/2 way direct-acting solenoid valve, normally open, with manual override	Bürkert flange	0.9	22	25	Vac.-8	1	126421	-
	Bürkert flange	1.2	40	47	Vac.-10	2	126419	-
C 3/2 way direct-acting solenoid valve, normally closed, with manual override	CNOMO	0.9	22	25	Vac.-8	1	126418	-
	CNOMO	1.2	33	38	Vac.-10	2	126414	-
		3	-	-	-	-	-	126416
D 3/2 way direct-acting solenoid valve, normally open, with manual override	CNOMO	0.9	22	25	Vac.-8	1	126422	-
	CNOMO	1.2	33	38	Vac.-10	2	126420	-

1) When using an AC power source, use an appliance with a rectifier.

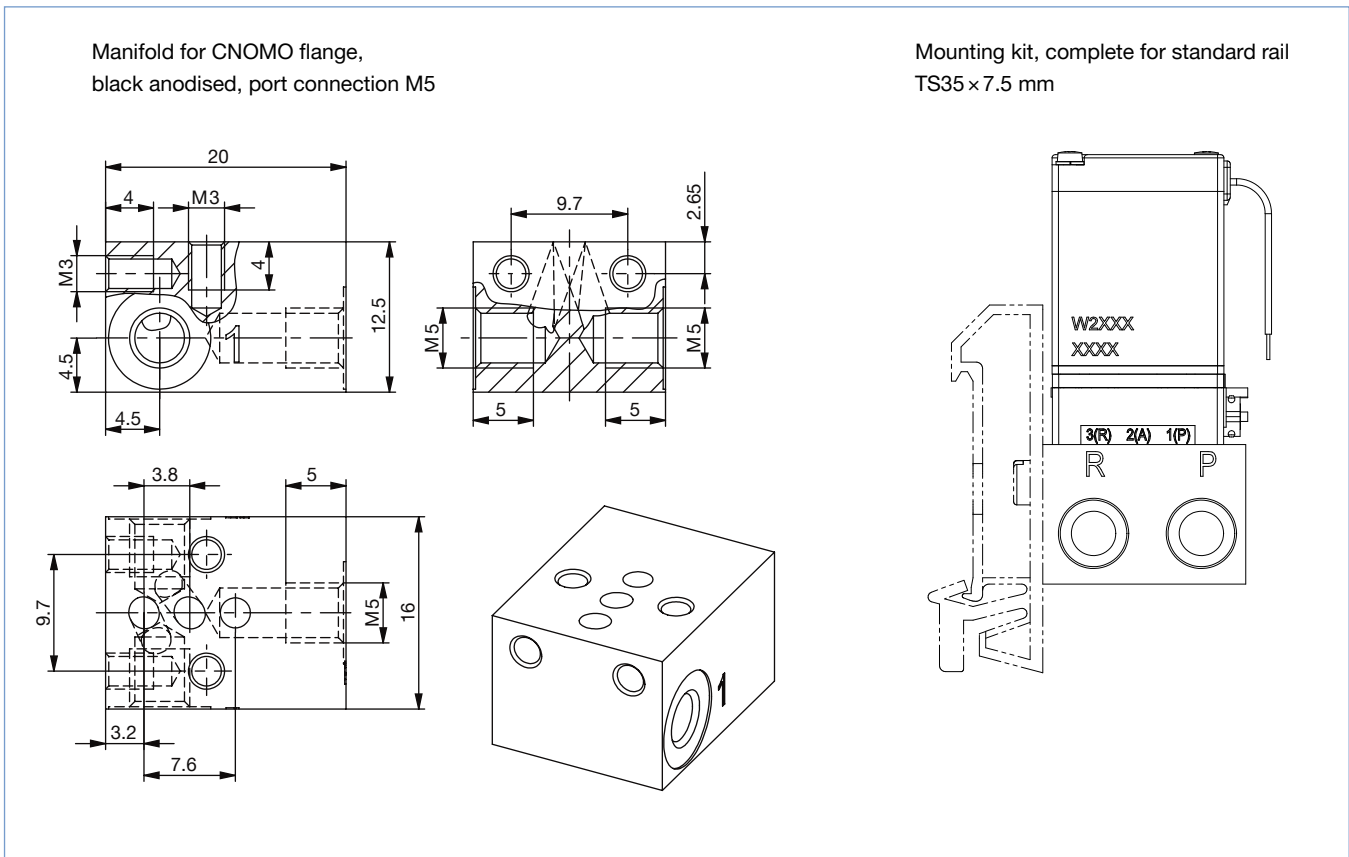
Note: Cable plug, see **Type 2516** ▶

Unit	Features	Article no.
Single manifolds from aluminium, black anodised		
Single manifold	for Bürkert flange, 16 mm width, M5	623873
	for Bürkert flange, 16 mm width, G 1/8	634917
	for CNOMO flange, 16 mm width, M5	639885
Single module with plug-in coupling	for single or series connection of valves with Bürkert flange	643566
Complete mounting kit	for standard rail TS 35 × 7.5 mm	629254
Blanking plate kit	for unused valve positions on Bürkert plates	629327
	for unused valve positions on CNOMO plates	639695
Banjo coupler with banjo bolts	G 1/8, with tube hose connector Ø 6 mm, for pilot valve	781126
	G 1/4, with tube hose connector Ø 6 mm, for pilot valve	781735

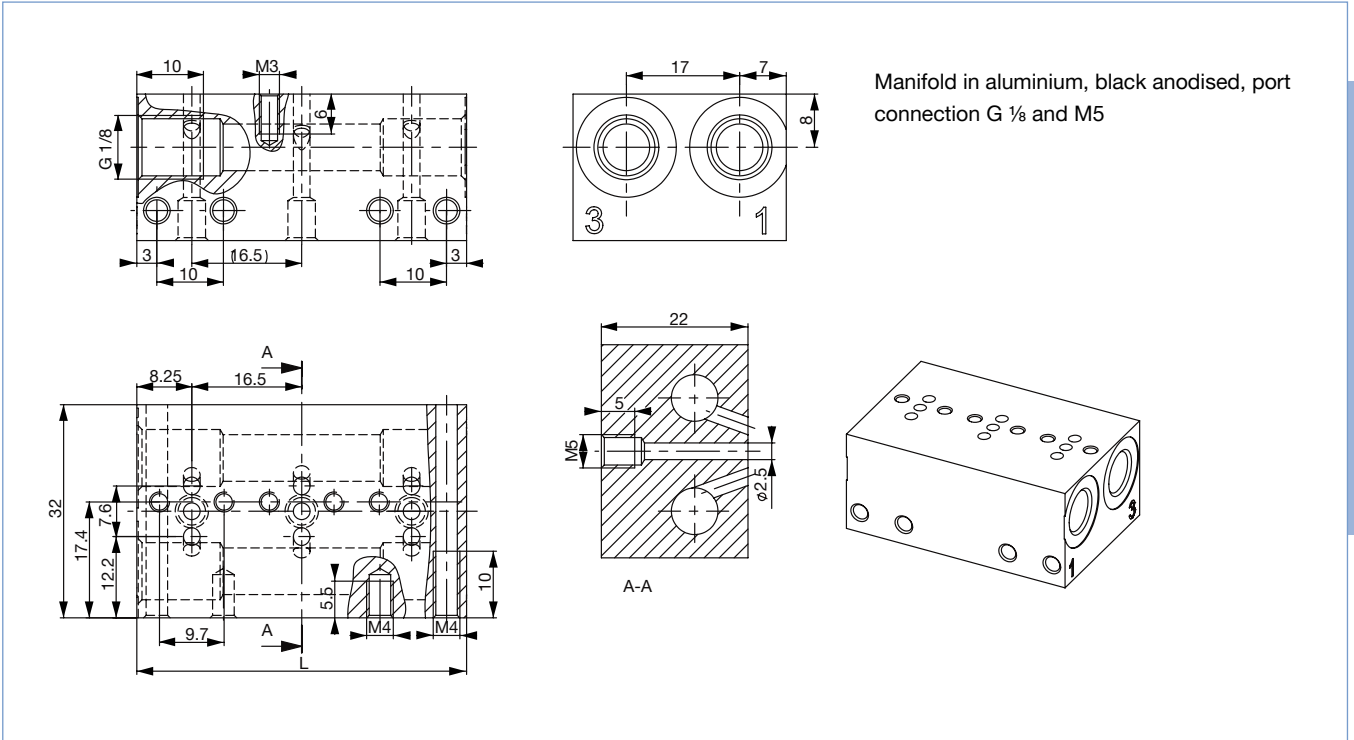
Dimensions for Bürkert flange manifolds [mm]



Dimensions for CNOMO flange manifolds [mm]



Dimensions for multiple manifolds CNOMO flange 3-way [mm]



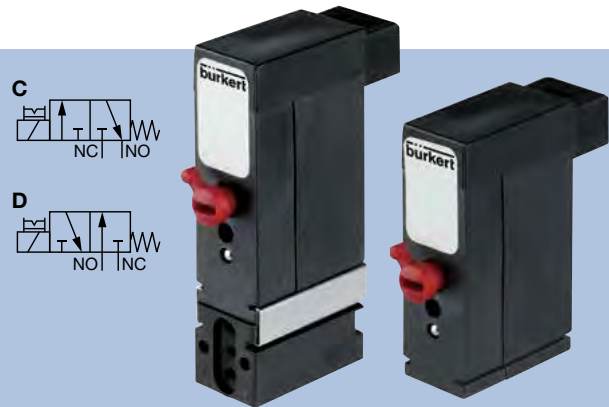
Accessories

No. of valves	Dimension A [mm]	Dimension B [mm]	Article no. G 1/8 and M5	Length L [mm]	Article no.. G 1/8 and M5
Aluminium manifolds					
	Bürkert flange, 18 mm width per station			CNOMO flange, 16,5 mm width per station	
2	60	18	658695	33	639887
3	78	36	658696	49,5	639862
4	96	54	658697	66	639863
5	114	72	658698	82,5	639864
6	132	90	658699	99	639865
8	168	126	658700	132	639866
10	204	162	658701	165	639867
12	240	198	658703	198	639868
Blanking plate kit for non-configured valve positions			629327		639695
Manifold for CNOMO flange					
Manifold for CNOMO flange, black anodised, port connection M5					639885
Mounting kit, complete for standard rail TS35 x 7.5 mm					629254

3/2 way Flipper Solenoid Valve, direct acting

6144

- Direct-acting
- 0...10 bar
- Low power consumption
- Sub-base connection
- 10 mm width per station



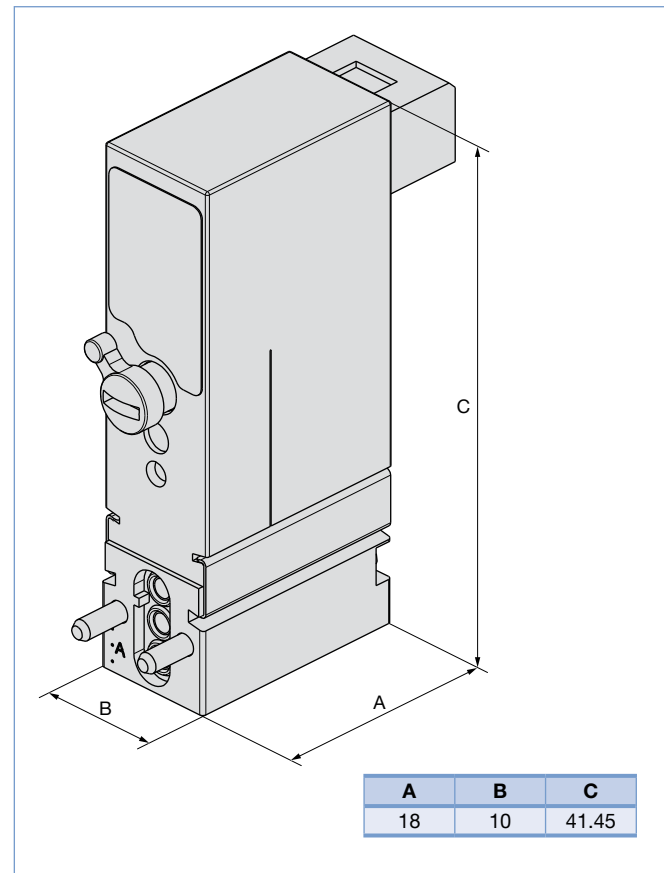
Type 6144 is a direct-action 3/2 way solenoid valve designed for neutral gases and liquids. Through the movement between the 2 end positions, the switching element (flipper) seals one of the two opposing valve seats and connects the other to the working port. This movement is caused by the solenoid's magnetic field pushing a permanent magnet that is fixed to the flipper element. In addition to its exceptional performance characteristics, the flipper principle is especially marked by its very low switching noise and its low wear level. Furthermore, integrated medium separation enables use above and beyond pneumatic applications. Depending on the case of operation, various flange connections are available that are suitable for both individual and block mounting.

Installation advice: The valve must have a minimum distance of 5 mm from other ferromagnetic materials in order to avoid malfunctioning during operating conditions.

Technical data

Body material	PPS (Polyphenylsulfide)
Seal material	FKM
Media	Compressed air lubricated, oil-free or dry; neutral gases and liquids (5 µm filtering); technical vacuum
Media temperature	-10 °C...+55 °C
Ambient temperature	-10 °C...+55 °C
Port connection	<ul style="list-style-type: none"> • Bürkert flange • Lateral flange • UNF ¼-28 • Lateral angle flange • Hose connector
Electrical connection	Rectangular plug as standard, on request: <ul style="list-style-type: none"> • Circular plug M8 × 1 • Flying lead 0.2 mm² • Blank connector (5.08 mm)
Operating voltage	24 V DC ¹⁾ 12 V DC ¹⁾ Further voltages on request
Voltage tolerance	±10 % ²⁾
Nominal power	0.8 W
Switching function	Monostable Bistable (impulse) on request
Duty cycle	100 % continuous rating
Installation	As required, preferably with actuator upright; 5 mm minimum distance to ferromagnetic materials
Protection class	3 acc. VDE 0580
Protection class	IP40 IP65 for flying leads and round plug (without manual override) on request
Cycling rate	ca. 1000/min

Dimensions [mm]



Electrical control	with SPS possible
Response times³⁾	
Open	ca. 8 ms (Standard)
Close	ca. 10 ms (Standard)

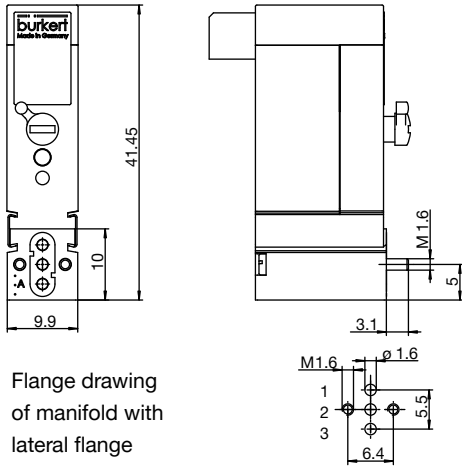
- 1) Battery voltage; observe polarity as shown on top of the valve
- 2) Max. residual ripple allowed
- 3) Measured at valve outlet at 6 bar and +20 °C acc. to DIN ISO 12238
Opening: pressure rise 0...10 %, closing: pressure drop 100...10 %

Options

- Further versions see data sheet or on request

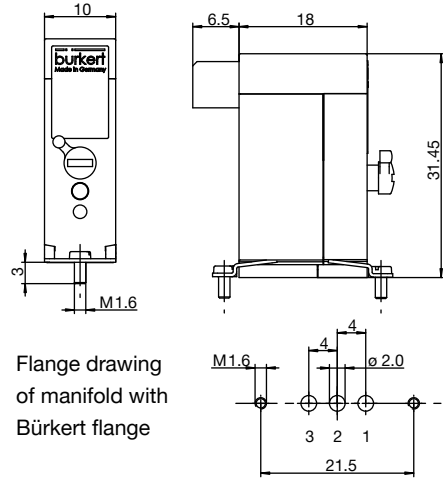
Dimensions [mm]

Type 6144 with lateral flange



Flange drawing of manifold with lateral flange

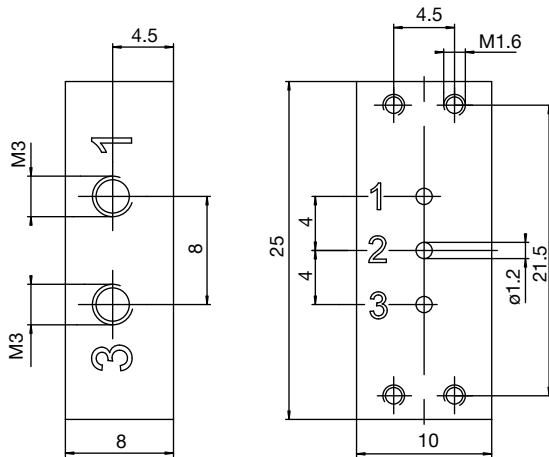
Type 6144 with Bürkert flange



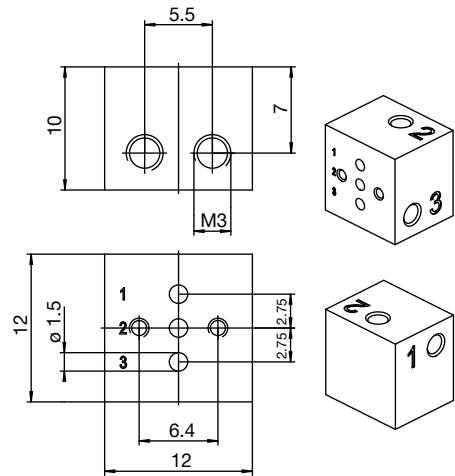
Flange drawing of manifold with Bürkert flange

The valve can optionally be delivered with manual override on the left or right hand side (standard: opposite the electrical connection).

Single manifold for Bürkert flange
Material: Aluminium, M3 threaded



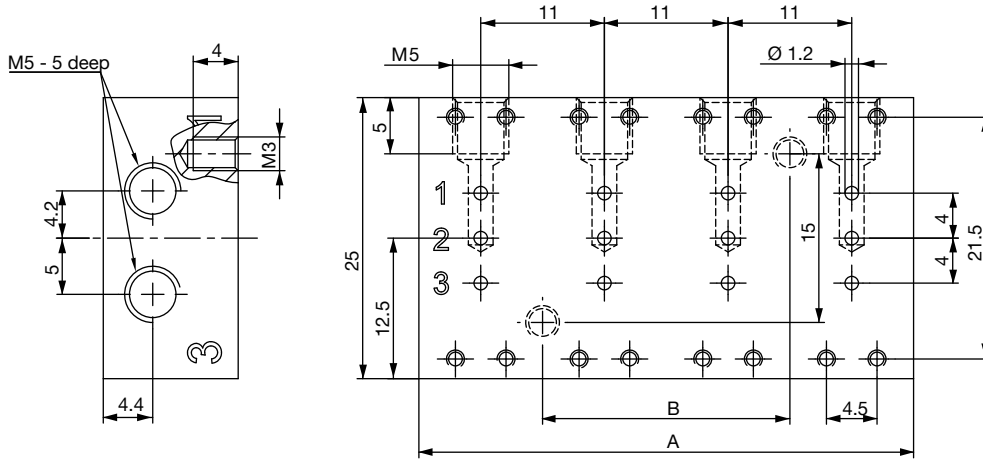
Single manifold for lateral flange
Material: Aluminium, M3 threaded



Dimensions [mm] continued

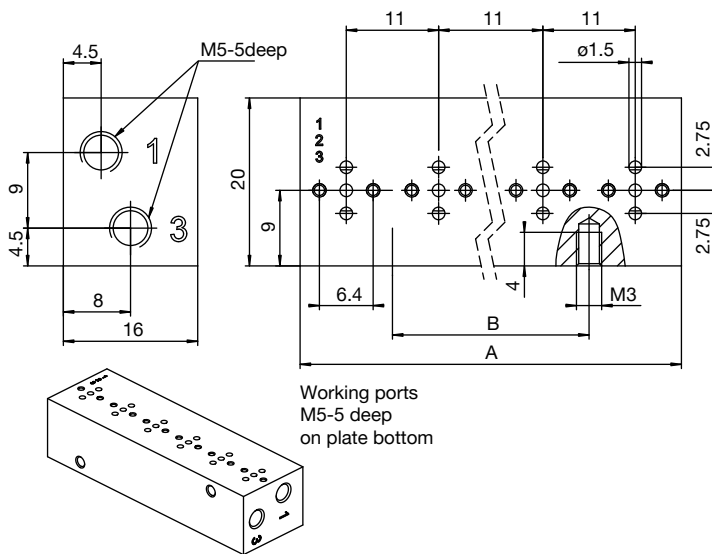
6144

Multiple manifolds for Bürkert flange, Material: Aluminium, M5 threaded



	A	B
2 valves	22	-
4 valves	44	22
6 valves	66	44

Multiple manifolds for lateral flange, Material: Aluminium, M5 threaded



	A	B
2 valves	22	-
4 valves	44	22
6 valves	66	44
8 valves	88	66

Ordering chart

Circuit function	Port connection	Orifice [mm]	Q _{Nn} value air [l/min] ¹⁾	K _v value water [l/min] ²⁾	Pressure range [bar] ³⁾	Manual override	Voltage [V]	Nominal power [W]	Article no.
All valves with rectangular plug, mounting screws and flange seal; without plug connection									
C 3/2 way direct-acting solenoid valve, normally closed, with manual override	Bürkert flange	0.6	8.5	0.0075	0...10 ⁴⁾	with	24	0.8	181367
	lateral flange		8.5	0.0075					175682
D 3/2 way direct-acting solenoid valve, normally open, with manual override	Bürkert flange	0.6	8.5	0.0075	0...10	with	24	0.8	175653
	lateral flange		8.5	0.0075					179098

1) Q_{Nn} value air [l/min]: Measurement with +20 °C, 6 bar pressure on the valve input and 1 bar pressure differential

2) Measured at +20 °C, 1 bar pressure difference, measured as overpressure to the atmospheric pressure

3) Pressure values [bar]: Measured as overpressure to the atmospheric pressure

4) Vacuum up to 10 bar on request

Fixing screws for Bürkert flange: M1.6 × 5, for lateral flange: M1.6 × 20

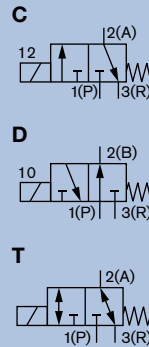
Accessories

Unit	Characteristics	Article no.
Manifolds		
Single manifold	for Bürkert flange, M3	639873
Single manifold	for lateral flange, M3	639234
Manifold 2-fold	for Bürkert flange, M5	641911
Manifold 4-fold	for Bürkert flange, M5	641912
Manifold 6-fold	for Bürkert flange, M5	639874
Blanking plate kit	for multiple manifolds, Bürkert flange	645512
Manifold 2 valves	for lateral flange, M5	641915
Manifold 4 valves	for lateral flange, M5	641916
Manifold 6 valves	for lateral flange, M5	639235
Manifold 8 valves	for lateral flange, M5	672676
Blanking plate set	for multiple manifolds angle flange	645513
Push-in fitting	Brass, straight, M3, for 4/2 mm tube	782534
Push-in fitting	Brass, straight, M5, for 4/2 mm tube	787810
Rectangular cable plug, Type 2505	with 3 m cable	133486
Rectangular cable plug, Type 2505	with 300 mm flying leads	644068
Rectangular cable plug, Type 2505	with 2 single contacts	644067

3/2 way pneumatic cartridge solenoid valve

6164

- Compact design with 11 mm width per station
- Orifices from 0.5 mm (10 bar) to 1.2 mm (1.5 bar)
- High durability and reliability
- Low power consumption, as well as optional ATEX Ex ib version
- Design for optimum integration



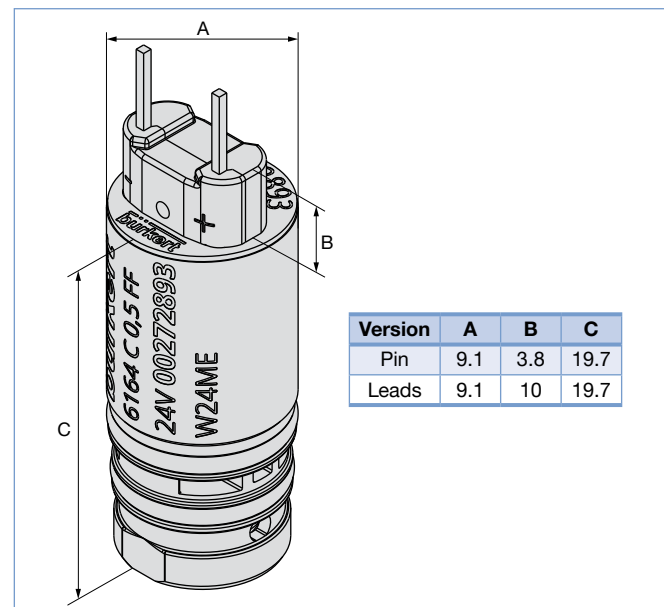
Customer specific applications are becoming more complex. Size, fluidic performance, low power consumption and cost efficiency are critical criteria. Therefore the demands on the components used are increasing. Type 6164 was developed with the goal, to simplify pneumatic control with optimum integration of a pilot valve in block and plastic moulding parts. Thus, making a more compact design possible.

This valve sets new standards with its uncompromising reliability, above average life cycle span and excellent fluidic characteristics. Various certifications and conformities make the use of the valve in medical applications such as media multiplexers in dental technology and oxygen control in respirators possible.

Technical data

Orifice and pressure range	DN0.5 (Vac-9 bar) ¹⁾ /DN0.8 (Vac-7.5 bar) ¹⁾ DN1.0 (Vac-5 bar) ¹⁾ /DN1.2 (Vac-1.5 bar) ¹⁾
Permissible leakage	Vac- 10 bar (Dependent on the version used) ^{1) 2)}
Body material	PEEK
Seal material	FKM
Medium	Neutral gases
Medium temperature	FKM -10 °C...+55 °C Low temperature version -20 °C...+55 °C
Ambient temperature	FKM -10 °C...+55 °C ³⁾ Low temperature version -20 °C...+55 °C ³⁾
Typical life span	100,000,000 switching cycles (accordance to endurance tests) ⁴⁾
Port connection	Bürkert-Cartridge-Connection
Electrical connection	Plug/Solder Flying leads
Operation voltage	12 and 24 V DC (other voltages on request)
Voltage tolerance	± 10 %
Power consumption	0.7 W 2.8 W/0.3 W (with external electric power reduction) 0.3 W (for Ex i version)
Duty cycle	100 % ED continuous rating
Installation	As required
Protection class	Depending on the electrical connection when installed
Pins	IP00
Special plug	IP40
Leads	IP54

Envelope Dimensions [mm]



Response times	Measurement at valve outlet acc. to DIN ISO 12238:2001
Open	< 5 ms (pressure rise 0...10 %)
Closed	< 5 ms (pressure drop 100...90 %)
Switching frequency	16 Hz
Switching noise	42 dB ⁵⁾
Weight	6 g (standard version)
Approvals and conformity on request	BVS 16 ATEX E 088 X: II 2G Ex ib IIC T6...T4 Gb II 2D Ex ib IIIB T155 °C Db IECEx BVS 16.0053 X: Ex ib IIC T6...T4 Gb Ex ib IIIB T155 °C Db UL class 2 Oxygen compatible

- 1) VAC corresponds to -0.8 bar relative
- 2) Overpressure to the atmospheric pressure
- 3) Depending on installation conditions (see manual), higher temperatures on request
- 4) Life span is dependent on temperature, pressure, sealing material and operating conditions
- 5) According to ISO 3745, testing environment in brass manifold, free-hanging

Options

- Further versions see data sheet or on request

Port connection

Circuit function C
(applicable to WWA by using blind connectors on 3)

Circuit function D
(applicable to WWB by using blind connectors on 3)

Circuit function T

1. Pressure port
2. Working port
3. Ventilation

The polarity must be observed only in the Ex version.

6164

Defining of the installation area

Fully sunken cartridge

3 : 1

19.55 ±0.03
14.5 ±0.05
11.2 ±0.05
9
6.5
3 ±0.10
0.2 ±0.10 x 45°
M2.5
3 ±0.10
0.9 ±0.05
Ø 1.4 ±0.05
Ø 9.1 ±0.05 (E)¹⁾
Ø 8.77 ±0.05 (E)¹⁾
Pin assignment according to mode of action
0.1 x 30°
0.3
Ø 1.3 ±0.03
13.75 ±0.03
19.85 ±0.03
30°
Z
Ø 9.2 ±0.05
A
Position of the M2.5 thread is turnable in cavity with a Ø 13.2
R0.2 ±0.10
Ø 13.2
A

Z 5:1

Rmax 16
Ra 0.8
Ra 0.8
Rmax 10
30°
30°
(Ø 8.77)
(Ø 9.1)
(11.2)
(14.5)

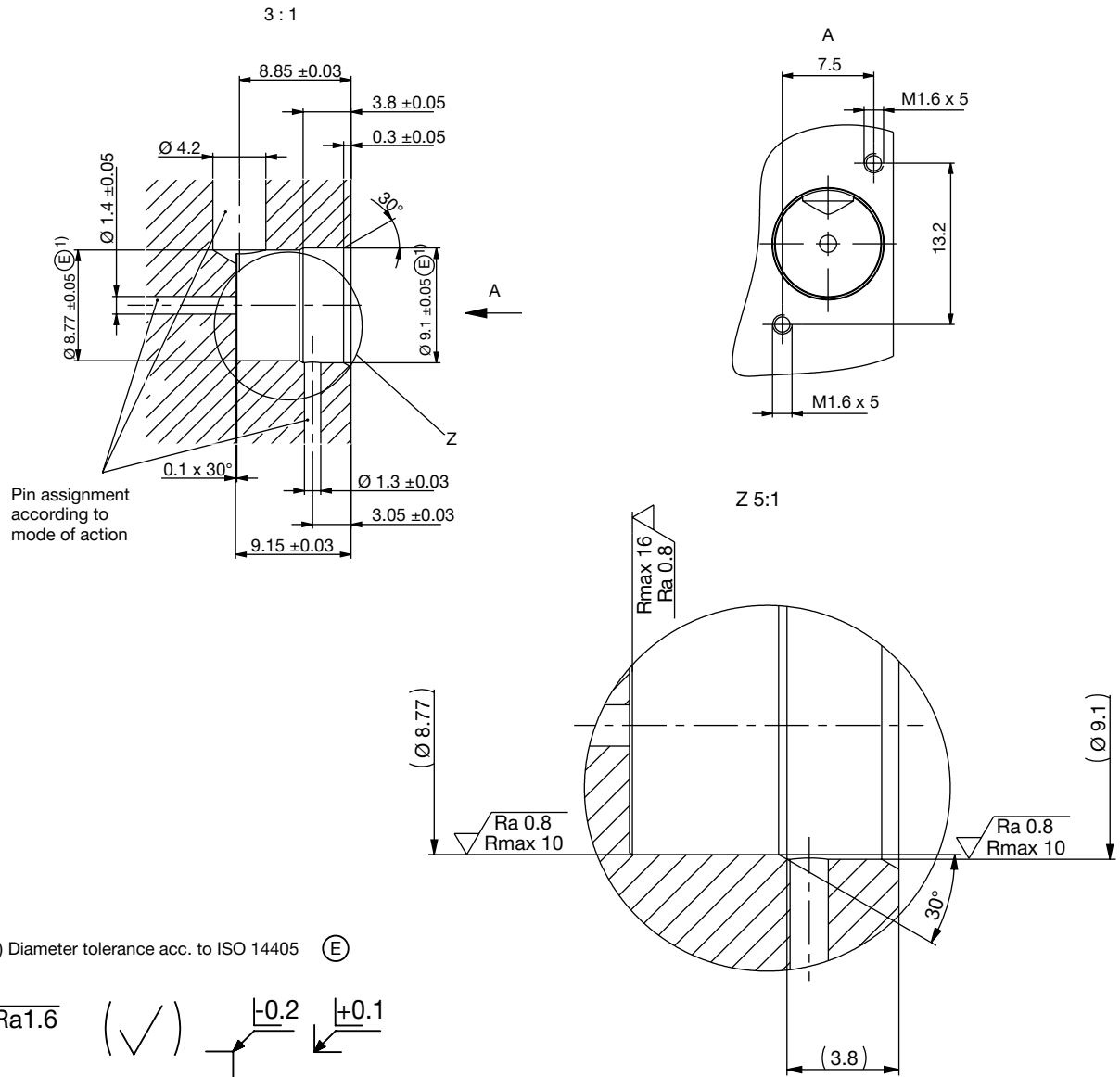
1) Diameter tolerance acc. to ISO 14405 (E)

Ra 1.6 (✓) -0.2 +0.1

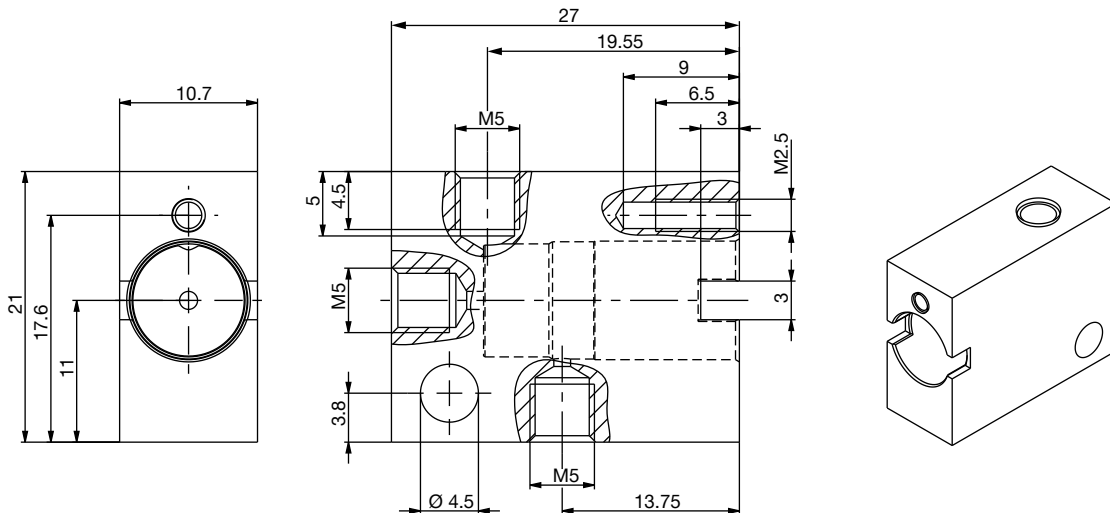
Defining of the installation area

6164

Half sunken Cartridge with retaining bracket



Manifold fully sunken (accessories)



Ordering chart

Circuit function	Port connection	Orifice ventilation 1-2	Orifice ventilation 2-3	Q _{Nn} value 1-2 air [l/min] ³⁾	Q _{Nn} value 2-3 air [l/min] ³⁾	Pressure range [bar]	Voltage	Power rating [W]	Article no. with connection pin
C 3/2 way direct-acting, impulse solenoid valve, normally closed	Bürkert Cartridge port connection	0.5	0.65	6	9.5	Vac.-9 ¹⁾	12	0.7	273612
		0.5	0.65	6	9.5	Vac.-9 ¹⁾	24	0.7	272893
		0.5	0.65	6	9.5	2.5...10	24	0.7	281022
		0.8	1.1	16	20	Vac.-7.5 ¹⁾	24	2.8/0.3 ²⁾	285701
		1	1.1	20	20	Vac.-5 ¹⁾	24	2.8/0.3 ²⁾	285700
		1.2	1.1	25	22	Vac.-1.5 ¹⁾	24	2.8/0.3 ²⁾	272894
D 3/2 way direct-acting solenoid valve, normally open	Bürkert Cartridge port connection	0.65	0.5	6.5	6	Vac.-6 ¹⁾	12	0.7	273615
		0.65	0.5	6.5	6	Vac.-6 ¹⁾	24	0.7	273614
T 3/2 way direct-acting solenoid valve, flow direction optional	Bürkert Cartridge port connection	0.5	0.65	6	6	Vac.-4 ¹⁾	24	0.7	292608

1) Vac. corresponds to -0.8 bar relative

2) External electric power reduction necessary

3) Measurement at +20 °C, 6 bar pressure at the valve input and 1 bar pressure difference

Ordering chart Ex version

Circuit function	Port connection	Orifice ventilation 1-2	Orifice ventilation 2-3	Q _{Nn} value 1-2 air [l/min] ⁵⁾	Q _{Nn} value 2-3 air [l/min] ⁵⁾	Pressure range [bar]	Resistance with 20 °C [Ω]	Min. holding current [mA]	Article no. with connection pin
C 3/2 way direct-acting, impulse solenoid valve, normally closed	Bürkert Cartridge port connection	0.5	0.65	6	9.5	Vac.-6 ¹⁾	320	29	289027
							510	23	289028
D 3/2 way direct-acting solenoid valve, normally open	Bürkert Cartridge port connection	0.65	0.5	6.5	6	Vac.-4 ⁴⁾	320	29	on request

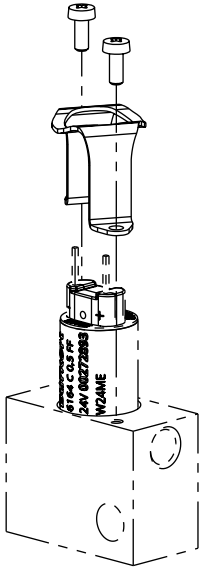
4) Vac. corresponds to -0.8 bar relative

5) Measurement at +20 °C, 6 bar pressure at the valve input and 1 bar pressure difference

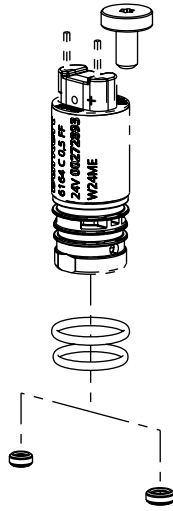
Accessories

6164

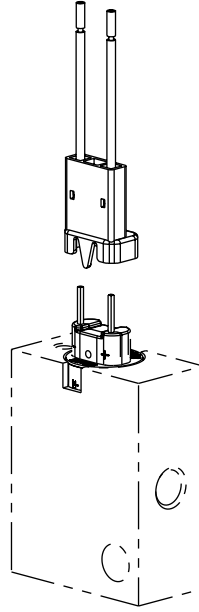
**Mounting bracket
for semi-submerged
configuration**






**Spare part set
O-ring and
fixing screw**



**Plug with
IP40 locking**



Description	Article no.
Manifold 1place, brass	695913 
Spare part set for Type 6164	696033 
Mounting bracket Set for Type 6164	696032 
Plug IP40 for Type 6164	695951 

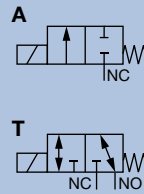
Note:

Max. tightening of the screws (see manual)

2/2 and 3/2 way Flipper Solenoid Valve, with hermetic isolation of fluid

6604

- Low internal volume
- High chemical resistance
- Low power consumption
- Impulse version
- High back pressure tightness



Thanks to the patented Bürkert flipper technology, the direct-acting 6604 solenoid valve is unique. It combines fast, precise switching behaviour with reliable media separation, and the design eliminates heat transfer between fluid and coil. The use of high quality materials makes it possible to also use it where high chemical resistance is required. The optional impulse model works with the smallest energy requirement, and is therefore especially suitable for battery operation; the heat transfer to the medium is negligible for this model. A minimal dead volume and gap-free internal design make it possible to use it in medical, analytical and laboratory technology.

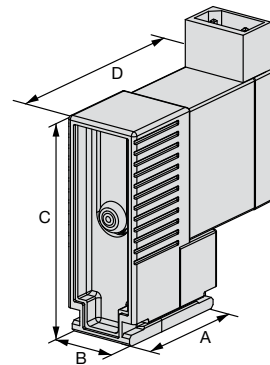
Technical data

Orifice	DN0.6
Body material	PEEK
Seal material	FFKM (Perfluorelastomer)
Medium	Resistant to neutral and aggressive liquids and gases, see Bürkert chemical resistance chart; technical vacuum
Medium temperature	0 °C...+50 °C
Ambient temperature	Max. +55 °C
Viscosity	Max. 21 mm ² /s
Internal volume	
Fluid chamber	Ca. 15µl
3/2 way versions	Ca. 45µl
2/2 way versions	Ca. 35µl
Port connection	Flange
Manual override	Push-button
Operating voltage	6, 12, 24 V DC ¹⁾
Voltage tolerance	± 10 %
Power consumption	1.5 W
Duty cycle	100 % continuous rating
with manifold mounting	40 % intermittent rating (within 10 min)
(in case Medium or ambient temperature higher +40 °C)	
Cycling function	Monostable or bistable (option)
Electrical connections	Rectangular plug 2505 or 2 single flying leads, 300 mm. Not included.
Protection class	IP40 with rectangular plug
Mounting (sub-base valve)	With holders and mounting screw
Installation	As required, preferably with flange downwards

1) 10 % residual ripple allowed

Dimensions [mm]

Flange connection



Version	A	B	C	D
Flange connection	24.8	11	29.5	31.9

Options

- Further port connections
- Further versions see data sheet or on request

Ordering chart

Circuit function	Orifice [mm]	K _v value water [m³/h]	K _v value oil water [l/min]	Q _{nm} value air [l/min]	Pressure range [bar]	Electrical connection	Article no. per Voltage/frequency [V/Hz] Cycling function			
							monostable		bistable (impulse)	
							012/DC ¹⁾	024/DC ¹⁾	06/DC ¹⁾	012/DC ¹⁾
Valves with flange										
A 2/2 way direct-acting solenoid valve, normally closed	0.6	0.006	0.1	6.4	Vac. -3	Rectangular plug 5.08 mm	145467 ☒	140464 ☒	140467 ☒	143170 ☒
						Flying leads 300 mm	140465 ☒	140466 ☒	140468 ☒	145467 ☒
T 3/2 way direct-acting solenoid valve, flow direction optional	0.6	0.006	0.1	6.4	Vac. -3	Rectangular plug. 5.08 mm	140469 ☒	140470 ☒	140473 ☒	141388 ☒
						Flying leads 300 mm	140471 ☒	140472 ☒	140474 ☒	145470 ☒

1) 10 % residual ripple allowed

Accessories

Description	Feature	Article no.
Rectangular cable plug Type 2505 - see Type 2505 ▶		
Raster 5.08 mm	3 m cable	133486 ☒
Raster 5.08 mm	300 mm flying leads	644068 ☒
Raster 5.08 mm	2 single contacts	644067 ☒

Quantity of valves places	Dimensions A [mm]	Article no.
Manifolds for Type 6604		
Single manifold in stainless steel	10	644684 ☒
2 valves	33	659285 ☒
3 valves	44	659286 ☒
4 valves	55	659287 ☒
5 valves	66	653131 ☒
6 valves	77	659288 ☒
7 valves	88	659289 ☒
8 valves	99	659290 ☒
9 valves	110	659291 ☒
10 valves	121	651379 ☒

Manifold dimensions [mm]

Single manifold M3, stainless steel

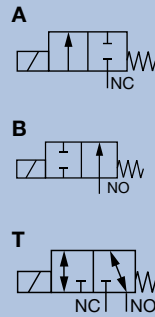
Multistation manifold, PEEK

No. of valve positions	2	3	4	5	6	7	8	9	10
Dimensions A [mm]	33	44	55	66	77	88	99	110	121

2/2 and 3/2 way Rocker Solenoid Valve for analytical applications

6606

- With isolating diaphragm
- For aggressive media
- Zero dead volume
- Also suitable for vacuum
- 16 mm width
- High back pressure tightness



The direct-acting rocker solenoid valve, Type 6606 (2/2 and 3/2 way), has minimal dead volume and low-gap, plus an easy to wash inside contour. The medium is exposed only to the housing material and the seal. The heat transfer into the medium is minimal, since the housing is also separated from the coil by a stainless steel plate. The valve is particularly suitable for dosing, filling, mixing and dispensing small quantities of corrosive medium optimal.

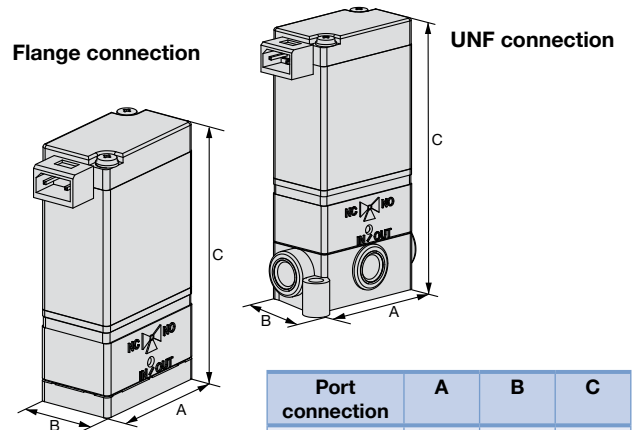
Technical data

Pressure range	Vac - 2 bar
Medium temperature	0 °C...+50 °C
Ambient temperature	Max. +55 °C
Voltage tolerance	± 10 %
Duty cycle	100 % continuous rating
Body material	PEEK, PVDF, ETFE
Seal material	FFKM
Power consumption	3.4 W
Protection class	IP65 with flying leads or with cable plug IP40 with rectangular plug
Electrical connection	- Rectangular plug, Type 2505 - Tag connection acc. to DIN EN 175301-803 (previously DIN 43650) for cable plug, Form C - 2 FEP flying leads, AWG 24, 500 mm long - Circular connector and spade connection at side on request
Response times	Acc. to ISO 12238:2001; measured at valve outlet at 2 bar and +20 °C Opening Ca. 25 ms (pressure rise from 0...10 %) Closing Ca. 25 ms (pressure drop 100...90 %)
Internal volume	Depending on body at G/NPT 1/8 85 µl with Flange 68 µl at UNF body 30 µl (2/2), 55 µl (3/2) on request < 10 µl

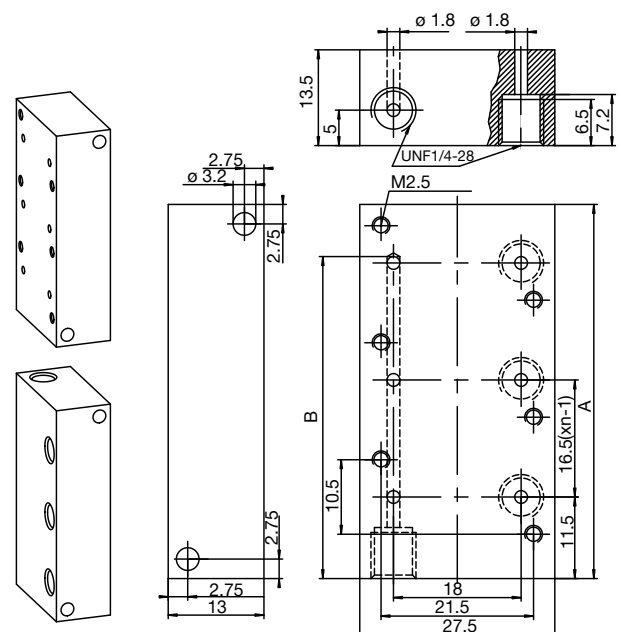
Options

- Further versions see data sheet or on request

Dimensions [mm]

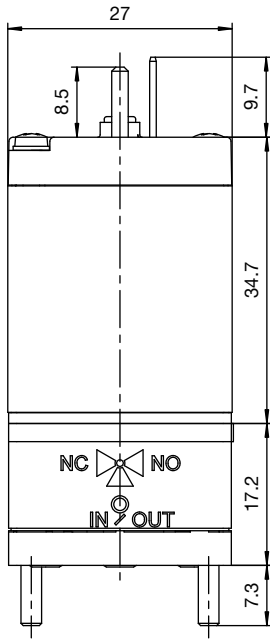


Port connection	A	B	C
G 1/8	45	21.8	61.1
UNF 1/4-28	37.8	23.8	60.1
Tube	39	16	54.8
Flange	27	16	51.9

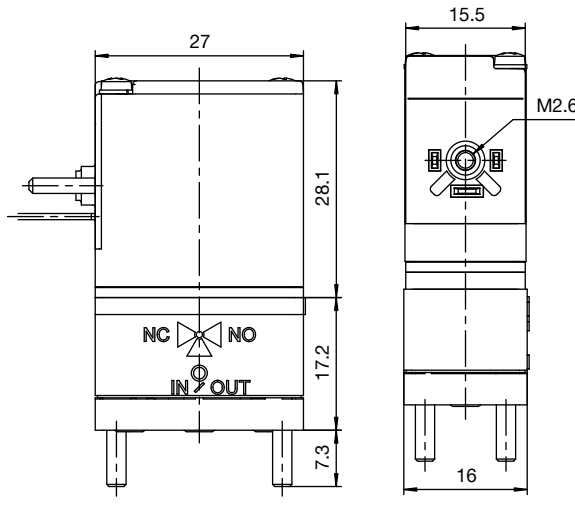


Dimensions [mm]

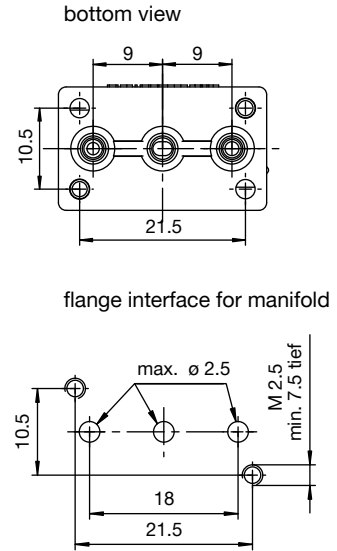
Bürkert Manifold connection



Spade connection on top

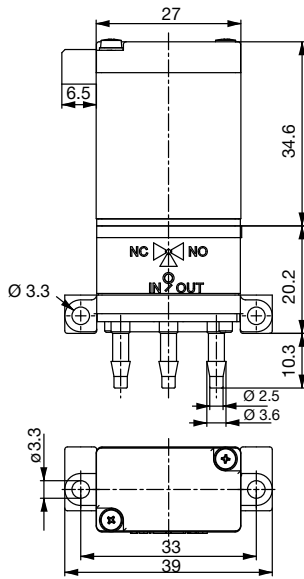


Spade connection on side



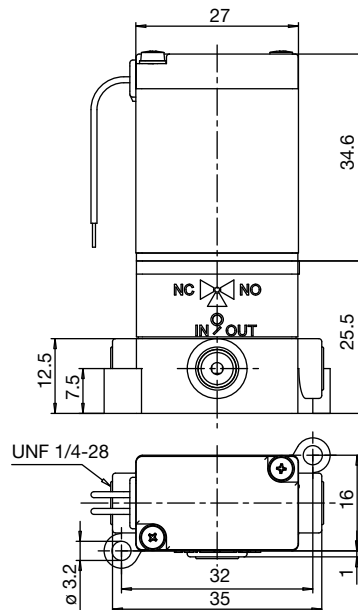
The middle port does not apply for the 2/2 way function

Valve with barb tube fittings and rectangular plug



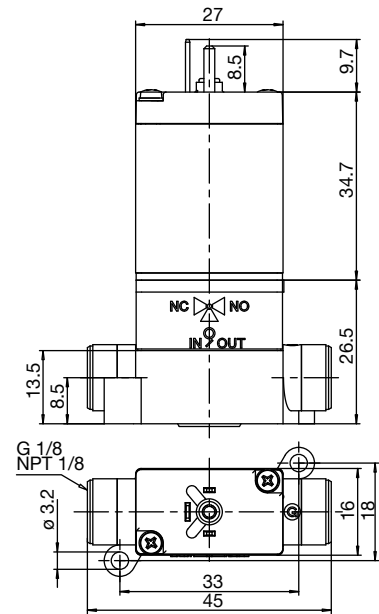
For the 2/2 way version the NO port does not apply

Valve with UNF 1/4-28 and flying lead



For the 2/2 way version the NO port does not apply

Valve with G 1/8 or NPT 1/8 and spade connection on top



For the 2/2 way version the middle port does not apply










Ordering chart

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h] ¹⁾	K _v value water [l/min]	Q _{Nn} -value air [l/min]	Pressure range [bar] ²⁾	Body material	Electrical connection	Voltage/frequency [V/Hz]	Article no.	
6606 A 2/2 way direct-acting solenoid valve, normally closed	UNF ¼-28	1.5	0.039	0.66	42	Vac. -2	ETFE	Flying leads, 500 mm	024/DC	137759	
	G ⅝	1.6	0.060	1.02	65	Vac. -2	PVDF	Rectangular plug	024/DC	139146	
								Tag connector sideways	024/DC	137746	
	Tube spigot	1.6	0.039	0.66	42	Vac. -2	PVDF	Flying leads, 500 mm	024/DC	137764	
								Rectangular plug	024/DC	139147	
	Bürkert Flange connection	1.6	0.039	0.66	42	Vac. -2	PEEK	Flying leads, 500 mm	012/DC	137744	
									024/DC	137745	
								Tag connector sideways	024/DC	137741	
	B	G ⅝	1.6	0.060	1.02	65	Vac. -2	PVDF	Tag connector sideways	024/DC	137747
	T 3/2 way direct-acting solenoid valve, flow direction optional	UNF ¼-28	1.5	0.025	0.43	27	Vac. -2	ETFE	Flying leads, 500 mm	024/DC	137779
G ⅝		1.6	0.047	0.80	51	Vac. -2	PVDF	Flying leads, 500 mm	024/DC	137771	
								Rectangular plug	024/DC	139149	
								Tag connector sideways	024/DC	137769	
Tube spigot		1.6	0.025	0.43	27	Vac. -2	PVDF	Flying leads, 500 mm	012/DC	137782	
									024/DC	137783	
								Rectangular plug	024/DC	139150	
Bürkert Flange connection		1.6	0.032	0.54	35	Vac. -2	PEEK	Flying leads, 500 mm	024/DC	137768	
								Rectangular plug	024/DC	139148	
								Tag connector sideways	012/DC	137766	
								024/DC	137765		

1) Measured at +20 °C , 2 bar pressure at valve inlet and 1 bar at outlet
 2) Gauge pressure with respect to the prevailing atmosphere pressure

Note: Cable plug, see **Type 2505** ▶ and **Type 2516** ▶

Ordering chart

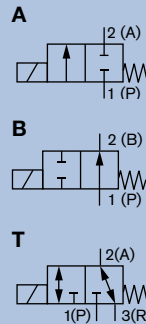
Number of valve stations	Dimensions A [mm]	Article no.
Manifolds		
2	37.50	651506 
3	53.75	651510 
4	70.25	651507 
5	86.75	651508 
6	103.30	651509 
7	119.80	651521 
8	163.30	651522 

Standard distributor/collector: a common In/Output, individual Out/Input (all UNF ¼...28) supplied without valves; PEEK material

2/2 and 3/2 way Bürkert TwinPower Rocker-Solenoid Valve with separating diaphragm

6624
TwinPower

- For highest chemical resistance requirements
- Ultra compact design due to Bürkert TwinPoweractuator with 10.3 mm width
- DN0.8 (5 bar) and DN1.6 (2 bar)
- Integrated hit and hold electronic
- High back pressure tightness with excellent cleanability

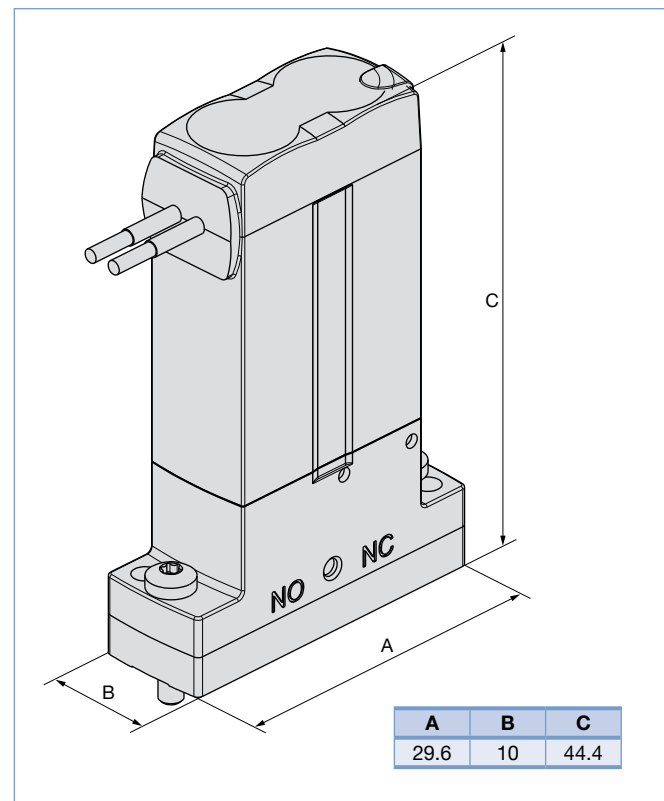


Type 6624 combines the reliable and successful Rocker principle with a highly innovative new actuator. The Bürkert TwinPower concept of this actuator reduces the size greatly without loss in performance. Hence the 10 mm wide medium isolated rocker valve, 6624, with a 1.6 mm orifice and a pressure resistance of 2 bar, provides the same performance as a traditional 16 mm valve. In addition, the integrated power reduction decreases the energy consumption by 75 %. In combination with other design features the heat transfer into the medium can be reduced to a minimum. In the design of the 6624, the main benefits lie in its excellent cleanability and a high reliability. By using high performance materials the 6624 suits the handling of aggressive medium perfectly. The valve is available in a 2 way and 3 way version.

Technical data

Orifice	DN0.8 mm (Vac...5 bar), DN1.6 mm (Vac...2 bar)
Body material	PEEK/PPS
Seal material	FFKM/FKM/EPDM
Medium	Resistant to neutral and aggressive gases and liquids acc. to our chemical resistance chart
Medium temperature	
FFKM	+15 °C...+50 °C
FKM	-10 °C...+50 °C
EPDM	-10 °C...+50 °C (for orifice DN0.8) +5 °C...+50 °C (for orifice DN1.6)
Ambient temperature	
FFKM	+15 °C...+55 °C
FKM	-10 °C...+55 °C
EPDM	-10 °C...+55 °C
Internal volume	< 100 µl
Port connection	Sub-base/UNF/Tube connection
Electrical connection	Flying leads, Rectangular plug
Power supply	24 V ¹⁾ /12 V ¹⁾
Voltage tolerance	
24 V	± 10 % ²⁾
12 V	+10 %/-5 % ²⁾
Nominal power consumption	4 W inrush power 1 W nominal holding power (internal power reduction)
Duty cycle	100 % continuous rating
Installation	As required
Protection class	IP40

Dimensions [mm]



Switching frequency	Max. 5 Hz ³⁾
Response times³⁾	Acc. DIN 12238
opening	ca. 10 ms (Pressure rise 0...10 %)
closing	ca. 13 ms (Pressure drop 100...90 %)

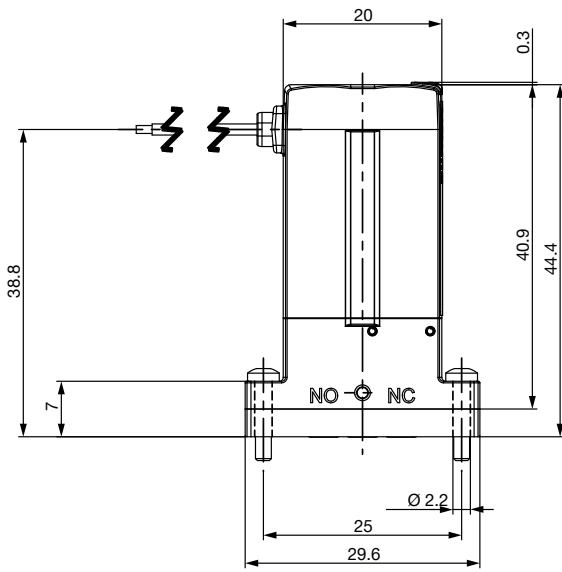
- 1) Battery voltage, observe polarity (red = +, black = -)
- 2) Max. allowed ripple
- 3) with ambient temperature of 20 °C

Options

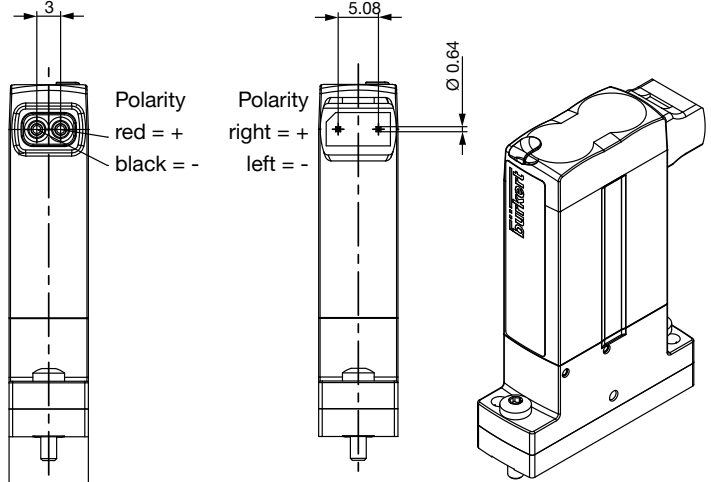
- Further versions see data sheet or on request

Dimensions [mm]

Electrical connections: flying leads



Electrical connections: rectangular plug

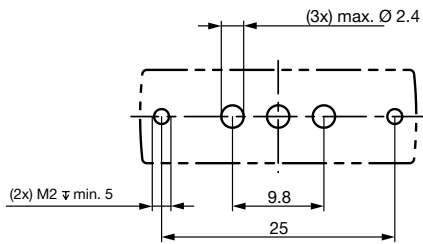


Polarity
red = +
black = -

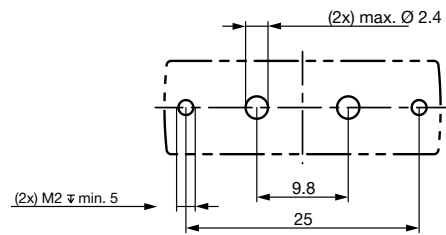
Polarity
right = +
left = -

Sub-base body for 3/2 way connection

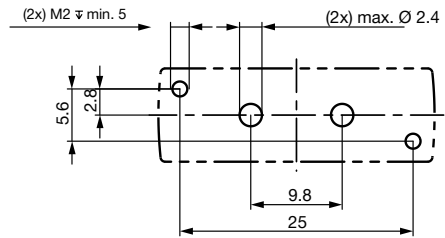
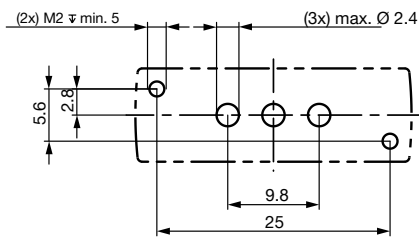
preferred threaded connection



Sub-base body for 2/2 way connection

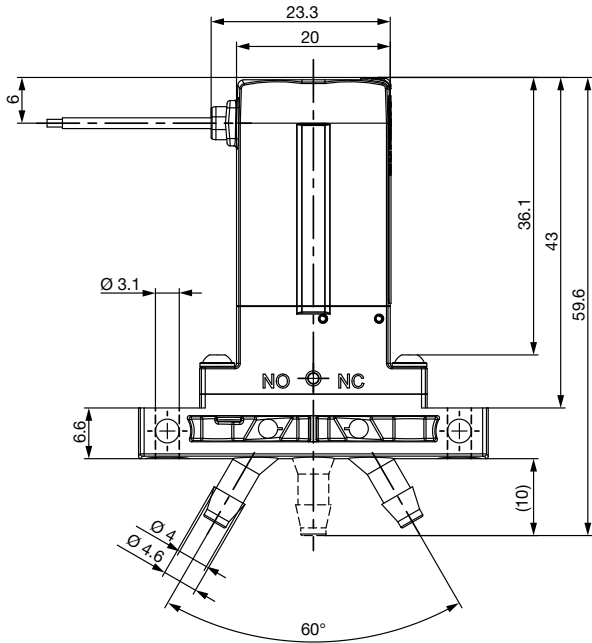


further possible threaded connection

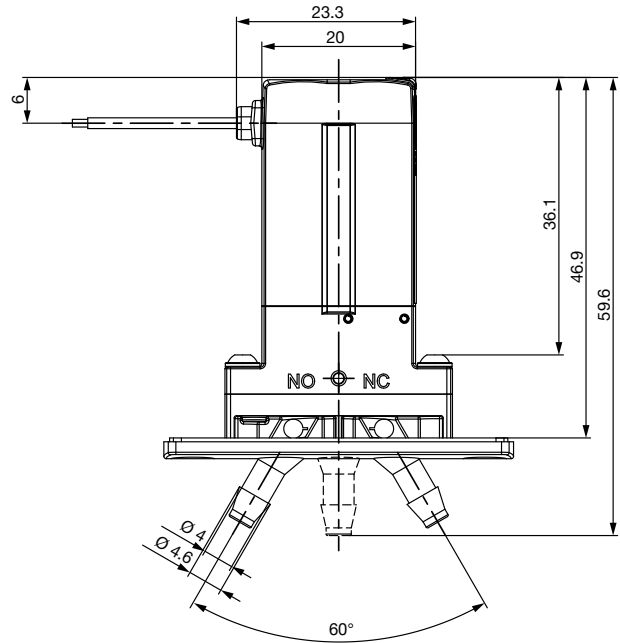


Dimensions [mm]

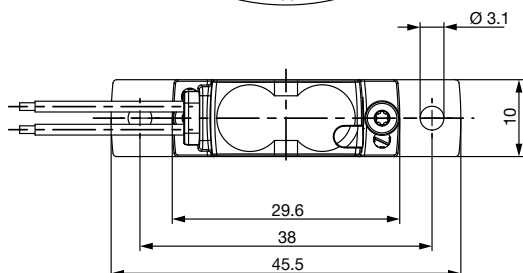
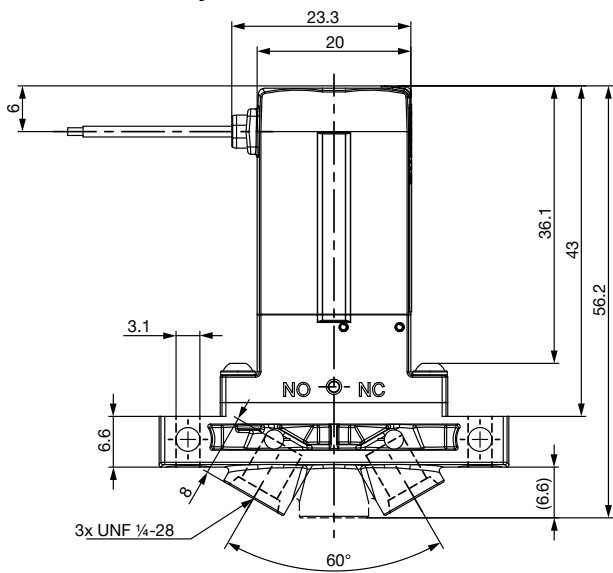
Tube connector housing



Tube connector housing with shield



Body UNF 1/4-28 Flat-Bottom



Ordering chart

Circuit function	Orifice [mm]	Port connection	K _v value water [m/h] ¹⁾	Pressure range [bar] ²⁾	Max. pressure difference [bar]	Seal material	Body material	Electrical connection	Voltage [V]	Article no.
A 2/2 way direct-acting solenoid valve, nor- mally closed	0.8	Sub-base	0.01	Vac...5	5	EPDM	PPS	Flying leads	12	241341
	0.8	Sub-base	0.01	Vac...5	5	EPDM	PPS	Rectangular plug ³⁾	12	241398
	0.8	Sub-base	0.01	Vac...5	5	EPDM	PPS	Flying leads	24	241342
	0.8	Sub-base	0.01	Vac...5	5	EPDM	PPS	Rectangular plug ³⁾	24	241399
	0.8	Sub-base	0.01	Vac...5	5	FFKM	PEEK	Flying leads	12	241344
	0.8	Sub-base	0.01	Vac...5	5	FFKM	PEEK	Flying leads	24	227015
	0.8	Sub-base	0.01	Vac...5	5	FKM	PPS	Rectangular plug ³⁾	12	241405
	0.8	Sub-base	0.01	Vac...5	5	FKM	PPS	Flying leads	24	241351
	0.8	UNF	0.01	Vac...5	5	FFKM	PEEK	Flying leads	24	241346
	0.8	UNF	0.01	Vac...5	5	FKM	PEEK	Flying leads	24	241349
	0.8	UNF	0.01	Vac...5	5	FKM	PEEK	Rectangular plug ³⁾	24	241404
	1.6	Sub-base	0.04	Vac...2	2	EPDM	PPS	Rectangular plug ³⁾	12	241412
	1.6	Sub-base	0.04	Vac...2	2	EPDM	PPS	Rectangular plug ³⁾	24	241413
	1.6	Sub-base	0.04	Vac...2	2	FFKM	PEEK	Flying leads	12	241359
	1.6	Sub-base	0.04	Vac...2	2	FFKM	PEEK	Rectangular plug ³⁾	24	229429
	1.6	Sub-base	0.04	Vac...2	2	FKM	PPS	Flying leads	12	241367
	1.6	Sub-base	0.04	Vac...2	2	FKM	PPS	Rectangular plug ³⁾	12	241424
	1.6	Sub-base	0.04	Vac...2	2	FKM	PPS	Flying leads	24	241368
	1.6	UNF	0.04	Vac...2	2	EPDM	PEEK	Rectangular plug ³⁾	24	241411
	1.6	UNF	0.04	Vac...2	2	FFKM	PEEK	Flying leads	24	241361
	1.6	UNF	0.04	Vac...2	2	FKM	PEEK	Flying leads	24	241366
	1.6	UNF	0.04	Vac...2	2	FKM	PEEK	Rectangular plug ³⁾	24	241423
	1.6	Tube	0.04	Vac...2	2	EPDM	PEEK	Rectangular plug ³⁾	24	241409
	1.6	Tube	0.04	Vac...2	2	FFKM	PEEK	Flying leads	24	237705
1.6	Tube	0.04	Vac...2	2	FKM	PEEK	Flying leads	24	241363	
1.6	Tube	0.04	Vac...2	2	FKM	PEEK	Rectangular plug ³⁾	24	241421	
B 2/2 way direct-acting solenoid valve, nor- mally open	0.8	Sub-base	0.01	Vac...5	5	FFKM	PEEK	Flying leads	24	on request
	1.6	Sub-base	0.04	Vac...2	2	FFKM	PEEK	Flying leads	24	on request
	1.6	Sub-base	0.04	Vac...2	2	FFKM	PEEK	Rectangular plug ³⁾	24	on request



Ordering chart continued

6624
TwinPower

Circuit function	Orifice [mm]	Port connection	K _v value water [m/h] ¹⁾	Pressure range [bar] ²⁾	Max. pressure difference [bar]	Seal material	Body material	Electrical connection	Voltage [V]	Article no.
T 3/2 way direct-acting solenoid valve, flow direction optional	0.8	Sub-base	0.01	Vac...5	5	EPDM	PPS	Rectangular plug ³⁾	12	241428
	0.8	Sub-base	0.01	Vac...5	5	EPDM	PPS	Rectangular plug ³⁾	24	241429
	0.8	Sub-base	0.01	Vac...5	5	FFKM	PEEK	Flying leads	12	241373
	0.8	Sub-base	0.01	Vac...5	5	FFKM	PEEK	Flying leads	24	222936
	0.8	Sub-base	0.01	Vac...5	5	FKM	PPS	Flying leads	24	241379
	0.8	Sub-base	0.01	Vac...5	5	FKM	PPS	Rectangular plug ³⁾	12	241435
	0.8	UNF	0.01	Vac...5	5	FFKM	PEEK	Flying leads	24	241375
	0.8	UNF	0.01	Vac...5	5	FKM	PEEK	Flying leads	24	241377
	0.8	UNF	0.01	Vac...5	5	FKM	PEEK	Rectangular plug ³⁾	24	241434
	1.6	Sub-base	0.04	Vac...2	2	EPDM	PPS	Rectangular plug ³⁾	12	241442
	1.6	Sub-base	0.04	Vac...2	2	EPDM	PPS	Rectangular plug ³⁾	24	241443
	1.6	Sub-base	0.04	Vac...2	2	FFKM	PEEK	Flying leads	12	239935
	1.6	Sub-base	0.04	Vac...2	2	FFKM	PEEK	Flying leads	24	227815
	1.6	Sub-base	0.04	Vac...2	2	FFKM	PEEK	Rectangular plug ³⁾	24	229430
	1.6	Sub-base	0.04	Vac...2	2	FKM	PPS	Flying leads	12	241394
	1.6	Sub-base	0.04	Vac...2	2	FKM	PPS	Rectangular plug ³⁾	12	241453
	1.6	Sub-base	0.04	Vac...2	2	FKM	PPS	Flying leads	24	241395
	1.6	UNF	0.04	Vac...2	2	EPDM	PEEK	Rectangular plug ³⁾	24	241441
	1.6	UNF	0.04	Vac...2	2	FFKM	PEEK	Flying leads	24	241389
	1.6	UNF	0.04	Vac...2	2	FKM	PEEK	Rectangular plug ³⁾	24	241452
	1.6	UNF	0.04	Vac...2	2	FKM	PEEK	Flying leads	24	241393
	1.6	Tube	0.04	Vac...2	2	EPDM	PEEK	Rectangular plug ³⁾	24	241439
	1.6	Tube	0.04	Vac...2	2	FFKM	PEEK	Flying leads	24	241387
	1.6	Tube ⁴⁾	0.04	Vac...2	2	FFKM	PEEK	Flying leads	24	242320
	1.6	Tube	0.04	Vac...2	2	FFKM	PEEK	Rectangular plug ³⁾	24	241445
	1.6	Tube	0.04	Vac...2	2	FKM	PEEK	Flying leads	24	241391
	1.6	Tube	0.04	Vac...2	2	FKM	PEEK	Rectangular plug ³⁾	24	241450





1) Measured at +20 °C, 1 bar pressure at value inlet and free outlet.

2) Measured as overpressure with respect to atmospheric pressure.

3) Rectangular cable plug with 300 mm flying leads; Article no. 644068 (please order separately)

4) Housing has a shield for easy separation of electronics and fluids.

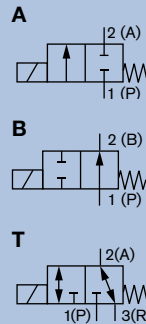
Accessories

Features	Article no.
Rectangular plug Type 2505 with 3 m cable	133486 
Rectangular plug Type 2505 with 300 mm flying leads	644068 
Rectangular plug Type 2505, single contact for individual mounting	644067 
foamed EPDM gasket for tube connector housing with shield	685294 
EPDM dust protection	on request

2/2 and 3/2 way solenoid valve for analytical applications

6626

- 16 mm width
- Orifice DN2.0...DN3.0 with pressure range vacuum to 5 bar
- Medium separation, for aggressive fluids
- High back-pressure tightness
- Direct acting



Our revolutionary Twin-power technology operates with two coils. The innovative drive concept is combined with the proven rocker principle. The integrated power reduction decreases the energy consumption by 75 % and has the same features as a traditional 22 mm unit. In combination with other design features the heat transfer into the medium can be reduced to a minimum.

In the design of the 6626, the main benefits lie in its excellent cleanability and a high reliability. By using high performance materials the 6626 suits the handling of aggressive medium perfectly. The valve is available in a 2/2 way and 3/2 way version.

Technical data

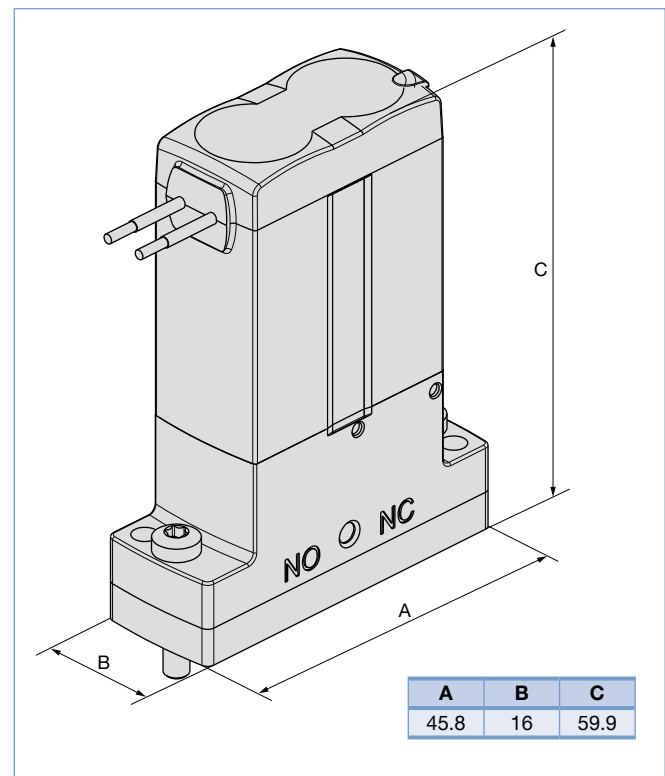
Orifice	DN2.0...DN3.0
Body material	PEEK, PPS
Seal material	FFKM, FKM, EPDM
Medium	Resistant to neutral and aggressive fluids and gases; see Bürkert resistance table
Medium temperature	
FFKM	+15 °C...+50 °C
FKM	-10 °C...+50 °C
EPDM DN2.0	-10 °C...+50 °C
EPDM DN3.0	+5 °C...+50 °C
Ambient temperature	
FFKM	+15 °C...+55 °C
FKM	-10 °C...+55 °C
EPDM DN2.0	-10 °C...+55 °C
EPDM DN3.0	+5 °C...+55 °C
Internal volume	<470 µl
Port connection	Flange, UNF, G 1/8, tube
Electrical connection	Flying leads, Rectangular plug
Operating voltages	24 V ¹⁾ , 12 V ¹⁾
Voltage tolerance	24 V ± 10 % ²⁾ 12 V ± 10 % / -5 % ²⁾
Nominal power	13.6 W inrush power 3.4 W nominal holding current (internal power reduction)
Duty cycle	Continuous operation 100 % ED
Installation	As required
Protection class	IP40
Switching frequency	Max. 2 Hz ³⁾
Response times	Acc. ISO 12238
Opening	ca. 10 ms (Pressure rise 0...10 %)
Closing	ca. 15 ms (Pressure drop 100...90 %)

1) Battery voltage, check polarity (red= +, black= -)

2) Max. allowed ripple

3) at ambient temperature of 20 °C

Dimensions [mm]

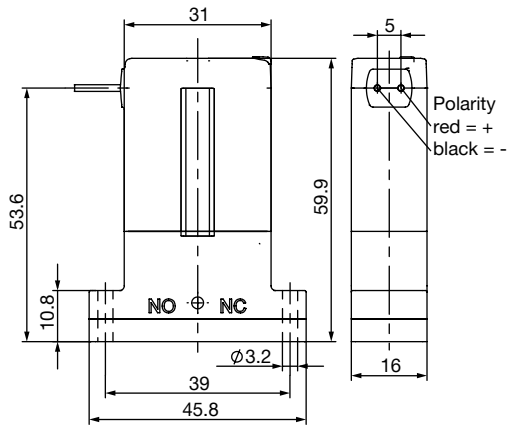


Options

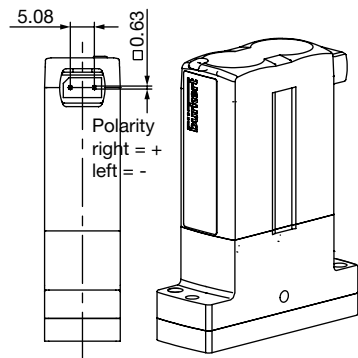
- Further versions see data sheet or on request

Dimensions [mm]

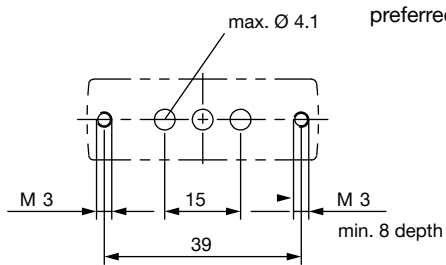
Electrical connections: flying leads



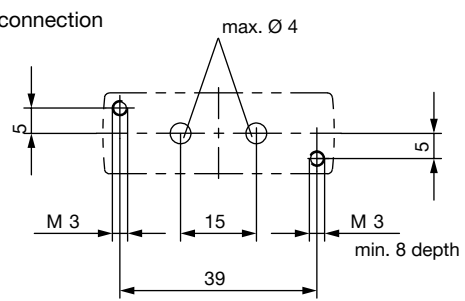
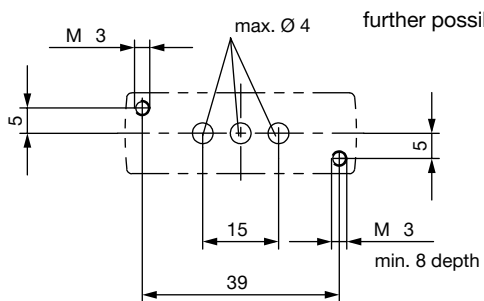
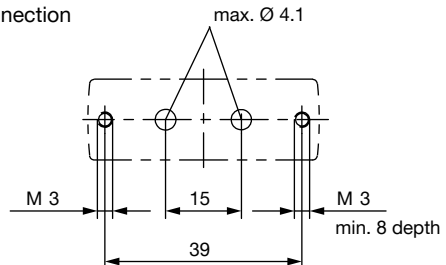
Electrical connections: rectangular plug



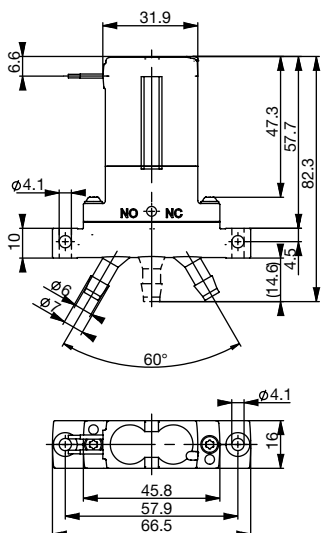
Sub-base body for 3/2 way connection



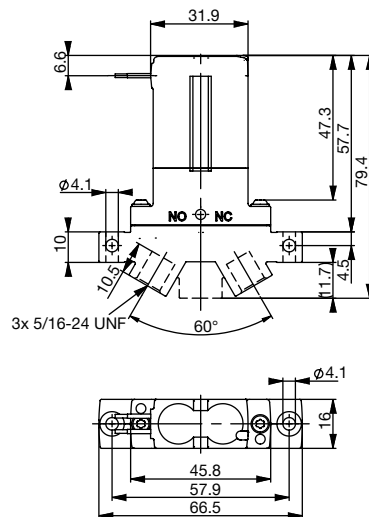
Sub-base body for 2/2 way connection



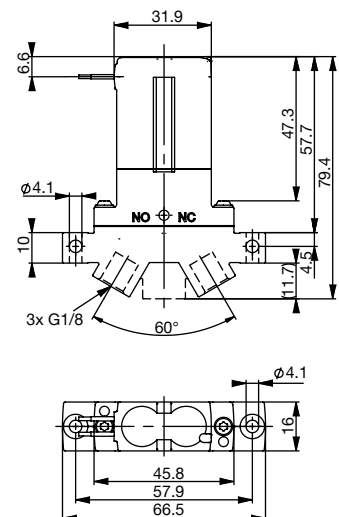
Body, tube connector

























Body, UNF 5/16" -24



Body, G1/8



Ordering chart

Circuit function	Orifice [mm]	Port connection	K _v value water [m ³ /h] ¹⁾	Pressure range [bar] ²⁾	Max. pressure difference [bar]	Seal material	Body material	Electrical connection	Voltage [V]	Article no.						
6626 A 2/2 way direct-acting solenoid valve, nor- mally closed	2.0	Sub-base	0.10	Vac. -3 (Vac. -5)	3 (5)	EPDM	PPS	Rectangular plug ³⁾	12	247769 						
									24	247771 						
				Vac. -3	3	FFKM	PEEK	Flying leads	12	247775 						
									24	247786 						
		UNF	Vac. -3 (Vac. -4)	3	FKM	PPS	Flying leads	12	251709 							
								24	252770 							
		G 1/8	Vac. -3	3	FFKM	PEEK	Flying leads	12	234278 							
	24							252770 								
	3.0	Sub-base	0.19	Vac. -2	2	EPDM	PPS	Rectangular plug ³⁾	24	247797 						
									FFKM	PEEK	24	238530 				
									FFKM	PPS	12	247816 				
									FFKM	PEEK	24	247819 				
		UNF	0.15	Vac. -2	2	FFKM	PEEK	Flying leads	24	251711 						
									FFKM	PEEK	12	252771 				
FFKM									PEEK	24	252772 					
FFKM									PEEK	24	252772 					
Tube	0.19	Vac. -2	2	EPDM	PPS	Rectangular plug ³⁾	24	247789 								
							FFKM	PEEK	24	228642 						
							FFKM	PEEK	12	247810 						
							FFKM	PEEK	24	247810 						
B 2/2 way direct-acting solenoid valve, nor- mally open	2.0	Sub-base	0.10	Vac. -3	3	FFKM	PEEK	Flying leads	24	252773 						
	3.0		0.19							Vac. -2	2	FFKM	PEEK	Flying leads	24	242597 
																Rectangular plug ³⁾

1) Measured at +20 °C, 1 bar pressure at value inlet and free outlet.

2) Measured as overpressure with respect to atmospheric pressure.

3) Rectangular cable to be ordered separately, selection option see accessories.

Note: () Values in brackets apply only for gaseous media.

Ordering chart

Circuit function	Orifice [mm]	Port connection	K _v value water [m ³ /h] ¹⁾	Pressure range [bar] ²⁾	Max. pressure difference [bar]	Seal material	Body material	Electrical connection	Voltage [V]	Article no.
T 3/2 way direct-acting solenoid valve, flow direction optional	2.0	Sub-base	0.10	Vac. -3 (Vac. -5)	3 (5)	EPDM	PPS	Rectangular plug ³⁾	24	247826
								Flying leads	12	247829
									24	247841
								Rectangular plug ³⁾	12	247838
									Flying leads	24
								252774		
	Rectangular plug ³⁾	252775								
		3.0	Sub-base	0.19	Vac. -2	2	EPDM	PPS	Rectangular plug ³⁾	12
	Flying leads								24	247853
									234371	
	Rectangular plug ³⁾								238531	
									12	247874
	Flying leads								24	247877
									Rectangular plug ³⁾	252776
	Flying leads									251715
									Rectangular plug ³⁾	247872
	Flying leads									247844
									Flying leads	247859
Rectangular plug ³⁾	247858									
	Flying leads	247869								
UNF	0.15	EPDM	PEEK	Rectangular plug ³⁾	252776					
					Flying leads	251715				
						247872				
					EPDM	PPS	Rectangular plug ³⁾	247844		
								Flying leads	247859	
					Rectangular plug ³⁾	247858				
Flying leads	247869									
G 1/8	0.19	EPDM	PEEK	Rectangular plug ³⁾	247872					
					EPDM	PPS	Rectangular plug ³⁾	247844		
								Flying leads	247859	
					Rectangular plug ³⁾	247858				
Flying leads	247869									
Tube	0.19	EPDM	PEEK	Rectangular plug ³⁾	247844					
					Flying leads	247859				
						Rectangular plug ³⁾	247858			
					Flying leads		247869			

1) Measured at +20 °C, 1 bar pressure at value inlet and free outlet.

2) Measured as overpressure with respect to atmospheric pressure.

3) Rectangular cable to be ordered separately, selection option see accessories.

Note: () Values in brackets apply only for gaseous media.

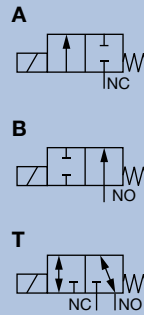
Ordering chart for accessories

Features	Article no.
Rectangular plug with 3 m cable	133486
Rectangular plug with 300 mm flying leads	644068
Rectangular plug, single contact for individual mounting	644067

2/2 and 3/2 way solenoid valve for analytical applications

6628

- 22 mm Installation width
- Isolating diaphragm for aggressive fluids
- High back-pressure tightness
- Minimal internal volume with good cleanability



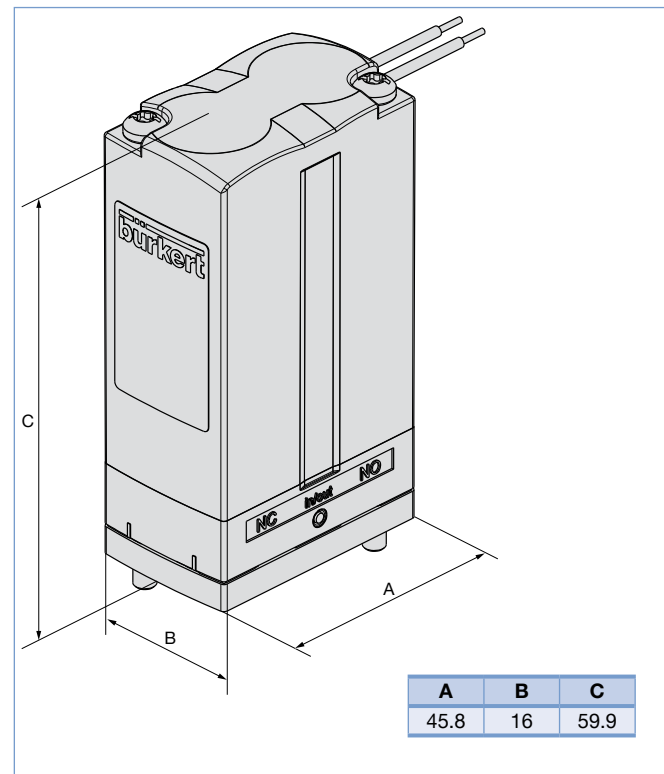
Direct acting medium separated 2/2 and 3/2 way rocker solenoid valve for control of aggressive fluids and gases in analytical medical applications, the food industry, and also the chemical industry for dosing, filling, mixing and distribution.

The medium is in contact with fluid housing and seal material solely through the isolating diaphragm. This valve with the new TwinPower actuator, robust screw-in connection and 22 mm installation width, will fulfil the highest requirements. The established rocker solenoid technology is characterized through full back pressure tightness, good rinsing capability and low internal volume. Type 6628 is available in different technical versions and by virtue of several body options, it offers a perfect adaption in fluid applications.

Technical data

Orifice	DN2.0 or DN3.0
Body material	PEEK or PPS (PVDF, PP on request)
Seal material	FFKM, FKM or EPDM
Medium	Resistant to neutral and aggressive gases and liquids acc. to our chemical resistance chart
Medium temperature	0 °C...+55 °C
FKM, EPDM, FFKM	+10 °C...+55 °C -10 °C...+55 °C
Ambient temperature	0 °C...+55 °C
FKM, EPDM, FFKM	+10 °C...+55 °C -10 °C...+55 °C
Internal volume	Ca. 200 µl
Viscosity	Max. ca. 21 mm ² /s
Electrical connection	<ul style="list-style-type: none"> • PFA single flying leads, 0.5 mm², 500 mm • Rectangular plug for cable plug Type 2505 (not included) • Industry plug acc. to DIN 43650 Form B for cable plug Type 2507 (not included) • Circular connector M8 on request
Operating voltages	24 V DC, other voltages on request
Voltage tolerance	± 10 %
Nominal power	5 W
Duty cycle	100 % continuous operation
Installation	As required, preferably with actuator upright

Dimensions [mm]

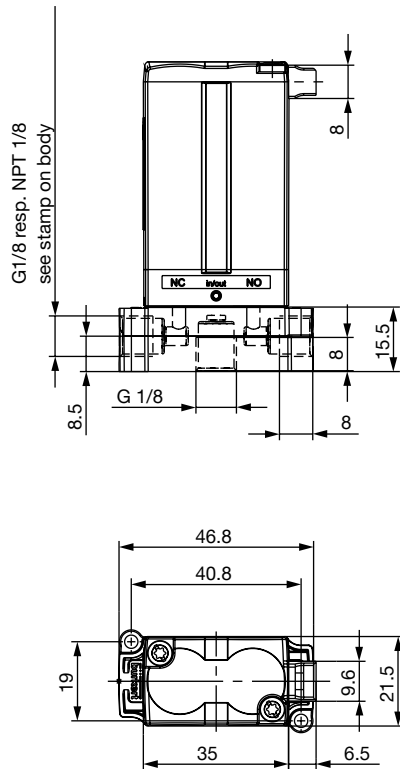


Protection class	IP54 (IP40 with rectangular plug Type 2505)
Response times	Measurement at valve output with 2 bar and 20 °C acc. to DIN ISO 12238:2001
Opening	25 ms (Pressure rise 0...10 %)
Closing	25 ms (Pressure drop 100...90 %)
Manual override	On request

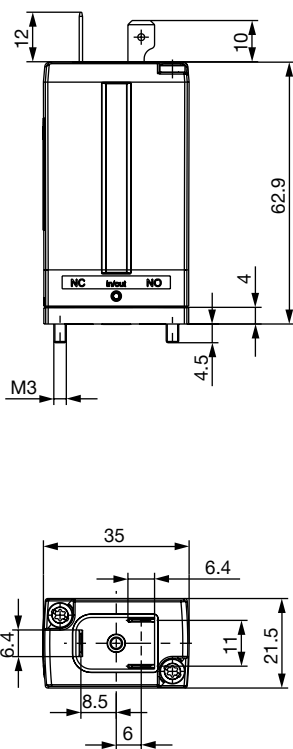
Options

- Further versions see data sheet or on request

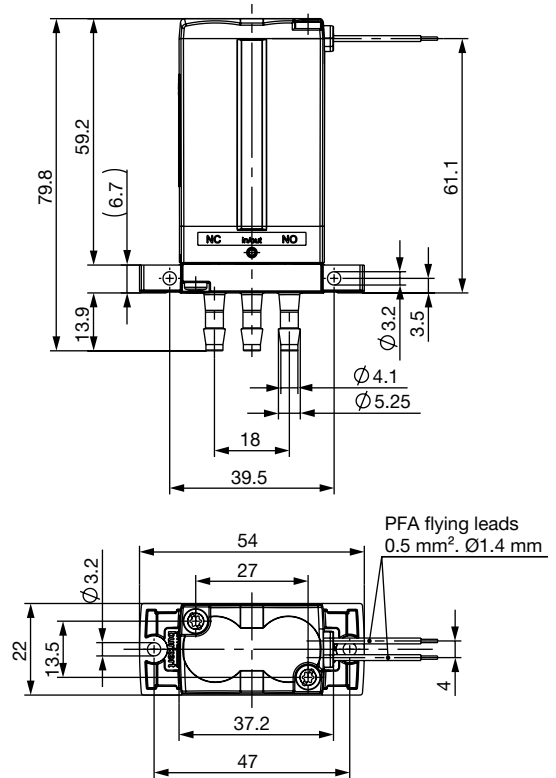
**Threaded port version
with Rectangular plug**



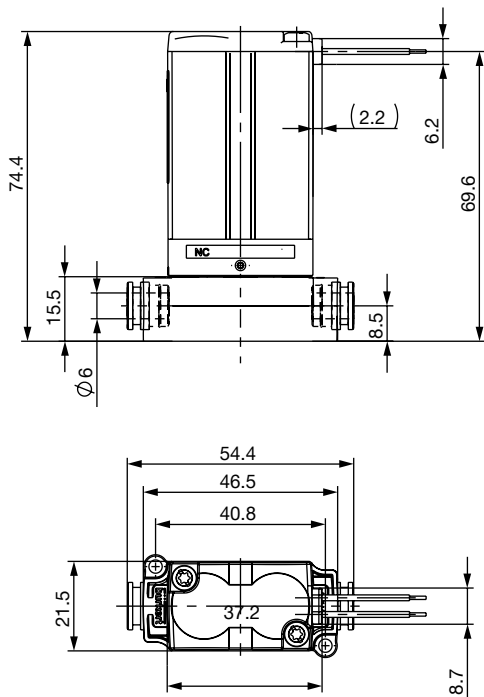
**Flange version
for Cable Plug**



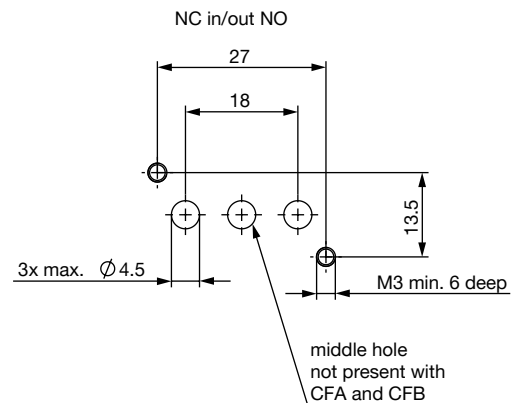
**Barbed hose connector
with Flying leads**



Push-in connector



Flange interface for manifold



**Classification
of fluid connections**

































CFA (Circuit function A)
2/2 way-valve, normally closed
inflow at „NC“-connector

CFB (Circuit function B)
2/2 way-valve, normally open
inflow at „NO“-connector

CFT (Circuit function T)
3/2 way-valve , universal
flow as required

Ordering chart

6628

Circuit function	Orifice [mm]	Port connection	K _v value water [m ³ /h]	Q _{Nn} value air [l/min]	Pressure range [bar]	Max. pressure difference [bar]	Seal material	Body material	Electrical connection	Voltage/Frequency [V/Hz]	Article no.
A 2/2 way direct-acting solenoid valve, normally closed	2	Bürkert-Flange	0.1	110	Vac-5	5	EPDM	PPS	Rectangular plug	24/DC	250857 
											Flying leads, 500 mm
	3		0.17	180	Vac-3	3			Rectangular plug	24/DC	241727 
											Flying leads, 500 mm
	Hose connector G 1/8		0.17	180	Vac-3	3			Rectangular plug	24/DC	242030 
											Flying leads, 500 mm
		Plug top					251613 				
		Plug top					236170 				
	2	Bürkert-Flange	0.1	110	Vac-5	5	FKM	PPS	Rectangular plug	24/DC	251644 
											Flying leads, 500 mm
	3	0.17	180	Vac-3	3	Rectangular plug	24/DC	251620 			
								Flying leads, 500 mm	246382 		
	Hose connector G 1/8	0.17	180	Vac-3	3	Rectangular plug	24/DC	248017 			
								Flying leads, 500 mm	251624 		
								Plug top	238616 		
								Plug top	251628 		
	2	Bürkert-Flange	0.1	110	Vac-5	5	FFKM	PEEK	Rectangular plug	24/DC	242340 
											Flying leads, 500 mm
	3	0.17	180	Vac-3	3	Rectangular plug	24/DC	251650 			
								Flying leads, 500 mm	235315 		
2	Bürkert-Flange	0.1	110	Vac-5	5	FFKM	PEEK	Rectangular plug	24/DC	234350 	
										Flying leads, 500 mm	235316 
3	0.17	180	Vac-3	3	Rectangular plug	24/DC	270082 				
							Flying leads, 500 mm	235317 			
Hose connector G 1/8	0.17	180	Vac-3	3	Rectangular plug	24/DC	270083 				
							Flying leads, 500 mm	230304 			
Push-in connection	0.17	180	Vac-3	3	Rectangular plug	24/DC	270081 				
							Flying leads, 500 mm	235318 			
2	Bürkert-Flange	0.1	110	Vac-5	5	FFKM	PEEK	Rectangular plug	24/DC	235319 	
										Flying leads, 500 mm	251686 
3	0.17	180	Vac-3	3	Rectangular plug	24/DC	235318 				
							Flying leads, 500 mm	235319 			
Hose connector G 1/8	0.17	180	Vac-3	3	Rectangular plug	24/DC	235317 				
							Flying leads, 500 mm	235319 			
Push-in connection	0.17	180	Vac-3	3	Rectangular plug	24/DC	235318 				
							Flying leads, 500 mm	235319 			
B 2/2 way direct-acting solenoid valve, normally open	3	Bürkert-Flange	0.17	180	Vac-3	3	FFKM	PEEK	Flying leads, 500 mm	24/DC	251686 

Ordering chart continued

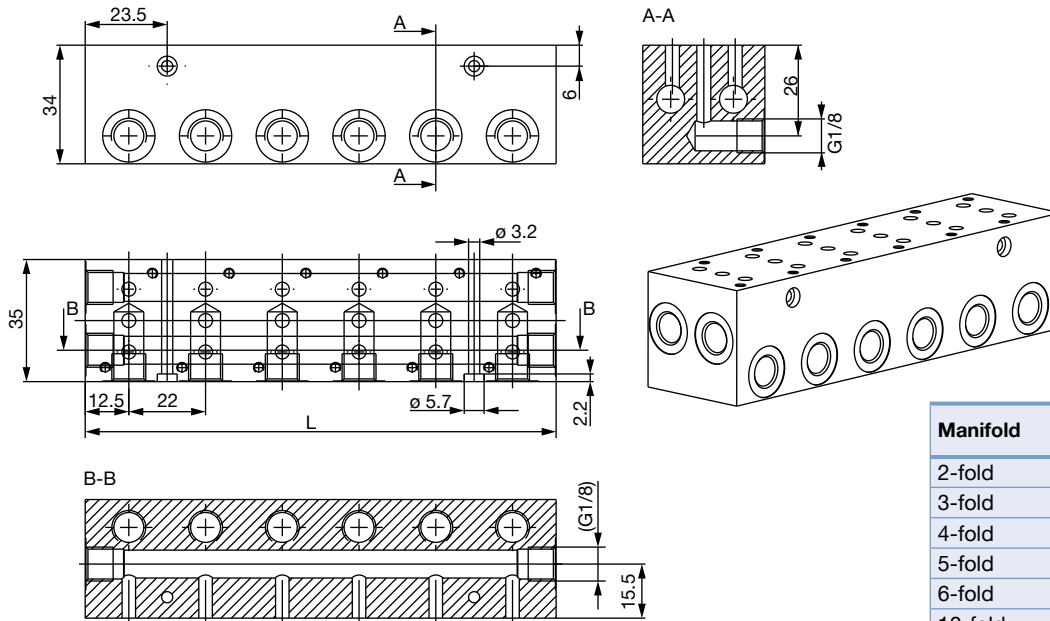
Circuit function	Orifice [mm]	Port connection	K _v value water [m ³ /h]	Q _{Nn} value air [l/min]	Pressure range [bar]	Max. pressure difference [bar]	Seal material	Body material	Electrical connection	Voltage/Frequency [V/Hz]	Article no.
T 3/2 way direct-acting solenoid valve, flow direction optional	2	Bürkert-Flange	0.1	110	Vac-5	5	EPDM	PPS	Rectangular plug	24/DC	250859
									Flying leads, 500 mm		241889
	3	Bürkert-Flange	0.17	180	Vac-2	2	EPDM	PPS	Flying leads, 500 mm	12/DC	241726
									Rectangular plug		24/DC
								Flying leads, 500 mm		245256	
									Plug top		251645
		Hose connector						PEEK	Flying leads, 500 mm		251617
		G 1/8									245205
									Plug top		251647
	2	Bürkert-Flange	0.1	110	Vac-5	5	FKM	PPS	Rectangular plug	24/DC	251629
									Flying leads, 500 mm		251630
	3	Bürkert-Flange	0.17	180	Vac-2	2	FKM	PPS	Flying leads, 500 mm	12/DC	251633
									Rectangular plug		24/DC
									Flying leads, 500 mm		
									Plug top		251684
		Hose connector						PEEK	Flying leads, 500 mm		251637
		G 1/8									251638
									Plug top		251649
			Push-in connection					PPS	Flying leads, 500 mm		251685
	2	Bürkert-Flange	0.1	110	Vac-5	5	FFKM	PEEK	Rectangular plug	24/DC	235320
Flying leads, 500 mm									234340		
3	Bürkert-Flange	0.17	180	Vac-2	2	FFKM	PEEK	Flying leads, 500 mm	12/DC	235321	
								Rectangular plug		24/DC	270079
							PVDF				
							PEEK	Rectangular plug	24/DC	235322	
							PVDF			270080	
							PEEK	Flying leads, 500 mm		230305	
							PVDF			270078	
	Hose connector						PEEK			235323	
	G 1/8									235325	

- K_v value water [m³/h] max. flow rate for water measured at +20 °C, 1 bar pressure to atmosphere
- Rectangular plug types delivered without plug (see ordering chart for accessories)

Manifolds

6628

Multiple Manifolds with individual service port (G 1/8) and diverter function on 2 common channels (G 1/8); Delivery without valves; Material: anodized aluminium



Manifold	L [mm]	Article no.
2-fold	47	669571
3-fold	69	672633
4-fold	91	669572
5-fold	113	672661
6-fold	135	669570
10-fold	223	672660

Note: Other versions on request.

Accessories

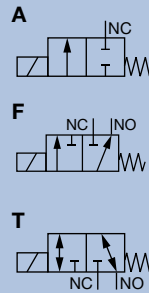
Description	Feature	Article no.
Rectangular cable plug Type 2505 - see Type 2505 ▶		
Raster 5.08 mm	3 m cable	133486
Raster 5.08 mm	300 mm flying leads	644068

Description	Voltage	Article no.
Cable plug Type 2507 acc. to industry standard Form B - see Type 2507 ▶		
without circuitry (standard)	0...250 V AC/DC	423845
with LED	24 V AC/DC	423849

2/2 and 3/2 way flipper solenoid valve for analytical applications

6650

- Only 4.5 mm wide
- Medium isolation, for aggressive fluids
- Direct-acting
- Short response times



With a width of only 4.5 mm, Type 6650 sets a new standard in medium isolation miniature solenoid valves. The optimized design enables reproducible and precise dosing, good rinsing capability and is suitable for the application of aggressive chemicals owing to the high quality of the materials used. With the two nominal sizes of 0.4 and 0.8 mm, as well as the selection between 2/2 way and 3/2 way function, it is ideal for applications where the highest fluid performances are required in the smallest space. Type 6650 opens up new possibilities, owing to the 4.5 mm station width, in particular in connection with dosing in 384-well microtiter plates.

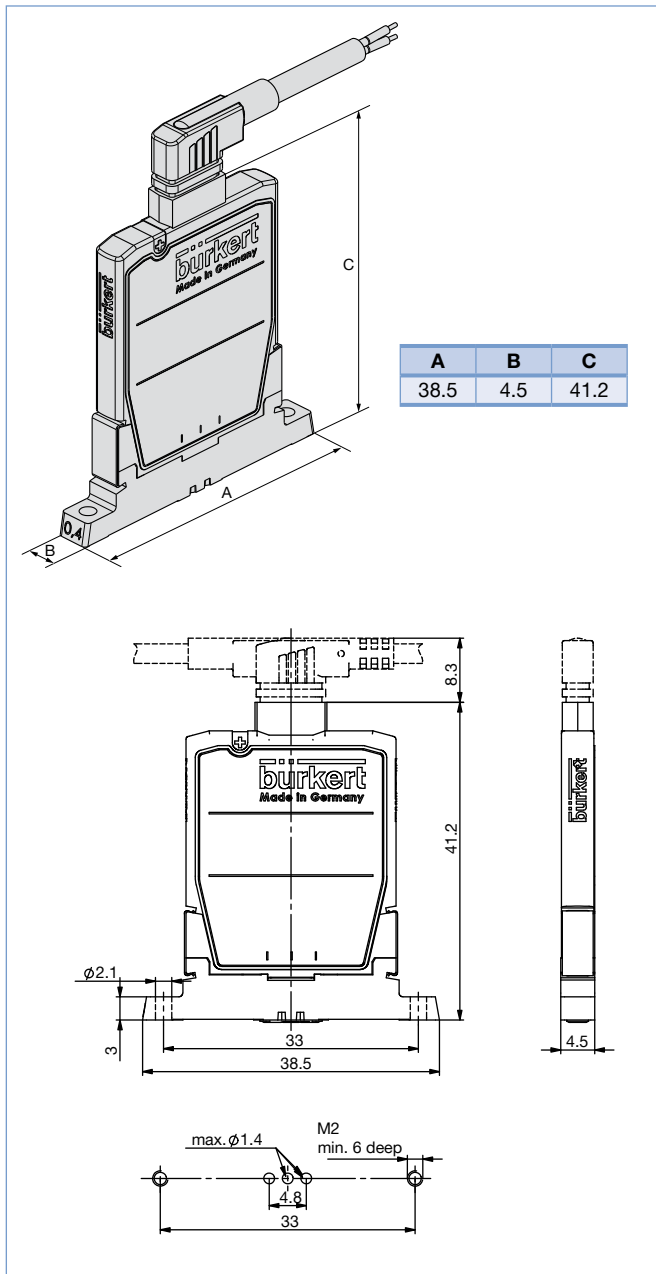
Technical data

Orifice	DN0.4 and DN0.8
Body material	PEEK
Seal material	FFKM (Simriz)
Medium	Resistant to neutral and aggressive fluids and gases; see Bürkert resistance table
Medium temperature	+15 °C...+50 °C
Ambient temperature	+10 °C...+50 °C
Internal volume	Approx. 30 µl
Port connection	Flange
Electrical connection	Plug Bürkert Type 2504 (not included)
Operating voltages	24 V (12 V on request)
Voltage tolerance	±10 %
Nominal power	5.7 W For 100 % duty cycle power has to be reduced externally.
Duty cycle	100 % continuous operation only with external power reduction
Installation	As required; with side by side connection standard polarity is adhered to
Protection class	IP65
Switching frequency	80 Hz (for mechanical limit observe maximum temperature) 15 Hz (continuous with external power reduction, for more information see manual)
Response times	<5 ms (acc. to ISO 12238)

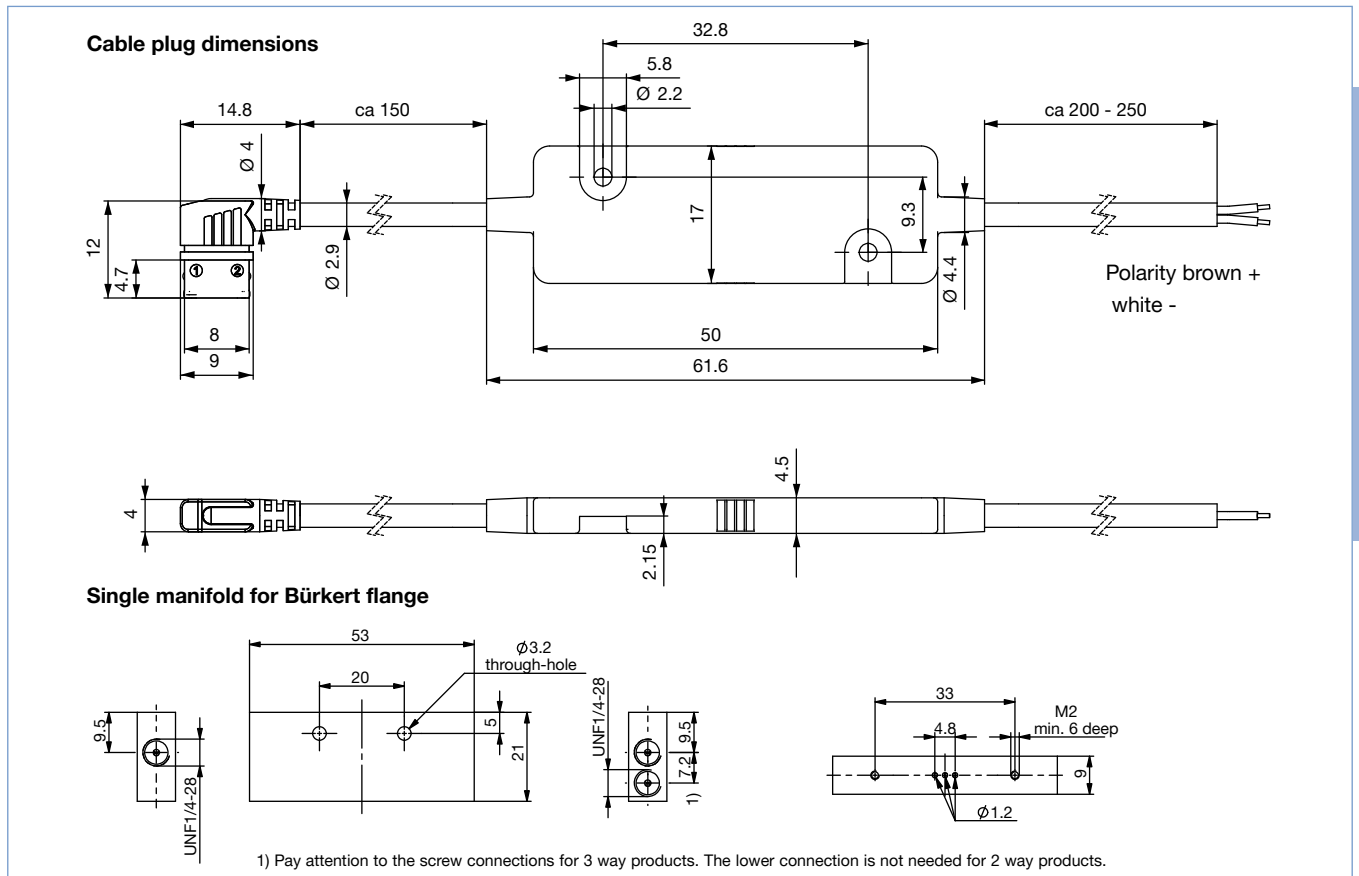
Options

- Further versions see data sheet or on request

Dimensions [mm]



Dimensions [mm]



Ordering chart

Circuit function	Orifice [mm]	K_v value water [m ³ /h] ¹⁾	Pressure range [bar] ²⁾	Max. pressure difference [bar]	Voltage [V]	Nominal power [W] (Inrush-/nominal holding power)	Article no.
A 2/2 way direct-acting solenoid valve, normally closed	0.4 ³⁾	0.004	Vac.-7	7	24	5.7 / 0.7	182284 🛒
	0.8 ⁴⁾	0.01	Vac.-3	3	24	5.7 / 0.7	226664 🛒
T 3/2 way direct-acting solenoid valve, flow direction optional	0.8	0.01	Vac.-1	1	24	5.7 / 0.7	189292 🛒
F 3/2 way direct-acting, distribution solenoid valve	0.8	0.01	Vac.-3	3	24	5.7 / 0.7	227020 🛒

1) Measured at +20 °C, 1 bar pressure at valve inlet and free outlet

2) Measured as overpressure to the atmospheric pressure

3) With orifice 0.4 mm flow permitted in both directions

4) With orifice 0.8 mm flow direction according to label

Accessories

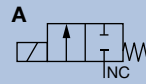
Description	Feature	Article no.
Hit and hold electronic cable plug Type 2504		
24 V AC/DC, power reduction to 0.7 W after 5 ms	500 mm	670178 🛒
Single cable ⁵⁾	500 mm	670164 🛒
Single cable ⁵⁾	5000 mm	680840 🛒
Single manifold material Peek		670181 🛒

5) The valve must be operated with external power reduction. Please refer to the manual for further details.

2/2 way Whisper Valve with media separation

6712

- Highest chemical resistance with minimal internal volume
- Compact design with 7 mm width
- Orifice size 0.8 mm (3 bar) and 0.4 mm (5 bar)
- Switching noise <36 dB
- For dosing applications with excellent flush ability



Fluidical “point-of-care” applications, as dialysis or artificial respiration, and applications at the “point-of-use” for example at pipetting arms in biological analysis have special requirements. The new media separated Whisper Valve type 6712 was particularly developed for these applications. Especially the reduced switching noise and the good flush ability set a new benchmark. But also in industrial applications like inkjet printers, the type 6712 is the first choice due to the high lifecycle and the excellent switching dynamic.

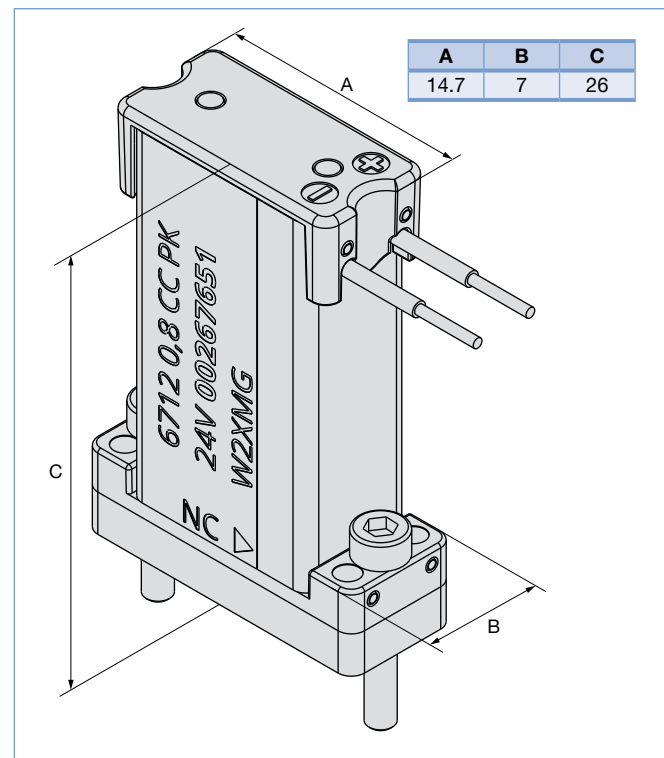
With the modular design and the available material variants this valve is applicable with virtually all liquids and gases in life science and industrial applications.

A valve that combines dosing accuracy and flush ability.

Technical data

General data	
Orifice sizes and pressure ranges	DN0.8 / 0...3 bar ¹⁾ DN0.4 / 0...5 bar ¹⁾
Pressure output (Back pressure)	DN0.8: max. 1.2 bar ²⁾ DN0.4: max. 1.8 bar ²⁾
Tightness to outside	8 bar ²⁾
Body material	PEEK, PPS
Seal material	FFKM, FKM and EPDM
Medium	Resistant to neutral and aggressive gases and liquids (acc. to Bürkert resistance chart)
Medium temperature	EPDM: 0 °C...+55 °C FFKM: +10 °C...+55 °C FKM: +15 °C...+55 °C
Ambient temperature	EPDM: 0 °C...+55 °C FFKM: +10 °C...+55 °C FKM: +15 °C...+55 °C
Typical service life	30.000.000 (acc. to laboratory duration tests ³⁾)
Internal volume	Fluid chamber: 2 µl Total (incl. connections): 5 µl
Viscosity	Max. 21 mm ² /s
Port connection	Bürkert flange (7 × 18.2 mm)
Electrical connection	Single flying leads, AWG26, 500 mm Dimension plug grid 2 mm (solder pin on request)
Power supply	12 V DC, 24 V DC
Voltage tolerance	± 10 %
Power consumption	0.9 W ⁴⁾
Duty cycle	100 % continuous operation
Installation	As required, preferably with actuator upright
Protection class	IP40 acc. IEC 60144

Dimensions [mm]



Switching frequency	50 Hz
Switching noise	36 dB(A) ⁵⁾
Approvals and compliance on request⁶⁾	Suitability for drinking water: KTW (W270) Suitability for foodstuffs: FDA

1) Maximum tightened relative pressure at the seat.

2) Relative pressure

3) Service life depends on the type of medium, the temperature, the pressure, the seal material and the specific operational conditions.

4) No further power reduction possible.

5) Tested under Bürkert test conditions. The value may vary with conditions.

6) Other versions on request

Options

- Further versions see data sheet or on request

Response times

Seal material		DN = 0.8 mm at 3 bar ¹⁾	DN = 0.4 mm at 5 bar ¹⁾
EPDM	Opening ²⁾	0.5 ms	0.8 ms
	Closing ³⁾	0.9 ms	1.2 ms
FFKM	Opening ²⁾	0.7 ms	0.9 ms
	Closing ³⁾	1.0 ms	1.8 ms
FKM	Opening ²⁾	0.8 ms	0.9 ms
	Closing ³⁾	1.0 ms	3.2 ms

1) Response time is typically measured between valve output and flow resistance according to DIN ISO 12238:2001 at 25 °C; the response time depends on temperature, pressure and sealing material. Electronics to further reduce the response time are available on request.

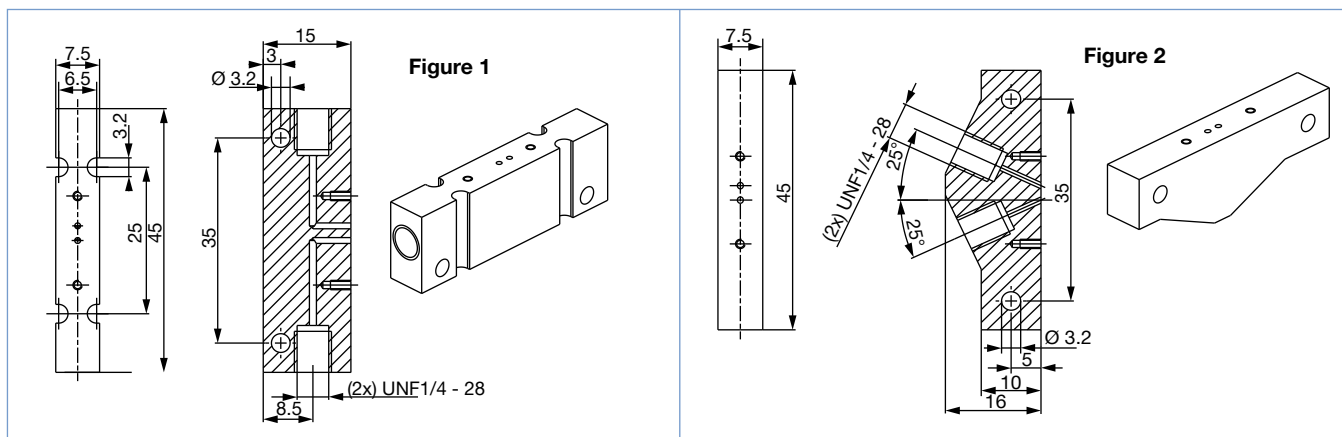
2) Pressure rise 0...10 %

3) Pressure rise 100...90 % against maximum back pressure

Accessories

Description	Article no.
Manifold UNF ¼ - 28 PEEK (Figure 1)	694895
Manifold UNF ¼ - 28 PEEK (Figure 2) (low internal volume)	695956
Plug with flying leads AWG24 with length of 500 mm	689974

Dimensions [mm]



Ordering chart

Circuit function	Orifice [mm]	Port connection ⁴⁾	K _v value water [m ³ /h] ⁵⁾	C _v value water [gpm]	Q ₁₀ value air [l/min] ⁷⁾	Pressure range [bar]	Max. back pressure at output [bar]	Seal material	Body material	Electrical connection ⁶⁾	Voltage/frequency [V/Hz]	Article no.		
A 2/2 way direct-acting solenoid valve, normally closed	0.4	Bürkert flange	0.005	0.006	5.8	0...5	1.8	EPDM	PPS	Plug	12 V DC	273226		
								FFKM	PEEK	Flying lead	24 V DC	273206		
	0.8		EPDM	PPS	0.012	0.014	13.1	0...3	1.2	FFKM	PEEK	Plug	12 V DC	273232
														273233
			EPDM	PPS	FFKM	PEEK	Flying lead	24 V DC	273231					
									273188					
			EPDM	PPS	FFKM	PEEK	Flying lead	24 V DC	273189					
									273187					
			EPDM	PPS	FFKM	PEEK	Flying lead	24 V DC	273236					
									273237					
			EPDM	PPS	FFKM	PEEK	Flying lead	24 V DC	273235					
									273190					
EPDM	PPS	FFKM	PEEK	Flying lead	24 V DC	273191								
						267651								

4) 2 stainless steel cylinder head screws, ISO 4762, M1.6×8 A2 included in delivery.

5) Water flow rate measured at +20 °C and 1 bar pressure at valve input and free outlet.

6) Plug delivered without plug connection. Please order connection socket with strand separately (see ordering chart accessories).

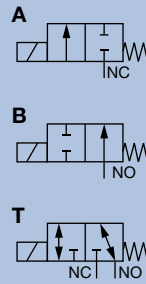
Other suitable plug connectors are: W+P series 521, JST series PHR-2 or Würth series ConWTB 2.00 mm. Other electrical assemblies on request.

7) Measurement at +20 °C, 1 bar pressure at valve inlet and 1 bar pressure difference.

2/2 or 3/2 way Whisper Valve with media separation

6724
Whisper Valve

- Highest chemical resistance with minimal internal volume
- Compact design with 7 mm width
- Orifice size 0.8 mm (3 bar) and 0.4 mm (5 bar)
- Switching noise <36 dB
- For dosing applications with excellent flush ability

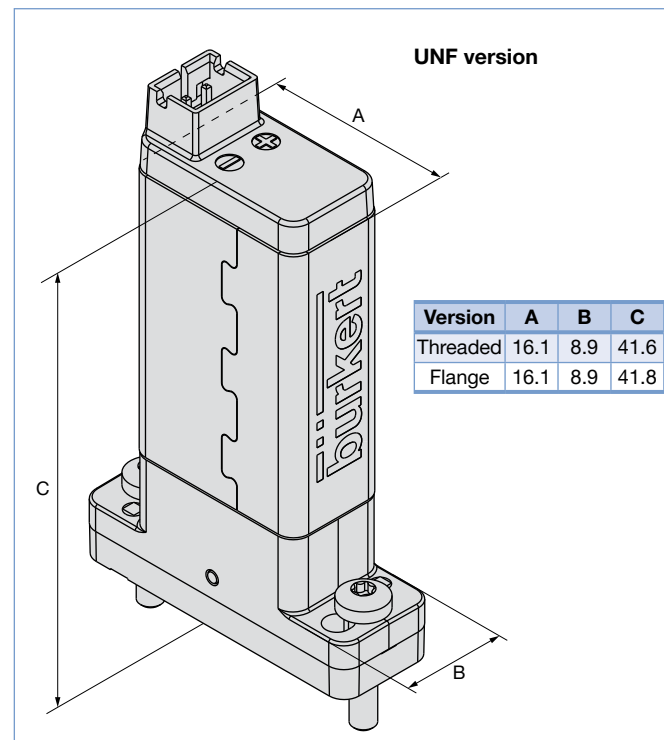


Many fluidic processes come closer to the point of interest. For example medical devices like dialysis machines become homecare devices and operate close to the patient. Washing units in analytical equipment are positioned on the pipetting arm or directly on the print head in printing applications. This requires special components. Solenoid valves need to switch without noise. They need to be smaller and lighter. Nevertheless it is essential to guarantee a long lifetime and excellent switching characteristics. All this is concerted in the Whisper Valve type 6724 and thanks to the modular structure and the range of available materials this valve is almost universal.

Technical data

Orifice size / pressure range	DN0.8 / vacuum ¹⁾ to 5 bar ²⁾ DN1.2, 2/2 way / vacuum to 3 bar ²⁾ DN1.2, 3/2 way / vacuum to 2 bar ²⁾
Body material	PEEK, PPS
Seal material	FFKM, EPDM and FKM
Medium	Resistant to neutral and aggressive gases and liquids (see Bürkert resistance chart)
Media temperature	FFKM: +15 °C...+50 °C (59...122 °F) FKM: 0 °C...+50 °C (32...122 °F) EPDM: 0 °C...+50 °C (32...122 °F)
Ambient temperature	FFKM: +15 °C...+50 °C (59...122 °F) FKM: 0 °C...+50 °C (32...122 °F) EPDM: 0 °C...+50 °C (32...122 °F)
Typical service life	10.000.000 (acc. to laboratory duration tests ³⁾)
Internal volume	Fluid chamber 28 µl / Total (incl. connection) 38 µl
Viscosity	Max. 21 mm ² /s
Port connection	Flange; UNF ¼-28
Electrical connection	Plug Raster 2 mm ⁴⁾
Power supply	12 V DC; 24 V DC (other voltages on request)
Voltage tolerance	± 10 % (incl. Residual ripple)
Power consumption	1 W ⁵⁾
Duty cycle	100 % continuous operation
Installation	As required, preferably with actuator upright
Protection class	IP40 acc. to IEC 60144
Switching noise	30 dB (A) / <20 dB (A) on request ⁶⁾
Response times	Measurement at valve output with 2 bar and 20 °C acc. to DIN ISO 12238:2001
Opening	3 ms (pressure build-up 0...10 %)
Closing	3 ms (pressure build-up 100...90 %)

Dimensions [mm]



Approvals and compliance (on request) Suitable for food industry: FDA
Suitable for drinking water: KTW (W270)
Oxygen application: BAM

- 1) Technical vacuum (-0.8 bar); connection only to NC or NO; do not apply vacuum at the valve outlet (COM /OUT).
- 2) With optional boost electronics, see accessories: Vacuum¹⁾ to 7 bar at NC connection, back pressure max. 3 bar permissible.
- 3) Service life depends on the type of medium, the temperature, the pressure, the seal material and the specific operational conditions.
- 4) Please order socket with flying leads separately → see ordering chart for accessories. other suitable connectors are e.g. W + P: 521 series (Socket 521S-02-1; Contact 521S-01-2-00) or JST (Socket PHR-2; Contact SPH-002GW-P0.5S); Stand 04/2015
- 5) No further power reduction possible.
- 6) <20 dB(A) with optional soft-close electronics possible, see accessories

Options

- Further versions see data sheet or on request

Ordering chart

Circuit function	Orifice [mm]	Port connection	K _v value water [m ³ /h] ¹⁾	C _v value water [gpm]	Q _{Nn} -value air [l/min]	Pressure range [bar] ^{2) 3)}	Max. pressure difference [bar]	Seal material	Body material	Voltage/frequency [V/Hz]	Article no.
A 2/2 way direct-acting solenoid valve, normally closed ⁴⁾	0.8	Sub-base	0.01	0.012	10.7	Vac-5	5	FFKM	PEEK	24 V DC	299245
	1.2		0.026	0.03	28	Vac-3	3				281506
			UNF	0.026	0.03	28	Vac-3				3
	0.8	UNF	0.01	0.012	10.7	Vac-5	5	EPDM	PPS	24 V DC	299246
		Sub-base	0.01	0.012	10.7	Vac-5	5				299247
	1.2	Sub-base	0.026	0.03	28	Vac-3	3	FKM	PPS	24 V DC	281934
	0.8		0.01	0.012	10.7	Vac-5	5				299248
			UNF	0.026	0.03	28	Vac-3				3
	1.2	Sub-base	0.026	0.03	28	Vac-3	3	PPS	24 V DC	281936	
Sub-base		0.026	0.03	28	Vac-2	2	FFKM	PEEK	24 V DC	281507	
B 2/2 way direct-acting solenoid valve, normally open	1.2	Sub-base	0.026	0.03	28	Vac-2	2	FFKM	PEEK	24 V DC	281507
	0.8	Sub-base	0.01	0.012	10.7	Vac-5	5	FFKM	PEEK	24 V DC	299249
			0.026	0.03	28	Vac-2	2			12 V DC	295322
			0.026	0.03	28	Vac-2	2			24 V DC	276458
	0.8	UNF	0.01	0.012	10.7	Vac-5	5	EPDM	PPS	12 V DC	299250
		1.2	UNF	0.026	0.03	28	Vac-2				2
	0.8	Sub-base	0.01	0.012	10.7	Vac-5	5	EPDM	PPS	24 V DC	299279
			0.01	0.012	10.7	Vac-5	5			299251	
	1.2	Sub-base	0.026	0.03	28	Vac-2	2	FKM	PPS	24 V DC	281935
0.8	0.01		0.012	10.7	Vac-5	5	299252				
	1.2		0.026	0.03	28	Vac-2	2				281937

1) Measured at +20 °C, 1 bar pressure at valve inlet and free outlet.

2) Gauge pressures with respect to the prevailing atmospheric pressure

3) Technical vacuum (-0.8 bar); Connection only to NC or NO; At the valve outlet (COM /OUT) do not apply low pressure.

4) With the new Boost Close Electronics Type 2503 (689998) the valve can also be operated in reverse flow direction.

Accessories

Description	Article no.
Connector ⁵⁾ with flying leads AWG 24, 500 mm length (Connector not included)	689974
Plug connectors with 500 mm flying leads and soft-close electronics for noise reduction – For further information refer to the operating instructions for the Type 2503 SoftClose.	689999
Plug connector with 500 mm flying lead and boost electronics to increase the permissible pressure under NC – For further information refer to the operating instructions for the Type 2503 BoostClose.	689998

5) Connector comparable with JST PHR-2

Micro Dosing Unit for precise dosing in microlitre-range

7615

- Diaphragm pump for high chemical resistance
- Dosing volume 5 µl/stroke up to 8 ml/min. in both directions
- Dosing accuracy $\pm 3.5\%$
- Self priming
- Integrated electronics, easy to use



Bürkert's Micro Dosing Unit has been designed for precise dosing applications in the microliter range. It combines high dosing accuracy and precision with excellent chemical inertness. The unit is comprised of three valves which can be opened simultaneously for flushing. Active inlet and outlet valves enable the device to pump liquid in two directions. This feature can be used to mix fluids inside a tube or channel or to constantly keep them in motion. Reagents can be sucked back from the dispensing tip to prevent drying out after dosing. The integrated heating function heats up the valves and the medium, and the unit comes with dry running capabilities.

Technical data

Body Material	PEEK
Seal Material	FFKM, EPDM-pump diaphragm on request
Fluids	Neutral and aggressive liquids (see Chemical Resistance Chart)
Fluid Temperatures	+15 °C...60 °C (FFKM)/+5 °C...60 °C (EPDM) ¹⁾
Ambient Temperature	+10...+55 °C ¹⁾
Dosing Quantity	Adjusted to 5 µl/stroke $\pm 1.5\%$ ²⁾ ; max. ca. 8 ml/min; at 40 Hz both directions
Dosing accuracy	$\pm 3.5\%$ ⁴⁾
Repetition accuracy	$\pm 2\%$ ²⁾
Max. Outlet Pressure	1.0 bar ³⁾
Max. Suction Lift	>2 m (dry); >4 m (wet)
Duty Cycle	100 %
Voltage	12 V DC, 24 V DC
Voltage Tolerance	$\pm 10\%$
Power Consumption	11 W (short term); 5 W
Electrical Connection	e.g. suitable for connection to Molex plug no. 50-57-9404
Installation	Variable, unit with two holes for M3 fixing screws
Fluid Connection	Sub-base connection; UNF ¼-28
Protection class	IP40
Lifetime	Approx. 20 Mio cycles (at 20 °C; 10 Hz; water)
Dimensions (L x W x H)	50 x 28.5 x 70 mm (UNF ¼-28) 44 x 39.5 x 70 mm (sub-base)
Max. Viscosity	<math>< 250 \text{ mm}^2/\text{s}</math>
Weight	ca. 120 g

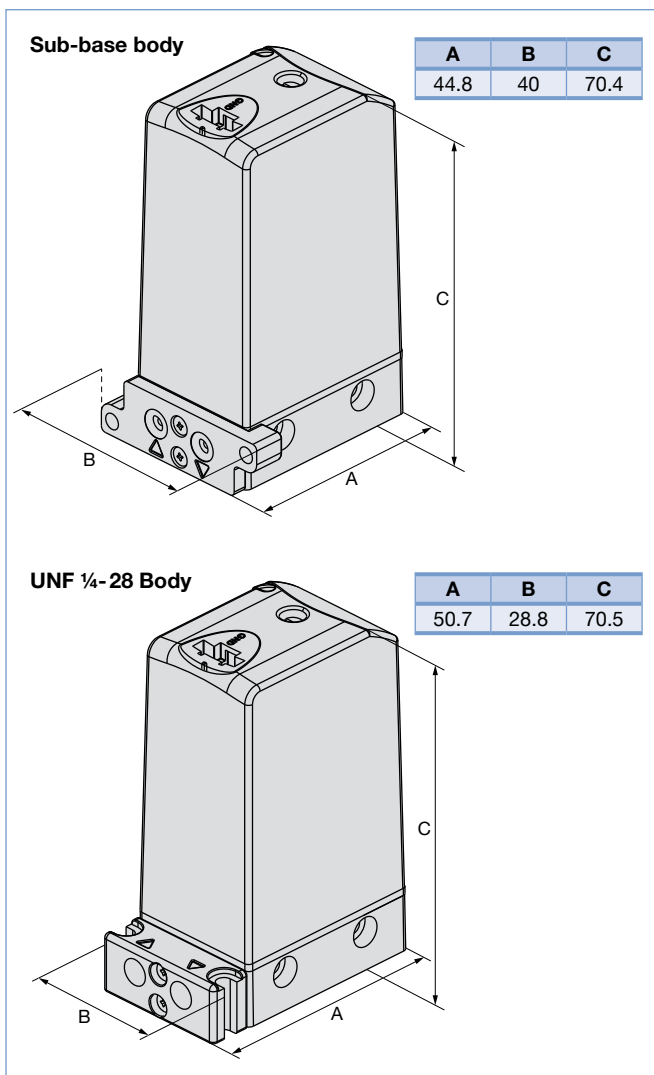
1) For lower temperatures the unit can be electrically preheated (heating mode without media feed).

2) At 20 °C ambient temperature, medium degassed DI water, 5 Hz, no backpressure.

3) Relative pressure

4) Typical value under Burkert test conditions see footnote 2. The typical repetition accuracy is $\pm 2\%$. This is a guiding value only!

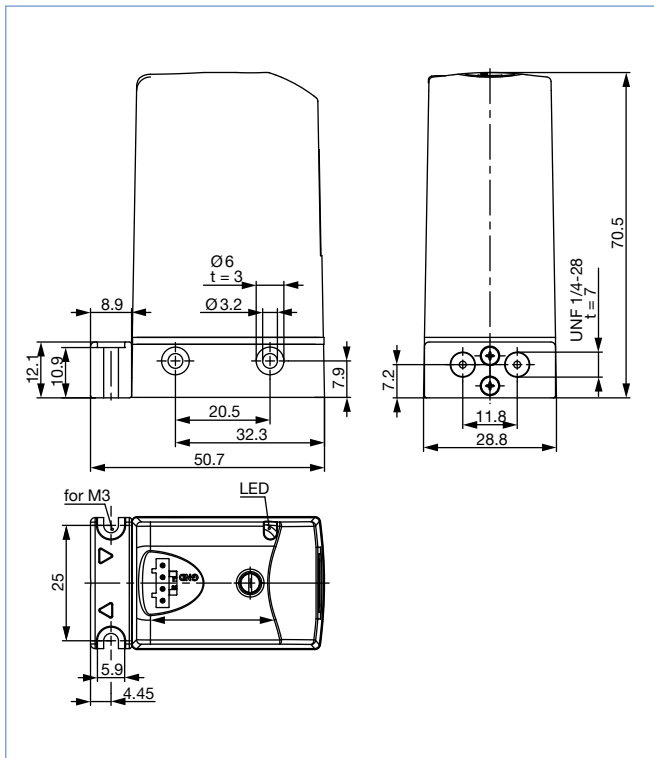
Dimensions [mm]



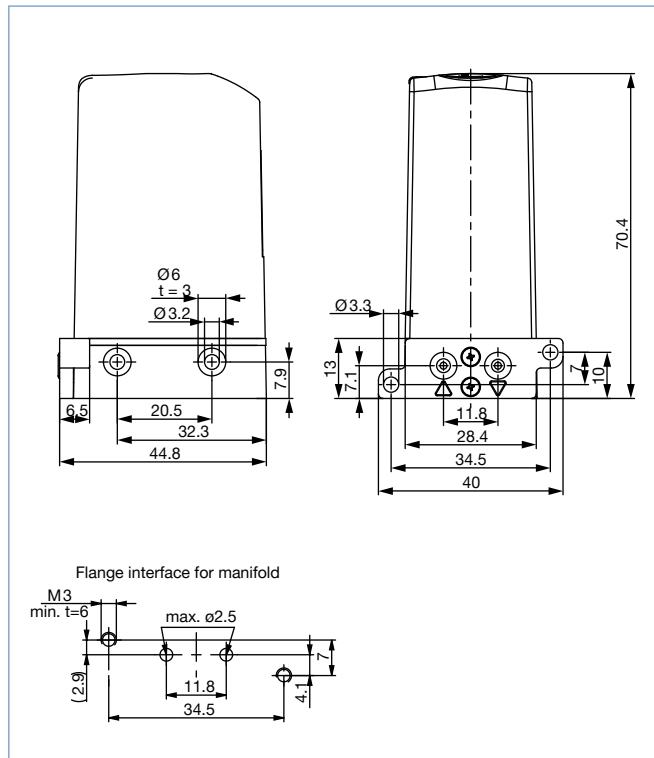
Options

- Further versions see data sheet or on request

Dimensions [mm] UNF-Version



Dimensions [mm] Flange version



Ordering chart

Version	Voltage	Connection	Seal material	Function mode ¹⁾	Article no.
Standard	24 V DC	Sub-base	FFKM	5 Hz	238190
Standard	24 V DC	UNF 1/4-28	FFKM	5 Hz	215793
Standard	24 V DC	Sub-base	FFKM/EPDM	5 Hz	238193
Standard	24 V DC	UNF 1/4-28	FFKM/EPDM	5 Hz	238194
Standard	12 V DC	UNF 1/4-28	FFKM/EPDM	5 Hz	238195
FEP-Leads 500 mm with 4 pin connector	12...24 V	-	-	-	683613

1) Function mode can be changed see user manual

Overview for Electromagnetic Proportional Valves

Note: The following product overview does not show the complete product range of this catalogue. A complete overview can be found [here](#) ▶

Overview Proportional Valves	Type	Operating principle	Design feature	Width [mm]	Sealing material	Medium	Port connection
	2871 ▶	Plunger directly on valve seat (NC)	Frictionless plunger guide	20	FKM, EPDM	Neutral gases, liquids on request	1/8", sub-base
	2873 ▶	Plunger directly on valve seat (NC)	Frictionless plunger guide	32	FKM, EPDM	Neutral gases, liquids on request	1/8", 1/4", sub-base
	2875 ▶	Plunger directly on valve seat (NC)	Frictionless plunger guide	49	FKM, EPDM	Neutral gases, liquids on request	3/8", 1/2", sub-base
	2836 ▶	Plunger directly on valve seat (NC)	Slide ring	72	FKM, EPDM	Neutral gases, liquids	1/2", 3/4"
	6024 ²⁾ ▶	Plunger directly on valve seat (NC)	Slide ring	49	FKM	Neutral gases, liquids	1/2", 3/4"
	6223 ▶	Plunger directly on servo piston (NC)	Servo-assisted	32...43	FKM	Neutral liquids	3/8", 1/2", 3/4", 1"

1) Within a type, the following generally applies: The larger the valve orifice, the lower the maximum possible operating pressure at which the valve closes tight

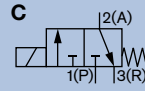
2) Max. differential pressure allowed: 3 bar

Power consumption [W]	Orifice sizes [mm] ¹⁾	Repeatability	Sensitivity	Span [%]	Response time [ms]	Typical application
2...5 (depending on application)	0.05...2	0.25 % F.S.	0.1...0.25 % F.S.	0.5...100	<15	<ul style="list-style-type: none"> - Medical and analytical equipment - Burner controls - Fuel cell technology - Plasma control - Powder coating
9	0.8...4	0.5 % F.S.	0.25 % F.S.	0.5...100	<20	<ul style="list-style-type: none"> - Burner controls - Waste gas treatment - Inert gas dosing - Plasma control - Vacuum control - Fuel dosing
16	2...8	0.5 % F.S.	0.25 % F.S.	0.5...100	<25	<ul style="list-style-type: none"> - Fuel cell technology - Test stand technology - Burner controls - Vacuum control - Filling level control
24	3...12	1 % F.S.	0.5 % F.S.	4...100	<100	<ul style="list-style-type: none"> - Cooling - Inert gas dosing
18	8...12	0.5 % F.S.	0.5 % F.S.	4...100	<50	<ul style="list-style-type: none"> - Combustion gas dosing - Forced air throttling
8...15	10...20	1 % F.S.	1 % F.S.	10...100	<200	<ul style="list-style-type: none"> - Cooling/heating circuits - Water dosing

Plunger Operated 3/2 way Solenoid Valve for high temperatures

0355

- Seat valve direct acting
- Medium temperature up to +180 °C
- Push-over solenoid system
- For gases and fluids

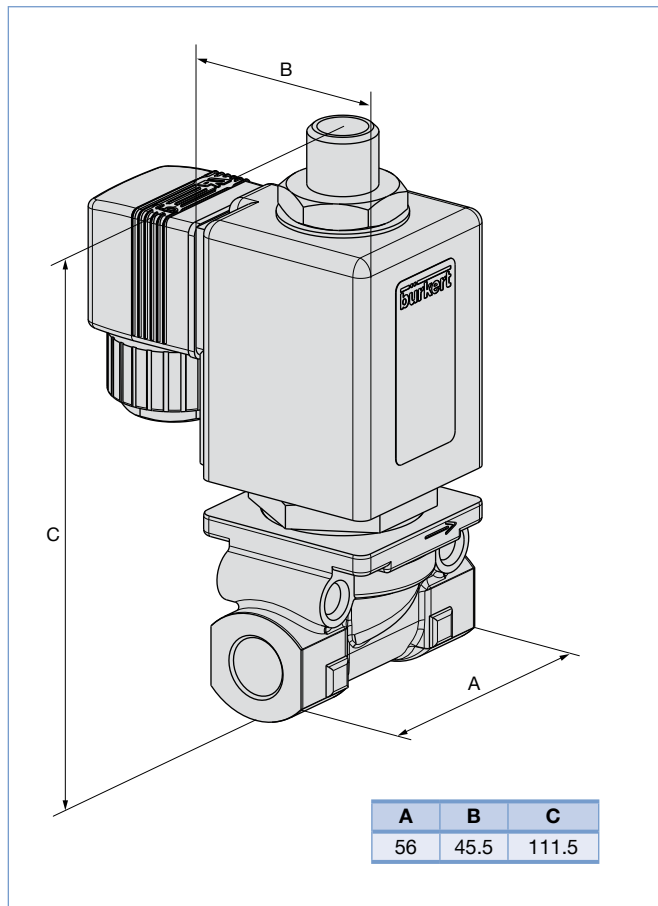


Direct-acting plunger solenoid, Type 355, for neutral gases and liquids.
Also suitable for high temperatures, such as hot water, hot air, steam.

Technical data

Orifice	DN2...DN4
Body material	Brass with stainless steel seat 1.4305, Stainless steel 1.4581
Coil material	Epoxy
Coil isolation class	H
Inner part valve	Stainless steel
Seal material	NBR, FKM, PTFE, EPDM
Medium	
NBR	Neutral fluids, hydraulic oil, oil without additives
EPDM	Oil and fat-free fluids
FKM	Per-solutions, hot oils with additives
PTFE	Steam, organic solvents
Medium temperature	
NBR	-10 °C... +90 °C
EPDM	-40 °C...+130 °C
FKM	0 °C...+130 °C
PTFE	-40 °C...+180 °C
Ambient temperature	Max. +55 °C
Voltage tolerance	±10 %
Duty cycle	100 % continuous rating
Electrical connection	Tag connector acc. to DIN EN 175301-803 Form A (previously DIN 43650) for cable plug Type 2508 (will be replaced with Type 2518) (supplied as standard)
Power consumption	
Inrush	AC: 35...40 VA
Hold (hot coil)	AC: 16 VA, 10 W DC: ca. 12 W
Protection class	IP65 with cable plug
Installation	As required, preferably with actuator upright

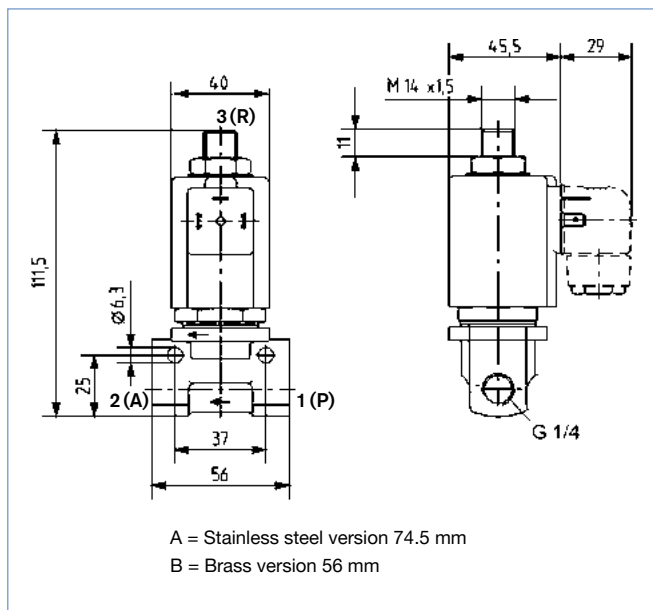
Dimensions [mm]



Options

- Circuit function D and E on request
- UL, UR and CSA approval
- Further versions see data sheet or on request

Dimensions [mm]



Ordering chart

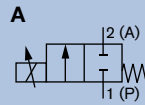
Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h]	Pressure range [bar]	Seal material	Article no. per voltage/frequency [V/Hz]		
						024/DC	024/50	230/50
C 3/2 way direct-acting solenoid valve, normally closed	Brass body							
	G ¼	2	0.11	0...16	EPDM	-	150300	066007
					NBR	043089	026069	068078
				0...14	PTFE	062188	049998	049025
					3	0.2	0...10	FKM
		NBR	068557	017668				061174
		0...8	PTFE	052665			067817	054885
			4	0.4			0...6	FKM
		NBR			061104	019095		061019
	0...5	PTFE			052078	065552	058403	
		Stainless steel body						
	G ¼	4	0.4	0...5	PTFE	018478	136558	021253
0...6				FKM	020978	062713	066759	

Note: Cable plug, see **Type 2508** ▶ (will be replaced with Type 2518)

2/2 way Solenoid Control Valve

2836

- Direct-acting, normally closed
- DN3...DN12
- Port Connection 1/2" or 3/4"



The direct-acting solenoid control valve, Type 2836, works as an electromagnetically actuated control valve in applications with relatively high flow rates. The valve is normally closed.

Valve control takes place through the control electronics of Type 8605, which converts an analogue input signal into a PWM¹⁾ (pulse-width modulation) signal.

Further, functional features of the Type 8605 electronic control unit:

- Temperature compensation for coil heating by internal current regulation
- Simple zero and span settings
- Ramp function to dampen fast status changes

Technical data

Body material	Brass, stainless steel
Seal material	FKM, others on request
Fluids	Neutral gases and liquids
Pressure range	0...25 bar ²⁾
Fluid temperature	-10 °C...+90 °C (14 °F...194 °F)
Ambient temperature	Max. +55 °C (max. 131 °F)
Viscosity	Max. 21 mm ² /s (max. 21 cSt)
Power supply	24 V DC
PWM frequency	150...180 Hz
Power consumption	Max. 24 W
Max. coil current	1100 mA
Duty cycle	100% continuously rated
Port connection	G 1/2, G 3/4, NPT 1/2, NPT 3/4, others on request
Electrical connection	Cable plug Type 2508 (will be replaced with Type 2518) acc. to DIN EN 175301-803 Form A
Installation	As required, preferably with actuator in upright position
Typical control data³⁾	
Hysteresis	< 5 %
Repeatability	< 1 % of F.S.
Sensitivity	< 0.5 % of F.S.
Span	1:25
Protection class	IP65

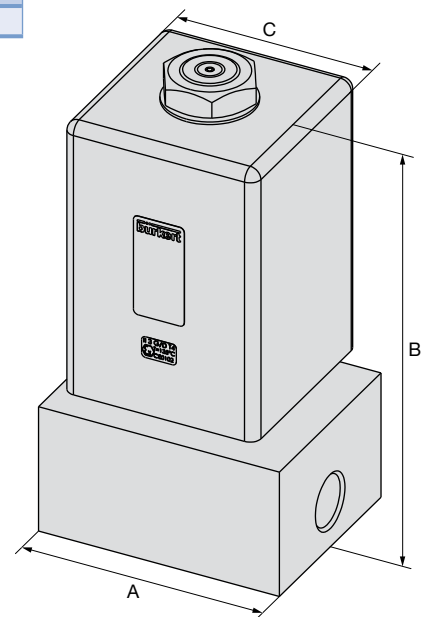
1) PWM pulse-width modulation

2) Pressure data [bar]: Overpressure with respect to atmospheric pressure

3) Characteristic data of control behaviour depends on process conditions

Dimensions [mm]

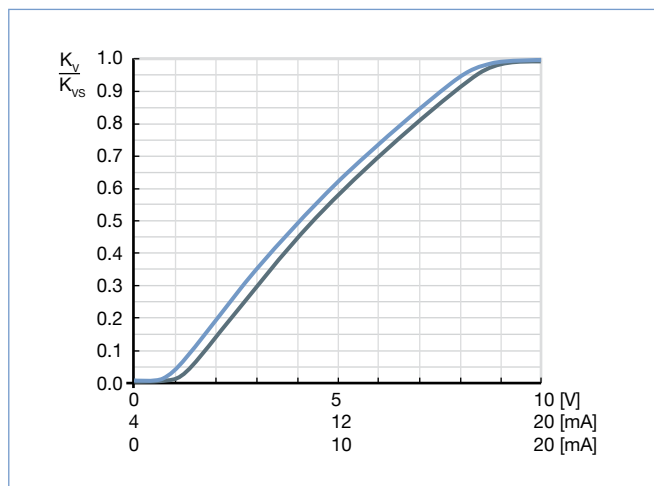
A	B	C
90	162.5	72



Options

- Further versions see data sheet or on request

Characteristics of a proportional valve



Advice for valve sizing

In continuous flow applications, the choice of an appropriate valve size is much more important than with on/off valves. The optimum size should be selected such that the resulting flow in the system is not unnecessarily reduced by the valve. However, a sufficient part of the pressure drop should be taken across the valve even when it is fully opened.

Recommended value: $\Delta p_{\text{valve}} > 25\%$ of total pressure drop within the system

Otherwise, the ideal, linear valve curve characteristic is changed.

If the differential pressure (difference between inlet and outlet pressure) exceeds half the value of the nominal pressure, the characteristics may change.

For that reason take advantage of Bürkert competent engineering services during the planning phase!

Ordering chart

Valve operation	Orifice [mm]	Port connection	K_{vs} value water [m ³ /h] ¹⁾	Q_{Nn} value [l/min] ²⁾	Maximum operating pressure [bar] ³⁾	Article no. brass body	Article no. stainless steel body
A 2/2 way direct-acting, solenoid proportional control valve	3	G ½	0.25	270	25	154541	154542
		NPT ½	0.25	270	25	164592	-
	4	G ½	0.40	430	16	154543	154544
		NPT ½	0.40	430	16	164593	-
	6	G ½	0.90	970	8	145654	154545
			NPT ½	0.90	970	8	164594
		G ¾	0.90	970	8	154546	154547
			NPT ¾	0.90	970	8	164595
	8	G ½	1.5	1615	5	154548	154549
			NPT ½	1.5	1615	5	164596
		G ¾	1.5	1615	5	154550	154551
			NPT ¾	1.5	1615	5	164597
	10	G ¾	2.0	2150	3	154552	154553
		NPT ¾	2.0	2150	3	164598	-
	12	G ¾	2.5	2700	2	154554	154555
		NPT ¾	2.5	2700	2	164599	-

1) K_{vs} value: Flow rate value for water, measured at +20 °C and 1 bar pressure differential over a fully opened valve.

2) Q_{Nn} value: Flow rate value for air with inlet pressure of 6 bar^a, 1 bar pressure differential and +20 °C.

3) Pressure data [bar]: Overpressure with respect to atmospheric pressure

Please note that the valves are delivered without control electronics unit and cable plug (see accessories below).

Accessories

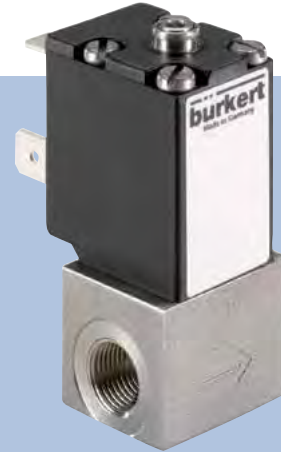
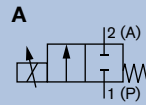
Description	Voltage	Article no.
Cable plug Type 2508 (will be replaced by Type 2518) acc. to DIN 175301-803 Form A - see Type 2508 ▶		
without circuitry (standard), without cable	0...250 V AC/DC	008376
without circuitry (standard), 3 m cable	0...250 V AC/DC	783573

Note: The valves are delivered without control electronics, see **Type 8605 ▶**

2/2 way Proportional Valve

2871

- Excellent range
- Very good repeatability
- Compact Design



The direct-acting solenoid control valve, Type 2871 (20 mm installation width), is used as the regulating unit in control loops. Due to an elastomeric seat seal the valve closes tight, up to the DN specific nominal pressure.

The operation lever of the valve is suspended frictionless, which leads to an extraordinary adjustment characteristic. Valve control takes place through a PWM signal (see control electronics, Type 8605).

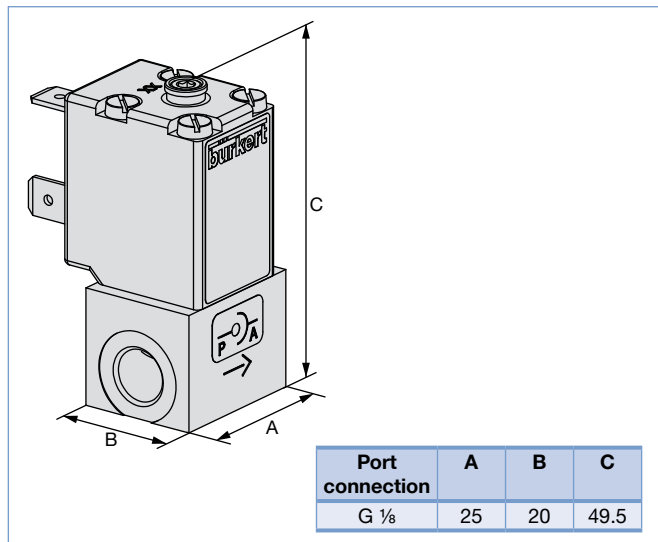
Technical data

Body material	Brass, stainless steel
Medium	Neutral gases, liquids on request
Span	1 : 200 Responsivity 0.25 % of full scale
Response sensitivity	0.25 % of full scale
PWM frequency	1500 Hz
Max. coil current	220 mA (Maximum value, value depends on the operating pressure)
Medium temperature	-10 °C...+90 °C
Duty cycle	100 % continuously rated
Ambient temperature	Max. 55 °C
Seal material	FKM
Operating voltages	24 V DC
Power consumption	2 W (to DN0.6), 5 W (from DN0.8)
Electrical connection	Cable Plug Type 2507 acc. to Form B Industrial standard (not included)
Typical control data¹⁾ at PWM control	
Hysteresis	< 5 %
Repeatability	< 0.25 % F.S. ²⁾
Sensitivity	< 0.25 % F.S. to < 0.1 % F.S. with DN < 0.8 mm ²⁾
Span	1:200 (DN0.8...2), 1:500 (DN0.05...0.6)
Response time (10...90 %)	< 15 ms
Protection class	IP65 (with cable plug)

1) Characteristic data of control behaviour depends on process conditions

2) By flow measurement

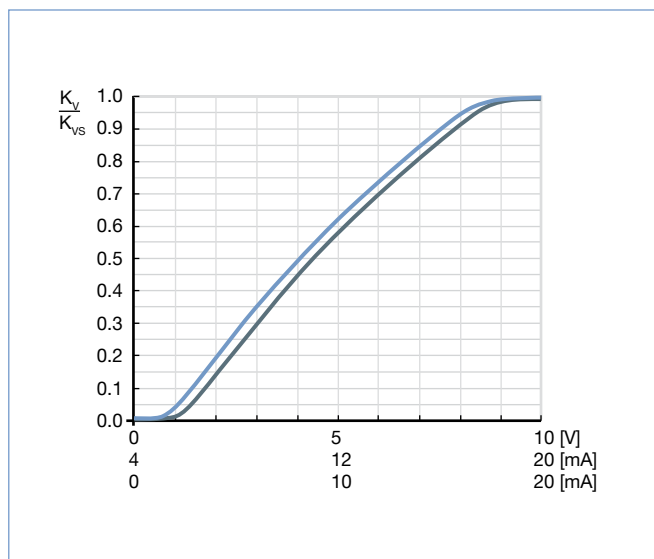
Dimensions [mm]



Options

- Seal material EPDM
- 12 V coil
- Coil with 30 cm flying leads
- Oxygen versions
- Parts oil-, fat- and silicon free
- Flange
- Further versions see data sheet or on request

Characteristics of a proportional valve



Advice for valve sizing

In continuous flow applications, the choice of an appropriate valve size is much more important than with on/off valves. The optimum size should be selected such that the resulting flow in the system is not unnecessarily reduced by the valve. However, a sufficient part of the pressure drop should be taken across the valve even when it is fully opened.

Recommended value: $\Delta p_{\text{valve}} > 25\%$ of total pressure drop within the system

Otherwise, the ideal, linear valve curve characteristic is changed.

If the differential pressure (difference between inlet and outlet pressure) exceeds half the value of the nominal pressure, the characteristics may change.

For that reason take advantage of Bürkert competent engineering services during the planning phase!

Ordering chart

Circuit function	Port connection	Orifice [mm]	K_v value [m ³ /h]	Nominal pressure [bar(ü)]	Max. differential pressure [bar]	Max. coil current [mA]	Article no.	
							Brass	Stainless steel
A 2/2 way direct-acting, solenoid proportional control valve	G 1/8	0.3	0.002	10	10	90	254451	254452
	G 1/8	0.4	0.004	8	8	90	254453	254454
	G 1/8	0.6	0.01	6	6	90	254455	254457
	G 1/8	0.8	0.018	12	6	220	235994	235995
	G 1/8	1.0	0.027	10	5	220	236000	236001
	G 1/8	1.2	0.038	8	4	220	236261	236262
	G 1/8	1.6	0.055	6	3	220	236267	236268
	G 1/8	2.0	0.09	3	1.5	220	236273	236274

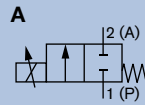
Accessories

Description	Voltage	Article no.
Cable plug Type 2507 acc. to industry standard Form B - see Type 2507 ▶		
without circuitry (standard)	0...250 V AC/DC	178362
Control electronics Type 8605, DIN-Rail version		178362

Direct-acting 2-way standard solenoid control valve

2873

- Excellent range
- Very good response
- Compact valve design
- Orifice sizes DN0.8...DN6
- Optional: Explosion-protected coil



The direct-acting solenoid control valve Type 2873 (32 mm installation width) is used as the regulating unit in control loops. Due to an elastomeric seat seal the valve closes tight, up to the DN specific nominal pressure.

The operation lever of the valve is suspended frictionless, which leads to an extraordinary adjustment characteristic. Valve control takes place through a PWM signal (see control electronics, Type 8605).

Technical data

Body material	Brass, stainless steel
Medium	Neutral gases, liquids on request
Span	1 : 200
Response sensitivity	0.25 % of full scale
Rotation time	<20 ms
PWM frequency	1200 Hz
Medium temperature	-10 °C...+90 °C
Ambient temperature	Max. 55 °C
Seal material	FKM
Operating voltages	24 V DC
Power consumption	9 W
Max. coil current¹⁾	420 mA
Duty cycle	100 % continuously rated
Electrical connection	Cable Plug Type 2508 (will be replaced with Type 2518) acc. to DIN EN 175301-803 Form A (previously DIN 43650) (not included)
Typical control data²⁾ at PWM control	
Hysteresis	<5 %
Repeatability	<0.5 % F.S. ³⁾
Protection class	IP65 (with cable plug)

1) Maximum value, value depends on operating pressure

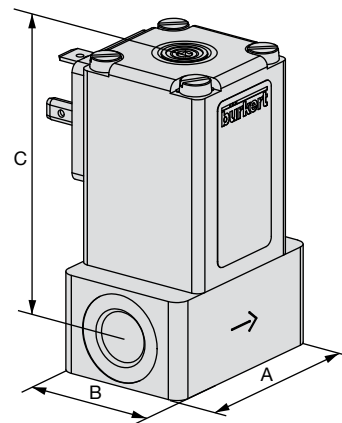
2) Characteristic data of control behaviour depends on process conditions

3) By flow measurement

Options

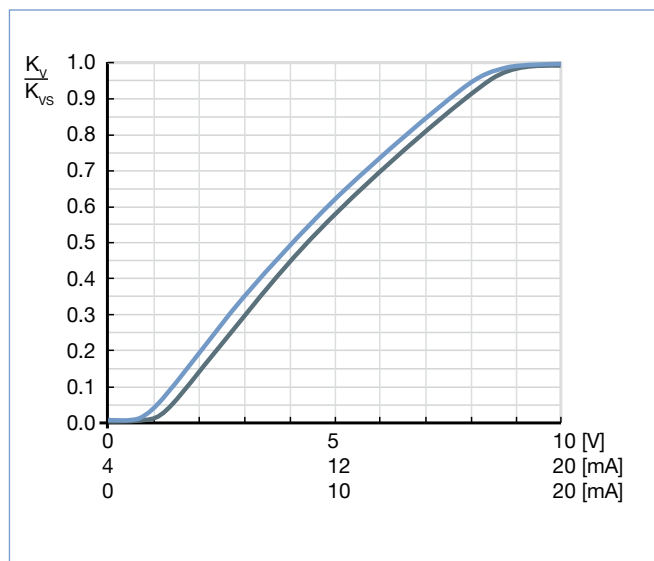
- Seal material EPDM
- 12 V coil
- Oxygen versions
- Parts oil-, fat- and silicon free
- Flange
- Further versions see data sheet or on request

Dimensions [mm]



Port connection	A	B	C
G 1/8	32	32	64.5
G 1/4	46	32	69.5

Characteristics of a proportional valve



Advice for valve sizing

In continuous flow applications, the choice of an appropriate valve size is much more important than with on/off valves. The optimum size should be selected such that the resulting flow in the system is not unnecessarily reduced by the valve. However, a sufficient part of the pressure drop should be taken across the valve even when it is fully opened.

Recommended value: $\Delta p_{\text{valve}} > 25\%$ of total pressure drop within the system

Otherwise, the ideal, linear valve curve characteristic is changed.

If the differential pressure (difference between inlet and outlet pressure) exceeds half the value of the nominal pressure, the characteristics may change.

For that reason take advantage of Bürkert competent engineering services during the planning phase!

Ordering chart

Circuit function	Port connection	Orifice [mm]	K_v value [m ³ /h]	Nominal pressure [bar(\bar{u})]	Max. differential pressure [bar]	Max. coil current [mA]	Article no.	
							Brass	Stainless steel
A 2/2 way direct-acting, solenoid proportional control valve	G 1/8	0.8	0.018	16	8	420	234289	234305
	G 1/8	1.2	0.04	12	6	420	234292	234307
	G 1/8	1.5	0.06	10	5	420	234294	234309
	G 1/4	2	0.1	8	4	420	234297	234312
	G 1/4	2.5	0.15	5	2.5	420	234299	234314
	G 1/4	3	0.22	3.5	1.75	420	234301	234316
	G 1/4	4	0.32	2	1	420	234303	234318

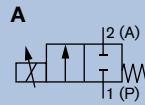
Accessories

Description	Voltage	Article no.
Cable plug Type 2508 (will be replaced with Type 2518) acc. to DIN 175301-803 Form A - see Type 2508 ▶		
without circuitry (standard), without cable	0...250 V AC/DC	008376
without circuitry (standard), 3 m cable	0...250 V AC/DC	783573

2/2 way Proportional Valve

2875

- Excellent range
- Very good repeatability
- Compact Design



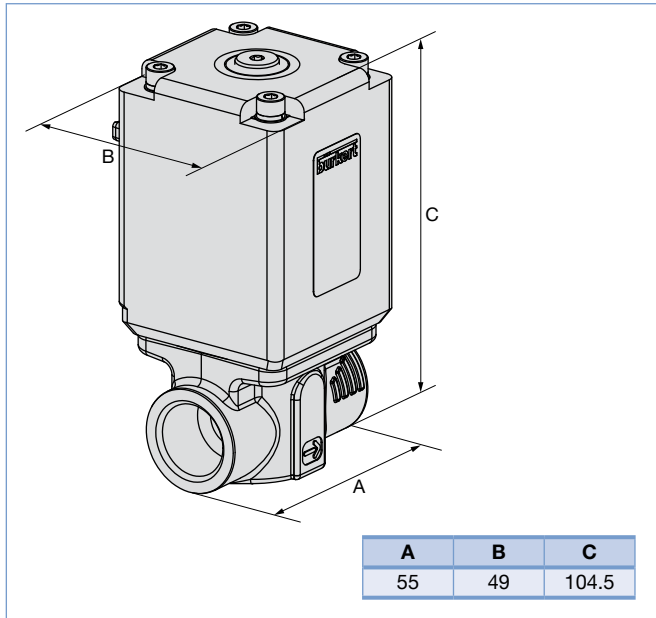
The direct-acting solenoid control valve Type 2875 is used as the regulating unit in control loops. Due to an elastomeric seat seal the valve closes tight (integrated shut-off function), up to the DN specific nominal pressure. The plunger of the valve is assembled frictionless, which leads to an extraordinary adjustment characteristic. This valve is particularly suitable for demanding control tasks (high control range, dry gases, etc.).

Valve control takes place through a PWM signal¹⁾. The duty cycle of the PWM signal determines the coil current and hence the position of the plunger. Optionally the valve can also be driven with DC voltage.

Technical data

Body material	Brass, stainless steel
Seal material	FKM, EPDM on request
Medium	Neutral gases, liquids on request
Pressure range	0...25 bar ²⁾
Medium temperature	-10 °C...+90 °C
Ambient temperature	max. +55 °C
Power supply	24 V DC
PWM frequency	900 Hz
Power consumption	16 W
Max. coil current³⁾	750 mA
Duty cycle	100 % continuously rated
Port connection	G 3/8, G 1/2, NPT 3/8, NPT 1/2
Electrical connection	Tag connector (DIN EN 175301-803 Form A)
Installation	As required, preferably with actuator in upright position
Typical control data at PWM-Control⁴⁾	
Hysteresis	< 5 %
Repeatability	< 0.5 % FS ⁵⁾
Sensitivity	< 0.25 % FS ⁵⁾
Span	1:200
Response time (10...90 %)	25 ms
Approvals	UR (UL recognized) DVGW: Approval acc. to the European gas device guidelines (DIN EN 161)
Ignition protection class	ATEX II 2 G Ex mb IIC T4 Gb II 2 D Ex mb IIIC T130 °C Db IECEX Ex mb IIC T4 Gb Ex mb IIIC T130 °C Db
Protection class	IP65

Dimensions [mm]



Options

- Seal material EPDM
- 12 V coil
- Oxygen versions
- Parts oil-, fat- and silicon free
- Flange
- Further versions see data sheet or on request

1) PWM pulse width modulation

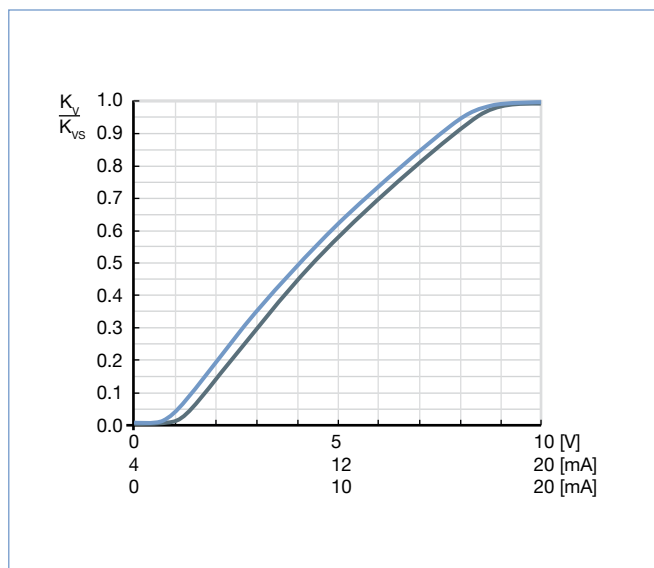
2) Pressure data [bar]: Measured as overpressure to the atmospheric pressure, orifice further depends on nominal pressure

3) Maximum value, value depends on operating pressure

4) Characteristic data of control behaviour depends on process conditions

5) By flow measurement

Characteristics of a proportional valve



Advice for valve sizing

In continuous flow applications, the choice of an appropriate valve size is much more important than with on/off valves. The optimum size should be selected such that the resulting flow in the system is not unnecessarily reduced by the valve. However, a sufficient part of the pressure drop should be taken across the valve even when it is fully opened.

Recommended value: $\Delta p_{\text{valve}} > 25\%$ of total pressure drop within the system

Otherwise, the ideal, linear valve curve characteristic is changed.

If the differential pressure (difference between inlet and outlet pressure) exceeds half the value of the nominal pressure, the characteristics may change.

For that reason take advantage of Bürkert competent engineering services during the planning phase!

Ordering chart

Circuit function	Orifice [mm]	Port connection	K_{vs} value water [m ³ /h] ¹⁾	Nominal pressure [bar] ²⁾	Max. differential pressure [bar]	Article no. Brass	Article no. Stainless steel
All valves with FKM seal							
A 2/2 way direct-acting, solenoid proportional control valve	2	G ¾	0.12	25	12.5	236897	236899
		NPT ¾	0.12	25	12.5	236898	236900
	3	G ¾	0.25	10	5	236901	236903
		NPT ¾	0.25	10	5	236902	236904
	4	G ¾	0.45	8	4	236905	236910
		NPT ¾	0.45	8	4	236908	236912
		G ½	0.45	8	4	236906	236911
		NPT ½	0.45	8	4	236909	236913
	6	G ½	0.8	4	2	236915	236919
		NPT ½	0.8	4	2	236917	236921
	8	G ½	1.1	2	1	236922	236924
		NPT ½	1.1	2	1	236923	236925
	9.5	G ½	1.4	0.7	0.35	273004	314557
		NPT ½	1.4	0.7	0.35	314555	314559

1) K_{vs} value: Flow rate value for water, measured at +20 °C and 1 bar pressure differential over a fully opened valve.

2) Pressure data [bar]: Overpressure with respect to atmospheric pressure, with a differential pressure (difference between inlet and outlet pressure) above half of the nominal pressure there are discontinuities in the valve's characteristics possible.

Note: Cable plug, see **Type 2508** (will be replaced with Type 2518)

The valves are delivered without control electronics, see **Type 8605**



Ordering chart continued

Circuit function	Orifice [mm]	Approvals	Port connection ¹⁾	K _{vs} value water [m ³ /h] ²⁾	Nominal pressure [bar]	Max. differential pressure [bar]	Article no. Brass	Article no. Stainless steel
Variants with approvals, all valves with FKM seal								
2875 A 2/2 way direct-acting, solenoid proportional control valve	2	UR	G 3/8	0.12	25	12.5	274976	274988
			NPT 3/8	0.12	25	12.5	274977	274989
		DVGW	G 3/8	0.12	5	5	314262	on request
		ATEX / IECEX	G 3/8	0.12	20	10	291483	on request
	3	UR	G 1/2	0.25	10	5	274978	274990
			NPT 1/2	0.25	10	5	274979	274991
		DVGW	G 1/2	0.25	5	5	314265	on request
		ATEX / IECEX	G 1/2	0.25	9	4.5	291485	on request
	4	UR	G 1/2	0.45	8	4	274980	274992
			NPT 1/2	0.45	8	4	274981	274993
		DVGW	G 1/2	0.45	5	4	314267	on request
		ATEX / IECEX	G 1/2	0.45	7	3.5	291486	on request
		UR	G 3/4	0.45	8	4	274982	274994
			NPT 3/4	0.45	8	4	274983	274995
	6	UR	G 3/4	0.8	4	2	274984	274996
			NPT 3/4	0.8	4	2	274985	274997
		DVGW	G 3/4	0.8	4	2	314269	on request
		ATEX / IECEX	G 3/4	0.8	3.5	1.75	291487	on request
	8	UR	G 3/4	1.1	2	1	274986	274998
			NPT 3/4	1.1	2	1	274987	274999
DVGW		G 3/4	1.1	2	1	314270	on request	
ATEX / IECEX		G 3/4	1.1	1.5	0.75	291488	on request	

1) Others on request.

2) K_{vs} value: Flow rate value for water, measured at +20 °C and 1 bar pressure differential over a fully opened valve.

Ordering chart continued

Circuit function	Orifice [mm]	Approvals	Port connection ¹⁾	K _{vs} value water [m ³ /h] ²⁾	Nominal pressure [bar]	Article no. Brass	Article no. Stainless steel
Variants for higher differential pressure, all valves with FKM seal							
A 2/2 way direct-acting, solenoid proportional control valve	2	–	G 3/8	0.12	25	239040	239085
		UR	G 3/8	0.12	25	275000	275005
		ATEX / IECEx	G 3/8	0.12	20	291468	on request
	3	–	G 3/8	0.25	10	239086	239087
		UR	G 3/8	0.25	10	275001	275006
		ATEX / IECEx	G 3/8	0.25	9	291470	on request
	4	–	G 3/8	0.45	8	239088	239089
		UR	G 3/8	0.45	8	274090	274091
		ATEX / IECEx	G 3/8	0.45	7	291474	on request
	6	–	G 1/2	0.8	4	239090	239091
		UR	G 1/2	0.8	4	275002	275007
		ATEX / IECEx	G 1/2	0.8	3.5	291476	on request
	8	–	G 1/2	1.1	2	239092	239093
		UR	G 1/2	1.1	2	275004	275008
		ATEX / IECEx	G 1/2	1.1	1.5	291477	on request
	9.5	–	G 1/2	1.4	0.7	291586	314558

1) Others on request.

2) K_{vs} value: Flow rate value for water, measured at +20 °C and 1 bar pressure differential over a fully opened valve.

Note for the variants with higher differential pressures: The following technical data change in comparison to the technical data listed above.

- PWM frequency 500 Hz, span 1:100.
- Other connection variations (sub-base, NPT) on request
- For Δp > 145 PSI it is possible to get inconsistencies in the characteristic curve because of flow conditions in the application.

Accessories

Description	Voltage	Article no.
Cable plug Type 2508 (will be replaced with Type 2518) acc. to DIN 175301-803 Form A - see Type 2508 ▶		
without circuitry (standard), without cable	0...250 V AC/DC	008376
without circuitry (standard), 3 m cable	0...250 V AC/DC	783573

Note: The valves are delivered without control electronics, see **Type 8605 ▶**

2 way motor valve

3280

- Actuator isolated from flow path
- Excellent range and fast response times
- Low power consumption
- Orifice sizes DN1...DN10
- Versions: Standard, positioner, process controller and high pressure version up to 22 bar



The direct-acting proportional valve of Type 3280 is used for dosing of liquids and gases in closed or open control loops. The valve features a linear stepper motor as actuator. The integrated electronics simplify the process integration; additional actuation modules are not necessary. The motor's power consumption to hold a specific opening position of the valve is zero. This key feature can reduce the energy consumption of a plant dramatically and thus make it more efficient. Type 3280 is available as standard proportional valve, as version with integrated positioner and as version with integrated process controller.

Technical data

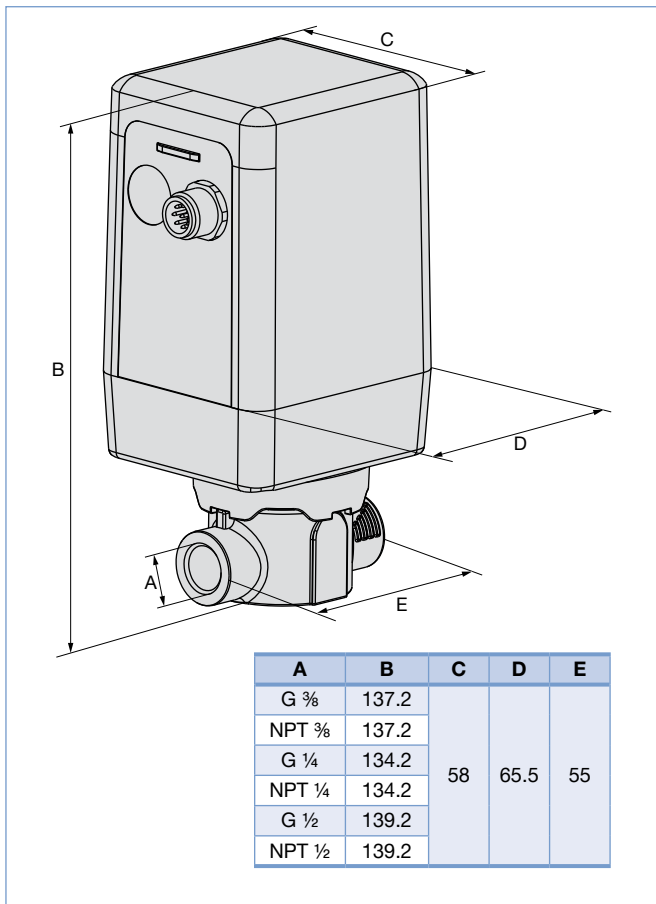
Materials	
Body	Brass or stainless steel
Housing	PC (Polycarbonate), PPS (Polyphenylene sulfide)
Seals ¹⁾	NBR for liquids EPDM for liquids and special gases (e. g. ammonia, acetylene) FKM for neutral gases
Medium	Neutral gases, liquids
Pressure Range²⁾	0...6 bar (high pressure version up to 22 bar (depending on orifice size) available)
Closure time	2.5 sec.(0...100 % stroke)
Fluid temperature	0 °C...+70 °C
Ambient temperature	-10 °C...+60 °C
Viscosity	Max. 600 mm ² /s (cSt)
Power supply	24 V DC ± 10 % (max. residual ripple 10 %)
Power consumption	Max. 8 W (DN2...DN6) resp. max. 12 W (DN8 and DN10) < 1 W in holding position
Duty cycle	Up to 100 % (depending on fluid and ambient temperature)
Port connection	G or NPT ¼, ⅜, ½, sub-base, Cartridge (on request)
Typical control data³⁾	
Hysteresis	< 5 %
Repeatability	< 1 % FS
Sensitivity	< 1 % FS
Span	1:100
Protection class	IP54
Installation	As required, preferably with actuator upright
Status display	LED (details: see manual)
Weight	~0.7 kg

1) PEEK seat seals are used for orifice sizes 1, 1.5, 5 and in the high-pressure version additionally for orifice sizes 4. In this case, the seat tightness of the valve is reduced.

2) Pressure data [bar]: Overpressure with respect to atmospheric pressure

3) Characteristic data of control behaviour depends on process conditions

Dimensions [mm]



Options

- Further versions see data sheet or on request

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Accessories

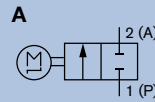
Article	Article no.
M12 socket, 8 pin with 2 m ready to use cable	919061
M12 socket, 8 pin with 2 m ready to use cable shielded cable	918991
Power supply Type 1573 for rail mounting, 100...240 V AC/ 24 V DC, 1.25 A, NEC Class 2 (UL 1310)	772438
Power supply Type 1573 for rail mounting, 100...240 V AC/ 24 V DC, 1 A	772361
Power supply Type 1573 for rail mounting, 100...240 V AC/ 24 V DC, 2 A	772362
Power supply Type 1573 for rail mounting, 100...240 V AC/ 24 V DC, 4 A	772363
Buffer module Type 1573 for safety position when power failure	773440
For positioner and process controller versions	
M12 plug, 5 pin with 2 m ready to use cable shielded cable	559177
büS adapter, M12 socket, 8 pin to M12 plug, 5 pin (for büS stick connection) ¹⁾	773286
büS-Stick Set 1 (incl. power supply, büS-Stick, termination resistor, Y-connector, cable, ...)	772426
büS-Stick Set 2 (incl. büS-Stick, cable)	772551
Software Bürkert Communicator	Download from www.buerkert.com

¹⁾ For the fieldbus version this is not necessary. The büS-Stick contained in büS-Stick-Set 1 and 2 is connected via a 5 pin M12 cable. Therefore an adapter for 8 pin M12 connector of the valve is necessary. Please note that the valve must be supplied with power during the connection of the parameterization interface. In büS-Stick-Set 1 a corresponding power supply is included.

2/2 way Proportional Valve (motor-driven)

3285

- Actuator isolated from flow path
- Excellent range and fast response times
- Low power consumption
- Orifice sizes DN8...DN25
- Versions: Standard, positioner, process controller



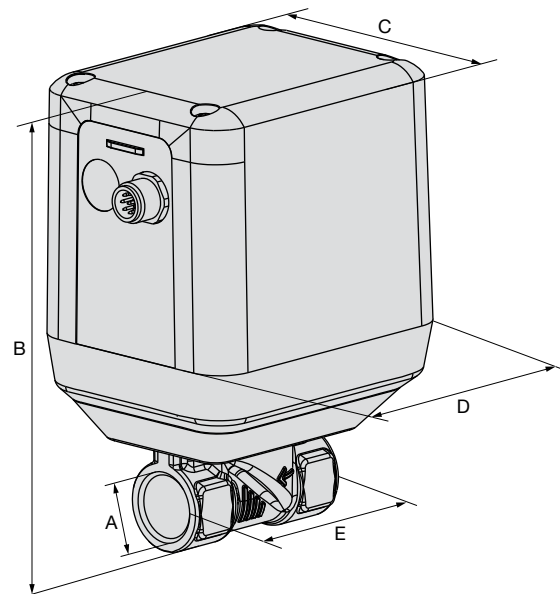
The direct-acting motor valve of type 3285 is used for dosing of liquids and gases in closed or open control loops. The valve features a stepper motor as the actuator. The integrated electronics simplifies the process integration; additional actuation modules are not necessary. The motor's power consumption to hold a specific opening position of the valve is zero. This key feature can reduce the energy consumption of a plant dramatically and thus make it more efficient. Type 3285 is available as a standard proportional valve, as a version with integrated positioner and as a version with integrated process controller.

Technical data

Materials	
Body	Brass or stainless steel
Housing	PC (Polycarbonate), PPS (Polyphenylene sulfide)
Seals	NBR for liquids, EPDM for liquids and special gases (e.g. ammonia, acetylene), FKM for neutral gases
Seat sealing	Technical ceramics
Medium	Neutral gases, liquids
Seat leakage based on IEC/EN 60534-4	Shut-off class IV
Pressure Range¹⁾	0...6 bar
Closure time	Ca. 4 sec.
Medium temperature	0 °C...+70 °C
Ambient temperature	-10 °C...+60 °C
Power supply	24 V DC ± 10 % (max. residual ripple 10 %)
Power consumption	< 1 W in holding position, Max. 12 W (depending on motor control)
Duty cycle	Up to 100 % (depending on fluid and ambient temperature)
Port connection	G ½, G ¾, G 1, NPT ½, NPT ¾, NPT 1
Typical control data²⁾	
Hysteresis	< 5 %
Repeatability	< 1 % FS
Sensitivity	< 1 % FS
Span	1:100
Protection class	IP50
Installation	As required, preferably with actuator upright
Status display	LED (details: see manual)
Weight	~ 800 g (DN8)...1500 g (DN25)

1) Pressure data [bar]: Overpressure with respect to atmospheric pressure
2) Characteristic data of control behaviour depends on process conditions.

Dimensions [mm]



Version		A	B	C	D	E
MS	NPT ½		137.95	77	92.5	58
	G ½		137.95			58
	NPT ¾		147.01			80
	G ¾		147.01			80
	NPT 1		156.35			95
	G 1		156.35			95
VA	NPT ½		141.55	77	92.5	58
	G ½		141.55			58
	NPT ¾		151.35			80
	G ¾		151.35			80
	NPT 1		161.15			95
	G 1		161.15			95

Options

- Further versions see data sheet or on request

Ordering information



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Accessories

Article	Article no.
M12 socket, 8 pin with 2 m ready to use cable	919061
M12 socket, 8 pin with 2 m ready to use cable shielded cable	918991
Power supply Type 1573 for rail mounting, 100...240 V AC/ 24 V DC, 1.25 A, NEC Class 2 (UL 1310)	772438
Power supply Type 1573 for rail mounting, 100...240 V AC/ 24 V DC, 1 A	772361
Power supply Type 1573 for rail mounting, 100...240 V AC/ 24 V DC, 2 A	772362
Power supply Type 1573 for rail mounting, 100...240 V AC/ 24 V DC, 4 A	772363
Buffer module Type 1573 for safety position when power failure	773440
For positioner and process controller versions	
M12 plug, 5 pin with 2 m ready to use cable shielded cable	559177
büS adapter, M12 socket, 8 pin to M12 plug, 5 pin (for büS stick connection) ¹⁾	773286
büS-Stick Set 1 (incl. power supply, büS-Stick, termination resistor, Y-connector, cable, ...)	772426
büS-Stick Set 2 (incl. büS-Stick, termination resistor, Y-connector, cable)	772551
Software Bürkert Communicator	Download from www.burkert.com

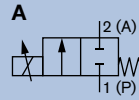
¹⁾ The büS-Stick contained in büS-Stick-Set 1 and 2 is connected via a 5 pin M12 cable. Therefore an adapter for 8 pin M12 connector of the valve is necessary.

Please note that the valve must be supplied with power during the connection of the parameterization interface. In büS-Stick-Set 1 a corresponding power supply is included.

2/2 way proportional valve for low differential pressures

6024

- Direct-acting, normally closed
- DN8...DN12
- G 1/2 or G 3/4



The direct-acting proportional valve, Type 6024, works as an electro-magnetically actuated control valve with relatively high flow rates at low operating pressures. The valve is normally closed.

Technical data

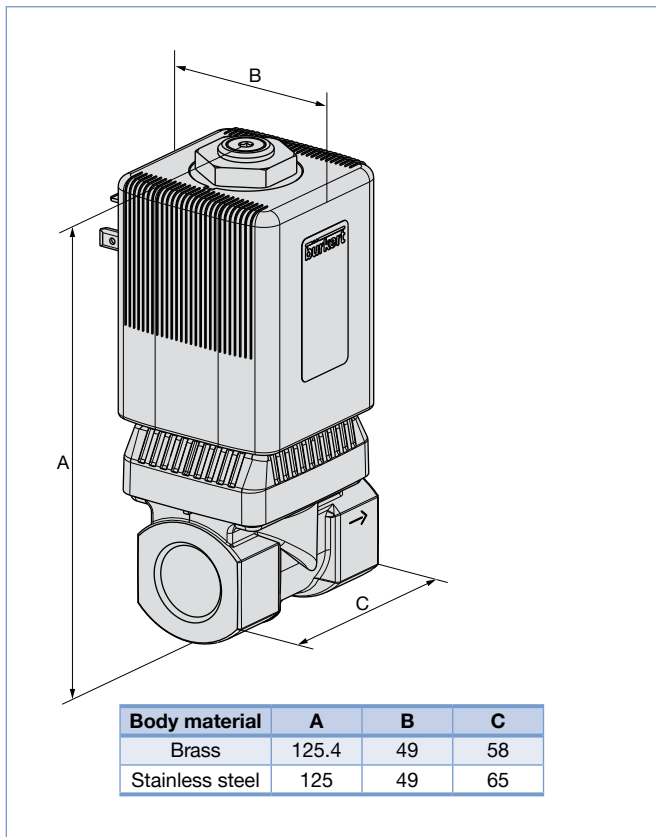
Body material	Brass, stainless steel
Sealing material	FKM, others on request
Media technical vacuum	Neutral gasses, liquids
Medium temperature	- 10 °C...+90 °C
Ambient temperature	Max. +55 °C
Viscosity	Max. 21 mm ² /s
Operating voltage	24 V DC
Power consumption	Max. 18 W
Duty cycle	100 % continuously rated
Port connection	G 1/2, G 3/4 (NPT 1/2 and NPT 3/4 on request)
Electrical connection	Tag connector acc. to DIN EN 175301-803 Form A, (cable plug Type 2508 (will be replaced with Type 2518) or Type 8605 pluggable control electronics not included)
Mounting position	Any, preferably with drive at top
Typical control data³⁾	
Hysteresis	< 7 %
Repeatability	< 0.5 % of F.S.
Sensitivity	< 0.5 % of F.S.
Turn-down ratio	1:25
K _{vs} value ²⁾	1.4...2.8 m ³ /h
Max. operating pressure ¹⁾	0.1...0.7 bar (depending on DN)
Protection class	IP65 with plug-in module or cable plug on valve

1) Pressure data [bar]: Overpressure with respect to atmospheric pressure

2) K_{vs} value [m³/h]: max. flow capacity for water

3) Characteristic data of control behaviour depends on process conditions

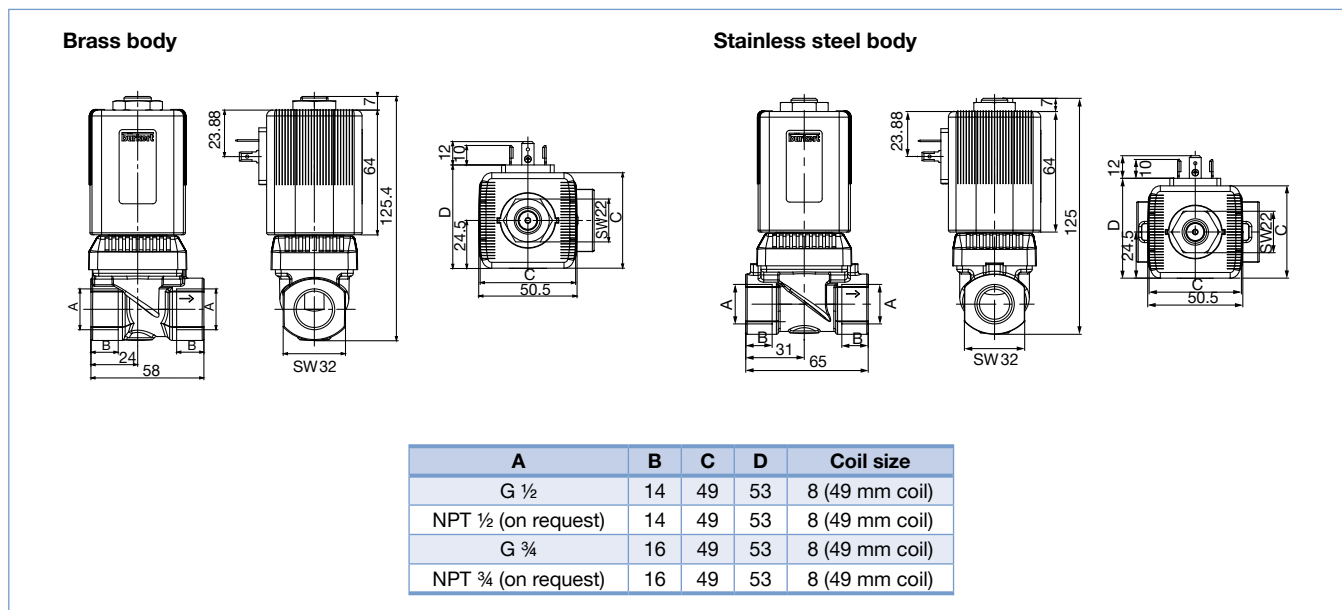
Dimensions [mm]



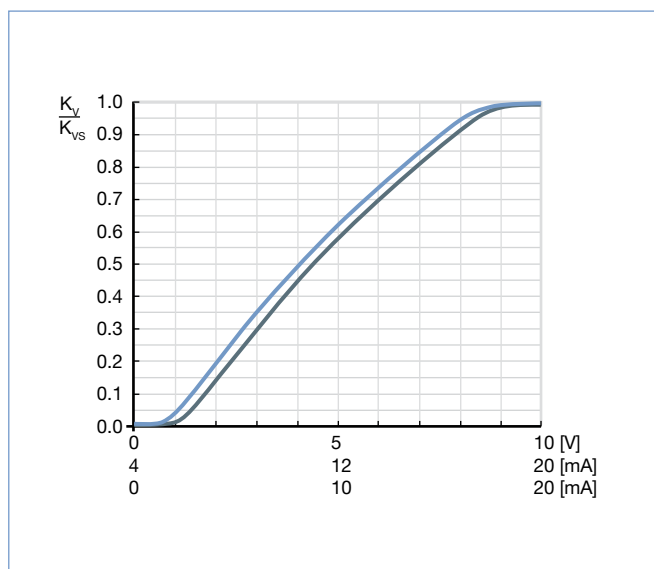
Options

- Oxygen version
- Further versions see data sheet or on request

Dimensions [mm]



Characteristics of a proportional valve



Advice for valve sizing

In continuous flow applications, the choice of an appropriate valve size is much more important than with on/off valves. The optimum size should be selected such that the resulting flow in the system is not unnecessarily reduced by the valve. However, a sufficient part of the pressure drop should be taken across the valve even when it is fully opened.

Recommended value: $\Delta p_{\text{valve}} > 30\%$ of total pressure drop within the system

Otherwise, the ideal, linear valve curve characteristic is changed.

If the differential pressure (difference between inlet and outlet pressure) exceeds half the value of the nominal pressure, the characteristics may change.

For that reason take advantage of Bürkert competent engineering services during the planning phase!

Ordering chart

Circuit function	Port connection	Orifice [mm]	K_v value water [m/h] ¹⁾	Q_{Nm} value [l/min] ²⁾	Max. operating pressure [bar] ³⁾	Power consumption [W]	Max. Coil current [mA]	Article no. brass body	Article no. stainless steel body
FKM Seal									
A 2/2 way direct-acting, solenoid proportional control valve	G ½	8	1.4	1500	0.7	18	580	150401	–
	G ¾	8	1.4	1500	0.7	18	580	150427	–
	G ½	10	2	2150	0.4	18	580	150402	150404
	G ¾	10	2	2150	0.4	18	580	150428	150429
	G ½	12	2.8	3020	0.2	18	580	150425	150426
	G ¾	12	2.8	3020	0.2	18	580	150406	150408

1) K_{vs} value: Flow rate value for water, measured at +20 °C and 1 bar pressure differential over a fully opened valve.

2) Q_{Nm} value: Flow rate value for air with inlet pressure of 6 bar, 1 bar pressure differential and +20 °C.

3) Pressure values [bar]: Overpressure with respect to atmospheric pressure



Accessories

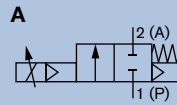
Description	Voltage	Article no.
Cable plug Type 2508 (will be replaced with Type 2518) acc. to DIN 175301-803 Form A - see Type 2508 ▶		
without circuitry (standard), without cable	0...250 V AC/DC	008376
without circuitry (standard), 3 m cable	0...250 V AC/DC	783573

Note: The valves are delivered without control electronics, see **Type 8605 ▶**

Servo-assisted 2-way high-flow solenoid control valve

6223

- Control valve for continuous control of liquids
- Low hysteresis and high repeatability
- Control with PWM signal
- Servo-assisted, tight closing valve



The valve, Type 6223, can be used to control the flow of large amounts of liquids. Low hysteresis, high repeatability and good response sensitivity guarantee good positioning behaviour. The valve closes tight. The push-over coil is easy to replace.

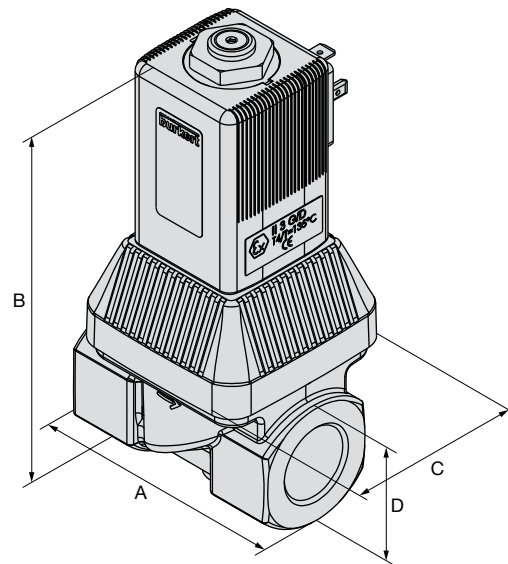
Technical data

Orifice	DN10, DN13 and DN20
Body material	Brass, stainless steel on request
Seal material	FKM, others on request
Media	Neutral liquids
Media temperature	-10 °C...+90 °C
Ambient temperature	Max. +55 °C
Port connection	G 3/8, G 1/2, G 3/4, G 1
Viscosity	Max. 21 mm ² /s
Operating voltage	24 V DC
Power consumption	See ordering chart
Duty cycle	Continuous rating 100 %
Electrical connection	Cable plug Type 2508 (will be replaced with Type 2518) acc. to DIN EN 175301-803 Form A
Protection class	IP65 with plug-on module or with cable plug on the valve
Installation	As required, preferably with actuator in upright position
Hysteresis	< 5 %
Repeatability	< 1 % FS
Sensitivity	< 1 % FS
Settling time (90 %)	< 200 ms
Span	1:10

Options

- Further versions see data sheet or on request

Dimensions [mm]



DN	A	B	C	D		
10	50	85.4	37.5	G 3/8	NPT 3/8	Rc 3/8
				G 1/2	NPT 1/2	Rc 1/2
13	58/65 ¹⁾	103.8	44.5	G 1/2	NPT 1/2	Rc 1/2
	65			G 3/4	NPT 3/4	Rc 3/4
20	80	142.1	66	G 3/4	NPT 3/4	Rc 3/4
	80			G 1	NPT 1/2	Rc 1

1) MS/VA

Ordering chart

Circuit function	Port connection	Orifice [mm]	K _{vs} value water [m ³ /h] ¹⁾	Q _{Nn} value [l/min] ²⁾	Pressure range [bar] ³⁾	Max. coil current [mA]	Power consumption [W]	Article no.
A 2/2 way servo-controlled, solenoid proportional control valve	G 3/8	10	1.4	1510	0.5...10	300	8	134229
	G 1/2		1.4	1510	0.5...10	300	8	134230
	G 1/2	13	2.5	2700	0.5...10	330	10	132202
	G 3/4		2.5	2700	0.5...10	330	10	282985
	G 3/4	20	5.0	5400	0.5...10	530	15	222478
	G 1		5.0	5400	0.5...10	530	15	222477

1) K_{vs} value: Flow rate value for water, measured at +20 °C and 1 bar pressure differential over a fully opened valve

2) Q_{Nn} value: Flow rate value for air with inlet pressure of 6 bar³⁾, 1 bar pressure differential and +20 °C

3) Pressure data [bar]: Overpressure with respect to atmospheric pressure; if the differential pressure over the valve exceeds 5 bar the characteristics may change.

Please note that the valves are delivered without control electronics unit and cable plug (see accessories below).

Accessories

Description	Voltage	Article no.
Cable plug Type 2508 (will be replaced with Type 2518) acc. to DIN 175301-803 Form A – see Type 2508 ▶		
without circuitry (standard), without cable	0...250 V AC/DC	008376
without circuitry (standard), 3 m cable	0...250 V AC/DC	783573

Note: The valves are delivered without control electronics, see **Type 8605 ▶**

Overview for Control Electronics for Electromagnetic Proportional Valves

Note: The following product overview does not show the complete product range of this catalogue. A complete overview can be found [here](#) ▶

Overview Control Electronics	Type	Function	Versions	Signals	Operating voltage	Max. power consumption	Valve outlet	Software features
	8605 ▶	Digital PWM control	DIN-rail, valve mounting	<ul style="list-style-type: none"> - Setpoint input (0...5 V, 0...10 V, 0...20 mA, 4...20 mA) - PWM output (80 Hz...6 kHz) 	12, 24 V DC	1 W (without valve)	Max. 2 A (PWM)	<ul style="list-style-type: none"> - Valve adjustment (frequency, min./max. opening) - Zero cutoff - Temperature compensation - Ramp function - Down-/Upload of the parameterization
8611 ▶	Digital PI controller, continuous, 2-point, 3-point and on/off control	Fitting, wall, switch cabinet, DIN-rail or valve mounting	<ul style="list-style-type: none"> - Setpoint input (0...10 V, 4...20 mA) - Actual value output (4...20 mA) - Sensor input (0...10 V, 4...20 mA, frequency, PT100), e.g. for pressure, temperature or flow rate - Binary input - Binary output - Outputs (continuous, discontinuous signal) 	24 V DC	2 W (without valve)	Max. 1 A (PWM)	<ul style="list-style-type: none"> - Controller parameterization - Valve adjustment (proportional valves selectable) - Sensor setting (all Bürkert flow sensors stored) - Configuration of the switching signals - Scaling of setpoint and actual value - Code protection 	

PWM Control Electronics for Solenoid Control Valves

8605

- Programmable digital electronics
- Converts an analog input signal to a PWM output signal
- Adjustable PWM frequency
- Cable plug and DIN rail version



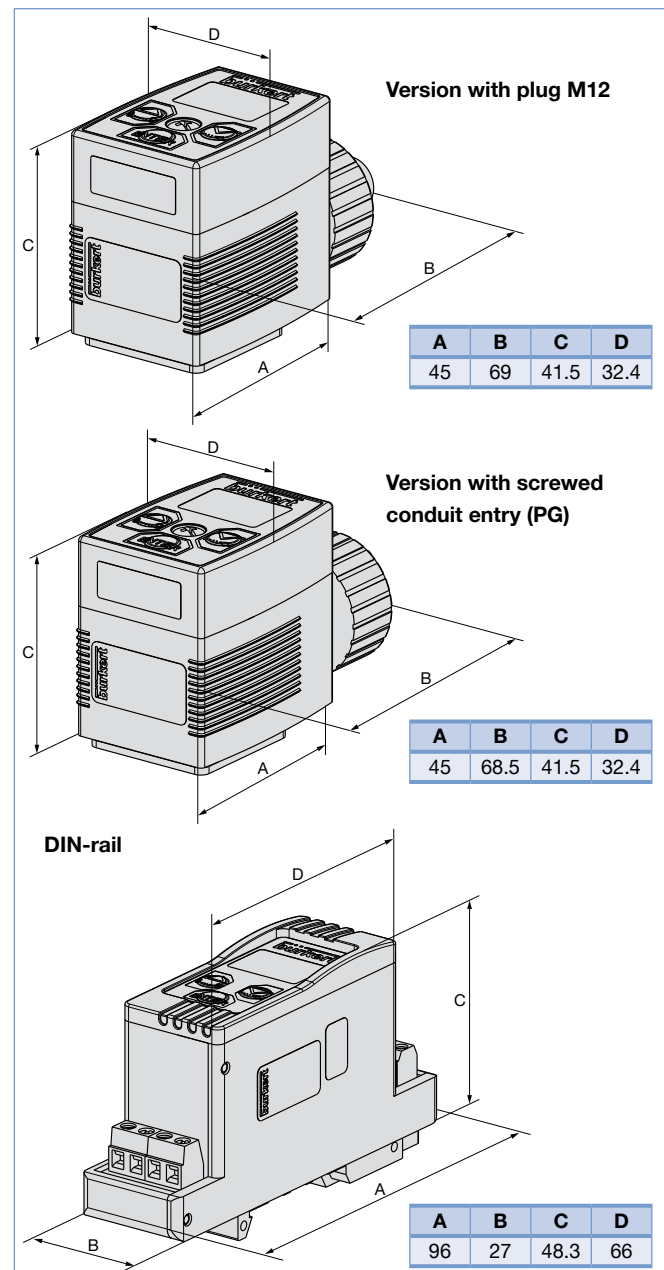
The digital control electronics, Type 8605, serves to operate valves in the power range from 40...2000 mA. The electronics converts an external standard signal into a pulse-width modulated (PWM) signal with which the opening of the valve and hence a fluidic output parameter (e.g. flow rate) can be infinitely varied. An internal current control with the duty cycle factor of the PWM signal as control variable ensures that every value of the input signal, irrespective of the thermal condition of the coil, is unambiguously assigned a given value of the effective coil current.

Compared to DC operation of solenoid control valves the PWM operation improves, among others, their sensitivity and hysteresis. A display and operating keys allow the electronics to be easily adapted to a particular solenoid control valve and to the concrete conditions of an application.

Technical data

Operating voltage	12 V DC or 24 V DC
Voltage tolerance	± 10 %
Residual ripple	< 5 %
Power consumption	Approx. 1 W (without valve)
Output current (valve)	Max. 2 A
Ambient temperature	- 10 °C...60 °C
Input signal	0...20 mA, 4...20 mA or 0...5 V, 0...10 V (configurable)
Input impedance	< 200 Ω (with current input) > 20 kΩ (with voltage input)
Output signal for valve control	PWM signal – frequency adjustable from 80 Hz to 6 kHz
Ramp function	Time variable from 0...10 sec.
Version	Cable plug for direct installation (with PG or M12 connection) DIN-rail version (DIN EN 50022)
Protection class	Cable plug – IP65 DIN-rail – IP40
Housing material	Cable plug – Polyamide / PC DIN-rail – Polyamide / PBT

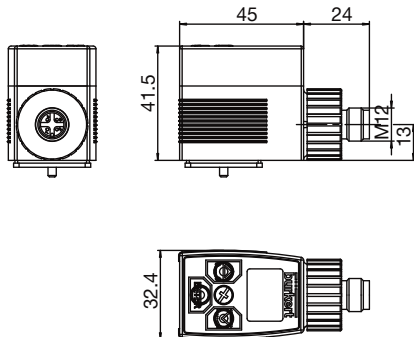
Dimensions [mm]



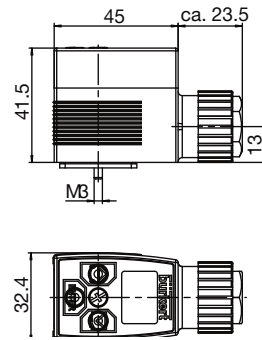
Dimensions [mm]

Cable plug with operating unit

Ausführung Stecker M12

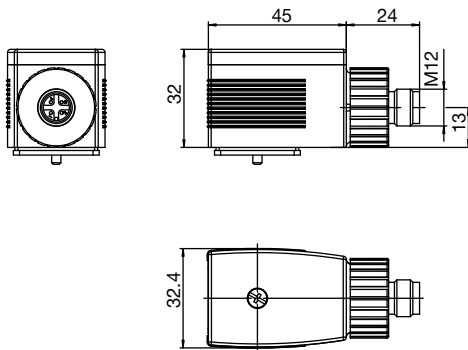


Ausführung PG-Verschraubung

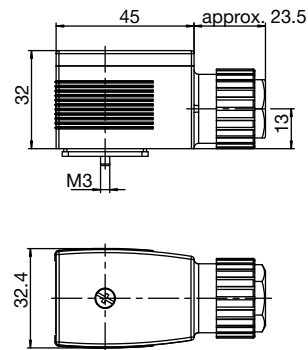


Cable plug without operating unit

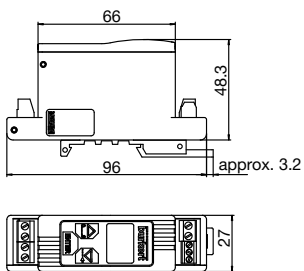
Version plug M12



Version with screwed conduit entry (PG)














DIN-rail



Ordering chart

8605

Version	Max. coil current [mA]	Article no.	2861, 2871 24 V DC	2861, 2871 12 V DC	2863, 2873 24 V DC	2863, 2873 12 V DC	2865, 2875 24 V DC	2865, 2875 12 V DC	2836 24 V DC	6024 24 V DC	6024 12 V DC	6223 24 V DC	6223 12 V DC
Cable plug with PG-connection	200...1000	316530 	-	-	x	x	x	-	-	x	-	x	-
Cable plug with M12-connection	200...1000	316528 	-	-	x	x	x	-	-	x	-	x	-
Cable plug with PG-connection	500...2000	316529 	-	-	-	x	x	x	x	x	x	-	x
Cable plug with M12-connection	500...2000	316526 	-	-	-	x	x	x	x	x	x	-	x
Cable plug with PG-connection without control unit	200...1000	316521 	-	-	x	x	x	-	-	x	-	x	-
Cable plug with M12-connection without control unit	200...1000	316522 	-	-	x	x	x	-	-	x	-	x	-
Cable plug with PG-connection without control unit	500...2000	316523 	-	-	-	x	x	x	x	x	x	-	x
Cable plug with M12-connection without control unit	500...2000	316525 	-	-	-	x	x	x	x	x	x	-	x
DIN-rail	40...220	316525 	x	-	-	-	-	-	-	-	-	-	-
DIN-rail	200...1000	316525 	x	x	x	x	x	-	-	x	-	x	-
DIN-rail	500...2000	316525 	-	-	-	x	x	x	x	x	x	-	x

Notes:

- With two current ranges possible please choose the lower one
- Successor types:
 - 2861, 2871 with 2822, 2824
 - 2863, 2873 with 2833
 - 2865, 2875 with 2835

When using the older type please choose the control electronics indicated for the adequate new type.

Accessories

Version	Article no.
Control unit for plug on module	582878 
Right-angle plug M12, 4 pins	784301 
M12 connector with 5 m cable, 4 pins	918038 
Cover (for control unit without display)	670549 

Overview for Cable Plugs

Note: The following product overview does not show the complete product range of this catalogue. A complete overview can be found [here](#) ▶

Overview Cable Plugs	Type	Versions	Size	Cable variants available	Protection class	Number of poles
	2505 ▶	Standard version without Ex approval	For small 10 mm Bürkert solenoid valves	Yes	IP30	2- and 3-pole
	2516 ▶	Standard version without Ex approval	DIN EN 175301-803 Form C	Yes	IP65	3-pole (2 + protective conductors)
	2507 ▶	Standard version without Ex approval	DIN EN 175301-803 Form B	No	IP65	3-pole (2 + protective conductors)
	2508 ▶	Standard version without Ex approval	DIN EN 175301-803, Form A	Yes	IP65	3-pole (2 + protective conductors) as an option 4-pole (3 + protective conductors)
	2509 ▶	Version with UR approval as component	DIN EN 175301-803, Form A	Yes	IP65	3-pole (2 + protective conductors)
	2513 ▶	Version according to ATEX Cat. 3 GD	DIN EN 175301-803, Form A	Yes	IP65	4-pole (2 + 2x protective conductors)

Cable Plug 10 mm for Bürkert small solenoid valves

2505

- Installation width 10 mm
- Cable and flying leads version available
- Contact form in grid dimension 2.54
- Locking



Connector with locking lug for contacting Bürkert solenoid valves with rectangular plug connector. These robust and affordable plug connection has established itself in the area of all small Bürkert solenoid valves in the analyst engineering and process pneumatics. As well as strands and cable versions for printed circuit board (PCB) mounting are also available.

Technical data

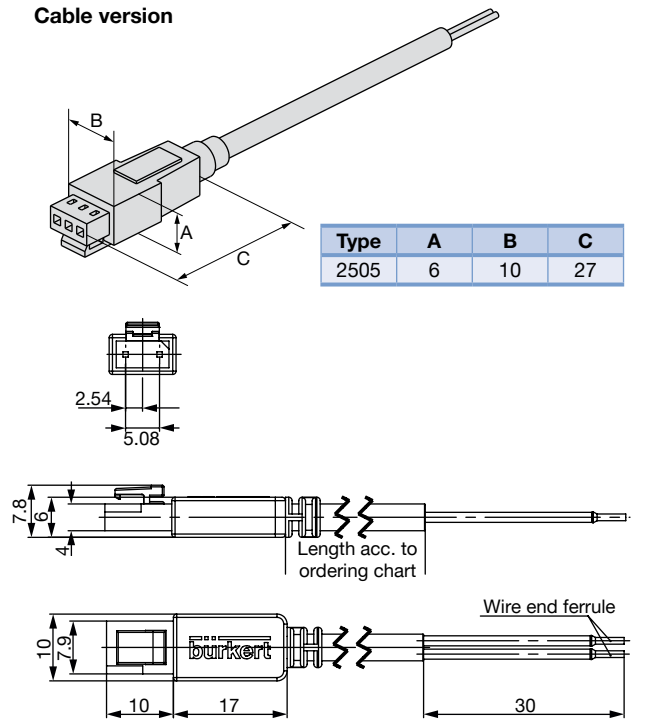
Material	POM and PA
Contact material	Brass gilded
Max. continuous temperature	+80 °C
External cable diameter	4...5 mm (cable version) 1.3...1.5 mm (flying leads version)
Coating material	
cable version	PVC
flying leads version	FEP
Core cross-section	0.25 mm ²
Cable outlet	Straight
Locking	Yes
Nominal voltage	Until 60 V DC and 25 V AC (clamp protection voltage according to VDE 0140)
Maximum current rating	1 A
Contact resistance	Approx. 20 mOhm
Cable ends	
Cable version	End ferrule
Flying leads version	Blank
Protection class	
Cable version	IP30
Flying leads version	IP30
Number of terminals	2 or 3 pin

Options

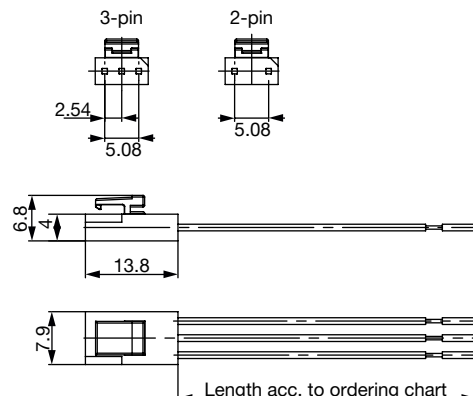
- Further versions see data sheet or on request

Dimensions [mm]














Cable version



Flying leads version



Ordering chart

Description	Cable length	Article no.		
2505 cable version, 2 pins Version, coating color grey				
Connector with cable 2 pins	0.5 m	260807 		
	3.0 m	252572 		
	5.0 m	255194 		
Description	Cable length	Article no.		
2505 cable version, 3 pin Version, coating color black				
Connector with cable 3 pins	0.5 m	260833 		
	3.0 m	252573 		
Description	Core cross section	Flying leads length	Number of terminals	Article no.
Flying leads version				
Connector with single flying leads	0.14 mm ²	300 mm	2	644068 
		600 mm	2	162144 
		300 mm	3	212968 
	0.25 mm ²	300 mm	2	262346 
		600 mm	2	262351 
		300 mm	3	262350 
Description	Mated height	Article no.		
Connector for PCB mounting (solder connection)	7 mm	645527 		
	11 mm	645526 		

Cable Plug acc. to DIN EN 175301-803 Form B Industrial standard

2507

- Also available with LED indicator
- Protection class IP65
- Contact form 11 mm

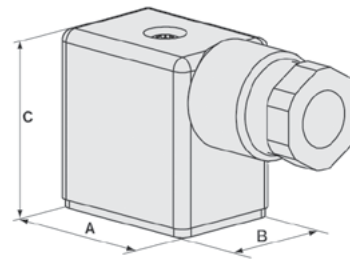


Plug for the connection of electrical components Form B Industrial standard.

Technical data





Body material	Polyamide (without LED; black, with LED; transparent)
Contact material	Brass, galvanised silver-plated
Flat seal	NBR
Temperature range	-40...+90 °C
Cable diameter	4.5...7 mm
Cable outlet	Straight
Functional display	LED, colour red
Nominal voltage	0...250 V
Contact resistance	≤ 4 mΩ
Electrical connection	Terminal screws max. 0.75 mm ² with circuitry (max. 1.5 mm ² without circuitry)
Protection class	IP65
Number of terminals	2 pins + protective earth
Cable glands	PG9
Number of terminals	2 pins + protective earth conductor

Dimensions [mm]



A	B	C
28.6	20.8	32

Ordering chart

Circuitry	Voltage/frequency	Article no. 2507
Without circuitry	0...250 V AC/DC	423845 
With LED	24 V AC/DC	423849 
	250 V AC/DC	423850 
With LED and freewheeling diode	24 V DC	423851 

Note: The delivery of a cable plug includes flat gasket and fixing screw made of steel (thick-film passivated).

Cable plug acc. to DIN EN 175301-803 Form A

2508 / 2509 / 2513

- Compact and simple to wire
- IP65 / NEMA 4X
- Global Approvals

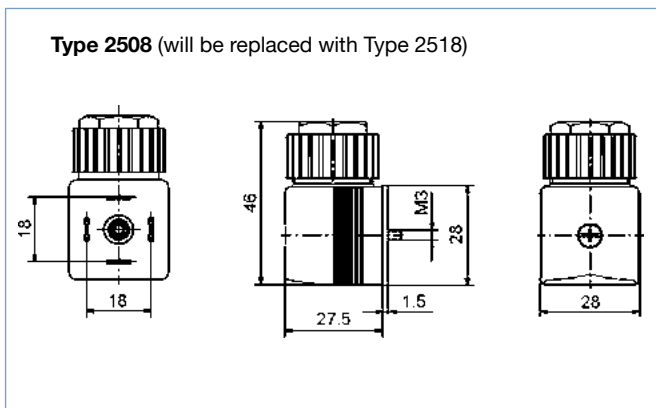


Type 2508 – Standard version without Ex approval
Type 2509 – Version with UR approval as component
Type 2513 – Version according to ATEX Cat. 3 GD

Technical data

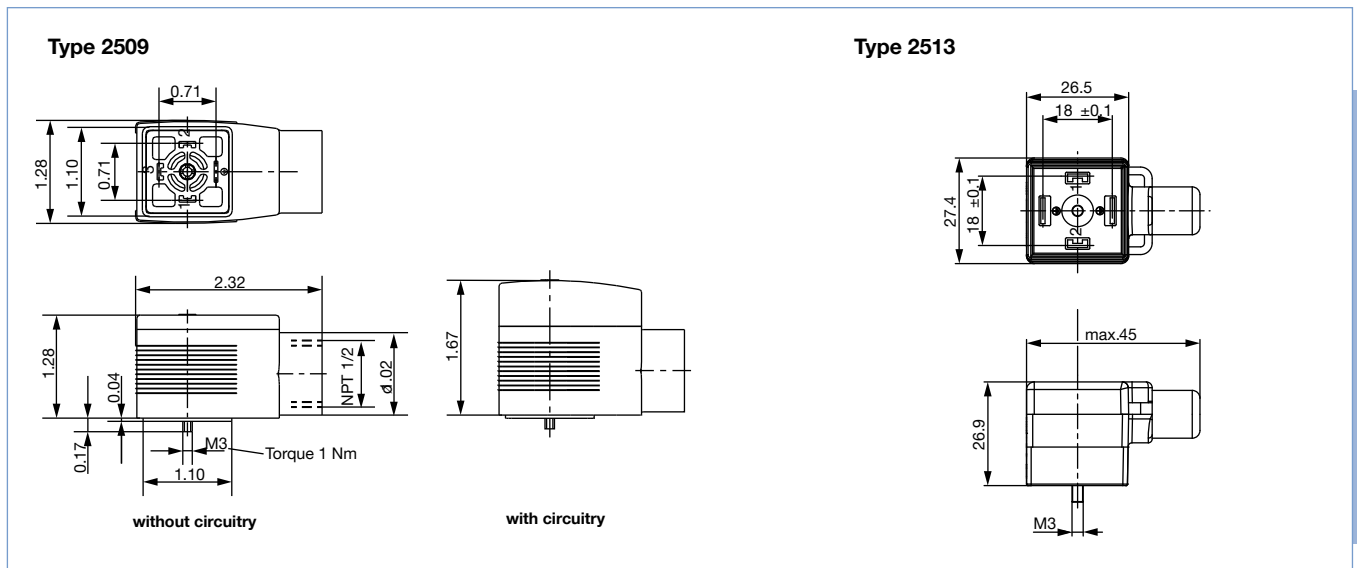
Type	2508 (will be replaced with Type 2518)
Body material	Polyamide, polycarbonate (version with LED)
Contact material	Brass, silver-plated
Max. continuous temp.	+90 °C (-10...+55 °C by version HL, LR and I _N)
Cable diameter	6-7 mm
Cable outlet	Can be rotated through 4 × 90°
Contact distance	18 mm according to DIN EN 175301-803
Functional display	LED, colour red (optional), yellow with version HL and LR
Electrical connection	Screw terminal, max. 1.5 mm ²
Nominal voltage	Depending on version
Contact resistance	5 mΩ (typ.)
Protection class	IP65
Number of terminals	
Standard	2 pins + protective earth conductor
Option	3 pins + protective earth conductor
Type	2509
Body material	PA (polyamide)
Contact material	Copper alloy, silver-plated
Connection thread	NPT 1/2
Cable outlet	vertically to the plug bottom can be rotated by 4 × 90° after removal
Cross section area	≤ 0.118"
Isolation between cable plug and coil	NBR flat seal
Cable diameter	0.029...0.078 inches
Ambient temperature	-10 °C...55 °C (+14 °C...131 °F)
Poles	2 pin + protective ground
Rated voltage	0 to 250 V
Protection class	NEMA 4 (IP65)
Flammability class to UL 94	5 V

Dimensions [mm]



Type	2513
No. of pins	4 pin (2+2x protective conductor)
Body material	Polyamide
Contact material	Brass, silver plated
Circuit	Without
Fixing screw	Stainless steel
Seal	TPU injected, additional NBR*1 (supplied loose)
Cable diameter	5.5...6.5 mm
Cable sheath	PUR
Core insulation	PP
Core cross-section	3 × 0.75 mm ²
Bending radius (moving state)	min. 10x cable diameter
Sheath colour	Black
Core insulation colour	BN,BU,GNYE
Acceptable current load	4 A
Rated voltage	max. 230 V AC/DC
Protection class	IP65 (in locked position)
Ambient temperature	-30 °C to +90 °C
Soiling level	3

Dimensions [mm]



Ordering chart

Description	Voltage	Article no.
Cable plug Type 2508 (will be replaced by 2518) acc. to DIN 175301 - 803 Form A		
Without circuitry (standard), without cable	0 - 250 V AC/DC	008376 🛒
Without circuitry (standard), 3 m cable	0 - 250 V AC/DC	783573 🛒
With LED	12 - 24 V AC/DC	008360 🛒
With LED	100 - 120 V AC/DC	008361 🛒
With LED	200 - 240 V AC/DC	008362 🛒
With varistor	12 - 24 V AC/DC	008370 🛒
With varistor	100 - 240 V AC/DC	008372 🛒
With LED and varistor	12 - 24 V AC/DC	008367 🛒
With LED and varistor	100 - 120 V AC/DC	008368 🛒
With LED and varistor	200 - 240 V AC/DC	008369 🛒
With rectifier, LED and varistor	12 - 24 V AC/DC	008363 🛒
With pole protection, free wheeling diode and LED	12 - 24 V DC	008373 🛒
With pole protection and free wheeling diode	12 - 240 V DC	008375 🛒
With rectifier and varistor	12 - 240 V AC/DC	008374 🛒
With inverter	12 - 24 V AC/DC	on request
Cable plug Type 2509 acc. to DIN EN 175301 - 803 Form A		
Without circuitry (standard)	0 - 250 V AC/DC	137943 🛒
Cable plug Type 2513 acc. to DIN EN 175301 - 803 Form A		
Cable length, 12000 mm	max. 230 V AC/DC	260893 🛒
Cable length, 5000 mm	max. 230 V AC/DC	260892 🛒
Cable length, 3000 mm	max. 230 V AC/DC	260891 🛒
Cable length, 300 mm	max. 230 V AC/DC	260890 🛒

Note: The delivery of a cable plug includes flat gasket and fixing screw made of steel (thick-film passivated).

Cable plug DIN EN 175301-803

2516

- Protection class IP65
- With approvals: UR, CSA, VDE
- Easy to install
- Also available with moulded-on cable connection



Plug-in connection for the connection of electrical components according to DIN EN 175301-803 Form C (previously DIN 43650).

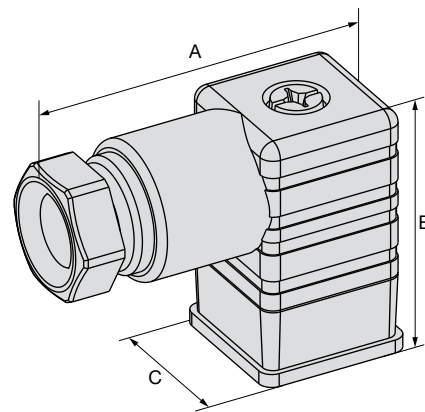
Technical data

Body material	Polyamide
Contact material	Brass
Cable diameter	4.5...6 mm
Temperature range (ambient)	
Plug	-40 °C...+125 °C
Seal	-25 °C...+90 °C
Functional display	LED, colour yellow
Nominal voltage	0...250 V
Maximum current rating	Without circuitry: 6 A With diode: 3 A
Contact resistance	≤ 10 mΩ
Electrical connection	Terminal screws
Protection class	IP65
Number of terminals	2 pins + protective earth

Options













- Further versions see data sheet or on request

Dimensions [mm]



A	B	C
38	26	15.8

Ordering chart

Voltage	Current rating	Article no. without cable	Article no. with 2 m cable	Article no. with 3 m cable
Without circuitry				
0...250 V AC/DC	max. 6 A	303141 	303161 	-
With LED				
12...24 V AC/DC	max. 3 A	303145 	303162 	-
100...120 V AC/DC	max. 3 A	303146 	-	-
200...240 V AC/DC	max. 3 A	303147 	-	-
With rectifier, varistor and LED				
12...24 V AC/DC	max. 1 A	-	-	303142 
100...120 V AC/DC	max. 1 A	-	-	303143 
200...240 V AC/DC	max. 1 A	-	-	303144 
With LED and varistor				
12...24 V AC/DC	max. 3 A	303148 	-	-
100...120 V AC/DC	max. 3 A	303149 	-	-
200...240 V AC/DC	max. 3 A	303150 	-	-

Note: The delivery of a cable plug includes the flat seal and fixing screw



Process Actuation Chapter Overview



[Overview for Pneumatic Valves ▶](#)

[Overview for Valve Islands ▶](#)

Process Actuation Types Overview

Pneumatic Valves	185
5413.....	187
5420.....	191
5470 E	193
5470 M	195
5470 R.....	199
5470 NAMUR / Ex i	203
6012 / 6014	205
6518.....	207
6519.....	209
6519 Ex i.....	211
6519 Ex m	213
6519 NAMUR	215
6519 NAMUR Ex i.....	217
6519 NAMUR Ex m/me..	219
6524.....	221
6525.....	225
6526 / 6527	227
Valve Islands	231
8640.....	233
8644.....	239
8647.....	243
8652.....	245

Overview for Pneumatic Valves

Note: The following product overview does not show the complete product range of this catalogue. A complete overview can be found [here](#) ▶

Overview Pneumatic Valves	Species	Type	Function	Q _N value air [l/min]	Supply connections	Operating connections
Pilot operated pneumatic valve	5413 ▶		4/2	900	NPT ¼, G ¼	NPT ¼, G ¼
	5420 ▶		4/2	200	G ⅜, hose fitting SL 6/4 flange for manifold	G ⅜, hose fitting SL 6/4
	6518 ▶		3/2	1300	NPT ¼, G ¼	NPT ¼, G ¼
	6519 standard ▶		5/2, 5/3	1300	NPT ¼, G ¼	NPT ¼, G ¼
	6519 Ex m ▶		5/2, 5/3	1300	NPT ¼, G ¼	NPT ¼, G ¼
	6519 Ex i ▶		5/2, 5/3	1300	NPT ¼, G ¼	NPT ¼, G ¼
	6519 NAMUR standard ▶		3/2-5/2 removable disk	900	NPT ¼, G ¼	NAMUR flange
	6519 NAMUR Ex m ▶		3/2-5/2 removable disk	900	NPT ¼, G ¼	NAMUR flange
	6519 NAMUR Ex i ▶		3/2-5/2 removable disk	900	NPT ¼, G ¼	NAMUR flange
	5470 R ▶		3/2, 4/2	300	Modular flange	NPT ⅜, G ⅜ Hose connections SL 6/4 mm Plug connector Ø 6 mm
	5470 E ▶		3/2, 4/2	300	NPT ⅜, G ⅜ Hose connections SL 6/4 mm Plug connector Ø 6 mm	NPT ⅜, ⅜ Hose connections SL 6/4 mm Plug connector Ø 6 mm
	5470 M ▶		3/2, 4/2	300	Flange for MP05 module	NPT ⅜, G ⅜ Hose connections SL 6/4 mm Plug connector Ø 6 mm
	5470 NAMUR ▶		3/2, 4/2	300	NPT ⅜, G ⅜ Plug connector Ø 6 mm	NAMUR flange
	6524 ▶		3/2, 2 × 3/2	300	Flange for MP11 module	No connection at the valve available (see basic pneumatic module MP11)
	6525 ▶		5/2	300	Flange for MP11 module	No connection at the valve available (see basic pneumatic module MP11)
	6526 ▶		3/2, 5/2	700	Flange for MP12 module	No connection at the valve available (see basic pneumatic module MP12)

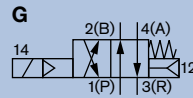
1) S = Standard | A = On request | N = Not available

Pressure range [in bar]	Medium temperature [°C]	Orifice [DN in mm]	Body material ⁽¹⁾			Seal material ⁽¹⁾			Special features and versions
			Plastic	Aluminum	Stainless steel	NBR	PUR	FPM	
1 ... 10	-10 ... +60	6	S	N	N	S	N	N	Single or block mounting
2.5 ... 10	-10 ... +60	3	S	N	N	S	N	N	Single or block mounting
2 ... 8	-10 ... +50	8	S	N	N	S	S	S (for Ex i)	Single or block mounting
2 ... 8 / 3 ... 10	-10 ... +50	8, 9	S	S (5/3 way)	N	S	S	N	Single or block mounting
2 ... 8	-10 ... +50	8, 9	S	S (5/3 way)	N	S	S	N	Single or block mounting
2 ... 8 / 3 ... 10	-10 ... +50	8, 9	S	N	N	S	S	S	Single or block mounting
2 ... 8	-10 ... +50	6	S	N	N	S	S	N	NAMUR version
2 ... 8	-10 ... +50	6	S	N	N	S	S	N	NAMUR version
2 ... 8	-10 ... +50	6	S	N	N	S	S	S	NAMUR version
2 ... 10	-10 ... +50	4	S	N	N	S	N	N	For snap-in block mounting
2 ... 10	-10 ... +50	4	S	N	N	S	N	N	Single mounting
2 ... 10	-10 ... +50	4	S	N	N	S	N	N	Block mounting only
2 ... 10	-10 ... +50	4	S	N	N	S	N	N	NAMUR version
1 ... 10	-10 ... +50	4	S	N	N	S	N	S	Block mounting only
1 ... 10	-10 ... +50	4	S	N	N	S	S	S	Block mounting only
1 ... 10	-10 ... +50	6	S	N	N	S	N	N	Block mounting only

4/2 way solenoid valve for pneumatic applications

5413

- Robust servo assisted piston valve
- Service friendly manual override
- Single or block assembly
- Explosion-proof versions available



Type 5413 is a pilot operated 4/2 way solenoid valve with manual override as standard. A 3/2 way solenoid pilot valve allows control. The valve consists basically of two assembled 3/2 way valves for ports A and B with a counter built-in servo piston with seat seals. Through pilot channels, the servo piston is operated at the input pressure and pushed either apart or towards the valve centre. A minimum pressure difference of 1 bar is required for switching.

Technical data

Orifice	DN6.0
Port connection	G ¼
Body material	Polyamide (reinforced) with moulded-in brass threads
Coil material	Polyamide, Epoxy
Seal material	NBR
Medium	Neutral medium, e.g. lubricated or unlubricated compressed air
Air pressure quality	ISO 8573-1:2010, class 7.4.4 ¹⁾
Medium Temperature	-10 °C...+60 °C
Medium pressure	1...10 bar
Ambient Temperature	Max. 55 °C
Q_{Nn}-Value air	900 l/min
Operating voltage	24 V DC 24/110/230 V, 50...60 Hz
Voltage tolerance	±10 %
Power consumption	
Version with V DC	2 W
Version with V AC	11 VA (inrush), 6 VA (hold)
Response time	
Opening	50 ms (Pressure rise 0...90 %)
Closing	30 ms (Pressure drop 100...10 %)
Duty cycle	100 % continuously rated
Electrical connection	Tag connectors according to DIN EN 175301-803 (previously DIN 43650) Form A for cable plug Type 2508 (will be replaced with Type 2518). Not included
Protection class	IP65 with cable plug
Installation	As required, preferably with solenoid system upright; Air exhausted from the relief port with pressed sintered bronze silencer must not be impeded.

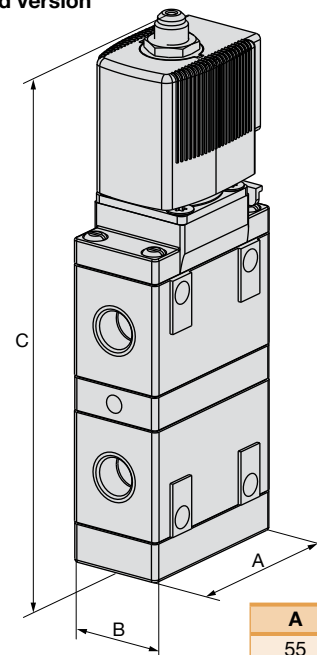
1) To prevent freezing of the expanded compressed air, the pressure dew point must be at least 10 K lower than the temperature of the medium.

Flow rate: Q_{Nn}-value air [l/min]: Measured at +20 °C, 6 bar pressure at valve inlet and 1 bar pressure difference.

Pressure ranges [bar]: Overpressure to the atmospheric pressure

Dimensions [mm]

Standard version



A	B	C
55	30	164.1

Options/Accessories

- Cable Plug Type 2508 (will be replaced with Type 2518)
- ATEX versions
- Further versions see data sheet or on request

Ordering chart

Circuit function	Orifice [mm]	Port connection	Q _{Nn} value air [l/m]	Pressure range [bar]	Power consumption [W]	Voltage/Frequency [V/Hz]	Article no.
Standard version with manual override, NBR seal							
G 4/2 way servo-controlled solenoid valve	6	G ¼	900	1...10	2	024/DC	134615
						024/50...60	134616
						110/50...60	134617
						230/50...60	134618
ATEX/IECEX version with manual override, NBR seal and moulded cable (3 m) The maximum fluid temperature may never exceed the permissible temperature class (T4 135 °C, T5 100 °C, T6 85 °C) minus 5K.							
G 4/2 way servo-controlled solenoid valve	6	G ¼	900	1...10	3	024/UC	566775
						110/UC	566776
						230/UC	566777
ATEX/IECEX version with manual override, NBR seal and junction box (without fuse) The maximum fluid temperature may never exceed the permissible temperature class (T4 135 °C, T5 100 °C, T6 85 °C) minus 5K.							
G 4/2 way servo-controlled solenoid valve	6	G ¼	900	1...10	1.8	024/UC	288801
						048/UC	on request
						110/UC	288804
						230/UC	288802

Note: To switch a pressure difference of 1 bar is required.

Cable plug, see **Type 2508** ▶ (will be replaced with Type 2518)



Accessories

5413

Manifold	Hole spacing A	Total length B	Article no.
Single channel manifolds for pressure port, in aluminium with banjo bolts and seals			
2	77	93	005811
3	110	126	005717
4	143	159	005843
5	176	192	005776
6	209	225	005718
Double channels manifolds for pressure and exhaust port, with mounting screws M5×60 DIN 912 and O-rings 11×2.5			
2	78	93	005686
3	111	126	005688
4	144	159	005719
5	177	192	005696
6	210	225	005626
7	243	258	005738
8	276	291	005724
9	309	324	005739
10	342	357	005740
11	375	390	005804
12	408	423	005700

Description	Voltage	Article no.
Cable plug Type 2508 (will be replaced with Type 2518) acc. to DIN 175301-803 Form A - see Type 2508 ▶		
without circuitry (standard), without cable	0...250 V AC/DC	008376
with LED	12...24 V AC/DC	008360
with LED	100...120 V AC/DC	008361
with LED and varistor	12...24 V AC/DC	008367
with LED and varistor	100...120 V AC/DC	008368
with LED and varistor	200...240 V AC/DC	008369

Note: The delivery of a cable plug includes the flat seal and fixing screw.

Accessories

Description	Ex Approvals		Article no.
	Certification	Identification	
Ex-Cable glands (polyamide version included in delivery / surcharge applied for brass nickel plated version)			
Brass, nickelplated, 6...13 mm	IECEX PTB 13.0027X, PTB 04 ATEX 1112 X	II 2 D Ex tb IIIC Db IP68, II 2 G Ex e IIC Gb	773278
Polyamide, 7...13 mm	PTB 13 ATEX 1015 X, IECEX PTB 13.0034X	II 2 G Ex e IIC Gb, II 2 D Ex tb IIIC Db IP68	773277

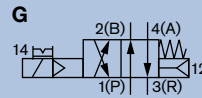
Description	Article no.
Special tool to turn the junction box (not included in delivery)	
Set SC02-AC10 Spezialschlüssel, Serviceanleitung	293488

Description	Voltage [V]	Max. current [A]	Article no.
Fuse for terminal box	24	0.4	153734
	230	0.63	153717

4/2 way Solenoid Valve for pneumatics

5420

- Compact design
- Push-over solenoid coil
- Exhaust air can be regulated
- Tube, thread or flange connection
- Servo-diaphragm seat discs



The Type 5420 is a pilot-controlled 4 way seat valve with servo-diaphragms. A minimum differential pressure of 2.5 bar is needed for switch-over. The valve can be mounted on two channel manifolds with a common pressure supply.

Technical data

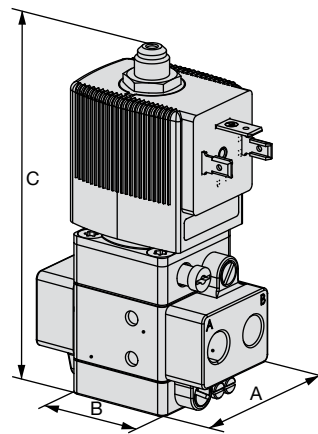
Orifice	DN3.0
Body material	Polyamide
Valve internals	Stainless steel, plastic
Seal material	NBR
Medium	Neutral gases
Media temperature	-10 °C...+60 °C
Ambient temperature	Max. +55 °C
Voltage tolerance	±10 %
Duty cycle	100 % continuous rating
Electrical Connection	Tag connector acc. to DIN EN 175301-803 (previously DIN 43650) Form A for Cable Plug Type 2508 (will be replaced with 2518). Not included.
Electrical Power consumption	Inrush AC 11 VA Hold AC 6/2 VA/W, DC 2 W
Protection class	IP65 (with cable plug)
Installation	As required, preferably with actuator upright
Response times¹⁾	Opening 30 ms Closing 20 ms

1) Measurement at the valve outlet 6 bar and +20 °C
Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

Options/Accessories

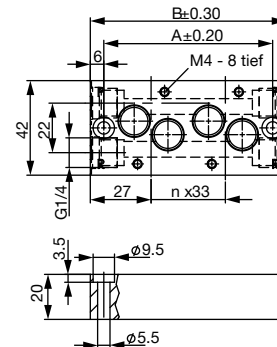
- ATEX versions
- Further versions see data sheet or on request

Dimensions [mm]



Port connection	A	B	C
G 1/8	32	32	101

Side by side manifold



Ordering chart

Circuit function	Port connection 1 and 3	Port connection 2 and 4	Orifice [mm]	Q _{Nn} Value air [l/min]	Pressure range [bar]	Article no. Voltage/Frequency [V/Hz]		
						024/DC	024/50...60	230/50...60
Corrosion-resistant body in polyamide, with 2 W coil, seal material NBR, without cable plug								
Circuit function G, 4/2 way servo-controlled pneumatic valve, with manual override								
G 4/2 way servo-controlled solenoid valve, with manual override	G 1/8	G 1/8	3	200	2.5...10	134622	134623	134625
	Hose fitting 6/4 mm	Hose fitting 6/4 mm	3	200	2.5...10	134630	134631	134633
	Flange for manifold	G 1/8	3	200	2.5...10	134634	134635	134637
	Flange for manifold	Hose fitting 6/4 mm	3	200	2.5...10	134638	134639	134641

Note: Cable plug, see **Type 2508** ▶ (will be replaced with Type 2518)

Accessories

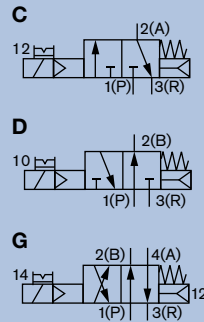
No. of valve places	Article no.
Expandable manifolds from light metal (aluminium)	
2 valves	005356
3 valves	005357
4 valves	005372
5 valves	005373
6 valves	005374
8 valves	006553

Accessories for manifold	Article no.
Blanking plug for unused ports 1 or 4	005390
Covering plate, complete, for unused valve positions on the manifolds	005432
Connector nipple with O-ring for connecting manifold	005049

3/2 and 4/2 way Solenoid Valve for pneumatic systems, single valve design

5470 E

- Compact design
- Reduced power consumption
- Various pneumatic connections available
- With manual override
- Extreme switching reliability



Type 5470 E is available as a 3/2 and 4/2 way valve. The valves can be used as single valves in various application cases. Numerous pipe connection variants exist. The valves are generally equipped with a DC coil. When using an AC power source, use an appliance with a rectifier.

Power consumption

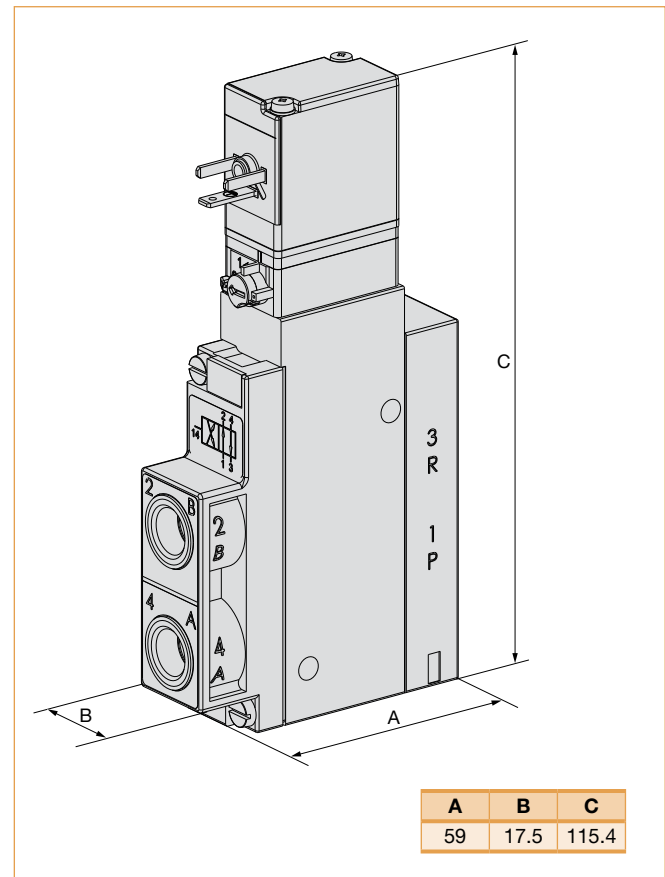
Corresponds to the effective coil power in the Ordering Table.

Technical data

Orifice	DN4.0
Body material	Polyamide (PA)
Valve internals	Ultramide
Seal material	NBR
Media	Compressed air, neutral gases
Media temperature	-10 °C...+50 °C
Ambient temperature	-10 °C...+55 °C
Port connection	G 1/8
1...4 (versions)	Tube connection SL 6/4 mm (on request) Push-in connection Ø 6 mm NPT 1/8 (on request)
Voltage tolerance	±10 %
Duty cycle	100 % continuous rating
Electrical connection	Tag connector acc. to DIN EN 175301-803 (previously DIN 43650) for cable plug, Form C (not included)
Protection class	IP65 with cable plug
Installation	As required, preferably with actuator upright
Response times¹⁾	
DC Opening	15 ms
DC Closing	12 ms
AC Opening	15 ms (with cable plug rectifier)
AC Closing	20 ms (with cable plug rectifier)

1) Measurement at the valve outlet 6 bar and +20 °C
Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

Dimensions [mm]



Options

- Type of protection: Explosion protection Ex i
- Without manual override
- Further versions see data sheet or on request

Ordering chart

Circuit function	Port connection 1 and 3 as well as service ports 2 and 4 (see drawing for the versions)	Orifice [mm]	Q _{Nn} -value air [l/min]	Pressure range [bar]	Voltage/ frequency [V/Hz]	Power consumption [W]	Article no.
Single valves with different port connections, tag connector on the side, seal material NBR, without cable plug							
C 3/2 way ser- vo-controlled solenoid valve, nor- mally closed, with manual override	Push-in connection Ø 6 mm (Option B)	4.0	300	2...10	024/DC ¹⁾	2	136755
	Service port 2 and 4 underneath (Option D)				220...240/DC ¹⁾	3	136757
D 3/2 way ser- vo-controlled solenoid valve, nor- mally open, with manual override	Push-in connection Ø 6 mm (Option B)	4.0	300	2...10	024/DC ¹⁾	2	136758
	Service port 2 and 4 below (Option D)				220...240/DC ¹⁾	3	136760
G 4/2 way ser- vo-controlled solenoid valve, with manual over- ride	G 1/8 (Option A)	4.0	300	2...10	024/DC ¹⁾	2	136749
					220...240/DC ¹⁾	3	136751
	Push-in connection Ø 6 mm (Option B)				024/DC ¹⁾	2	136752
					220...240/DC ¹⁾	3	136754

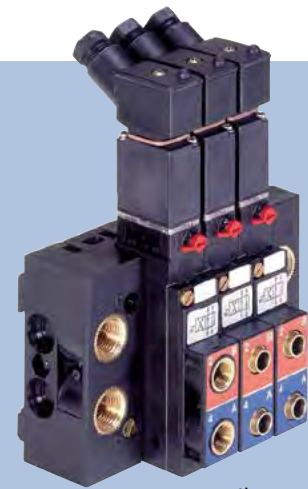
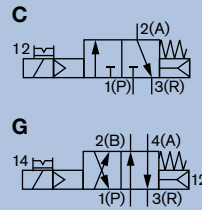
1) When using an AC power source, use an appliance with a rectifier.

Note: Cable plug, see **Type 2508** ► (will be replaced with Type 2518)
Cable plug must be ordered separately.

3/2 and 4/2 way Solenoid Valve for pneumatic systems, modular for block mounting

5470 M

- With manual override
- Extreme switching reliability
- Flexible block compilation
- Reduced power consumption
- Different pneumatic connections available



mounting example

Type 5470 M is available as a 3/2 and 4/2 way valve. Different modes of action are used within a block. The valves are generally equipped with a DC coil. When using an AC power source, use an appliance with a rectifier.

Power consumption

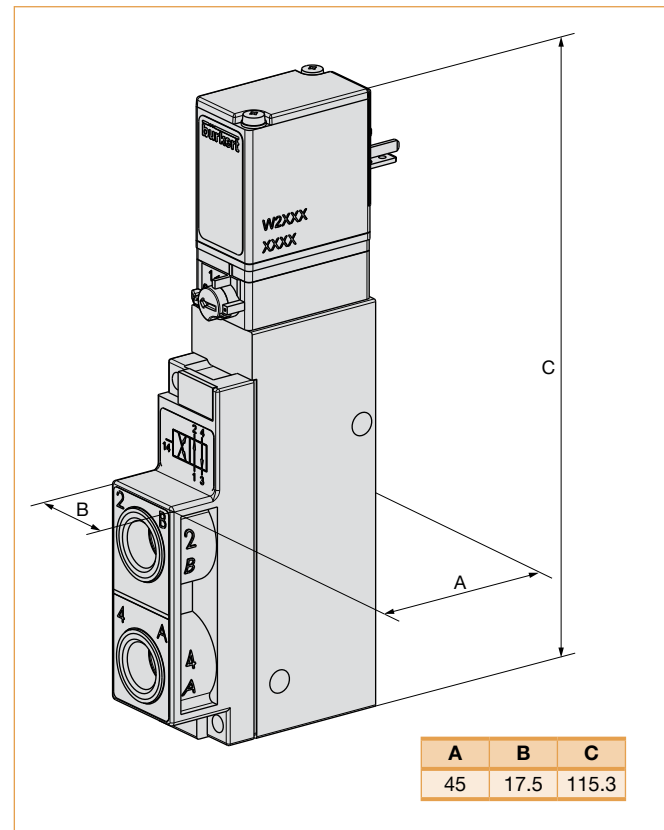
Corresponds to the effective coil power in the ordering chart.

Technical data

Orifice	DN4.0
Body material	Polyamide (PA)
Valve internal	Ultramide
Seal material	NBR
Media	Compressed air, neutral gases
Media temperature	-10 °C...+50 °C
Ambient temperature	-10 °C...+55 °C
Port connection	G 1/8
1...4 (Versions)	Tube connection SL 6/4 mm (on request) Push-in connection Ø 6 mm NPT 1/8 (on request)
Voltage tolerance	± 10 %
Duty cycle	100 % continuous rating
Electrical connection	Tag connector acc. to DIN EN 175301-803 (previously DIN 43650) for cable plug, Form C (not included)
Protection class	IP65 (with cable plug)
Installation	As required, preferably with actuator upright
Response times¹⁾	
DC opening	15 ms
DC closing	12 ms
AC opening	15 ms (with rectifier plug)
AC closing	20 ms (with rectifier plug)

¹⁾ Measurement at the valve outlet 6 bar and +20 °C
Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

Dimensions [mm]



Options

- Type of protection: Explosion protection Ex i
- Without manual override
- Normally open circuit function
- Further versions see data sheet or on request

Ordering chart

Circuit function	Orifice [mm]	Q _{NH} value air [l/min]	Pressure range [bar]	Service ports 4 and 2	Voltage/frequency [V/Hz]	Power consumption [W]	Article no. Tag connector in the rear for valve blocks Type 8640	Article no. Tag connector in the front for valve blocks
C 3/2 way servo-controlled solenoid valve, normally closed, with manual override	4.0	300	2...8	Push-in connection Ø 6 mm, underneath	024/DC ¹⁾	1	132479	135203
			2...10		024/DC ¹⁾	2	133148	135204
					220...240/DC ¹⁾	3	-	132953
G 4/2 way servo-controlled solenoid valve, with manual override	4.0	300	2...8	Push-in connection Ø 6 mm, in front	024/DC ¹⁾	1	-	135205
			2...10		024/DC ¹⁾	2	132487	135206
					220...240/DC ¹⁾	3	-	132955
			2...8	Push-in connection Ø 6 mm, underneath	024/DC ¹⁾	1	132489	135207
			2...10		024/DC ¹⁾	2	133150	135208
					220...240/DC ¹⁾	3	-	132957
			2...8	Threaded port G 1/8, in the front	024/DC ¹⁾	1	-	135211
			2...10		024/DC ¹⁾	2	-	135212
					220...240/DC ¹⁾	3	-	132959











1) When using an AC power source, use an appliance with a rectifier.
Tag connector at the rear: over the supply ports 1 and 3.

Note: Cable plug, see **Type 2508** ▶ (will be replaced with Type 2518)








No.	Unit	Article no.
Example for Type 5470 with Type MP05		
1	Connection module right, G 1/8	133177
1	Pneumatic basic module, 2 valves	132516
1	Pneumatic basic module, 3 valves	132517
1	Connection module left, G 1/8	133175
5	Valves	135203

Ordering chart

5470 M

Version	Article no.
Type MP05 pneumatic modules	
Connection module right, G 1/8	133177 
Connection module right, G 1/4	132514 
Connection module right, NPT 1/4	132515 
Pneumatic basic module, 2 valves	132516 
Pneumatic basic module, 3 valves	132517 
Pneumatic basic module, 2 valves with check valve	132518 
Pneumatic basic module, 3 valves with check valve	132519 
Connection module left, G 1/8	133175 
Connection module left, G 1/4	132512 
Connection module left, NPT 1/4	132513 

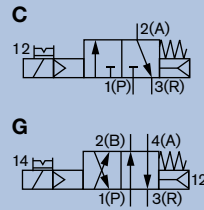
Accessories

Description	Features	Article no.
Type MP05 pneumatic modules		
Connection module G 1/8	intermediate supply	643019 
Blanking plug	G 1/8	631019 
Blanking plug	G 1/4	631020 
Blanking plug for push-in connection	Ø 6 mm	015397 
Pressure rings for push-in connection	Ø 6 mm	015401 
Covering plate (black)	for unused valve positions	643223 
Indicating tags	64 pieces	623816 

3/2 and 4/2 way Solenoid Valve for pneumatic systems, for self-connecting block mounting

5470 R

- Valve discs individually self-connecting
- With manual override
- 3 way version with check valve
- Extreme switching reliability
- Flexible block compilation



Type 5470 R is available as a 3/2 and 4/2 way valve. The valves can be mounted together individually using the module flange. They can be snapped together with the connection modules to form valve blocks.

Power consumption

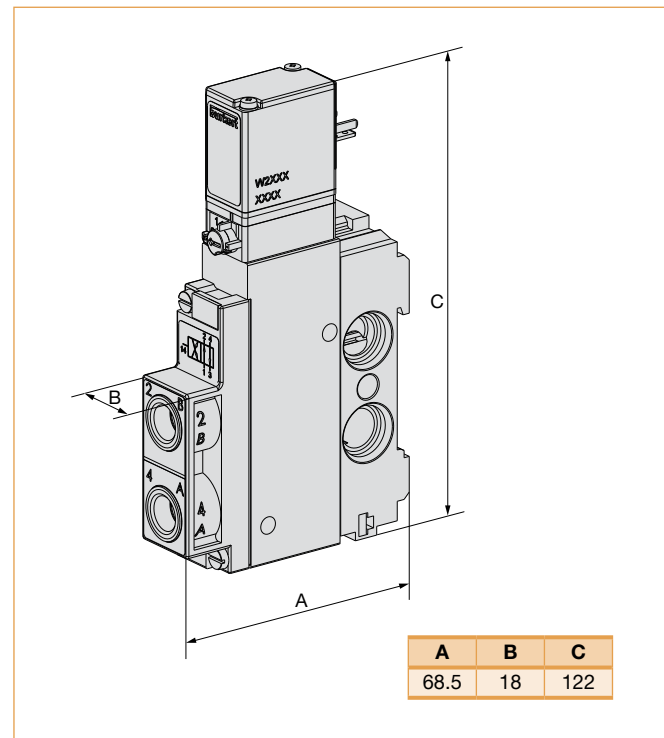
Corresponds to the effective coil power in the ordering chart.

Technical data

Orifice	DN4.0
Body material	Polyamide (PA)
Valve internal	Ultramide
Seal material	NBR
Media	Compressed air, neutral gases (5 µm filtering)
Media temperature	-10 °C...+50 °C
Ambient temperature	-10 °C...+55 °C
Supply port 1 and 3	Module flange
Service port 2 and 4 (Versions)	Threaded port G 1/8 Tube connection SL 6/4 mm (on request) Push-in connection Ø 6 mm Threaded port NPT 1/8 (on request)
Voltage tolerance	± 10 %
Duty cycle	100 % continuous operation
Electrical connection	Tag connector above acc. to DIN EN 175301-803 (previously DIN 43650) for cable plug, Form C and side by side cable plug Type 1057-SA and rectangular plug (5.08 mm) Type 2505 (not included)
Protection class	IP65 with cable plug IP20 with Type 1057-SA or IP40 with rectangular plug (5.08 mm)
Installation	As required, preferably with actuator upright
Response times¹⁾	
DC opening	15 ms
DC closing	12 ms
AC opening	15 ms
AC closing	20 ms

¹⁾ Measurement at the valve outlet 6 bar and +20 °C
Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

Dimensions [mm]



Options

- Type of protection: Explosion protection Ex i
- Without manual override
- Normally open circuit function
- Further versions see data sheet or on request

Ordering chart

Circuit function	Orifice [mm]	Q _{Nn} value air [l/min]	Pressure range [bar]	Service port 2 and 4	Voltage/frequency [V/Hz]	Power consumption [W]	Article no. DC coil ²⁾	Article no. UC coil ³⁾
Extendable single valve with module flange for supply ports 1 and 3, tag connector above, supplied without cable plug								
C ¹⁾ 3/2 way servo-controlled solenoid valve, normally closed, with manual override	4.0	300	2...10	Push-in connection Ø 6 mm below with check valve (Option A)	024/DC/UC	2	136872	-
					220...240/DC/UC	3	136874	145971
G 4/2 way servo-controlled solenoid valve, with manual override	4.0	300	2...10	G 1/8 at side (Option E)	024/DC/UC	2	136881	-
					220...240/DC/UC	3	136883	145980
				G 1/8 at side with one way flow restrictor (Option B)	024/DC/UC	2	136884	-
					220...240/DC/UC	3	136886	145983
				Push-in connection Ø 6 mm at side (Option F)	024/DC/UC	2	136887	-
					220...240/DC/UC	3	136889	145986
Push-in connection Ø 6 mm underneath (Option C)	024/DC/UC	2	136890	-				
	220...240/DC/UC	3	136892	145989				

1) 3/2 way models with non-return valve in the module flange

2) Only for direct current operation (DC), for alternating current (AC), place a cable plug with a rectifier upstream

3) For universal current operation (UC = DC or AC); rectifier, varistor and LED integrated into the coil

Circuit function	Orifice [mm]	Q _{Nn} value air [l/min]	Pressure range [bar]	Service port 2 and 4	Voltage/frequency [V/Hz]	Power consumption [W]	Article no. DC coil
Extendable single valves with module flange for supply ports 1 and 3, with rectangular plug							
C 3/2 way servo-controlled solenoid valve, normally closed, with manual override	4.0	300	2...10	Push-in connection Ø 6 mm under with RSV (Option A) ⁴⁾	024/DC	2	145993
G 4/2 way servo-controlled solenoid valve, with manual override	4.0	300	2...10	G 1/8 with 1 way restrictor valve (Option B)	024/DC	2	145997
				Push-in connection Ø 6 mm on side (Option F)	024/DC	2	145998
				Push-in connection Ø 6 mm underneath (Option C)	024/DC	2	145999

4) RSV = non-return valve



Accessories

5470 R

Version	Port connection	Article no. DC coil
Connector modules and accessories for valve blocks		
Connector module, left	G 1/8	133175
	G 1/4	132512
	Push-in connection Ø 8 mm	623755
	Push-in connection Ø 10 mm	623762
Connector module, right	G 1/8	133177
	G 1/4	132514
	Push-in connection Ø 8 mm	623770
	Push-in connection Ø 10 mm	623784
Intermediate supply	G 1/8	627742
	G 1/4	631288
	Push-in connection Ø 8 mm	631287
	Push-in connection Ø 10 mm	631290
Blanking plug	G 1/8	631019
	G 1/4	631020
Blanking plug	Ø 6 mm	015397
	Ø 8 mm	900065
Covering plate	for unused valve positions	643223

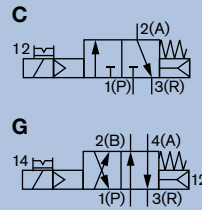
Version	Article no. DC coil
Additional accessories	
Extendable cable plug Type 1057-SA, IP20, with looped-through neutral and protective conductor (only for 24 V)	647357
Protective conductor and neutral cable kit	629262
Control line with AMP plug, 540 mm wires	629181
Standard 300 mm rail for 8...12 way block with intermediate supply (IS) or for 8...14 way block without IS	640789
Standard 498 mm rail for 17...22 block with 2 intermediate supply (IS) or for 18...23 block with 1 IS	630579

Description	Feature	Article no.
Rectangular cable plug Type 2505 - see Type 2505 ▶		
Raster 5.08 mm	3 m cable	133486
Raster 5.08 mm	300 mm flying leads	644068
Raster 5.08 mm	2 single contacts	644067

3/2 and 4/2 way NAMUR Solenoid Valve for pneumatic

5470 NAMUR
5470 NAMUR Ex i

- Extreme switching reliability
- Plastic version
- Reduced power consumption
- With manual override



The NAMUR solenoid valves, Type 5470 NAMUR and Type 5470 NAMUR Ex i, are equipped with a NAMUR standard flange for easy direct mounting on process actuator. The devices of this series are made from high quality plastics.

Technical data

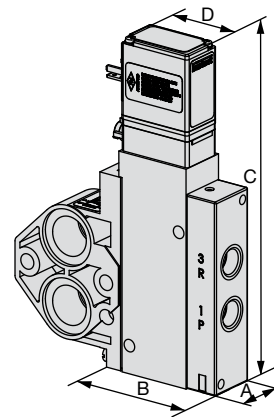
General data		
Pressure range	2...10 bar Standard, 2...8 bar Ex i	
Media temperature	-10 °C...+50 °C	
Ambient temperature	+55 °C max.	
Body material	Polyamide	
Connections	G ¼ (Brass nickel-plated for Connection 1 and 3)	
Orifice	4 mm	
Seal material	NBR	
Voltage tolerance	±10 %	
Duty cycle	100 % continuous rating	
Electrical connection	Tag connector according to DIN EN 175301 (previously DIN 43650) for cable plug Form C (not included)	
Protection class	IP65 (NEMA4) with Cable Plug	
Response times¹⁾		
Standard	Opening 50 ms, Closing 12 ms	
Ex i	Opening 60 ms, Closing 50 ms	
Electrical data - coil AC10 Ex i		
Ignition protection class	II 2G Ex ia IIC T6 PTB 01 ATEX 2175	
Functional values for valve switching function		
	at +20 °C	at +55 °C
Minimum switching current	29 mA	29 mA
Nominal resistance of the coil	320 Ω	360 Ω
Minimum terminal voltage	9,3 V	10,4 V
Permissible maximum values acc. to certificate of conformity		
U _i	35 V	
I _i	0,9 A	
P _i /T _{umg. max.}	0,9 W/+55 °C	

¹⁾ Measurement at the valve outlet 6 bar and +20 °C acc. to ISO 12238. Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

Options

- Without manual override
- SIL certificate
- Further versions see data sheet or on request

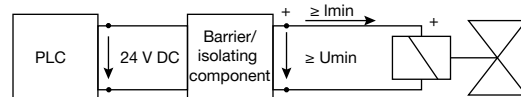
Dimensions [mm]



Port connection	A	B	C	D
G ¼	18	55	115.3	37

Installation note

The units may only be used in explosive atmospheres in the manner approved by the Federal Institute of Physics and Technology (PTB), i.e., the permissible maximum electrical values must be complied with. Suitable barriers and isolating modules are available for this.



The valve is intended for operation on 24 V DC outputs via the intermediate switching of a corresponding intrinsically-safe operating resource (isolating module or barrier). If required, request the "Recommended Barrier and Isolating Module" data sheet.

Ordering chart

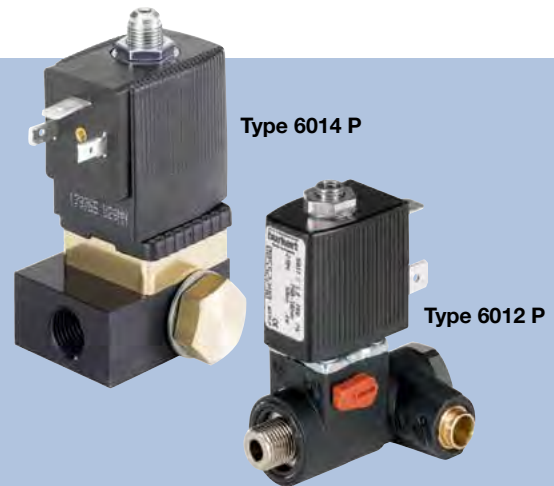
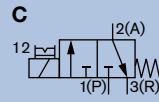
Circuit function	Orifice [mm]	Q _{NH} Value air [l/min]	Pressure [bar]	Port connection	Article no.			
					024/DC [2 W]	110...120/DC [3 W]	220...240/DC [3 W]	Ex i
3/2 way with NAMUR flange								
C 3/2 way servo-controlled solenoid valve, normally closed, with manual override	4.0	300	2...10 (at Ex i 2...8)	G 1/8 (Connections 1 and 3)	136761	136762	136763	139224
				Push-in connection Ø 6 mm (Connections 1 and 3)	136764	-	136766	139402
4/2 way with NAMUR flange								
G 4/2 way servo-controlled solenoid valve, with manual override	4.0	300	2...10 (at Ex i 2...8)	G 1/8 (Connections 1 and 3)	136767	136768	136769	139407
				Push-in connection Ø 6 mm (Connections 1 and 3)	136770	136771	136772	139408
				G 1/8 (Connections 1 and 3), NAMUR flange with one way flow restrictor (Connections 2 and 4)	136773	136774	136775	-

5470 NAMUR
5470 NAMUR Ex i

Note: Cable plug, see **Type 2508** ► (will be replaced with Type 2518)

Direct mounting pilot valve for pneumatic actuators

- Simple to connect to valve and air supply
- Low power
- Tough and reliable
- Manual override as standard



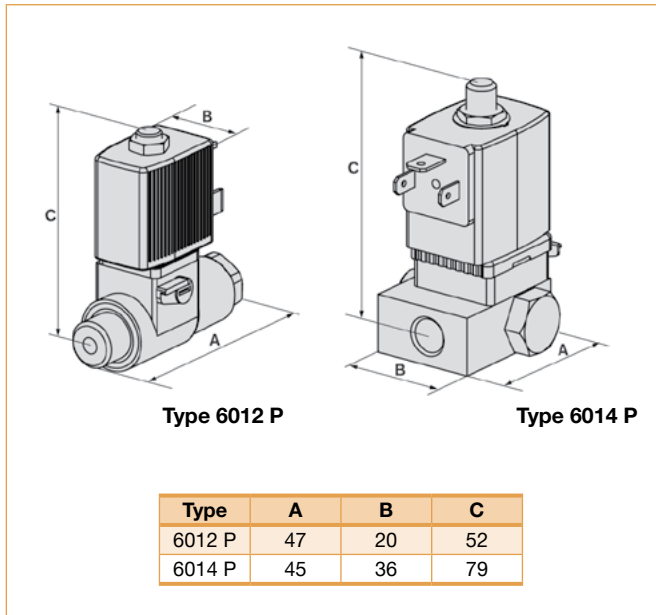
Direct-acting, 3/2 way, normally closed solenoid valve is plunger operated and designed to fit simply and securely to process valves. Type 6012 P has a compact design and a 1.2 mm orifice. Type 6014 P with a higher air capacity because of the 2 mm orifice.

Technical data

	6012 P	6014 P
Pressure range	0...10 bar max.	0...10 bar max.
Temperature media	-10 °C...+60 °C	-10 °C...+60 °C
Ambient temperature	-10 °C...+40 °C	-10 °C...+40 °C
Body material	Polyamide	Brass and aluminium
Banjo bolt material	Brass, nickel plated	Brass, nickel plated
Seal material	Banjo screw: NBR Valve: FKM	FKM
Coil material	Epoxy (Class H)	Polyamide
Voltage tolerance	± 10 %	± 10 %
Power consumption	DC: 4 W AC: 9 VA (inrush) 6 VA (hold)	DC: 8 W AC: 24 VA (inrush) 17 VA (hold)
Protection class	IP65 (with cable plug)	IP65, NEMA 4 (with cable plug)
Electrical connection	Cable plug, Type 2507, Form B acc. to industry standard (not included)	Cable plug, Type 2508 (will be replaced with Type 2518), Form A acc. to DIN EN 175301-803 (not included)
Response times¹⁾		
DC opening	7...12 ms	ca. 18 ms
DC closing	7...12 ms	ca. 22 ms
AC opening	7...10 ms	ca. 18 ms
AC closing	9...12 ms	ca. 22 ms

¹⁾ Measurement at the valve outlet 6 bar and +20 °C
Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

Dimensions [mm]



Options

6012 P

- Normally open
- Cable plug with LED and varistor
- Other voltages on request

6014 P

- Normally open
- Cable plug with LED and varistor
- Hazardous area approvals
- Further versions see data sheet or on request

Ordering charts

Circuit function	Port (P)	Port (A)	Orifice [mm]	Q _{Nn} [l/min]	Pressure range [bar]	Article no. voltage/frequency [V/Hz]		
						024/DC	024/50	230/50
Type 6012 P								
C 3/2 way direct-acting solenoid valve, normally closed, with manual override	6 mm tube	G 1/8	1.2	48	0...10	552287	552288	552290
	6 mm tube	G 1/4	1.2	48	0...10	552283	552284	552286
	G 1/8	G 1/8	1.2	48	0...10	552299	552300	552302
	G 1/4	G 1/8	1.2	48	0...10	552295	552296	552298
	G 1/4	G 1/4	1.2	48	0...10	552291	552292	552294

Note: Cable plug, see **Type 2507** ▶

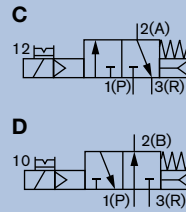
Circuit function	Port (P)	Port (A)	Orifice [mm]	Q _{Nn} [l/min]	Pressure range [bar]	Article no. voltage/frequency [V/Hz]		
						024/DC	024/50	230/50
Type 6014 P								
C 3/2 way direct-acting solenoid valve, normally closed, with manual override	G 1/4	G 1/4	2	120	0...10	424103	424104	424107

Note: Cable plug, see **Type 2508** ▶ (will be replaced with Type 2518)

3/2 way Solenoid Valve for pneumatics

6518

- High flow-rate capacity
- Single or manifold mounting
- Circuit function NC and NO
- Push-over solenoid coil
- Reduced power consumption
- With manual override



Type 6518 is a pilot operated 3/2 way valve. The use of high quality materials allows the valves to be used even in outdoor and chemical environments. The valve can be used individually or in blocks.

Technical data

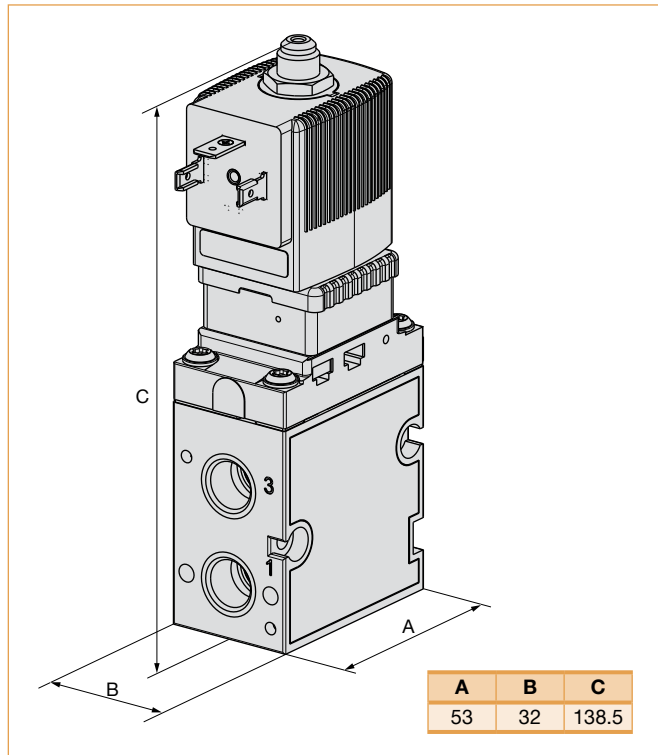
Orifice	DN8.0
Body material	Polyamide, reinforced
Thread insert material	Brass (stainless steel on request)
Seal material	NBR and PUR
Medium	Compressed air, neutral gases
Medium temperature	-10 °C...+50 °C
Ambient temperature	-25 °C...+55 °C
Supply ports	1 and 3
	Threaded port G ¼, can also be flanged
Service port	2
	Threaded port G ¼
Voltage tolerance	± 10 %
Duty cycle	100 % continuous rating
Electrical connection	Tag connector acc. to DIN EN 175301-803 (previously DIN 43650) Form A for cable plug, Type 2508 (will be replaced with Type 2518) (not included)
Power consumption	AC 11 VA (inrush), 6 VA (hold), DC 2 W
Protection class	IP65 with cable plug
Installation	As required, preferably with actuator upright
Response times¹⁾	
	Opening 20 ms
	Closing 40 ms

¹⁾ Measurement at the valve outlet 6 bar and +20 °C acc. to ISO 12238
Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

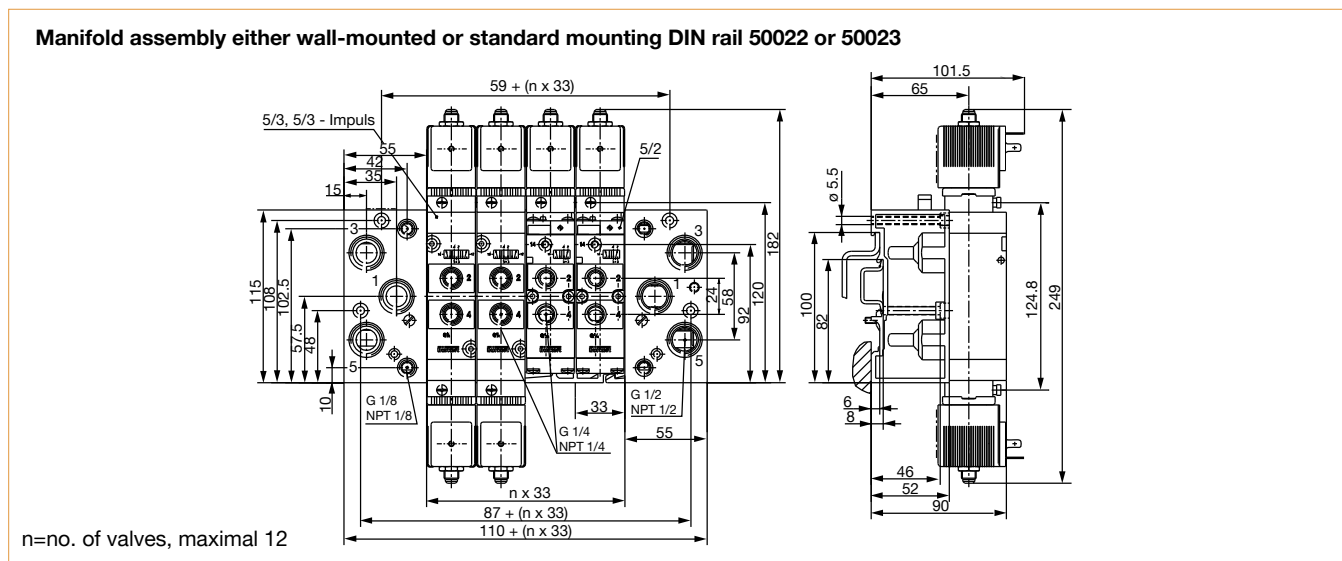
Options

- ATEX approvals
- Without manual override
- Further versions see data sheet or on request

Dimensions [mm]



Dimensions Type MP07 pneumatic modules [mm]



Valve assembly on pneumatic modules Type MP07 using the supplied M4 screws

Ordering chart

Circuit function	Orifice [mm]	Q_{Nn} value air [l/min]	Pressure range [bar]	Nominal power [W]	Article no. per Voltage/frequency [V/Hz]		
					024/DC	024/50...60	230/50...60
NBR and PUR (polyamide), threaded port connection G ¼							
C 3/2 way servo-controlled solenoid valve, normally closed, with manual override	8.0	1300	2...8	2	132457	132458	132460
D 3/2 way servo-controlled solenoid valve, normally open, with manual override	8.0	1300	2...8	2	132461	132462	132464

Note: Cable plug, see **Type 2508** ▶ (will be replaced with Type 2518)

Accessories

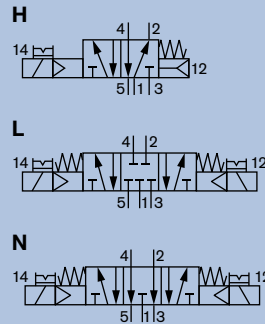
Description	Article no.
Connector module right G ½	635331
Intermediate supply module	637505
Pneumatic basic module, 2 valves universal (for 3/2-, 5/2- and 5/3 way)	635319
Pneumatic basic module, 3 valves universal (for 3/2-, 5/2- and 5/3 way)	635343
Connector module left G ½	635324
Covering plate for 5/2- and 5/3 way (to cover unused valve positions)	635335
Covering plate for 3/2 way (to cover unused connections)	635337
Blanking plug G ⅜	780141
Blanking plug G ¼	780142
Blanking plug G ½	780144
Silencer G ⅜ ¹⁾	780779
Silencer G ¼ ¹⁾	780780
Silencer G ½	780782
Labelling plate (64 pieces)	635411

¹⁾ Packaging unit; 10 pieces

5/2 and 5/3 way Solenoid Valve for pneumatics

6519

- High flow rate
- Low power consumption
- Single and manifold assembly
- High switching reliability
- Manual override as standard
- Corrosion-resistant construction



Type 6519 is a pilot operated 5/2 or 5/3 way valve. The valve width of 32 mm allows high flow rates. The use of high quality materials allows the use of the valves even under outdoor and chemical atmosphere. The valves can be used individually or in blocks.

Technical data

Orifice	DN8.0 and DN9.0
Body materials	
Pilot valve	Polyamide
Main valve	5/2 way; polyamide, 5/3 way; aluminium
Thread insert material	Brass (stainless steel on request)
Seal material	NBR, NBR and PUR
Pneumatic connections	
Supply ports 1,3,5	Threaded port G 1/4, can also be flanged
Service ports 2 and 4	Threaded port G 1/4 (on request NPT 1/4)
Electrical connection	Tag connector acc. to DIN EN 175301-803 Form A, Type 2508 (will be replaced with Type 2518) (not delivered)
Protection class	IP65 with cable plug
Operating voltage	24 V DC, 24/110/230 V, 50...60 Hz
Voltage tolerance	± 10 %
Power consumption	AC 11 VA (inrush), 6 VA (hold), DC 2 W
Power consumption coil	2 W (100 % continuous rating)
Ambient temperature	-25 °C...+55 °C
Mediums	Lubricated or non-lubricated compressed air, neutral gases Technical vacuum
on request	
Environmental conditions	Open air, chemical atmosphere
Response times¹⁾	
Opening	20 ms
Closing	40 ms

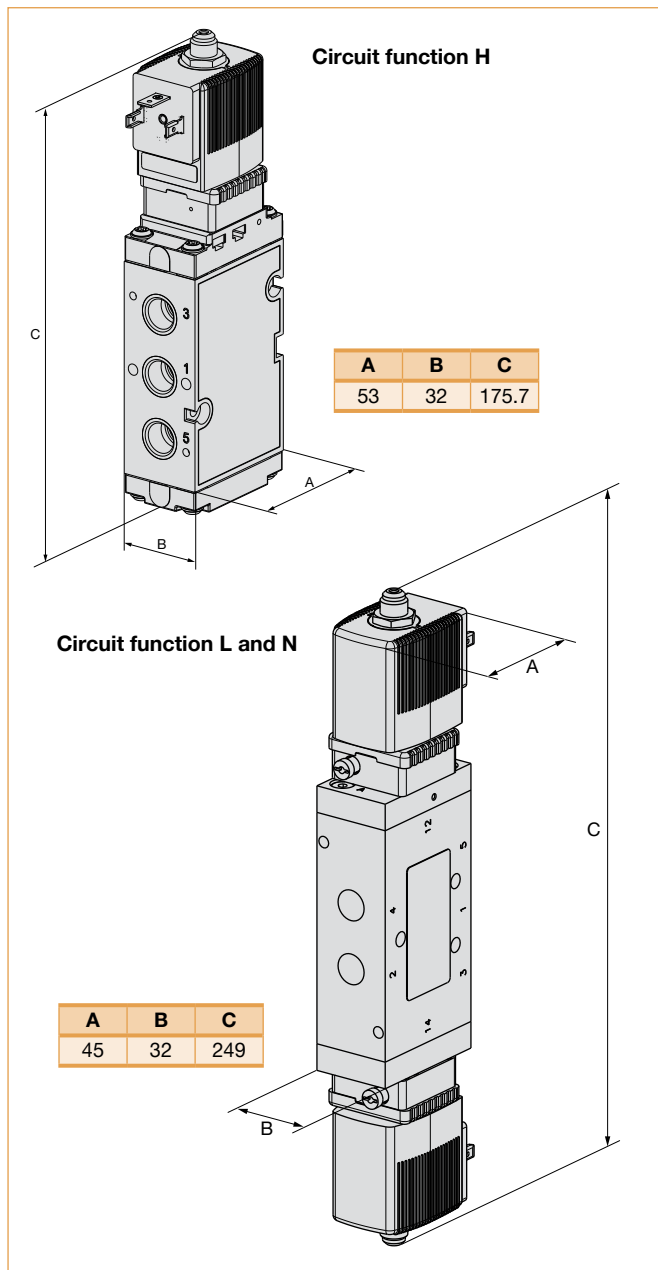
1) Measurement at the valve outlet 6 bar and +20 °C acc. to ISO 12238
Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

Note: Pneumatic module see **Type 6518** ▶

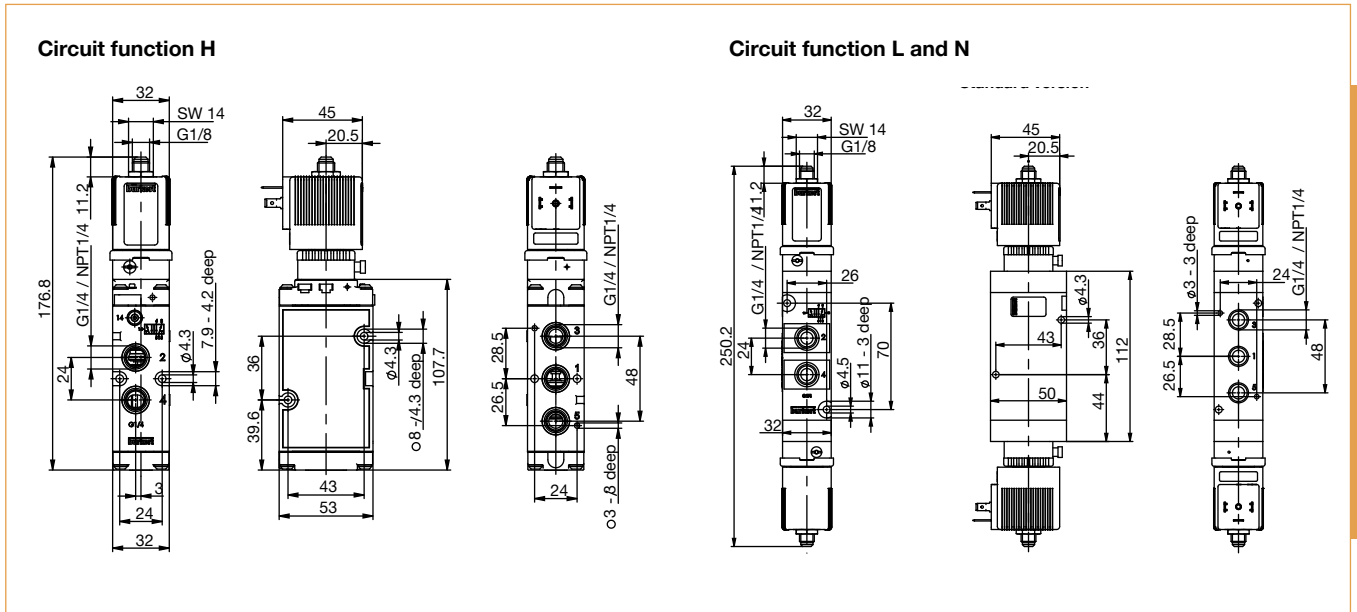
Options

- Further versions see data sheet or on request

Dimensions [mm]



Dimensions [mm]



Ordering chart

Circuit function	Orifice [mm]	Seal material (body material)	Port connection threaded port	Q_{Nn} -value air ¹⁾ [l/min]	Pressure range ²⁾ [bar]	Mass [g]	Nominal power [W]	Voltage/frequency [V/Hz]	Article no.
Type 6519 threaded version – thread insert material brass, threaded port 1, 3 and 5 can also be flanged									
H 5/2 way servo-controlled solenoid valve, pilot air and manual override	8.0	NBR and PUR (Polyamide)	G 1/4	1300	2...8	450	2	024/DC	132465
								024/50...60	132466
								110/50...60	132467
								230/50...60	132468
L 5/3 way solenoid valve, in middle position all ports locked, with manual override	9.0	NBR (Aluminium)	G 1/4	1300	3...10	720	2	024/DC	132469
								024/50...60	132470
								110/50...60	132471
								230/50...60	132472
N 5/3 way valve, in middle position ports 2 and 4 exhausted, with manual override	9.0	NBR (Aluminium)	G 1/4	1300	3...10	720	2	024/DC	132473
								024/50...60	132474
								110/50...60	132475
								230/50...60	132476

1) Flow rate: Q_{Nn} value air [l/min]: Measured at +20 °C, 6 bar pressure at valve inlet, 1 bar pressure difference

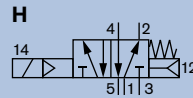
2) Pressure values [bar]: Gauge pressures with respect to the prevailing atmospheric pressure

Note: Cable plug, see **Type 2508** (will be replaced with Type 2518)

5/2 way solenoid valve for pneumatics, Ex i version

6519 Ex i

- Intrinsically safe version
- High flow rate
- High switching reliability
- Corrosion-resistant construction



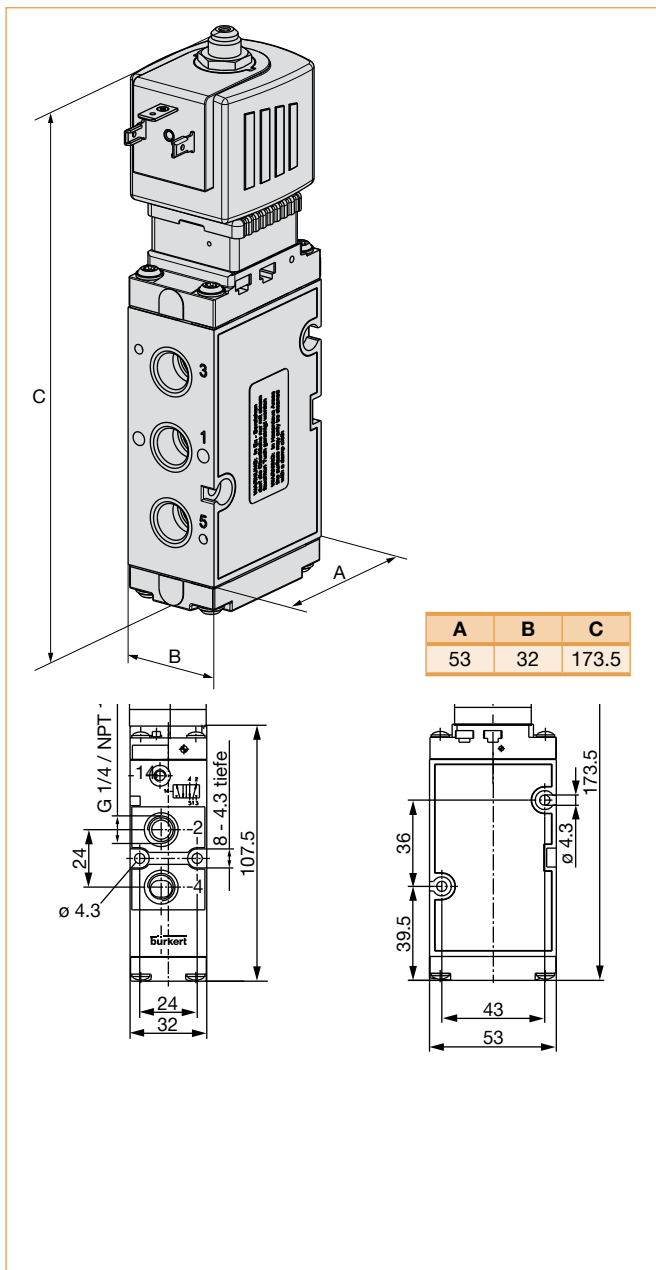
The 6519 Ex i valve consists of an intrinsically-safe pilot control and a pneumatic amplifier. The diaphragm-controlled valve seats work with very low friction, ensuring reliable switching of the valve, even after long shutdown periods.

Technical data

General data		
Orifice	DN8.0	
Body materials		
Pilot valve	Stainless steel 1.4305 or brass	
Main valve	Polyamide, glass-fibre reinforced	
Thread insert material	Stainless steel or brass, nickel-plated	
Seal material	NBR and PUR	
Pneumatic connection		
Supply ports 1,3,5	Threaded port G 1/4	
Service ports 2 and 4	Threaded port G 1/4	
Electrical connection	Tag connector acc. to DIN EN 175301-803 Form A (previously DIN 43650) for cable plug Type 2508 (will be replaced with Type 2518) (not included). Ensure correct polarity!	
Protection class	IP65 with cable plug	
Ambient temperature	-25 °C...+55 °C	
Medium	Lubricated or non-lubricated compressed air, instrument air, nitrogen	
Environmental conditions	Open air, chemical atmosphere	
For use in zone	1, 2, 21 and 22	
Response times¹⁾		
Opening	75 ms	
Closing	115 ms	
Electrical data - coil AC10 Ex i		
Approval	II 2G Ex ia IIC T6 PTB 01 ATEX 2101 II 2D Ex ia D21 T 80 °C	
Functional values for valve switching function²⁾		
	at +20 °C	at +55 °C
Minimum switching current	29 mA	29 mA
Nominal resistance of the coil	310 Ω	360 Ω
Minimum terminal voltage	9.0 V	10.4 V
Permissible maximum values acc. to certificate of conformity		
Ui	35 V	
Ii	0.9 A	
Pi	1.1 W	

1) Measurement at the valve outlet 6 bar and +20 °C acc. to ISO 12238
Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %
2) With high impedance coil on request

Dimensions [mm]

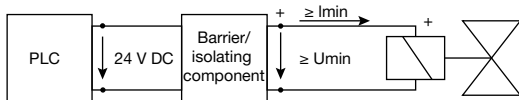


Options

- With manual override
- High impedance coil
- Further versions see data sheet or on request

Installation notes

- Valves with Ex i coil are not suitable for block construction.
- The units may only be used in explosive atmospheres in the manner approved by the Federal Institute of Physics and Technology (PTB), i.e., the permissible maximum electrical values must be complied with. Suitable barriers and isolating modules are available for this.



The valve is intended for operation on 24 V DC outputs via the intermediate switching of a corresponding intrinsically-safe operating resource (isolating module or barrier). If required, request the “Recommended Barrier and Isolating Module” data sheet.

Ordering chart

Circuit function	Orifice [mm]	Seal material (body material)	Port connection threaded port	Q_{Nn} -value air ¹⁾ [l/min]	Pressure range ²⁾ [bar]	Mass [g]	Body material pilot valve	Pilot air thread insert material	Article no.
Type 6519 threaded version Ex i									
H 5/2 way servo-controlled solenoid valve	8.0	NBR and PUR (Polyamide)	G 1/4	1300	2...8	670	St. St. 1.4305	St. St.	144484
							Brass	brass, nickel plated	144485
							Brass	brass, nickel plated	147252

1) Flow rate: Q_{Nn} value air [l/min]: Measured at +20 °C, 6 bar pressure at valve inlet, 1 bar pressure difference

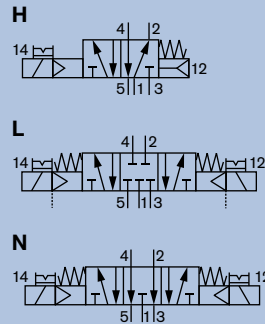
2) Pressure values [bar]: Gauge pressures with respect to the prevailing atmospheric pressure

Note: Cable plug, see **Type 2508** ▶ (will be replaced with Type 2518)

5/2 and 5/3 way Solenoid Valve for pneumatics, Ex m Version

6519 Ex m

- Ex m model with 3 m moulded cable
- High flow rate
- Single and manifold assembly
- High switching reliability
- Manual override as standard



The Ex m approval is achieved by the mounting of an approved push-over coil. The cable connection and the cable are non-detachable and sealed together with the valve. The valves can be used individually or in blocks.

Technical data

Orifice	DN08 and DN09
Body materials	Polyamide, glass fiber reinforced
Pilot valve and main valve	Polyamide, glass fiber reinforced
Thread insert material	Brass (stainless steel on request)
Seal materials	NBR, NBR and PUR
Pneumatic connection	
Supply ports 1.3.5	Threaded port G ¼, can also be flanged
Service ports 2 and 4	Threaded port G ¼ (on request NPT ¼)
Electrical connection	Moulded cable, 3 m (non-detachable), Terminal box on request
Protection class	IP65
Approvals	
Coil	PTB 14 ATEX 2023 X / IECEx PTB 14.0049 X II 2G Ex mb IIC T5 Gb II 2D Ex mb IIIC T 100 °C Db
Junction box	EPS16 ATEX 1046 X / IECEx EPS 16.0021 X II 2G EX eb mb IIC T5 Gb II 2D EX mb tb IIIC T100 °C Db
Operating voltage	24/110/230 V UC (all currents)
Voltage tolerance	± 10 %
Power consumption coil	3 W (100 % continuous rating)
Ambient temperature	-25 °C...+50 °C
Medium	Lubricated or non-lubricated compressed air, neutral gases technical vacuum
on request	
Environmental conditions	Open air, chemical atmosphere
For use in zone	1, 2, 21 and 22
Response times¹⁾	
Opening	20 ms
Closing	50 ms

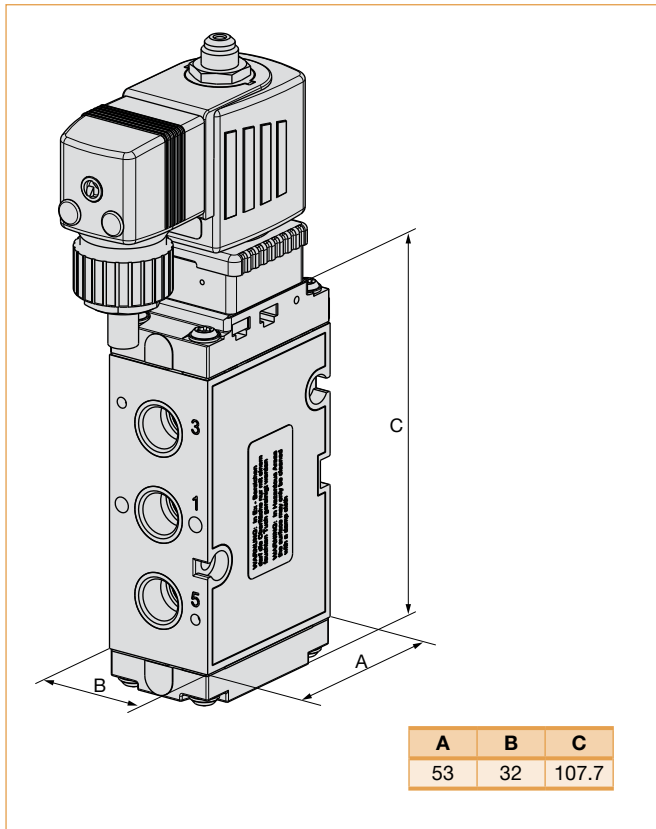
1) Measurement at the valve outlet 6 bar and +20 °C acc. to ISO 12238
Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

Note: pneumatic modules see **Type 6518** ▶

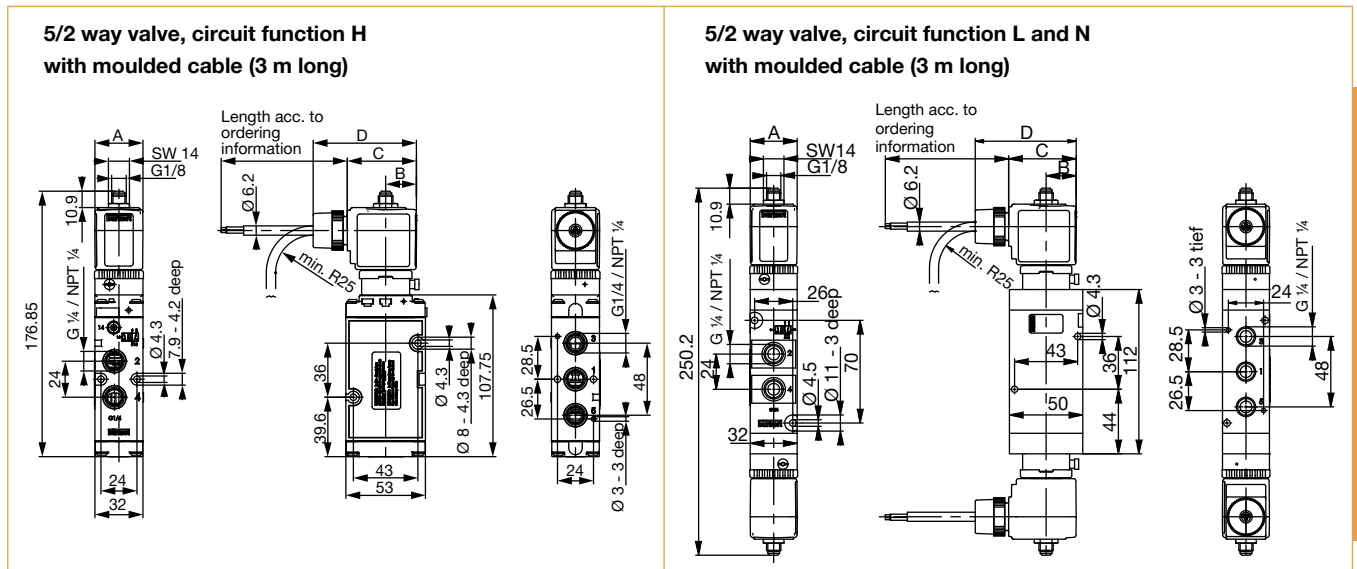
Options

- Further versions see data sheet or on request

Dimensions [mm]



Dimensions [mm]



Ordering chart

Circuit function	Orifice [mm]	Seal material and body	Threaded port connection	Q_{Nn} value Luft ¹⁾ [l/min]	Pressure range ²⁾ [bar]	Weight [g]	Nominal power [W]	Voltage/Frequency [V/Hz]	Article no.
Type 6519 Ex m – Brass threaded socket, also threads 1, 3 and 5 of multi-station manifold; with moulded cable, 3 m long³⁾									
H 5/2 way servo-controlled solenoid valve, pilot air and manual override	8.0	NBR and PUR (Polyamide)	G ¼	1300	2...8	700	3	024/UC	278209 ☞
								110/UC	278212 ☞
								230/UC	278213 ☞
L 5/3 way solenoid valve, in middle position all ports locked, with auxiliary pilot air and manual override	9.0	NBR (Aluminium)	G ¼	1300	3...10	1.100	3	024/UC	278221 ☞
								110/UC	on request
								230/UC	on request
N 5/3 way valve, in middle position ports 2 and 4 exhausted, with manual override	9.0	NBR (Aluminium)	G ¼	1300	3...10	1.100	3	024/UC	278222 ☞
								110/UC	on request
								230/UC	on request

1) Flow rate: Q_{Nn} value air [l/min]: Measured at +20 °C, 6 bar pressure at valve inlet and 1 bar pressure difference

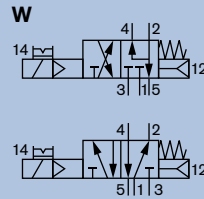
2) Pressure values [bar]: Overpressure with respect to atmospheric pressure

3) Circuit function H (5/2 way) as impulse version on request

5/2 on 3/2 way Convertible Solenoid Valve for pneumatics, NAMUR version

6519 NAMUR

- High flow rate
- Low power consumption
- High switching reliability
- Manual override as standard
- Corrosion-resistant construction



The solenoid valve, Type 6519 NAMUR, is provided with a NAMUR standard flange for easy, direct mounting to pneumatic actuators. It is manufactured from high-quality manmade materials.

Technical data

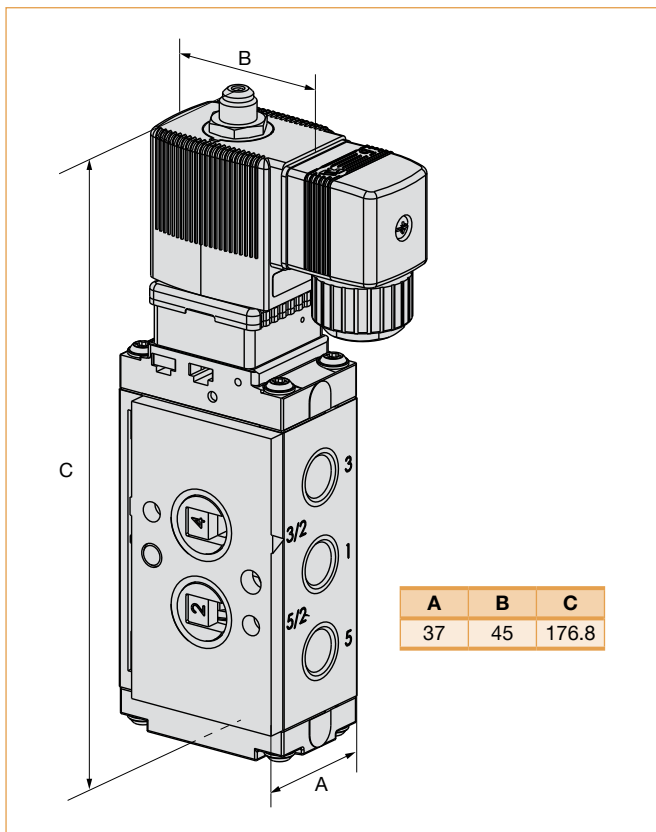
Orifice	DN6.0
Body Materials	Polyamide, glass fiber reinforced
Pilot valve and main valve	Polyamide, glass fiber reinforced
Thread insert material	Brass, nickel-plated or stainless steel
Seal material	NBR and PUR
Pneumatic connection	
Supply ports 1.3.5	Threaded port G ¼
Service ports 2 and 4	NAMUR flange
Electrical connection	Tag connector acc. to DIN EN 175301-803 Form A, Type 2508 (will be replaced with Type 2518) (not included)
Power consumption	AC 11 VA (inrush), 6 VA (hold), DC 2 W
Protection class	IP65 with cable plug
Operating voltage	024/DC, 024/230 V, 50...60 Hz
Voltage tolerance	± 10 %
Duty cycle	100 % continuous rating
Ambient temperature	-25 °C...+55 °C
Mediums	Compressed air, nitrogen, instrument air
Environmental conditions	Slightly aggressive, also open air
Response times¹⁾	
Opening	20 ms
Closing	40 ms

1) Measurement at the valve outlet 6 bar and +20 °C acc. to ISO 12238
Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

Options

- Further versions see data sheet or on request

Dimensions [mm]



Ordering chart

Circuit function	Orifice [mm]	Seal material and body	Material sockets ¹⁾	Threaded port connection	Q _{Nn} value Luft ²⁾ [l/min]	Pressure range ³⁾ [bar]	Weight [g]	Electrical nominal power [W]	Voltage/Frequency [V/Hz]	Article no.
W 5/2 or 3/2 way solenoid valve, with removable disk and manual override	6.0	NBR and PUR	Stainless steel	G ¼	900	2...8	460	2	024/DC	131425
									024/50...60	131426
									110/50...60	131427
									230/50...60	131428
	6.0	NBR and PUR	Brass, nickel plated	G ¼	900	2...8	460	2	024/DC	131421
									024/50...60	131422
									110/50...60	131423
									230/50...60	131424

1) When the connecting sockets are made of stainless steel, then the mounting screws are also made of stainless steel

2) Flow rate: Q_{Nn} value air [l/min]: Measured at +20 °C, 6 bar pressure at valve inlet and 1 bar pressure difference

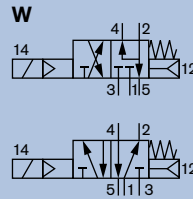
3) Pressure values [bar]: Overpressure with respect to atmospheric pressure

Note: All valves can be operated in circuit function C as well as in circuit function H. By replacing the adapter plate that comes with the valves, the change between the two circuit functions can be set up.

Cable plug, see **Type 2508** ▶ (will be replaced with Type 2518)

5/2 from 3/2 way Convertible Pneumatic Solenoid Valve, NAMUR Ex i Version

- Intrinsically Safe
- High flow rate
- High reliability
- Corrosion-resistant design

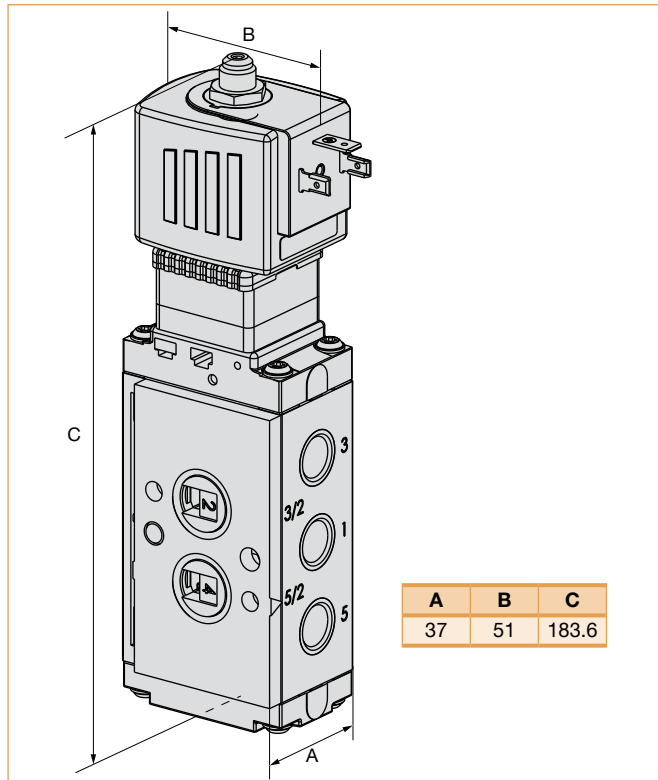


Type 6519 NAMUR Ex i is used for the pneumatic control of double or single-acting actuators with a NAMUR adapter plate flange. The circuit function can easily be changed using an adapter plate. In the 3/2 way function, feedback of the exhaust air takes place in the spring area of the armature drive. The diaphragm-controlled valve seats work with very low friction, ensuring reliable switching of the valve even after long shutdown periods and at ambient temperatures below 0 °C. The valves work without a continuous air consumption.

Technical data

General data		
Orifice	DN6.0	
Body materials		
Pilot valve	Stainless steel 1.4305 or brass	
Main valve	Polyamide, glass-fibre reinforced	
Thread insert material	Stainless steel or brass, nickel plated	
Seal materials		
FKM, NBR and PUR		
Pneumatic connection		
Supply ports 1,3,5	Threaded port G 1/4	
Service ports 2 and 4	NAMUR flange acc. to VDI/VDE 3845	
Electrical connection		
Tag connector acc. to DIN EN 175301-803 Form A (previously DIN 43650) for cable plug Type 2508 (will be replaced with Type 2518) (not included). Ensure correct polarity!		
Protection class	IP65 with cable plug	
Ambient temperature	-25 °C...+55 °C	
Medium	Lubricated or non-lubricated compressed air, instrument air, nitrogen	
Environmental conditions		
Open air, chemical atmosphere		
Response times¹⁾		
Opening	75 ms	
Closing	115 ms	
Electrical data - coil AC10 Ex i		
Approval	II 2G Ex ia IIC T6 PTB 01 ATEX 2101 II 2D Ex ia D21 T 80 °C	
Functional values for valve switching function²⁾		
	at +20 °C	at +55 °C
Minimum switching current	29 mA	29 mA
	310 Ω	360 Ω
Nominal resistance of the coil	9.0 V	10.4 V
Minimum terminal voltage		

Dimensions [mm]



Permissible maximum values acc. to certificate of conformity	
Ui	35 V
Ii	0.9 A
Pi	1.1 W

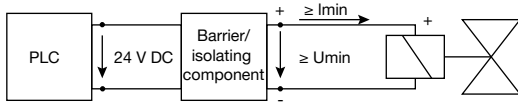
- 1) Measurement at the valve outlet 6 bar and +20 °C acc. to ISO 12238
 Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %
 2) With high impedance coil on request

Options

- With manual override
- High impedance coil
- Further versions see data sheet or on request

Installation note

The units may only be used in explosive atmospheres in the manner approved by the Federal Institute of Physics and Technology (PTB), i.e., the permissible maximum electrical values must be complied with. Suitable barriers and isolating modules are available for this.



The valve is intended for operation on 24 V DC outputs via the intermediate switching of a corresponding intrinsically-safe operating resource (isolating module or barrier). If required, request the “Recommended Barrier and Isolating Module” data sheet.

Ordering chart

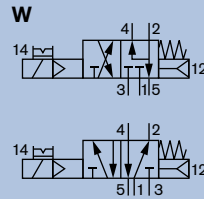
Circuit Function	Thread insert material	Port (P)	Orifice [mm]	Q_{Np} [l/min]	Pressure range [bar]	Article no.
Type 6519 NAMUR version, Ex i, 5/2 way convertible to 3/2 way¹⁾						
W	stainless steel	G ¼	6	900	2...8	144482
5/2 or 3/2 way solenoid valve, with removable disk	brass nickelplated	G ¼	6	900	2...8	144483
	brass nickelplated	G ¼	6	900	2...8	147244

1) The circuit function 3/2 way is setting by changing the mounting plate.

Note: Cable plug, see **Type 2508** ▶ (will be replaced with Type 2518)

5/2 on 3/2 way Convertible Solenoid Valve for pneumatics, NAMUR Ex m/me version

- Ex m model with 3 m cable
- High flow rate
- High switching reliability
- Manual override as standard
- Corrosion-resistant construction



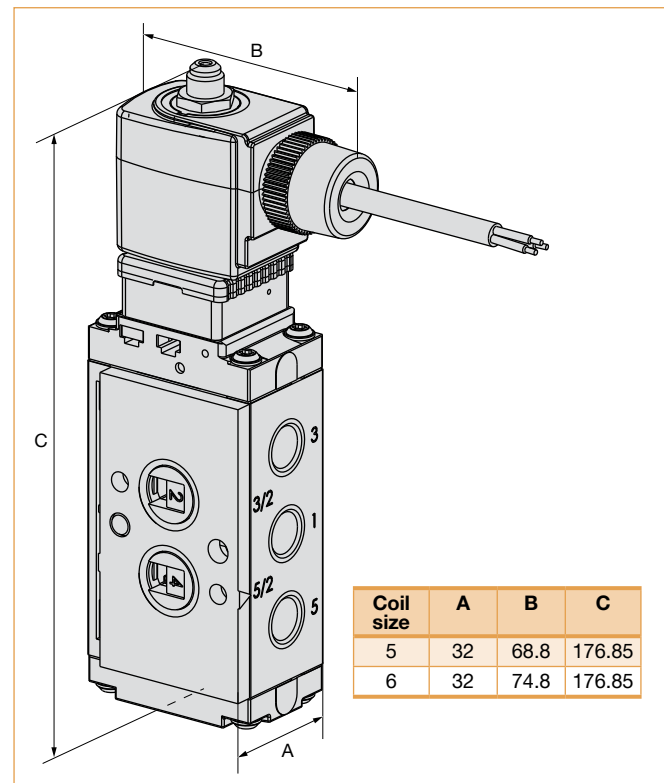
The valve made out of premium polyamide can be operated either as a 5/2 or a 3/2 way version through different mounting plates. The solenoid valve Type 6014 with a coil approved for use in hazardous areas is connected as a pilot. The NAMUR flange interface allows easy assembly on different pneumatic actuators on the spot.

Technical data

Orifice	DN6.0
Body materials	Pilot valve and main valve Polyamide, glass fiber reinforced
Thread insert material	Brass, nickel-plated or stainless steel
Seal material	NBR and PUR
Pneumatic connection	Supply ports 1,3,5 Threaded port G 1/4 Service ports 2 and 4 NAMUR flange
Electrical connection	Moulded cable, 3 m (non-detachable) or terminal box
Power consumption	Cable version 3 W, 5 W terminal box version with T5 and Tu 50 °C, 7 W with T4 and Tu 55 °C
Protection class	IP65
Approval	
Coil	PTB 14 ATEX 2023 X / IECEx PTB 14.0049 X II 2G Ex mb IIC T5 Gb II 2D Ex mb IIIC T 100 °C Db
Junction box	EPS16 ATEX 1046 X / IECEx EPS 16.0021 X II 2G EX eb mb IIC T5 Gb II 2D EX mb tb IIIC T100 °C Db
Operating voltage	24/230 V UC (universal current)
Voltage tolerance	± 10 %
Duty cycle	100 % continuous rating
Ambient temperature	-25 °C...+55 °C
Mediums	Lubricated or non-lubricated compressed air, nitrogen, instrument air
Environmental conditions	Slightly aggressive, also open air
Response times¹⁾	
Opening	20 ms
Closing	40 ms

1) Measurement at the valve outlet 6 bar and +20 °C acc. to ISO 12238
Opening: Pressure rise 0...90 %, Closing: Pressure drop 100...10 %

Dimensions [mm]

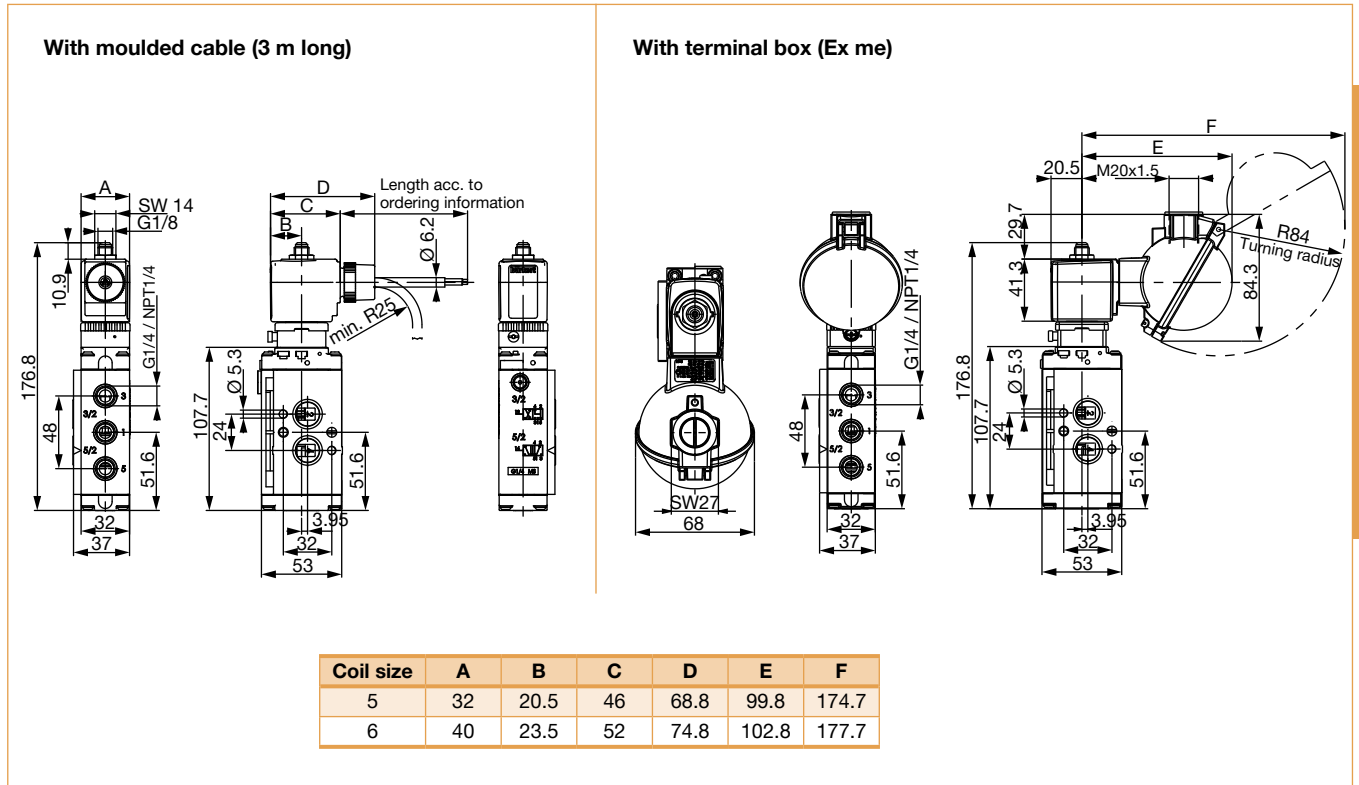


Coil size	A	B	C
5	32	68.8	176.85
6	32	74.8	176.85

Options

- Further versions see data sheet or on request

Dimensions [mm]



Ordering chart

Circuit function	Orifice [mm]	Seal material and body	Material sockets ¹⁾	Threaded port connection	Q _{Nn} value Luft ²⁾ [l/min]	Pressure range ³⁾ [bar]	Weight [g]	Electrical Nominal power [W]	Voltage/Frequency [V/Hz]	Article no.
Version acc. to Ex m, with moulded 3 m-cable										
W 5/2 or 3/2 way solenoid valve, with removable disk and manual override	6.0	NBR and PUR	Stainless steel	G ¼	900	2...8	650	3	024/UC	278231
									110/UC	278234
									230/UC	278237
			Brass, nickel plated	G ¼	900	2...8	650	3	024/UC	278228
									110/UC	278235
									230/UC	278239
Version acc. to Ex me, with junction box without fuse										
W 5/2 or 3/2 way solenoid valve, with removable disk and manual override	6.0	NBR and PUR	Stainless steel	G ¼	900	2...8	690	3	024/UC	289407
									230/UC	289415
			Brass, nickel plated	G ¼	900	2...8	690	3	024/UC	289406
									110/UC	289412
									230/UC	289414

1) When the connecting sockets are made of stainless steel, then the mounting screws are also made of stainless steel

2) Flow rate: Q_{Nn} value air [l/min]: Measured at +20 °C, 6 bar pressure at valve inlet and 1 bar pressure difference

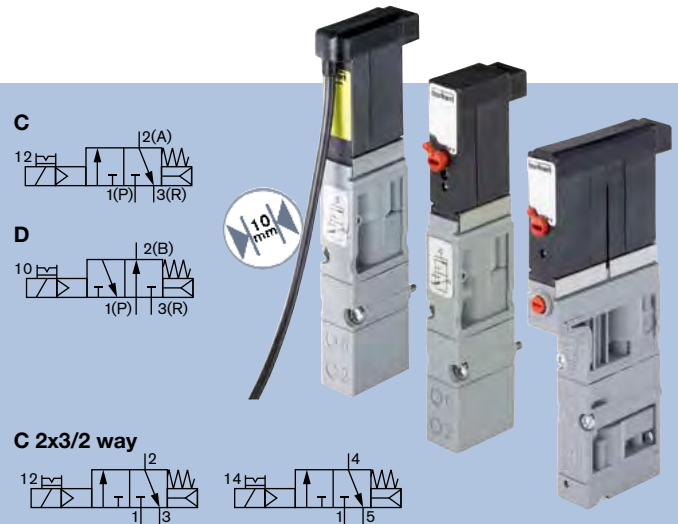
3) Pressure values [bar]: Overpressure with respect to atmospheric pressure

Note: All valves can be operated in circuit function C as well as in circuit function H. By replacing the adapter plate that comes § the valves, the change between the two circuit functions can be set up.

3/2 way and 2 × 3/2 way solenoid valve for pneumatics

6524

- Compact design
- Single and manifold mounting
- Low power consumption
- Fast response times
- Second connection shut-off function (optional)



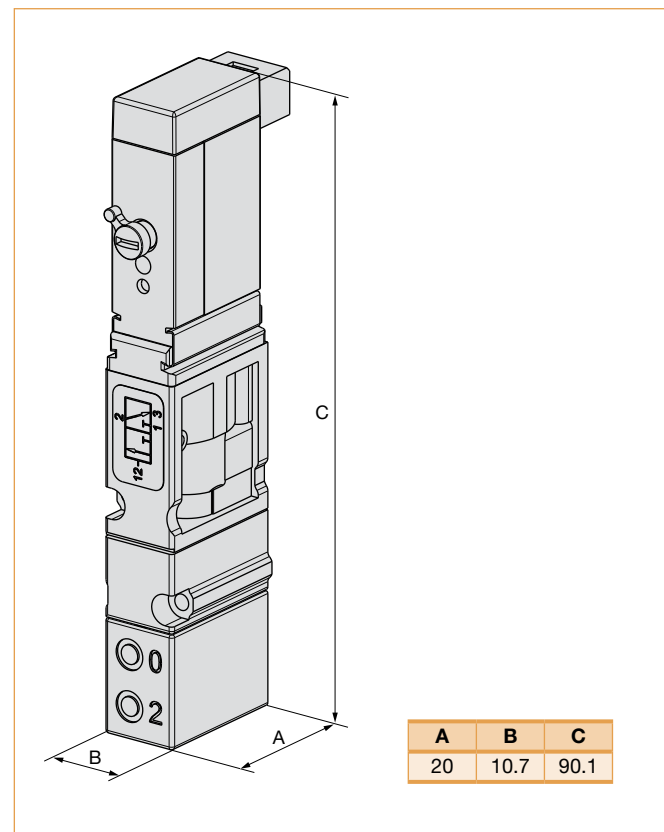
A compact manifold with a pitch of 11 mm per station can be put together from the components of Type 6524. Type 6524 consists of the pilot flipper solenoid valve, Type 6144 and a pneumatic seat valve. The flipper principle allows switching of high pressures together with low power consumption and fast response times. All valves are equipped with manual override as a standard. The 2 × 3/2 way valve version is the combination of two pilot flipper solenoid valves, Type 6144 and a pneumatic seat valve. The valve is also available with a second connection (pressed cable), whereby a safety related shut-off function is realized

Technical data

	3/2 way valve	2 × 3/2 way valve
Orifice	DN4.0	
Body material	PPS, PA	
Seal material	FKM, NBR	
Medium	Lubricated, oil free, dry compressed air; neutral gases (5 µm filter recommended)	
Medium temperature	- 10 °C...+ 50 °C	
Ambient temperature	- 10 °C...+ 55 °C	
Manual override	Standard	
Port connection	Flange for MP11	
Pneumatic module	Type MP11 with M5, M7, push-in connection Ø 6 mm	
Voltage tolerance	± 10 %	
Cycle rate	Approx. 1000 c.p.m.	
Voltage	24 V DC ¹⁾	
Nominal power	0.8 W	2 × 0.8 W
Duty cycle	Continuous operation (100 % ED)	
Electrical connection on valve (not included)	Rectangular plug with 2 pin raster 5.08 mm	Rectangular plug with 3 pin raster 2.54 mm
Protection class	IP40 with rectangular plug	
Protection class	3 acc. to VDE 0580	
Weight	20 g	40 g
Mounting	with 2 screws M2 × 20	with 2 screws M2 × 28
Installation	As required, preferably with actuator upright	
Response times [ms]	Measurement acc. to ISO 12238	
Opening	< 10 ms	
Closing	< 10 ms	

1) 10 % residual ripple allowed

Dimensions [mm]



Options

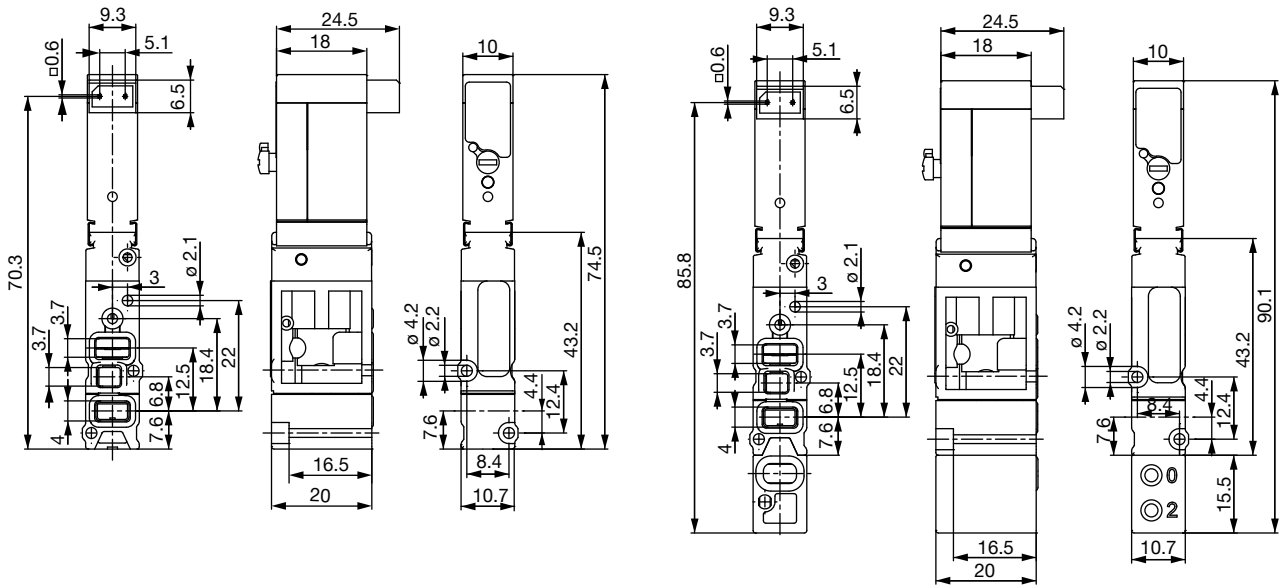
- Safety-related switch-off function (i.o.)
- Further versions see data sheet or on request

Dimensions [mm] 3/2 way and 2x3/2 way solenoid valve

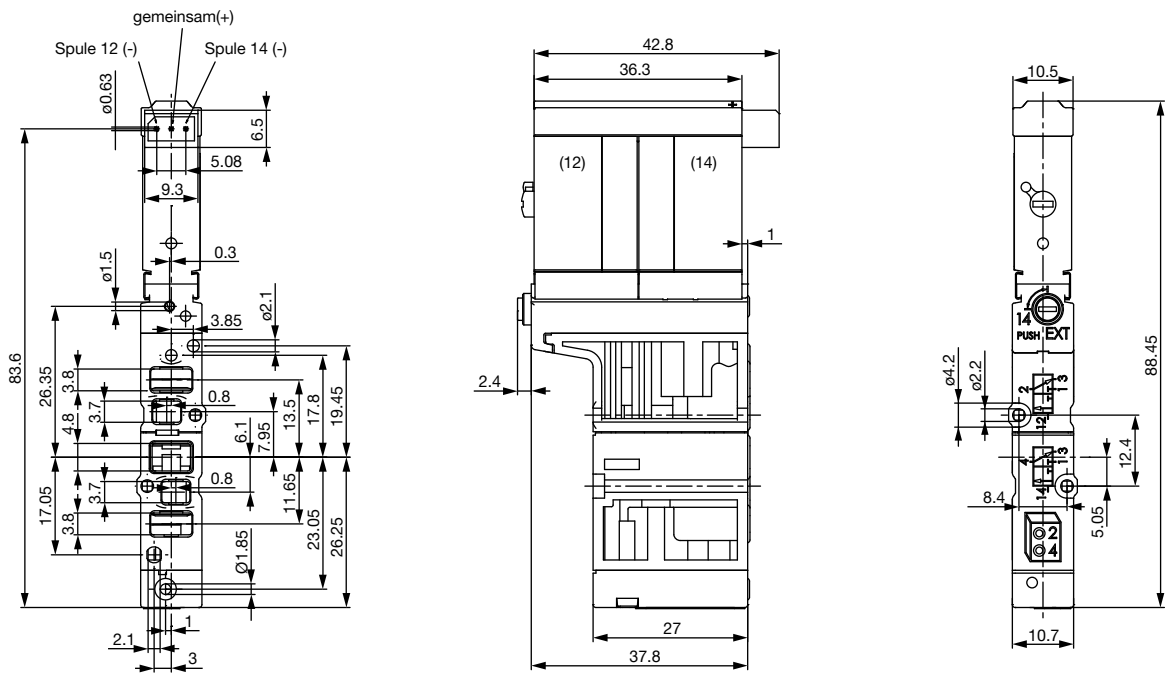
3/2 way solenoid valve

Without covering plate

With covering plate



2x3/2 way solenoid valve





Ordering chart

6524

Circuit function	Orifice [mm]	Q _{Nn} value air [l/min] ²⁾	Pressure range [bar] ³⁾	Voltage/frequency [V/Hz] ⁵⁾	Article no.
3/2 way solenoid valve					
C	4	300	Vac...10 ¹⁾	024 V DC	186258
3/2 way servo-controlled solenoid valve, normally closed, with manual override			1...10	024 V DC	186257
			2.5...10	024 V DC	184043
D	4	300	2.5...10	024 V DC	184400
3/2 way servo-controlled solenoid valve, normally open, with manual override					

Circuit function	Orifice [mm]	Q _{Nn} value air [l/min] ²⁾	Pressure range [bar] ³⁾	Voltage/frequency [V/Hz] ⁵⁾	Integrated power savings electronics	Article no.
2 x 3/2 way solenoid valve						
C	4	300	Vac...10 ¹⁾	024 V DC	Yes ⁴⁾	186259
2 x 3/2 way servo-controlled solenoid valve, normally closed, with manual override			2.5...10	024 V DC	Yes ⁴⁾	186260
			2.5...10	024 V DC	No	204710

1) Version with auxiliary pilot air

2) Measured at +20 °C, 6 bar pressure at valve inlet and 1 bar pressure difference

3) Measured as overpressure to the atmospheric pressure

4) Applicable on valve island 8640, AirLine system 8644 or valve blocks

5) 10 % residual ripple allowed

Accessories

Description	Version	Features	Article no.
Covering plate for 5/2 way valve position	Complete	for 1 unused valve position	650373
Covering plate for 2x3/2 way valve position		for 1 unused valve position	661092
Pneumatic connector module	Left	G 1/4	144750
		NPT 1/4	144751
	Right	G 1/4	144753
		NPT 1/4	144754
Pneumatic basic module MP11, 2 valves wide	Push-in connection Ø 6 mm	without check valve	144903
		without check valve for 2x3/2 way valve	170261
		with check valve in R+S for 2x3/2 way valve	170266
	Connection M7	without check valve	144905
		without check valve for 2x3/2 way valve	170263
		with check valve in R+S for 2x3/2 way valve	170276
Pneumatic basic module MP11, 8 valves wide	Push-in connection Ø 6 mm	without check valve	144912
		without check valve for 2x3/2 way valve	170279
		with check valve in R+S for 2x3/2 way valve	170285
	Connection M7	without check valve	144914
		without check valve for 2x3/2 way valve	170282
		with check valve in R+S for 2x3/2 way valve	170287

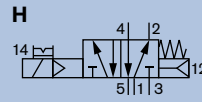
6524

Description	Feature	Article no.
Rectangular cable plug Type 2505 - see Type 2505 ▶		
Raster 5.08 mm	3 m cable	133486
Raster 5.08 mm	300 mm flying leads	644068
Raster 5.08 mm	2 single contacts	644067

5/2 way Flipper Solenoid Valve for pneumatics

6525

- Compact design
- Single and manifold mounting
- Low power consumption
- Fast response times
- Second connection shut-off function (optional)



The Type 6525 consist of a pilot flipper valve Type 6144 and a pneumatic seat valve. The flipper principle allows switching of high pressures together with low power consumption and fast response times.

All valves are equipped with manual override as a standard. The valve is also available with a second connection (pressed cable), whereby a safety-related shut-off function is realized.

Technical data

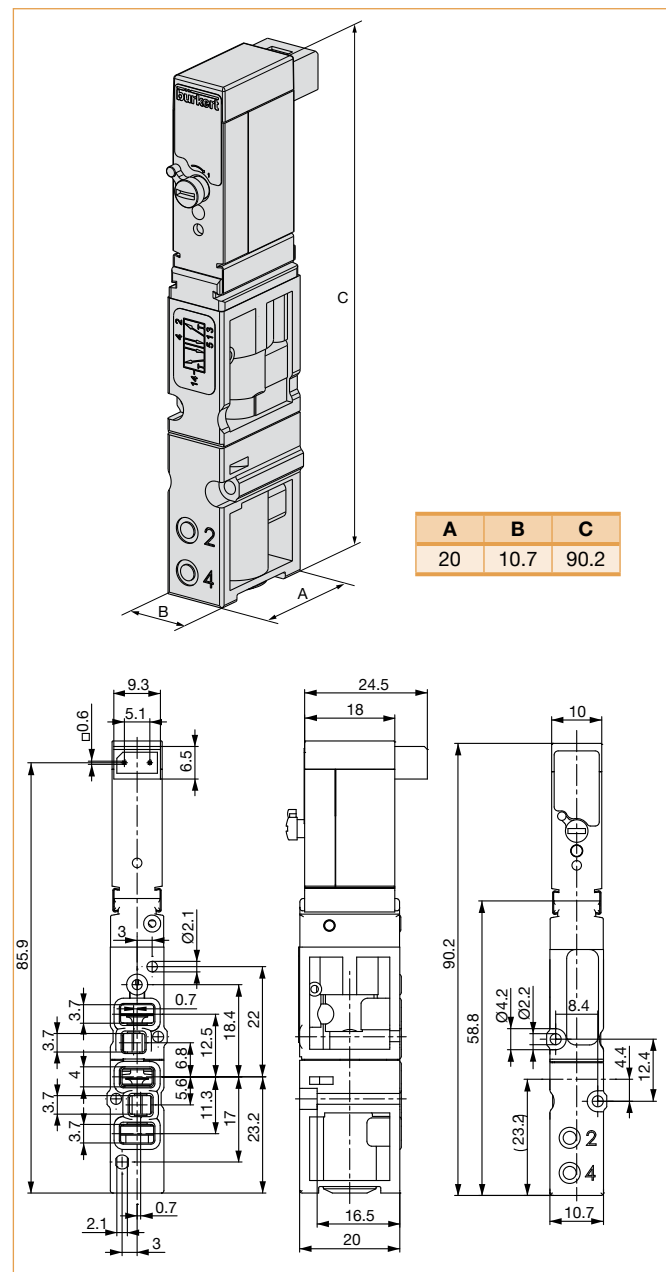
Orifice	DN4.0
Body material	PPS, PA
Seal material	FKM, NBR and PUR
Media	Lubricated, oil free, dry compressed air; neutral gases (5 µm filter recommended)
Media temperature	-10 °C...+50 °C
Ambient temperature	-10 °C...+55 °C
Manual override	Standard
Port connection	Flange for MP11
Pneumatic module	Type MP11 with M5, M7, push-in connection Ø 6 mm
Voltage tolerance	± 10 %
Cycling rate	Approx. 1000 c.p.m.
Voltage	24 V DC ¹⁾
Nominal power	0.8 W
Duty cycle	Continuous operation (100 % ED)
Electrical connection on valve	Rectangular plug with Raster 5.08 mm (not included)
Protection class	IP40 with rectangular plug
Protection class	3 acc. to VDE 0580
Weight	21 g
Mounting	2 screws M2 × 20
Installation	As required, preferably with actuator upright
Response times [ms]	Measurement acc. to ISO 12238
Opening	< 10 ms
Closing	< 10 ms

1) 10 % residual ripple allowed

Options

- Safety-related switch-off function (i.o.)
- Further versions see data sheet or on request

Dimensions [mm]



Ordering chart

Circuit function	Orifice [mm]	Q _{Nn} value air [l/min] ²⁾	Pressure range [bar] ³⁾	Response times		Voltage/ Frequency [V/Hz]	Article no.
				Opening [ms]	Closing [ms]		
H 5/2 way servo-controlled solenoid valve, pilot air and manual override	4	300	1...10 ¹⁾	<10	<10	024 V DC	186271
			2.5...10	<10	<10	024 V DC	179938

1) Version with auxiliary pilot air

2) Measured at +20 °C, 6 bar pressure at valve inlet and 1 bar pressure difference

3) Measured as overpressure to the atmospheric pressure

Accessories

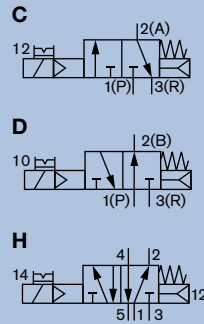
Description	Version	Features	Article no.
Rectangular cable plug	Raster 5.08 mm	with 3 m cable	133486
		with 300 mm flying leads	644068
		with 2 single contacts	644067
Protective cover for 5/2 way valve position	complete	for 1 unused valve position	650373
Pneumatic connector module	left	G ¼	144750
		NPT ¼	144751
	right	G ¼	144753
		NPT ¼	144754
Pneumatic basic module MP11, 2 valve wide	Push-in connection Ø 6 mm	without check valve	144903
		with check valve in R and S	144906
	Connection M7	without check valve	144905
		with check valve in R and S	144908
Pneumatic basic module MP11, 8 valve wide	Push-in connection Ø 6 mm	without check valve	144912
		with check valve in R and S	144915
	Connection M7	without check valve	144914
		with check valve in R and S	144917

Description	Feature	Article no.
Rectangular cable plug Type 2505 - see Type 2505 ▶		
Raster 5.08 mm	3 m cable	133486
Raster 5.08 mm	300 mm flying leads	644068
Raster 5.08 mm	2 single contacts	644067

3/2 and 5/2 way Solenoid Valve for pneumatic

6526 / 6527

- Modular valve block with 16.5 mm mounting pitch
- Low power consumption
- Rocker pilot in DC
- Fast response times



A compact manifold with a pitch of 16.5 mm per station can be put together from the components of Type 6526 / 6527. Type 6526 / 6527 consists of a pilot rocker valve, Type 6106 and a pneumatic seat valve. The rocker principle allows switching of high pressures together with low power consumption and fast response times. All valves are equipped with manual override as a standard.

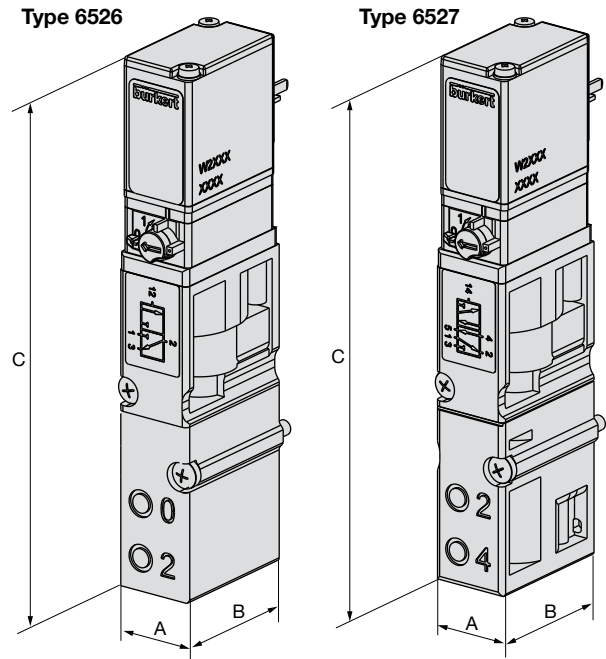
Technical data

Orifice	DN6.0
Body material	PA (Polyamide)
Seal material	NBR
Media	Lubricated and non-lubricated dry air; neutral gases (10 µm filtering)
Media temperature	-10 °C...+50 °C
Ambient temperature	-10 °C...+55 °C
Manual override	Standard
Port connection	Flange for MP12
Pneumatic module	Type MP12 with G ½, Push-in connection Ø 8 mm
Voltage tolerance	± 10 %
Voltage	24 V DC
Nominal power	2 W, 1 W
Duty cycle	Continuous operation (100 % ED)
Electrical connection	Tag connector acc. to DIN EN 175301-803 (previously DIN 43650) for cable plug, Form C (not included)
Protection class	IP65 (with cable plug)
Weight	Type 6526 85 g Type 6527 95 g
Mounting	With 2 screws M3×30
Installation	As required, preferably with actuator upright

Options

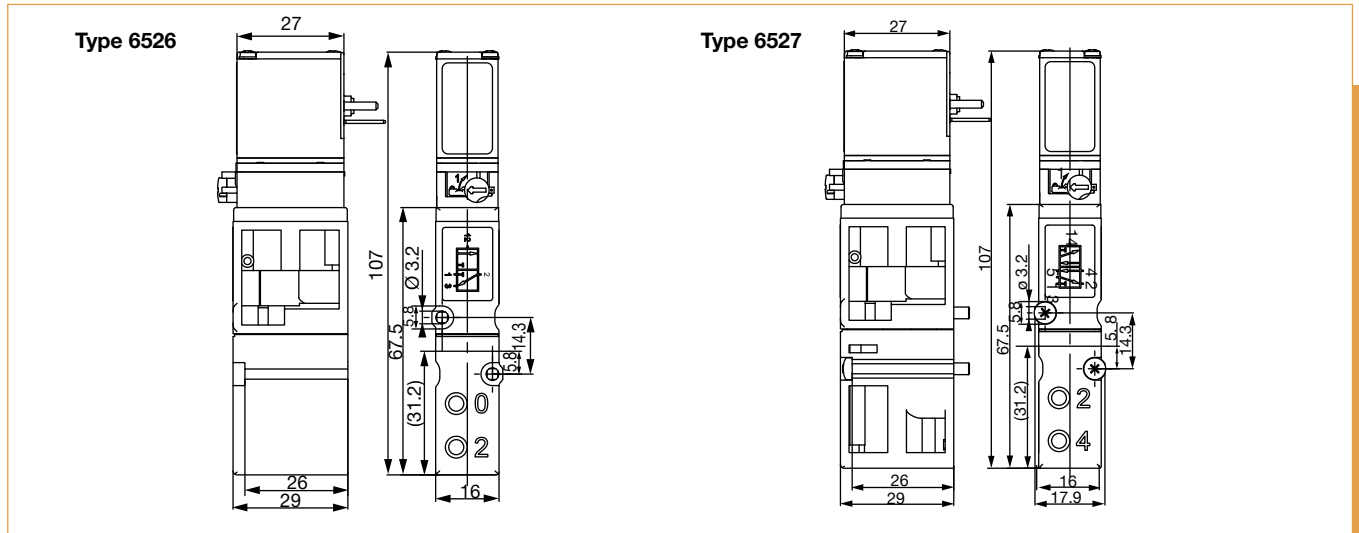
- Further versions see data sheet or on request

Dimensions [mm]



A	B	C
16	29	107

Dimensions [mm]



6526 / 6527

Ordering chart

Circuit function	Orifice [mm]	Q _{Nn} value air [l/min]	Pressure range [bar]	Power consumption [W]	Response times		Article no. 024 V DC
					Opening [ms]	Closing [ms] ³⁾	
3/2 way solenoid valve without cable plug, Type 6526							
C	6	700	1.0...10	2	20	12	156842
3/2 way servo-controlled solenoid valve, normally closed, with manual override	6	700	1.0...10	2	20	12	163028
			2.0...10	2	20	12	156318
			2.0...10	2	20	12	158944
			2.0...8.0	1	20	12	158947
D	6	700	1.0...10	2	20	12	163029
			2.0...10	2	12	20	156320
			2.0...10	2	20	12	158946

1) Electrical connection above manual override.

2) "long version": can be mounted together with Type 6527 on a valve island.

3) In combination with valve islands the closing time will be approx. 5 ms longer.

Circuit function	Orifice [mm]	Q _{Nn} value air [l/min]	Pressure range [bar]	Power consumption [W]	Response times		Article no. 024 V DC
					Opening [ms]	Closing [ms] ⁵⁾	
5/2 way solenoid valve without cable plug, Type 6527							
H	6	700	1.0...10	2	20	12	156828
			1.0...10	2	20	12	163030
			2.0...10	2	20	12	156337
			2.0...10	2	20	12	158942
			2.0...8.0	1	20	17	156827
			2.0...8.0	1	20	12	158943

4) Electrical connection above manual ride.

5) In combination with valve islands the closing time will be approx. 5 ms longer.
























Flow rate, Q_{Nn}-value air [l/min]: Measured at +20 °C, 6 bar pressure at valve inlet and 1 bar pressure difference

Pressure values [bar]: Measured as overpressure to the atmospheric pressure

Response times [ms]: Measures acc. to ISO 12238

Ordering chart

6526 / 6527

Module	Version	Feature	Article no.	
Type MP12 pneumatic modules				
Connection module	right	G 3/8	655110 	
		NPT 3/8	655112 	
	left	G 3/8	655109 	
		NPT 3/8	655111 	
Pneumatic basic module 2 valves	push-in connection Ø 8 mm	without check valve	156617 	
		with integrated check valve with R-channel	156635 	
		with integrated check valve with R and S-channel	156632 	
	connection G 1/8	without check valve	156620 	
		with integrated check valve with R-channel	156636 	
		with integrated check valve with R and S-channel	156633 	
	connection NPT 1/8	without check valve	156631 	
		with integrated check valve with R-channel	156637 	
		with integrated check valve with R and S-channel	156634 	
	Pneumatic basic module 4 valves	push-in connection Ø 8 mm	without check valve	156656 
			with integrated check valve with R-channel	156662 
			with integrated check valve with R and S-channel	156659 
connection G 1/8		without check valve	156657 	
		with integrated check valve with R-channel	156663 	
		with integrated check valve with R and S-channel	156660 	
NPT 1/8		without check valve	156658 	
		with integrated check valve with R-channel	156664 	
		with integrated check valve with R and S-channel	156661 	
Covering plate	-	for unused valve positions	653765 	

Note: Cable plug, see **Type 2508** ▶ (will be replaced with Type 2518)



Overview for Valve Islands

Note: The following product overview does not show the complete product range of this catalogue. A complete overview can be found [here](#) ▶

Overview Valve Islands	Type	Function	Number of valves [max.]	Integrated feedback [max.]	Communication	Station width [mm]
	8640 ▶	3/2 way 2x 3/2 way 5/2 way	24	32	Collective connection, Multipol, PROFIBUS DP, DeviceNet, CANopen, PROFINET IO, EtherNet/IP, Modbus TCP	11, 16.5
8644 ▶	3/2 way 2x 3/2 way 5/2 way	64	Depending on I/O system	Compatible with Siemens ET 200S, Wago I/O-System 750, Rockwell Point I/O system, Phoenix Inline	11, 16.5	
8647 ▶	3/2 way 2x 3/2 way 5/2 way	64	Depending on I/O system	Compatible with Siemens ET 200SP	11	
8652 ▶	2x 3/2 way 5/2 way	48	48	PROFIBUS DP, Industrial Ethernet (PROFINET, EtherNet/IP, Modbus TCP, EtherCAT), CANopen / büS (for networking with Bürkert devices)	11	

1) Integrated HotSwap and/or non-return function reduces flow rate

2) Approvals on request

Q_{Nn} value air [l/min]	Pressure range [bar]	Housing material	Connection plate	Special features and options²⁾
300 (130) ¹⁾	2.5...10	PA (polyamide)	Option AirLINE Quick Aluminium or stainless steel	Pneumatic hot-swap function With check valves in R- and S-channel ¹⁾
300 (130) ¹⁾	2.5...10	PA (polyamide)	Option AirLINE Quick Aluminium or stainless steel	Pneumatic hot-swap function With check valves in R- and S-channel ¹⁾
300 (130) ¹⁾	2...7	PA (polyamide)	Option AirLINE Quick Aluminium or stainless steel	Pneumatic hot-swap function With check valves in R- and S-channel ¹⁾ Safety related shutdown of valves Option integrated pressure transmitter
300	3...10	PA (polyamide)	AirLINE Quick aluminium standard Option in stainless steel	Pneumatic hot-swap function With check valves in R- and S-channel ¹⁾ Simple diagnosis via LC display Safety related shutdown of valves

AirLINE and AirLINE Quick – Modular pneumatic valve unit

8640

- Compact design
- Modular configuration
- Higher flexibility in control cabinet due to AirLINE Quick
- Simple exchange of valves (with option “P-shut-off” – also possible during operation)



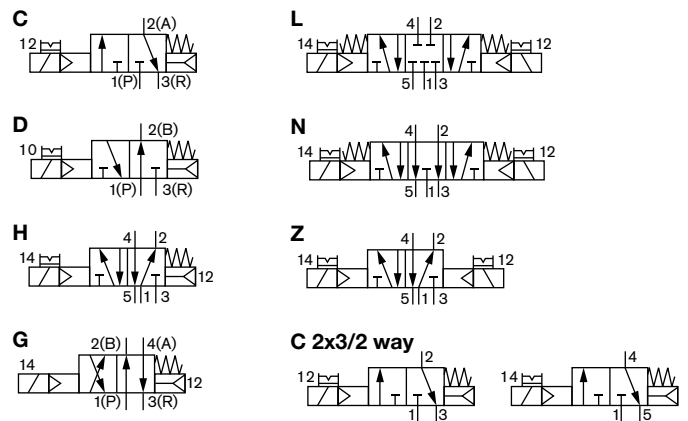
The 8640 valve unit system is designed to solve diverse and complex control problems due to its systematic modular construction and combination of pneumatic and electrical interfaces. By putting together a row of pneumatic modules with different numbers of valves, 2 to 24 valve functionalities may be realized on one valve unit.

Electrical connectivity is achieved by either fieldbus interfaces, common connection (parallel connection technique) or multipin interfaces. The valves allow different applications to be covered. Bodies and connection modules are made of high-quality plastic (polyamide) and are easy to assemble by means of the built-in snap connectors.


Technical data

Specification	Type 0460/6524/6525	Type 6526/6527	Type 5470
Mounting dimensions	11 mm	16.5 mm	18 mm
Ambient temperature	0 °C...+55 °C (by use of Type 0460: 0 °C...+50 °C)	0 °C...+55 °C	-10 °C...+55 °C
Pressure range	Vac.-10 bar	Vac.-10 bar	2...10 bar
Operating voltage	24 V DC	24 V DC	24 V DC
Voltage tolerance	±10 %	±10 %	±10 %
Protection class	3 acc. to VDE 0580	3 acc. to VDE 0580	3 acc. to VDE 0580
Duty cycle	Continuous operation (100 % ED)	Continuous operation (100 % ED)	Continuous operation (100 % ED)
Circuit functions	C and D (3/2) H (5/2) H (5/2) Impulse L (5/3) in middle position all ports closed N (5/3) in middle position all ports vented	C and D (3/2) H (5/2)	C and D (3/2) G (4/2)
Flow rate	300 l/min ¹⁾	700 l/min	300 l/min
Rated power	1 W	2 W, 1 W	1 W, 2 W, 3 W
No. of valve functionalities per unit	Max. 24	Max. 24	Max. 24
Feedback	Max. 32	Max. 32	Max. 32
Protection class	IP20 with terminals	IP20 with terminals	IP20 with terminals
Electric Connection	<ul style="list-style-type: none"> • Common connection (parallel connection) • Multipin (D-Sub, 25 pin) • Profibus-DP • DeviceNet • CANopen • Internal bus extension by Profibus DP • Profinet IO • Ethernet I/P • Modbus TCP 		
Total current	<p>As a function of the electrical connection technique</p> <p>Max. 3 A (sum of current through individual valves)</p> <p>Max. 3 A (sum of current through individual valves) + max. 3 A (repeater)</p> $I_{total} = I_{base} + (n \times I_{valve}) + (m \times I_{repeater})$ <p>n=quantity of valves, m=quantity of repeaters, I_{valve} = rated current of each valve</p> <p>$I_{repeater}$ = rated current of each repeater, $m \times I_{repeater}$ = max. 650 mA</p> <p>I_{base} = 200 mA spec. base current Profibus-DP 200 mA spec. base current DeviceNet</p>		

1) Maximum flow rate depending on valve function



Ordering chart replacement valves



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Circuit function	Orifice [mm]	Q _{Nn} value air [l/min] ¹⁾	Pressure range [bar]	Response times		Voltage/Frequency [V/Hz]	Article no.
				Opening [ms]	Closing [ms]		
11 mm width per station Multi-way solenoid valve Types 6524 and 6525							
C 3/2 way servo-controlled solenoid valve, normally closed, with manual override	4	300	Vac.-7	15	20	24 V DC ⁴⁾	186258
			1...10 ²⁾	15	20	24 V DC ⁴⁾	186257
			2.5...10	15	28	24 V DC ⁴⁾	184043
D 3/2 way servo-controlled solenoid valve, normally open, with manual override	–	–	2.5...10	15	28	24 V DC ⁴⁾	184400
H 5/2 way servo-controlled solenoid valve, pilot air and manual override	4	300	1.0...10 ²⁾	15	20	24 V DC ⁴⁾	186271
			2, 5...10	20	28	24 V DC ⁴⁾	179938
C 2 × 3/2 way servo-controlled solenoid valve, normally closed, with manual override	4	300	1.0...10 ²⁾	12	20	24 V DC ⁴⁾	186259 ³⁾
			2.5...10	12	20	24 V DC ⁴⁾	186260 ³⁾

1) With integrated HotSwap and/or non-return function, the flow rate is reduced.

2) Version with auxiliary air.

3) Version with integrated reduction of power consumption

4) 10 % residual ripple allowed

Circuit function	Orifice [mm]	Q _{Nn} value air [l/min]	Pressure range [bar]	Response times		Nominal power [V/Hz]	Article no.
				Opening [ms]	Closing [ms]		
11 mm width per station: pilot valve Type 0460							
Z 5/2 way solenoid valve, with 2 impulse coils and manual override	2.5	200	2.0...7.0	15	15	1	154183
L 5/3 way solenoid valve, in middle position all ports locked, with manual override	2.5	200	2.0...7.0	15	20	1	154184
N 5/3 way valve, in middle position ports 2 and 4 exhausted, with manual override	2.5	200	2.0...7.0	15	20	1	154185



Ordering chart replacement valves continued

8640

Circuit function	Orifice [mm]	Q _{Nn} value air [l/min]	Pressure range [bar]	Response times		Nominal power [W]	Voltage/Frequency [V/Hz]	Article no.
				Opening [ms]	Closing [ms] ³⁾			
16.5 mm width per station Multi-way for solenoid valve Types 6526 and 6527								
C 3/2 way servo-controlled solenoid valve, normally closed, with manual override	6	700	1.0...10 ¹⁾	20	12	2	24 V DC	156842
			1.0...10 ¹⁾	20	12	2	24 V DC	163028
			2.0...10	20	12	2	24 V DC	156318
			2.0...10	20	12	2	24 V DC	158944
			2.0...8.0	20	17	1	24 V DC	156840
			2.0...8.0	20	12	1	24 V DC	158947
D 3/2 way servo-controlled solenoid valve, normally open, with manual override	6	700	1.0...10 ¹⁾	20	12	2	24 V DC	163029
			2.0...10	12	20	2	24 V DC	156320
			2.0...10	20	12	2	24 V DC	158946
			2.0...8.0	17	20	1	24 V DC	156841
H 5/2 way servo-controlled solenoid valve, pilot air and manual override	6	700	1.0...10 ¹⁾	20	12	2	24 V DC	156828
			1.0...10 ¹⁾	20	12	2	24 V DC	163030
			2.0...10	20	12	2	24 V DC	156337
			2.0...10	20	12	2	24 V DC	158942
			2.0...8.0	20	17	1	24 V DC	156827
			2.0...8.0	20	12	1	24 V DC	158943

1) Version with auxiliary air

2) Electric connection with manual override.

3) Closing time approx. 5 ms higher when used together with valve unit

Circuit function	Orifice [mm]	Q _{Nn} value air [l/min]	Service ports 4 and 2	Pressure range [bar]	Nominal power [W]	Voltage/Frequency [V/Hz]	Article no. (Valve island)	Article no. (Valve block)
C 3/2 way servo-controlled solenoid valve, normally closed, with manual override	4	300	Push-in Ø 6 mm, below	2...8	1	24 V DC	132479	135203
				2...10	2	24 V DC	133148	135204
				2...10	3	110...120 DC	-	132952
				2...10	3	220...240 DC	-	132953
D 3/2 way servo-controlled solenoid valve, normally open, with manual override	4	300	Push-in Ø 6 mm, below	2...8	1	24 V DC	132481	136742
				2...10	2	24 V DC	136741	136743
				2...10	3	110...120 DC	-	136744
				2...10	3	220...240 DC	-	136745

Ordering chart replacement valves continued

Circuit function	Orifice [mm]	Q _{Nn} value air [l/min]	Service ports 4 and 2	Pressure range [bar]	Nominal power [W]	Voltage/Frequency [V/Hz]	Article no. (Valve island)	Article no. (Valve block)
G 4/2 way servo-controlled solenoid valve	4	300	Push-in Ø 6 mm, front	2...8	1	24 V DC	132487	135205
				2...10	2	24 V DC	133149	135206
				2...10	3	110...120 DC	–	132954
				2...10	3	220...240 DC	–	132955
	4	300	Push-in Ø 6 mm, below	2...8	1	24 V DC	132489	135207
				2...10	2	24 V DC	133150	135208
				2...10	3	110...120 DC	–	132956
				2...10	3	220...240 DC	–	132957
	4	300	Push-in Ø 6 mm, front with throttle-check valve	2...8	1	24 V DC	132488	135209
				2...10	2	24 V DC	133151	135210
				2...10	3	110...120 DC	–	133152
				2...10	3	220...240 DC	–	133153
	4	300	Threaded port G 1/8, front	2...8	1	24 V DC	132483	135211
				2...10	2	24 V DC	133157	135212
				2...10	3	110...120 DC	–	132958
				2...10	3	220...240 DC	–	132959
	4	300	Threaded port G 1/8, front, with throttle-check valve	2...8	1	24 V DC	132484	135213
				2...10	2	24 V DC	133159	135214
				2...10	3	110...120 DC	–	133160
				2...10	3	220...240 DC	–	133161
G 4/2 way servo-controlled solenoid valve	4	300	Tube connection SL6/4 mm, front	2...8	1	24 V DC	133162	135215
				2...10	2	24 V DC	133163	135216
				2...10	3	110...120 DC	–	133164
				2...10	3	220...240 DC	–	133166



Accessories

8640

Description	Article no.
Covering plates	
Covering plate for solenoid valve Type 6524/6525	650373
Covering plate for solenoid valve Type 6524 2 x 3/2 way valve	661092
Covering plate for solenoid valve Type 6526/6527	653765
Exhaust plates	
Exhaust air plate complete Type 6524/6525	655166
Exhaust air plate complete Type 6526/6527	653697

Material	Amount of valve slots	Article no.
Blanking plate		
Aluminium anodised	4	246937
	8	246933
	12	246929
	16	246925
Stainless steel 1.4301	4	246938
	8	246934
	12	246930
	16	246926

AirLINE Quick

Electrical/pneumatic automation system

8644

- Combination of fieldbus, pilot valves and I/O modules
- AirLINE Quick - Stainless steel mounting plate saves time, effort and cost
- Compact design
- High flow rates



The AirLINE system provides a universal interface between process and system control. It integrates electrical and pneumatic devices in an assembly group, which allows a modular and flexible structure comprising of fieldbus modules, pilot valves and I/O modules through a simple snap-in technique.

AirLINE Quick adapter plate, with integrated fluid connections (hose connectors), can be attached directly to the cabinet wall.

This reduces installation costs and the cabinet can be smaller. The hygienic design allows the cabinet to be placed closer to the process. Hose distances can be shortened.











































































Technical data

Pilot valve 6524, 6525	
Width/station	11 mm
Circuit function	C (3/2) H (5/2)
Flow rate	300 l/min
Pressure range	2.5...10 bar
Module types	2x and 8x (integrated check valve and P-shut-off optional)
Fieldbus	PROFIBUS DP, INTERBUS, DeviceNet, CANopen, Ethernet, further on request
Electrical modules	WAGO I/O System 750 PHOENIX INLINE Siemens ET200S Rockwell Point I/O
Operating voltage	24 V DC
Residual ripple	1 V _{ss}
Nominal power per valve	1 W (0.5 W Nominal power after 120 ms)
Nominal current per valve	43 mA (28 mA hold current after 120 ms) 41 mA (when using the Type 0460)
Temperatures	Ambient 0 °C...+55 °C Storage -20 °C...+60 °C
Protection class	IP20 IP65 in closed cabinet
Approvals	Zone 2

Ordering chart

Valve functions	AirLINE Quick	Article no.			
		Siemens ET 200S	Wago I/O System 750	Rockwell Point I/O	Phoenix Contact INLINE
Type 8644 AirLINE Quick with 3/2 and 5/2 way functions					
8 × 3/2	Anodised aluminium	239952 𐀀	239982 𐀀	254389 𐀀	254323 𐀀
8 × 5/2		239956 𐀀	239987 𐀀	254428 𐀀	254334 𐀀
8 × 2 × 3/2		239948 𐀀	239978 𐀀	245818 𐀀	254282 𐀀
12 × 5/2		252396 𐀀	253757 𐀀	254437 𐀀	254432 𐀀
12 × 2 × 3/2		246849 𐀀	248097 𐀀	254340 𐀀	254242 𐀀
16 × 5/2		239958 𐀀	239990 𐀀	254554 𐀀	241610 𐀀
16 × 2 × 3/2		239950 𐀀	239980 𐀀	254560 𐀀	240906 𐀀
16 × 2 × 3/2		-	-	254571 𐀀	254606 𐀀
24 × 5/2		248090 𐀀	248104 𐀀	254564 𐀀	254610 𐀀
24 × 2 × 3/2		248099 𐀀	248094 𐀀	254575 𐀀	254614 𐀀
Type 8644 AirLINE Quick with 3/2 and 5/2 way functions					
8 × 3/2	Stainless steel 1.4301	239941 𐀀	239970 𐀀	254390 𐀀	254331 𐀀
8 × 5/2		239944 𐀀	239973 𐀀	254429 𐀀	254335 𐀀
8 × 2 × 3/2		239937 𐀀	239967 𐀀	254330 𐀀	254283 𐀀
12 × 5/2		253751 𐀀	253759 𐀀	254438 𐀀	254434 𐀀
12 × 2 × 3/2		248117 𐀀	248100 𐀀	254329 𐀀	254275 𐀀
16 × 5/2		239946 𐀀	239975 𐀀	254555 𐀀	241586 𐀀
16 × 2 × 3/2		239939 𐀀	233301 𐀀	254561 𐀀	254586 𐀀
16 × 2 × 3/2		-	-	254572 𐀀	254607 𐀀
24 × 5/2		248091 𐀀	248105 𐀀	254565 𐀀	254611 𐀀
24 × 2 × 3/2		246870 𐀀	248095 𐀀	254577 𐀀	254669 𐀀

Ordering chart continued

Valve functions	AirLINE Quick	Article no.			
		Siemens ET 200S	Wago I/O System 750	Rockwell Point I/O	Phoenix Contact INLINE
Type 8644 AirLINE Quick with 3/2- and 5/2 way functions including process safety functions, pneumatic HotSwap and check valves					
8644 8 × 3/2	Anodised aluminium	239953 	239983 	254391 	254332 
		239957 	239988 	254430 	254336 
		239949 	239979 	244856 	254284 
		171778 	253758 	254439 	254435 
		248121 	244418 	254342 	254280 
		239959 	239991 	254557 	254584 
		239951 	239981 	254562 	254605 
		-	-	254573 	254608 
		248092 	248107 	254566 	254612 
		248101 	248096 	254580 	254672 
		8 × 3/2	Stainless steel 1.4301	239942 	239971 
239945 	239974 			254277 	254337 
239938 	239968 			254388 	241661 
253755 	253760 			254440 	254436 
244417 	248123 			254348 	254281 
239947 	239977 			254559 	245257 
239940 	239969 			254563 	241662 
-	-			254574 	254609 
248093 	248108 			254567 	254613 
248102 	248098 			254581 	254674 

AirLINE SP – Electropneumatic Automation System

8647
AirLINE SP

- Direct connection to the I/O-System SIMATIC ET 200SP
- Combination of fieldbus, pilot valves and I/O modules
- Easy diagnosis by LC-Display
- Safety related shut-off of valves possible



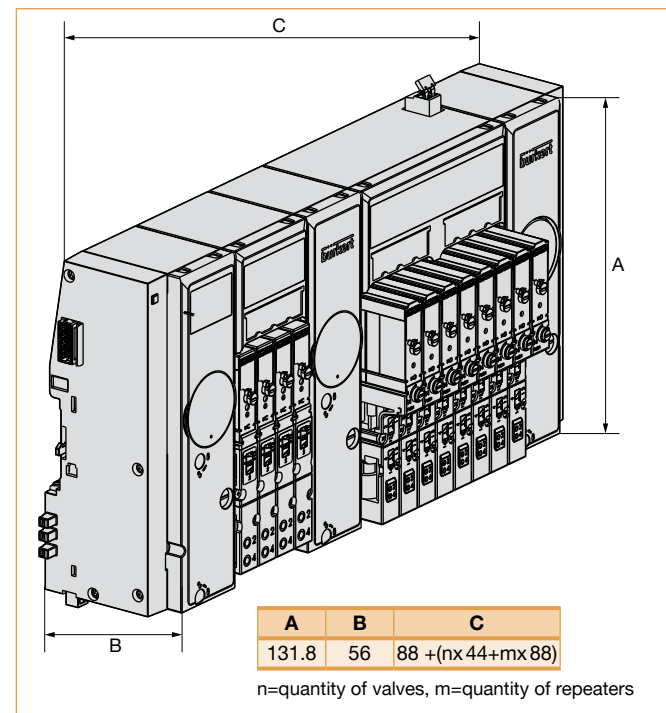
The pneumatic valve island, Type 8647 AirLINE SP, is a modular, electropneumatic automation system consisting of connection modules and valve modules. It is perfectly designed for safe and complete integration into the decentralized peripheral system “SIMATIC ET 200SP” from Siemens. Type 8647 is used to integrate pneumatic pilot valves directly into the SIMATIC ET 200SP and to control them via the ET 200SP. Pneumatically actuated process valves, pneumatic cylinders or other pneumatic components can be connected to the pneumatic outputs. If the pneumatic components are installed with digital feedbacks, the position of the actuated pneumatic components can be displayed on the associated pilot valve. This can save time on commissioning and maintenance.

Technical data

Pilot valve Types 0460, 6524, 6525	
Width/station	11 mm
Circuit function	C (3/2 way) D (3/2 way) H (5/2 way) H (5/2 way) impulse
Flow rate	300 l/min ¹⁾
Pressure range	Vac. up to 10 bar
Max. number of modules	Depending on application
Max. number valve functions	64
Fieldbus type	PROFIBUS DP, PROFINET I/O
Electrical modules	Siemens ET200SP
Operating voltage	24 V DC
Voltage tolerance	± 10 %
Residual ripple	2.4 V _{ss}
Nominal power per valve	0.8 W (0.5 W Nominal power acc. to 120 ms)
Rated current per valve	40 mA (28 mA Hold current after 120 ms) 20 mA (by use of Type 0460)
Temperatures	
Ambient	0 °C...+55 °C
Storage	-20 °C...+60 °C
Protection class	IP20 IP65 in closed field housing
Approvals	ATEX & IECEx, Zone 2 (in preparation)

1) Maximum flow rate depending on valve function - see data sheet.

Dimensions [mm]



Ordering information



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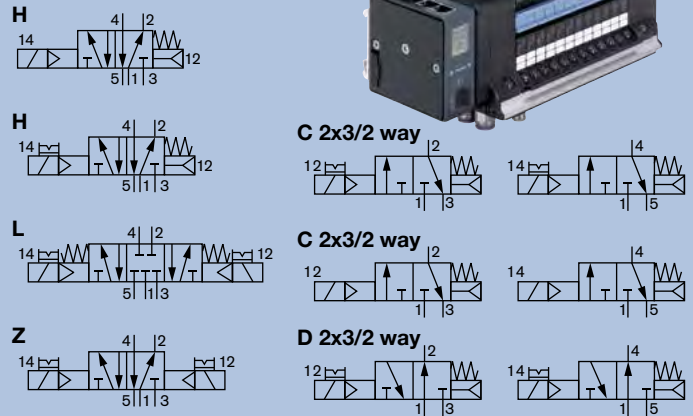
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AirLINE – The valve island optimized for process automation

8652
AirLINE

- Compact design
- Diagnosis in cleartext at the LC-Display
- Process reliability with pneumatics functions
- Optimized for installation at the cabinetbottom

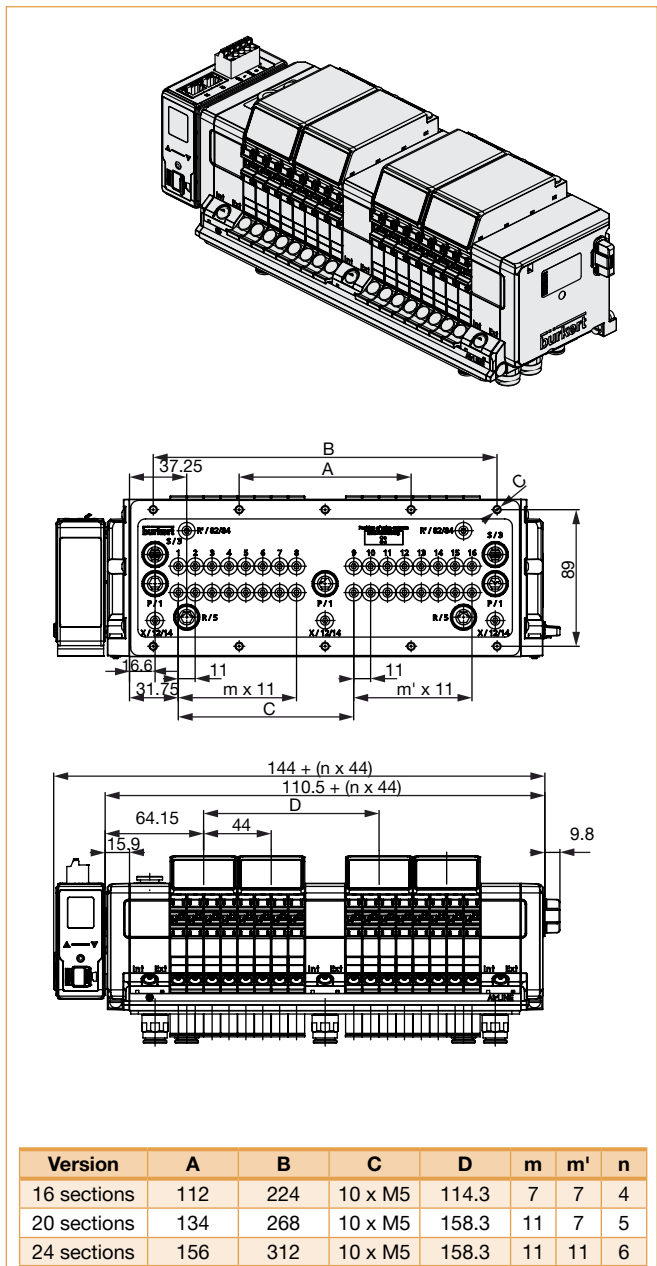


The pneumatic valve island type 8652 AirLINE is especially developed for applications in process automation. New diagnosis functions can be visualized at the LC-Display. Both cleartext as well as symbols show information which makes easy to relate the shown diagnosis. This saves time during installation and commissioning. Furthermore the diagnosis information is also available in the PLC which enables a fast overview about the plant status. The hardware is optimized for installation at the cabinet bottom. Of course to fix the AirLINE at DIN rail is possible as well. Besides important pneumatics functions ensure increased process safety. For instance the checkvalves make sure not to get an unplanned actuation due to pressure peaks.

Technical data

General data	
Width/station	11 mm
Circuit functions	C 2x3/2 way (NC/NC) D 2x3/2 way (NO/NO) H (5/2 way) Z (5/2 way) impulse / bistable L (5/3 way) Mid-position locked Blind plate
Flow rate	310 l/min ¹⁾
Pressure range	Vac. 10 bar
Outlet port	Plug-in coupling diameter 6 mm, D ¼"
Connection air supply	Plug-in coupling diameter 10 mm, D ⅜"
Max. number of modules	6
Number of valve positions per module	4 valve positions (max. 8 valve functions)
Max. number valve functions	48
Communication interfaces	PROFIBUS DP Industrial Ethernet (PROFINET I/O, EtherNet IP, Modbus TCP, EtherCAT) CANopen / būS ²⁾ (when networking with Bürkert devices)
Electrical modules	Type ME43
Operating voltage	24 V DC
Voltage tolerance	± 10 %
Nominal power per valve	0.7 W (0.175 W after power reduction)
Rated current per valve	29 mA (10 mA after power reduction)

Dimensions [mm]




Technical data continued

Temperatures	
Ambient	-10 °C...+55 °C
Storage	-10 °C...+60 °C
Protection class	IP20
Approvals	ATEX & IECEx, Zone 2 & Zone 22 (in preparation) FM Div2 Class 1 & Class 2 (in preparation) cULus Class 2 (in preparation)
Specification	
Body material	PA (Polyamide)
Seam materials	NBR and PUR
Medium	Compressed air, oil free, dry; Neutral gases (5 µm Filter recommended)

Port connection	Flange for MP15
Connection air supply	Flange for MP15
Manual override available / lockable	Yes / yes
Installation	As required
Mounting	1 screw M4 × 10
Flow rate: Q_{Nn} value air [l/min]	Measured at +20 °C, 6 bar pressure at valve inlet and 1 bar pressure difference
Pressure values [bar]	Overpressure with respect to atmospheric pressure
Response times [ms]	Measured according to ISO 12238

- 1) Maximum flow depending on the valve function – see datasheet.
2) For commissioning, the Bürkert software “Communicator” as well as the corresponding USB-büs Interface Set 1 with Article no. 772426 is required.

Ordering chart replacement valves



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Circuit function	Orifice [mm]	Q_{Nn} value ³⁾ air [l/min]	Pressure range [bar]	Response times		Voltage/Frequency [V/Hz]	Article no. ⁴⁾ incl. screw
				Opening [ms]	Closing [ms]		
Standard version							
C 2×3/2 way servo-controlled solenoid valve, normally closed, with manual override	4	270 l/min	Vac. 10 ⁵⁾ 3...10	15	15	24 V DC	301374
D 2×3/2 way servo-controlled solenoid valve, normally open, with manual override	4	310 l/min	Vac. 10 ⁵⁾ 3...10	15	15	24 V DC	301375
H 5/2 way servo-controlled solenoid valve, with manual override	4	290 l/min	Vac. 10 ⁵⁾ 3...10	20	25	24 V DC	301376
Z 5/2 way solenoid valve, with 2 impulse coils and manual override	4	290 l/min	Vac. 10 ⁵⁾ 3...10	20	25	24 V DC	301377
L 5/3 way solenoid valve, in middle position all ports locked, with manual override	4	275 l/min	Vac. 10 ⁵⁾ 3...10	15	15	24 V DC	301377
Blind plate	–	–	–	–	–	–	335779
Second connection for shutdown							
C 2×3/2 way servo-controlled solenoid valve, normally closed	4	270 l/min	Vac. 10 ⁵⁾ 3...10	15	15	24 V DC	338802
H 5/2 way servo-controlled solenoid valve	4	290 l/min	Vac. 10 ⁵⁾ 3...10	20	25	24 V DC	338805

3) With HotSwap function, ca. 3% flow reduction

4) The valves are components or spare parts for the valve island 8652. They are exclusively meant to be used with the valve island type 8652.

5) Separate control auxiliary air min. 3 bar, please refer to the control pressure table in the instruction manual.



Process Valves Chapter Overview



[Overview for Diaphragm Valves ▶](#)

[Overview for Seat Valves ▶](#)

[Overview for 2/2 way Control Systems ▶](#)

[Overview for Controls ▶](#)

[Overview for Ball Valves ▶](#)

[Overview for Rotary Actuators ▶](#)

Process Valves Types Overview

Diaphragm Valves..... 249

2030.....	251
2031 forged	257
2031 Tube Valve Body....	265
2033.....	269
2036.....	271
2063.....	273
2103 forged	279
2103 Tube Valve Body....	283
2104.....	287
2105.....	289
3230.....	291
3232.....	293
3233.....	295
3233 Tube Valve Body....	301
3323.....	305
3363.....	309

Seat Valves..... 313

2000 for Liquids.....	315
2000 for Steam & Gases	317
2006.....	319
2100	321
2101 / 2012	331
2106.....	333
2301.....	347
3320.....	353
3321.....	355
3360.....	357
3361.....	359

2/2 Way Control Syst.... 361

8802 GD-I/GD-J ELE.....	363
8802 YG-I/YG-J ELE.....	365

Controls..... 367

1060.....	369
1061.....	371
8635.....	375
8681.....	379
8685 / 8686	385
8690 / 8691	389
8692.....	393
8693.....	397
8694.....	401
8695.....	405
8696.....	409
8697.....	413
8791.....	417
8792.....	423
8793.....	429

Ball Valves 435

2651.....	437
2652 / 2655	439
2654.....	441
2654 Hygienic.....	443
2657.....	447
2671.....	451
2674.....	455
8804.....	459
8804 plastic	461

8805.....	463
-----------	-----

Rotary Actuators 469

2051.....	471
2052.....	473
3003.....	477
3003 PS.....	481
3005.....	483

Overview for Process Valves – Diaphragm Valves

Note: The following product overview does not show the complete product range of this catalogue. A complete overview can be found [here](#) ▶

Overview Diaphragm Valves	Species	Type	Process connection	Max. operating pressure ¹⁾ [in bar]	Medium temperature ²⁾ [°C]	Max. control pressure ³⁾ [in bar]	Body shape ⁴⁾	Surface product contacted Ra value
								mech. polished/ e-polished
Diaphragm valve manually-operated	3232 ▶		DN15...DN100	0...10	-10...+150 acc. to diaphragm material	–	D	–
	3233 ▶		DN08...DN50	0...10		–	D	0.76...0.38 (SF1 - SF6)
Diaphragm valve pneumatic actuator CLASSIC ON / OFF	2030 ▶		DN15...DN100	0...10	-10...+150 acc. to diaphragm material	Max. 7.0	D	–
	2031 ▶		DN08...DN50	0...10		Max. 7.0	D	0.76...0.38 (SF1 - SF6)
	2033 ▶		DN08...DN100	0...10		Max. 7.0	B	0.76...0.38 (SF1 - SF6)
Diaphragm valve pneumatic actuator ELEMENT ON/Off	2103 ▶		DN08...DN50	0...10	-10...+150 acc. to diaphragm material	Max. 10	D	–
	2104 ▶		DN08...DN65	0...10		Max. 10	T	0.76...0.38 (SF1 - SF6)
	2105 ▶		DN08...DN65	0...10		Max. 10	B	0.76...0.38 (SF1 - SF6)
Diaphragm valve pneumatic actuator	2063 ▶		DN15...DN50	0...10	-10...+150 acc. to diaphragm material	Max. 10	D	0.76...0.38 (SF1 - SF6)
Diaphragm valve electric actuator ON / OFF	3323 ▶		DN08...DN40	0...10	-10...+150 acc. to diaphragm material	Max. 10	D	–
Diaphragm valve electric actuator Control valve	3363 ▶		DN04...DN40	0...10	-10...+150 acc. to diaphragm material	–	D	–
Robolux Systems pneumatic actuator	2036 ▶		RV 50...110	0...10	-10...+150 acc. to diaphragm material	Max. 10	M	0.76...0.38 (SF1 - SF6)

1) Operating pressure depending on the actuator specification and diaphragm material

2) Max. operating temperature depending on the diaphragm/body material

3) Max. control pressure depending on the actuator size

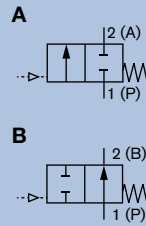
4) D = Bore body | T = T-Form | B = Tank bottom | M = Multi-way body

Material valve body			Material actuator		Diaphragm material			Overview Diaphragm Valves
Stainless steel	Special materials	Plastic	Stainless steel	Plastic	EPDM AD	PTFE EA/EU	Gylon ER	
-	-	PVC/PU/PVDF	1.4404	PPS	Diaphragm material selection according to the resistance table			
1.4435/316L	on request	-	1.4404	PPS	Diaphragm material selection according to the resistance table			
-	-	PVC/PU/PVDF	Inox at DN08	PA/PPS	Diaphragm material selection according to the resistance table			
1.4435/316L	on request	-	Inox at DN08	PA/PPS	Diaphragm material selection according to the resistance table			
1.4435/316L	on request	-	Inox at DN08	PA/PPS	Diaphragm material selection according to the resistance table			
1.4435/316L	on request	PVC/PU/PVDF	1.4561/316TI	-	Diaphragm material selection according to the resistance table			
1.4435/316L	on request	-	1.4561/316TI	-	Diaphragm material selection according to the resistance table			
1.4435/316L	on request	-	1.4561/316TI	-	Diaphragm material selection according to the resistance table			
1.4435/316L	on request	-	1.4404/1.4308	-	Diaphragm material selection according to the resistance table			
1.4435/316L	on request	PVC/PU/PVDF	-	PPS	Diaphragm material selection according to the resistance table			
1.4435/316L	on request	PVC/PU/PVDF	-	PPS	Diaphragm material selection according to the resistance table			
1.4435/316L	on request	-	INOX	-	Diaphragm material selection according to the resistance table			

Pneumatically operated 2/2 way diaphragm valve CLASSIC with plastic body

2030

- Flow optimised and deadleg free bodies
- Hermetical separation of fluids from the operating mechanism by diaphragm
- Robust actuators with modular accessory program
- Self-draining plastic bodies with true union, solvent socket, weld ends or flanges
- Applicable for aggressive and corrosive media



Pilot controlled diaphragm valve with piston actuator and diaphragm seal. As standard, actuator from PA. The flow optimised and zero dead volume valve body makes high flow rates possible.

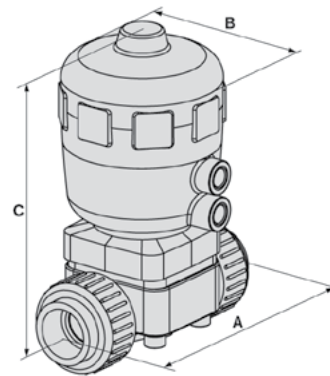
Technical data

Orifice (diaphragm size)	DN15...DN100
Body materials	PVC-U, PP, PVDF
Actuator material	PA polyamide (PPS on request)
Seal material	EPDM, PTFE/EPDM
Media	Neutral gases and liquids, aggressive or abrasive media
Viscosity	Up to viscous
Media temperature	See diagram
Ambient temperature	-10 °C...+60 °C (PA) Actuator size \geq 175 mm: -10 °C...+50 °C
Control medium	Neutral gases, air
Port connections	DN15...DN50: True union and spigot connections DN65: Loose flanges DN80...DN100: Fixed flanges
Installation	As required, preferably with actuator in upright position

Options

- Actuator made from PPS
- Double-acting actuator
- Feedback unit **Type 8697** ▶
- Stroke limiter

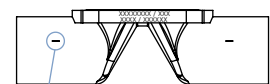
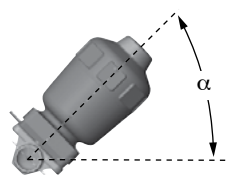
Dimensions [mm]



Drawing shows dimensions for true union connection. For dimensions of other versions see data sheet **Type 2030** ▶.

DN	Actuator size	A	B	C
15	50	128	64	123
	63	128	80	139
20	63	152	80	148
	80	152	101	173
25	80	166	101	176
32	100	192	127	231
40	100	222	127	239
	125	222	153	277
50	125	266	153	284

Installation for self-draining operation

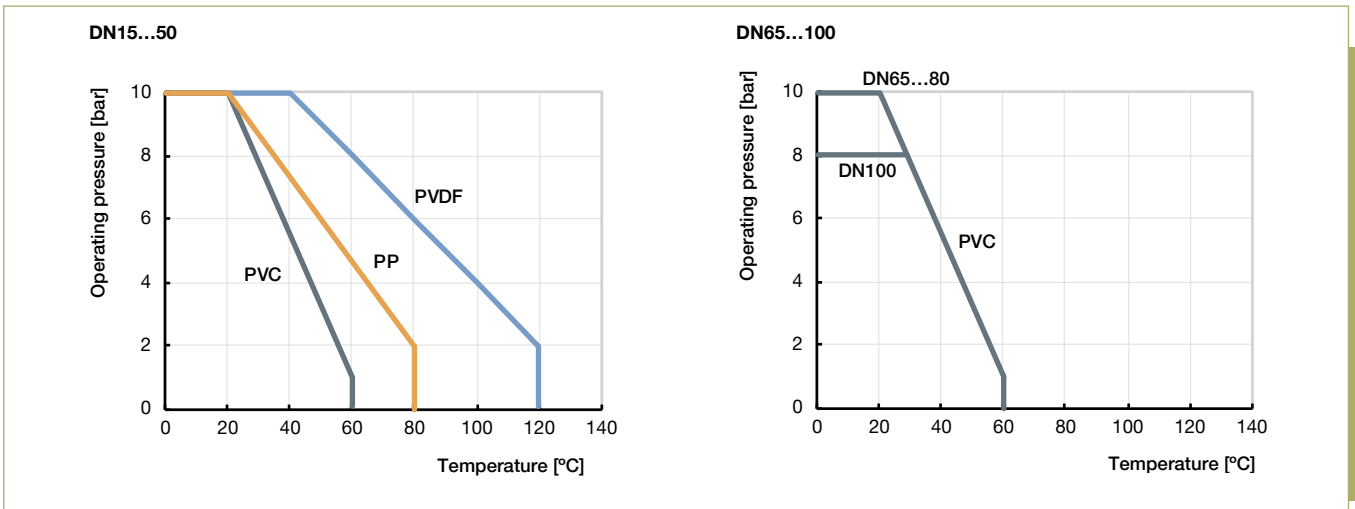


markings for self-drain angle

$\alpha = 15^\circ$ up to 30° plus 3° to 5° inclination to the pipe axis.
Drain marks indicate the correct mounting position to optimise self-draining.

Mediums temperature

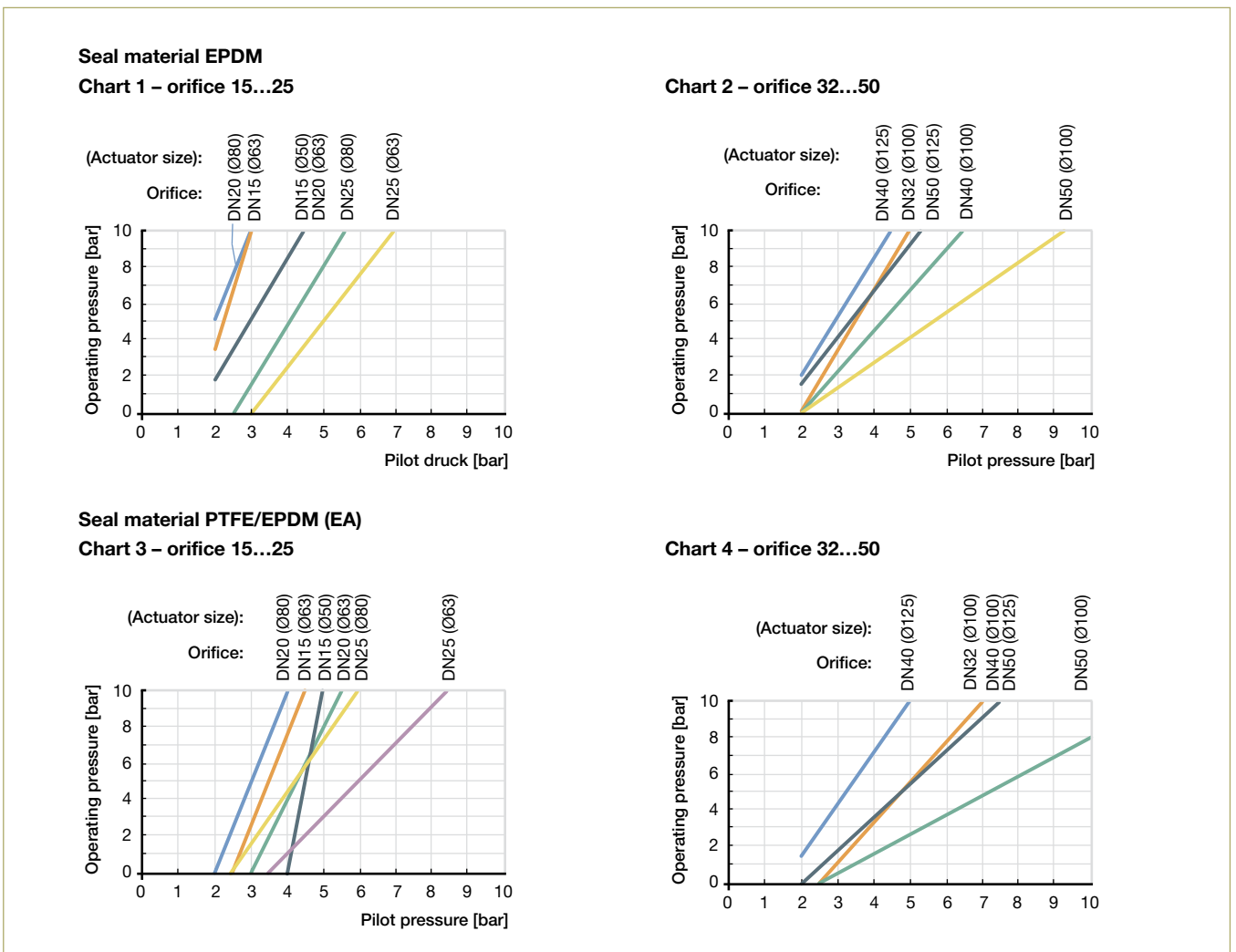
Pressure temperature compatibility charts



Important for the material selection!

Note that the permissible operating pressure is dependent on the media temperature.

Pilot pressure charts for control function B





Ordering chart

2030

Control function	Port connection [mm]	Orifice Dia-phragm size [mm]	Actuator size Ø [mm]	K _v value water [m³/h]	Minimum pilot pressure [bar]	Operating pressure [bar]	Article no. true union
Body in PVC-U with true union or spigot connections DN15...DN50							
Seal material EPDM							
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	20	15	50	3	5	8.5	317273
			63	3.5	5	10	317274
	25	20	63	7	5.5	10	317276
			80	11	5.5	10	317277
	40	32	100	18	5.5	10	317278
			100	24	5.5	6.5	317279
	-	-	125	26	5.5	10	317280
	63	50	125	43	5.5	8	317281
B Single-acting actuator for pneumatically activated open/closed valve, normally opened by spring force.	20	15	50	3	see pilot pressure chart 1	10	317275
			63	7		10	317282
			80	11		10	317284
	40	32	100	18	see pilot pressure chart 2	10	317285
			100	24		10	317286
			125	43		10	317287
Seal material PTFE/EPDM							
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	20	15	50	3	5	5	262237
			63	3.5	5	10	262245
	25	20	63	7	5.5	5	262760
			80	7	5	10	262742
	32	25	80	11	5.5	7.5	262744
			100	18	5.5	8	262746
	50	40	100	24	5.5	6	262761
			125	26	5.5	10	262749
63	50	125	43	5.5	7	262751	
B Single-acting actuator for pneumatically activated open/closed valve, normally opened by spring force.	20	15	63	3.5	see pilot pressure chart 3	10	262306
			80	7		10	262753
			80	11		10	262755
	40	32	100	18	see pilot pressure chart 4	10	on request
			125	26		10	262758
			125	43		10	274572

Ordering chart continued

Control function	Port connection [mm]	Orifice Diaphragm size [mm]	Actuator size Ø [mm]	K _v value water [m ³ /h]	Minimum pilot pressure [bar]	Operating pressure [bar]	Article no.	
							true union	spigot
Body in PP with true union or spigot connections DN15...50								
Seal material EPDM								
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	20	15	50	3	5	8.5	317258	317235
			63	3.5	5	10	317259	317237
	25	20	63	7	5.5	10	317260	317250
			80	11	5.5	10	317261	317238
	40	32	100	18	5.5	10	317262	317240
	50	40	100	24	5.5	6.5	317263	317241
			125	26	5.5	10	317265	317242
63	50	125	43	5.5	8	317266	317243	
B Single-acting actuator for pneumatically activated open/closed valve, normally opened by spring force.	20	15	50	3	see pilot pressure chart 1	10	317267	317244
	25	20	63	7		10	317268	317245
	32	25	80	11		10	317269	317251
	40	32	100	18	see pilot pressure chart 2	10	317270	317246
	50	40	100	24		10	317271	317247
	63	50	125	43		10	317272	317249
Seal material PTFE/EPDM								
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	20	15	50	3	5	5	154770	144295
			63	3.5	5	10	154781	141454
	25	20	63	7	5.5	5	154784	144299
			80	7	5	10	154785	141464
	32	25	80	11	5.5	7.5	154787	141471
	40	32	100	18	5.5	8	154789	141477
	50	40	100	24	5.5	6	154792	144303
			125	26	5.5	10	154793	141486
63	50	125	43	5.5	7	154795	141492	
B Single-acting actuator for pneumatically activated open/closed valve, normally opened by spring force.	20	15	63	3.5	see pilot pressure chart 3	10	154807	141502
	25	20	80	7		10	154810	141513
	32	25	80	11		10	154812	141520
	40	32	100	18	see pilot pressure chart 4	10	154814	141526
	50	40	125	26		10	154817	141535
	63	50	125	43		10	154819	141541



Ordering chart continued

2030

Control function	Port connection [mm]	Orifice Diaphragm size [mm]	Actuator size Ø [mm]	K _v value water [m ³ /h]	Minimum pilot pressure [bar]	Operating pressure [bar]	Article no.	
							true union	spigot
Body in PVDF with true union or spigot connections DN15...50								
Seal material PTFE/EPDM								
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	20	15	50	3	5	5	154796	144296
			63	3.5	5	10	154797	141453
	25	20	63	7	5.5	5	154798	144300
			80	7	5	10	154799	141463
	32	25	80	11	5.5	7.5	154800	141470
	40	32	100	18	5.5	8	154801	141476
	50	40	100	24	5.5	6	154802	144337
			125	26	5.5	10	154803	141485
63	50	125	43	5.5	7	154804	141491	
B Single-acting actuator for pneumatically activated open/closed valve, normally opened by spring force.	20	15	63	3.5	see pilot pressure chart 3	10	154820	141501
	25	20	80	7		10	154821	141512
	32	25	80	11		10	154822	141519
	40	32	100	18	see pilot pressure chart 4	10	154823	141525
	50	40	125	24		10	154824	141534
	63	50	125	43		10	154825	141540

Control function	Port connection [mm]	Orifice Diaphragm size [mm]	Actuator size Ø [mm]	K _v value water [m ³ /h]	Minimum pilot pressure [bar]	Operating pressure [bar]	Article no.
							flanges
Body in PVC-U with flange connection DN65...100							
Seal material EPDM							
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	Loose flanges	65	125	55	5.5	7	317257
			175	60	4.5	8	317252
	Fixed flanges	80	175	100	5	5	317253
			225	100	5	10	317254
Fixed flanges	100	225	160	5	8	317255	
Seal material PTFE/EPDM							
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	Loose flanges	65	125	55	5.5	4.5	149296
			175	60	4.5	5	147845
	Fixed flanges	80	175	100	5	4.5	147847
			225	100	5	10	147849
	Fixed flanges	100	225	160	5	4	147850

Accessories

Valve for actuator size [Ø mm]	Type	Pressure inlet P (valve body)	Service port A (banjo bolt)	Orifice [mm]	Q _{Nn} value air [l/min]	Pressure range [bar]	Electrical coil connection Ind. Std.	Power consumption [W]	Article no. Voltage/frequency [V/Hz]	
									024/DC	230/50
3/2 way pilot valves with banjo bolts										
Seal material valve FKM, seal material banjo bolt NBR										
50	6012P	G ¼	G ⅜	1.2	48	0...10	Form B	4	552295	552298
63	6012P	Tube fitting Ø 6 mm	G ¼	1.2	48	0...10	Form B	4	552283	552286
63...125	6014P	G ¼	G ¼	2	120	0...10	Form A	8	424103	424107
175...225	6014P	G ⅜	G ¼	2.5	174	0...6	Form A	8	786014	786015
175...225	0331P	G ¼	G ¼	3	194	0...10	Form A	8	-	041233

Description	Voltage	Article no.
Cable plug Type 2507 acc. to industry standard Form B - see Type 2507 ▶		
without circuitry (standard)	0...250 V AC/DC	423845
Cable plug Type 2508 (will be replaced with Type 2518) acc. to DIN 175301-803 Form A - see Type 2508 ▶		
without circuitry (standard), without cable	0...250 V AC/DC	008376

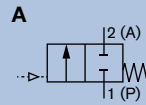
For further accessories see **Type 1062 ▶** or **Type 2XXX ▶**, for the full options programme.

Note: For design reasons, some of the accessories cannot be supplied for actuator size Ø 40, 175 and 225 mm. Please request the accessories datasheet, see **Type 2XXX ▶**.

2/2 way Diaphragm Valve, forged valve body, weld end and clamp connection

2031
forged

- Hermetical separation of fluids from the operating mechanism by diaphragm
- Zero dead volume
- Various surface finishes available
- Quality certifications / USP FDA

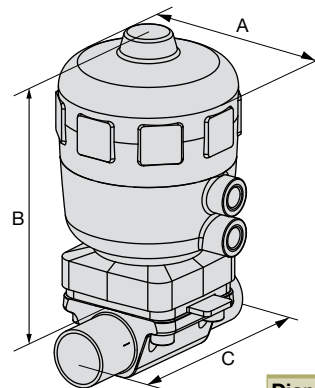


The externally piloted diaphragm valve consists of a pneumatically operated piston actuator, a diaphragm and a 2 way valve housing made of forged stainless steel. The standard material of the actuator is PPS. The flow optimised and zero dead volume valve body makes high flow rates possible and a variety of applications to be realised.

Technical data

Orifice	DN8...DN100 (1/8"-4")
Body material	Forged stainless steel 316L/1.4435 / BN2 Fe < 0.5 % / C ≤ 0.03 %
Pilot air ports	Stainless steel 1.4305
Seal materials	PTFE/EPDM (EA), EPDM (AD), advanced PTFE/EPDM (EU), GYLON®/EPDM laminated (ER) and FKM (FF) on request
Medium temperatures	
PTFE/EPDM (EA)	-10 °C...+130 °C (steam sterilisation + 140 °C for 60 min)
EPDM (AD)	-10 °C...+143 °C (steam sterilisation + 150 °C for 60 min)
advanced PTFE/EPDM (EU)	-5 °C...+143 °C (steam sterilisation + 150 °C for 60 min)
GYLON®/EPDM laminated (ER)	-5 °C...+130 °C (steam sterilisation + 140 °C for 60 min)
FKM (FF)	0 °C...+130 °C (not recommended for steam)
Actuator materials	PPS for actuator size ≥ 40...125 mm PA polyamide for actuator size ≥ 175 mm
Media	Neutral gases and liquids, high purity, aseptic, aggressive or abrasive fluids
Control medium	Neutral gases; air
Ambient temperature	
PPS actuator size ≤ 80 mm	+5 °C...+140 °C
PPS actuator size 100 mm, 125 mm	+5 °C...+90 °C (briefly up to +140 °C)
PA actuator size ≤ 125 mm (on request)	-10 °C...+60 °C
PA actuator size ≥ 175 mm	-10 °C...+50 °C
Port connections	
Weld ends	DIN EN ISO 1127 / ISO 4200 / DIN11866 B DIN 11850 2 / DIN11866 A ASME BPE / DIN 11866 C BS4825 SMS 3008 DIN 11850 0
Clamps	DIN 32676 B (with pipe ISO 4200) DIN 32676 A (with pipe DIN 11850 2) ASME BPE further port connections on request
Viscosity	Up to viscous

Dimensions [mm]



Pilot air port
Actuator 40 & 50 = 1/8"
Actuator 63...225 = 1/4"

Drawing shows dimensions for forged body/weld end
For dimensions of other versions see datasheet
Type 2031 ▶

Diaphragm size	Actuator size	A	B	C
8	40	53	89	90
15	50	64	108	110
	63	80	125	110
20	63	80	130	119
	80	101	151	119
25	80	101	155	129
40	100	127	205	161
	125	153	243	161
50	125	153	243	192
80	225	261	345	250
100	225	261	345	295

Options

- Seal material FKM
- Feedback
- Stroke limitation

Ordering chart

Control function	Port Connection DN		Diaphragm size	Actuator size Ø [mm]	K _v value [m³/h]	Pilot pressure [bar]	Max. operating pressure [bar]	Article no.	
	[mm]	[inch]						mechanically polished Ra ≤0.5 µm	electro polished Ra ≤0.38 µm
Welded connection acc. DIN EN ISO 1127 / ISO 4200 / DIN11866 B									
A	Diaphragm material EPDM (AD)								
Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	8	¼	8	40	1.5	5.0...7	10	319780	319781
	10	⅜	8	40	1.6	5.0...7	10	319782	319492
	10	⅜	15	50	5.5	5.0...7	8.5	319783	319784
	15	½	15	50	6.5	5.0...7	8.5	319785	291162
	20	¾	20	63	12.5	5.5...7	10	319786	291178
	25	1	25	80	18	5.5...7	10	319787	291218
	40	1 ½	40	100	41	5.0...7	6.5	319788	319789
	50	2	50	125	66	5.0...7	8	319790	319791
	65	2 ½	80	225	160	5.0...6	10	on request	on request
	80	3	80	225	160	5.0...6	10	on request	on request
	100	4	100	225	235	5.0...6	8	on request	on request
		Diaphragm material PTFE/EPDM (EA)							
	8	¼	8	40	2	5.0...7	10	445003	445004
	10	⅜	8	40	2	5.0...7	10	445008	445009
	10	⅜	15	63	5.2	5.0...7	10	299523	299495
	15	½	15	63	6	5.0...7	10	445013	445014
	20	¾	20	80	12	5.0...7	10	445018	445019
	25	1	25	80	16	5.5...7	7.5	445023	445024
	40	1 ½	40	125	40	5.0...7	10	445027	445028
	50	2	50	125	67	5.0...7	7	445032	445033
	65	2 ½	80	225	160	5.0...6	10	on request	on request
	80	3	80	225	160	5.0...6	10	on request	on request
	100	4	100	225	235	5.0...6	4	on request	on request
Welded connection acc. DIN 11850 2 / DIN 11860 A									
A	Diaphragm material EPDM (AD)								
Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	10	⅜	8	40	1.5	5.0...7	10	319810	291122
	10	⅜	15	50	3.5	5.0...7	8.5	319811	319812
	15	½	15	50	6.5	5.0...7	8.5	293915	319813
	20	¾	20	63	12.4	5.5...7	10	319814	319815
	25	1	25	80	20	5.5...7	10	291220	319816
	32	1 ¼	40	100	34	5.0...7	6.5	319817	319818
	40	1 ½	40	100	40	5.0...7	6.5	319819	319820
	50	2	50	125	66	5.0...7	8	319821	319822
	65	2 ½	80	225	160	5.0...6	10	on request	on request
	80	3	80	225	160	5.0...6	10	on request	on request
	100	4	100	225	235	5.0...6	8	on request	on request



Ordering chart

2031
forged

Control function	Port Connection DN		Diaphragm size	Actuator size Ø [mm]	K _v value [m³/h]	Pilot pressure [bar]	Max. operating pressure [bar]	Article no.	
	[mm]	[inch]						mechanically polished Ra ≤ 0.5 µm	electro polished Ra ≤ 0.38 µm
Diaphragm material PTFE/EPDM (EA)									
Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	10	¾	8	40	1.9	5.0...7	10	445137	445138
	10	¾	15	63	3.4	5.0...7	10	299521	299492
	15	½	15	63	6	5.0...7	10	445142	445143
	20	¾	20	80	12	5.0...7	10	445147	445148
	25	1	25	80	17	5.5...7	7.5	445152	445153
	32	1 ¼	40	125	34	5.0...7	10	554976	554977
	40	1 ½	40	125	40	5.0...7	10	445157	445158
	50	2	50	125	66	5.0...7	7	445162	445163
	65	2 ½	80	225	160	5.0...6	10	on request	on request
	80	3	80	225	160	5.0...6	10	on request	on request
100	4	100	225	235	5.0...6	4	on request	on request	
Welded connection acc. ASME BPE / DIN 11866 C									
Diaphragm material EPDM (AD)									
Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	8	¼	8	40	0.7	5.0...7	10	291108	319800
	10	¾	8	40	1.6	5.0...7	10	319802	291121
	15	½	8	40	1.5	5.0...7	10	291109	319803
	15	½	15	50	3.1	5.0...7	8.5	274226	255243
	20	¾	15	50	6.5	5.0...7	8.5	318103	319804
	20	¾	20	63	8.4	5.5...7	10	274227	319805
	25	1	25	80	15.5	5.5...7	10	274228	255244
	40	1 ½	40	100	37	5.0...7	6.5	274231	291243
	50	2	50	125	66	5.0...7	8	274232	255246
	65	2 ½	50	125	66	5.0...7	8	319830	319831
	65	2 ½	80	225	160	5.0...6	10	on request	on request
	80	3	80	225	160	5.0...6	10	on request	on request
	100	4	100	225	235	5.0...6	8	on request	on request

Ordering chart

Control function	Port Connection DN		Diaphragm size	Actuator size Ø [mm]	K _v value [m ³ /h]	Pilot pressure [bar]	Max. operating pressure [bar]	Article no.	
	[mm]	[inch]						mechanically polished Ra ≤0.5 µm	electro polished Ra ≤0.38 µm
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	Diaphragm material PTFE/EPDM (EA)								
	8	¼	8	40	0.7	5.0...7	10	447915	447916
	10	¾	8	40	1.8	5.0...7	10	447920	447921
	15	½	8	40	1.9	5.0...7	10	250491	218537
	15	½	15	63	3.1	5.0...7	10	445082	445083
	20	¾	15	63	6	5.0...7	10	250492	299489
	20	¾	20	80	8.5	5.0...7	10	445087	445088
	25	1	25	80	14.5	5.5...7	7.5	445092	445093
	40	1 ½	40	125	37.5	5.0...7	10	445097	445098
	50	2	50	125	66	5.0...7	7	445102	445103
	65	2 ½	50	125	66	5.0...7	7	299536	276355
	65	2 ½	80	225	160	5.0...6	10	on request	on request
	80	3	80	225	160	5.0...6	10	on request	on request
100	4	100	225	235	5.0...6	4	on request	on request	
Welded connection acc. SMS 3008									
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	Diaphragm material EPDM (AD)								
	25	1	25	80	16	5.5...7	10	319792	319793
	40	1 ½	40	100	37.8	5.0...7	6.5	319794	319796
	50	2	50	125	66	5.0...7	8	319797	319798
	65	2 ½	50	125	66	5.0...7	8	260734	319799
	80	3	80	225	160	5.0...6	10	on request	on request
	Diaphragm material PTFE/EPDM (EA)								
	25	1	25	80	14.8	5.5...7	7.5	445182	445183
	40	1 ½	40	125	38	5.0...7	10	445187	445188
	50	2	50	125	66	5.0...7	7	445192	445193
	65	2 ½	50	125	66	5.0...7	7	449521	551469
	80	3	80	225	160	5.0...6	10	on request	on request



Ordering chart

2031
forged

Control function	Port Connection DN		Diaphragm size	Actuator size Ø [mm]	K _v value [m³/h]	Pilot pressure [bar]	Max. operating pressure [bar]	Article no.	
	[mm]	[inch]						mechanically polished Ra ≤ 0.5 µm	electro polished Ra ≤ 0.38 µm
Welded connection acc. BS4825									
A	Diaphragm material EPDM (AD)								
Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	8	¼	8	40	0.5	5.0...7	10	319823	319824
	10	⅜	8	40	1.4	5.0...7	10	319825	319826
	15	½	15	50	3.7	5.0...7	8.5	319827	319828
	20	¾	20	63	8.9	5.5...7	10	291180	319829
	25	1	25	80	15.5	5.5...7	10	274228	255244
	40	1 ½	40	100	37	5.0...7	6.5	274231	291243
	50	2	50	125	66	5.0...7	8	274232	255246
	65	2 ½	50	125	66	5.0...7	8	319830	319831
	65	2 ½	80	225	160	5.0...6	10	on request	on request
	80	3	80	225	160	5.0...6	10	on request	on request
	100	4	100	225	235	5.0...6	8	on request	on request
Diaphragm material PTFE/EPDM (EA)									
Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	8	¼	8	40	0.5	5.0...7	10	445072	445073
	10	⅜	8	40	1.6	5.0...7	10	445077	445078
	15	½	15	63	3.6	5.0...7	10	447905	447906
	20	¾	20	80	8.8	5.0...7	10	447910	447911
	25	1	25	80	14.5	5.5...7	7.5	445092	445093
	40	1 ½	40	125	37.5	5.0...7	10	445097	445098
	50	2	50	125	66	5.0...7	7	445102	445103
	65	2 ½	50	125	66	5.0...7	7	299536	276355
	65	2 ½	80	225	160	5.0...6	10	on request	on request
	80	3	80	225	160	5.0...6	10	on request	on request
	100	4	100	225	235	5.0...6	4	on request	on request
Welded connection acc. DIN 11850 0									
A	Diaphragm material EPDM (AD)								
Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	8	¼	8	40	1.1	5.0...7	10	319806	319807
	10	⅜	8	40	1.7	5.0...7	10	319808	319809
	Diaphragm material PTFE/EPDM (EA)								
Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	8	¼	8	40	1.1	5.0...7	10	299511	448288
	10	⅜	8	40	1.9	5.0...7	10	299515	448289

Ordering chart

Control function	Port Connection DN		Diaphragm size	Actuator size Ø [mm]	K _v value [m ³ /h]	Pilot pressure [bar]	Max. operating pressure [bar]	Article no.		
	[mm]	[inch]						mechanically polished Ra ≤0.5 µm	electro polished Ra ≤0.38 µm	
Clamp connection acc. DIN 32676 B (with pipe ISO 4200)										
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	Diaphragm material EPDM (AD)									
	15	½	15	50	6.5	5.0...7	8.5	319840	319841	
	20	¾	20	63	12.5	5.5...7	10	319832	319833	
	25	1	25	80	18	5.5...7	10	319834	319835	
	40	1 ½	40	100	41	5.0...7	6.5	319836	319837	
	50	2	50	125	66	5.0...7	8	319838	319839	
	Diaphragm material PTFE/EPDM (EA)									
	15	½	15	63	6	5.0...7	10	299526	299494	
	20	¾	20	80	12	5.0...7	10	299530	299500	
	25	1	25	80	16	5.5...7	7.5	299531	299501	
	40	1 ½	40	125	40	5.0...7	10	299534	299504	
	50	2	50	125	67	5.0...7	7	299539	299508	
	Clamp connection acc. DIN 32676 A (with pipe DIN 11850 2)									
	A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	Diaphragm material EPDM (AD)								
		10	⅜	15	50	3.5	5.0...7	8.5	319842	319843
15		½	15	50	6.5	5.0...7	8.5	319844	319845	
20		¾	20	63	12.4	5.5...7	10	319846	319847	
25		1	25	80	20	5.5...7	10	319848	319849	
40		1 ½	40	100	34	5.0...7	6.5	319850	319851	
50		2	50	125	40	5.0...7	8	319852	319853	
Diaphragm material PTFE/EPDM (EA)										
10		⅜	15	63	3.4	5.0...7	10	299518	299487	
15		½	15	63	6	5.0...7	10	445361	445362	
20		¾	20	80	12	5.0...7	10	445366	445367	
25		1	25	80	17	5.5...7	7.5	445371	445372	
40		1 ½	40	125	34	5.0...7	10	445376	445377	
50		2	50	125	40	5.0...7	7	445381	445382	



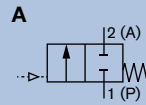
Ordering chart

Control function	Port Connection DN		Diaphragm size	Actuator size Ø [mm]	K _v value [m ³ /h]	Pilot pressure [bar]	Max. operating pressure [bar]	Article no.		
	[mm]	[inch]						mechanically polished Ra ≤ 0.5 µm	electro polished Ra ≤ 0.38 µm	
Clamp connection acc. ASME BPE										
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	Diaphragm material EPDM (AD)									
	8	¼	8	40	0.7	5.0...7	10	291111	319863	
	10	⅜	8	40	1.6	5.0...7	10	319854	319855	
	15	½	8	40	1.5	5.0...7	10	282107	319856	
	15	½	15	50	3.1	5.0...7	8.5	291167	255242	
	20	¾	20	63	8.4	5.5...7	10	291181	319857	
	25	1	25	80	15.5	5.5...7	10	282110	319858	
	40	1 ½	40	100	37	5.0...7	6.5	274655	319859	
	50	2	50	125	66	5.0...7	8	282111	319860	
	65	2 ½	50	125	66	5.0...7	8	291266	319861	
	65	2 ½	80	225	160	5.0...6	10	on request	on request	
	80	3	80	225	160	5.0...6	10	on request	on request	
	100	4	100	225	235	5.0...6	8	on request	on request	
	Diaphragm material PTFE/EPDM (EA)									
	8	¼	8	40	0.7	5.0...7	10	445301	445302	
	10	⅜	8	40	1.8	5.0...7	10	445306	445307	
	15	½	8	40	1.9	5.0...7	10	250487	252214	
	15	½	15	63	3.1	5.0...7	10	445311	445312	
	20	¾	20	80	8.5	5.0...7	10	445316	445317	
	25	1	25	80	14.5	5.5...7	7.5	445321	445322	
	40	1 ½	40	125	37.5	5.0...7	10	445326	445327	
50	2	50	125	66	5.0...7	7	445331	445332		
65	2 ½	50	125	66	5.0...7	7	551473	551474		
65	2 ½	80	225	160	5.0...6	10	on request	on request		
80	3	80	225	160	5.0...6	10	on request	on request		
100	4	100	225	235	5.0...6	4	on request	on request		

2031 forged

2/2 way Diaphragm Valve, tube valve body, weld end connection

- Light tube valve body
- Flow optimised body in stainless steel
- Zero dead volume
- Easy to weld



The externally piloted light weight diaphragm valve consists of a pneumatically operated piston actuator, a diaphragm and a 2 way tube valve body, which assures high flow rates and the highest quality.

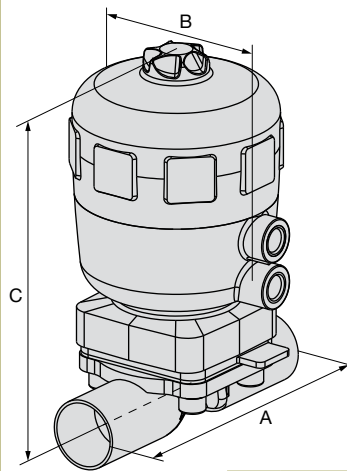
Technical data

Pressure range	See ordering chart
Media temperature	
EPDM (AD), PTFE/EPDM (EA)	-10 °C...+130 °C (steam sterilisation +140 °C for 60 min)
EPDM (AD), advanced PTFE/EPDM (EU)	-5 °C...+143 °C (steam sterilisation +150 °C for 60 min)
GYLON®/EPDM laminated (ER)	-5 °C...+130 °C (steam sterilisation +140 °C for 60 min)
FKM (FF)	0 °C...+130 °C (not recommended for steam)
Ambient temperature	
PPS actuator	+5 °C...140 °C for actuator size < 100 mm +5 °C...+90 °C for actuator size ≥ 100 mm (briefly up to +140 °C)
PA actuator (on request)	-10 °C...+60 °C
Port connections	
Weld ends	ASME BPE/DIN 11866 Series C DIN EN ISO 1127/ISO 4200/DIN11866 Series B DIN 11850 2/DIN 11866 Series A
Medium	Neutral gases and liquids, high purity, sterile, aggressive or abrasive fluids
Viscosity	Up to viscous
Body material	Stainless steel 316L / 1.4435 / BN2
Diaphragm materials	EPDM (AD), PTFE/EPDM (EA) EPDM (AD), advanced PTFE/EPDM (EU), GYLON®/EPDM laminated (ER) and FKM (FF) on request
Actuator material	PPS (PA on request)
Pilot air ports material	Stainless steel 1.4305
Control fluid	Neutral gases, air
Installation	As required, preferably with actuator in upright position

Options/Accessories

- Actuator normally open
- Actuator with reduced spring force
- Electrical position feedback see **Type 8697** ▶
- Valve islands see **Type 8640** ▶ / **Type 8644** ▶
- Pilot valve see **Type 6012/6014 P** ▶
- Stroke limitation

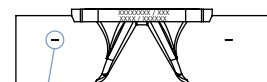
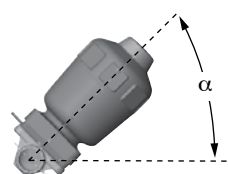
Dimensions [mm]



Dimensions for DIN EN ISO 1127/ISO 4200/DIN11866 B.
For further dimensions see data sheet **Type 2031** ▶.

DN	Actuator size	A	B	C
8	40	90	53	94
15	50	110	64	122
	63	110	80	139
20	63	119	80	147
	80	119	101w	1678
25	80	129	101	176
32	100	148	127	227
40	100	161	127	234
	125	161	153	272
50	125	192	153	277

Installation for self-draining operation







markings for self-drain angle











$\alpha = 13^\circ$ up to 24° plus 3° to 5° inclination to the pipe axis.
Drain marks indicate the correct mounting position to optimise self-draining.

Approvals

Suitability for foodstuffs / sterile applications

Approvals	Description
	Approval according to TA-air (Port size DN4...50)
Conformity	Description
	The composition of the EPDM (AB), EPDM (AD), PTFE/EPDM (EA), advanced PTFE (EU) and GYLON®/EPDM laminated (ER) diaphragms corresponds to the Code of Federal Regulations, published by the FDA (Food and Drug Administration, USA)
Conformity	Description
	The composition of the EPDM (AB), EPDM (AD), PTFE/EPDM (EA), advanced PTFE (EU) and GYLON®/EPDM laminated (ER) diaphragms is suitable for the application with food and beverage (acc. to EC-Regulation 1935/2004/EC)
Conformity	Description
	The composition of the EPDM (AB), EPDM (AD), PTFE/EPDM (EA), advanced PTFE (EU) and GYLON®/EPDM laminated (ER) diaphragms are approved acc. USP Class VI
Conformity	Description
	The diaphragm valve with tube valve body and EPDM or PTFE has been evaluated for compliance with the Hygienic Equipment Design Criteria of the EHEDG

Ordering chart

Control function	Orifice		Diaphragm size	Actuator size Ø [mm]	K _v value water [m³/h]	Pilot pressure [bar]	Max. operating pressure [bar]	Article no. EPDM (AD) seal material	Article no. PTFE/EPDM (EA) seal material
	[mm]	[inch]							
Welded connection ASME BPE/DIN 11866 C electropolished Ra ≤0.38 micrometer and Certification of Conformity for Raw Material EN-ISO 10204 3.1 (included in delivery)									
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	15	½	8	40	2	5.0...7	10	275388 	275390 
	20	¾		50	6.5	5.0...7	8.5	275391 	-
			63	6.5	5.0...7	10	-	275392 	
	25	1	20	63	12.5	5.5...7	10	278879 	-
				80	12.5	5.0...7	10	-	278880 
	40	1 ½	32	100	30	5.5...7	10	278881 	-
					30	5.5...7	8	-	278882 
	50	2	40	100	40	5.5...7	6.5	278883 	-
125				40	5.5...7	10	-	278884 	



Ordering chart continued

2031
Tube Valve Body

Control function	Orifice		Diaphragm size	Actuator size Ø [mm]	K _v value water [m³/h]	Pilot pressure [bar]	Max. operating pressure [bar]	Article no. EPDM (AD) seal material	Article no. PTFE/EPDM (EA) seal material
	[mm]	[inch]							
Welded connection acc. DIN EN ISO 1127/ISO 4200/DIN11866 B									
electropolished Ra ≤0.38 micrometer and Certification of Conformity for Raw Material EN-ISO 10204 3.1 (included in delivery)									
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	8	¼	8	40	2.1	5.0...7	10	290447	290448
				63	6.7	5.0...7	10	-	290454
	15	½	15	50	6.7	5.0...7	8.5	290452	-
				63	6.7	5.0...7	10	-	290454
	20	¾	20	63	13	5.5...7	10	290455	-
				80	13	5.0...7	10	-	290457
	25	1	25	80	17.5	5.5...7	10	290458	-
				80	17.5	5.5...7	7.5	-	290460
	32	1 ¼	32	100	36	5.5...7	10	290461	-
				100	36	5.5...7	8	-	290462
	40	1 ½	40	100	47	5.5...7	6.5	290463	-
				125	47	5.5...7	10	-	290465
	50	2	50	125	70	5.5...7	8	290466	-
				125	70	5.5...7	7	-	290467

Control function	Orifice		Diaphragm size	Actuator size Ø [mm]	K _v value water [m³/h]	Pilot pressure [bar]	Max. operating pressure [bar]	Article no. EPDM (AD) seal material	Article no. PTFE/EPDM (EA) seal material
	[mm]	[inch]							
Welded connection DIN 11850 2/DIN 11866 A									
electropolished Ra ≤0.38 micrometer and Certification of Conformity for Raw Material EN-ISO 10204 3.1 (included in delivery)									
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	10	¾	8	40	2.1	5.0...7	10	290433	290434
				63	6.5	5.5...7	10	-	290436
	15	½	15	50	6.5	5.0...7	8.5	290435	-
				63	6.5	5.5...7	10	-	290436
	20	¾	15	50	6.5	5.0...7	8.5	290437	-
				63	6.5	5.5...7	10	-	290438
	25	1	20	63	14	5.5...7	10	290439	-
				80	14	5.0...7	10	-	290440
	32	1 ¼	25	80	20	5.5...7	10	290441	-
				80	20	5.5...7	7.5	-	290442
	40	1 ½	32	100	35	5.5...7	10	290443	-
				100	35	5.5...7	8	-	290444
	50	2	40	100	44	5.5...7	6.5	290445	-
				125	44	5.5...7	10	-	290446

Accessories

Valve for actuator size [Ø mm]	Type	Pressure inlet P (valve body)	Service port A (banjo bolt)	Orifice [mm]	Q _{Nn} value air [l/min]	Pressure range [bar]	Electrical coil connection Ind. Std.	Power consumption [W]	Article no. per voltage/frequency [V/Hz]	
									024/DC	230/50
3/2 way pilot valves with banjo bolts										
Seal material valve FKM, seal material banjo bolt NBR										
40...50	6012P	G ¼	G ½	1.2	48	0...10	Form B	4	552295	552298
63	6012P	Tube fitting Ø 6 mm	G ¼	1.2	48	0...10	Form B	4	552283	552286
80...125	6014P	G ¼	G ¼	2	120	0...10	Form A	8	424103	424107

Description	Voltage	Article no.
Cable plug Type 2507 acc. to industry standard Form B - see Type 2507 ▶		
without circuitry (standard)	0...250 V AC/DC	423845
Cable plug Type 2508 (will be replaced with Type 2518) acc. to DIN 175301-803 Form A - see Type 2508 ▶		
without circuitry (standard), without cable	0...250 V AC/DC	008376

For further accessories see data sheet **Type 2XXX ▶** for the full options programme.

Pneumatically operated tank bottom valve CLASSIC

2033

- Zero dead volume body - no welds
- Hermetical separation of fluids from the operating mechanism by diaphragm
- Universal and robust actuators with modular accessory range
- Stainless steel body with welded connection
- Quality certifications FDA/3 A



The Bürkert Tank Bottom Valve is designed for control of ultra pure, sterile, aggressive or abrasive fluids. Enables especially optimal filling and emptying vessels with less dead leg.

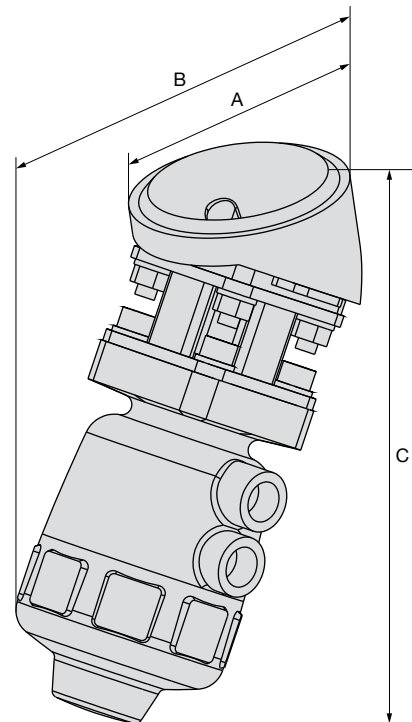
The valve body consists of a block with no weld seam, machined out of high quality stainless steel. The Tank Bottom Valve has two welding bevels to ease the welding and valve positioning operations. The high quality diaphragms separate hermetically critical fluids from the actuator.

The pneumatic actuator can be controlled by pneumatic pilot valves (single pilot valves, valve islands and control heads). Control function A, normally closed by spring return.

Technical data

Orifice	DN08...DN100
Body material	Stainless steel 1.4435 acc. to BN2 / ASME BPE Fe <0.5 % / C ≤0.03 %
Port connections	
Weld end	<ul style="list-style-type: none"> • DIN EN ISO 1127 / ISO 4200 / DIN 11866 Series B • DIN 11850 Series 2 / DIN 11866 Series A
Clamp	<ul style="list-style-type: none"> • ASME BPE / DIN 11866 Series C • DIN 32676 Series A (DIN tube) • DIN 32676 Series B (ISO tube) • ASME BPE
Surface finish (others on request)	
inside mechanical polished	Ra ≤0.5 µm (ASME BPE SF1) (external Ra ≤1.6 µm) ¹⁾
inside electro polished	Ra ≤0.38 µm (ASME BPE SF4 / DIN HE4) (external Ra ≤1.6 µm) ¹⁾
Diaphragm materials	EPDM (AD), PTFE/EPDM (EA), advanced PTFE/EPDM (EU), Gylon®/EPDM laminated (ER), FKM (FF)
Actuator material	PPS (PA for actuator sizes Ø 175/225 mm)
Medium temperature	
EPDM (AD)	-10 °C...+143 °C (steam sterilisation +150 °C for 60 min)
PTFE/EPDM (EA)	-10 °C...+130 °C (steam sterilisation +140 °C for 60 min)
PTFE/EPDM (EU)	-5 °C...+143 °C (steam sterilisation +150 °C for 60 min)
GYLON®/EPDM laminated (ER)	-5 °C to +130 °C (steam sterilisation +140 °C for 60 min)
FKM (FF)	0 °C...+130 °C (not recommended for steam)

Dimensions [mm]



Orifice	Port connection	Actuator size	A	C	B
08	08	40	50	107	100
15	15	50	65	146	134
		63	85	160	147
20	20	63	85	171	160
		80		190	179
25	25	80	120	183	174
		100		200	192
40	32	100	150	258	260
		100		258	260
		125		293	291
50	50	125	180	306	304
80	65	175	225	388	422
				388	422
100	100	225	298	436	481




Technical data continued

Ambient temperature	
Actuator size < 100 mm	+ 5 °C...+ 140 °C
Actuator size ≥ 100 mm	+ 5 °C...+ 90 °C (briefly up to + 140 °C, - 10 °C...+ 60 °C with PA actuator)
Control medium	Neutral gases, air
Pilot pressure max.	Max. 7 bar

1) Internal Ra < 0.1 µm/4 µlnch/500 Grit: on request

Approvals

Suitability for foodstuffs / sterile applications

Approvals	Description
	Approval according to TA-air (Port size DN4...DN50)
Conformity	Description
	The composition of the EPDM (AD), PTFE/EPDM (EA), advanced PTFE/EPDM (EU) and GYLON®/EPDM laminated (ER) diaphragms corresponds to the Code of Federal Regulations, published by the FDA (Food and Drug Administration, USA)
Conformity	Description
	The composition of the EPDM (AD), PTFE/EPDM (EA), advanced PTFE/EPDM (EU) and GYLON®/EPDM laminated (ER) diaphragms is suitable for the application with food and beverage (acc. to EC-Regulation 1935/2004/EC)
Conformity	Description
	The composition of the EPDM (AD), PTFE/EPDM (EA), advanced PTFE/EPDM (EU) and GYLON®/EPDM laminated (ER) diaphragms are approved acc. USP Class VI

Ordering information



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Robolux Multiway Multiport Diaphragm Valve, Pneumatically operated

2036

- Allows optimized processes designs
- Reduced installation costs
- Reduced number of valves and welds
- Stainless steel bodies in different configurations
- Approvals FDA, CE, USP VI, ATEX, 3.1



This Multiway-Multiport Diaphragm Valve system is designed for control of ultra pure, sterile, aseptic and steam/CIP fluid paths. It enables optimal sampling, draining or diverting of critical process fluids.

The valve range is based on the patented Robolux technology, where two seats are placed under one diaphragm. This design eliminates dead legs and will minimize the flow system volume.

The valve body is machined from a single piece of bar stock stainless steel. The high quality diaphragms are available in several different USP class VI approved materials. The valve is operated with compressed air.

With the Feedback and Control Heads the Robolux fits perfectly into Bürkert's decentralized automation concept.

All valves will be delivered with 3.1 certificate, installation drawing and manual instruction.

Technical data

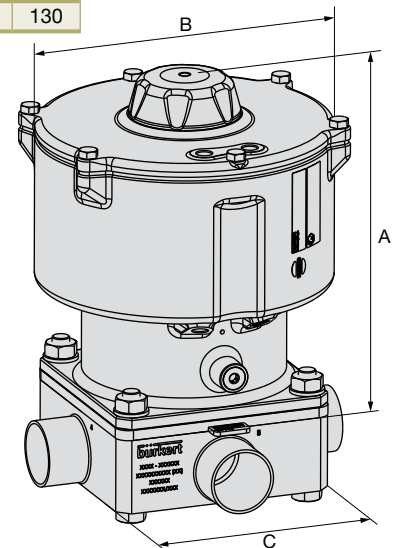
Port connection size	1/4" ... 2", DN4 ... DN50
Materials	
Valve body	1.4435 stainless steel (316L)
Diaphragm	EPDM (AD), advanced PTFE/EPDM laminated (EK), GYLON®/EPDM laminated (ER) on request
Actuator	1.4308 stainless steel (CF8)
End connections	
Weld end	DIN EN ISO 1127 / ISO 4200 / DIN 11866 series B DIN 11850 series 2 / DIN 11866 series A ASME BPE / DIN 11866 series C
Clamp	DIN 32676 series A (DIN Tube) DIN 32676 series B (ISO Tube) ASME BPE
Surface quality	
internally mechanically polished	Ra ≤ 0.5 µm (ASME BPE SF1) (external Ra ≤ 1.6 µm)
internally electro-polished	Ra ≤ 0.38 µm (ASME BPE SF4 / DIN HE4) (external Ra ≤ 1.6 µm) (others on request)
Medium pressure	Max. 8 bar ¹⁾ (depending on actuator and diaphragm)
Pilot pressure	6 ... 10 bar for RV50/70 6 ... 7 bar for RV110
Pilot air ports	Thread G 1/8

Dimensions [mm]

Orifice	A	B	C
50	193	171	130

Dimensions for other orifices see data sheet

Type 2036 ▶



Temperature

EPDM (AD)	+5 °C ... +130 °C (steam sterilisation +140 °C for 60 min)
advanced PTFE/EPDM laminated (EK)	+5 °C ... +90 °C (not recommended for steam)
GYLON®/EPDM laminated (ER)	on request
Ambience	0 ... +60 °C

Approval²⁾

Valve bodies	EN ISO 10204 3.1
ATEX Certification	PTB 13 ATEX D103 X II 2G c IIC T4 II 2D c T135 °C
Diaphragms	FDA CFR 177.2600; FDA CFR 177.1550 USP VI (121 °C, EPDM, advanced PTFE / EPDM)

1) Pressure data [bar]: Overpressure with respect to atmospheric pressure

2) Certificates are delivered together with the valves.

Ordering information



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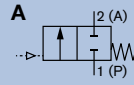
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Pneumatically operated 2/2 way diaphragm valve with stainless steel actuator

2063

- Flow optimized and deadleg free stainless steel cast or forged bodies
- Media separation with different diaphragm materials
- Trusted inner parts for long cycle life
- Actuator in stainless steel for demanding environments
- Large accessory program with stroke limitation and feedback



The pneumatically operated diaphragm valve with stainless steel actuators fulfills the demands of tough process environments. Forged or casted bodies in high quality stainless steel have excellent cleanliness and surface qualities that are required in pharma, biopharma, cosmetic or food and beverage industry.

The stainless steel actuator is designed to withstand tough process environments. Laser welding allows a design without seals and smooth surfaces that is both cleanable and robust. With a ducted exhaust air port the actuator can be isolated from the environment an optimum from a lifetime and hygienic point of view.

The trusted diaphragm materials are optimized for a long cycle life and comply to USP Class IV, FDA and EC-Regulation 1935/2004. Placed within the Bürkert diaphragm valve program various port connections, and a large accessory program are available, also explosion proof variants.

Technical data

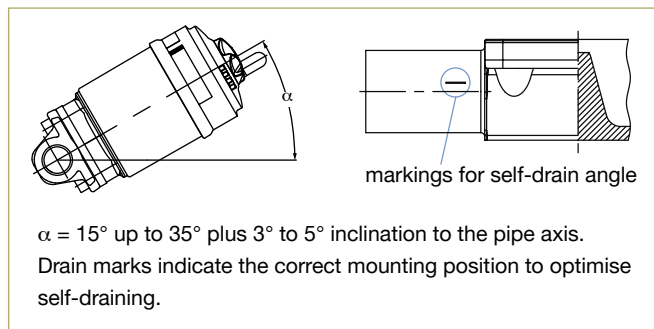
Port connection	DN15...DN50
Body material	
Forged version	Forged stainless steel 316L/1.4435/BN2
Cast version	Cast stainless steel 316L /1.4435
Port connections	
Welded acc. to	EN ISO 1127/ISO 4200, DIN 11866 RB, DIN 11850 R2, DIN 11866 RA, DIN EN 10357 RB, ASME BPE, DIN 11866 RC on request: SMS 3008, BS 4825
Clamp and threaded	on request
Actuator material	
Cover	1.4404 (316L)
Diaphragm cover	1.4308
Diaphragm materials	EPDM (AD), PTFE/EPDM (EA), advanced PTFE/EPDM (EU), GYLON®/EPDM laminated (ER) on request
Medium	Neutral gases and liquids, high purity, sterile, aggressive or abrasive fluids
Viscosity	Up to viscous
Surface finishes – forged version	(average surface finish)
internal mechanically polished	Ra ≤ 0.5 µm (ASME BPE SF1) on request
(with external forged surface)	
internal electropolished	Ra ≤ 0.38 µm (ASME BPE SF4)
(with external forged surface electropolished)	

Dimensions [mm]

Orifice	Actuator size	A	B	C
15	50	55	110	131
	70	75	110	139.4
20	70	75	119	154.3
25	70	75	129	165.1
	90	96	129	187
40	90	96	161	206.5
	130	137	161	258.9
50	130	137	192	272.7




Surface finishes – cast version	(average surface finish)
internal mechanically polished	Ra ≤ 0.76 µm (ASME BPE SF3)
(with external cast surface)	
internal electropolished	Ra ≤ 0.6 µm (ASME BPE SF6) on request
(with external cast surface electropolished)	
Medium temperature	
EPDM (AD)	-10 °C...+143 °C (steam sterilisation +150 °C for 60 min)
PTFE/EPDM (EA)	-10 °C...+130 °C (steam sterilisation +140 °C for 60 min)
PTFE/EPDM (EU)	-5 °C...+143 °C (steam sterilisation +150 °C for 60 min)
GYLON®/EPDM laminated (ER)	-5 °C...+130 °C (steam sterilisation +140 °C for 60 min)
Ambient temperature	0 °C...+60 °C, autoclavable
Control medium	Neutral gases, air
Max. pilot pressure	Max. 10.5 bar (with actuator size 130 mm (P) max. 7.5 bar)
Pilot air ports	Thread G 1/8
Installation	As required, preferably with actuator in upright position

Installation for self-draining operation











Approvals

Suitability for foodstuffs / sterile applications

























Approvals	Description
	Approval according to TA-air (Port size DN4...DN50)
Conformity	Description
	The composition of the EPDM (AD), PTFE/EPDM (EA), advanced PTFE/EPDM (EU) and GYLON®/EPDM laminated (ER) diaphragms corresponds to the Code of Federal Regulations, published by the FDA (Food and Drug Administration, USA)
Conformity	Description
	The composition of the EPDM (AD), PTFE/EPDM (EA), advanced PTFE/EPDM (EU) and GYLON®/EPDM laminated (ER) diaphragms is suitable for the application with food and beverage (acc. to EC-Regulation 1935/2004/EC)
Conformity	Description
	The composition of the EPDM (AD), PTFE/EPDM (EA), advanced PTFE/EPDM (EU) and GYLON®/EPDM laminated (ER) diaphragms are approved acc. USP Class VI

Ordering chart forged diaphragm valve

Control function	Orifice		Diaphragm size	Port connection tube \varnothing x wall thickness [mm]	K_v value water [m³/h]	Actuator size \varnothing [mm]	Pilot pressure [bar]	Max. operating pressure [bar]	Article no. electropolished, $R_a \leq 0.38 \mu\text{m}$, incl. 3.1 certificate	
	[mm]	[inch]								
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	Acc. to EN ISO 1127/ISO 4200/DIN 11866 series B									
	Diaphragm material EPDM (AD)									
	15	½	15	213×16	6.5	50 (D)	5...10.5	8.5	285310 	
						70 (M)	5...10.5	10	285311 	
	20	¾	20	26.9×1.6	12.5	70 (M)	5...10.5	10	285312 	
	25	1	25	33.7×2.0	18	70 (M)	5...10.5	6.5	285313 	
						90 (N)	5.5...10.5	10	285314 	
	40	1½	40	48.3×2.0	41	90 (N)	5.5...10.5	10	285315 	
130 (P)						5...7.5	10	285316 		
50	2	50	60.3×2.0	66	130 (P)	5...7.5	8	285317 		

Ordering chart forged diaphragm valve continued

2063

Control function	Orifice		Diaphragm size	Port connection tube Ø x wall thickness [mm]	K _v value water [m³/h]	Actuator size Ø [mm]	Pilot pressure [bar]	Max. operating pressure [bar]	Article no. electropolished, Ra ≤ 0.38 µm, incl. 3.1 certificate
	[mm]	[inch]							
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	Acc. to EN ISO 1127/ISO 4200/DIN 11866 series B								
	Diaphragm material PTFE/EPDM (EU)								
	15	½	15	21.3×1.6	6.5	50 (D)	5...10.5	5	285335 
						70 (M)	5...10.5	10	285336 
	20	¾	20	26.9×1.6	12.5	70 (M)	5...10.5	10	285337 
	25	1	25	33.7×2.0	18	70 (M)	5...10.5	6	282091 
						90 (N)	5.5...10.5	8	285338 
	40	1½	40	48.3×2.0	41	90 (N)	5.5...10.5	10	285339 
						130 (P)	5...7.5	10	285340 
	50	2	50	60.3×2.0	66	130 (P)	5...7.5	7	285341 
	Acc. to DIN 11850 series 2/DIN 11866 series A/DIN EN 10357 series B								
	Diaphragm material EPDM (AD)								
	15	½	15	19.0×1.5	6.5	50 (D)	5...10.5	8.5	285301 
						70 (M)	5...10.5	10	285302 
	20	¾	20	23.0×1.5	12.4	70 (M)	5...10.5	10	285304 
	25	1	25	29.0×1.5	20	70 (M)	5...10.5	6.5	285305 
						90 (N)	5.5...10.5	10	285306 
	40	1½	40	41.0×1.5	40	90 (N)	5.5...10.5	10	285307 
						130 (P)	5...7.5	10	285308 
	50	2	50	53.0×1.5	66	130 (P)	5...7.5	8	285309 
	Diaphragm material PTFE/EPDM (EU)								
	15	½	15	19.0×1.5	6.5	50 (D)	5...10.5	5	285326 
						70 (M)	5...10.5	10	285327 
	20	¾	20	23.0×1.5	12.4	70 (M)	5...10.5	10	285328 
	25	1	25	29.0×1.5	20	70 (M)	5...10.5	6	285329 
						90 (N)	5.5...10.5	8	285330 
	40	1½	40	41.0×1.5	40	90 (N)	5.5...10.5	10	285331 
						130 (P)	5...7.5	10	285333 
	50	2	50	53.0×1.5	66	130 (P)	5...7.5	7	285334 

Ordering chart forged diaphragm valve continued

Control function	Orifice		Diaphragm size	Port connection tube Ø x wall thickness [mm]	K _v value water [m³/h]	Actuator size Ø [mm]	Pilot pressure [bar]	Max. operating pressure [bar]	Article no. electropolished, Ra ≤ 0.38 µm, incl. 3.1 certificate
	[mm]	[inch]							
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	Acc. to ASME BPE/DIN 11866 series C								
	Diaphragm material EPDM (AD)								
	15	½	15	12.7 × 1.65	3.1	50 (D)	5...10.5	8.5	285292
						70 (M)	5...10.5	10	285294
	20	¾	20	19.05 × 1.65	8.4	70 (M)	5...10.5	10	285295
						90 (N)	5.5...10.5	10	285297
	40	1 ½	40	38.1 × 1.65	37	90 (N)	5.5...10.5	10	285298
						130 (P)	5...7.5	10	285299
	50	2	50	50.8 × 1.65	66	130 (P)	5...7.5	8	285300
						Diaphragm material PTFE/EPDM (EU)			
	15	½	15	12.7 × 1.65	3.1	50 (D)	5...10.5	5	285318
						70 (M)	5...10.5	10	285319
	20	¾	20	19.05 × 1.65	8.4	70 (M)	5...10.5	10	285320
						90 (N)	5.5...10.5	8	285322
	40	1 ½	40	38.1 × 1.65	37	90 (N)	5.5...10.5	10	285323
						130 (P)	5...7.5	10	285324
	50	2	50	50.8 × 1.65	66	130 (P)	5...7.5	7	285325

Ordering chart cast version

Control function	Orifice		Diaphragm size	Port connection tube Ø x wall thickness [mm]	K _v value water [m³/h]	Actuator size Ø [mm]	Pilot pressure [bar]	Max. operating pressure [bar]	Article no. mechanical polished, Ra ≤ 0.8 µm
	[mm]	[inch]							
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	Acc. to EN ISO 1127/ISO 4200/DIN 11866 series B								
	Diaphragm material EPDM (AD)								
	15	½	15	21.3 × 1.6	5.5	50 (D)	5...10.5	8.5	285259
						70 (M)	5...10.5	10	285260
	20	¾	20	26.9 × 1.6	10	70 (M)	5...10.5	10	285262
						90 (N)	5.5...10.5	10	285264
	40	1 ½	40	48.3 × 2.0	30	90 (N)	5.5...10.5	10	285267
						130 (P)	5...7.5	10	285268
	50	2	50	60.3 × 2.0	51.5	130 (P)	5...7.5	8	285269



Ordering chart cast version continued

2063

Control function	Orifice		Diaphragm size	Port connection tube Ø x wall thickness [mm]	K _v value water [m ³ /h]	Actuator size Ø [mm]	Pilot pressure [bar]	Max. operating pressure [bar]	Article no. mechanical polished, Ra ≤0.8 µm
	[mm]	[inch]							
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	Acc. to EN ISO 1127/ISO 4200/DIN 11866 series B								
	Diaphragm material PTFE/EPDM (EA)								
	15	½	15	21.3×1.6	5.5	50 (D)	5...10.5	5	285284
						70 (M)	5...10.5	10	285285
	20	¾	20	26.9×1.6	10	70 (M)	5...10.5	10	285286
						25	1	25	33.7×2.0
	40	1 ½	40	48.3×2.0	30	90 (N)	5.5...10.5	8	285288
						130 (P)	5...7.5	10	285290
	50	2	50	60.3×2.0	51.5	130 (P)	5...7.5	7	285291
						Acc. to DIN 11850 series 2/DIN 11866 series A/DIN EN 10357 series B			
	Diaphragm material EPDM (AD)								
	15	½	15	19.0×1.5	5.5	50 (D)	5...10.5	8.5	285250
						70 (M)	5...10.5	10	285252
	20	¾	20	23.0×1.5	10	70 (M)	5...10.5	10	285253
						25	1	25	29.0×1.5
	40	1 ½	40	41.0×1.5	30	90 (N)	5.5...10.5	10	285255
						130 (P)	5...7.5	10	285257
	50	2	50	53.0×1.5	51.5	130 (P)	5...7.5	8	285258
						Diaphragm material PTFE/EPDM (EA)			
	15	½	15	19.0×1.5	5.5	50 (D)	5...10.5	5	285276
						70 (M)	5...10.5	10	285277
	20	¾	20	23.0×1.5	10	70 (M)	5...10.5	10	285278
						25	1	25	29.0×1.5
	40	1 ½	40	41.0×1.5	30	90 (N)	5.5...10.5	8	285280
						130 (P)	5...7.5	10	285282
	50	2	50	53.0×1.5	51.5	130 (P)	5...7.5	7	285283

Ordering chart cast version continued

Control function	Orifice		Diaphragm size	Port connection tube Ø x wall thickness [mm]	K _v value water [m ³ /h]	Actuator size Ø [mm]	Pilot pressure [bar]	Max. operating pressure [bar]	Article no. mechanical polished, Ra ≤ 0.8 µm
	[mm]	[inch]							
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	Acc. to ASME BPE/DIN 11866 series C								
	Diaphragm material EPDM (AD)								
	20	¾	20	19.05 × 1.65	10	70 (M)	5...10.5	10	285243
	25	1	25	25.4 × 1.65	14	70 (M)	5...10.5	6.5	285244
						90 (N)	5.5...10.5	10	285246
	40	1½	40	38.1 × 1.65	30	90 (N)	5.5...10.5	10	285247
						130 (P)	5...7.5	10	285248
	50	2	50	50.8 × 1.65	51.5	130 (P)	5...7.5	8	285249
	Diaphragm material PTFE/EPDM (EA)								
	20	¾	20	19.05 × 1.65	10	70 (M)	5...10.5	10	285270
	25	1	25	25.4 × 1.65	14	70 (M)	5...10.5	6	285271
						90 (N)	5.5...10.5	8	285272
	40	1½	40	38.1 × 1.65	30	90 (N)	5.5...10.5	10	285273
						130 (P)	5...7.5	10	285274
	50	2	50	50.8 × 1.65	51.5	130 (P)	5...7.5	7	285275

2063

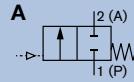
Accessories

Accessory	for actuator size	Article no.
Stainless steel silencer set (VA-Silencer incl. PTFE sealing ring)	universal	696931
Max. stroke limitation	D (Ø50), M (Ø70)	699550
	N (Ø90), P (Ø130)	699994
Min./Max. stroke limitation	D (Ø50), M (Ø70)	699986
	N (Ø90), P (Ø130)	699998
Proximity switch (single)	D (Ø50), M (Ø70)	699989
	N (Ø90), P (Ø130)	699991
Proximity switch (double)	D (Ø50), M (Ø70)	699990
	N (Ø90), P (Ø130)	699992
Adaptionsset 8697	D (Ø50), M (Ø70)	699551
	N (Ø90), P (Ø130)	580000
Type 8697	universal	depending on version

On-Off Pneumatically Operated 2/2 way Forged Diaphragm Valve

2103
forged

- Hygienic stainless steel design
- Optical display as standard in series
- Interface to feedback and control options
- For highly pure and aseptic materials
- Certification acc. to FDA
- Silencer included



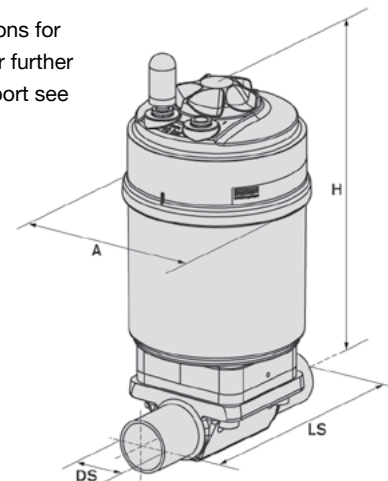
The externally piloted diaphragm valve, Type 2103, consists of a pneumatically operated piston actuator, a diaphragm and a 2 way valve body made of forged steel. The high-quality drive with stainless steel casing ensures its suitable use in hygienic or aggressive environments. The streamlined and zero dead volume valve body allows high flow rates and versatility.

Technical data

Port connection size	DN6...DN65 (1/8" ... 2 1/2")
Diaphragm size	8...50
Port connections	
Weld ends	ASME BPE / DIN 11866 C DIN EN ISO 1127/ISO 4200/DIN11866 B DIN 11850 2/DIN11866 A BS4825 SMS 3008 DIN 11850 0
Clamps	ASME BPE DIN 32676 A (with pipe DIN 11850 2) DIN 32676 B (with pipe ISO 4200) Further port connections on request
Materials	
Body	Stainless steel 316L/1.4435/BN2
Diaphragm materials	EPDM (AB), PTFE/EPDM (EA) EPDM (AD), advanced PTFE/EPDM (EU), Gylon®/ EPDM laminated (ER) and FKM (FF) on request PPS / Stainless steel 1.4561 (316Ti)
Actuator / Cover	
Media	Neutral gases and liquids, high-purity, sterile, aggressive or abrasive fluids
Viscosity	Up to viscous
Surface finish	
internally electropolished	Ra ≤ 0.38 µm (ASME BPE SF4)
internally mechanically polished	Ra ≤ 0.5 µm (ASME BPE SF1)
Medium temperature	
EPDM (AB), PTFE/EPDM (EA)	-10 °C...+130 °C (steam sterilisation + 140 °C for 60 min)
EPDM (AD), advanced PTFE/EPDM (EU)	-5 °C...+143 °C (steam sterilisation + 150 °C for 60 min)
Gylon®/EPDM laminated (ER)	-5 °C...+130 °C (steam sterilisation + 140 °C for 60 min)
FKM (FF)	0 °C...+130 °C (not recommended for steam)
Ambient temperature	+5 °C...+60 °C
Control medium	Neutral gases; air
Max. pilot pressure	Max. 10 bar, 7 bar with actuator size 130 mm
Pilot air ports	Push-in connector for external Ø 6 mm or 1/4" tube, thread G 1/8 (on request)
Installation	As required, preferably with actuator in upright position

Dimensions

Drawing shows dimensions for weld end connection, for further versions with threaded port see data sheet **Type 2103** ▶



Orifice	Actuator size	A	H	LS	DS Ø		
					EN ISO 1127/ISO 4200	DIN 11850 R2	
[inch]							
8	1/4	50	64.5	129	90	13.5	–
10	3/8	50	64.5	144	110	17.2	13
15	1/2	70	91	161	110	21.3	19
20	3/4	70	91	171	119	26.9	23
25	1	70	91	174	129	33.7	29
25	1	90	120	207	129	33.7	29
40	1 1/2	130	159	288	161	48.3	41
50	2	130	159	311	192	60.3	53

Options

- Any standard surface finish
- Classic actuator for sizes above 2" see **Type 2031** ▶
- Control heads/Positioner
- Advanced PTFE/EPDM
- Control function B (normally open) and I (double-acting)

Installation for self-draining operation

$\alpha = 15^\circ$ up to 35° plus 3° to 5° inclination to the pipe axis.
 Drain marks indicate the correct mounting position to optimise self-draining.

Ordering chart

Circuit function	Orifice		K _v value [m ³ /h]	Actuator size Ø [mm]	Pilot pressure range [bar]	Max. operating pressure [bar] EPDM	Article no. mech. polished Ra ≤ 0.6 µm EPDM	Max. operating pressure [bar] PTFE / EPDM	Article no. mech. polished Ra ≤ 0.6 µm PTFE / EPDM
	[mm]	[inch]							
Body with weld end connection									
Acc. to EN ISO 1127 / ISO 4200									
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	8	¼	1	50	5...10	10	218005	10	218012
	15	½	5.5	70	5...10	10	218006	10	218013
	20	¾	10	70	5...10	10	218007	10	218014
	25	1	14	70	5...10	6.5	218008	6	218015
					90	5.5...10	10	218009	8
	40	1 ½	30	130	5...7	10	218010	10	218017
50	2	51.5	130	5...7	8	218011	7	218018	
Acc. to DIN 11850 Series 2									
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	10	⅜	1	50	5...10	10	218019	10	218026
	15	½	5.5	70	5...10	10	218020	10	218027
	20	¾	10	70	5...10	10	218021	10	218028
	25	1	14	70	5...10	6.5	218022	6	218029
					90	5.5...10	10	218023	8
	40	1 ½	30	130	5...7	10	218024	10	218031
50	2	51.5	130	5...7	8	218025	7	218032	
Acc. to ASME BPE									
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	8	¼	1.0	50	5...10	10	218033	10	218041
	10	⅜	1.0	50	5...10	10	218034	10	218042
	15	½	5.5	70	5...10	10	218035	10	218043
	20	¾	10.0	70	5...10	10	218036	10	218044
	25	1	14.0	70	5...10	6.5	218037	6	218045
					90	5.5...10	10	218038	8
	40	1 ½	30	130	5...7	10	218039	10	218047
50	2	51.5	130	5...7	8	218040	7	218048	



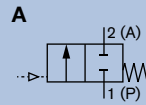
Ordering chart

2103
forged

Circuit function	Orifice		K _v value [m³/h]	Actuator size Ø [mm]	Pilot pressure range [bar]	Max. operating pressure [bar] EPDM	Article no. mech. polished Ra ≤ 0.6 µm EPDM	Max. operating pressure [bar] PTFE / EPDM	Article no. mech. polished Ra ≤ 0.6 µm PTFE / EPDM
	[mm]	[inch]							
Acc. to BS 4825									
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	8	¼	1.0	50	5...10	10	218049	10	218053
	10	⅜	1.0	50	5...10	10	218050	10	218054
	15	½	5.5	70	5...10	10	218051	10	218055
	20	¾	10.0	70	5...10	10	218052	10	218056
Body with clamp connection									
Acc. to DIN 32676									
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	15	½	5.5	70	5...10	10	218057	10	218063
	20	¾	10.0	70	5...10	10	218058	10	218064
	25	1	14.0	70	5...10	6.5	218059	6	218065
				90	5.5...10	10	218060	8	218066
	40	1 ½	30.0	130	5...7	10	218061	10	218067
	50	2	51.5	130	5...7	8	218062	7	218068
Acc. to ASME BPE – short dimension									
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	8	¼	1.0	50	4.4...10	10	266683	10	266685
	10	⅜	1.0	50	5...10	10	218070	10	218078
	15	½	5.5	70	5...10	10	218071	10	218079
	20	¾	10.0	70	5...10	10	218072	10	218080
				90	5.5...10	10	218074	8	218082
	25	1	14.0	70	5...10	6.5	218073	6	218081
				90	5.5...10	10	218074	8	218082
	40	1 ½	30.0	130	5...7	10	218075	10	218083
50	2	51.5	130	5...7	8	218076	7	218084	
Acc. to ASME BPE – long dimension									
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	8	¼	1.0	50	5...10	10	218085	10	218092
	15	½	5.5	70	5...10	10	218086	10	218093
	20	¾	10.0	70	5...10	10	218087	10	218094
				90	5.5...10	10	218089	8	218096
	25	1	14.0	70	5...10	6.5	218088	6	218095
				90	5.5...10	10	218089	8	218096
	40	1 ½	30.0	130	5...7	10	218090	10	218097
50	2	51.5	130	5...7	8	218091	7	218098	

2/2 way diaphragm valve ELEMENT pneumatically operated, tube valve body

- Light tube valve body
- Hermetical separation of fluids from the operating mechanism
- Optimal design for hygienic environments
- Easy integration of automation units with ELEMENT



The externally piloted diaphragm valve Type 2103 consists of a pneumatically operated piston actuator, a diaphragm and a 2 way tube valve body. The flow optimized body is hydroformed from a stainless steel pipe and combines hygienic design with low weight. The high-quality actuator with a stainless steel cover is designed for usage in hygienic or aggressive environments.

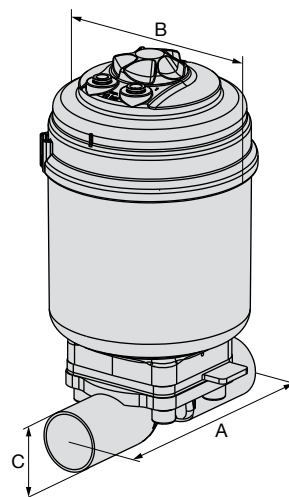
Technical data

Port connection size	DN15...50 (½" ... 2")
Diaphragm size	08...50
Port connections	
Weld ends	ASME BPE / DIN 11866 Series C DIN EN ISO 1127/ISO 4200/DIN11866 Series B DIN 11850 2/DIN 11866 Series A
Materials	
Body	Stainless steel 316L / 1.4435 / BN2
Diaphragm materials	EPDM (AB), PTFE/EPDM (EA), EPDM (AD), advanced PTFE/EPDM (EU), GYLON®/EPDM laminated (ER) and FKM (FF) on request
Actuator / Cover	PPS / Stainless steel 1.4561 (316Ti)
Media	Neutral gases and liquids, high-purity, sterile, aggressive or abrasive fluids
Viscosity	Up to viscous
Surface finish	
Internally electro polished	Ra ≤ 0.38 µm (ASME BPE SF4)
Medium temperature	
EPDM (AB), PTFE/EPDM (EA)	-10 °C...+130 °C (steam sterilisation + 140 °C for 60 min)
EPDM (AD), advanced PTFE/EPDM (EU)	-5 °C...+143 °C (steam sterilisation + 150 °C for 60 min)
GYLON®/EPDM laminated (ER)	-5 °C...+130 °C (steam sterilisation + 140 °C for 60 min)
FKM (FF)	0 °C...+130 °C (not recommended for steam)
Ambient temperature	+5 °C...+60 °C
Control medium	Neutral gases; air
Max. pilot pressure	Max. 10 bar, 7 bar with actuator size 130 mm
Pilot air ports	Push-in connector for external Ø 6 mm or ¼" tube, thread G ½ (on request)
Installation	As required, preferably with actuator in upright position

Options/Accessories

- Actuator normally open
- Actuator with reduced spring force
- pneumatic Control Unit see **Type 8697** ▶ / **Type 8690** ▶
- Control Head see **Type 8695** ▶ / **Type 8691** ▶
- Positioner see **Type 8696** ▶ / **Type 8692** ▶

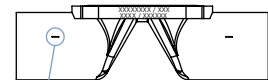
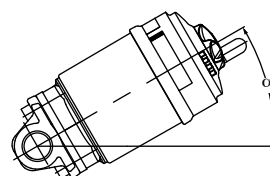
Dimensions [mm]



Port connection
DN DIN EN ISO 1127/
ISO 4200/DIN 11866 RB

DN	Actuator size	A	B	C
8	50	90	65	13.5
15	70	110	91	21.3
20	70	119	91	26.6
25	90	129	120	33.7
32	90	148	120	42.4
40	90	161	120	48.3
	130	161	159	48.3
50	130	192	159	60.3

Installation for self-draining operation



markings for self-drain angle

$\alpha = 13^\circ$ up to 24° plus 3° to 5° inclination to the pipe axis.
Drain marks indicate the correct mounting position to optimise self-draining.

Ordering chart

Control function	Port connection DN		Diaphragm size	Actuator size Ø [mm]	K _v value water [m ³ /h]	Pilot pressure [bar]	Max. operating pressure [bar]	Article no. interface plastic, PPS	Article no. interface 360° rotatable, stainless steel	
	[mm]	[inch]								
Welded connection ASME BPE/DIN 11866 C										
electropolished Ra ≤ 0.38 µm and Inspection certificate 3.1 acc. to EN ISO 10204 (included in delivery)										
A	Diaphragm material EPDM (AB)									
Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	15	½	8	50	2	5...10	10	290501	290513	
	20	¾	15	70	6.5	5...10	10	290503	290515	
	25	1	20	70	12.5	5...10	10	290505	290517	
	40	1 ½	32	90	30	5...10	8	290507	290519	
	50	2	40	90	40	5...10	5.5	290509	290521	
				130		5...7	10	290511	290524	
	Diaphragm material PTFE/EPDM (EA)									
		15	½	8	50	2	5...10	10	290502	290514
		20	¾	15	70	6.5	5...10	10	290504	290516
		25	1	20	70	12.5	5...10	10	290506	290518
	40	1 ½	32	90	30	5...10	6	290508	290520	
	50	2	40	90	40	5...10	5	290510	290523	
			130		5...7	10	290512	290525		



Ordering chart

2103
Tube Valve Body

Control function	Port connection DN		Diaphragm size	Actuator size Ø [mm]	K _v value water [m ³ /h]	Pilot pressure [bar]	Max. operating pressure [bar]	Article no. interface plastic, PPS	Article no. interface 360° rotatable, stainless steel
	[mm]	[inch]							
Welded connection acc. DIN EN ISO 1127/ISO 4200/DIN11866 B									
electropolished Ra ≤0.38 micrometer and Certification of Conformity for Raw Material EN ISO 10204 3.1 (included in delivery)									
A 2/2 way valve, pilot operated, normally closed (NC)	Diaphragm material EPDM (AB)								
	8	¼	8	50	2.1	5...10	10	290575	290594
	15	½	15	70	6.7	5...10	10	290579	290598
	20	¾	20	70	13	5...10	10	290582	290600
	25	1	25	90	17.5	5...10	10	290584	290602
	32	1 ¼	32	90	36	5...10	8	290586	290604
	40	1 ½	40	90	47	5...10	5.5	290588	290608
				130		5...7	10	290590	290610
	50	2	50	130	70	5...7	8	290592	290612
	Diaphragm material PTFE/EPDM (EA)								
	8	¼	8	50	2.1	5...10	10	290576	290595
	15	½	15	70	6.7	5...10	10	290580	290599
	20	¾	20	70	13	5...10	10	290583	290601
	25	1	25	90	17.5	5...10	8	290585	290603
32	1 ¼	32	90	36	5...10	6	290587	290606	
40	1 ½	40	90	47	5...10	5	290589	290609	
			130		5...7	10	290591	290611	
50	2	50	130	70	5...7	7	290593	290613	

Ordering chart continued

Control function	Port connection DN		Diaphragm size	Actuator size Ø [mm]	K _v value water [m ³ /h]	Pilot pressure [bar]	Max. operating pressure [bar]	Article no. interface plastic, PPS	Article no. interface 360° rotatable, stainless steel
	[mm]	[inch]							
Welded connection acc. DIN 118502 / DIN 11866 A									
electropolished Ra ≤ 0.38 micrometer and Certification of Conformity for Raw Material EN ISO 10204 3.1 (included in delivery)									
A 2/2 way valve, pilot operated, normally closed (NC)	Diaphragm material EPDM (AB)								
	10	¾	8	50	2.1	5...10	10	290527	290550
	15	½	15	70	6.5	5...10	10	290531	290553
	20	¾	15	70	6.5	5...10	10	290535	290556
	25	1	20	70	14	5...10	10	290537	290559
	32	1 ¼	25	90	20	5...10	10	290539	290562
	40	1 ½	32	90	35	5...10	8	290541	290566
	50	2	40	90	44	5...10	5.5	290544	290569
				130		5...7	10	290547	290572
	Diaphragm material PTFE/EPDM (EA)								
	10	¾	8	50	2.1	5...10	10	290528	290552
	15	½	15	70	6.5	5...10	10	290533	290554
	20	¾	15	70	6.5	5...10	10	290536	290558
	25	1	20	70	14	5...10	10	290538	290561
	32	1 ¼	25	90	20	5...10	8	290540	290564
40	1 ½	32	90	35	5...10	6	290543	290568	
50	2	40	90	44	5...10	5	290546	290571	
			130		5...7	10	290549	290573	

Pneumatically operated zero dead volume T-valve ELEMENT for decentralized automation

2104

- Zero deadleg monoblock without welds
- Diaphragm hermetically separates the fluids from the operating mechanism
- Easy integration of ELEMENT automation units
- Stainless steel body with clamp or weld ends
- FDA/3A quality certifications



The Bürkert Zero dead volume T-Valve Type 2104 is designed for control of ultra pure, sterile, aggressive or abrasive fluids. It enables especially optimal sampling, draining or diverting of critical process fluids. The valve body is machined from a single piece of block material (monoblock, no weld seam). The high quality diaphragms separate hermetically critical fluids from the actuator.

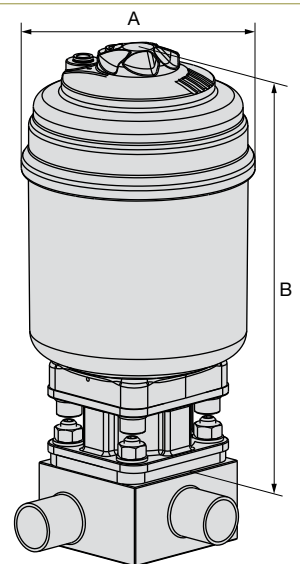
The pneumatic actuator is optimized for decentralized automation through ELEMENT pneumatic automation units. The fully integrated system has a compact and smooth design, integrated pneumatic lines, IP65/67, NEMA Type 4x protection class and superior chemical resistance.

Technical data

Orifice	DN8...DN50
Body material	<ul style="list-style-type: none"> • Stainless steel 1.4435/316 L • Stainless steel 1.4435BN2/ASME BPE Fe <0.5 %/C ≤0.03 %
Diaphragm materials	EPDM (AD), PTFE/EPDM (EA), advanced PTFE/EPDM (EU), GYLON®/EPDM laminated (ER), FKM (FF)
Actuator material	
Actuator	PPS
Cover	Stainless steel 1.4561 (316Ti)
Pilot air ports	Stainless steel 1.4305
Surface finish (others on request)	
inside mechanical polished	Ra ≤ 0.5 µm (ASME BPE SF1) (external Ra ≤ 1.6 µm)
inside electro polished	Ra ≤ 0.38 µm (ASME BPE SF4/DIN HE4) (external Ra ≤ 1.6 µm)
Media temperature	
EPDM (AD)	-10 °C...+143 °C (steam sterilisation +150 °C for 60 min)
PTFE/EPDM (EA)	-10 °C...+130 °C (steam sterilisation +140 °C for 60 min)
PTFE/EPDM (EU)	-5 °C...+143 °C (steam sterilisation +150 °C for 60 min)
GYLON®/EPDM laminated (ER)	-5 °C...+130 °C (steam sterilisation +140 °C for 60 min)
FKM (FF)	0 °C...+130 °C (not recommended for steam)
Ambient temperature	+5 °C...+60 °C
Control medium	Neutral gases, air
Max. pilot pressure	Max. 10 bar; Actuator size 130 mm 7 bar

Dimensions [mm]

Orifice	Actuator size	A	B
8	50	64.5	137.5
15	50	64.5	145.5
	70	91	164.5
20	70	91	165
25	70	91	171
	90	120	204
40	90	120	220.5
	130	159	273
50	130	159	281.5



Body with weld end

acc. to DIN EN ISO 1127 / ISO 4200 / DIN 11866 Series B

Port connections

Weld end

- DIN EN ISO 1127/ISO 4200/DIN 11866 Series B
- DIN 11850 Series 2/DIN 11866 Series A
- ASME BPE/DIN 11866 Series C
- DIN 32676 Series A (DIN tube)
- DIN 32676 Series B (ISO tube)
- ASME BPE

Clamp

Installation for self-draining

Inclined 3°...5° downwards

Ordering information



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Ordering information for decentralized automation of On/Off ELEMENT valve system Typ 8801-TB

A decentralized, automated On/Off ELEMENT valve system Type 8801-TB consists of a T-valve Type 2104 and a valve actuation system control head Type 8691/8695 or a pneumatic control unit Type 8690/8697 (see separate datasheets).

For the configuration of further valve systems please use the “Request for quotation” on separate datasheet.

You order two components and receive a complete assembled and certified valve.

T-Valve Type 2104	Control Head		Pneumatic Control Unit / Feedback	
	Type 8691 ▶	Type 8695 ▶	Type 8690 ▶	Type 8697 ▶
Valve System On/Off ELEMENT				
	Valve System Type 8801-TB-H 2104+8691 (Actuator size Ø 70/90/130 mm) Type 8801-TB-M 2104+8695 (Actuator size Ø 50 mm)		Valve System Type 8801 TB-K 2104+8690 (Actuator size Ø 70/90/130 mm) Type 8801 TB-U 2104+8697 (Actuator size Ø 50 mm)	

Pneumatically operated tank bottom valve ELEMENT for decentralized automation

2105

- Zero deadleg monoblock without welds
- Diaphragm hermetically separates the fluids from the operating mechanism
- Easy integration of ELEMENT automation units
- Stainless steel body with weld ends
- FDA/3A quality certifications



The Bürkert Tank Bottom Valve Type 2105 is designed for control of ultra pure, sterile, aggressive or abrasive fluids. Enables especially optimal filling and emptying vessels with less dead leg.

The valve body consists of a block with with no weld seam, machined out of high quality stainless steel. The Tank Bottom Valve has two welding bevels to ease the welding and valve positioning operations.

The high quality diaphragms separate hermetically critical fluids from the actuator. The pneumatic actuator is optimized for decentralized automation through ELEMENT pneumatic automation units. The fully integrated system has a compact and smooth design, integrated pneumatic lines, IP65/67, NEMA Type 4X protection class and superior chemical resistance.

Technical data

Orifice	DN8...DN50
Body material	<ul style="list-style-type: none"> • Stainless steel 1.4435/316 L • Stainless steel 1.4435BN2/ASME BPE Fe < 0.5 %/C ≤ 0.03 %
Diaphragm materials	EPDM (AD), PTFE/EPDM (EA), advanced PTFE/EPDM (EU), Gylon®/EPDM laminated (ER), FKM (FF)
Actuator material	
Actuator	PPS
Cover	Stainless steel 1.4561 (316Ti)
Pilot air ports	Stainless steel 1.4305
Surface finish (others on request)	
inside mechanical polished	Ra ≤ 0.5 µm (ASME BPE SF1) (external Ra ≤ 1.6 µm)
inside electro polished	Ra ≤ 0.38 µm (ASME BPE SF4/DIN HE4) (external Ra ≤ 1.6 µm)
Media temperature	
EPDM (AD)	-10 °C...+143 °C (steam sterilisation +150 °C for 60 min)
PTFE/EPDM (EA)	-10 °C...+130 °C (steam sterilisation +140 °C for 60 min)
PTFE/EPDM (EU)	-5 °C...+143 °C (steam sterilisation +150 °C for 60 min)
GYLON®/EPDM laminated (ER)	-5 °C...+130 °C (steam sterilisation +140 °C for 60 min)
FKM (FF)	0 °C...+130 °C (not recommended for steam)
Ambient temperature	+5 °C...+60 °C
Control medium	Neutral gases, air
Max. pilot pressure	Max. 10 bar; Actuator size 130 mm 7 bar

Dimensions [mm]

Orifice	Actuator size	A	B
8	50	64.5	137.5
15	50	64.5	145.5
	70	91	164.5
20	70	91	165
25	70	91	171
	90	120	204
40	90	120	220.5
	130	159	273
50	130	159	281.5

**Welded body acc. to
DIN EN ISO 1127/ISO 4200/
DIN 11866 Series B and
ASME BPE**

Port connections	
Weld end	<ul style="list-style-type: none"> • DIN EN ISO 1127/ISO 4200/DIN 11866 Series B • DIN 11850 Series 2/DIN 11866 Series A • ASME BPE/DIN 11866 Series C
Clamp	<ul style="list-style-type: none"> • DIN 32676 Series A (DIN tube) • DIN 32676 Series B (ISO tube) • ASME BPE
Installation for self-draining	Inclined 3°...5° downwards

Ordering chart



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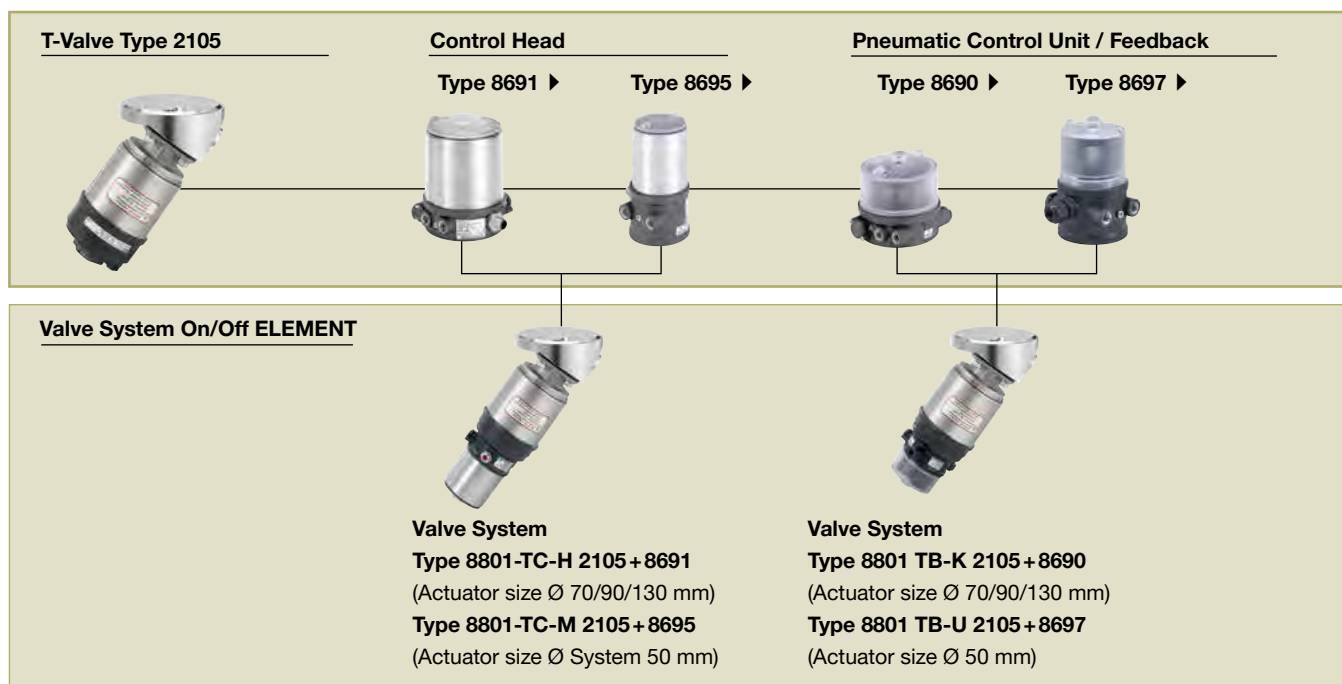
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Ordering information for decentralized automation of On/Off ELEMENT valve system Typ 8801-TC

A decentralized, automated On/Off ELEMENT valve system Type 8801-TB consists of a T-valve Type 2105 and a valve actuation system control head Type 8691/8695 or a pneumatic control unit Type 8690/8697 (see separate datasheets).

For the configuration of further valve systems please use the "Request for quotation" on separate datasheet.

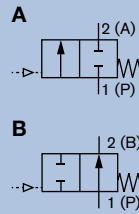
You order two components and receive a complete assembled and certified valve.



2/2 way diaphragm valve with plastic body, pneumatically operated

3230

- Use with aggressive and contaminate mediums
- Threaded port version
- Compact design
- Optical position indicator



2/2 way plastic diaphragm valve, pilot operated with pneumatic actuator and spring return. Used for polluted medium in process and water technology.

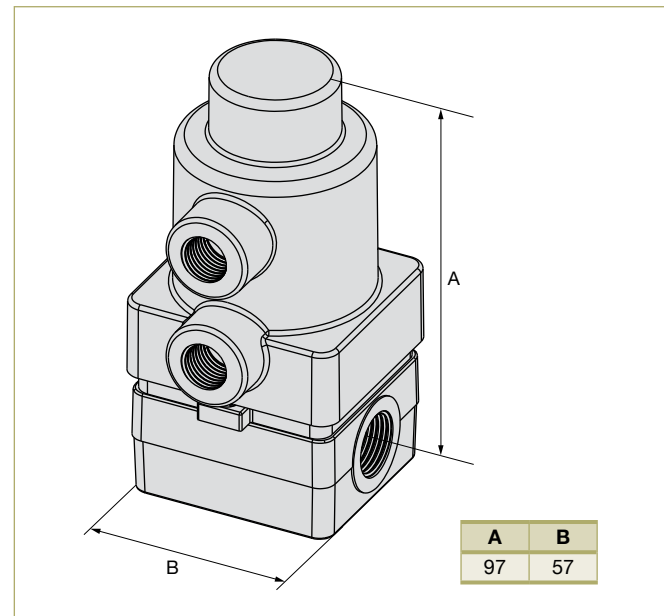
Technical data

Orifice	DN12 and DN15
Body material	PVC-U, PP
Seal material	EPDM
Actuator material	PP, glass-fibre reinforced
Medium	Neutral or aggressive medium that do not attack the body and seal materials
Medium temperature	See pressure temperature chart
Ambient temperature	0 °C...+60 °C
Control medium	Lubricated/non-lubricated compressed air and other neutral medium (e.g., water)
Pilot pressure	Max. 7 bar
Port connections	Threaded port Ø 16 mm, Ø 20 mm and G 3/8 Threaded port Ø 20 mm radially expandable
Installation	As required, preferably with actuator in upright position

Options

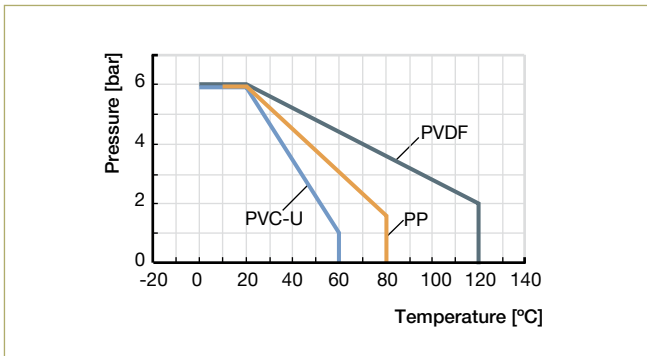
- Double-acting actuator (circuit function I)
- Body material, PVDF

Dimensions [mm]



Pressure temperature chart

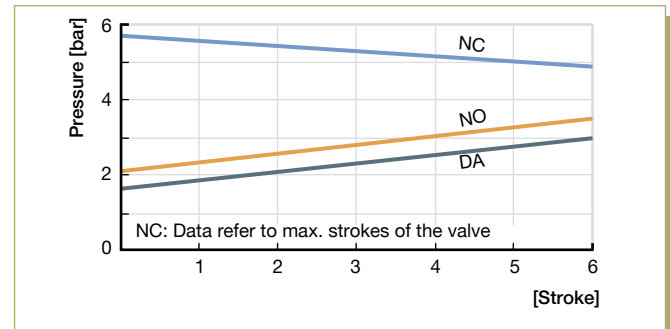
depending on the body materials



Pilot-pressure chart

NC = Control function A, NO = Control function B,

DA = Control function I



Ordering chart

Control function	Orifice [mm]	K _v value water [m ³ /h]	Pressure range +20 °C [bar]	Body material	Port connections	Article no.
A 2/2 way valve, operated by external air, normally closed	12	2.8	0...6	PVC-U	True union Ø 16	784822
					G ½	784824
	PP	True union Ø 16	784828			
		G ½	784830			
15	3.5	0...6	PVC-U	True union Ø 20	784826	
				PP	True union Ø 20	784832
B 2/2 way valve, operated by external air, normally open	12	2.8	0...6	PVC-U	True union Ø 16	784823
					G ½	784825
	PP	True union Ø 16	784829			
		G ½	784831			
	15	3.5	0...6	PVC-U	True union Ø 20	784827
					PP	True union Ø 20

Accessories

Type	Pressure inlet P (valve body)	Service port A (banjo bolt)	Orifice [mm]	Q _{Nn} value air [l/min]	Pressure range [bar]	Electrical connection	Power consumption [W]	Article no. voltage/frequency [V/Hz]	
								024/DC	230/50
3/2 way pilot valves with banjo bolts									
Seal material valve FKM, seal material banjo bolt NBR									
6012 P	Tube fitting Ø 6 mm	G ¼	1.2	48	0...10	Form B	4	552283	552286

Description	Voltage	Article no.
Cable plug Type 2507 acc. to industry standard Form B - see Type 2507 ▶		
without circuitry (standard)	0...250 V AC/DC	423845

Manually Operated 2/2 way Diaphragm Valve

3232

- Flow optimized and deadleg free bodies
- Hermetical separation of fluids from the operating mechanism by diaphragm
- Manual actuator in plastic
- Plastic bodies with true union, solvent socket, weld ends or flanges
- Suitable for aggressive and corrosive media



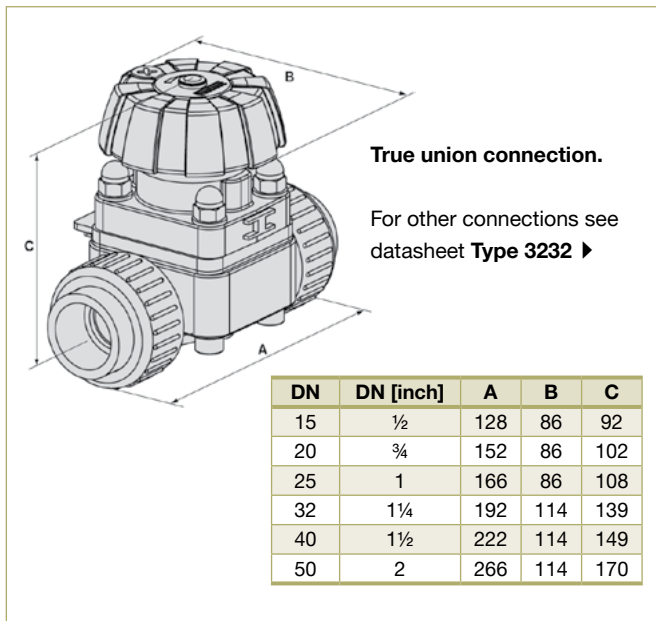
Manually-operated diaphragm valves in compact model consisting of plastic bodies, diaphragm seal, PPS bonnet and PPS handwheel. The diaphragm is both a switching element and a seal element towards the outside, and is easily replaced. The flow can be continually adjusted with the handwheel. The valves have no dead volume and can be mounted to be self-draining.

Technical data

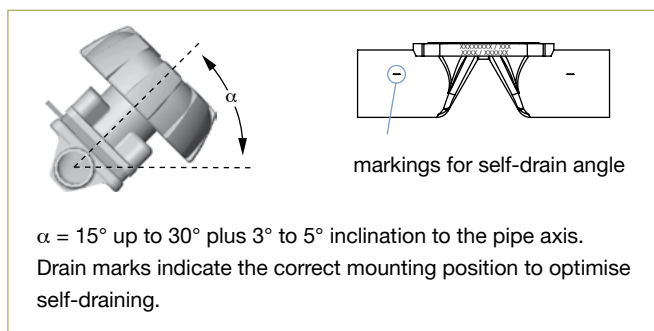
Orifice (diaphragm size)	DN15...DN50 (DN65...DN100 on request)
Body materials	PVC-U, PP, PVDF
Actuator material	PPS manual actuator and bonnet
Seal material	EPDM, PTFE/EPDM (FKM on request)
Medium	Neutral or aggressive medium
Viscosity	Up to viscous
Medium temperature¹⁾	See diagram
Ambient temperature	-10 °C...+60 °C
Port connections	DN15...DN50: True union and spigot connections
Installation	As required
Installation for self draining	Tilted 5°...30° to the horizontal and Inclined 3°...5° to the flow direction (see drawing)
Options (on request)	Locking function

1) The permissible nominal pressure falls with increasing medium temperature

Dimensions [mm]



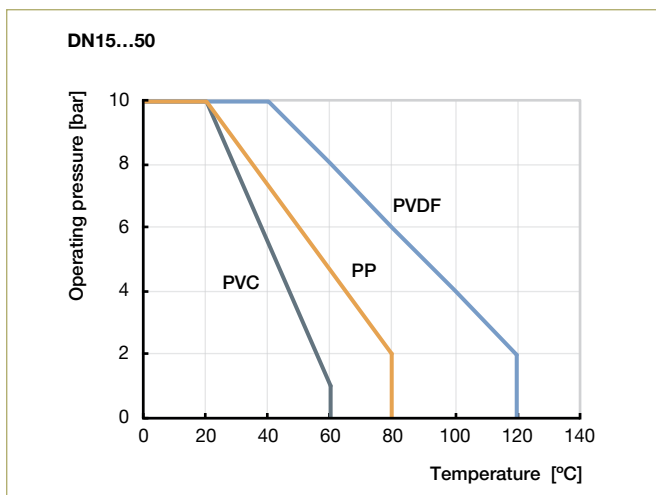
Installation for self-draining operation



Options

- Pneumatic actuation
- Safety lock

Pressure-Temperature diagram




Ordering chart

Port connection [mm]	Orifice Diaphragm size [mm]	Orifice Diaphragm size [inch]	K _v value water [m ³ /h]	Pressure range at +20 °C [bar]	Article no. EPDM diaphragm	Article no. EPDM/PTFE diaphragm
Body in PVC						
True union connection						
20	15	½	3.5	0...10	296103	144764
25	20	¾	7.2	0...10	317230	144765
32	25	1	12.5	0...10	317231	144766
40	32	1¼	19	0...10	317232	144767
50	40	1½	28	0...10	317233	144768
63	50	2	40	0...7	317234	144769
Body in PP						
True union connection						
20	15	½	3.5	0...10	317218	144788
25	20	¾	7.2	0...10	317219	144789
32	25	1	12.5	0...10	317220	144790
40	32	1¼	19	0...10	317221	144791
50	40	1½	28	0...10	317222	144792
63	50	2	40	0...7	317223	144793
Spigot connection						
20	15	½	3.5	0...10	317224	144800
25	20	¾	7.2	0...10	317225	144801
32	25	1	12.5	0...10	317226	144802
40	32	1¼	19	0...10	317227	144803
50	40	1½	28	0...10	317228	144804
63	50	2	40	0...7	317229	144805
Body in PVDF						
True union connection						
20	15	½	3.5	0...10	317206	144812
25	20	¾	7.2	0...10	317207	144813
32	25	1	12.5	0...10	317208	144814
40	32	1¼	19	0...10	317209	144815
50	40	1½	28	0...10	317210	144816
63	50	2	40	0...7	317211	144817
Spigot connection						
20	15	½	3.5	0...10	317212	144824
25	20	¾	7.2	0...10	317213	144825
32	25	1	12.5	0...10	317214	144826
40	32	1¼	19	0...10	317215	144827
50	40	1½	28	0...10	317216	144828
63	50	2	40	0...7	317217	144829

2/2 way Diaphragm Valve, manually operated, forged valve body, weld end and clamp connection

3233

- Hermetical separation of fluids from the operating mechanism by diaphragm
- Zero dead volume
- Various surface finishes
- Quality certifications 



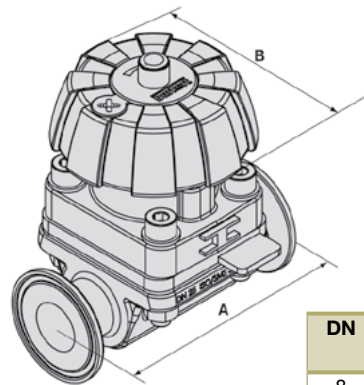
Hand operated diaphragm valve designed specifically for 3 A/FDA compliant bioprocessing tasks. The forged 316L stainless steel body can be delivered with your specific surface finish with a range of diaphragm materials to suit positive control of ultra-pure, abrasive and aggressive fluids.

The flow is continuously adjustable with the hand wheel. The valves are zero dead volume and can be mounted to self-draining. The valves are autoclavable.

Technical data

Port connection size	DN8...DN80 (¼"...3"), DN6, DN100 (½", 4") on request
Diaphragm size	8...80 (100 on request)
Port connections	
Weld ends acc.	DIN EN ISO 1127/ISO 4200/DIN11866 B DIN 11850 2/DIN11866 A ASME BPE / DIN 11866 C BS4825 SMS 3008
Clamps acc.	DIN 11850 0 (on request) DIN 32676 B (with pipe ISO 4200) DIN 32676 A (with pipe DIN 11850 2) ASME BPE ISO 2852 further port connections on request
Materials	
Body	Stainless steel 316L / 1.4435 / BN2
Actuator	Handwheel / Bonnet
Diaphragm size 8	PPS (Stainless steel on request)/Stainless steel
Diaphragm size 15...50	PPS (Stainless steel on request) / PPS (Stainless steel on request)
Diaphragm size 80...100	Stainless steel / Stainless steel
Diaphragm materials	EPDM (AB), PTFE/EPDM (EA) EPDM (AD), advanced PTFE/EPDM (EU), GYLON®/EPDM laminated (ER) and FKM (FF) on request
Media	Neutral gases and liquids, high-purity, sterile, aggressive or abrasive fluids
Viscosity	Up to viscous
Surface finish	
internally electropolished (external surface forged electropolished)	Ra ≤ 0.38 µm (ASME BPE SF4)
internally mechanically polished (external surface forged)	Ra ≤ 0.5 µm (ASME BPE SF1)

Dimensions [mm]



True union connection.

For dimensions of other versions see datasheet

Type 3233. ▶

DN	DN [inch]	A	B
8	¼	90	35
15	½	110	86
20	¾	119	86
25	1	129	86
40	1½	161	114
50	2	192	114
80	3	250	272
100	4	295	272

Medium temperature

EPDM (AB), PTFE/EPDM (EA)	-10 °C...+130 °C (steam sterilisation +140 °C for 60 min)
EPDM (AD), advanced PTFE/EPDM (EU)	-5 °C...+143 °C (steam sterilisation +150 °C for 60 min)
GYLON®/EPDM laminated (ER)	-5 °C...+130 °C (steam sterilisation +140 °C for 60 min)
FKM (FF)	0 °C...+130 °C (not recommended for steam)

Ambient temperature

Up to +130 °C (briefly up to +150 °C)

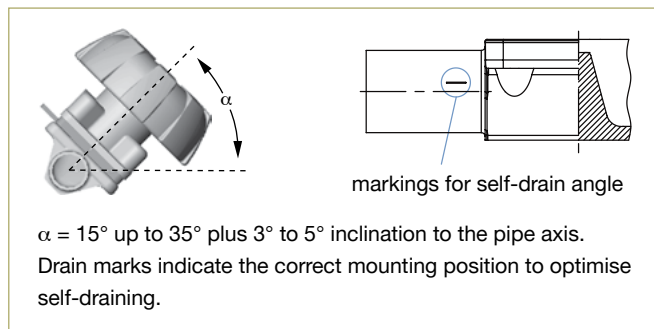
Installation

As required, preferably with actuator in upright position

Options

- All mechanical and electropolished finishes a standard
- Locking function

Installation for self-draining operation



Ordering chart

Port Connection DN		Diaphragm size [mm]	Actuator material Handwheel / Bonnet	K_v value [m ³ /h]	Max. operating pressure [bar]	Article no.	
[mm]	[inch]					mechanically polished Ra ≤ 0.5 μm	electropolished Ra ≤ 0.38 μm
Welded connection acc. EN ISO 1127 / ISO 4200 / DIN11866 B							
Certification of Conformity for Raw Material EN-ISO 10204 3.1 (included in delivery)							
diaphragm material EPDM (AB)							
8	¼	8	PPS / Stainless steel	1.5	10	446182	446183
10	⅜	8	PPS / Stainless steel	1.5	10	446187	446188
10	⅜	15	PPS / PPS	5.5	10	449930	554176
15	½	15	PPS / PPS	6.5	10	445503	445504
20	¾	20	PPS / PPS	12.5	10	445508	445509
25	1	25	PPS / PPS	18	10	445513	445514
40	1½	40	PPS / PPS	41	10	445518	445519
50	2	50	PPS / PPS	66	10	445523	445524
65	2½	80	Stainless steel / Stainless steel	160	10	254349	273309
80	3	80	Stainless steel / Stainless steel	160	10	on request	273310
100	4	100	Stainless steel / Stainless steel	235	6	on request	on request
diaphragm material PTFE/EPDM (EA)							
8	¼	8	PPS / Stainless steel	2	10	446217	446218
10	⅜	8	PPS / Stainless steel	2	10	446222	446223
10	⅜	15	PPS / PPS	5.2	10	299713	299688
15	½	15	PPS / PPS	6	10	445538	445539
20	¾	20	PPS / PPS	12	10	445543	445544
25	1	25	PPS / PPS	16	10	445548	445549
40	1½	40	PPS / PPS	40	10	445553	445554
50	2	50	PPS / PPS	67	10	445558	445559
65	2½	80	Stainless steel / Stainless steel	160	10	on request	273312
80	3	80	Stainless steel / Stainless steel	160	10	on request	270877
100	4	100	Stainless steel / Stainless steel	235	6	on request	on request



Ordering chart continued

3233

Port Connection DN		Diaphragm size [mm]	Actuator material Handwheel / Bonnet	K _v value [m³/h]	Max. operating pressure [bar]	Article no.	
[mm]	[inch]					mechanically polished Ra ≤ 0.5 µm	electropolished Ra ≤ 0.38 µm
Welded connection acc. DIN 11866 A / DIN 11850 2							
Certification of Conformity for Raw Material EN-ISO 10204 3.1 (included in delivery)							
diaphragm material EPDM (AB)							
10	¾	8	PPS / Stainless steel	1.5	10	445462	446322
10	¾	15	PPS / PPS	3.5	10	299708	299686
15	½	15	PPS / PPS	6.5	10	445638	445639
20	¾	20	PPS / PPS	12.4	10	445643	445644
25	1	25	PPS / PPS	20	10	445648	445649
32	1¼	40	PPS / PPS	34	10	554981	554982
40	1½	40	PPS / PPS	40	10	445653	445654
50	2	50	PPS / PPS	66	10	445658	445659
65	2½	80	Stainless steel / Stainless steel	160	10	on request	273315
80	3	80	Stainless steel / Stainless steel	160	10	on request	273316
100	4	100	Stainless steel / Stainless steel	235	6	on request	on request
diaphragm material PTFE/EPDM (EA)							
10	¾	8	PPS / Stainless steel	1.9	10	447340	446351
10	¾	15	PPS / PPS	3.4	10	299709	299687
15	½	15	PPS / PPS	6	10	445668	445669
20	¾	20	PPS / PPS	12	10	445673	445674
25	1	25	PPS / PPS	17	10	445678	445679
32	1¼	40	PPS / PPS	34	10	554991	554992
40	1½	40	PPS / PPS	40	10	445683	445684
50	2	50	PPS / PPS	66	10	445688	445689
65	2½	80	Stainless steel / Stainless steel	160	10	on request	273321
80	3	80	Stainless steel / Stainless steel	160	10	258261	273322
100	4	100	Stainless steel / Stainless steel	235	6	on request	on request
Welded connection acc. ASME BPE							
Certification of Conformity for Raw Material EN-ISO 10204 3.1 (included in delivery)							
diaphragm material EPDM (AB)							
8	¼	8	PPS / Stainless steel	0.7	10	447975	447976
10	¾	8	PPS / Stainless steel	1.6	10	447980	447981
15	½	8	PPS / Stainless steel	1.5	10	299699	299672
15	½	15	PPS / PPS	3.1	10	445573	445574
20	¾	15	PPS / PPS	6.5	10	250478	299683
20	¾	20	PPS / PPS	8.4	10	445578	445579
25	1	25	PPS / PPS	15.5	10	445583	445584
40	1½	40	PPS / PPS	37	10	445588	445589
50	2	50	PPS / PPS	66	10	445593	445594
65	2½	50	PPS / PPS	66	10	299722	266030
65	2½	80	Stainless steel / Stainless steel	160	10	271331	on request
80	3	80	Stainless steel / Stainless steel	160	10	on request	on request
100	4	100	Stainless steel / Stainless steel	235	6	on request	on request
diaphragm material PTFE/EPDM (EA)							
8	¼	8	PPS / Stainless steel	0.7	10	447995	447996
10	¾	8	PPS / Stainless steel	1.8	10	448000	448001
15	½	8	PPS / Stainless steel	1.9	10	558789	299673
15	½	15	PPS / PPS	3.1	10	445608	445609
20	¾	15	PPS / PPS	6	10	250482	299684
20	¾	20	PPS / PPS	8.5	10	445613	445614
25	1	25	PPS / PPS	14.5	10	445618	445619
40	1½	40	PPS / PPS	37.5	10	445623	445624
50	2	50	PPS / PPS	66	10	445628	445629
65	2½	50	PPS / PPS	66	10	551115	246098
65	2½	80	Stainless steel / Stainless steel	160	10	276777	on request
80	3	80	Stainless steel / Stainless steel	160	10	274778	260493
100	4	100	Stainless steel / Stainless steel	235	6	on request	on request

Ordering chart continued

Port Connection DN		Diaphragm size [mm]	Actuator material Handwheel / Bonnet	K _v value [m ³ /h]	Max. operating pressure [bar]	Article no.	
[mm]	[inch]					mechanically polished Ra ≤ 0.5 μm	electropolished Ra ≤ 0.38 μm
Welded connection acc. BS4825							
Certification of Conformity for Raw Material EN-ISO 10204 3.1 (included in delivery)							
diaphragm material EPDM (AB)							
8	¼	8	PPS / Stainless steel	0.5	10	446252	446253
10	⅜	8	PPS / Stainless steel	1.4	10	446257	446258
15	½	15	PPS / PPS	3.7	10	447925	447926
20	¾	20	PPS / PPS	8.9	10	447930	447931
25	1	25	PPS / PPS	15.5	10	445583	445584
40	1½	40	PPS / PPS	37	10	445588	445589
50	2	50	PPS / PPS	66	10	445593	445594
65	2½	50	PPS / PPS	66	10	299722	266030
65	2½	80	Stainless steel / Stainless steel	160	10	271331	on request
80	3	80	Stainless steel / Stainless steel	160	10	on request	on request
100	4	100	Stainless steel / Stainless steel	235	6	on request	on request
diaphragm material PTFE/EPDM (EA)							
8	¼	8	PPS / Stainless steel	0.5	10	446287	446288
10	⅜	8	PPS / Stainless steel	1.6	10	446292	446293
15	½	15	PPS / PPS	3.6	10	447945	447946
20	¾	20	PPS / PPS	8.8	10	447950	447951
25	1	25	PPS / PPS	14.5	10	445618	445619
40	1½	40	PPS / PPS	37.5	10	445623	445624
50	2	50	PPS / PPS	66	10	445628	445629
65	2½	50	PPS / PPS	66	10	551115	246098
65	2½	80	Stainless steel / Stainless steel	160	10	276777	on request
80	3	80	Stainless steel / Stainless steel	160	10	274778	260493
100	4	100	Stainless steel / Stainless steel	235	6	on request	on request
Welded connection acc. SMS 3008							
Certification of Conformity for Raw Material EN-ISO 10204 3.1 (included in delivery)							
diaphragm material EPDM (AB)							
25	1	25	PPS / PPS	16	10	445693	445694
40	1½	40	PPS / PPS	37.8	10	445698	445699
50	2	50	PPS / PPS	66	10	445703	445704
65	2½	50	PPS / PPS	66	10	449820	551557
80	3	80	Stainless steel / Stainless steel	160	10	on request	273326
diaphragm material PTFE/EPDM (EA)							
25	1	25	PPS / PPS	14.8	10	445708	445709
40	1½	40	PPS / PPS	38	10	445713	445714
50	2	50	PPS / PPS	66	10	445718	445719
65	2½	50	PPS / PPS	66	10	551561	551562
80	3	80	Stainless steel / Stainless steel	160	10	on request	273328
Welded connection acc. DIN 11850 0							
Certification of Conformity for Raw Material EN-ISO 10204 3.1 (included in delivery)							
diaphragm material EPDM (AB)							
8	¼	8	PPS / Stainless steel	1.1	10	299701	299678
10	⅜	8	PPS / Stainless steel	1.7	10	299703	181775
diaphragm material PTFE/EPDM (EA)							
8	¼	8	PPS / Stainless steel	1.1	10	299702	299679
10	⅜	8	PPS / Stainless steel	1.9	10	299704	299680



Ordering chart continued

3233

Port Connection DN		Diaphragm size [mm]	Actuator material Handwheel / Bonnet	K _v value [m³/h]	Max. operating pressure [bar]	Article no.	
[mm]	[inch]					mechanically polished Ra ≤ 0.5 µm	electropolished Ra ≤ 0.38 µm
Clamp connection acc. DIN 32676 B (with pipe ISO 4200)							
Certification of Conformity for Raw Material EN-ISO 10204 3.1 (included in delivery)							
diaphragm material EPDM (AB)							
15	½	15	PPS / PPS	6.5	10	299710	299689
20	¾	20	PPS / PPS	12.5	10	299714	299691
25	1	25	PPS / PPS	18	10	299718	553714
40	1½	40	PPS / PPS	41	10	299720	299695
50	2	50	PPS / PPS	66	10	299723	299697
diaphragm material PTFE/EPDM (EA)							
15	½	15	PPS / PPS	6	10	299712	299690
20	¾	20	PPS / PPS	12	10	299716	299692
25	1	25	PPS / PPS	16	10	299719	299693
40	1½	40	PPS / PPS	40	10	299721	299696
50	2	50	PPS / PPS	67	10	299724	299698
Clamp connection acc. DIN 32676 A (with pipe DIN 11850 2)							
Certification of Conformity for Raw Material EN-ISO 10204 3.1 (included in delivery)							
diaphragm material EPDM (AB)							
10	⅜	15	PPS / PPS	3.5	10	299705	299681
15	½	15	PPS / PPS	6.5	10	445893	445894
20	¾	20	PPS / PPS	12.4	10	445898	445899
25	1	25	PPS / PPS	20	10	445903	445904
40	1½	40	PPS / PPS	34	10	445908	445909
50	2	50	PPS / PPS	40	10	445913	445914
diaphragm material PTFE/EPDM (EA)							
10	⅜	15	PPS / PPS	3.4	10	299706	299682
15	½	15	PPS / PPS	6	10	445918	445919
20	¾	20	PPS / PPS	12	10	445923	445924
25	1	25	PPS / PPS	17	10	445928	445929
40	1½	40	PPS / PPS	34	10	445933	445934
50	2	50	PPS / PPS	40	10	445938	445939
Clamp connection acc. ASME BPE							
Certification of Conformity for Raw Material EN-ISO 10204 3.1 (included in delivery)							
diaphragm material EPDM (AB)							
8	¼	8	PPS / Stainless steel	0.7	10	446510	446511
10	⅜	8	PPS / Stainless steel	1.6	10	446515	446516
15	½	8	PPS / Stainless steel	1.5	10	299700	299674
15	½	15	PPS / PPS	3.1	10	445868	445869
20	¾	20	PPS / PPS	8.4	10	445873	445874
25	1	25	PPS / PPS	15.5	10	445878	445879
40	1½	40	PPS / PPS	37	10	445883	445884
50	2	50	PPS / PPS	66	10	445888	445889
65	2½	50	PPS / PPS	66	10	551454	551455
65	2½	80	Stainless steel / Stainless steel	160	10	292835	on request
80	3	80	Stainless steel / Stainless steel	160	10	269347	252571
100	4	100	Stainless steel / Stainless steel	235	6	on request	on request
diaphragm material PTFE/EPDM (EA)							
8	¼	8	PPS / Stainless steel	0.7	10	446545	446546
10	⅜	8	PPS / Stainless steel	1.8	10	446550	446551
15	½	8	PPS / Stainless steel	1.9	10	553269	299677
15	½	15	PPS / PPS	3.1	10	445833	445834
20	¾	20	PPS / PPS	8.5	10	445838	445839
25	1	25	PPS / PPS	14.5	10	445843	445844
40	1½	40	PPS / PPS	37.5	10	445848	445849
50	2	50	PPS / PPS	66	10	445853	445854
65	2½	50	PPS / PPS	66	10	551460	551461
65	2½	80	Stainless steel / Stainless steel	160	10	279251	on request
80	3	80	Stainless steel / Stainless steel	160	10	254131	257108
100	4	100	Stainless steel / Stainless steel	235	6	on request	on request

Manually operated 2 way Diaphragm Valve

3233
Tube Valve Body

- Light tube valve body
- Flow optimised body in stainless steel
- Zero dead volume
- Easy to weld



Hand operated diaphragm valve designed specifically for 3 A/FDA compliant bioprocessing tasks. The forged 316L stainless steel body can be delivered with your specific surface finish with a range of diaphragm materials to suit positive control of ultra-pure, abrasive and aggressive fluids.

The flow is continuously adjustable with the hand wheel. The valves are zero dead volume and can be mounted to self-draining. The valves are autoclavable.

Technical data

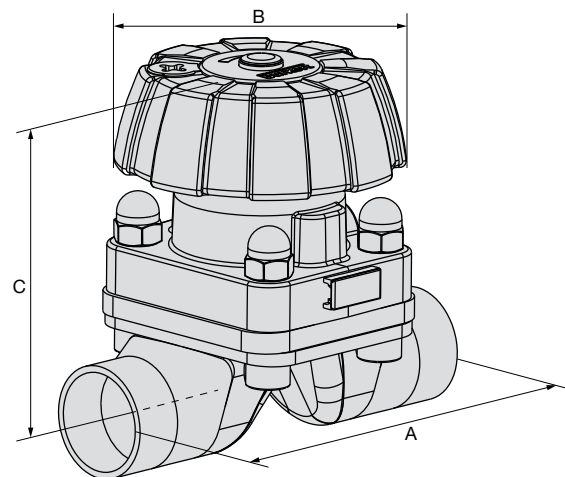
Pressure range	DN08...DN50 (1/4"...2")
Port connections	
Weld ends	ASME BPE/DIN 11866 Series C DIN EN ISO 1127/ISO 4200/DIN11866 Series B DIN 11850 2/DIN 11866 Series A
Media temperature	
EPDM (AD), PTFE/EPDM (EA)	-10 °C...+130 °C (steam sterilisation +140 °C for 60 min)
EPDM (AD), advanced PTFE/EPDM (EU)	-5 °C...+143 °C (steam sterilisation +150 °C for 60 min)
GYLON®/EPDM laminated (ER)	-5 °C...+130 °C (steam sterilisation +140 °C for 60 min)
FKM (FF)	0 °C...+130 °C (not recommended for steam)
Ambient temperature	Up to +130 °C (briefly up to +150 °C)
Fluid	Neutral gases and liquids, high purity, sterile, aggressive or abrasive fluids
Body material	Stainless steel 316L/1.4435/BN2
Seal material	EPDM (AD), PTFE/EPDM (EA), EPDM (AD); advanced PTFE/EPDM (EU), GYLON®/EPDM laminated (ER) and FKM (FF) on request
Actuator material	PPS (Stainless steel on request)
Viscosity	Up to viscous
Surface	
Electropolished inside	Ra ≤ 0.38 µm (ASME BPE SF4)
Installation	As required, preferably with actuator in upright position

Options

- Locking function

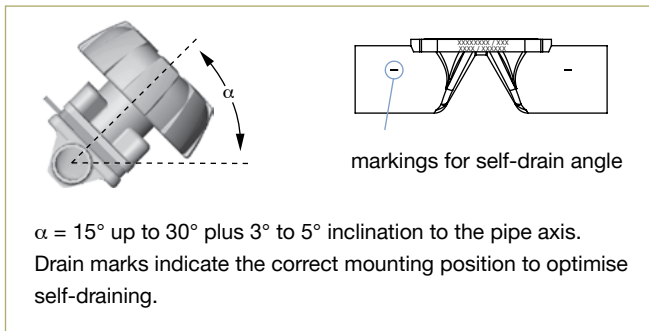
Dimensions [mm]

Weld ends port connection







Diaphragm size	A	B	C
ASME BPE / DIN 11866 C			
8	90	35	56
15	110	80	83
20	119	80	91
32	148	114	116
40	161	114	117
DIN EN ISO 1127 / ISO 4200 / DIN11866 B			
8	90	35	56
15	110	80	83
20	119	80	91
25	129	80	96
32	148	114	116
40	161	114	117
50	192	114	133
DIN 11850 2 / DIN 11866 A			
8	90	35	56
15	110	80	83
15	119	80	85
20	129	80	95
25	148	80	96
32	161	114	115
40	192	114	120

Installation for self-draining operation



Approvals

Suitability for foodstuffs / sterile applications

Conformity	Description
	The composition of the EPDM, PTFE/EPDM and advanced PTFE/EPDM diaphragms corresponds to the Code of Federal Regulations, published by the FDA (Food and Drug Administration, USA).
	The composition of the EPDM, PTFE/EPDM and advanced PTFE/EPDM diaphragms is suitable for the application with food and beverage (acc. to EC-Regulation 1935/2004/EC).
	The diaphragm valve with tube valve body and EPDM or PTFE has been evaluated for compliance with the Hygienic Equipment Design Criteria of the EHEDG.
	The Diaphragm valve according to 3-A approved on request (3-A Sanitary Standards Symbol Administrative Council).



Ordering chart

3233
Tube Valve Body

Port connection DN		Diaphragm size	K _v value water [m ³ /h]	Max. operating pressure [bar]	Article no. EPDM (AD) seal material	Article no. PTFE/EPDM (EA) seal material
[mm]	[inch]					
Welded connection ASME BPE/DIN 11866 Series C						
PPS Handwheel, electropolished Ra ≤ 0.38 μm and Inspection certificate 3.1 acc. to EN-ISO 10204 (included in delivery)						
15	½	8	2	10	275864	275865
20	¾	15	6.5	10	275866	275867
25	1	20	12.5	10	278887	278888
40	1½	32	30	10	278889	278890
50	2	40	40	7	278891	278892

Port connection DN		Diaphragm size	K _v value water [m ³ /h]	Max. operating pressure [bar]	Article no. EPDM (AD) seal material	Article no. PTFE/EPDM (EA) seal material
[mm]	[inch]					
Welded connection EN ISO 1127 / ISO 4200 / DIN 11866 Series B						
PPS Handwheel, electropolished Ra ≤ 0.38 μm and Inspection certificate 3.1 acc. to EN-ISO 10204 (included in delivery)						
8	¼	8	2.1	10	290482	290483
15	½	15	6.7	10	290487	290488
20	¾	20	13	10	290489	290490
25	1	25	17.5	10	290491	290492
32	1¼	32	36	10	290493	290494
40	1½	40	47	10	290495	290497
50	2	50	70	7	290498	290499

Port connection DN		Diaphragm size	K _v value water [m ³ /h]	Max. operating pressure [bar]	Article no. EPDM (AD) seal material	Article no. PTFE/EPDM (EA) seal material
[mm]	[inch]					
Welded connection DIN 11866 A / DIN 11850 2						
PPS Handwheel, electropolished Ra ≤ 0.38 μm and Inspection certificate 3.1 acc. to EN-ISO 10204 (included in delivery)						
10	⅜	8	2.1	10	290468	290469
15	½	15	6.5	10	290470	290471
20	¾	15	6.5	10	290472	290473
25	1	20	14	10	290474	290475
32	1¼	25	20	10	290476	290477
40	1½	32	35	10	290478	290479
50	2	40	44	7	290480	290481

Electromotive 2 way diaphragm on/off valve

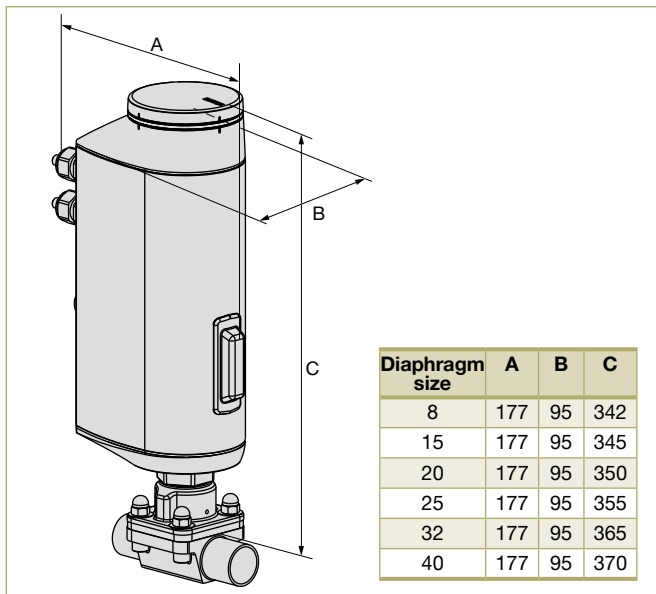
3323

- Safety position with energy pack
- Fast shut off
- Adjustable force for increased diaphragm lifetime
- Various diaphragms, stainless steel and plastic bodies available
- Diagnostic functions and fieldbus integration



The innovative diaphragm on/off valve Type 3323 is the solution when it comes to on/off control in areas with media contact such as the Food and Beverage, Cosmetic, Pharma and Biopharma Industry. The electromotive actuator with ball screw shuts the diaphragm valve quasi delay free with – for electromotive valves – unique speed of 4 mm/s within 1.5...4.5 seconds. If necessary, the safety position can be realized with optional energy storage in case of power failure. Pressure variations or shocks in the medium aren't transferred to the valve position. Many helpful functions for process monitoring, valve diagnostics and predictive maintenance can be used. Beside the mechanical position indication a 360°- LED illuminated ring displays valve position and information about warnings or errors. Various communication standards up to modern fieldbus systems are available. Trusted valve bodies and diaphragms ensure media separation with minimum dead leg and are easy to clean. Demanding environments are no problem for Type 3323 with its high IP-protection and high resistance to vibration and shocks. Hygienic design allows a fast and residue-free exterior cleaning. The actuator force can be exactly adjusted for the operating conditions to optimize diaphragm life.

Dimensions [mm]



Technical data

General data	
Port connection size	DN8...DN50 (¼"...2")
Diaphragm size	8...40
Body material	
Stainless steel	Forged 316L/1.4435/BN2 Tube 316L/1.4435/BN2 Cast, tank bottom and T-body on request
Plastic	PVC (Polyvinyl chloride) PP (Polypropylene) PVDF (Polyvinylidene fluoride)
Port connections stainless steel	
Weld ends	ASME BPE / DIN 11866 C DIN EN ISO 1127/ISO 4200/DIN11866 B DIN 11850 2/DIN11866 A BS4825, SMS 3008 DIN 11850 0
Clamps	ASME BPE DIN 32676 A (with pipe DIN 11850 2) DIN 32676 B (with pipe ISO 4200) further port connections on request
Port connections plastic	True union (solvent), true union (weld), weld ends and solvent sockets
Surface finish: forged	
internally electropolished	Ra ≤ 0.38 µm (ASME BPE SF4)
internally mechanically polished	Ra ≤ 0.5 µm (ASME BPE SF1)

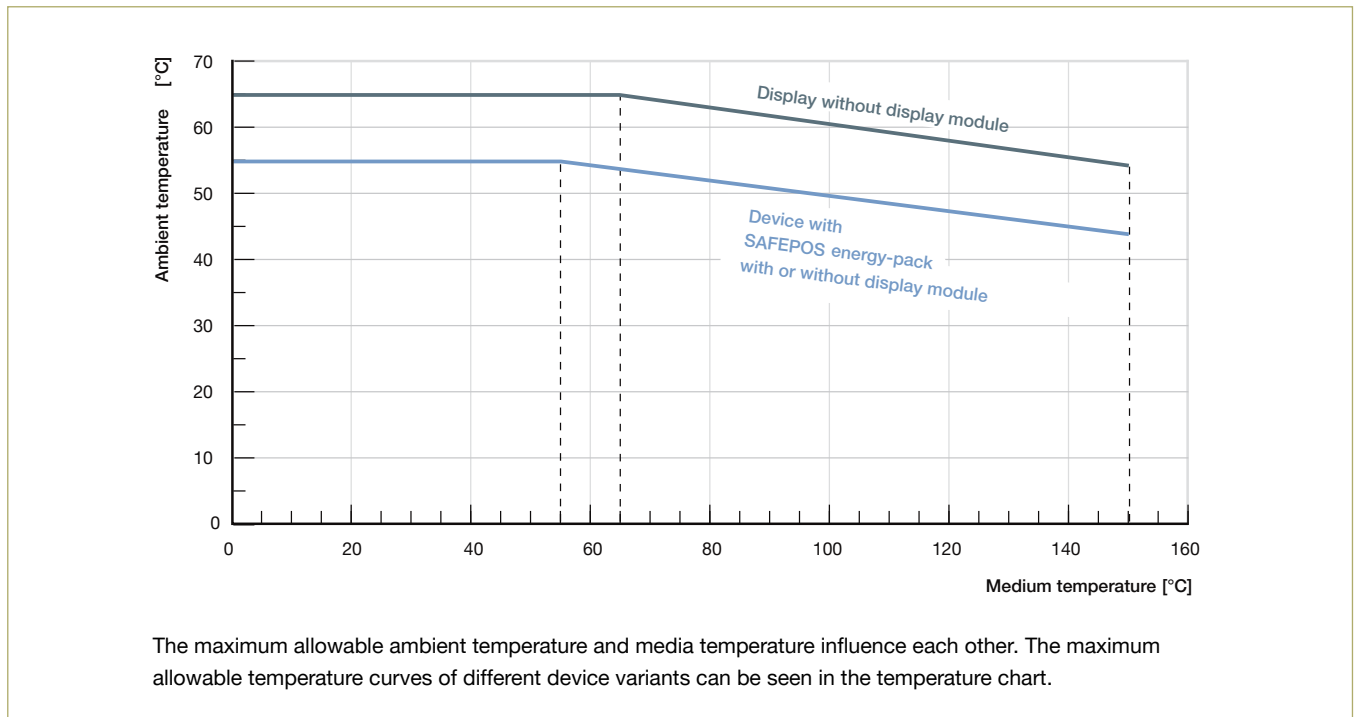
Surface finish: tube body	internally electropolished	Ra ≤ 0.38 µm (ASME BPE SF4)
Materials	Diaphragm materials	EPDM (AB), PTFE/EPDM (EA), EPDM (AD), advanced PTFE/EPDM (EU), Gylon®/EPDM laminated (ER), FKM (FF)
Medium temperature	EPDM (AD)	-10 °C...+143 °C (steam sterilisation +150 °C for 60 min)
	PTFE/EPDM (EA)	-10 °C...+130 °C (steam sterilisation +140 °C for 60 min)
	PTFE/EPDM (EU)	-5 °C...+143 °C (steam sterilisation +150 °C for 60 min)
	Gylon®/EPDM laminated (ER)	-5 °C...+130 °C (steam sterilisation +140 °C for 60 min)
	FKM (FF)	0 °C...+130 °C (not recommended for steam)
Media		Neutral gases and liquids, high-purity, sterile, aggressive or abrasive fluids
Viscosity		Up to viscous
Installation		As required, preferably with actuator in upright position
Ambient temperature		-10 °C...+65 °C (without SAFEPOS energy storage) -10 °C...+55 °C (with SAFEPOS energy storage) Depends on media temperature see temperature chart

Technical data continued

Safety position at power failure	With SAFEPOS energy-pack: opened, closed or free programmable without SAFEPOS energy-pack: blocked in last position
Power supply	24 V DC \pm 10 % (max. residual ripple 10 %)
Closure time	< 1.5...4.5 sec. depending on diaphragm size
Travel speed	4 mm/s
Duty cycle	100 %
Protection class	IP65/IP67
Binary control	0...5 V (log. 0) 10...30 V (log.1)
Vibration, sinusoidal	5 g according to IEC 60068-2-6 Test Fc
Shock, mechanical	50 g according to IEC 60068-2-27 Test Ea
Digital control (fieldbus)	EtherNet/IP, Modbus/TCP, PROFINET (on request)
Approval and Conformity	ATEX II Cat 3G/D / IECEx (optional) cULus Cert. No. 238179 (optional)
Ignition protection class	II 3G Ex ec IIC T4 Gc II 3D Ex tc IIIC T135 °C Dc

Electrical data	
Protection class	3 acc. to DIN EN 61140
Electrical connections	Cable gland, 2 x M20 or 2 circular plug-in connector M12, 5 pin and 8 pin
Operating voltage	24 V DC \pm 10 % max. residual ripple 10 %
Operating current [A]	Max. 3 A including actuator at max. load and charging current of the optional SAFEPOS energy-pack (charging current approx. 1 A)
Lifelong energy storage SAFEPOS energy-pack	Up to 10 years (depending on operating conditions)
Electronic without actuator [W]	Min. 2 W, max. 4 W
Control	
Output digital	Current limit 100 mA
Input digital	0...5 V = log "0", 10...30 V = log "1" inverted input reversed accordingly
Communication interface	Connection to PC via USB bÜS interface set
Communication Software	Bürkert communicator

Temperature chart

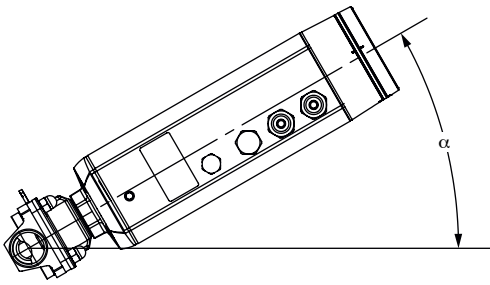


Pressure values

Diaphragm size	Max. operating pressure [bar]	
	EPDM, FKM	PTFE, advanced PTFE, Gylon®
8	10	10
15	10	10
20	10	10
25	10	10
32	8	5,5
40	4	2,5

Pressure values: K_v value water [m³/h]: Measured at +20 °C, 1 bar pressure at valve inlet and free outlet.

Installation for self-draining operation



$\alpha = 15^\circ$ up to 35° plus 3° to 5° inclination to the pipe axis.
 Drain marks indicate the correct mounting position to optimise self-draining.

Ordering information



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Electromotive 2 way diaphragm control valve

3363

- Precise and fast control
- Safety position with energy pack
- Adjustable force for increased diaphragm lifetime
- Various diaphragms, stainless steel and plastic bodies available
- Diagnostic functions and fieldbus integration



The innovative diaphragm control valve Type 3363 is the solution when it comes to demanding control tasks in areas with media contact such as the Food and Beverage, Cosmetic, Pharma and Biopharma Industry. The electromotive actuator with ball screw positions the diaphragm with quasi delay free with highest precision and – for electromotive valves – unique speed of 4 mm/s that can be varied acc. to plant design.

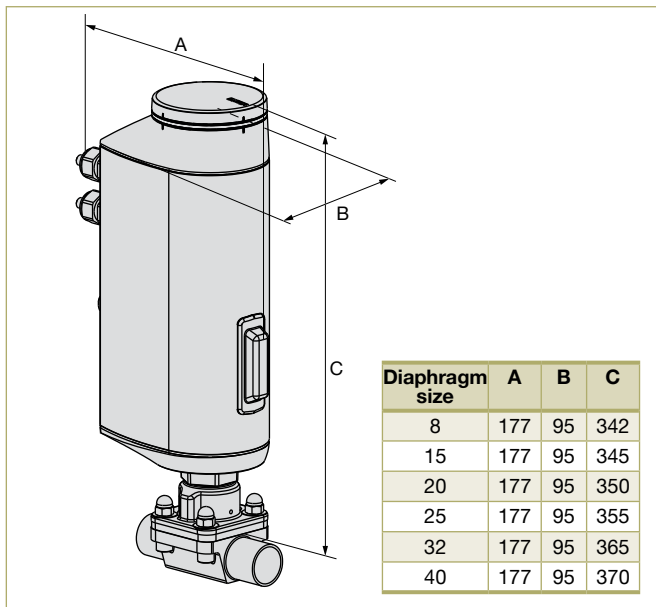
Pressure variations or shocks in the medium aren't transferred to the valve position. If necessary, the safety position can be realized with optional energy storage in case of power failure. Many helpful functions for process monitoring, valve diagnostics and predictive maintenance can be used. Beside the mechanical position indication a 360°- LED illuminated ring displays valve position and information about warnings or errors. Communication is possible with both analogue signals and modern fieldbus systems.

Trusted valve bodies and diaphragms ensure media separation with minimum dead leg and are easy to clean. Demanding environments are no problem for Type 3363 with its high IP-protection and high resistance to vibration and shocks. Hygienic design allows a fast and residue-free exterior cleaning. The actuator force can be exactly adjusted for the operating conditions to optimize diaphragm life.

Technical data

General data	
Port connection size	DN8...DN50 (1/4" ... 2")
Diaphragm size	8...40 mm
Body material	
Stainless steel	Forged 316L/1.4435/BN2 Tube 316L/1.4435/BN2 Cast, tank bottom and T-body on request
Plastic	PVC (Polyvinyl chloride) PP (Polypropylene) PVDF (Polyvinylidene fluoride)
Port connections, stainless steel	
Weld ends	ASME BPE / DIN 11866 C DIN EN ISO 1127/ISO 4200/DIN11866 B DIN 11850 2/DIN11866 A BS4825 SMS 3008 DIN 11850 0
Clamps	ASME BPE DIN 32676 A (with pipe DIN 11850 2) DIN 32676 B (with pipe ISO 4200) further port connections on request
Port connections plastic	
	True union (solvent), true union (weld), weld ends and solvent sockets

Dimensions [mm]



Surface finish, forged

{internally electropolished Ra ≤ 0.38 µm (ASME BPE SF4)
internally mechanically polished Ra ≤ 0.5 µm (ASME BPE SF1)

Surface finish, tube body

internally electropolished Ra ≤ 0.38 µm (ASME BPE SF4)

Materials

Diaphragm materials EPDM (AD), PTFE/EPDM (EA), advanced PTFE/EPDM (EU), Gylon®/EPDM laminated (ER), FKM (FF)

Medium temperature

EPDM (AD) -10 °C...+143 °C (steam sterilisation +150 °C for 60 min)
PTFE/EPDM (EA) -10 °C...+130 °C (steam sterilisation +140 °C for 60 min)
PTFE/EPDM (EU) -5 °C...+143 °C (steam sterilisation +150 °C for 60 min)
GYLON®/EPDM laminated (ER) -5 °C...+130 °C (steam sterilisation +140 °C for 60 min)
FKM (FF) 0 °C...+130 °C (not recommended for steam)

Media

Neutral gases and liquids, high-purity, sterile, aggressive or abrasive fluids

Viscosity

Up to viscous

Installation

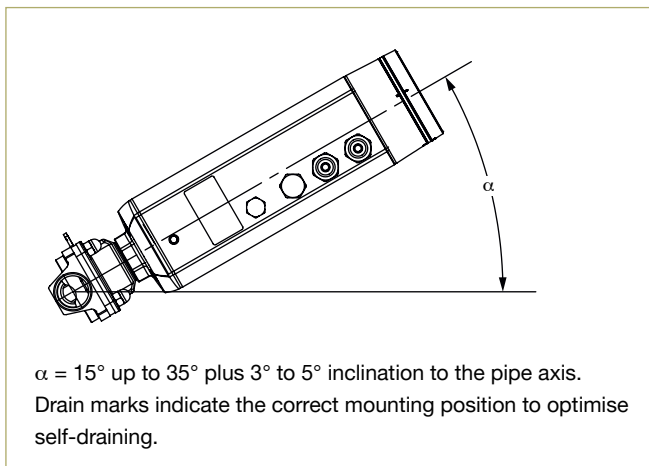
As required, preferably with actuator in upright position

Technical data continued

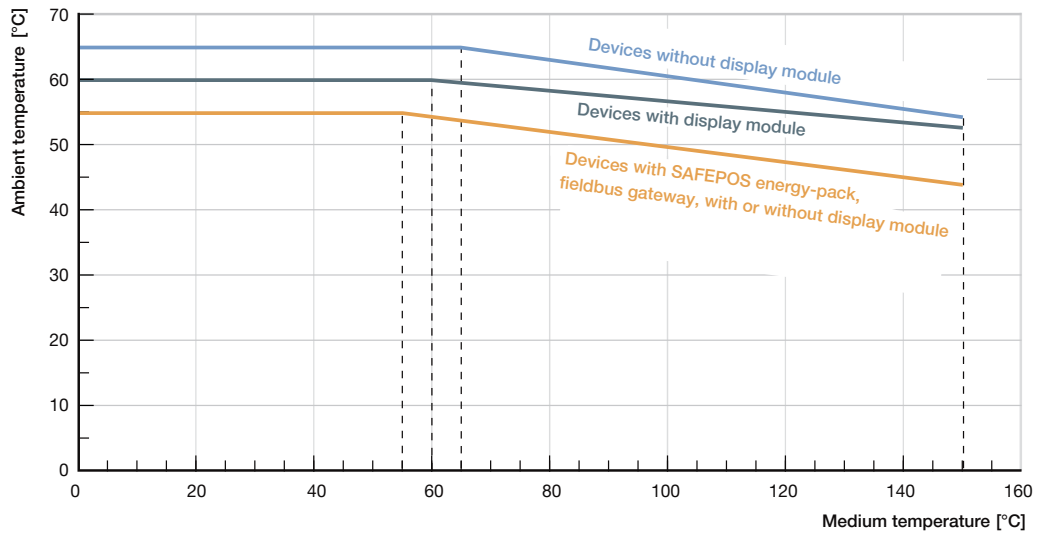
Ambient temperature	-10 °C...+65 °C (without display) -10 °C...+60 °C (with display) -10 °C...+55 °C (with SAFEPOS energy storage) depends on media temperature, see temperature chart
Safety position at power failure	With SAFEPOS energy-pack: opened, closed or free programmable without SAFEPOS energy-pack: blocked in last position
Power supply	24 V DC \pm 10 % (max. residual ripple 10 %)
Closure time	< 1.5...4.5 sec. depending on diaphragm size
Travel speed	4 mm/s
Deadband (min.)	0.4 %
Duty cycle	100 %
Protection class	IP65/IP67
Analoque control	Setpoint: 0...20 mA, 4...20 mA, 0...5 V, 0...10 V Actual value optional
Vibration, sinusoidal	5 g according to IEC 60068-2-6 Test Fc
Shock, mechanical	50 g according to IEC 60068-2-27 Test Ea
Digital control (fieldbus)	EtherNet/IP, Modbus/TCP, PROFINET (optional)
Approval and Conformity	ATEX II Cat 3G/D / IECEx (optional) cULus Cert. No. 238179 (optional)
Ignition protection class	II 3G Ex ec IIC T4 Gc II 3D Ex tc IIIC T135 °C Dc
Electrical data	
Protection class	3 acc. to DIN EN 61140
Electrical connections	Cable gland, 2 x M20 or 2 circular plug-in connector M12, 5 pin and 8 pin, 1 circular plug-in connector M12, 5 pin (only by process controller)
Operating voltage	24 V DC \pm 10 % max. residual ripple 10 %

Operating current [A]	Max. 3 A including actuator at max. load and charging current of the optional SAFEPOS energy-pack (charging current approx. 1 A)
Lifelong energy storage SAFEPOS energy-pack	Up to 10 years (depending on operating conditions)
Electronic without actuator [W]	Min. 2 W, max. 5 W
Control	
Analogue input setpoint	Galvanically isolated from the supply voltage and analog output 0/4...20 mA (input resistance 60 Ω) 0...5/10 V (input resistance 22 k Ω)
Analogue actual value input	Input resistance: 60 Ω Resolution: 12 bits Measurement range: 0 Hz...1000 Hz Input resistance: > 30 k Ω Resolution: 1 % of measurement value Input signal: > 300 mV _{ss} Waveform: Sine wave, rectangle wave, triangle wave Measurement range: -20 °C...+220 °C Resolution: < 0.1 °C Pt 100 Measurement current: 1 mA
Output analogue	Max. current 10 mA (for voltage output 0...5/10 V) Bürde (Last) 0...560 Ω (for current output 0/4...20 mA)
Output digital	Current limit 100 mA
Input digital	0...5 V = log "0", 10...30 V = log "1" inverted input reversed accordingly
Communication interface	Connection to PC via USB b \ddot{u} S interface set
Communication software	Bürkert communicator

Installation for self-draining operation



Temperature chart



The maximum allowable ambient temperature and media temperature influence each other.
The maximum allowable temperature curves of different device variants can be seen in the temperature chart.

Ordering information



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Overview for Process Valves – Seat Valves

Note: The following product overview does not show the complete product range of this catalogue. A complete overview can be found [here](#) ▶

Overview Seat Valves	Species	Type	Valve version	Orifice	Max. operating pressure ¹⁾ [in bar]	Medium temperature ²⁾ [°C]
	Seat valve pneumatic CLASSIC On/Off	2000 ▶	2/2 way angle seat	DN15...DN65	0...16	-10...+180
2006 ▶		3/2 way globe valve	DN15...DN50			
2012 ▶		2/2 way globe valve	DN15...DN100			
Seat valve pneumatic ELEMENT On/Off	2100 ▶	2/2 way angle seat	DN15...DN65	0...16	-10...+185	
	2101 ▶	2/2 way globe valve	DN10...DN100			
	2106 ▶	3/2 way globe valve	DN15...DN50			
Seat valve pneumatic ELEMENT Regel	2300 ▶	2 way angle seat	DN15...DN65	0...16	-10...+185	
	2301 ▶	2 way globe valve	DN15...DN100			
Seat valve electromotive On/Off	3320 ▶	2/2 way angle seat	DN15...DN50	0...16	-10...+185	
	3321 ▶	2/2 way globe valve	DN10...DN50			
Seat valve electromotive control	3360 ▶	2 way angle seat	DN15...DN50	0...16	-10...+185	
	3361 ▶	2 way globe valve	DN10...DN50			

1) Operating pressure depends on the actuator specification

2) Medium temperature depends on the seat seal material

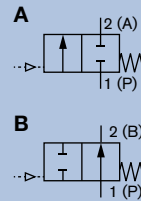
3) S = Standard | V = Variant | N = Not available

Material valve body ³⁾		Material actuator		Material seat seal ³⁾			Overview Seat Valves
Stainless steel	Gunmetal	Stainless steel / metal	Plastic	PTFE	Steel	PEEK	
S	S	-	PA / PPS	S	N	N	
	-	-	PA / PPS				
	-	-	PA / PPS				
S	-	1.4561/316TI	PPS	S	N	N	
S	-	1.4561/316TI	PPS	S	S	V	
S	-	Aluminum coated	PPS	S	N	N	
S	-	Aluminum coated	PPS	S	S	V	

On-Off Pneumatically Operated 2/2 way Angle Valve for Liquids

2000
for Liquids

- Waterhammer-free
- High flow rates
- Self adjusting double packing
- Optical position indicator is standard
- Rotating power head to orient air control connections



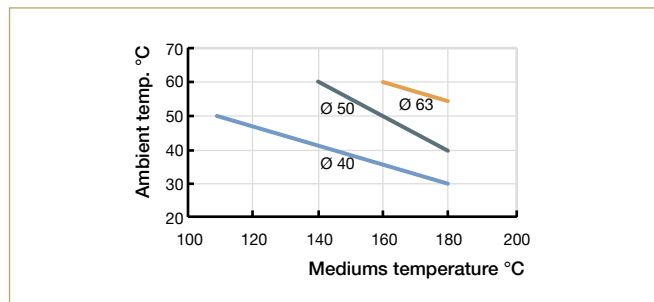
The angle seat valve consists of a pneumatically actuated piston-drive and a 2 way valve body. Depending on the ambient temperature the drive is available in two different materials, PA and PPS. The self reliable gland packing ensures a good seal. The 2/2 way flow valve body made of bronze or stainless steel precision casting allows high flow rates. These durable and robust valves can be retrofitted with a comprehensive range of accessories for position indication, stroke limitation or manual override.

Technical data

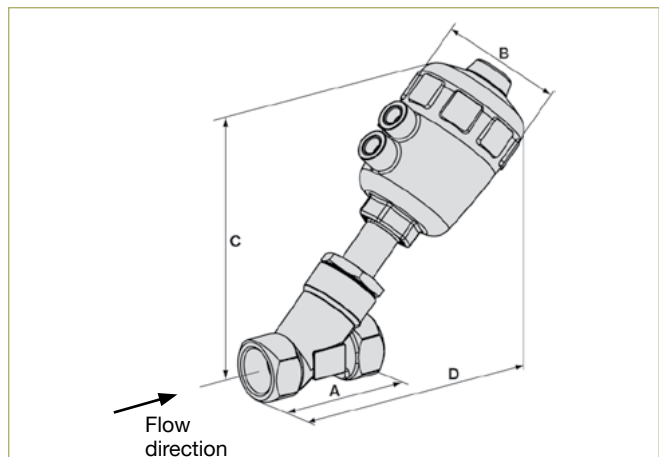
Pressure range	See Ordering Chart
Viscosity	Max. 600 mm ² /s
Stuffing socket (with silicone grease)	PTFE V-Rings with spring compensation
Temperature media	-10 °C...+180 °C
Ambient temperature	
for PA-Actuator ¹⁾	-10 °C...+60 °C
for PPS-Actuator ¹⁾ Ø 40...80	+5 °C...+140 °C
for PPS-Actuator ¹⁾ Ø 100...125	+5 °C...+90 °C, temporary up to +140 °C
Body material	Gunmetal or stainless steel 316L
Seal material	PTFE
Actuator material	Polyamide or PPS
Control medium	Instrument air at 6 bar
Flow direction	Under seat
Safe position	Normally closed or normally open
Pilot air port	¼" (Actuator Ø 40 = ⅜")

1) For PA actuators in the sizes 40, 50 and 63, the combination of max. medium temperature and max. ambient temperature is as shown in the following chart.

Temperature diagram



Dimensions [mm]

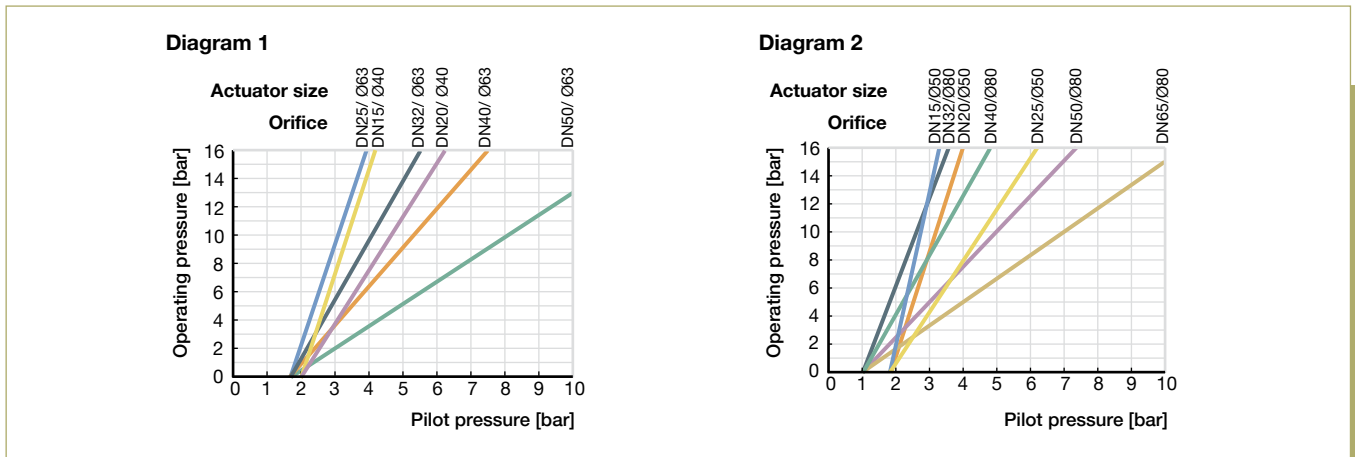


Port connection	Actuator	A	B	C	D
G ½	40	65	53	115	139
G ½	50	65	64	140	163
G ¾	50	75	64	144	171
G ¾	63	75	80	171	198
G 1	50	90	64	152	181
G 1	63	90	80	177	206
G 1	80	90	101	198	228
G 1¼	63	110	80	183	219
G 1¼	80	110	101	205	240
G 1½	63	120	80	188	222
G 1½	100	120	127	260	295
G 1½	125	120	158	289	324
G 2	80	150	101	225	270
G 2	100	150	127	272	317
G 2	125	150	158	302	347
G 2½	80	185	127	239	296
G 2½	125	185	158	317	374

Options

- Double acting
- Solenoid pilot valves
- Vacuum version
- Feedback switches
- Cleaned for oxygen service
- Seal material NBR, FKM, EPDM
- SIL approvals
- Stroke limiter

Pilot pressure diagram for normally open and flow direction below seat

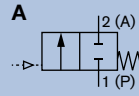


Ordering chart

Circuit function	Port connection	Orifice [mm]	Actuator size Ø [mm]	K _v value [m³/h]	Pressure range [bar]	Article no. Gunmetal body		Article no. Cast st. st. body	
						PA actuator	PPS actuator	PA actuator	PPS actuator
A Pneumatically operated on / off valve, normally closed by spring force, flow direction below seat	G ½	13	40	3.7	0...15	178608	178607	178606	178605
			50	4.2	0...16	178684	178683	178682	178681
	G ¾	20	50	8.5	0...11	178680	178679	178678	178677
			63	9	0...16	178666	178665	178664	178663
	G 1	25	63	18	0...11	178676	178675	178674	178667
			80	18	0...16	186489	187565	186488	187844
	G 1¼	32	80	27	0...14	178699	178698	178697	178696
			100	42	0...12.5	185072	187829	185073	235380
	G 1½	40	125	42	0...16	186487	-	187840	-
			100	55	0...7.2	001134	002170	001140	001239
G 2	50	125	55	0...10	001593	002171	001601	002162	
		125	90	0...5.2	001368	002172	001373	001703	
B Pneumatically operated on / off valve, normally open by spring force, flow direction below seat	G ½	13	40	3.8	0...16	178601	178602	178603	178604
			50	4.2	0...16	178691	178690	178689	178688
	G ¾	20	50	8.5	0...16	178687	179020	178686	178685
			63	10	0...16	178850	178849	178848	178847
	G 1¼	32	63	25	0...16	178845	178853	178852	178851
			63	35	0...16	178864	178863	178862	178861
	G 2	50	80	49	0...16	001595	002180	001603	002164
80			77	0...16	001372	002181	001377	001710	

On-Off Pneumatically Operated 2/2 way Angle Valve for Steam and Gases

- Flow direction above seat
- PPS actuator for hot environments
- Optical position indicator is standard
- Self adjusting double packing
- High flow rates
- Rotating power head to orient air control connections



Bürkert's classic angle seat valve for steam applications. With this product and its longevity is it world wide dependable. These valves with flow direction above the seat for steam and gas are equipped with maintenance-free gland packing.

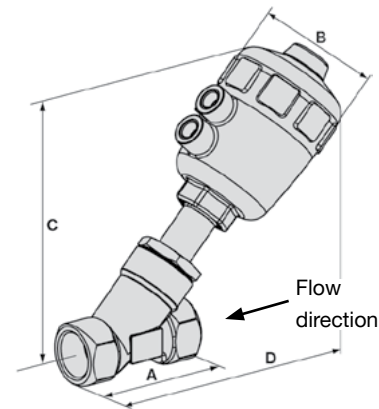
Technical data

Pressure range	See Ordering Chart	
Temperature media	- 10 °C...+ 180 °C	
Viscosity	Max. 600 mm ² /s	
Stuffing socket (with silicone grease)	PTFE V-Rings with spring compensation	
Ambient temperature max.		
PA actuator	- 10 °C...+ 60 °C	
PPS actuator Ø 40...80	+ 140 °C	
PPS actuator Ø 100...125	+ 90 °C	
Body material	Gunmetal or stainless steel 316L	
Seal material	PTFE	
Actuator material	Polyamide or PPS	
Control medium	Instrument air at 6 bar	
Flow direction	Over seat to minimise actuator size	
Safe position	Normally closed	
Max. pilot pressure		
Actuator size Ø 40...80	PA and PPS	10 bar
Actuator size Ø 100	PA	10 bar
Actuator size Ø 100	PPS	7 bar
Actuator size Ø 125	PA and PPS	7 bar
Pilot air port	¼" (Actuator Ø 40 = ⅜")	

Options

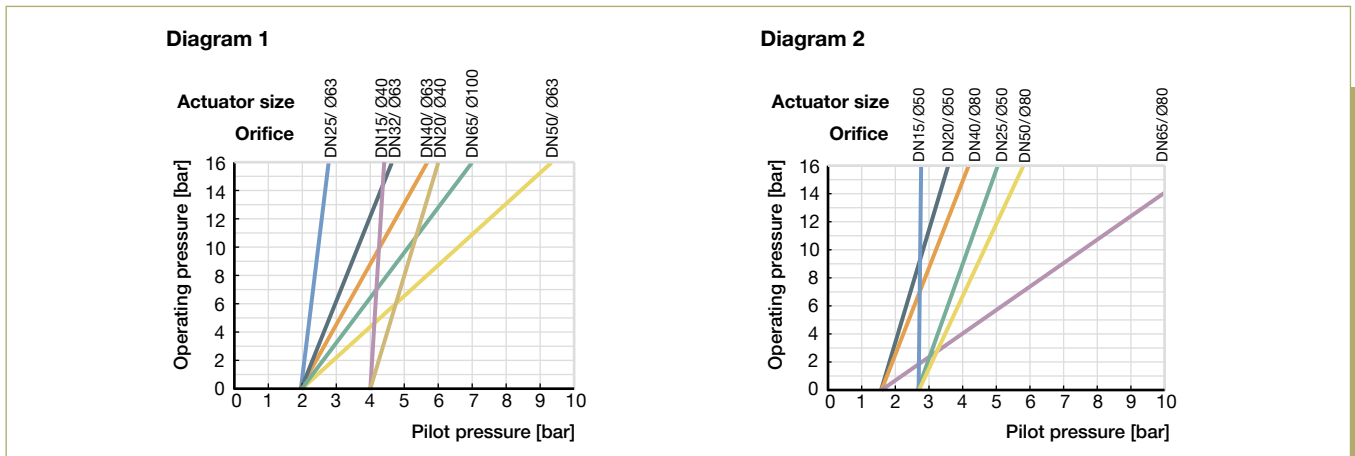
- Normally open
- Double acting
- Solenoid pilot valves
- Vacuum version
- Feedback switches
- Cleaned for oxygen service
- Stroke limiter
- Seal material NBR, FKM, EPDM

Dimensions [mm]



Port connection	Actuator	A	B	C	D
G ½	50	65	64	140	163
G ¾	40	75	53	120	147
G ¾	50	75	64	144	171
G 1	50	90	64	152	181
G 1	63	90	80	177	206
G 1¼	63	110	80	183	219
G 1½	63	120	80	188	222
G 2	63	150	80	204	249
G 2½	80	185	101	239	296
G 2½	100	185	127	287	344

Pilot pressure diagram for normally closed and flow direction below seat



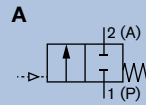
Ordering chart

Circuit function	Port connection	Orifice [mm]	Actuator [mm]	K _v value [m ³ /h]	Pressure range [bar]	Article no. PA	Article no. PPS
Gunmetal body							
A Pneumatically operated on / off valve, normally closed by spring force, flow direction above seat	G ½	13	50	4.2	0...16	183939	186106
	G ¾	20	40	7	0...16	186822	-
			50	8.5	0...16	185356	180374
	G 1	25	50	10	0...16	186380	187556
			63	18	0...16	178860	178859
	G 1 ¼	32	63	25	0...16	178855	178854
	G 1½	40	63	35	0...16	178896	178897
	G 2	50	63	49	0...16	001251	002149
80			77	0...14	001398	002151	
		100	90	0...15	130332	186344	
Stainless steel body							
A Pneumatically operated on / off valve, normally closed by spring force, flow direction above seat	G ½	13	50	4.2	0...16	186376	186467
	G ¾	20	40	7	0...16	187672	-
			50	8.5	0...16	185304	180375
	G 1	25	50	10	0...16	186729	187872
			63	18	0...16	178857	178856
	G 1 ¼	32	63	25	0...16	178893	178892
	G 1½	40	63	35	0...16	178895	178894
	G 2	50	63	49	0...16	001401	002158
80			77	0...14	001402	002160	
		100	90	0...15	130333	-	

Pneumatically operated 3/2 way seat valve CLASSIC

2006

- For mixing or distributing mediums
- Controlled by a pilot valve or centrally by a valve island
- Flow optimized body in stainless steel
- Long service life and maintenance-free operation

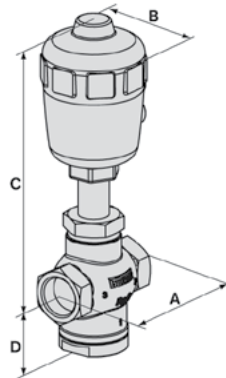


The Burkert 3 way seat valve, Type 2006, consists of a pneumatically operated CLASSIC actuator and a 3 way valve body. The actuator is available in two different materials, PA or PPS, depending on the ambient temperature. Interchanging of pressure and service ports enables different fluidic circuit functions, such as the mixing or distributing of mediums. The flow-optimized valve body of Type 2006 allows excellent flow rates. The tried and tested self-adjusting gland secures a high level of tightness and thus ensures reliable operation over years. The 3 way valve Type 2006 is controlled by a pilot valve, or by centralized automation using a valve island. It can be equipped easily with an electrical position indicator. For the user, the compact Type 2006 is thus often an economic alternative instead of two single shut-off valves.

Technical data

Orifice	DN15...DN50
Body materials	Stainless steel 316L
Nominal pressure	PN16 (body)
Actuator material	PA (PPS on request)
Seal material	PTFE
Media	Water, alcohol, oils, fuels, hydraulic fluid, alkaline solutions, salt solution, organic solutions, hot water, steam
Viscosity	Max. 600 mm ² /s
Packing gland (with silicone grease)	PTFE V-rings with spring compensation
Media temperature	-10 °C...+180 °C
Ambient temperature	
PA actuator	-10 °C...+60 °C
PPS actuator	
Actuator sizes Ø 50...80	+5 °C...+140 °C
Actuator sizes Ø 125	+5 °C...+90 °C, (up to 140 °C for a short period)
Installation	As required, preferably with actuator in upright position
Control medium	Neutral gases, air
Max. pilot pressure	10 bar 7 bar with actuator Ø 125
Port connections	G thread acc. to EN ISO 228-1 NPT thread acc. to ANSI B 1.20.1 (Rc thread on request)
Approval and Conformity	EGV 1935/2004 (optional) FDA (optional)

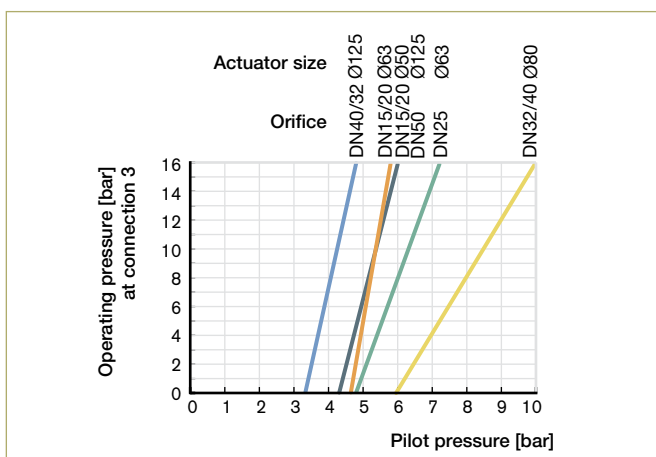
Dimensions [mm]



Control air connection 1/4"

Port connection	A	B	C	D
G 1/2	85	80	220	54
G 3/4	85	80	220	54
G 1	105	80	220	54
G 1 1/4	130	158	345	68
G 1 1/2	130	158	345	68
G 2	150	158	352	72

Pilot pressure chart (CFA, flow direction 3 → 2)



Ordering chart

Control function	Port connection	Orifice [mm]	Actuator size Ø [mm]	K _v value water [m ³ /h]		Min. pilot pressure [bar]	Max. operating pressure to 180 °C [bar]		Weight [kg]	Article no. PA actuator	Article no. PPS actuator
				1→2	2→3		1→2	2→3 2→1			
Threaded connection acc. to EN ISO 228-1											
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	G ½	15	50	7	4.5	4.4	11	16	1.3	287191	287202
			63	8	4.5	4.7	16	16	1.6	287192	287203
	G ¾	20	50	9	6.2	4.4	11	16	1.3	287193	287204
			63	11	5.6	4.7	16	16	1.6	287194	287205
	G 1	25	63	17	11	4.9	10	16	2.1	287195	287206
	G 1¼	32	80	32	21	6	9	16	4.3	287196	287207
			125	35	24	3.4	14	16	8.1	287197	287208
	G 1½	40	80	35	24	6	9	16	4.3	287199	287210
			125	35	24	3.4	14	16	8.1	287200	287211
G 2	50	125	51	35	4.3	10	16	9.5	287201	287212	

Control function	Port connection	Orifice [mm]	Actuator size Ø [mm]	K _v value water [m ³ /h]		Min. pilot pressure [bar]	Max. operating pressure to 180 °C [bar]		Weight [kg]	Article no. PA actuator	Article no. PPS actuator
				1→2	2→3		1→2	2→3 2→1			
Threaded connection with NPT thread acc. to ANSI B 1.20.1											
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	NPT ½	15	50	7	4.5	4.4	11	16	1.3	292542	292553
			63	8	4.5	4.7	16	16	1.6	292543	292554
	NPT ¾	20	50	9	6.2	4.4	11	16	1.3	292544	292555
			63	11	5.6	4.7	16	16	1.6	292545	292556
	NPT 1	25	63	17	11	4.9	10	16	2.1	292546	292557
	NPT 1¼	32	80	32	21	6	9	16	4.3	292547	292558
			125	35	24	3.4	14	16	8.1	292548	292559
	NPT 1½	40	80	35	24	6	9	16	4.3	292550	292560
			125	35	24	3.4	14	16	8.1	292551	292561
NPT 2	50	125	51	35	4.3	10	16	9.5	292552	292562	

Accessories

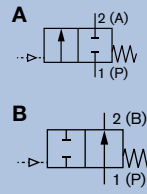
Valve for actuator size [Ø mm]	Type	Pressure inlet P (valve body)	Service port A (banjo bolt)	Orifice [mm]	Q _{Nn} value air [l/min]	Pressure range [bar]	Electrical coil connection Ind. Std.	Power consumption [W]	Article no. Voltage/frequency [V/Hz]	
									024/DC	230/50
50...63	6012P	Tube fitting Ø6 mm	G ¼	1.2	48	0...10	Form B	4	552283	552286
50...125	6014P	G ¼	G ¼	2	120	0...10	Form A	8	424103	424107

Please note that the cable plug has to be ordered separately.

On-Off Pneumatically Operated 2/2 way ELEMENT Angle Valve

2100 ELEMENT

- High flow rate
- Long service life
- Easy integration of automation units with ELEMENT
- Flow-optimized stainless steel housing with threaded, clamp or weld connection
- Suitable for 10 bar(g) steam



The angle seat valve, Type 2100, is specially optimized for decentralized process automation and fulfils tough criteria for process environments. The design enables the easy integration of automation units whether they are electrical/optical position feedback, pneumatic control units or an integrated fieldbus interface. Unrivaled cycle life and sealing integrity is guaranteed by the proven self adjusting spindle packing with V-seals.

The fully integrated system has a compact and smooth design, integrated pneumatic lines, IP65/67, NEMA Type 4X protection class and superior chemical resistance.

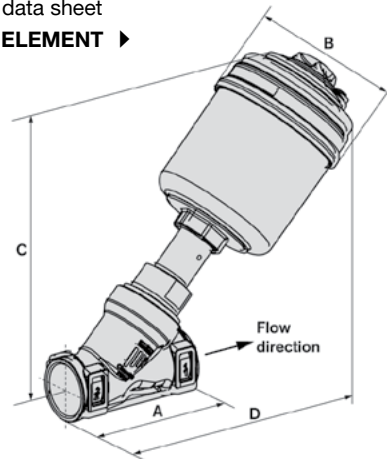
Technical data

Pressure range	See Ordering Chart
Viscosity	Max. 600 mm ² /s
Temperature media	-10 °C...+185 °C
Ambient temperature	0 °C...+55 °C (with integrated control) 0 °C...+60 °C (connector hose air supply) 0 °C...+100 °C (threaded piping)
Body material	316L stainless steel
Seal material	PTFE
Actuator material	Actuator PPS Cover stainless steel 1.4561 (316Ti)
Control medium	Instrument air at 6 bar
Flow direction	Flow under seat
Port connection	G-thread, weld end, clamp
Spindle packing	PTFE seal with spring compensation
Safe position	Normally closed, normally open

Dimensions [mm]

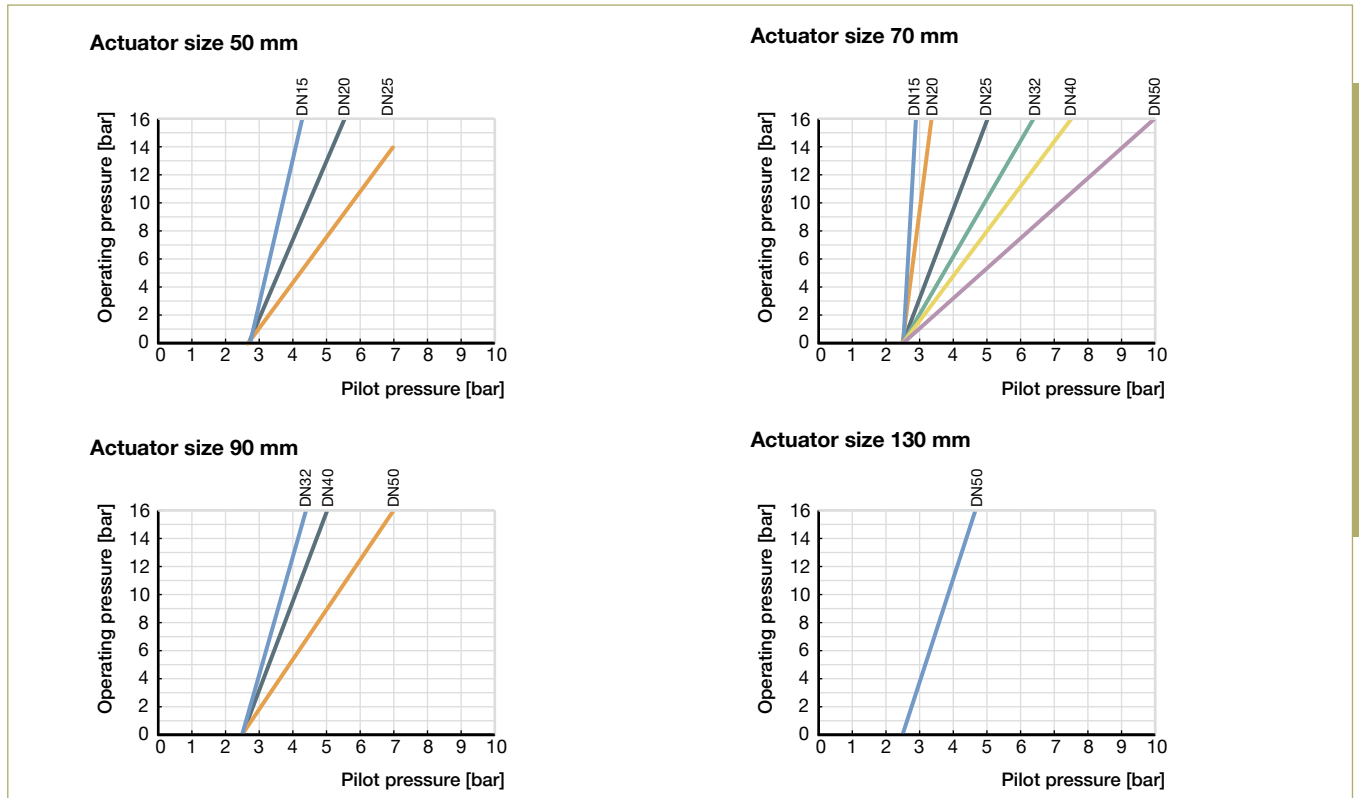
Dimensions shown for threaded version for others please see data sheet
Type 2100 ELEMENT ▶

Pilot air ports for 6/4 mm tubing



Port connection	Actuator size	A	B	C	D
G 1/2	50	65	64.5	158	185
G 1/2	70	65	91	173	201
G 3/4	50	75	64.5	166	195
G 3/4	70	75	91	181	211
G 1	50	90	64.5	172	204
G 1	70	90	91	187	220
G 1 1/4	70	110	91	195	235
G 1 1/4	90	110	120	240	277
G 1 1/2	70	120	91	197	236
G 1 1/2	90	120	120	242	278
G 2	70	150	91	214	262
G 2	90	150	120	255	301
G 2	130	150	159	306	351

Pilot pressure diagram, normally open



Ordering information for decentralized automation of On/Off ELEMENT valve system Type 8801-YE

A decentralized, automated On/Off ELEMENT valve system Type 8801-YE consists of an angle seat valve Type 2100 and a valve control head Type 8691/8695 or a pneumatic control unit Type 8690/8697 (see separate datasheets).

You order two components and receive a complete assembled and certified valve.

Angle seat valve Type 2100 Threaded	Control Head		Control Head / Feedback	
	Type 8691 ▶	Type 8695 ▶	Type 8690 ▶	Type 8697 ▶
Valve System On/Off ELEMENT				
	Valve System Type 8801-YE-H 2100 + 8691 (Actuator size Ø 70/90/130 mm)	Valve System Type 8801-YE-M 2100 + 8695 (Actuator size Ø 50 mm)	Valve System Type 8801-YE-K 2100 + 8690 (Actuator size Ø 70/90/130 mm)	Valve System Type 8801-YE-U 2100 + 8697 (Actuator size Ø 50 mm)

A detailed description of the control heads and pneumatic control units, see the separate datasheets.



Ordering chart

2100 ELEMENT


















Circuit function	Port connection	Orifice Ø [mm]	K _v value [m ³ /h]	Actuator size [mm]	Minimum pilot pressure [bar]	Max. operating pressure [bar]	Article no.	
Angle seat valve G Thread								
A 2/2 way solenoid valve, operated by external air, normally closed	G ½	15	5	50	5.2	25	213619	
			5	70	5.0	25	213620	
	G ¾	20	10	50	5.2	16	227616	
			11	70	5.0	20	213621	
	G 1	25	15	50	5.2	9	227617	
			18	70	5.0	16	213622	
	G 1¼	32	27	70	5.0	8-May	213623	
			28	90	5.0	16	213624	
	G 1½	40	38	70	5.0	6	213625	
			40	90	5.0	16	213627	
	G 2	50	55	90	5.0	10	175108	
			62	130	5.0	16	188610	
	G 2½	65	85	90	5.0	5	239456	
			95	130	5.6	16 (15 ¹⁾)	239472	
	B 2/2 way solenoid valve, operated by external air, normally open	G ½	15	5	50	see diagram	16	213637
				5	70		16	213638
		G ¾	20	10	50	16	213639	
				11	70	16	213640	
G 1		25	18	70	16	213641		
G 1¼		32	27	70	16	213642		
G 1½		40	38	70	16	213643		
G 2		50	52	70	16	175123		
G 2½		65	85	90	14	239464		
			95	130	16 (15 ¹⁾)	239479		

1) acc. to the Pressure Equipment Directive 97/23 / EC for compressible fluids in Group 1 (hazardous gases and vapors in accordance with Article 3, Section 1.3, letter a, first dash)

Ordering chart

Circuit function	Orifice [mm]	Actuator size Ø [mm]	K _v value [m ³ /h]	Port clamp external Ø [mm]	Minimum pilot pressure [mm]	Max. operating pressure [bar]	Article no.	
Clamp acc. to ISO 2852								
A 2/2 way solenoid valve, operated by external air, normally closed	15	50	5	34	5.2	25	187097	
		70	5	34	5.0	25	188783	
	20	50	10	50.5	5.2	16	209437	
		70	11	50.5	5.0	20	188784	
	25	50	15	50	5.2	9	227613	
		70	18	50.5	5.0	16	188785	
	32	70	27	50.5	5.0	8.5	188786	
		90	28	50.5	5.0	16	188787	
	40	70	38	64	5.0	6	188788	
		90	40	64	5.0	16	188789	
	50	90	55	77.5	5.0	10	188790	
		130	62	77.5	5.0	16	188791	
	B 2/2 way solenoid valve, operated by external air, normally open	15	50	5	34	see diagram	16	187101
			70	5	34		16	188800
20		50	10	50.5	16		187102	
		70	11	50.5	16		188801	
25		70	18	50.5	16		188802	
32		70	27	50.5	16		188803	
40		70	38	64	16		188804	
50		70	52	77.5	16		188805	

Ordering chart

Circuit function	Orifice [mm]	Actuator size Ø [mm]	K _v value [m ³ /h]	Port clamp external Ø [mm]	Minimum pilot pressure [mm]	Max. operating pressure [bar]	Article no.	
Clamp acc. to ASME BPE								
2100 ELEMENT A 2/2 way solenoid valve, operated by external air, normally closed	15	50	5	25	5.0	25	187103 	
		70	5	25	5.0	25	188806 	
	20	50	10	25	5.0	16	227614 	
		70	11	25	5.0	20	188807 	
	25	50	15	50.5	5.0	9	227615 	
		70	18	50.5	5.0	16	188808 	
	40	70	38	50.5	5.0	6	188809 	
		90	40	50.5	5.0	16	188810 	
	50	90	55	64	5.0	10	188811 	
		130	62	64	5.0	16	188812 	
	B 2/2 way solenoid valve, operated by external air, normally open	15	50	5	25	see diagram	16	187107 
			70	5	25		16	188820 
		20	50	10	25		16	187108 
			70	11	50.5		16	188821 
25		70	18	50.5	16		188822 	
40		70	38	50.5	16		188823 	
50		70	52	64	16		188824 	

Ordering chart

Circuit function	Orifice [mm]	Actuator size Ø [mm]	K _v value [m ³ /h]	Port connection tube Ø [mm]	Minimum pilot pressure [mm]	Max. operating pressure [bar]	Article no.
Weld end acc. To EN ISO 1227							
A 2/2 way solenoid valve, operated by external air, normally closed	15	50	5	21.3×1.6	5.2	25	187065
		70	5	21.3×1.6	5.0	25	188680
	20	50	10	26.9×1.6	5.2	16	210399
		70	11	26.9×1.6	5.0	20	188681
	25	50	15	33.7×2	5.2	9	235519
		70	18	33.7×2	5.0	16	188682
	32	70	27	42.4×2	5.0	8.5	188683
		90	28	42.4×2	5.0	16	188684
	40	70	38	48.3×2	5.0	6	188685
		90	40	48.3×2	5.0	16	188686
	50	90	55	60.3×2.6	5.0	10	283500
		130	62	60.3×2	5.0	16	283501
	65	90	85	76.1×2.3	5.0	5	239459
		130	95	76.1×2.3	5.6	16 (15 ¹⁾)	239475
B 2/2 way solenoid valve, operated by external air, normally open	15	50	5	21.3×1.6	see diagram	16	187069
		70	5	21.3×1.6		16	188697
	20	50	10	26.9×1.6		16	187070
		70	11	26.9×1.6		16	188698
	25	70	18	33.7×2		16	188699
	32	70	27	42.4×2		16	188700
	40	70	38	48.3×2		16	188701
	50	70	52	60.3×2.6		16	283504
	65	90	85	76.1×2.3		14	239467
130		95	76.1×2.3	16 (15 ¹⁾)	239482		

1) acc. to the Pressure Equipment Directive 97/23 / EC for compressible fluids in Group 1 (hazardous gases and vapors in accordance with Article 3, Section 1.3, letter a, first dash)



Ordering chart

Circuit function	Orifice [mm]	Actuator size Ø [mm]	K _v value [m ³ /h]	Port connection tube Ø [mm]	Minimum pilot pressure [mm]	Max. operating pressure [bar]	Article no.	
Weld end acc. to DIN 11850 S2								
2100 ELEMENT A 2/2 way solenoid valve, operated by external air, normally closed	15	50	5	19 × 1.5	5.2	25	187071	
		70	5	19 × 1.5	5.0	25	188703	
	20	50	10	23 × 1.5	5.2	16	227605	
		70	11	23 × 1.5	5.0	20	188704	
	25	50	15	29 × 1.5	5.2	9	227606	
		70	18	29 × 1.5	5.0	16	188705	
	32	70	27	35 × 1.5	5.0	8.5	188706	
		90	28	35 × 1.5	5.0	16	188707	
	40	70	38	41 × 1.5	5.0	6	188708	
		90	40	41 × 1.5	5.0	16	188709	
	50	90	55	53 × 1.5	5.0	10	188710	
		130	62	53 × 1.5	5.0	16	188711	
	65	90	85	70.0 × 2.0	5.0	5	239460	
		130	95	70.0 × 2.0	5.6	16 (15 ¹⁾)	237020	
	B 2/2 way solenoid valve, operated by external air, normally open	15	50	5	19 × 1.5	see diagram	16	187075
			70	5	19 × 1.5		16	188720
		20	50	10	23 × 1.5		16	187076
			70	11	23 × 1.5		16	188721
25		70	18	29 × 1.5	16		188722	
32		70	27	35 × 1.5	16		188723	
40		70	38	41 × 1.5	16		188724	
50		70	52	53 × 1.5	16		188725	
65	90	85	70.0 × 2.0	14	239468			
	130	95	70.0 × 2.0	16 (15 ¹⁾)	239483			

1) acc. to the Pressure Equipment Directive 97/23 / EC for compressible fluids in Group 1 (hazardous gases and vapors in accordance with Article 3, Section 1.3, letter a, first dash)

Ordering chart

Circuit function	Orifice [mm]	Actuator size Ø [mm]	K _v value [m ³ /h]	Port connection tube Ø [mm]	Minimum pilot pressure [mm]	Max. operating pressure [bar]	Article no.
Weld end acc. To ASME BPE							
A 2/2 way solenoid valve, operated by external air, normally closed	15	50	5	12.7 × 1.65	5.2	25	187077
		70	5	12.7 × 1.65	5.0	25	188726
	20	50	10	19.05 × 1.65	5.2	16	227607
		70	11	19.05 × 1.65	5.0	20	188727
	25	50	15	25.4 × 1.65	5.2	9	227608
		70	18	25.4 × 1.65	5.0	16	188728
	40	70	38	38.1 × 1.65	5.0	6	188729
		90	40	38.1 × 1.65	5.0	16	188730
	50	90	55	50.8 × 1.65	5.0	10	188731
		130	62	50.8 × 1.65	5.0	16	188732
	65	90	85	63.5 × 1.65	5.0	5	239461
		130	95	63.5 × 1.65	5.6	16 (15 ¹⁾)	239478
B 2/2 way solenoid valve, operated by external air, normally open	15	50	5	12.7 × 1.65	see diagram	16	187082
		70	5	12.7 × 1.65		16	188740
	20	50	10	19.05 × 1.65		16	187083
		70	11	19.05 × 1.65		16	188741
	25	70	18	25.4 × 1.65		16	188742
	40	70	38	38.1 × 1.65		16	188781
	50	70	52	50.8 × 1.65		16	188744
	65	90	85	63.5 × 1.65		14	239469
130		95	63.5 × 1.65	16 (15 ¹⁾)	239484		

1) acc. to the Pressure Equipment Directive 97/23 / EC for compressible fluids in Group 1 (hazardous gases and vapors in accordance with Article 3, Section 1.3, letter a, first dash)



Ordering chart

Circuit function	Orifice [mm]	Actuator size Ø [mm]	K _v value [m ³ /h]	Port connection tube Ø [mm]	Minimum pilot pressure [mm]	Max. operating pressure [bar]	Article no.	
Weld end acc. to SMS 3008								
2100 ELEMENT A 2/2 way solenoid valve, operated by external air, normally closed	15	50	5	12 × 1.0	5.2	25	187084	
		70	5	12 × 1.0	5.0	25	188745	
	20	50	10	18 × 1.0	5.2	16	227609	
		70	11	18 × 1.0	5.0	20	188746	
	25	50	15	25 × 1.2	5.2	9	227610	
		70	18	25 × 1.2	5.0	16	188747	
	40	70	38	38 × 1.2	5.0	6	188748	
		90	40	38 × 1.2	5.0	16	188749	
	50	90	55	51 × 1.2	5.0	10	188750	
		130	62	51 × 1.2	5.0	16	188751	
	65	90	85	63.5 × 1.65	5.0	5	239462	
		130	95	63.5 × 1.65	5.6	16 (15 ¹⁾)	239477	
	B 2/2 way solenoid valve, operated by external air, normally open	15	50	5	12 × 1.0	see digramm	16	187089
			70	5	12 × 1.0		16	188759
20		50	10	18 × 1.0	16		187090	
		70	11	18 × 1.0	16		188760	
25		70	18	25 × 1.2	16		188761	
40		70	38	38 × 1.2	16		188762	
50		70	52	51 × 1.2	16		188763	
65		90	85	63.5 × 1.65	14		239470	
	130	95	63.5 × 1.65	16 (15 ¹⁾)	239485			

1) acc. to the Pressure Equipment Directive 97/23 / EC for compressible fluids in Group 1 (hazardous gases and vapors in accordance with Article 3, Section 1.3, letter a, first dash)

Ordering chart

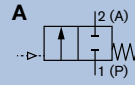
Circuit function	Orifice [mm]	Actuator size Ø [mm]	K _v value [m ³ /h]	Port connection tube Ø [mm]	Minimum pilot pressure [mm]	Max. operating pressure [bar]	Article no.
Weld end acc. to BS 4825							
A 2/2 way solenoid valve, operated by external air, normally closed	15	50	5	12.7 × 1.2	5.2	25	187091
		70	5	12.7 × 1.2	5.0	25	188764
	20	70	11	19.05 × 1.65	5.0	20	188765
		70	18	25.4 × 1.65	5.0	16	188728
	40	70	38	38.1 × 1.65	5.0	6	188729
		90	40	38.1 × 1.65	5.0	16	188730
	50	90	55	50.8 × 1.65	5.0	10	188731
		130	62	50.8 × 1.65	5.0	16	188732
	65	90	85	63.5 × 1.65	5.0	5	239461
		130	95	63.5 × 1.65	5.6	16 (15 ¹⁾)	239478
B 2/2 way solenoid valve, operated by external air, normally open	15	50	5	12.7 × 1.2	see diagram	16	187095
		70	5	12.7 × 1.2		16	188778
	20	50	10	19.05 × 1.65		16	187096
		70	11	19.05 × 1.65		16	188779
	25	70	18	25.4 × 1.65		16	188742
	40	70	38	38.1 × 1.65		16	188781
	50	70	52	50.8 × 1.65		16	188744
	65	90	85	63.5 × 1.65		14	239469
130		95	63.5 × 1.65	16 (15 ¹⁾)	239484		

1) acc. to the Pressure Equipment Directive 97/23 / EC for compressible fluids in Group 1 (hazardous gases and vapors in accordance with Article 3, Section 1.3, letter a, first dash)

Pneumatically operated 2/2 way globe valves with flange connection acc. to DIN EN 1092-1

2101 / 2012

- Flow direction below seat
- Long life
- Flow optimised stainless steel body 316L
- Silencer, Type 2101 included



The externally piloted globe valve consists of a pneumatically operated piston actuator and a 2 way angle valve body. Sealing integrity is guaranteed by the proven self adjusting gland. These maintenance-free and robust valves can be retrofitted with a comprehensive range of accessories for position indication, stroke limitation or manual override.

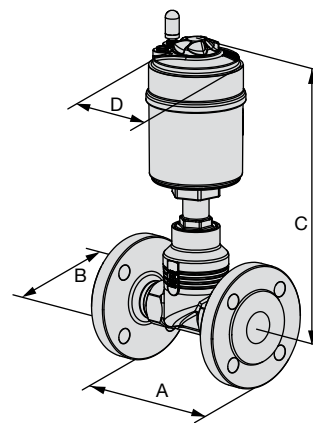
Technical data

Pressure range	See ordering chart
Nominal pressure	PN25 (body)
Temperature media	-10 °C...+180 °C (CLASSIC) / +185 °C (ELEMENT)
Ambient temperature	
Actuator size up to Ø 125	-10 °C...+60 °C
Actuator size Ø 175...225	-10 °C...+50 °C
ELEMENT	0 °C...+55 °C (with integrated control) 0 °C...+60 °C (connector hose air supply)
CLASSIC	-10 °C...+60 °C
Body material	Cast stainless steel 316L
Viscosity	Max. 600 mm ² /s
Seal material	PTFE
Actuator material	PPS and St.st. 316L (ELEMENT), PA (Classic)
Control medium	Neutral gases, air
Flow direction	Under seat anti water-hammer
Port connection	Flange DIN EN 1092-1
Pilot air port	For ELEMENT connector hose For plastic hose, 6/4 mm For Classic, G ¼

Options

- Normally open
- Double acting
- Solenoid pilot valves
- Vacuum version
- Feedback switches
- High temperature actuator
- Chemically resistant actuator
- Stroke limiter
- JIS and ANSI flanges
- See **Type 2101** ▶ with threaded air connection for ambient temperature up to +100 °C

Dimensions [mm]



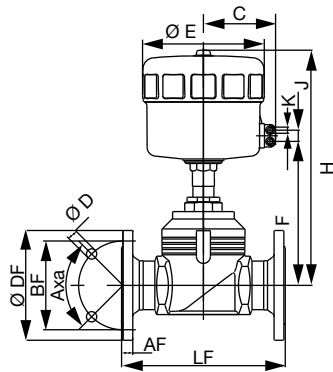
Dimensions shown for 2101.
For 2012 see **Type 2012** ▶.

DN	Actuator	A	B	C	D
15	50	130	95	236	64.5
20	50	150	105	242	64.5
20	70	150	105	256	91
25	50	160	115	245	64.5
25	70	160	115	259	91
32	70	180	140	280	91
32	90	180	140	340	120
40	70	200	150	285	91
40	90	200	150	345	120
50	90	230	165	351	120
50	130	230	165	403	159

Dimensions [mm]

DN65...DN100

Actuator size 125 mm...225 mm



DN	All bodies							ANSI flange						
	Actuator	C	ØE	F	H	K	J	ØDF	LF	ØBF	AF	ØD	Axa	ØM
1½"	125	86	157	220	397	G ¼	30	127	222	98.6	17.5	15.7	4 × 90°	41
2"	125	86	157	225	402	G ¼	30	152	254	120.7	19.1	19.1	4 × 90°	53
2½"	125	86	157	254	430	G ¼	30	178	276	139.7	22.3	19.1	4 × 90°	63
	175	130	211	289	491	G ¼	24	178	276	139.7	22.3	19.1	4 × 90°	63
3"	125	86	157	264	440	G ¼	30	190	298	152.4	23.9	19.1	4 × 90°	78
	175	130	211	296	498	G ¼	24	190	298	152.4	23.9	19.1	4 × 90°	78
	225	155	261	299	494	G ¼	24	190	298	152.4	23.9	19.1	4 × 90°	78
4"	125	86	157	274	450	G ¼	30	229	352	190.5	23.9	19.1	8 × 45°	102
	175	130	211	306	508	G ¼	24	229	352	190.5	23.9	19.1	8 × 45°	102
	225	155	261	309	504	G ¼	24	229	352	190.5	23.9	19.1	8 × 45°	102

Ordering chart

Circuit function	Orifice [mm]	Actuator size Ø [mm]	K _v value [m³/h]	Minimum pilot pressure [bar]	Max. operating pressure up to +185 °C [bar]	Article no.
Type 2101 ELEMENT – Flange connection acc. to DIN EN 1092-1						
A 2/2 way solenoid valve, operated by external air, normally closed	15	50	4.7	4.8...10	25	203076 ☞
	20	50	8.1	4.8...10	16	203077 ☞
		70	8.1	4.8...10	20	203078 ☞
	25	50	13	4.8...10	9	203079 ☞
		70	13	4.8...10	16	189700 ☞
	32	70	19.5	4.8...10	8.5	203080 ☞
		90	19.5	5.0...10	16	203081 ☞
	40	70	31	4.8...10	6	203082 ☞
		90	31	4.8...10	16	203083 ☞
	50	90	45	4.8...10	10	203084 ☞
130		45	5.0...7	16	218418 ☞	

Circuit function	Orifice [mm]	Actuator size Ø [mm]	K _v value [m³/h]	Pilot pressure [bar]	Max. operating pressure up to +180 °C [bar]	Article no.
Type 2012 CLASSIC – Flange connection acc. to DIN EN 1092-1						
PA-actuator						
A 2/2 way solenoid valve, operated by external air, normally closed	65	125	73	5.6...7	12	152743 ☞
		175	73	4.5...6	16 (15 ¹⁾)	152761 ☞
	80	125	110	5.6...7	7.5	155527 ☞
		175	110	4.5...6	10	152779 ☞
	100	225	110	3.3...6	16 (12.5 ¹⁾)	152797 ☞
		125	165	5.6...7	5	155546 ☞
		175	155	4.5...6	7	152815 ☞
	225	155	4.8...6	16 (10 ¹⁾)	152833 ☞	

1) acc. to the Pressure Equipment Directive 97/23 / EC for compressible fluids in Group 1 (hazardous gases and vapors in accordance with Article 3, Section 1.3, letter a, first dash)

Pneumatically operated 3/2 way seat valve ELEMENT for decentralized automation

2106

- For mixing or distributing mediums
- Decentralized automation with control head
- Flow optimized body in stainless steel
- Long service life and maintenance-free operation
- Control Head is connected without external tubing



The Bürkert 3/2 way seat valve, Type 2106, consists of a pneumatically operated ELEMENT actuator and a 3 way stainless steel valve body. Interchanging of pressure and service ports enables different fluidic circuit functions, such as the mixing or distributing of mediums. The flow-optimized valve body of Type 2106 allows excellent flow rates. The tried and tested self-adjusting gland secures a high level of tightness and thus ensures reliable operation over years. The design of the 3/2 way valve, Type 2106, offers all the advantages of a modern, decentralized automation: The directly connected control head and actuator provide a compact and smooth design, integrated pneumatic lines, protection class IP65/67/NEMA Type 4X, and a high chemical resistance. An optionally integrated fieldbus interface or even explosion proof device versions are further advantages of the 3 way shut-off valve. For the user, the compact Type 2106 is thus often an economical alternative to two single valves.

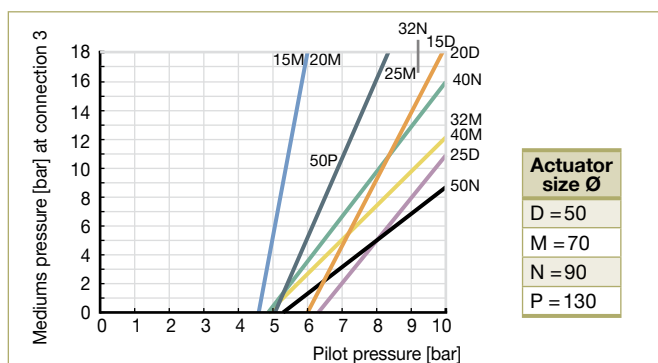
Technical data

Orifice	DN15...DN50
Port connections	G thread acc. to EN ISO 228-1 NPT acc. to ANSI B 1.20.1 (Rc thread on request)
Body material	Cast stainless steel 316L
Nominal pressure	PN16 (Body)
Actuator material	PPS/Stainless steel 1.4561 (316Ti)
Sealing material	PTFE
Medium	Water, alcohol, oils, fuels, hydraulic fluids, salt solution, alkali solutions, organic solvents, steam
Viscosity	Max. 600 mm ² /s
Spindle packing	PTFE V-rings with spring compensation
Medium temperature	-10 °C...+185 °C
Ambient temperature	-10 °C...+60 °C (integrated control head) -10 °C...+100 °C (push-in air ports)
Control medium	Neutral gases, air
Max. pilot pressure	Max. 10 bar; actuator size 130 mm, 7 bar
Pilot air ports	Push-in connector (for external Ø 6 mm or ¼" tube) thread G ½ (on request)
Installation	As required, preferably with actuator in upright position
Approval and Conformity	EGV 1935/2004 (standard) FDA (optional)

Dimensions [mm]

DN	Actuator size	A	B	C
15	50	64.5	202.4	85
	70	91	202.4	85
20	50	64.5	202.4	85
	70	91	202.4	85
25	50	64.5	227.4	105
	70	90	227.4	105
32	70	91	234.7	130
	90	120	294.4	130
	130	159	346.7	130
40	70	91	234.7	130
	90	120	294.4	130
	130	159	346.7	130
50	70	91	245.5	150
	90	120	310.7	150
	130	159	353.7	150

Pilot pressure chart



Ordering chart

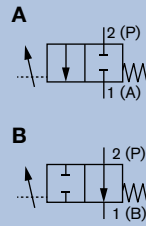
Control function	Port connection	Orifice [mm]	Actuator size Ø [mm]	K _v value water [m ³ /h]		Min. pilot pressure [bar]	Max. operating pressure to 180 °C [bar]			Weight [kg]	Article no.
				1 → 2	2 → 3		1 → 2	2 → 3 2 → 1			
G thread acc. to EN ISO 228-1											
A 3/2 way, normally closed (NC) (port1)	G ½	15	50	7	4.5	5.5	16	16	1.5	282698	
			70	7	4.5	4.5	16	16	2.2	282701	
	G ¾	20	50	9	6.2	5.5	16	16	1.4	282702	
			70	9	6.2	4.5	16	16	2.1	282704	
	G 1	25	50	17	11	5.5	9	11	1.9	282705	
			70	17	11	4.5	16	16	2.6	282706	
	G 1¼	32	70	32	21	4.5	8	11	3.9	282707	
			90	32	21	5.1	11	16	5.4	282709	
	G 1½	40	70	35	24	4.5	7	11	3.7	282711	
			90	35	24	5.1	12	16	5.2	282712	
	G 2	50	90	51	35	5.1	9	8	7.3	282715	
			130	51	35	4.9	16	16	10.4	282716	

Control function	Port connection	Orifice [mm]	Actuator size Ø [mm]	K _v value water [m ³ /h]		Min. pilot pressure [bar]	Max. operating pressure to 180 °C [bar]			Weight [kg]	Article no.
				1 → 2	2 → 3		1 → 2	2 → 3 2 → 1			
NPT thread acc. to ANSI B 1.20.1											
A 3/2 way, normally closed (NC) (port1)	NPT ½	15	50	7	4.5	5.5	16	16	1.5	292478	
			70	7	4.5	4.5	16	16	2.2	292531	
	NPT ¾	20	50	9	6.2	5.5	16	16	1.4	292532	
			70	9	6.2	4.5	16	16	2.1	292533	
	NPT 1	25	50	17	11	5.5	9	11	1.9	292534	
			70	17	11	4.5	16	16	2.6	292535	
	NPT 1¼	32	70	32	21	4.5	8	11	3.9	292536	
			90	32	21	5.1	11	16	5.4	292537	
	NPT 1½	40	70	35	24	4.5	7	11	3.7	292538	
			90	35	24	5.1	12	16	5.2	292539	
	NPT 2	50	90	51	35	5.1	9	8	7.3	292540	
			130	51	35	4.9	16	16	10.4	292541	

2/2 way Angle-Seat Control Valve ELEMENT for medium up to +185 °C

2300

- Control valve component for the valve system Continuous ELEMENT 8802
- Excellent combination of good control characteristic and high flow rates
- High cycle life
- Clean design for optimal use in hygienic environment



In line with Bürkert's philosophy for modular valves and sensors the construction of the 2300 angle-seat valve fulfils tough criteria for process environments. Unrivalled cycle life and sealing integrity is guaranteed by the proven self adjusting spindle packing with V-seals.

The parabolic trim results in a flow characteristic approximately 35 % larger than conventional control valves. It is available in either stainless steel on stainless steel or with a durable PTFE seal for tight shut-off.

The design enables the easy integration of automation modules whether they are digital electropneumatic positioner or process controller.

The fully integrated system has a compact and smooth design, integrated pneumatic lines, IP65/67 protection class and superior chemical resistance.

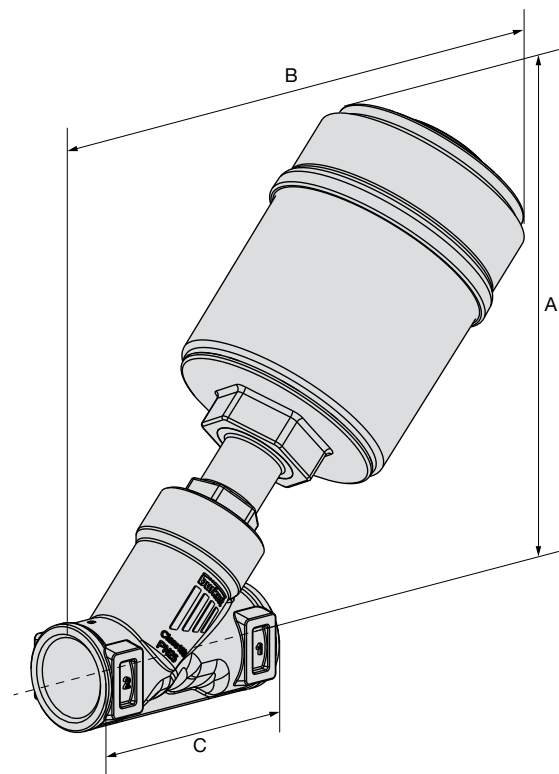
This system has been engineered for reliable accurate control in applications where high flow rate is an advantage.

Technical data

Orifice	DN15...DN65
Port connections	
Weld acc. to	EN ISO 1127, DIN 11850 R2, ASME BPE, SMS 3008, BS 4825
Threaded port	G ½...G 2½, NPT ½...NPT 2½, Rc ½...Rc 2½
Clamp	ISO 2852, ASME BPE (DIN 32676, BS4825 on request)
Body material	Stainless steel 316L
Nominal pressure	PN25 (Body)
Actuator material	
Actuator	PPS
Cover	Stainless steel 1.4561 (316Ti)
Plug sealing	PTFE/St.st. (PTFE/stainless steel) and St.st./St.st. (stainless steel/stainless steel)
Seat leakage	Shut-off class III and IV for St.st./St.st.
IEC 534-4/EN 1349	Shut-off class VI for PTFE/St.st.
Medium	Water, alcohol, oils, fuels, hydraulic fluids, salt solution, alkali solutions, organic solvents, steam, optional fuel gas (EC Gas Appliances Directive 2009/142/EG)
Viscosity	Max. 600 mm ² /s
Spindle packing	PTFE V-seals with spring compensation
Medium temperature	-10 °C...+185 °C (max. +130 °C for PTFE/St.st. sealing)

Dimensions [mm]

Thread version (further versions see data sheet)



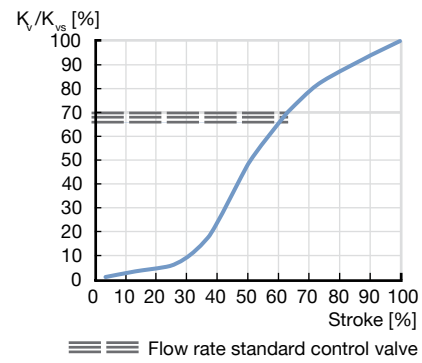
Orifice	Actuator size	A	B	C
15	70	251	279	65
20	70	259	289	75
25	70	265	298	90
	90	302	333	90
32	70	273	313	110
	90	316	353	110
40	90	318	354	120
	130	355	390	120
50	90	331	377	150
	130	368	413	150
65	130	401	458	185

Technical data continued

Ambient temperature	0 °C...+55 °C (when used with positioner or process controllers)	
	0 °C...+80 °C (remote version)	
Control medium	Compressed air	
Relevant pilot pressure for circuit function A	Port size DN15...DN50	5.5 bar...7 bar
	Port size DN65	5.6 bar...7 bar
Pilot air ports	Push-in connector for external Ø 6 mm or ¼" tube	
Installation	As required, preferably with actuator in upright position	
Surface Finish	Standard Ra, internal ≤ 3.2 µm	
On request	Internal connection area ¹⁾ Ra ≤ 0.6 µm mechanical polished (cast iron external surface)	
	Internal connection area ¹⁾ Ra ≤ 0.6 µm electro polished (cast iron external surface)	

1) In the seat area the Ra ≤ 0.6 µm surface finish can be higher.

Flow characteristic

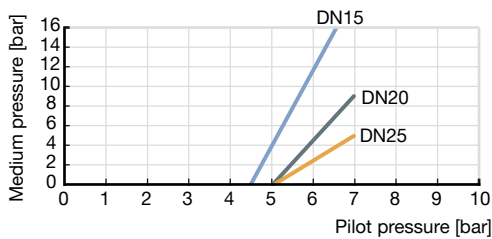


Remarks on the flow characteristic

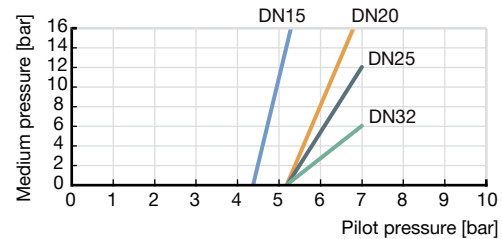
Modified equi-percentile flow characteristic. engineered for a quick response during peak flow demand (an advantage for many processes like heating/cooling with heat exchangers) and fine control at lower flow.

Pressure Charts with control function B (normally open, NO)

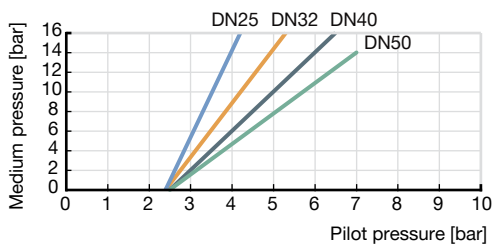
Ø 50



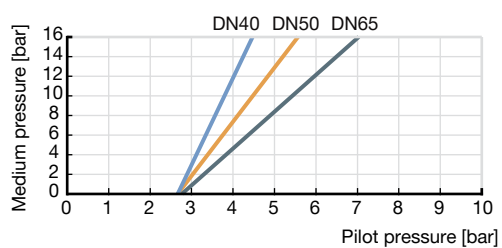
Ø 70



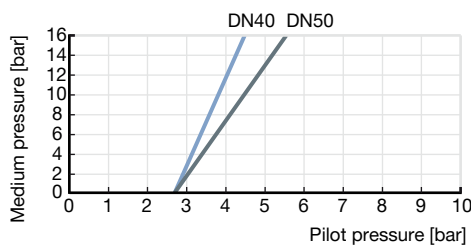
Ø 90



Ø 130



Ø 130 clamp





Ordering chart

2300

Control function	Orifice [mm]	Actuator size Ø [mm]	Port connection thread	K _{vs} value water [m ³ /h]	Operating pressure up to +185 °C [bar]	Article no. plug sealing PTFE/St. st.	Leakage class	Article no. plug sealing St. st./St. st.	Leakage class	
G threaded port										
A Pneumatically operated control valve, normally closed by spring force, flow direction below seat	15	50	G ½	5	16	213712	VI	213763	IV	
		70	G ½	5	16	213713	VI	213764	IV	
	20	50	G ¾	10	10	213714	VI	213765	III	
		70	G ¾	10	16	213715	VI	213766	IV	
	25	50	G 1	16	5	213716	VI	213767	III	
		70	G 1	16	12	213718	VI	213768	IV	
		90	G 1	16	16	245405	VI	229276	IV	
	32	70	G 1¼	23	6	213719	VI	213769	III	
		90	G 1¼	23	16	245406	VI	225395	IV	
	40	90	G 1½	34	12	213720	VI	213770	III	
		130	G 1½	36	16	223307	VI	223310	IV	
	50	90	G 2	49	7	203500	VI	206230	III	
		130	G 2	53	16	213697	VI	213708	IV	
	65	130	G 2½	90	16 (15 ¹⁾)	239487	VI	239503	IV	
	B Pneumatically operated control valve, normally open by spring force, flow direction below seat	15	50	G ½	5	see charts	213722	VI	223313	IV
			70	G ½	5		213721	VI	223314	IV
20		50	G ¾	10	213723		VI	223315	III	
		70	G ¾	10	213724		VI	223316	IV	
25		50	G 1	16	213725		VI	223317	III	
		70	G 1	16	213726		VI	223318	III	
32		70	G 1¼	23	213727		VI	223319	III	
40		90	G 1½	34	213728		VI	223320	IV	
50		90	G 2	49	203510		VI	223321	III	
65		130	G 2½	90	239495		VI	239511	IV	

1) acc. to the Pressure Equipment Directive 97/23 / EC for compressible fluids in Group 1 (hazardous gases and vapors in accordance with Article 3, Section 1.3, letter a, first dash)

Ordering chart

Control function	Orifice [mm]	Actuator size Ø [mm]	Port connection thread	K _{vs} value water [m ³ /h]	Operating pressure up to + 185 °C [bar]	Article no. plug sealing PTFE/St. st.	Leakage class	Article no. plug sealing St. st./St. st.	Leakage class	
NPT threaded port										
A Pneumatically operated control valve, normally closed by spring force, flow direction below seat	15	50	NPT ½	5	16	213729	VI	213771	IV	
		70	NPT ½	5	16	213730	VI	213772	IV	
	20	50	NPT ¾	10	10	213731	VI	213773	III	
		70	NPT ¾	10	16	213732	VI	213774	IV	
	25	50	NPT 1	16	5	213733	VI	213775	III	
		70	NPT 1	16	12	213734	VI	213776	IV	
		90	NPT 1	16	16	465032	VI	464364	IV	
	32	70	NPT 1 ¼	23	6	213736	VI	213777	III	
		90	NPT 1 ¼	23	16	465033	VI	464365	IV	
	40	90	NPT 1 ½	34	12	213737	VI	213778	III	
		130	NPT 1 ½	36	16	223308	VI	223311	IV	
	50	90	NPT 2	49	7	203537	VI	206239	III	
		130	NPT 2	53	16	213699	VI	213709	IV	
	65	130	NPT 2 ½	90	16 (15 ¹⁾)	239488	VI	239504	IV	
	B Pneumatically operated control valve, normally open by spring force, flow direction below seat	15	50	NPT ½	5	see charts	213738	VI	223322	IV
			70	NPT ½	5		213739	VI	223323	IV
20		50	NPT ¾	10	213740		VI	223324	III	
		70	NPT ¾	10	213741		VI	223325	IV	
25		50	NPT 1	16	213742		VI	223326	III	
		70	NPT 1	16	213743		VI	223327	III	
32		70	NPT 1 ¼	23	213744		VI	223328	III	
40		90	NPT 1 ½	34	213745		VI	223329	IV	
50		90	NPT 2	49	203546		VI	223330	III	
65		130	NPT 2 ½	90	239486		VI	239512	IV	

1) acc. to the Pressure Equipment Directive 97/23 / EC for compressible fluids in Group 1 (hazardous gases and vapors in accordance with Article 3, Section 1.3, letter a, first dash)



Ordering chart

2300

Control function	Orifice [mm]	Actuator size Ø [mm]	Port connection thread	K _{vs} value water [m ³ /h]	Operating pressure up to +185 °C [bar]	Article no. plug sealing PTFE/St. st.	Leakage class	Article no. plug sealing St. st./St. st.	Leakage class	
Rc threaded port										
A Pneumatically operated control valve, normally closed by spring force, flow direction below seat	15	50	Rc ½	5	16	213746	VI	213779	IV	
		70	Rc ½	5	16	213747	VI	213780	IV	
	20	50	Rc ¾	10	10	213748	VI	213781	III	
		70	Rc ¾	10	16	213749	VI	213782	IV	
	25	50	Rc 1	16	5	213750	VI	213783	III	
		70	Rc 1	16	12	213751	VI	213784	IV	
		90	Rc 1	16	16	245407	VI	245438	IV	
	32	70	Rc 1 ¼	23	6	213752	VI	213785	III	
		90	Rc 1 ¼	23	16	245408	VI	245439	IV	
	40	90	Rc 1 ½	34	12	213753	VI	213786	III	
		130	Rc 1 ½	36	16	223309	VI	223312	IV	
	50	90	Rc 2	49	7	203555	VI	206249	III	
		130	Rc 2	53	16	213700	VI	213710	IV	
	65	130	Rc 2 ½	90	16 (15 ¹⁾)	239489	VI	239506	IV	
	B Pneumatically operated control valve, normally open by spring force, flow direction below seat	15	50	Rc ½	5	see charts	213755	VI	223331	IV
			70	Rc ½	5		213756	VI	223332	IV
20		50	Rc ¾	10	213757		VI	223333	III	
		70	Rc ¾	10	213758		VI	223334	IV	
25		50	Rc 1	16	213759		VI	223335	III	
		70	Rc 1	16	213760		VI	223336	III	
32		70	Rc 1 ¼	23	213761		VI	223337	III	
40		90	Rc 1 ½	34	213762		VI	223338	IV	
50		90	Rc 2	49	203564		VI	223339	III	
65		130	Rc 2 ½	90	239497		VI	239513	IV	

1) acc. to the Pressure Equipment Directive 97/23 / EC for compressible fluids in Group 1 (hazardous gases and vapors in accordance with Article 3, Section 1.3, letter a, first dash)

Ordering chart

Control function	Orifice [mm]	Actuator size Ø [mm]	Port connection tube Ø [mm]	K _{vs} value water [m ³ /h]	Operating pressure up to +185 °C [bar]	Article no. plug sealing PTFE/St. st.	Leakage class	Article no. plug sealing St. st./St. st.	Leakage class	
Welded connection acc. to EN ISO 1127										
A Pneumatically operated control valve, normally closed by spring force, flow direction below seat	15	50	21.3×1.6	5	16	203565	VI	206250	IV	
		70	21.3×1.6	5	16	203566	VI	206252	IV	
	20	50	26.9×1.6	10	10	203567	VI	206253	III	
		70	26.9×1.6	10	16	203568	VI	206254	IV	
	25	50	33.7×2	16	5	203569	VI	206255	III	
		70	33.7×2	16	12	203570	VI	206256	III	
		90	33.7×2	16	16	245395	VI	245403	IV	
	32	70	42.4×2	23	6	203571	VI	206257	III	
		90	42.4×2	23	16	204766	VI	245404	IV	
	40	90	48.3×2	34	12	203572	VI	206258	III	
		130	48.3×2	36	16	223299	VI	223306	IV	
	50	90	60.3×2.0	49	7	274669	VI	274670	III	
		130	60.3×2.0	53	16	274672	VI	274673	IV	
	65	130	76.1×2.3	90	16 (15 ¹⁾)	239490	VI	217770	IV	
	B pneumatisch betätigtes Regelventil, in Ruhestellung durch Federkraft geöffnet, Anströmung unter Sitz	15	50	21.3×1.6	5	see charts	203574	VI	223340	IV
			70	21.3×1.6	5		203575	VI	223341	IV
20		50	26.9×1.6	10	203576		VI	223342	III	
			26.9×1.6	10	203577		VI	223343	IV	
25		50	33.7×2	16	203578		VI	223344	III	
		70	33.7×2	16	203579		VI	223345	III	
32		70	42.4×2	23	203580		VI	223346	III	
40		90	48.3×2	34	203581		VI	223347	IV	
50		90	60.3×2.0	49	274674		VI	274675	III	
65		130	76.1×2.3	90	239498		VI	239515	IV	

1) acc. to the Pressure Equipment Directive 97/23 / EC for compressible fluids in Group 1 (hazardous gases and vapors in accordance with Article 3, Section 1.3, letter a, first dash)



Ordering chart

2300

Control function	Orifice [mm]	Actuator size Ø [mm]	Port connection tube Ø [mm]	K _{vs} value water [m ³ /h]	Operating pressure up to +185 °C [bar]	Article no. plug sealing PTFE/St. st.	Leakage class	Article no. plug sealing St. st./St. st.	Leakage class
Welded connection acc. to DIN 11850 S2									
A Pneumatically operated control valve, normally closed by spring force, flow direction below seat	15	50	19 × 1.5	5	16	203583	VI	223349	IV
		70	19 × 1.5	5	16	203584	VI	223350	IV
	20	50	23 × 1.5	10	10	203585	VI	223351	III
		70	23 × 1.5	10	16	203586	VI	223352	IV
	25	50	29 × 1.5	16	5	203587	VI	223353	III
		70	29 × 1.5	16	12	203588	VI	223354	III
		90	29 × 1.5	16	16	245396	VI	245409	IV
	32	70	35 × 1.5	23	6	203589	VI	223355	III
		90	35 × 1.5	23	16	204767	VI	245410	IV
	40	90	41 × 1.5	34	12	203590	VI	223356	III
		130	41 × 1.5	36	16	223300	VI	223357	IV
	50	90	53 × 1.5	49	7	203591	VI	223358	III
		130	53 × 1.5	53	16	213702	VI	223359	IV
	65	130	70 × 2	90	16 (15 ¹⁾)	239491	VI	239507	IV
B pneumatisch betätigtes Regelventil, in Ruhestellung durch Federkraft geöffnet, Anströmung unter Sitz	15	50	19 × 1.5	5	see charts	203592	VI	223360	IV
		70	19 × 1.5	5		203593	VI	223361	IV
	20	50	23 × 1.5	10		203594	VI	223362	III
		70	23 × 1.5	10		203595	VI	223363	IV
	25	50	29 × 1.5	16		203596	VI	223364	III
		70	29 × 1.5	16		203597	VI	223365	III
	32	70	35 × 1.5	23		203598	VI	223366	III
	40	90	41 × 1.5	34		203599	VI	223367	IV
	50	90	53 × 1.5	49		203600	VI	223368	III
	65	130	70 × 2	90		239499	VI	239516	IV

1) acc. to the Pressure Equipment Directive 97/23 / EC for compressible fluids in Group 1 (hazardous gases and vapors in accordance with Article 3, Section 1.3, letter a, first dash)

Ordering chart

Control function	Orifice [mm]	Actuator size Ø [mm]	Port connection tube Ø [mm]	K _{vs} value water [m ³ /h]	Operating pressure up to +185 °C [bar]	Article no. plug sealing PTFE/St. st.	Leakage class	Article no. plug sealing St. st./St. st.	Leakage class	
Welded connection acc. to ASME BPE										
A Pneumatically operated control valve, normally closed by spring force, flow direction below seat	15	50	12.7 × 1.65	5	16	203601	VI	223369	IV	
		70	12.7 × 1.65	5	16	203602	VI	223370	IV	
	20	50	19.05 × 1.65	10	10	203603	VI	223371	III	
		70	19.05 × 1.65	10	16	203604	VI	223372	IV	
	25	50	25.4 × 1.65	16	5	203637	VI	223373	III	
		70	25.4 × 1.65	16	12	203606	VI	223374	III	
	40	90	25.4 × 1.65	16	16	245397	VI	245411	IV	
		90	38.1 × 1.65	34	12	203607	VI	212906	III	
	50	130	38.1 × 1.65	36	16	223303	VI	223376	IV	
		90	50.8 × 1.65	49	7	203608	VI	223377	III	
	65	130	50.8 × 1.65	53	16	213703	VI	223378	IV	
		130	63.5 × 1.65	90	16 (15 ¹⁾)	239492	VI	239508	IV	
	B pneumatisch betätigtes Regelventil, in Ruhestellung durch Federkraft geöffnet, Anströmung unter Sitz	15	50	12.7 × 1.65	5	see charts	203609	VI	223379	IV
			70	12.7 × 1.65	5		203610	VI	223380	IV
20		50	19.05 × 1.65	10	203611		VI	223381	III	
		70	19.05 × 1.65	10	203612		VI	223382	IV	
25		50	25.4 × 1.65	16	203645		VI	223383	III	
		70	25.4 × 1.65	16	203614		VI	223384	III	
40		90	38.1 × 1.65	34	203615		VI	223385	IV	
50		90	50.8 × 1.65	49	203616		VI	223386	III	
65		130	63.5 × 1.65	90	239500		VI	239517	IV	

1) acc. to the Pressure Equipment Directive 97/23 / EC for compressible fluids in Group 1 (hazardous gases and vapors in accordance with Article 3, Section 1.3, letter a, first dash)



Ordering chart

2300

Control function	Orifice [mm]	Actuator size Ø [mm]	Port connection tube Ø [mm]	K _{vs} value water [m ³ /h]	Operating pressure up to +185 °C [bar]	Article no. plug sealing PTFE/St. st.	Leakage class	Article no. plug sealing St. st./St. st.	Leakage class	
Welded connection acc. to SMS 3008										
A Pneumatically operated control valve, normally closed by spring force, flow direction below seat	15	50	12 × 1.0	5	16	203617	VI	223387	IV	
		70	12 × 1.0	5	16	203618	VI	223388	IV	
	20	50	18 × 1.0	10	10	203619	VI	223389	III	
		70	18 × 1.0	10	16	203620	VI	223390	IV	
	25	50	25 × 1.2	16	5	203621	VI	223391	III	
		70	25 × 1.2	16	12	203622	VI	223392	III	
		90	25 × 1.2	16	16	245398	VI	245412	IV	
	40	90	38 × 1.2	34	12	203623	VI	223393	III	
		130	38 × 1.2	36	16	223302	VI	223394	IV	
	50	90	51 × 1.2	49	7	203624	VI	223395	III	
		130	51 × 1.2	53	16	213704	VI	223396	IV	
	65	130	63.5 × 1.65	90	16 (15 ¹⁾)	239493	VI	239509	IV	
	B Pneumatisch betätigtes Regelventil, in Ruhestellung durch Federkraft geöffnet, Anströmung unter Sitz	15	50	12 × 1.0	5	see charts	203625	VI	223397	IV
			70	12 × 1.0	5		203626	VI	223398	IV
20		50	18 × 1.0	10	203627		VI	223399	III	
		70	18 × 1.0	10	203628		VI	223400	IV	
25		50	25 × 1.2	16	203629		VI	223401	III	
		70	25 × 1.2	16	203630		VI	223402	III	
40		90	38 × 1.2	34	203631		VI	223403	IV	
50		90	51 × 1.2	49	203632		VI	223404	III	
65		130	63.5 × 1.65	90	239501		VI	239518	IV	

1) acc. to the Pressure Equipment Directive 97/23 / EC for compressible fluids in Group 1 (hazardous gases and vapors in accordance with Article 3, Section 1.3, letter a, first dash)

Ordering chart

Control function	Orifice [mm]	Actuator size Ø [mm]	Port connection tube Ø [mm]	K _{vs} value water [m ³ /h]	Operating pressure up to + 185 °C [bar]	Article no. plug sealing PTFE/St. st.	Leakage class	Article no. plug sealing St. st./St. st.	Leakage class
Welded connection acc. to BS 4825									
A Pneumatically operated control valve, normally closed by spring force, flow direction below seat	15	50	12.7 × 1.2	5	16	203633	VI	223405	IV
		70	12.7 × 1.2	5	16	203634	VI	223406	IV
	20	50	19.05 × 1.65	10	10	203635	VI	223407	III
		70	19.05 × 1.65	10	16	203636	VI	223408	IV
	25	50	25.4 × 1.65	16	5	203637	VI	223373	III
		70	25.4 × 1.65	16	12	203606	VI	212907	III
		90	25.4 × 1.65	16	16	245397	VI	245413	IV
	40	90	38.1 × 1.65	34	12	203607	VI	212906	III
		130	38.1 × 1.65	36	16	223303	VI	223412	IV
	50	90	50.8 × 1.65	49	7	203608	VI	212904	III
		130	50.8 × 1.65	53	16	213703	VI	223414	IV
	65	130	63.5 × 1.65	90	16	239492	VI	239508	IV
	B Pneumatisch betätigtes Regelventil, in Ruhestellung durch Federkraft geöffnet, Anströmung unter Sitz	15	50	12.7 × 1.2	5	see charts	203641	VI	223415
70			12.7 × 1.2	5	203642		VI	223416	IV
20		50	19.05 × 1.65	10	203643		VI	223417	III
		70	19.05 × 1.65	10	203644		VI	223418	IV
25		50	25.4 × 1.65	16	203645		VI	223383	III
		70	25.4 × 1.65	16	203614		VI	223384	III
40		90	38.1 × 1.65	34	203615		VI	223385	IV
50		90	50.8 × 1.65	49	203616		VI	223386	III
65		130	63.5 × 1.65	90	239500		VI	239517	IV



Ordering chart

2300

Control function	Orifice [mm]	Actuator size Ø [mm]	Port connection clamp external Ø [mm]	K _{vs} value water [m³/h]	Operating pressure up to +185 °C [bar]	Article no. plug sealing PTFE/St. st.	Leakage class	Article no. plug sealing St. st./St. st.	Leakage class
Clamp acc. to ISO 2852									
A Pneumatically operated control valve, normally closed by spring force, flow direction below seat	15	50	34	5	16	203649	VI	223423	IV
		70	34	5	16	203650	VI	223424	IV
	20	50	50.5	10	10	203651	VI	223425	III
		70	50.5	10	16	203652	VI	223426	IV
	25	50	50.5	16	5	203653	VI	223427	III
		70	50.5	16	12	203654	VI	223428	III
		90	50.5	16	16	245401	VI	245414	IV
	32	70	50.5	23	6	203655	VI	223429	III
		90	50.5	23	16	204768	VI	245415	IV
	40	90	64	34	12	203656	VI	223430	III
		130	64	36	16	223304	VI	223431	IV
	50	90	77.5	49	7	203657	VI	223433	III
		130	77.5	53	16	213706	VI	223434	IV
	B Pneumatically operated control valve, normally open by spring force, flow direction below seat	15	50	34	5	see charts	203658	VI	223435
70			34	5	203659		VI	223436	IV
20		50	50.5	10	203660		VI	223437	III
		70	50.5	10	203661		VI	223438	IV
25		50	50.5	16	203662		VI	223439	III
		70	50.5	16	203663		VI	223440	III
32		70	50.5	23	203664		VI	223441	III
40		90	64	34	203665		VI	223442	IV
50		90	77.5	49	203666		VI	223443	III

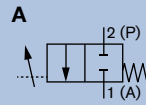
Ordering chart

Control function	Orifice [mm]	Actuator size Ø [mm]	Port connection clamp external Ø [mm]	K _{vs} value water [m³/h]	Operating pressure up to + 185 °C [bar]	Article no. plug sealing PTFE/St. st.	Leakage class	Article no. plug sealing St. st./St. st.	Leakage class
Clamp acc. to ASME BPE									
A Pneumatically operated control valve, normally closed by spring force, flow direction below seat	15	50	25	5	16	203667	VI	223444	IV
		70	25	5	16	203668	VI	223445	IV
	20	50	25	10	10	203669	VI	223446	III
		70	25	10	16	203670	VI	223447	IV
	25	50	50.5	16	5	203671	VI	223448	III
		70	50.5	16	12	203672	VI	223449	III
		90	50.5	16	16	245402	VI	245416	IV
	40	90	50.5	34	12	203673	VI	223450	III
		130	50.5	36	16	223305	VI	223451	IV
	50	90	64	49	7	203674	VI	223452	III
		130	64	53	16	213707	VI	223453	IV
	B Pneumatically operated control valve, normally open by spring force, flow direction below seat	15	50	25	5	see charts	203675	VI	223454
70			25	5	203677		VI	223455	IV
20		50	25	10	203678		VI	223456	III
		70	25	10	203679		VI	223457	IV
25		50	50.5	16	203680		VI	223458	III
		70	50.5	16	203681		VI	223459	III
40		90	50.5	34	203682		VI	223460	IV
50		90	64	49	203683		VI	223461	III

Pneumatic operated 2 way Globe Control Valve ELEMENT

2301

- Control valve component for the valve system Continuous ELEMENT 8802
- Excellent control characteristics
- High cycle life and maintenance-free operation
- Flow optimised body in stainless steel
- Several K_{vs} value per port size due to removable trim kit



In line with Bürkert's philosophy the construction of the 2301 globe valve fulfils tough criteria for process environments. Unrivalled cycle life and sealing integrity is guaranteed by the proven self adjusting spindle packing with exchangeable V-seals. Each globe valve body can be fitted with up to five sizes of trim sets. These parabolic trims provide a reliable and repeatable characteristic to vary the flow. The control cones are available in either stainless steel or with a durable PTFE seal or PEEK seal for tight shut-off. Leakage class III, IV or VI are available. The design enables the easy integration of automation modules whether they are digital electropneumatic positioner or process controller. The fully integrated system has a compact and smooth design, integrated pneumatic lines, IP65/67 protection class and superior chemical resistance.

Technical data

K_{vs} values	0.1...140 m ³ /h
Port size/Seat size (orifice)	DN10...DN100 / 3...100 mm
Pressure stage	PN25
Port connections	
Flange	DIN EN 1092-1, ANSI B 16.5, JIS 10K
Thread	G, Rc, NPT
Weld ends	EN ISO 1127 Series 1/ISO 4200/DIN 11866 Series B, DIN 11850 Series 2/DIN 11866 Series A/ DIN EN 10357 Series A, ASME BPE/DIN 11866 Series C, BS 4825-1, SMS 3008
Clamp	ISO 2852, DIN 32676 Series A and Series B, ASME BPE/DIN 32676 Series C, BS 4825-3
Medium	Neutral gases, water, alcohol, oils, fuel, hydraulic mediums, salt solution, alkali solutions, organic solvents, steam, oxygen, optional fuel gas (EC Gas Appliances Directive 2009/142/EG)
Viscosity	Max. 600 mm ² /s
Medium temperature	-10 °C...+185 °C (Stainless Steel seal / Stainless Steel cone) -10 °C...+185 °C (PEEK seal / Stainless Steel cone) -10 °C...+130 °C (PTFE seal / Stainless Steel cone)
Ambient temperature	-10 °C...+80 °C (remote version) -10 °C...+55 °C (when used with positioner or process controllers)
Seat leakage acc. to DIN EN 60534-4:2006	Shut-off class III and IV for Stainless steel Shut-off class VI for PTFE/St.st. and PEEK/St. st. (see details in ordering chart)

Dimensions [mm]

Flange version without TopControl and SideControl

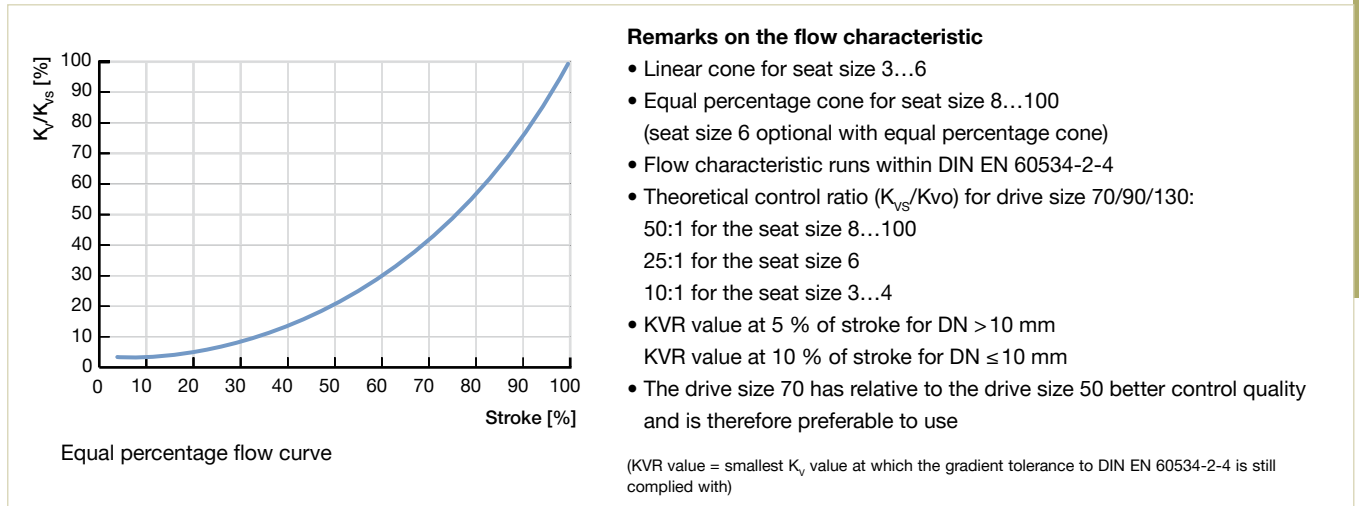
The dimensions of other versions can be found in the datasheet.

Port size (tube)	Actuator size	A	B
10	50	64.5	226
	70	91	239
15	50	64.2	226
	70	91	239
20	50	64.5	232
	70	91	245
25	50	64.5	235
	70	91	248
	90	120	301
32	90	120	329
	130	159	381
40	90	120	334
	130	159	386
50	90	120	340
	130	159	392
65	130	159	446
80	130	159	454
100	130	159	464

Technical data continued

Safety position	A: normally closed by spring action (NC) B: normally open by spring action (NO)
Control medium	neutral gases, air
Approval and Conformity	FDA, EGV 1935/2004; (ATEX, FDA and EC Gas Appliances Directive 2009/142/EG on request)

Flow curve and description



Ordering chart

Circuit function	Port size (tube)		Seat size		Ac-tuator size Ø	K_{vs} value	Article no. DIN EN 1092-1 Seal/cone		Article no. ANSI B 16.5 Seal/cone		Article no. JIS 10K Seal/cone	
	[mm]	[inch]	[mm]	[inch]			PTFE/St. St.	St. St./St. St.	PTFE/St. St.	St. St./St. St.	PTFE/St. St.	St. St./St. St.
Flange connection, Flow direction below the seat												
A Pneumatically operated control valve, normally closed by spring force, flow direction below seat	10	¾	3	0.12	70	0.1	–	on request	–	–	–	–
			4	0.16	70	0.5	–	215207	–	–	–	–
			6	0.24	70	1.25	–	215209	–	–	–	–
			8	0.31	70	2	213985	215212	–	–	–	–
			10	0.39	70	2.7	213989	215215	–	–	–	–
	15	½	3	0.12	70	0.1	–	233165	–	on request	–	on request
			4	0.16	70	0.5	–	210529	–	215219	–	215226
			6	0.24	70	1.25	–	215211	–	215220	–	215227
			8	0.31	70	2.1	213987	215214	215198	215221	215203	215228
			10	0.39	70	3.1	213991	215217	215199	215222	213913	213911
	20	¾	15	0.59	70	4.3	204932	205010	204944	205021	204953	205030
			10	0.39	70	3.2	210530	215218	215200	215223	215204	215229
			15	0.59	70	5.2	213993	214030	214009	214046	213936	213933
			20	0.79	70	7.1	204935	205012	204946	205023	204955	205032
			–	–	–	–	–	–	–	–	–	–



Ordering chart

2301

Circuit function	Port size (tube)		Seat size		Ac-tuator size Ø [mm]	K _{vs} value [m³/h]	Article no. DIN EN 1092-1 Seal/cone		Article no. ANSI B 16.5 Seal/cone		Article no. JIS 10K Seal/cone	
	[mm]	[inch]	[mm]	[inch]			PTFE/St. St.	St. St./St. St.	PTFE/St. St.	St. St./St. St.	PTFE/St. St.	St. St./St. St.
Flange connection, Flow direction below the seat												
A Pneumatically operated control valve, normally closed by spring force, flow direction below seat	25	1	15	0.59	70	5.3	213994	214031	214010	214047	214020	214059
			20	0.79	70	7.2	213995	214032	214011	214048	213930	213914
			25	0.98	70	12	204937	205014	204948	205025	204957	205034
					90	12	242054	229421	464851	464367	242165	242199
	32	1 ¼	25	0.98	90	9.9	213997	210446	-	-	213939	213937
					130	13	222634	222655	-	-	222643	222665
			32	1.3	90	13.4	204939	205016	-	-	213177	213178
					130	17.8	223597	223598	-	-	222645	222667
	40	1 ½	32	1.3	90	14.4	213999	214035	215201	215224	213932	213931
					130	20.2	222636	222657	463905	463913	222647	222668
			40	1.6	90	17.5	204941	205018	204950	205027	204959	205037
					130	23.8	219791	222659	463907	463915	222649	222670
	50	2	40	1.6	90	18	214001	214037	214013	214050	213941	213940
					130	24.6	222638	222660	463908	463916	222650	222671
			50	2	90	28	204942	205019	204951	205028	204960	205038
					130	37	214003	214039	214015	214052	214023	214062
	65	2 ½	50	2	130	45	214005	214040	239537	239573	214024	214063
			65	2.6	130	65	217772	219618	239535	239572	219617	219620
	80	3	65	2.6	130	73	239545	239581	239546	239582	239547	239584
			80	3.2	130	100	239540	239576	239541	239577	239542	239578
100	4	80	3.2	130	110	239561	239597	239562	239598	239563	239599	
		100	3.9	130	140	239556	239592	239557	239593	239558	239594	

Ordering chart

Circuit function	Port size (tube)		Seat size		Actuator size Ø	K _{vs} value	Article no. G (EN ISO 228-1) Seal/cone		Article no. NPT (ISO 7/1/DIN EN 10226-2) Seal/cone		Article no. Rc (ASME B 1.20.1) Seal/cone	
	[mm]	[inch]	[mm]	[inch]			PTFE/St. St.	St. St./St. St.	PTFE/St. St.	St. St./St. St.	PTFE/St. St.	St. St./St. St.
Thread connection, Flow direction below the seat												
A Pneumatically operated control valve, normally closed by spring force, flow direction below seat	10	⅜	3	0.12	70	0.1	-	284168	-	on request	-	on request
			4	0.16	70	0.5	-	215238	-	220447	-	220513
			6	0.24	70	1.25	-	215240	-	220450	-	220516
			8	0.31	70	2.0	215233	215242	220418	220453	220484	220519
			10	0.39	70	2.7	215235	215245	220421	220457	220487	220523
			15	0.59	70	4.3	206432	213955	220882	220886	220889	220894
	15	½	3	0.12	70	0.1	-	227784	-	466159	-	233369
			4	0.16	70	0.5	-	208843	-	220884	-	220891
			6	0.24	70	1.25	-	215241	-	220452	-	220518
			8	0.31	70	2.1	212964	215243	220881	220455	220888	220521
			10	0.39	70	3.1	215236	215246	220423	220459	220489	220525
			15	0.59	70	4.3	206432	213955	220882	220886	220889	220894
	20	¾	10	0.39	70	3.2	215237	215247	220425	220461	220491	220527
			15	0.59	70	5.2	214067	215248	220427	220463	220493	220529
			20	0.79	70	7.1	206584	211239	220430	220466	220496	220532
	25	1	15	0.59	70	5.3	206588	210460	220428	220464	220494	220530
			20	0.79	70	7.2	206586	210721	220431	220467	220497	220533
			25	0.98	70	12.0	189145	210485	220434	220470	220500	220536
					90	12.0	242203	242207	464864	464867	242257	242380
	32	1 ¼	25	0.98	90	9.9	214070	210407	220435	220471	220501	220537
					130	13.0	222677	222687	463921	463931	222740	222777
			32	1.3	90	13.4	210097	210458	220437	220473	220503	220539
					130	17.8	223599	223600	463956	463957	223605	223606
	40	1 ½	32	1.3	90	14.4	214072	214084	220438	220474	220504	220540
				130	20.2	222679	222689	463923	463933	222742	222763	
40			1.6	90	17.5	210098	207800	220440	220476	220506	220542	
				130	23.8	222681	222691	463925	463935	222767	222765	
50	2	40	1.6	90	18.0	214074	214086	220441	220477	220507	220543	
				130	24.6	222682	222692	463926	463936	222768	222766	
		50	2.0	90	28.0	210099	203693	220443	220479	220509	220545	
				130	37.0	214076	214088	220444	220480	220510	220546	
65	2 ½	50	2.0	130	45.0	214077	214089	239536	239620	220511	220547	
		65	2.6	130	65.0	219621	219622	239534	239571	220512	220548	



Ordering chart

2301

Circuit function	Port size (tube)		Seat size		Actuator size Ø	K _{vs} value	Article no. EN ISO 1127 series 1 / ISO 4200 / DIN 11866 Series B		Article no. DIN 11850 Series 2 / DIN 11866 Series A / DIN EN 10357 Series A		Article no. ASME BPE / DIN 11866 Series C	
	[mm]	[inch]	[mm]	[inch]			Seal/cone		Seal/cone		Seal/cone	
					[mm]	[m³/h]	PTFE/St. St.	St. St./St. St.	PTFE/St. St.	St. St./St. St.	PTFE/St. St.	St. St./St. St.
Weld ends connection, Flow direction below the seat												
A Pneumatically operated control valve, normally closed by spring force, flow direction below seat	10	¾					17.2x1.6		13.0x1.5		-	
			3	0.12	70	0.1	-	on request	-	250658	-	-
			4	0.16	70	0.5	-	on request	-	284171	-	-
			6	0.24	70	1.25	-	on request	-	284177	-	-
			8	0.31	70	2.0	on request	on request	on request	284179	-	-
			10	0.39	70	2.7	on request	on request	257412	208553	-	-
	15	½					21.3x1.6		19.0x1.5		12.7x1.65	
3			0.12	70	0.1	-	259240	-	225130	-	466160	
4			0.16	70	0.5	-	215254	-	215257	-	464905	
6			0.24	70	1.25	-	215255	-	215258	-	464907	
8			0.31	70	2.1	212392	215872	215250	215911	464878	464909	
10			0.39	70	3.1	212393	215873	215251	215913	464882	222997	
			15	0.59	70	4.3	209571	215909	215253	209173	-	-
	20	¾					26.9x1.6		23.0x1.5		19.05x1.65	
15			0.59	70	5.2	214094	214132	214113	208555	464455	211017	
20			0.79	70	7.1	214096	210696	211937	211953	-	-	
	25	1					33.7x2.0		29.0x1.5		25.4x1.65	
20			0.79	70	7.2	214097	214135	214116	214154	464891	464920	
25			0.98	70	12.0	209572	214138	209384	209089	-	-	
	32	1 ¼					42.4x2.0		35.0x1.5		-	
25			0.98	90	9.9	214101	214139	214119	214156	-	-	
32			1.3	90	13.4	214103	214141	211965	209181	-	-	
	40	1 ½					48.3x2.0		41.0x1.5		38.1x1.65	
32			1.3	90	14.4	214104	214142	214121	213487	464898	464927	
				130	20.2	222700	222721	222711	222732	464899	464928	
40			1.6	90	17.5	209440	214144	211967	209110	-	-	
			130	23.8	222702	222723	222713	222734	-	-		
	50	2					60.3x2.0		53.0x1.5		50.8x1.65	
40			1.6	90	18.0	210756	213561	214123	213411	464902	464931	
				130	24.6	222703	222724	222714	222735	464903	464932	
50			2.0	90	28.0	214107	214146	211968	209185	-	-	
			130	37.0	214108	214147	214125	214159	-	-		
	65	2 ½					76.1x2.3		70.0x2.0		-	
65			2.6	130	65.0	219623	219626	219625	219628	-	-	

Ordering chart

Circuit function	Port size (tube)		Seat size		Actuator size Ø	K _{vs} value	Article no. EN ISO 1127 series 1 / ISO 4200 / DIN 11866 Series B Seal/cone		Article no. DIN 11850 Series 2 / DIN 11866 Series A / DIN EN 10357 Series A Seal/cone		Article no. ASME BPE / DIN 11866 Series C Seal/cone	
	[mm]	[inch]	[mm]	[inch]			PTFE/St. St.	St. St./St. St.	PTFE/St. St.	St. St./St. St.	PTFE/St. St.	St. St./St. St.
Weld ends connection, Flow direction below the seat												
A Pneumatically operated control valve, normally closed by spring force, flow direction below seat	80	3					88.9x2.3		85.0x2.0		-	
			80	3.2	130	100.0	239543	239579	239544	239580	-	-
	100	4					114.3x2.6		104.0x2.0		-	
			100	3.9	130	140.0	239559	239595	239560	239596	-	-

Circuit function	Port size (tube)		Seat size		Actuator size Ø	K _{vs} value	Article no. DIN 32676 series A Seal/cone		Article no. DIN 32676 series B Seal/cone		
	[mm]	[inch]	[mm]	[inch]			PTFE/St. St.	St. St./St. St.	PTFE/St. St.	St. St./St. St.	Connection MC x TC, TC
Clamp connection, Flow direction below the seat											
A Pneumatically operated control valve, normally closed by spring force, flow direction below seat	15	½					19x1.5, 34		21.3x1.6, 50.5		
			15	0.59	70	4.3	222593	282208	273974	282213	
	20	¾					23x1.5, 34		26.9x1.6, 50.5		
			20	0.79	70	7.1	225647	282209	209438	282214	
	25	1					29x1.5, 50.5		33.7x2.0, 50.5		
			25	0.98	90	12.0	222594	282210	241115	282215	
	32	1 ¼					35x1.5, 50.5		-		
			32	1.3	90	13.4	240415	282211	-	-	
	40	1 ½					41x1.5, 50.5		48.3x2.0, 64.0		
			40	1.6	130	23.8	240351	282212	209880	284181	
	50	2					53x1.5, 64		60.3x2.0, 77.5		
			50	2.0	130	37.0	282258	282259	282261	282263	

Electromotive process valve – 2 way angle-seat shut-off valve

3320

- Fail-safe position by energy storage
- Rapid flow shut off
- Weather and impact resistant design
- Designed according to hygienic demands
- Many diagnostic functions

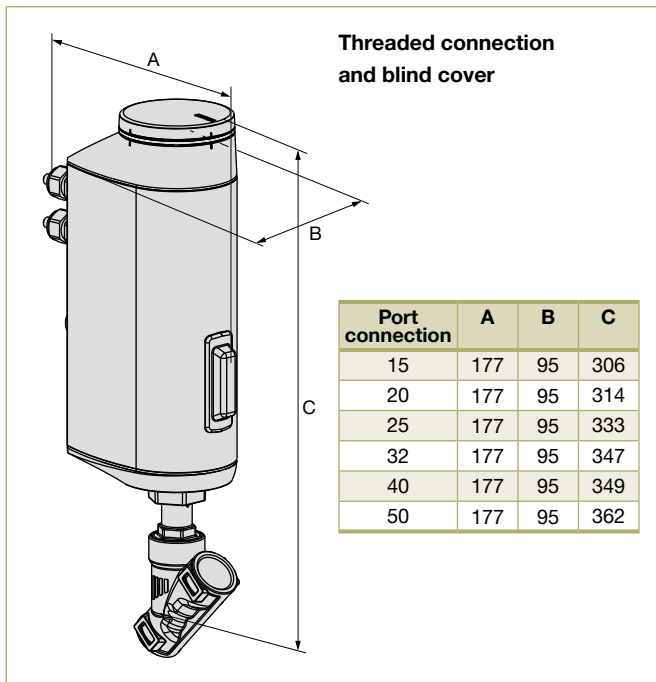


The innovative Bürkert On/Off process valve Type 3320 is the solution when it comes to shut-off tasks under demanding operating conditions. The electromotive actuator with ball screw moves the swivel plate at a particularly high rate of 6 mm/s to its end position. Thereby it reacts almost instantaneously to process signals. If necessary, the safety position can be approached by an optional energy storage in case of power failure. The actuator and shut-off valve are adapted perfectly to each other with closed design and robust surface. This ensures the hygienic requirements of a fast and residue-free cleaning. Harsh environments are no problem for the Type 3320 because of the protection class IP65 / IP67 and its high impact and vibration resistance. Unrivalled cycle life and sealing integrity is guaranteed by the proven self adjusting spindle packing with exchangeable V-seals. The fieldbus suitable for Type 3320 provides many helpful functions for process monitoring, valve diagnostics and predictive maintenance and thus offers the decisive advantage of a modern process automation.

Technical data

Port size	DN15...DN50
Nominal pressure (max.)	PN25 (valve body)
Port connections	
Thread	G, Rc, NPT (EN ISO 228-1, ISO 7/1 / DIN EN 10226-2, ASME B 1.20.1)
Weld ends	EN ISO 1127 / ISO 4200, DIN 11850 R2, ASME BPE, BS 4825-1, SMS 3008
Clamp	DIN 32676 A, DIN 32676 B, ASME BPE, BS 4825
Medium	Neutral gases, water, alcohol, oils, fuel, hydraulic mediums, salt solution, alkali solutions, organic solvents, steam
Viscosity	Max. 600 mm ² /s
Medium temperature	-10 °C...+185 °C (seat seal PEEK) -10 °C...+130 °C (seat sea PTFE)
Ambient temperature	-25 °C...+65 °C ¹⁾ (without SAFEPOS energy storage) 25 °C...+55 °C ¹⁾ (with SAFEPOS energy storage)
Safety position at power failure	With SAFEPOS energy-pack: opened, closed or free programmable Without SAFEPOS energy-pack: blocked in last position
Power supply	24 V DC ± 10 % (max. residual ripple 10 %)
Closure time	<2.3 sec...4.3 sec.(depending on stroke)
Travel speed	6 mm/s
Duty cycle	100 %
Protection class	IP65 / IP67

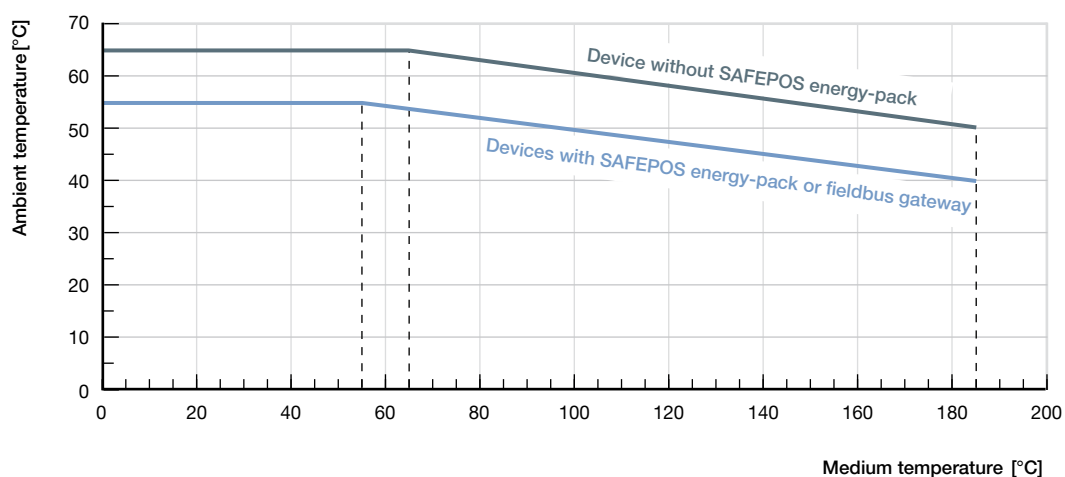
Dimensions [mm]



Ignition protection class	II 3G Ex ec IIC T4 Gc II 3D Ex tc IIIC T135 °C Dc
Binary control	0...5 V (log. 0) 10...30 V (log. 1)
Fieldbus communication	büS (Bürkert-System-Bus) (Standard) CANopen, EtherNet/IP, Modbus/TCP, PROFINET (optional)
Vibration, sinusoidal	5 g according to IEC 60068-2-6 Test Fc
Shock, mechanical	50 g according to IEC 60068-2-27 Test Ea
Approval and Conformity	EGV 1935/2004 (standard) FDA (optional) ATEX / IECEx (optional) cULus Cert. No. 238179 (optional)
Ignition protection class	II 3G Ex ec IIC T4 Gc II 3D Ex tc IIIC T135 °C Dc

1) The maximum value is reduced with increasing media temperature.

Temperature chart



The maximum allowable ambient temperature and media temperature influence each other. The maximum allowable temperature curves of different device variants can be seen in the temperature chart. The curves were determined for maximum operating conditions (max. operating pressure and motor power). For deviating operating conditions an individual verification can be performed. Please contact your Bürkert office for more information.

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Electromotive process valve – 2 way shut-off globe valve

3321

- Fail-safe position by energy storage
- Rapid flow shut off
- Weather and impact resistant design
- Designed according to hygienic demands
- Many diagnostic functions

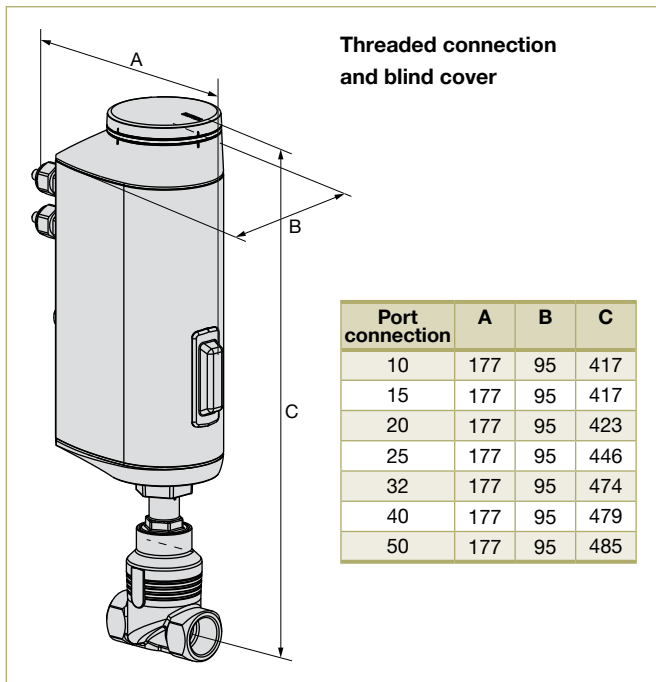


The innovative Bürkert process On/Off valve Type 3321 is the solution when it comes to shut-off tasks under demanding operating conditions. The electromotive actuator with ball screw moves the swivel plate at a particularly high rate of 6 mm/s to its end position. Thereby it reacts almost instantaneously to process signals. If necessary, the safety position can be approached by an optional energy storage in case of power failure. The actuator and shut-off globe valve are adapted perfectly to each other with closed design and robust surface. This ensures the hygienic requirements of a fast and residue-free cleaning. Harsh environments are no problem for the Type 3321 because of the protection class IP65 / IP67 and its high impact and vibration resistance. Unrivalled cycle life and sealing integrity is guaranteed by the proven self adjusting spindle packing with exchangeable V-seals. The fieldbus suitable for Type 3321 provides many helpful functions for process monitoring, valve diagnostics and predictive maintenance and thus offers the decisive advantage of a modern process automation.

Technical data

Port size	DN15...DN50
Nominal pressure (max.)	PN25 (valve body)
Port connections	
Thread	G, Rc, NPT (EN ISO 228-1, ISO 7/1 / DIN EN 10226-2, ASME B 1.20.1)
Weld ends	EN ISO 1127 / ISO 4200, DIN 11850 R2, ASME BPE, BS 4825-1, SMS 3008
Clamp	DIN 32676 A, DIN 32676 B, ASME BPE, BS 4825
Medium	Neutral gases, water, alcohol, oils, fuel, hydraulic mediums, salt solution, alkali solutions, organic solvents, steam
Viscosity	Max. 600 mm ² /s
Medium temperature	-10 °C...+185 °C (seat seal PEEK) -10 °C...+130 °C (seat seal PTFE)
Ambient temperature	-25 °C...+65 °C ¹⁾ (without SAFEPOS energy-pack) -25 °C...+55 °C ¹⁾ (with SAFEPOS energy-pack)
Safety position at power failure	With SAFEPOS energy-pack: opened, closed or free programmable Without SAFEPOS energy-pack: blocked in last position
Power supply	24 V DC ± 10 % (max. residual ripple 10 %)
Closure time	<2.3...4.3 sec. (depending on stroke)
Travel speed	6 mm/s
Duty cycle	100 %

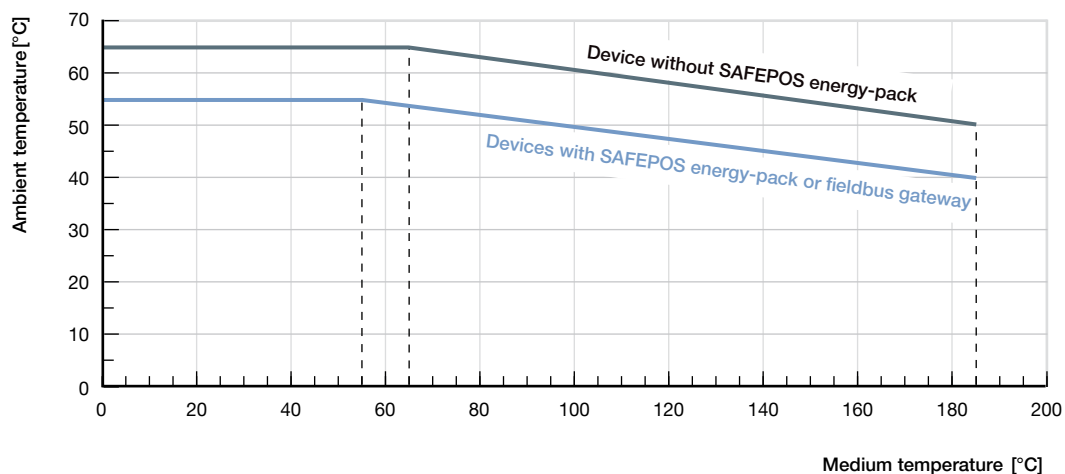
Dimensions [mm]



Protection class	IP65 / IP67
Binary control	0...5 V (log. 0) 10...30 V (log. 1)
Fieldbus communication	büS (Bürkert-System-Bus) (Standard) CANopen, EtherNet/IP, Modbus/TCP, PROFINET (optional)
Vibration, sinusoidal	5 g according to IEC 60068-2-6 Test Fc
Shock, mechanical	50 g according to IEC 60068-2-27 Test Ea
Approval and Conformity	EGV 1935/2004 (standard) FDA (optional) ATEX / IECEx (optional) cULus Cert. No. 238179 (optional)
Ignition protection class	II 3G Ex ec IIC T4 Gc II 3D Ex tc IIIC T135 °C Dc

1) Derating see temperature chart

Temperature chart



The maximum allowable ambient temperature and media temperature influence each other. The maximum allowable temperature curves of different device variants can be seen in the temperature chart. The curves were determined for maximum operating conditions (max. operating pressure and motor power). For deviating operating conditions an individual verification can be performed. Please contact your Bürkert office for more information.

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Electromotive process valve – 2 way angle-seat control valve

3360

- Good and fast control
- Weather, impact and vibration resistant design
- Easy cleaning by its design according hygienic demands
- Position controller and process controller available

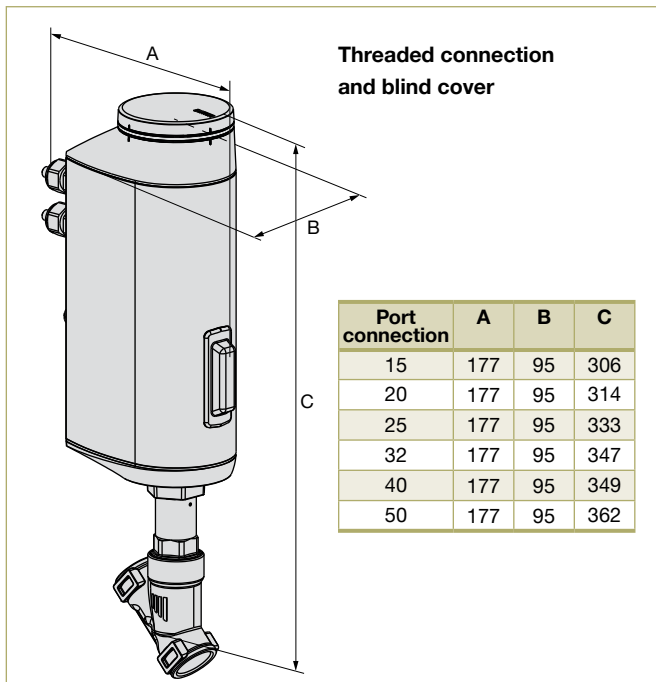


The innovative process controller Bürkert valve Type 3360 is the solution when it comes to control tasks under demanding operating conditions. The electromotive actuator with ball screw positions the control come with highest precision. A unique feature is its high positioning speed of 6 mm/s, that reacts quasi delay-free to process signals, and can be varied according to customer demands. Pressure variations or shocks in the medium aren't transferred to the valve position. If necessary, the safety position can be approached by an optional energy storage in case of power failure. Actuator and valve are adapted perfectly to each other with closed design and robust surface. This ensures the hygienic requirements of a fast and residue-free cleaning. Harsh environment are no problem for the Type 3360 because of the protection class IP65 / IP67 and its high impact and vibration resistance. Unrivalled cycle life and sealing integrity is guaranteed by the proven self adjusting spindle packing with exchangeable V-seals. The fieldbus suitable Type 3360 provides many helpful functions for process monitoring, valve diagnostics and predictive maintenance and thus offers the decisive advantage of a modern process automation.

Technical data

K_v values	5...53 m ³ /h
Port size	DN15...DN50
Operating pressure	16 bar / 1600 kPa / 232 psi
Port connections	
Thread	G, Rc, NPT (EN ISO 228-1, ISO 7/1 /DIN EN 10226-2, ASME B 1.20.1)
Welded	EN ISO 1127 / ISO 4200, DIN 11850 R2, ASME BPE, BS 4825-1, SMS 3008
Clamp	ISO 2852, DIN 32676, ASME BPE, BS 4825
Medium	Neutral gases, water, alcohol, oils, fuel, hydraulic mediums, salt solution, alkali solutions, organic solvents, steam
Viscosity	Max. 600 mm ² /s
Medium temperature	- 10...+ 185 °C (seat seal metallic or PEEK) - 10...+ 130 °C (seat seal PTFE)
Ambient temperature	-25 °C...+65 °C ¹⁾ (without touch display) -25 °C...+60 °C ¹⁾ (with touch display) -25 °C...+55 °C ¹⁾ (with SAFEPOS energy storage)
Seat leakage acc. to DIN EN 60534-4:2006	Shut-off class III and IV for metallic seat seal Shut-off class VI for PTFE and PEEK
Safety position at power failure	With SAFEPOS energy-pack: opened, closed or free programmable Without SAFEPOS energy-pack: blocked in last position

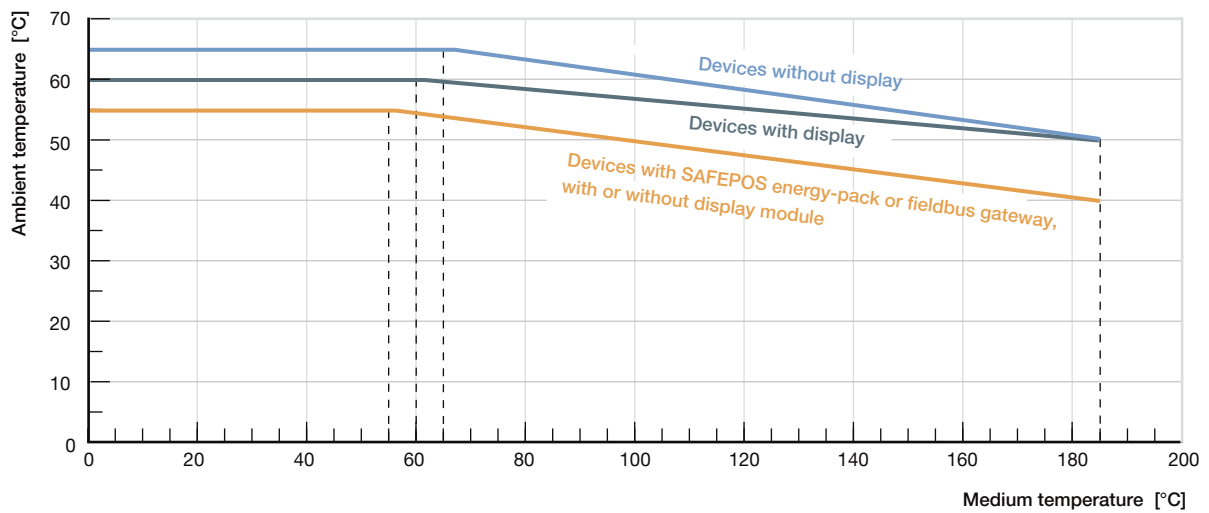
Dimensions [mm]



Power supply	24 V DC ± 10 % (max. residual ripple 10 %)
Closing time	2.3...4.3 sec. (depending on stroke)
Travel speed	6 mm/s
Deadband (min.)	0.1 %
Duty cycle	100 %
Protection class	IP65/P67
Ignition protection class	II 3G Ex ec IIC T4 Gc II 3D Ex tc IIIC T135 °C Dc
Controller type	Position controller or process controller
Analogue control	Setpoint: 0/4 - 20mA, 0 - 5/10 V and Binary input (other inputs and outputs optional)
Fieldbus communication	büS (Bürkert-System-Bus) (Standard) CANopen, EtherNet/IP, Modbus/TCP, PROFINET (optional)
Vibration, sinusoidal	5 g according to IEC 60068-2-6 Test Fc
Shock, mechanical	50 g according to IEC 60068-2-27 Test Ea
Approval and Conformity	EGV 1935/2004 (standard) FDA (optional) ATEX / IECEx (optional) cULus Cert. No. 238179 (optional)

1) Derating see temperature chart

Temperature chart



The maximum allowable ambient temperature and media temperature influence each other. The maximum allowable temperature curves of different device variants can be seen in the temperature chart. The curves were determined for maximum operating conditions (max. operating pressure and motor power). For deviating operating conditions an individual verification can be performed. Please contact your Bürkert office for more information.

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Electromotive process valve - 2 way globe control valve

3361

- High precise and fast flow control
- Several K_{vs} value per port size due to removable trim kit
- Weather, impact and vibration resistant design
- Easy cleaning by its design according hygienic demands
- Position controller and process controller available

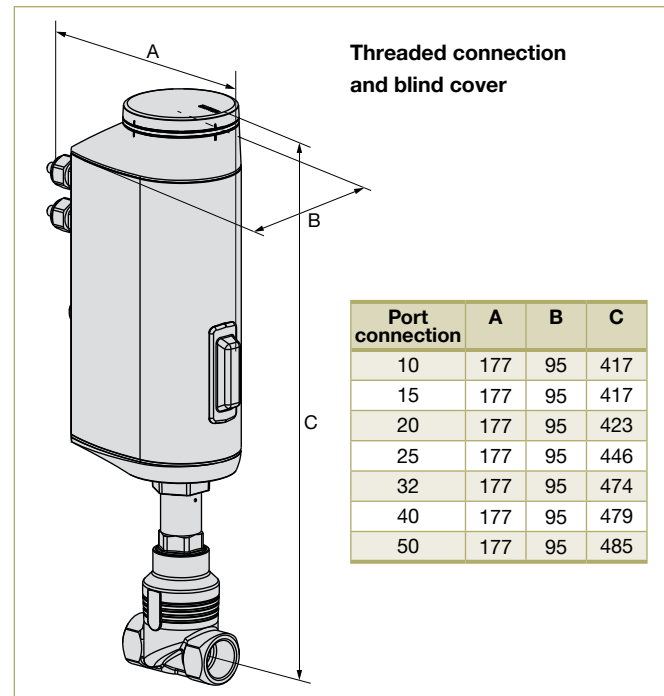


The innovative process controller Bürkert valve Type 3361 is the solution when it comes to demanding control tasks and operating conditions. The electromotive actuator with ball screw positions the control cone with highest precision. A unique feature is its high positioning speed of 6 mm/s, that reacts quasi delay-free to process signals, and can be varied according to customer demands. Pressure variations or shocks in the medium aren't transferred to the valve position. Each flow optimized valve housing can be equipped with up to 5 different valve seats for a precise adaptation according to customer needs. If necessary, the safety position can be approached by an optional energy storage in case of power failure. Actuator and valve are adapted perfectly to each other with closed design and robust surface. This ensures the hygienic requirements of a fast and residue-free cleaning. Harsh environment are no problem for the Type 3361 because of the protection class IP65 / IP67 and its high impact and vibration resistance. Unrivalled cycle life and sealing integrity is guaranteed by the proven self adjusting spindle packing with exchangeable V-seals. The fieldbus suitable Type 3361 provides many helpful functions for process monitoring, valve diagnostics and predictive maintenance and thus offers the decisive advantage of a modern process automation.

Technical data

K_{vs} values	0.1...37 m ³ /h
Port and seat size	DN10...DN50 / 3...50
Operating pressure	16 bar / 1600 kPa / 232 psi
Port connections	
Flange	DIN EN 1092-1, ANSI B 16.5, JIS 10K
Thread	G, Rc, NPT (EN ISO 228-1, ISO 7/1 /DIN EN 10226-2, ASME B 1.20.1)
Welded	EN ISO 1127 / ISO 4200, DIN 11850 R2, ASME BPE, BS 4825-1, SMS 3008
Clamp	ISO 2852, DIN 32676, ASME BPE, BS 4825
Medium	Neutral gases, water, alcohol, oils, fuel, hydraulic mediums, salt solution, alkali solutions, organic solvents, steam
Viscosity	Max. 600 mm ² /s
Medium temperature	- 10...+ 185 °C (seat seal metallic or PEEK) - 10...+ 130 °C (seat seal PTFE)
Ambient temperature	- 25 °C...+ 65 °C ¹⁾ (without touch display) - 25 °C...+ 60 °C ¹⁾ (with touch display) - 25 °C...+ 55 °C ¹⁾ (with SAFEPOS energy storage)

Dimensions [mm]



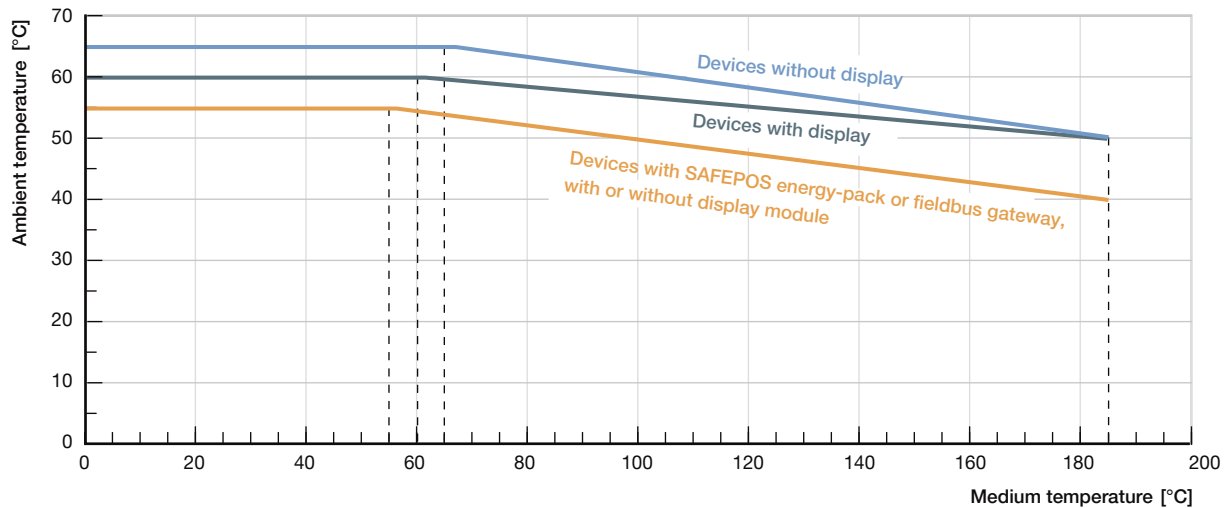
Seat leakage according to DIN EN 60534-4:2006	Shut-off class III and IV for metallic seat seal Shut-off class VI for PTFE and PEEK
Safety position at power failure	With SAFEPOS energy-pack: opened, closed or free programmable Without SAFEPOS energy-pack: blocked in last position
Power supply	24 V DC \pm 10 % (max. residual ripple 10 %)
Closing time (100 % stroke)	3.3...4.5 sec. (depending on stroke)
Travel speed	6 mm/s
Deadband (min.)	0.1 %
Duty cycle	100 %
Protection class	IP65 / IP67
Controller type	Position controller or process controller
Analogue control	Setpoint: 0/4 - 20 mA, 0 - 5/10 V and binary input (further inputs and outputs optional)
Fieldbus interface	büS (Bürkert-System-Bus) (Standard) CANopen, EtherNet/IP, Modbus/TCP, PROFINET (optional)
Vibration, sinusoidal	5 g according to IEC 60068-2-6 Test Fc

Technical data continued

Shock, mechanical	50 g according to IEC 60068-2-27 Test Ea
Approval and Conformity	EGV 1935/2004 (standard) FDA (optional) ATEX / IECEx (optional) cULus Cert. No. 238179 (optional)
Ignition protection class	II 3G Ex ec IIC T4 Gc II 3D Ex tc IIIC T135 °C Dc

1) Derating see temperature chart

Temperature chart



The maximum allowable ambient temperature and media temperature influence each other. The maximum allowable temperature curves of different device variants can be seen in the temperature chart. The curves were determined for maximum operating conditions (max. operating pressure and motor power). For deviating operating conditions an individual verification can be performed. Please contact your Bürkert office for more information.

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Overview for 2/2 Way Control Systems

Note: The following product overview does not show the complete product range of this catalogue. A complete overview can be found [here](#) ▶

Overview Control Systems	Species	Type	Process connection [mm]	Max. operating pressure [bar]	Note
	Electromotive diaphragm valve	3363 ▶	DN04...DN40	0...10	-
	Electromotive angle seat valve	3360 ▶	DN15...DN50	0...16	-
	Electromotive globe valve	3361 ▶	DN10...DN50	0...16	-
	Electromotive globe valve	3280 ▶	DN01...DN10	0...22	General product information in the catalogue, inquiry via data sheet possible
	Electromotive disc control valve	3285 ▶	DN08...DN25	0...6	General product information in the catalogue, inquiry via data sheet possible
	Pneumatic globe valve flange version	8802-GD-I/ GD-J ▶	DN03...DN100	0...25	General product information in the catalogue, inquiry via data sheet possible
	Pneumatic angle seat valve threaded port	8802 YG-I / YG-J ▶	DN15...DN50	0...25	General product information in the catalogue, inquiry via data sheet possible

2/2 way ELEMENT globe control valve with positioner or process controller, flange version

- High control accuracy
- Stainless steel IP65 and IP67 protection
- Easy to install



The fully integrated system with control valve, Type 2301, and automation unit, Type 8692 or Type 8693, is characterized by compact and smooth design, integrated air channels, IP65/67/NEMA 4X protection class and a high chemical resistance.

Technical data

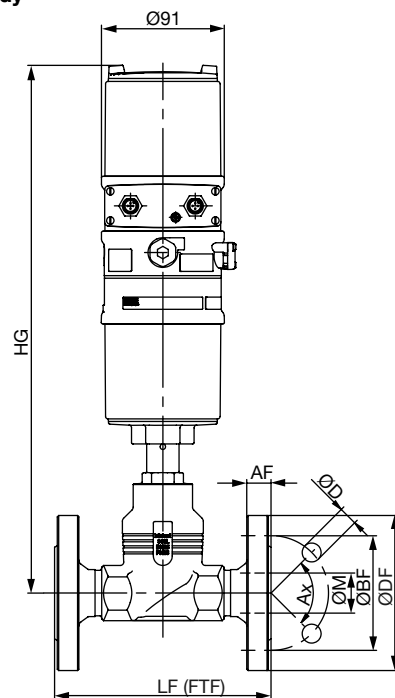
Orifice (seat orifice)	DN10...DN50 (DN4...DN50)
Port connection	
Flange conn. acc. to	DIN EN 1092-1
Welded and threaded connection	See separate datasheet
Body material	Cast stainless steel 316L
Actuator material	
Actuator	PPS
Case	Stainless steel 1.4561 (316Ti)
Plug seal	PTFE/steel (PTFE/stainless steel) and Steel/steel (Stainless steel/stainless steel)
Seat leakage acc. to . IEC 534-4/EN 1349	Shut-off class III and IV for steel/steel. Shut-off class VI for PTFE/steel (see details in ordering chart)
Medium	Neutral gases, water, alcohol, oil, fuels, hydraulic fluid, salt solutions, alkalis, organic solvents, steam
Viscosity	Max. 600 mm ² /s
Packing spindle	PTFE seal with spring compensation
Mediums temperature	-10 °C...+185 °C (max. +130 °C for sealing PTFE/steel)
Ambient temperature	0 °C...+55 °C (in conjunction with positioners - respectively process controllers) 0 °C...+80 °C (remote version)
Control medium	Compressed air
Required pilot pressure for control function A	Orifice DN10...DN50: 5.5...7 bar Orifice DN65...DN100: 5.6...7 bar
Operating voltage	24 V DC ± 10 %
Setpoint	0/4...20 mA and 0...5/10 V
Installation	As required, preferably with actuator upright

Note: For more technical data, see **Types 2301** ▶, **8692** ▶ or **8693** ▶

Dimensions [mm]

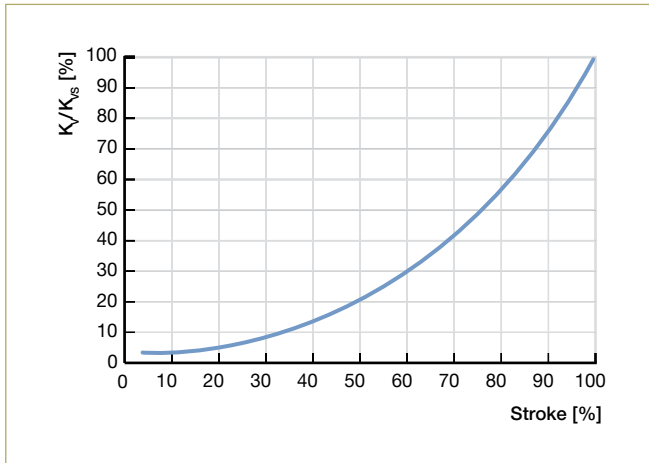
Continuous ELEMENT valve system, Type 8802 GD-I and 8802 GD-J

Flange body



Orifice	Actuator size	DIN EN 1092 FTF acc. to EN558 Series 1						
		HG	ØDF	LF	ØBF	AF	ØD	ØM
10	70	383	90	130	60	16	14	13.6
15	70	383	95	130	65	16	14	18.1
20	70	389	105	150	75	18	14	23.7
25	70	392	115	160	85	18	14	29.7
	90	445	115	160	85	18	14	29.7
32	90	473	140	180	100	18	18	38.4
	130	525	140	180	100	18	18	38.4
40	90	478	150	200	110	18	18	44.3
	130	530	150	200	110	18	18	44.3
50	90	484	165	230	125	20	18	56.3
	130	536	165	230	125	20	18	56.3

Flow curve and description



Remarks on the flow characteristic

- Equipercentile parabolic plug for the orifices DN8...DN50
- Linear plug for the orifices DN4 and DN6
- Flow characteristic runs within DIN/IEC 534-2-4
- Theoretical control ratio (K_{vs}/K_{vo}):
50:1 for the orifices DN8...DN50
25:1 for the orifice DN6
10:1 for the orifice DN4
- K_{vr} value at 5 % of stroke for DN > 10 mm
 K_{vr} value at 10 % of stroke for DN ≤ 10 mm

(K_{vr} value = smallest K_v value at which the gradient tolerance to DIN/IEC 534-2-4 is still complied with)

Ordering chart

Control function	Orifice [mm]	Port connection thread	Actuator size Ø [mm]	K_v value water [m³/h]	Pressure range to +185 °C [bar]	Article no. 8802-GD-I with positioner 8692 steel/steel	Article no. 8802-GD-J with positioner and Process controller 8693 steel/steel	Article no. 8802-GD-I with positioner 8692 steel/PTFE	Article no. 8802-GD-J with positioner and Process controller 8693 steel/PTFE
8802 GD-I and 8802 GD-J									
A 2/2 way valve normally closed (NC)	15	Flange DIN EN 1092-1	70	4.3	16	225353	232010	229667	232217
	20	Flange DIN EN 1092-1	70	7.1	16	219164	229461	232262	232342
	25	Flange DIN EN 1092-1	90	12	16	229422	229462	266884	-
	32	Flange DIN EN 1092-1	90	13.6	16	219166	229464	236168	276578
	40	Flange DIN EN 1092-1	130	23.8	16	229423	229465	260905	277569
	50	Flange DIN EN 1092-1	130	37	16	229424	229467	232750	238259

2/2 way ELEMENT angle seat control valve with positioner or process controller, flange version

- High control accuracy
- Stainless steel IP65 and IP67 protection
- Easy to install



The fully integrated system with control valve type 2300 and automation unit Type 8692 or Type 8693 has a compact and smooth design, integrated pneumatic lines, IP65/67/NEMA 4X protection class and a high chemical resistance.

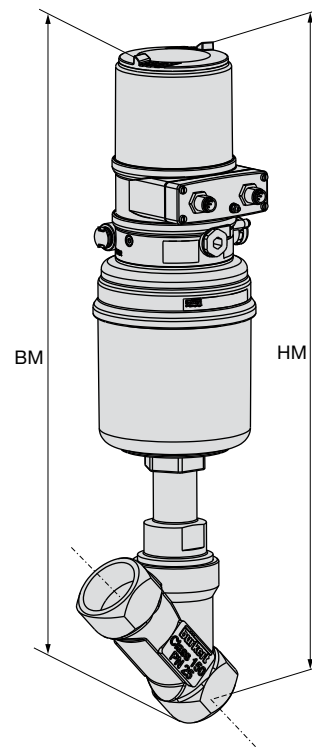
Technical data

Orifice	DN15...DN50
Port connection	G ½...G 2
Body material	Stainless steel 316L
Actuator material	
Actuator	PPS
Case	Stainless steel 1.4561 (316Ti)
Plug seal	PTFE/steel (PTFE/stainless steel) and Steel/steel (Stainless steel/stainless steel)
Seat leakage acc. to IEC 534-4/EN 1349	Shut-off class III and IV for steel/steel. Shut-off class VI for PTFE/steel
Medium	Water, alcohol, oil, fuels, hydraulic fluid, salt solutions, alkalis, organic solvents, steam
Viscosity	Max. 600 mm ² /s
Packing spindle	PTFE seal with spring compensation
Mediums temperature	- 10 °C...+ 185 °C (max. + 130 °C for sealing PTFE/steel)
Ambient temperature	0 °C...+ 55 °C (in conjunction with positioners - respectively process controllers) 0 °C...+ 80 °C (remote version)
Control medium	Compressed air
Required pilot pressure for control function A	Orifice DN15...DN50: 5.5...7 bar Orifice DN65: 5.6...7 bar
Control air connections	Push-in connector (external Ø 6 mm or ¼")
Installation	As required, preferably with actuator upright

Note: For more technical data, see **Types 2301** ▶, **8692** ▶ or **8693** ▶

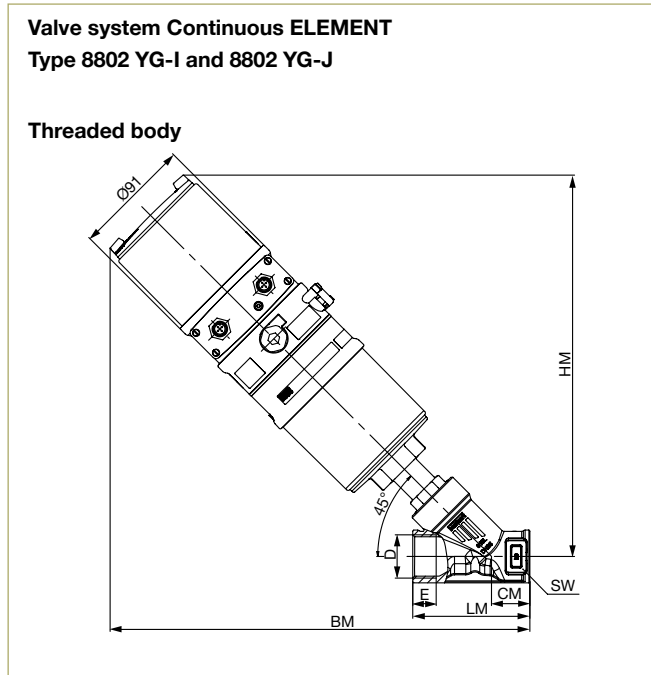
Dimensions [mm]

Valve system Continuous ELEMENT Type 8802 YG-I and 8802 YG-J



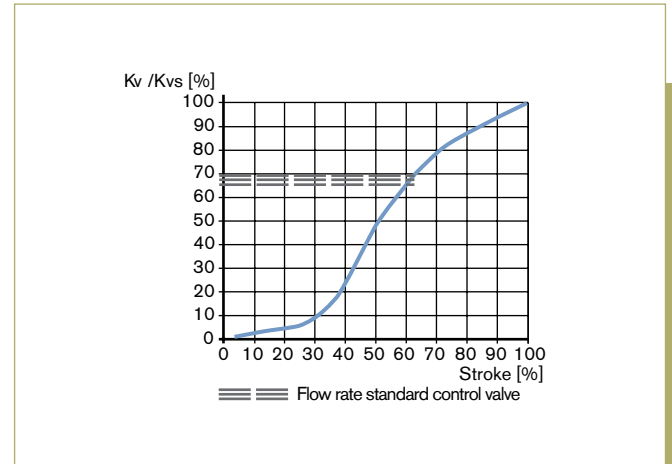
Orifice	Actuator size	HM	BM
15	70	280	308
20	70	288	318
25	70	294	327
	90	331	362
32	70	302	342
	90	345	382
40	90	347	383
	130	384	419
50	90	360	406
	130	397	442

Dimensions [mm]



Orifice	Actuator size	HM	BM	CM	LM	SW	G	
							D	E
15	70	280	308	24	65	27	G ½	14
20	70	288	318	27	75	34	G ¾	16
25	70	294	327	29.5	90	41	G 1	18
	90	331	362	29.5	90	41	G 1	18
32	70	302	342	36	110	50	G 1¼	16
	90	345	382	36	110	50	G 1¼	16
40	90	347	383	35	120	55	G 1½	18
	130	384	419	35	120	55	G 1½	18
50	90	360	406	45	150	70	G 2	24
	130	397	442	45	150	70	G 2	24

Flow characteristic



Remarks on the flow characteristic

Modified equipercentile flow characteristic, engineered for a quick response during peak flow demand (an advantage for many processes like heating/cooling with heat exchangers) and fine control at lower flow.

8802 YG-I/YG-J
ELEMENT

Ordering chart

Control function	Orifice [mm]	Port connection thread	Actuator size Ø [mm]	K _v value water [m ³ /h]	Pressure range to +185 °C [bar]	Article no. 8802-YG-I with positioner 8692 steel/steel	Article no. 8802-YG-J with positioner and Process controller 8693 steel/steel	Article no. 8802-YG-I with positioner 8692 steel/PTFE	Article no. 8802-YG-J with positioner and process controller 8693 steel/PTFE
8802 YG-I and 8802 YG-J									
A 2/2 way valve normally closed (NC)	15	G ½	70	5	16	229270	228611	232164	259464
	20	G ¾	70	10	16	229272	229415	240343	249255
	25	G 1	90	16	16	229279	249829	267356	256739
	32	G 1¼	90	23	16	229275	229417	273975	273104
	40	G 1½	130	36	16	229280	229419	267374	-
	50	G 2	130	53	16	229281	229420	267362	247460



Overview for Controls

Note: The following product overview does not show the complete product range of this catalogue. A complete overview can be found [here](#) ▶

Overview Controls	Mounting	Function	Description	Type	Valve lift / rotation range	Position sensor/ feedback end position	Optical position indicator
Direct mounting on linear and rotary drives	regulate	Positioner	8692 ▶	3...45 mm 0...352°	Inductive	Display	
		Process controller	8693 ▶	3...45 mm 0...352°	Inductive	Display	
		Positioner BASIC	8694 ▶	3...45 mm 0...352°	Inductive	LEDs	
		Positioner BASIC	8696 ▶	3...32 mm	Inductive	LEDs	
	switch (on/off)	Control head	8681 ▶	0...80 mm	Inductive	High performance LEDs	
		Control head	8691 ▶	2.5...45 mm 0...352°	Inductive	High performance LEDs	
		Control head	8695 ▶	2.5...32 mm	Inductive	LEDs	
		Control head Robolux	8686 ▶	6...13.5 mm	Reed sensors	LEDs	
		Feedback head Robolux	8685 ▶	6...13.5 mm	Reed sensors	LEDs	
	Direct mounting on push and part-turn actuators according to IEC 534-6 or VDI / VDE 3845 (NAMUR) or remote	regulate	Pneumatic control / feedback unit	8690 ▶	3...28 mm	Micro switches / Initiators	LEDs / mechanically
			Pneumatic control / feedback unit	8697 ▶	2...36 mm	Micro switches / Initiators	LEDs / mechanically
			Positioner SideControl	8792 ▶	3...130 mm 30...180°	Conductive plastic rotative	Display / mechanically
	Process controller SideControl		8793 ▶	3...130 mm 30...180°	Conductive plastic rotative	Display / mechanically	
Direct mounting on Classic actuators 2XXX, as an option from factory for 0330/0331	Electrical positioner feedback	Positioner SideControl BASIC	8791 ▶	3...130 mm 30...180°	Conductive plastic rotative	LEDs / mechanically	
		Positioner/process controller SideControl	8635 ▶	3...130 mm 30...120°	Conductive plastic rotative	Display / mechanically	
Direct mounting on 2051 / 2052 / 8805	Electrical positioner feedback	Accessories for pivoted armature valve and pneumatic linear actuators	1060 ▶	–	Micro switch, plunger	Mechanical for Type 2XXX	
		Accessories for pneumatic rotary actuator	1061 ▶	–	Electromechanical, inductive, inductive ATEX	Optical mechanical	

1) EtherNet/IP; PROFINET; Modbus TCP

2) Bürkert System Bus (based on CANopen)

Automatic setup function	Diagnosis	Graphic display	Fieldbus communications						Electrical connection		Pilot valve system operation		Overview Controls
			PROFIBUS DP	DeviceNet	Industrial Ethernet ¹⁾	AS-Interface	IO-Link	btIS ²⁾	Multipole	Cable gland	Single acting	Double acting	
Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	No	No	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes
Yes	No	No	No	No	No	No	No	No	Yes	No	Yes	No	No
Yes	Yes	No	No	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes
Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yes	No	No	No	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes
No	No	No	No	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes
No	No	No	No	No	No	Yes	No	No	No	Yes	Yes	Yes	Yes
No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Yes	No	No	No	No	No	No	No	No	Yes	Yes	Yes	No	No
Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Yes	No	No	No	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes
No	No	No	No	No	No	No	No	No	No	Yes	No	No	No
No	No	No	No	No	No	Yes	No	No	Yes	Yes	No	No	No

Electrical position feedback for pneumatically operated process valves

1060

- Fast and easy installation
- Compact design
- High electrical and mechanical lifetime



Figure shows Type 1060 mounted on actuator cover

The electrical position feedback Type 1060 is designed for integrated mounting on CLASSIC Series process valves. The electrical position feedback is screwed in, instead of the visual position indicator. While the valve is opening, the piston of the actuator lifts a palm-button. This button actuates a micro switch with change-over contact, which gives the electrical feedback of the valve position. The palm-button also acts as an optical position indicator.

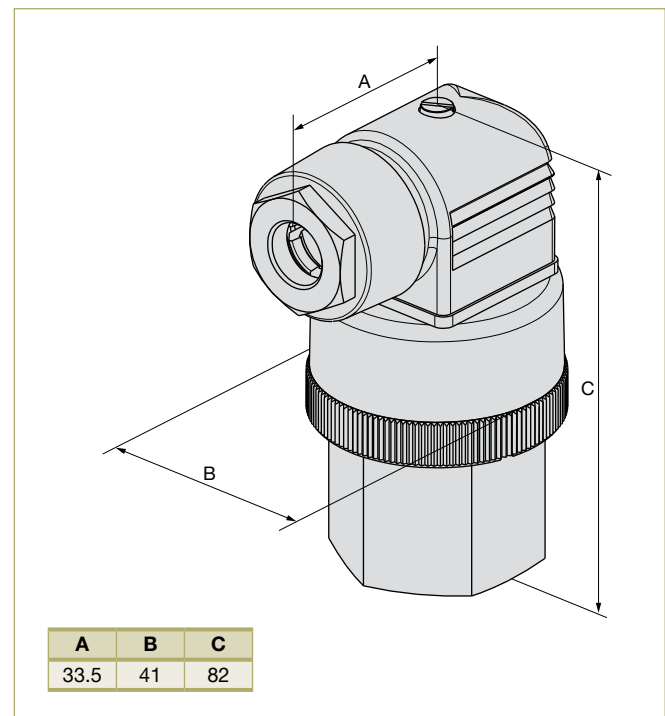
Technical data

Micro switch	1 switch over contact
Contact rating	Till 250 V AC – maximum 5 A ohmic or inductive contact load – filament load 0.5 A Till 250 V DC – maximum 0.25 A ohmic contact load – maximum 0.02 A inductive load – maximum 0.02 A filament load
Protection class	IP65 acc. to DIN 40050
Connection	Solder terminals
Cable outlet	Can be rotated through 4 × 90°
Cable diameter	5...9 mm
Continuous temperature	+ 125 °C
Material	Housing and micro switch made of plastic

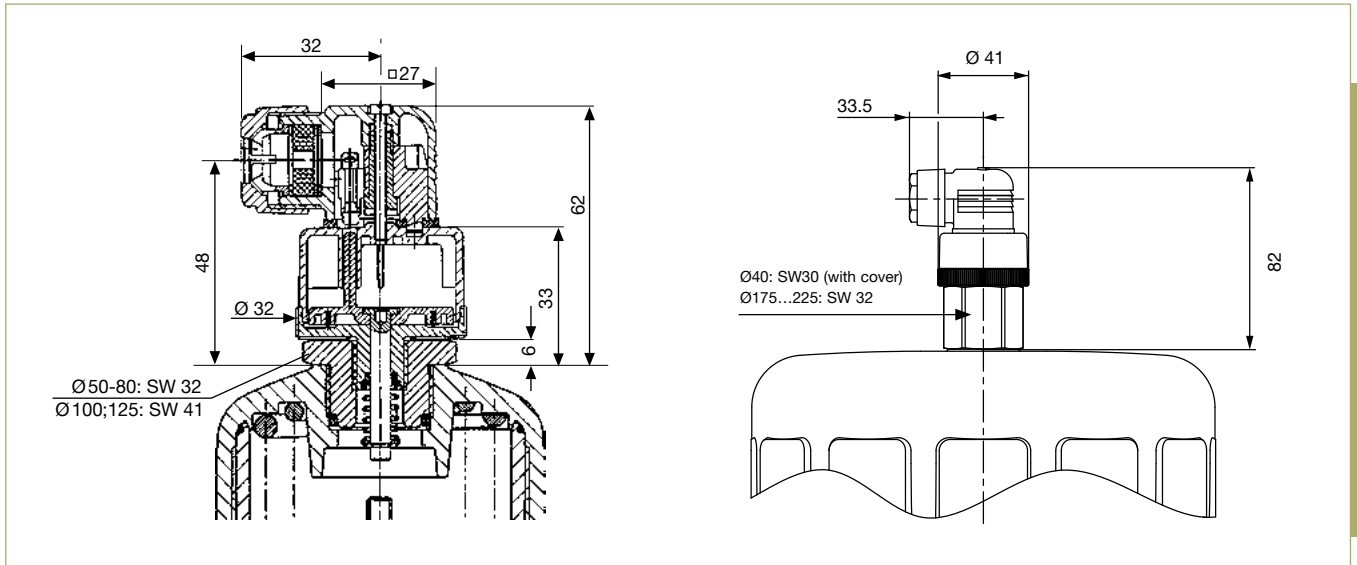
Options

- Further versions see data sheet or on request

Dimensions [mm]



Dimensions [mm]



Ordering chart

For Actuator size \varnothing [mm]	Article no.
40	293113
50...80	701515
100, 125	701516
175, 225	655696

Accessory for pneumatic rotary actuators

1061

- Combines the functions of a position feedback and a solenoid valve in one
- Available with 3/2 way, 5/2 way or without solenoid valve
- ATEX versions available
- Perfectly suited for pneumatic rotary actuators: 2051 ▶ and 2052 ▶
- Adjustable bracket allows the combination with actuators in different sizes



Type 1061 combines the function of a position feedback and an optional solenoid valve in one box. It is designed to standardisation acc. VDI/VDE 3845 for assembly with pneumatic rotary actuators. So it can be used with actuators of type 2051 and 2052, which are part of the system type 8805.

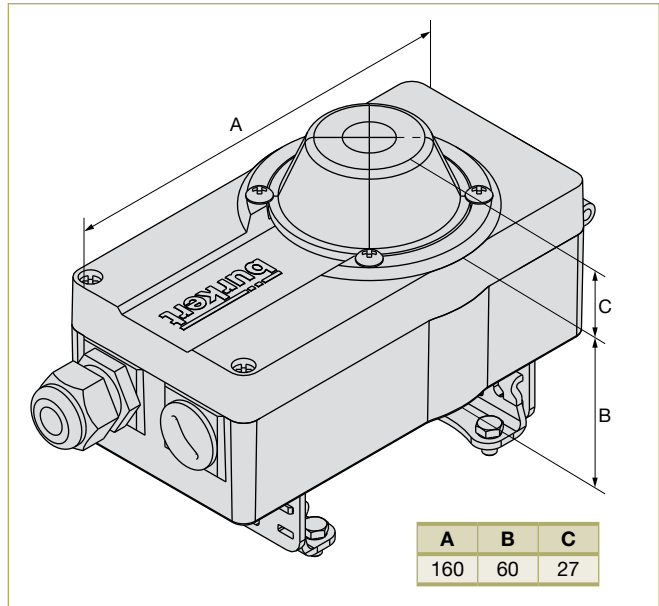
Type 1061 is available with different of limit switches (micro switches, inductive sensors) and solenoid valves (3/2 way, 5/2 way or without solenoid valve). Next to this, an ATEX version is also available.

Because of the several available variations, it perfectly meets the requirements of different applications and processes.

Technical data

Housing	Aluminium
Base (powder-coated)	RAL9005
Cover (powder-coated)	RAL7016
Protection class	IP65
Seal	PUR
Bracket	Adjustable Hole gauge: 80/130 mm x 30 mm Height: 20/30 mm
Temperature	-25 °C...-10 °C up to 55 °C...85 °C
Limit Switches	
Micro Switches	Crouzet 83.161.3 Crouzet 83.161.8
Inductive Sensors	Pepperl+Fuchs NBB2-V3-E2 Pepperl+Fuchs NJ2-V3-N
Switching precision	< 1.5°
System connection	Cable gland M20 x 1.5 ASi Cable connector M12-connector, male, 4 pin
Solenoid valves	Without solenoid valve 3/2 way (type 6524) 5/2 way (type 6525)






Dimensions [mm]








Options

- Further versions see data sheet or on request

Ordering chart

Technical Data	Electromechanical Feedback without Solenoid Valve	Electromechanical Feedback + 3/2 way Solenoid Valve	Electromechanical Feedback + 5/2 way Solenoid Valve
Housing and Seal			
Housing material	Aluminium	Aluminium	Aluminium
Base (powder-coated)	RAL9005	RAL9005	RAL9005
Cover (powder-coated)	RAL7016	RAL7016	RAL7016
Seal	PUR	PUR	PUR
Dome	Polycarbonate	Polycarbonate	Polycarbonate
Protection class	IP65	IP65	IP65
Limit Switch			
Manufacturer	Crouzet	Crouzet	Crouzet
Type	83.161.3 Micro switch	83.161.3 Micro switch	83.161.3 Micro switch
Switching capacity	4 A, 230 V AC	4 A, 230 V AC	4 A, 230 V AC
Contacts	silver nickel	silver nickel	silver nickel
Switching precision	<1.5°	<1.5°	<1.5°
System connection	Cable gland M20 × 1.5 Clamp range 8 up to 13 mm	Cable gland M20 × 1.5 Clamp range 8 up to 13 mm	Cable gland M20 × 1.5 Clamp range 8 up to 13 mm
Terminals	Screw terminal up to 2.5 mm ²	Screw terminal up to 2.5 mm ²	Screw terminal up to 2.5 mm ²
Temperature	-25 °C up to 85 °C	-10 °C up to 55 °C	-10 °C up to 55 °C
Solenoid Valve			
Bürkert Type	-	6524 (ID-No. 207505 )	6525 (ID-No. 207485 )
Ways	-	3/2	5/2
Operating Voltage	-	24 V DC	24 V DC
Nominal Power	-	0.8 W	0.8 W
Nominal width	-	4 mm	4 mm
Supply / Exhaust air	-	G ¼, G ⅛	G ¼, G ⅛
Article no.	773151 	773139 	773140 

Technical Data	Inductive Feedback without Solenoid Valve	Inductive Feedback + 3/2 way Solenoid Valve	Inductive Feedback + 5/2 way Solenoid Valve
Housing and Seal			
Housing material	Aluminium	Aluminium	Aluminium
Base (powder-coated)	RAL9005	RAL9005	RAL9005
Cover (powder-coated)	RAL7016	RAL7016	RAL7016
Seal	PUR	PUR	PUR
Dome	Polycarbonate	Polycarbonate	Polycarbonate
Protection class (Housing)	IP65	IP65	IP65
Limit Switch			
Manufacturer	Pepperl + Fuchs	Pepperl + Fuchs	Pepperl + Fuchs
Type	NBB2-V3-E2 Inductive sensor	NBB2-V3-E2 Inductive sensor	NBB2-V3-E2 Inductive sensor
Voltage	10...30 V DC	10...30 V DC	10...30 V DC
Operating current	0 up to 100 mA	0 up to 100 mA	0 up to 100 mA
Output	Short-circuit and pole protected	Short-circuit and pole protected	Short-circuit and pole protected
Switching precision	<1.5°	<1.5°	<1.5°
System connection	Cable gland M20 × 1.5 Clamp range 8 up to 13 mm	Cable gland M20 × 1.5 Clamp range 8 up to 13 mm	Cable gland M20 × 1.5 Clamp range 8 up to 13 mm
Terminals	Screw terminal up to 2.5 mm ²	Screw terminal up to 2.5 mm ²	Screw terminal up to 2.5 mm ²
Temperature	-25 °C up to 70 °C	-10 °C up to 55 °C	-10 °C up to 55 °C
Solenoid Valve			
Bürkert Type	-	6524 (ID-No. 207505 )	6525 (ID-No. 207485 )
Ways	-	3/2	5/2
Operating Voltage	-	24 V DC	24 V DC
Nominal Power	-	0.8 W	0.8 W
Nominal width	-	4 mm	4 mm
Supply / Exhaust air	-	G ¼, G ⅛	G ¼, G ⅛
Article no.	773152 	773141 	773142 



Ordering chart

1061

Technical Data	Inductive Feedback without Solenoid Valve	Inductive Feedback + 3/2 way Solenoid Valve	Inductive Feedback + 5/2 way Solenoid Valve
Housing and Seal			
Housing material	Aluminium	Aluminium	Aluminium
Base (powder-coated)	RAL9005	RAL9005	RAL9005
Cover (powder-coated)	RAL7016	RAL7016	RAL7016
Seal	PUR	PUR	PUR
Dome	Polycarbonate	Polycarbonate	Polycarbonate
Protection class (Housing)	IP65	IP65	IP65
Limit Switch			
Manufacturer	Pepperl + Fuchs	Pepperl + Fuchs	Pepperl + Fuchs
Type	P+F NJ2-V3-N Inductive sensor	P+F NJ2-V3-N Inductive sensor	P+F NJ2-V3-N Inductive sensor
Voltage	8.2 V DC (1000 Ω)	8.2 V DC (1000 Ω)	8.2 V DC (1000 Ω)
Current consumption	≥3 mA (not activated) ≤1 mA (activated)	≥3 mA (not activated) ≤1 mA (activated)	≥3 mA (not activated) ≤1 mA (activated)
Output	Short-circuit and pole protected	Short-circuit and pole protected	Short-circuit and pole protected
Switching precision	< 1.5°	< 1.5°	< 1.5°
System connection	Cable gland M20 × 1.5 Clamp range 8 up to 13 mm	Cable gland M20 × 1.5 Clamp range 8 up to 13 mm	Cable gland M20 × 1.5 Clamp range 8 up to 13 mm
Terminals	Screw terminal up to 2.5 mm ²	Screw terminal up to 2.5 mm ²	Screw terminal up to 2.5 mm ²
Temperature	-25 °C up to 70 °C	-10 °C up to 55 °C	-10 °C up to 55 °C
Solenoid Valve			
Bürkert Type	-	6524 (ID-No.184560 [☞])	6525 (ID-No. 184564 [☞])
Ways	-	3/2	5/2
Electrical resistance	-	320 Ω	320 Ω
Min. Operating current	-	29 mA	29 mA
Power consumption	-	0.3 W	0.3 W
Nominal width	-	4 mm	4 mm
Supply / Exhaust air	-	G ¼, G ½	G ¼, G ½
ATEX Classification			
	⊕ II 2G Ex e ia IIC T6 Gb EC-type examination certificate PTB 10 ATEX 1061 X	⊕ II 2G Ex ia IIC T6 Gb EC-type examination certificate PTB 00 ATEX 2032 X (Sensor) PTB 07 ATEX 2048 (Solenoid Valve)	
Article no.	773153 [☞]	773143 [☞]	773144 [☞]

Ordering chart

Technical Data	ASi + Electromechanical Feedback without Solenoid Valve		ASi + Electromechanical Feedback + 3/2 way Solenoid Valve		ASi + Electromechanical Feedback + 5/2 way Solenoid Valve	
Housing and Seal						
Housing material	Aluminium		Aluminium		Aluminium	
Base (powder-coated)	RAL9005		RAL9005		RAL9005	
Cover (powder-coated)	RAL7016		RAL7016		RAL7016	
Seal	PUR		PUR		PUR	
Dome	Polycarbonate		Polycarbonate		Polycarbonate	
Protection class	IP65		IP65		IP65	
Limit Switch & AS-Interface						
Manufacturer	Crouzet		Crouzet		Crouzet	
Type	83.161.8 Micro switch		83.161.8 Micro switch		83.161.8 Micro switch	
Contacts	gold		gold		gold	
Plug-in Card	ASi – 2 Inputs, 1 Output		ASi – 2 Inputs, 1 Output		ASi – 2 Inputs, 1 Output	
Voltage	26.5...31. V DC		26.5...31. V DC		26.5...31. V DC	
Switching precision	<1.5°		<1.5°		<1.5°	
System connection	ASi cable connector	M12-connector, male, 4 pin	ASi cable connector	M12-connector, male, 4 pin	ASi cable connector	M12-connector, male, 4 pin
Terminals	Screw terminal up to 1.5 mm ²		Screw terminal up to 1.5 mm ²		Screw terminal up to 1.5 mm ²	
Temperature	- 10 °C up to 60 °C		- 10 °C up to 55 °C		- 10 °C up to 55 °C	
Solenoid Valve						
Bürkert Type	-		6524 (ID-No. 207505 ☞)		6525 (ID-No. 207485 ☞)	
Ways	-		3/2		5/2	
Operating Voltage	24 V DC ¹⁾		24 V DC		24 V DC	
Nominal Power	max. 2.4 W ¹⁾		0.8 W		0.8 W	
Nominal width	-		4 mm		4 mm	
Supply / Exhaust air	-		G ¼, G ½		G ¼, G ½	
Article no. ASi cable connector	773149 ☞		773145 ☞		773146 ☞	
Article no. M12-connector	773292 ☞		773288 ☞		773298 ☞	

Technical Data	ASi + Inductive Feedback without Solenoid Valve		ASi + Inductive Feedback + 3/2 way Solenoid Valve		ASi + Inductive Feedback + 5/2 way Solenoid Valve	
Housing and Seal						
Housing material	Aluminium		Aluminium		Aluminium	
Base (powder-coated)	RAL9005		RAL9005		RAL9005	
Cover (powder-coated)	RAL7016		RAL7016		RAL7016	
Seal	PUR		PUR		PUR	
Dome	Polycarbonate		Polycarbonate		Polycarbonate	
Protection class	IP65		IP65		IP65	
Limit Switch & AS-Interface						
Manufacturer	Pepperl + Fuchs		Pepperl + Fuchs		Pepperl + Fuchs	
Type	NBB2-V3-E2 Inductive sensor		NBB2-V3-E2 Inductive sensor		NBB2-V3-E2 Inductive sensor	
Plug-in Card	ASi – 2 Inputs, 1 Output		ASi – 2 Inputs, 1 Output		ASi – 2 Inputs, 1 Output	
Voltage	26.5...31 V DC		26.5...31 V DC		26.5...31 V DC	
Switching precision	<1.5°		<1.5°		<1.5°	
System connection	ASi cable connector	M12-connector, male, 4 pin	ASi cable connector	M12-connector, male, 4 pin	ASi cable connector	M12-connector, male, 4 pin
Terminals	Screw terminal up to 1.5 mm ²		Screw terminal up to 1.5 mm ²		Screw terminal up to 1.5 mm ²	
Temperature	-25 °C up to 60 °C		- 10 °C up to 55 °C		- 10 °C up to 55 °C	
Solenoid Valve						
Bürkert Type	-		6524 (ID-No. 207505 ☞)		6525 (ID-No. 207485 ☞)	
Ways	-		3/2		5/2	
Operating Voltage	24 V DC ¹⁾		24 V DC		24 V DC	
Nominal Power	max. 2.4 W ¹⁾		0.8 W		0.8 W	
Nominal width	-		4 mm		4 mm	
Supply / Exhaust air	-		G ¼, G ½		G ¼, G ½	
Article no. ASi cable connector	773150 ☞		773147 ☞		773148 ☞	
Article no. M12-connector	773293 ☞		773290 ☞		773291 ☞	

1) If an extern solenoid valve should be connected.

Digital electropneumatic Positioner SideControl

8635

- Compact and robust design
- Easy to start using tune function
- Dynamic positioning system with no air consumption in controlled state
- Intrinsically safe according to ATEX II 2 (1) G Ex ia IIC T6 Gb
- Optionally with integrated process controller

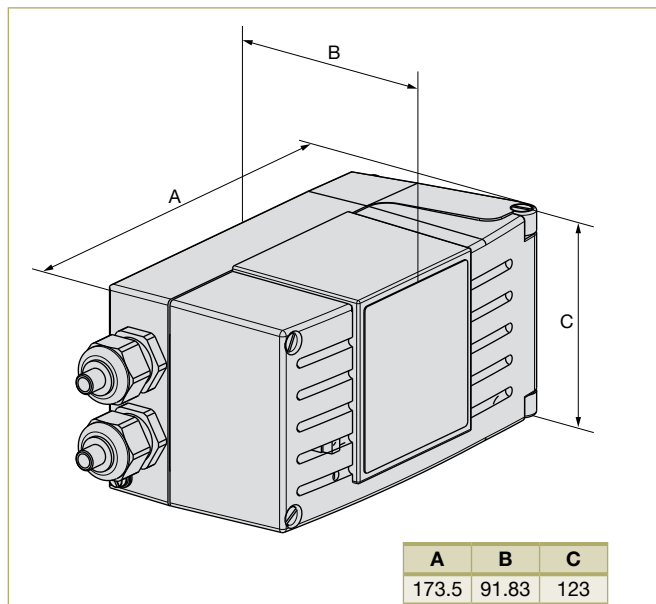


The SideControl Positioner Type 8635 is an electropneumatic positioner for pneumatically actuated process valves with linear or part-turn actuators. It is excited in two conductor technology. Signal processing, control and actuation of the internal positioning system are accomplished with microprocessor controlled electronics. The software function Autotune implemented therein enables automatic adaptation of the positioner to the control valve in use. The positioner is parametrized and operated comfortably via three operating keys and a plain text display. It is possible to set up a decentralized control system if a process controller with PID characteristics is used. As an option, the SideControl Positioner Type 8635 can be supplied with approval for use in the Ex area (Zone1) according to ATEX. Due to its compact and robust design, the housing is suitable for use in chemical and process engineering.

Technical data

Body material	Aluminium, hard anodized and plastic coated
Other external parts	Stainless steel V4 A
Seal material	NBR, Neoprene
Control medium	Neutral gases, air, quality class acc. to ISO 8573-1
Dust content	Class 7 (< 40 µm particle size)
Particle density	Class 5 (< 10 mg/m ³)
Pressure dew point	Class 3 (< -20 °C)
Oil concentration	Class X (< 25 mg/m ³)
Control air temperature	-25 °C...+60 °C ¹⁾
Ambient temperature	-25 °C...+60 °C ¹⁾
Supply pressure	1.4...6 bar ³⁾
Air flow capacity²⁾	55 l/min at 1.4 bar ³⁾
Control valve	170 l/min at 6 bar ³⁾ for pressurizing and venting
Intrinsic air consumption	0 l/min
Positioning range	
Linear actuator	3 mm...130 mm
Part-turn actuator	0...120°
Position sensor system	High resolution conductive plastic rotary potentiometer
Operation	Operating keys and plain text display
Electrical connection	2 x M20 x 1.5 bushing Clamping range 6...12 mm Screw terminals for 0.14...1.5 mm ² Pre-assembled cable for position measuring system for control valves Type 27xx: Length 0.3 m Pre-assembled cable for remote position sensor for control valves Type 23xx: Length 2.5 m
Electrical data Type	
Current supply for electronics	Via setpoint signal 4...20 mA
Burden voltage	< 10.2 V DC
Setpoint setting	4...20 mA

Dimensions [mm]



Control air sockets	G 1/4 NPT 1/4; Rc 1/4 on request
Mounting kits	NAMUR recommendation
for linear actuator	Acc. to DIN IEC 534 T6
for part-turn actuator	Acc. to VDI/VDE 3845
Weight	Ca. 1.5 kg
Protection class	IP65 acc. to EN 60529
Ignition protection class	II 2 (1) G Ex ia IIC T6 Gb acc. to EN 60079-0:2012 and EN 60079-11:2012
Certification	PTB 04 ATEX 2027 / IECEx PTB 04.0016
Conformity	EMC 2004/108/EC

- 1) Up to +65 °C temperature class T4/T5 or without EEx i approval.
- 2) May be adapted to actuator size with throttle screw.
- 3) Pressure data in bar; overpressure to ambient pressure.

Options

- Universal integrated attachment (air conduction without piping)
- Manometer VA (supply and drive chamber),
- Switches according to NAMUR as limit switches (optional)

Other electrical data

Function value			Permissible maximal as per certificate of conformity	
Power Supply	U I	10.2 V 4 mA	U _i I _i P _i	30 V 100 mA 1 W
Process value input (only for version with process controller)	Burden Burden voltage U	10 Ω <200 mV	U _i I _i C _i P _i	30 V 100 mA 14.3 nF 1 W
Binary input	Make/break contact (conf.)	–	Co Lo	5.5 μF 1000 mH
Binary output	U I switching status OPEN I switching status CLOSED	5...11 V DC <1.2 mA >2.1 mA	U _i I _i P _i	30 V 100 mA 1 W
Analogue feedback (option)	U I	12...30 V 4...20 mA	U _o I _o P _o	30 V 100 mA 1 W

Recommendations for isolation transformers/DC transformers input 4...20 mA/output 4...20 mA

Company	Model	Burden	Ex	active/passive
Pepperl+Fuchs	KFD2-CD-Ex 1.32	850 Ω	x	A
Foxboro Eckardt	TV228-S-EGX	700 Ω	x	A
Foxboro Eckardt	MT228-S-EGX	750 Ω	x	A
Foxboro Eckardt	II949-S1 ZZZ	750 Ω	-	A
Steel	9318/16-22-10	700 Ω	x	A
Steel	M318/12-11-00	1000 Ω	x	A
PhoenixContact	PI/EX-ID-I/I	800 Ω	x	A

- Data given without guarantee of accuracy.
- For dimensioning and operation of intrinsically safe circuits, the user/owner is responsible.







Software functions (depending on the device configuration chosen)












Type 8635



- Automatic commissioning of control system
- Parametrization of the positioner
- Automatic or manual entry of characteristic curve for correction of operating characteristic
- Setting of the tight-closure or maximum stroke threshold
- Stroke limitation
- Limitation of positioning speed
- Dead band
- Direction of action of the controller setpoint
- Signal range splitting (split range up to 4 times)
- Setting of direction of movement
- Definition of a safety position
- Calibration of input and display
- Configuration of binary input
- Code protection for settings/operation
- RESET of factory settings
- Optional built-in process controller (PID)
- Automatic parametrization of the process controller
- Setting of the parameters of the process controller
- Calibration of the setpoint input and display
- Configuration of the analog input
- Configuration of the binary input and binary outputs

Ordering chart

8635

Assembly variations	Electrical connection	Analogue feedback with 2 binary outputs	ATEX Approvals EEx ia II C T6	Article no.
Positioner / Process controller SideControl Type 8635 NAMUR Pneumatic control system single-acting				
Positioner SideControl 8635				
NAMUR IEC 60534-6-1 VDI/VDE 3845 (IEC 60534-6-2)	Cable gland	no	yes	147263 
	Cable gland	no	yes	on request
	Cable gland	yes	yes	155371 
	Cable gland	yes	no	on request
	Cable gland	no	no	147265 
Process controller SideControl 8635				
NAMUR IEC 60534-6-1 VDI/VDE 3845 (IEC 60534-6-2)	Cable gland	no	yes	147264 
	Cable gland	yes	yes	155375 
	Cable gland	no	no	147266 









Assembly variations	Electrical connection	Analogue feedback with 2 binary outputs	ATEX Approvals EEx ia II C T6	Article no.
Positioner / Process controller SideControl Type 8635 for remote and direct mounting on control valves Pneumatic control system single-acting				
Positioner SideControl 8635				
Remote mounting in combination with Typ 23xx control valves (Actuator size Ø 70/90/130 mm)	Cable gland	yes	yes	322841 
	Cable gland	yes	no	322847 
	Cable gland	no	no	322845 
	Cable gland	no	yes	322840 
Direct mounting on Type 27xx control valves (Actuator size Ø 175/225 mm)	Cable gland	no	yes	150347 
	Cable gland	yes	yes	155369 
	Cable gland	no	no	147267 
Process controller SideControl 8635				
Remote mounting in combination with Typ 23xx control valves (Actuator size Ø 70/90/130 mm)	Cable gland	yes	yes	322839 
	Cable gland	yes	no	322844 
	Cable gland	no	no	322842 
	Cable gland	no	yes	322837 

Assembly variations	Actuator size	Electrical connection	ATEX Approvals EEx ia II C T6	Article no.
Remote position sensor for SideControl Type 8635 remote resp. position sensor system for 8635 version with direct mounting on 27xx control valves				
Type 23xx control valves	Ø 70/90/130 mm	Cable gland	yes	689162 
Type 27xx control valves	Ø 175/225 mm	Cable gland	yes	655535 

Further options:

- Universal integrated attachment (air duct without piping)

Accessories

Description	Article no.
Accessories for SideControl NAMUR	
Assembly bridge VDI/VDE 3845 VA, bracket for attachment to pneumatic actuator of ball valve Type 8805	770294 
Adapter kit acc. to VDI/VDE 3845 VA, without bracket	787338 
Adapter kit linear actuators acc. to IEC 534...6 VA	787215 
Accessories for SideControl remote / direct mounting	
Bracket for wall mounting, stainless steel (replacement part)	675715 
Adapter kit remote position sensor for Type 23xx control valves, actuator sizes Ø 70/90/130 mm	584363 
Adapter kit for piston actuators Type 27xx, Ø 175/225 mm	655567 
Position measuring system for piston drives Type 27xx, Ø 175/225 mm	655535 
Standard accessories	
Silencer G ¼ (replacement part)	780780 

Ordering note

When mounted on a Bürkert control valve, the SideControl positioner Type 8635 is only supplied as part of a complete control valve (positioner, position measuring system, associated add-on parts and control valve).

Use the data sheets of Types 23xx and 27xx to select a suitable control valve.

For ordering a complete control valve, specify the following article numbers:

- Article no. of the SideControl positioner Type 8635
- the article no. of the position measuring system,
- the article no. of the selected control valve and
- the article no. of the corresponding attachment parts with the SideControl positioner reference

Bürkert supplies a fully assembled and tested control valve.

Control head for hygienic process valves

- Universal attachment for hygienic process valves
- Contactless position measurement system with 3 switching points (Teach-In function)
- Coloured status display
- Manual override operative with closed housing
- Communication AS-Interface, DeviceNet (option)

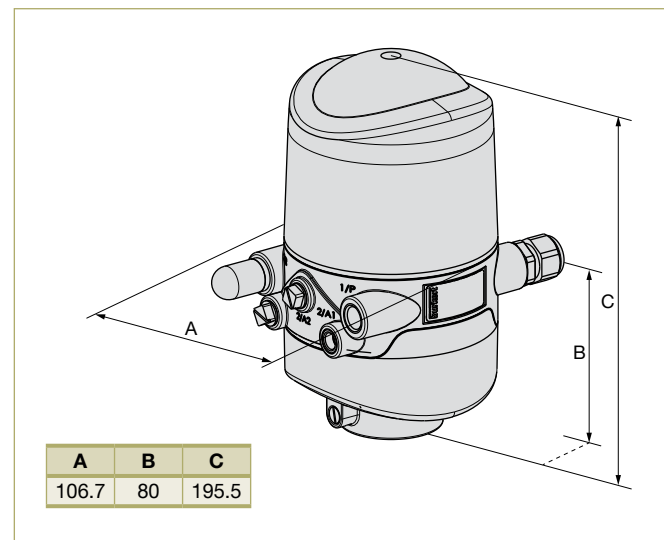


Type 8681 control head is optimised for decentralised automation of hygienic process valves. Thanks to its universal adapter it can be combined with all normal commercial butterfly valves, ball valves, single and double seated valves. With a decentralised automation concept, the control head takes over all pneumatic actuation, feedback and diagnostic functions up to and including field bus communication. The housing is easy to clean and features proven electrical IP protection and chemically resistant materials for use in hygienic processing in food, beverage and pharmaceutical industries.

Technical data

General data	
Material	
Body	PA, PPO, VA
Cover	PC
Seal	CR, EPDM
Control medium	Neutral gases, air DIN ISO 8573-1 (filter 5 µm recommended)
Dust concentration	Class 7 (<40 µm particle size)
Particle density	Class 7 (<10 mg/m ³)
Pressure condensation point	Class 3 (<-20 °C)
Oil concentration	Class X (<25 mg/m ³)
Supply pressure	2.5...8 bar
Air capacity solenoid valve¹⁾	110 l _N /min - for pressurization and exhaust, (supply and exhaust air per solenoid valve adjustable)
	110 l _N /min - delivery condition
	200 l _N /min - max. typical flow rate (throttle)
Pilot air ports	
Air inlet and outlet	G ¼
Service ports	G ½
Position sensor	Non-contact Position Sensor, 3 self-regulated switching points PNP (Teach-In-function) closer (normally open), PNP-output short-circuit proof, with clocking short-circuit protection
Outlet current	Max. 100 mA per feedback signal
Stroke range	0...80 mm
Resolution	≤0.1 mm
Total error	±0.5 mm - when using a target for the dimensional drawing, material 1.4021 and a piston rod (Ø 22 mm, material 1.4301) (error refers to the reproducibility of a teach-position)
Ambient temperature	-10 °C...+55 °C +5 °C...+55 °C (ATEX II 3G Ex nA IIC T4; ATEX II 3G Ex tD A22 T135 °C)
Installation	As required, preferably with actuator in upright position

Dimensions [mm]



Protection class	IP65/67 acc. to EN 60529
Protection class	3 (AS-Interface, 24 V DC, DeviceNet); 1 (120 V AC) acc. to DIN EN 61140
Fieldbus communication	AS-Interface, DeviceNet
EG-Conformity	EMV2004/108/EG; ATEX 94/9/EG
Ignition protection class	ATEX II 3G Ex nA IIC T4 ATEX II 3D Ex tD A22 T135 °C

¹⁾ Q_{Nn}-value acc. to the definition with decrease in pressure from 7...6 bar absolute with 20 °C.

Technical data continued

Without fieldbus communication; 24 V DC	
Power supply	12...28 V DC
Residual ripple with DC	Max. 10 %
Power consumption	<5 W (acc. to version and operating status see instruction manual)
Valve control inputs (Y1 - Y3)	
Signal level - active	U > 10 V, max. 24 V DC + 10 %
Signal level - inactive	U < 5 V
Impedance	U > 30 kOhm
Outputs / binary feedback signals	
Design	S1 out - S4 out
Switchable output current	Normally open contact, PNP output short-circuit proof with self-clocking short circuit protection
Output voltage -active	Max. 100 mA per feedback signal
Output voltage -inactive	≥ (operating voltage - 2 V) Max. 1 V in unloaded state
Input / proximity switches (external initiator: S4 in)	
Operating voltages	Voltage present at control head - 10 %
Current carrying capacity, sensor power supply	Max. 90 mA short-circuit protection
Design	DC 2- and 3-conductor, NO or NC (factory setting NO), PNP output
Input current 1 signal	$I_{\text{Sensor}} > 6.5 \text{ mA}$, limited internally to 10 mA
Input voltage 1 signal	$U_{\text{Sensor}} > 10 \text{ V}$
Input current 0 signal	$I_{\text{Sensor}} < 4 \text{ mA}$
Input voltage 0 signal	$U_{\text{Sensor}} < 5 \text{ V}$
Electrical connection	
Multipole	M12 12 pin with cable 8 cm, 1 x M16 x 1.5 cable glands for external initiator (clamping range 3...6 mm)
Cable gland	M16 x 1.5 (cable-Ø 5...10 mm, screw terminals 0.14...1.5 mm ²), 1 x M16 x 1.5 cable glands for external initiator (clamping range 3...6 mm)

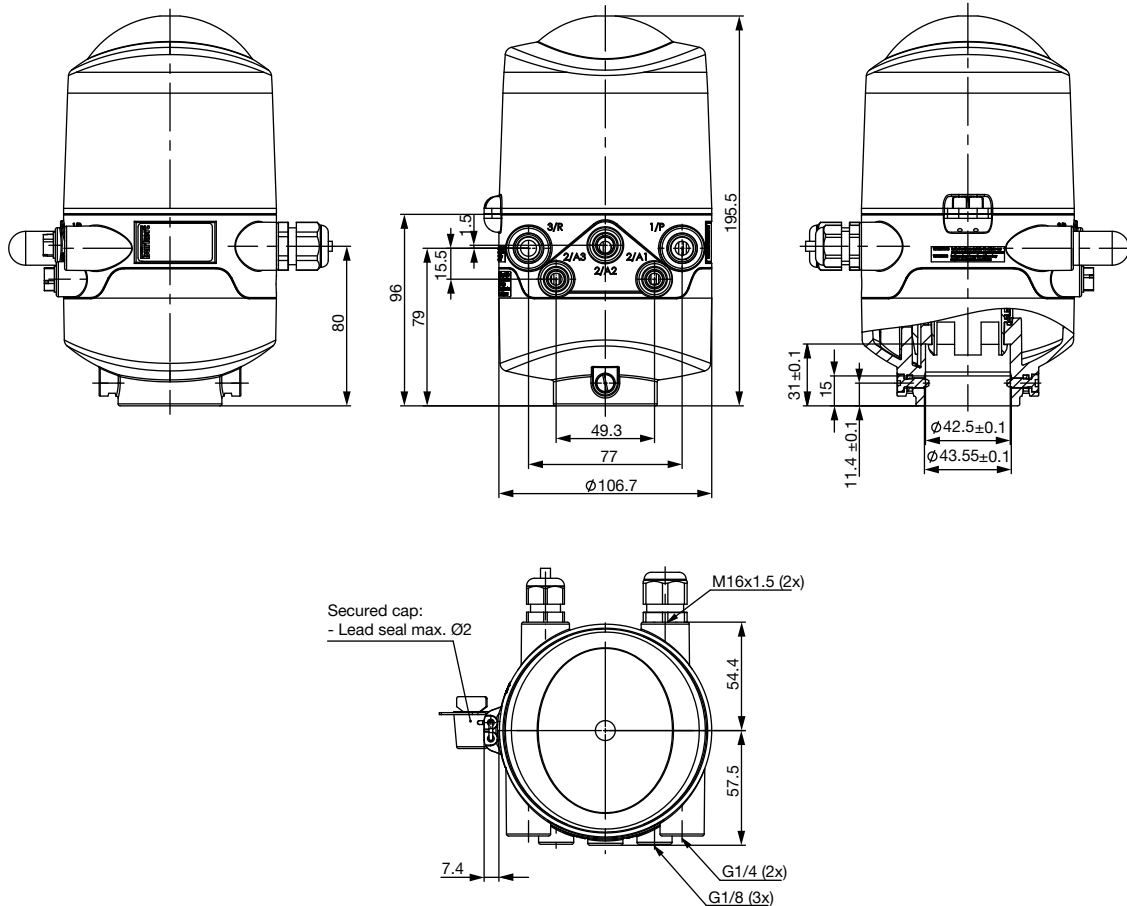
With Fieldbus communication; AS-Interface	
Profil	S- 7.A.E (A/B slave max. 62 slaves/master) S- 7.F.F (max. 31 slaves/master)
Power supply	
above bus line	As Specification
from bus signal separated	Reversible (Jumper)
Power consumption equipment without external power supply	
Max. Current consumption	240 mA (incl. external initiator with 90 mA)
Current consumption in normal operation (acc. to reduction of electric current; valve + 1 end position achieved)	≤ 150 mA 3 valves activated, 1 position feedback with LED display, no external initiator
Power consumption equipment with external power supply	
The power supply unit must include a secure disconnect in accordance with IEC 364-4-41. It must conform to the SELV standard. The ground potential may not have an earth connection.	19.2 V DC...31.6 V DC ≤ 110 mA 24 V DC ≤ 150 mA type.
Output (from master perspective) / solenoid valves	
Max. switching capacity	0.9 W (per solenoid valve)
Typ. continuous output	0.6 W (per solenoid valve)
Watchdog function	Integrated
Pull-in current	30 mA or 0.9 W / 200 ms (at 30.5 AS-i-voltage)
Holding current	20 mA or 0.6 W / 200 ms (at 30.5 AS-i-voltage)
Operating mode	Long-term operation (100 % operation)
Valve type	6524
Input / proximity switches (external Initiator: S4 in)	
Operating voltages	AS interface voltage present at control head - 10 %
Current carrying capacity, sensor power supply	Max. 30 mA short-circuit protection
Design	DC 2- and 3-conductor, NO or NC (factory setting NO), PNP output
Input current 1 signal	$I_{\text{Sensor}} > 6.5 \text{ mA}$, limited internally to 10 mA
Input voltage 1 signal	$U_{\text{Sensor}} > 10 \text{ V}$
Input current 0 signal	$I_{\text{Sensor}} < 4 \text{ mA}$
Input voltage 0 signal	$U_{\text{Sensor}} < 5 \text{ V}$
Electrical connection	
(ASI flat cable clip at cable 80 cm as standard)	M12 4 pin at cable 8 cm (acc. 0.3 m cable length acc. to AS-Interface Specification) 1 x M 16 x 1.5 cable glands for external initiator clamping range 3...6 mm. M12 4 pin at cable 80 cm (acc. 1.0 m cable length acc. to AS-Interface Specification) 1 x M 16 x 1.5 cable glands for external initiator clamping range 3...6 mm.

Bit configuration

Databit	D3	D2	D1	D0
Input	external initiator S4	position 3	position 2	position 1
Output	not configured	solenoid valve 3	solenoid valve 2	solenoid valve 1
Parameterbit	D3	D2	D1	D0
Output	not configured	not configured	not configured	not configured

Programming data

Databit	Programming data with 62 Slaves AS-Interface - device for A/B-Slave-addressing (standard device)	Programming data with 31 Slaves AS-Interface (optional)
E/A - configuration	7 hex (4 Inputs / 4 Outputs) see bit configuration chart	7 hex (4 Inputs / 4 Outputs) see bit configuration chart
ID-code	A hex	F hex
combinative ID-code 1	7 hex	(F hex)
combinative ID-code 2	E hex	(F hex)
profile	S-7.A.E	S-7.F.F

Dimensions [mm]


Ordering chart

Communication	Voltage	Connection	ATEX Zone 2/22 cat. 3	Quantity of solenoid valves	Feedback	Article no.
without	12...28 V DC	Cable glands	without	0	3 int. + 1 ext.	196410
			without	1	3 int. + 1 ext.	196411
			without	2	3 int. + 1 ext.	196412
			without	3	3 int. + 1 ext.	196413
			with	1	3 int. + 1 ext.	196415
without	12...28 V DC	M12, 12 pin, cable 8 cm	without	0	3 int. + 1 ext.	196420
			without	1	3 int. + 1 ext.	196421
			without	2	3 int. + 1 ext.	196422
			without	3	3 int. + 1 ext.	196423
			with	1	3 int. + 1 ext.	196425
	120 V AC	Cable glands	without	0	3 int. + 1 ext.	196470
			without	1	3 int. + 1 ext.	196471
			without	2	3 int. + 1 ext.	196472
			without	3	3 int. + 1 ext.	196473
			with	1	3 int. + 1 ext.	196475
AS-Interface (62 slaves)	29.5...31.6 V DC	Version with ASI flat cable terminal and 80 cm cable	without	0	3 int. + 1 ext.	196430
			without	1	3 int. + 1 ext.	196431
			without	2	3 int. + 1 ext.	196432
			without	3	3 int. + 1 ext.	196433
			with	1	3 int. + 1 ext.	196435
DeviceNet	via Bus	M12, 5 pin, cable 80 cm	without	0	3 int. + 1 ext.	196450
			without	1	3 int. + 1 ext.	196451
			without	2	3 int. + 1 ext.	196452
			without	3	3 int. + 1 ext.	196453
			with	1	3 int. + 1 ext.	196455



Accessories

Version	Article no.
Silencer PE G ¼	780780
Blind plug PP G ½	770901
Banjo fitting brass nickel-plated G ¼ for Ø tube 8/6 mm	780084
Banjo fitting brass nickel-plated G ½ for Ø tube 6/4 mm	780082
Universal VA-flange with O-ring	196495
Target for type 8681 from 1.4021	196494
Magnet-manual control tool	196490
Cable 27 cm (8 cm outside) with 12 pin M12 plug for 24 V DC	217574
Cable 99 cm (80 cm outside) with 4 pin M12 plug for ASi	217572
Cable 27 cm (8 cm outside) with 4 pin M12 plug for ASi	217573
ASi-flat cable terminal with M12 with stainless steel female connector	799646
Cable 99 cm (80 cm outside) with 5 pin M12 plug for DeviceNet	218187
USB adaptation kit PC-communicator	227093
Set with 20 lead seals, to avoid tool-free opening of the cover (spare part)	257100

8681
Control head

Control- and feedback head for integrated mounting on Robolux valves Type 2036

8685 / 8686

- Compact stainless steel design
- Contactless valve position registration
- Fieldbus AS- Interface (optional)
- Version for NAMUR circuits (optional)
- Version according to ATEX/IECEx



Feedback, Type 8685, and control head, Type 8686, are optimised for integrated mounting on pneumatically operated actuator, Type 2036 Robolux. The adjustment to the individual actuator size is done through DIP-switches.

As a compact unit the devices provide the complete automation functionality for the two individually operated actuator pistons. Depending on the configuration the electrical and visual position feedback is done by non-contact switches and high-power LEDs. Integrated pilot valves control the actuator pistons and AS-interface communication is available. Using appropriate barriers both types feature intrinsic safety acc. to ATEX.

In this way a complete concept for decentralized automation is feasible for the process technique.

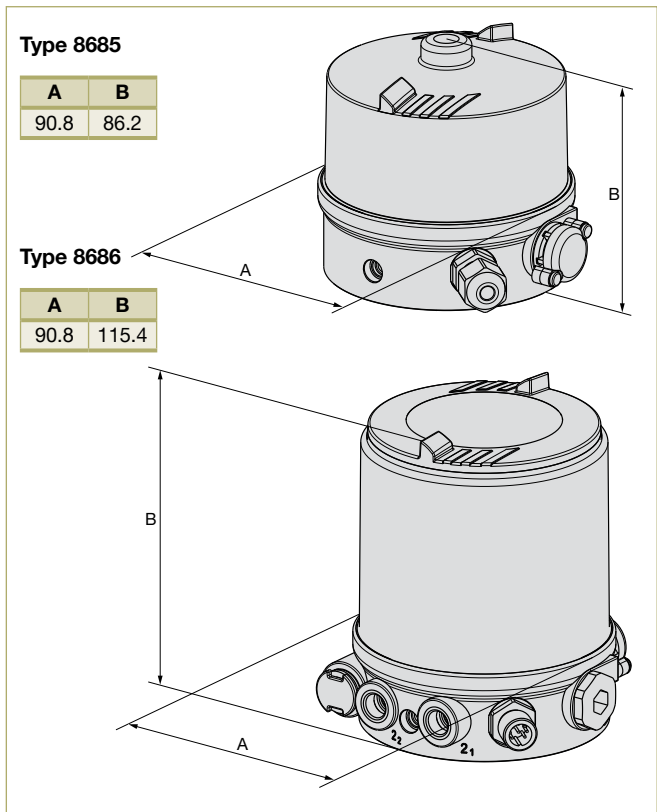
The compact body is especially distinguished by its hygienic design, with resistance to cleaning agents and a proven electrical IP protection.

In addition the control head, Type 8686, features an integrated compressed air filter to protect the pilot valve function against particles through the compressed air supply.

Technical data

General data	
Material:	
Body	PPS, stainless steel
Cover	PC
Seal	EPDM
Power supply	
Limit switches	24 V DC \pm 10 % 8.2 V DC (Ex i NAMUR switch amplifier) U < 12 V, Ii < 20 mA, Pi < 60 mW (Ex Barrier)
Pilot valve	24 V DC \pm 10 % Max. voltage see footnote no. 3
Pilot valve	Residual ripple 10 %; Power consumption 0.8 W every valve for Ex i variants: acc datasheet II 2G Ex ia IIC T4 T5 T6 PTB01 ATEX 2048
Control medium	
Dust content	Neutral gases, air DIN ISO 8573-1 Class 5 (< 40 μ m particle size)
Particle density	Class 5 (< 10 mg/m ³)
Pressure dew point	Class 3 (< -20 °C)
Oil concentration	Class 5 (< 25 mg/ m ³)
Supply pressure	3...7 bar ¹⁾
Air supply filter	
Mesh aperture	Exchangeable ~0.1 mm
Pilot air ports	Threaded ports G 1/8
Position feedback	Reed sensors (no contact)

Dimensions [mm]



Stroke range valve spindle	RV50=6.0 mm, RV70=9.5 mm, RV110=13.5 mm
Ambient temperature	0 °C...+55 °C
Installation	As required, preferably with actuator in upright position
Protection class	IP65/67 according to EN 60529
Protection class	3 acc. to VDE 0580
Fieldbus communication	AS-Interface
Conformity	CE acc. to EMV2004/108/EG
Electrical connection	
Multipole	M12 (8 pin), M12 (4 pin) with 1 m cable (AS-Interface)
Cable gland	M16x1.5 (Cable Ø 6.5 mm), screw terminals (1.0 mm ²)

1) The supply pressure must be 0.5...1 bar above the minimum required control pressure of the valve actuator.

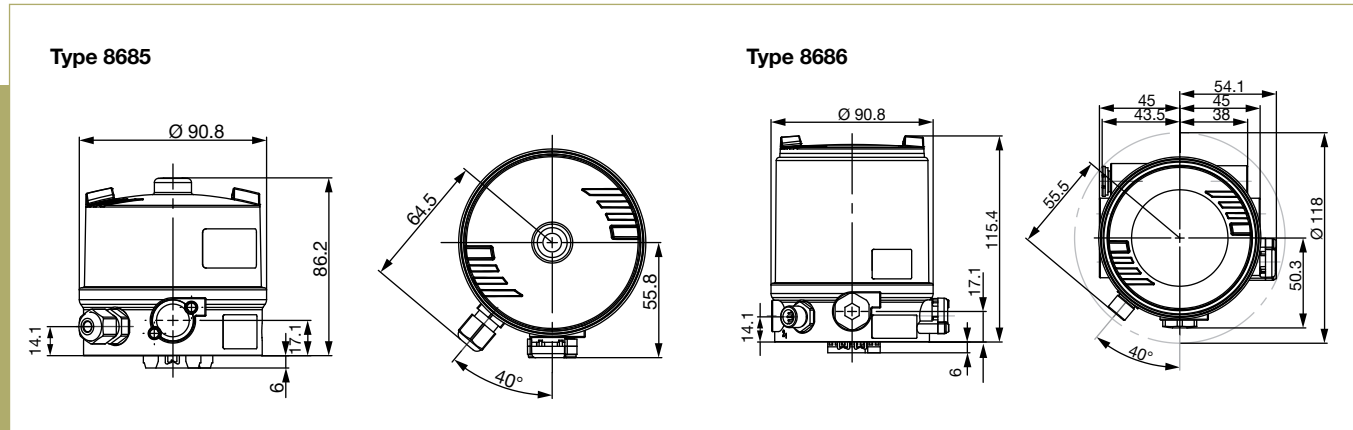
Technical data continued

Without Fieldbus communication	
Power supply	24 V DC
Residual ripple with DC	10 %
Voltage tolerance	± 10 %
Power consumption	< 2 W
Output	Max. 100 mA per output/ short-circuit protected
Electrical connection	
Multipole	M12 (8 pin)
Cable gland	M12 × 1.5 (cable Ø 6.5 mm), screw terminals (1.0 mm ² / max. port cross-section 0.25 mm ²)
Type 8685 / 8686 2G II Ex ia IIC T4 Gb	
Ignition protection class	IIG Ex ia IIC T4 Gb (BVS 13 ATEX E 039 X) Ex ia IIC T4 Gb (IECEx BVS 13.0047 X)
Operating conditions	Medium temperature of adapted process valve Type 2036 T(media) : 0 °C to 130 °C (safety requirement value)
Power supply	
Limit switches	Operates with Ex i NAMUR switch amplifier: 8.2 V DC Operates with Ex barrier ¹⁾ : max. input voltage U _i < 12 V DC
Pilot valve	Control valve component for Ex valve coils ²⁾
Limit switches- Status	Only electrical feedback
Power consumption	Operates with Ex i NAMUR- switch amplifier: < 1.2 mA (terminal position reached) > 2.1 mA (terminal position not reached) Operates with Ex barrier ¹⁾ : max. input voltage U _i < 50 mA
Electrical connection	Cable gland M12 × 1.5 (cable-Ø 6.5 mm), screw terminals 1.0 mm ² /max. port cross-section: 8685: 0.25 mm ² ; 8686: 0.14 mm ²
<p>1) Electrical feed-in through intrinsically safe electric circuit of type of protection Ex ia IIC Each circuit (end position) has the following safety related max data: Max. input voltage U_i = 12 V DC / max. input circuit I_i = 50 mA Max. input power P_i = 60 mW Internal capacity and inductance negligible</p> <p>2) Feed-in valves Max. input power P_i = 1.1 mW Max input voltage and max. input circuit acc. following table: U_i [V] 15 18 20 22 25 28 30 35 I_i[mA] 900440 309224 158120 101 73 Internal capacity and inductance negligible</p>	
With Fieldbus communication; AS-Interface Type 8685	
Profile	S-O.A.E (A/B slave, max 62 slaves/master)
Power supply	29.5...31.6 V DC
via bus lines	Acc. to specification
separated from bus signal	On request
Max. power consumption (2 terminal position reached)	35 mA
Electrical connection	M12 4 pin with 1 m cable on flat cable clip
Programming data	See operating manual
With Fieldbus communication; AS-Interface Type 8686	
Profile	S-O.A.E (A/B slave, max 62 slaves/master)
Power supply	29.5...31.6 V DC
via bus lines	Acc. to specification
separated from bus signal	On request
Max. power consumption Max. power consumption (2 valves activated and 2 feedback active)	≤ 120 mA
Outputs	
Contact rating	≤ 2 × 0.8 W (above AS-Interface)
Watch-dog function	Integrated
Inputs	
Sensor operating voltage	24 V ± 10 % (above AS-Interface)
Acceptable current load	≤ 50 mA short circuit protected
Switching level High	10 V
Input current High	≤ 1.5 mA
Input current Low	≤ 0.1 mA
Electrical connection	M12 4 pin with 1 m cable on flat cable clip
Programming data	See operating instruction

Options

- Type 8686 ASI version with external power supply
- Type 8686 24 V DC version with cable gland

Dimensions [mm]



Ordering chart

Type	Communication	Electrical connection	Pneumatic function	Position feedback	Pilot air ports	Article no.
8685	without	Cable gland	without	2 switching points	Threaded ports G 1/8	231306
	AS-Interface A/B	cable glands with 1 m cable on flat cable clip	without	2 switching points	Threaded ports G 1/8	231307
	Ex i (NAMUR)	Cable gland	without	2 switching points	Threaded ports G 1/8	242249
8686	without	M12 (8 pin)	2 x single-acting DN3.0	2 switching points	Threaded ports G 1/8	231292
	AS-Interface A/B	cable glands with 1 m cable on flat cable clip	2 x single-acting DN3.0	2 switching points	Threaded ports G 1/8	231293
	Ex i (NAMUR)	Cable gland	2 x single-acting DN3.0	2 switching points	Threaded ports G 1/8	242250

Accessories

Specifications	for actuator size	Article no.
Adapter set for Type 8685	RV50, RV70, RV110	684267
Adapter set for Type 8686	RV50, RV70, RV110	684268

Specifications	Article no.
M12 socket, 8 pin, 5 m assembled cable	919267
M12 socket, 8 pin, 2 m assembled cable	919061
ASI-fl at cable clip with VA-socket M12 (replacement part)	799646
Silencer G 1/8 threaded ports	780779
Pilot tool for cover mounting	674077

Control head and pneumatic control unit for decentralized automation of ELEMENT process valves

8690/8691

- Spring chamber vent
- Flushing function
- Optical position indicator
- Integrated air supply
- With ATEX II Cat. 3G/D and Cat. 2D/G approval



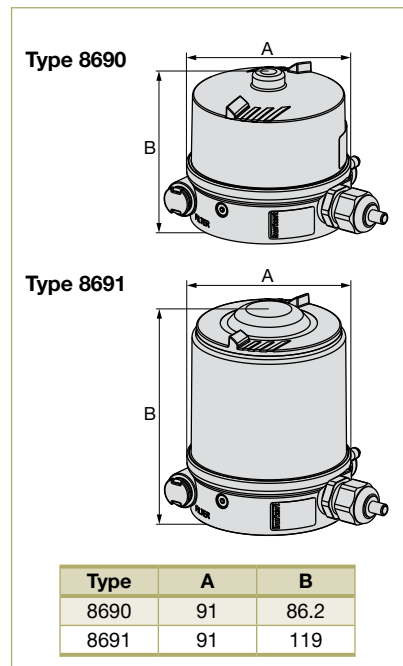
The pneumatic control units, Type 8690 and Type 8691, are optimised for the integrated mounting on process valves series 21XX. At the 8691 bright coloured LEDs indicate the current status of the process valves (visible from a distance). Chemically resistant PPS housing is designed in accordance with EHEDG guidelines for use in hygienic environments. Especially for the system cleaning the IP protection of the housing is supported by overpressure in the control head.

Technical data

	8690	8691
Materials		
Body	PPS	PPS, Stainless steel
Cover	PC	PC
Seal	EPDM	EPDM
Pilot valve	24 V DC \pm 10 %, residual ripple 10 % (no technical direct current); 1 W	24 V DC \pm 10 %, residual ripple 10 % (no technical direct current); 2 W
Micro switch	Max. 24 V DC, max. 2 A	
Initiator	10...24 V DC, max. 100 mA ext. load per initiator	PNP, 10...24 V DC, max. 100 mA
Electrical connection		
Multipole	M12, 8 pin	M12, 8-pins, M12 4-pins (AS-Interface, IO-Link)
Cable gland	M16 \times 1.5 (cable- \varnothing 10 mm), Screw terminals (1.5 mm ²)	M12 5-pins (DeviceNet, bÜS) M16 \times 1.5 (clamping area 5...10 mm) With screw-type terminals for cable cross-sections 0.14...1.5 mm ²
Buses available	–	DeviceNet, AS-i
Optical feedback	–	SuperBRIGHT LED
Media	Instrument air	Instrument air
Push in connector	(external \varnothing 6 mm or 1/4") or threaded ports G 1/8	
Integrated filter	0.1 mm (exchangeable)	0.1 mm (exchangeable)
Supply pressure	3...7 bar ¹⁾	3...7 bar ¹⁾
Ambient temperature	With pilot valve -10 °C...+55 °C Without pilot valve -20 °C...+60 °C	With pilot valve -10 °C...+55 °C Without pilot valve -20 °C...+60 °C
Protection class	IP65/IP67 acc. to EN 60529, Type 4X acc. to NEMA 250 standard	IP65/IP67 acc. to EN 60529, Type 4X acc. to NEMA 250 standard
Protection class	3 acc. to DIN EN 61140	3 acc. to DIN EN 61140
Conformity	EMC Directive 2014/30/EU	EMC Directive 2014/30/EU

1) The supply pressure has to be 0.5...1 bar above the minimum required pilot pressure for the valve actuator.

Dimensions [mm]



Technische Daten, Fortsetzung

	8690	8691
Approvals		
ATEX	<ul style="list-style-type: none"> ⊗ II 3D Ex tc IIIC T135 °C Dc / ⊗ II 3G Ex ec IIC T4 Gc Certificate; BVS 14 ATEX E 008 X	<ul style="list-style-type: none"> ⊗ II 3D Ex tc IIIC T135 °C Dc / ⊗ II 3G Ex ec IIC T4 Gc Certificate; BVS 14 ATEX E 008 X
IECEX	<ul style="list-style-type: none"> ⊗ II 2D Ex ia IIIC T135°C IP64 / ⊗ II 2G Ex ia IIC T* Gb Certificate; BVS 14 ATEX E052 X Ex tc IIIC T135 °C Dc / Ex ec IIC T4 Gc Certificate; IECEX BVS 14.0009 X Ex ia IIIC T135°C IP64 / Ex ia IIC T* Gb Certificate; IECEX BVS 14.0035 X	Ex tc IIIC T135 °C Dc / Ex ec IIC T4 Gc Certificate; IECEX BVS 14.0009 X
UL	cULus Certificate; E238179	cULus Certificate; E238179
Ignition protection class	II 3D Ex tc IIIC T135 °C Dc II 3G Ex ec IIC T4 Gc II 2G Ex ia IIC T* Gb II 2D Ex ia IIIC T135 °C Db IP64	II 3D Ex tc IIIC T135 °C Dc II 3G Ex ec IIC T4 Gc

Ordering chart Type 8690

Pneumatic control unit Type 8690								
End position feedback			Electrical connection	Control function	Pilot air ports threaded ports	Standard	Article no.	
Inductive switch 24 V DC PNP	Inductive switch NAMUR 2-wire 8 V DC Ex ia IIC T6	Micro switch 24 V DC					ATEX II cat. 3G/D	ATEX II cat. 2G/D
2	-	-	M12 multipole	single-acting	G 1/8	227222	264968	-
2	-	-		double-acting	G 1/8	264939	264957	-
2	-	-			G 1/8	227190	264949	-
2	-	-	Cable gland	single-acting	G 1/8	227220	264967	-
2	-	-		double-acting	G 1/8	264941	264956	-
2	-	-			G 1/8	227189	264948	-
1	-	-	M12 multipole	single-acting	G 1/8	227218	264964	-
1	-	-		double-acting	G 1/8	264940	264953	-
1	-	-			G 1/8	265151	264945	-
1	-	-	Cable gland	single-acting	G 1/8	227216	264963	-
1	-	-		double-acting	G 1/8	264942	264952	-
1	-	-			G 1/8	265154	264944	-
-	2	-		single-acting	G 1/8	-	-	265143
-	2	-		double-acting	G 1/8	-	-	265144
-	2	-			G 1/8	-	-	265142
-	-	2	M12 multipole	single-acting	G 1/8	227234	-	-
-	-	1			G 1/8	227230	-	-



Ordering chart Type 8691 continued

8690/8691

Pneumatic control unit Type 8690								
End position feedback						Article no.		
Inductive switch 24 V DC PNP	Inductive switch NAMUR 2-wire 8 V DC Ex ia IIC T6	Micro switch 24 V DC	Electrical connection	Control function	Pilot air ports threaded ports	Standard	ATEX II cat. 3G/D	ATEX II cat. 2G/D
-	-	2	Cable gland	single-acting	G 1/8	227232	-	-
-	-	2		-	G 1/8	227195	-	-
without end position feedback			Cable gland	single-acting	G 1/8	225883	264961	-
				double-acting	G 1/8	265156	265935	-





Note: All non-ATEX versions are UL approved.

Control head Type 8691					
Communication	Electrical connection	Control function pilot valve system	Pilot air ports threaded ports	Article no.	
				Standard	ATEX II cat. 3G/D, IECEX
AS-Interface Slave profile: S-B.A.E (A/B slave, max. 62 slaves)	M12 multipole connector	single-acting	G 1/8	227254	264988
		double-acting	G 1/8	227240	264975
	M12 multipole connector /Flat cable clip / 80 cm cable	single-acting	G 1/8	227258	264990
		double-acting	G 1/8	227244	264977
DeviceNet	M12 multipole connector	single-acting	G 1/8	227255	264989
		double-acting	G 1/8	227241	264976
IO-Link	M12 multipole connector	single-acting	G 1/8	307371	321927
		double-acting	G 1/8	307368	321925
		without	G 1/8	307377	321933
bÜS - Bürkert System Bus	M12 multipole connector	single-acting	G 1/8	307375	321931
		double-acting	G 1/8	307373	321929
		without	G 1/8	307379	321935
Without fieldbus communica- tion	M12 multipole connector	single-acting	G 1/8	227262	264992
		double-acting	G 1/8	227248	264979
		without	G 1/8	246211	264972
	Cable gland	single-acting	G 1/8	227260	264991
		double-acting	G 1/8	227246	264978
		without	G 1/8	264943	264971

Note: Standard versions are UL approved (UL approval IO-Link and bÜS - Bürkert System Bus in preparation)

Accessories for Type 8690










Description	Actuator size	Control function	Article no.
Adapter kit ELEMENT Type 21xx	Ø 70/90/130 mm	Universal	665720 

Description	Article no.
M12 socket 8 pin with 5 m cable for power supply and input/output signals	919267 
ASI flat cable clip with stainless steel socket M12 (spare part)	799646 
Silencer G 1/8	780779 
Silencer, push-in connector	902662 

Accessories for Type 8691

Description	Actuator size	Control function	Article no.
Adapter kit ELEMENT Type 21xx	Ø 70 / 90 / 130 mm	universal	679917 

For installation kits to 3rd party process valves please see data sheet **Type KK01** ▶ adapter kits for hygienic process valves or contact your sales office for related drawings or individual engineering support

Description	Article no.
M12 socket 8 pin with 5 m cable for power supply and input/output signals	919267 
ASI flat cable clip with stainless steel socket M12 (spare part)	799646 
USB büS-Interface Set (büS Stick + connecting cable with M12 connector + connecting cable M12 to micro USB for büS service interface) for connecting to the PC tool Bürkert Communicator	772551 
büS cable extension M12, length 1 m	772404 
büS cable extension M12, length 3 m	772405 
büS cable extension M12, length 5 m	772406 
büS cable extension M12, length 10 m	772407 
Silencer G 1/8	780779 
Sensor puck (spare part)	682240 
Bürkert Communicator Software	http://www.burkert.com/en/type/8920

Digital electropneumatic positioner for the integrated mounting on process control valves

8692

- PROFIBUS DP-V1, DeviceNet, EtherNet/IP, PROFINET, Modbus TCP or büS (Bürkert System Bus)
- Compact, robust stainless steel design
- Easy start-up by automatic X-Tune function
- Contact-free position sensor
- Integrated control air routing with spring chamber aeration

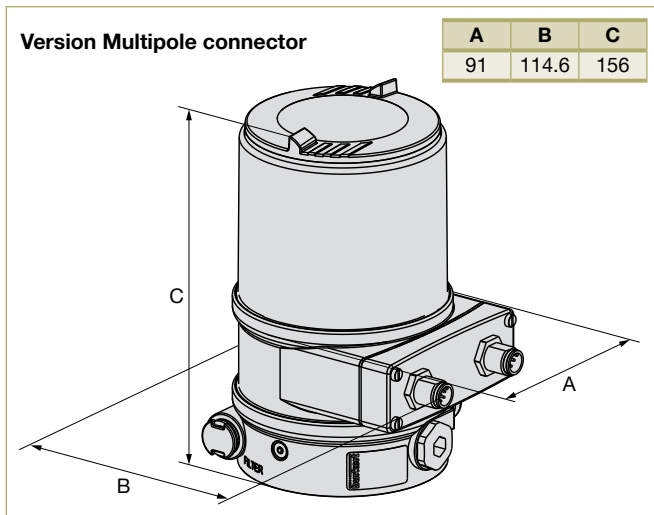


The compact positioner Type 8692 is optimized for integrated mounting on the pneumatic actuators in the process valve series Type 23xx/2103 and is specially designed for the requirements of a hygienic process environment. The control air channel is integrated in the actuator without external tubings. The easy handling and the selection of additional software functions are done either on a big graphic display with backlight and keypad or over COMMUNICATOR. The positioner registers the valve position without deterioration through a contact-free, analog position sensor. The control of single or double-acting actuators is done without internal air consumption. With integrated diagnostic functions operation conditions of the control valve can be monitored. Through status signals, valve diagnostic messages are transmitted according to NAMUR NE107 and recorded as history entries. The housing is easy to clean and features proven IP protection and chemically resistant materials for use in hygienic processing, in food, beverage and pharmaceutical industries. Combined with Bürkert ELEMENT actuators the unique pilot valve system enables a compressed air recycling that avoids actuator chambers contamination from the environment.

Technical data

Material	
Body	PPS, stainless steel
Cover	PC
Sealing	EPDM
Power supply	24 V DC \pm 10 %, UL: NEC Class 2
Residual ripple	Max. 10 %
Setpoint setting	0/4...20 mA and 0...5/10 V
Input resistance	0/4...20 mA: 180 Ω 0...5/10 V: 19 k Ω
Control medium	Neutral gases, air, quality classes acc. to ISO 8573-1
Dust concentration	Class 7: (< 40 μ m particle size)
Particle density	Class 5 (< 10 mg/m ³)
Pressure condensation point	Class 3 (< -20 °C)
Oil concentration	Class X (< 25 mg/m ³)
Ambient temperature	-10 °C...+55 °C
Control air ports	Threaded ports G 1/8 stainless steel
Supply pressure	Low air flow rate: 0...7 bar ¹⁾ High air flow rate: 3...7 bar
Air input filter	Exchangeable (mesh aperture ~0.1 mm)
Actuator system	
Actuator series Type 23xx	Low air flow rate: \varnothing Actuator 70/90 mm High air flow rate: \varnothing Actuator 130 mm
Actuator series Type 27xx	High air flow rate: \varnothing Actuator 175/225 mm

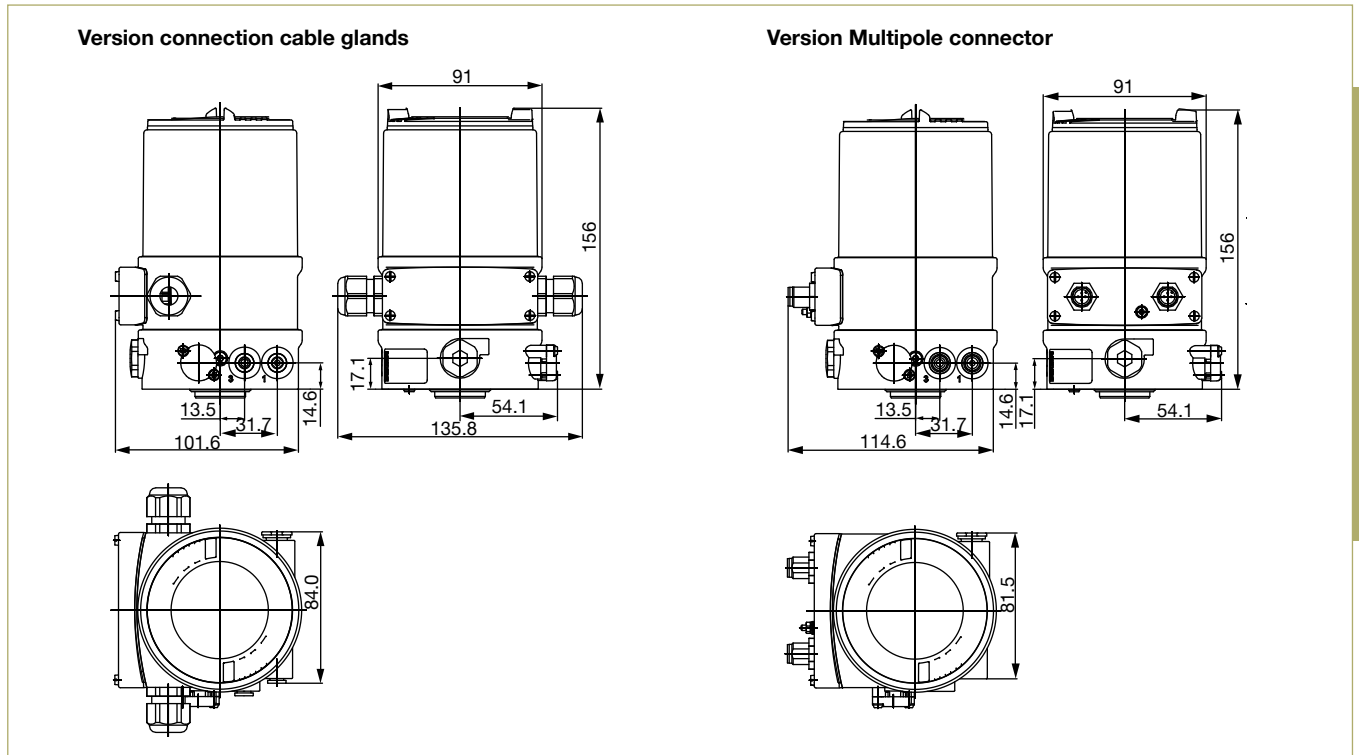
Dimensions [mm]



Position detection module	Contact-free, wear-free
Stroke range valve spindle	3...28 mm (3...45 mm on request)
Installation	As required, preferably with actuator in upright position
Protection class	IP65/IP67 acc. to EN 60529, Type 4X acc. to NEMA 250 standard
Protection class	3 acc. to DIN EN 61140
Power consumption	<5 W
Electrical connection	
Multipole connection	M12, 8 pin or 4 pin
Cable gland	2xM16 x 1.5 (cable \varnothing 5...10 mm) with connection terminals for cable cross-sections 0.14...1.5 mm ²
Bus communication	
PROFIBUS DP-V1, DeviceNet, EtherNet/IP, PROFINET, Modbus TCP, büS - Bürkert System Bus (based on CANopen)	
Approvals	
ATEX	Ⓜ II 3D Ex tc IIIC T135 °C Dc / Ⓜ II 3G Ex ec IIC T4 Gc Certificate; BVS 14 ATEX E 008 X
IECEx	Ex tc IIIC T135 °C Dc / Ex ec IIC T4 Gc Certificate; IECEx BVS 14.0009 X
UL	cULus Certificate; E238179
Ignition protection class	II 3D Ex tc IIIC T135 °C Dc II 3G Ex ec IIC T4 Gc
Conformity	EMC directive 2014/30/EU

1) The supply pressure has to be 0.5...1 bar above the minimum required pilot pressure for the valve actuator.

Dimensions [mm]



8692

Ordering chart

Control function Pilot valve system	Communi- cation	Electrical connection	Analogue feedback 0/4...20 mA	Analogue feedback 0/4...20 mA + 2 binary outputs	Diagnostic function ¹⁾	Binary inputs	Pilot air ports threaded ports	Article no.	
								Standard	ATEX II cat. 3G/D, IECEx
Actuator series Type 23xx, size Ø 70/90 mm									
Low air capacity single-acting	without fieldbus com- munication	cable gland	-	-	-	yes	G 1/8	306913	306982
			-	yes	yes	yes	G 1/8	307005	306983
	M12 multipole connector	-	-	-	yes	G 1/8	307012	307095	
		-	yes	yes	yes	G 1/8	307123	307096	
	PROFIBUS DP-V1	via Bus	-	-	-	G 1/8	233348	265019	
	DeviceNet	via Bus	-	-	-	G 1/8	265168	265017	
	EtherNet/IP	via Bus	-	yes	-	G 1/8	306849	306847	
	PROFINET	via Bus	-	yes	-	G 1/8	306854	306851	
	Modbus TCP	via Bus	-	yes	-	G 1/8	306859	306856	
büS - Bürkert System Bus	via Bus	-	yes	-	G 1/8	306863	306861		
Low air capacity double-acting	without fieldbus com- munication	cable gland	-	-	-	yes	G 1/8	306905	306977
			-	yes	yes	yes	G 1/8	307006	306978
	M12 multipole connector	-	-	-	yes	G 1/8	307124	307091	
		-	yes	yes	yes	G 1/8	307125	307092	
	PROFIBUS DP-V1	via Bus	-	-	-	G 1/8	265172	265004	
	DeviceNet	via Bus	-	-	-	G 1/8	265173	265002	



Ordering chart

8692

Control function Pilot valve system	Communi- cation	Electrical connection	Analogue feedback 0/4...20 mA	Analogue feedback 0/4...20 mA + 2 binary outputs	Diagnostic function ¹⁾	Binary inputs	Pilot air ports threaded ports	Article no.	
								Standard	ATEX II cat. 3G/D, IECEx
Actuator series Type 23xx, size Ø 130 mm									
High air capacity single-acting	without fieldbus com- munication	Cable gland	-	-	-	yes	G 1/8	306922	306986
			-	yes	yes	yes	G 1/8	307007	306987
		M12 multipole connector	-	-	-	yes	G 1/8	307084	307099
			-	yes	yes	yes	G 1/8	307126	307100
	PROFIBUS DP-V1	via Bus	-	-	-	G 1/8	233349	265033	
	DeviceNet	via Bus	-	-	-	G 1/8	265176	265031	
	EtherNet/IP	via Bus	-	yes	-	G 1/8	306850	306848	
	PROFINET	via Bus	-	yes	-	G 1/8	306855	306853	
	Modbus TCP	via Bus	-	yes	-	G 1/8	306860	306857	
büS - Bürkert System Bus	via Bus	-	yes	-	G 1/8	306864	306862		
Actuator series Type 27xx, size Ø 175/225 mm									
High air capacity single-acting	without fieldbus com- munication	Cable gland	-	-	-	yes	G 1/8	306925	306988
			-	yes	yes	yes	G 1/8	306927	306989
		M12 multipole connector	-	-	-	yes	G 1/8	307041	307101
			-	yes	yes	yes	G 1/8	307043	307102
	PROFIBUS DP-V1	via Bus	-	-	-	G 1/8	233350	265041	
	DeviceNet	via Bus	-	-	-	G 1/8	239114	265039	
	EtherNet/IP	via Bus	-	yes	-	G 1/8	313266	313265	
	PROFINET	via Bus	-	yes	-	G 1/8	313269	313268	
	Modbus TCP	via Bus	-	yes	-	G 1/8	313271	313270	
büS - Bürkert System büS	via Bus	-	yes	-	G 1/8	313274	313272		

1) See additional software functions parametrisable diagnostic functions / binary outputs on separate datasheet

Note: Standard versions are UL approved.

Accessories

Description	Actuator size	Control function	Article no.
Adapter kit actuator series Type 23xx/2103	Ø 70 / 90 / 130 mm	universal	679917
Adapter kit actuator series Type 27xx	Ø 175 / 225 mm	A (NO), B (NC)	679935

For installation kits to 3rd party process valves please see data sheet **Type KK01** ▶ adapter kits for hygienic process valves or contact your sales office for related drawings or individual engineering support

Description	Article no.
M12 socket 8 pin with 5 m cable input/output signals	919267
M12 socket 4 pin with 5 m cable for power supply	918038
USB bÜS-Interface Set (bÜS Stick + connecting cable with M12 connector + connecting cable M12 to micro USB for bÜS service interface) for connecting to the PC tool Bürkert Communicator (only for device versions with EtherNet/IP, PROFINET, Modbus TCP and bÜS - Bürkert System Bus)	772551
bÜS cable extension M12, length 1 m	772404
bÜS cable extension M12, length 3 m	772405
bÜS cable extension M12, length 5 m	772406
bÜS cable extension M12, length 10 m	772407
SIM Card	291773
Silencer G 1/8	780779
Sensor puck (spare part)	682240
USB interface for serial communication (only for device versions with PROFIBUS / DeviceNet or with fluid flow controller Type 8750)	227093
Bürkert Communicator Software	http://www.buerkert.com/en/type/8920

Digital electropneumatic process controller for the integrated mounting on process control valves

8693

- Compact, robust stainless Steel design
- Easy start-up by Tune function for position and process controller
- Contact-free position sensor
- Integrated control air routing with spring chamber aeration
- PROFIBUS DP-V1, DeviceNet, EtherNet/IP, PROFINET, Modbus TCP or bÜS (Bürkert System Bus)

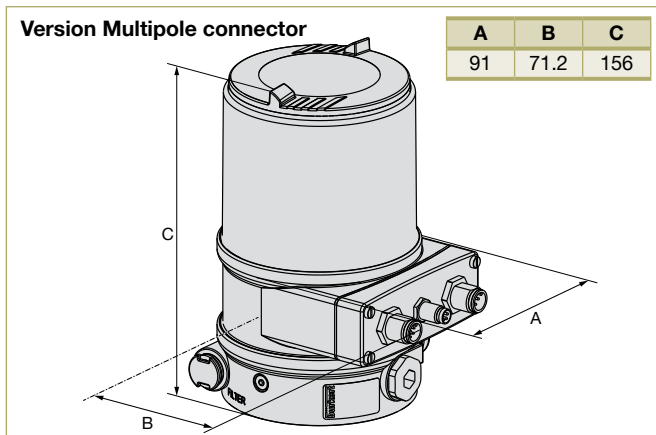


The compact process controller Type 8693 is optimized for integrated mounting on the pneumatic actuators in the process valve series Type 23xx/2103 and is specially designed for the requirements of a hygienic process environment. The actual value of the process factor is directly supplied to the device as 4...20 mA, PT100 or a frequency signal. The process controller calculates the setpoint for the subordinated positioner through the variance comparison. Due to the analogue feedback all analogue values on the controlling level can be transferred. With integrated diagnostic functions operation conditions of the control valve can be monitored. Through status signals, valve diagnostic messages are transmitted according to NAMUR NE107 and recorded as history entries. The parameterization of process controller and positioner can be carried out automatically. The easy handling and the selection of additional software functions are done either on a big graphic display with backlight and keypad or over a PC interface. The positioner registers the valve position without deterioration through a contact-free, analog position sensor. The control of single or double-acting actuators is done without internal air consumption. Optionally available are PROFIBUS DP-V1, DeviceNet, EtherNet/IP, PROFINET, Modbus TCP, bÜS (based on CANopen) communication interfaces as well as analogue and binary feedback.

Technical data

Material	
Body	PPS, stainless steel
Cover	PC
Sealing	EPDM
Power supply	24 V DC \pm 10 %, UL: NEC Class 2
Residual ripple	10 %, no technical direct current!
Setpoint setting	0/4...20 mA and 0...5/10 V
Input resistance	0/4...20 mA: 180 Ω 0...5/10 V: 19 k Ω
Sensor input	4...20 mA (180 Ω input resistance) Frequency 0...1000 Hz (17 k Ω input resistance) PT100...20 to +220 $^{\circ}$ C (resolution <0.1 $^{\circ}$ C)
Control medium	
Dust concentration	Neutral gases, air, quality classes acc. to ISO 8573-1
Particle density	Class 7: (<40 μ m particle size)
Pressure condensation point	Class 5 (<10 mg/m ³) Class 3 (<-20 $^{\circ}$ C)
Oil concentration	Class X (<25 mg/m ³)
Ambient temperature	-10 $^{\circ}$ C to +55 $^{\circ}$ C
Control air ports	Threaded ports G 1/8 stainless steel
Supply pressure	Low air flow rate: 0...7 bar ¹⁾ High air flow rate: 3...7 bar

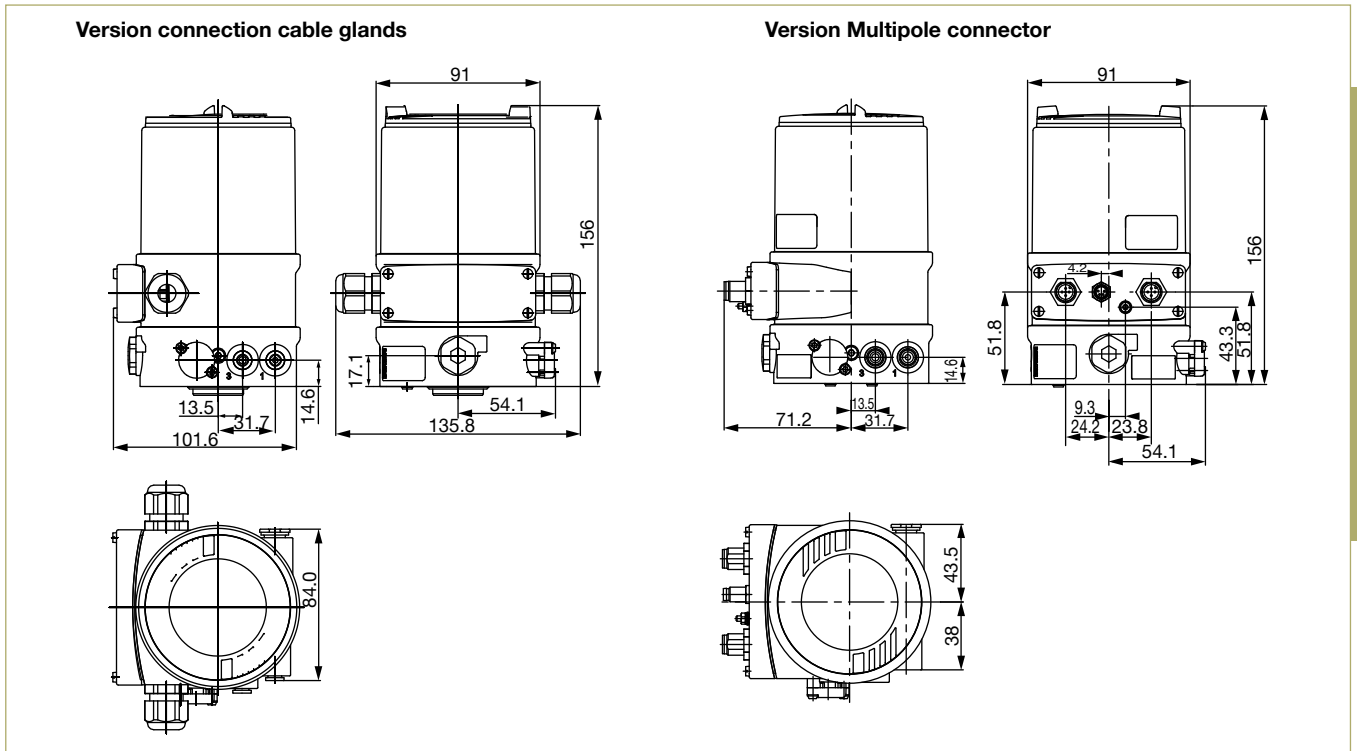
Dimensions [mm]



Air input filter	Exchangeable (mesh aperture \sim 0.1 mm)
Actuator system	
Actuator series Type 23xx	Low air flow rate: \varnothing Actuator 70/90 mm High air flow rate: \varnothing Actuator 130 mm
Actuator series Type 27xx	High air flow rate: \varnothing Actuator 175/225 mm
Position detection module	Contact-free, wear-free
Stroke range valve spindle	3...45 mm
Installation	As required, preferably with actuator in upright position
Protection class	IP65/IP67 acc. to EN 60529, Type 4X acc. to NEMA 250 standard
Power consumption	<5 W
Electrical connection	
Multipole connection	M12, 8 pin or 4 pin
Cable gland	2xM16 \times 1.5 (Cable \varnothing 5...10 mm) with connection terminals for cable cross-sections 0.14...1.5 mm ²
Fieldbus communication	PROFIBUS DP-V1, DeviceNet, EtherNet/IP, PROFINET, Modbus TCP, bÜS - Bürkert System Bus (based on CANopen)
Approval	
ATEX	⊕ II 3D Ex tc IIIC T135 $^{\circ}$ C Dc / ⊕ II 3G Ex ec IIC T4 Gc Certificate: BVS 14 ATEX E 008 X Ex tc IIIC T135 $^{\circ}$ C Dc / Ex ec IIC T4 Gc
IECEX	Certificate: IECEx BVS 14.0009 X
UL	cULus Certificate; E238179
Ignition protection class	II 3D Ex tc IIIC T135 $^{\circ}$ C Dc II 3G Ex ec IIC T4 Gc
Protection class	3 acc. to DIN EN 61140 (VDE 0140-1)
Conformity	EMC directive 2014/30/EU

1) The supply pressure has to be 0.5...1 bar above the minimum required pilot pressure for the valve actuator.

Dimensions [mm]



Ordering chart

Control function Pilot valve system	Communi- cation	Electrical connection	Analogue feedback 0/4...20 mA	Analogue feedback 0/4...20 mA + 2 binary outputs	Diagnostic function ¹⁾	Binary input	Pilot air ports threaded ports	Article no.	
								Standard	ATEX II cat. 3G/D
Actuator series Type 23xx, size Ø 70/90 mm									
Low air capacity single-acting	without fieldbus-com- munication	Cable gland	-	-	-	yes	G 1/8	306936	306990
			-	yes	yes	yes	G 1/8	306965	306991
		M12 Multipole connector	-	-	-	yes	G 1/8	307082	307103
			-	yes	yes	yes	G 1/8	307105	307104
	PROFIBUS DP-V1		via Bus	-	-	-	G 1/8	311800	311801
	DeviceNet		via Bus	-	-	-	G 1/8	265092	265094
	EtherNet/IP		via Bus	yes	yes	-	G 1/8	306867	306865
	PROFINET		via Bus	yes	yes	-	G 1/8	306871	306869
	Modbus TCP		via Bus	yes	yes	-	G 1/8	306876	306874
	büS -Bürkert System Bus	M12 Multipole connector	via Bus	-	yes	-	G 1/8	306881	306878
Low air capacity double-acting	without fieldbus-com- munication	Cable gland	-	-	-	yes	G 1/8	306931	306992
			-	yes	yes	yes	G 1/8	306994	306993
	M12 Multipole connector	-	-	-	yes	G 1/8	307107	307109	
		-	yes	yes	yes	G 1/8	307108	307110	
	PROFIBUS DP-V1		via Bus	-	-	-	G 1/8	311802	311803
	DeviceNet		via Bus	-	-	-	G 1/8	265104	265106

Ordering chart



8693

Control function Pilot valve system	Communi- cation	Electrical connection	Analogue feedback 0/4...20 mA	Analogue feedback 0/4...20 mA +2 binary outputs	Diagnostic function ¹⁾	Binary input	Pilot air ports threaded ports	Article no.	
								Standard	ATEX II cat. 3G/D
Actuators series Type 23xx, size Ø 130 mm									
High air capacity single-acting	without fieldbus-com- munication	Cable gland	-	-	-	yes	G 1/8	306946	306995
			-	yes	yes	yes	G 1/8	306973	306997
		M12 Multipole connector	-	-	-	yes	G 1/8	307112	307114
			-	yes	yes	yes	G 1/8	307113	307115
	PROFIBUS DP-V1	via Bus	-	-	-	G 1/8	311804	311805	
	DeviceNet	via Bus	-	-	-	G 1/8	265113	265115	
	EtherNet/IP	via Bus	-	yes	-	G 1/8	306868	306866	
	PROFINET	via Bus	-	yes	-	G 1/8	306872	306870	
	Modbus TCP	via Bus	-	yes	-	G 1/8	306877	306875	
	büS - Bürkert System Bus	-	via Bus	-	yes	-	G 1/8	306882	306880
Actuator series Type 27xx, size Ø 175 / 225 mm									
High air capacity single-acting	without fieldbus-com- munication	Cable gland	-	-	-	yes	G 1/8	306950	307003
			-	yes	yes	yes	G 1/8	306952	307004
		M12 Multipole connector	-	-	-	yes	G 1/8	307068	307121
			-	yes	yes	yes	G 1/8	307070	307122
	PROFIBUS DP-V1	via Bus	-	-	-	G 1/8	233356	265138	
	DeviceNet	via Bus	-	-	-	G 1/8	265141	265140	
	EtherNet/IP	via Bus	-	yes	-	G 1/8	313276	313275	
	PROFINET	via Bus	-	yes	-	G 1/8	313269	313268	
	Modbus TCP	via Bus	-	yes	-	G 1/8	313271	313270	
	büS - Bürkert System Bus	-	via Bus	-	yes	-	G 1/8	313283	313282













1) See additional software functions Parametrisable diagnostic functions / binary outputs on

Note: Standard versions are UL approved.

Accessories

Description	Actuator size	Control function	Article no.
Adapter kit actuator series Type 23xx/2103	Ø 70 / 90 / 130 mm	universal	679917 
Adapter kit actuator series Type 27xx	Ø 175 / 225 mm	A (NO), B (NC)	679935 

For installation kits to 3rd party process valves please see data sheet **Type KK01** ▶ adapter kits for hygienic process valves or contact your sales office for related drawings or individual engineering support.

Description	Article no.
M12 socket 8 pin with 5 m cable for input and output signals	919267 
M12 socket 4 pin with 5 m cable for power supply	918038 
M8 socket 4 pin with 5 m cable for process actual value from sensor	264602 
USB bÜS-Interface Set (bÜS Stick + connecting cable with M12 connector + connecting cable M12 to micro USB for bÜS service interface) for connecting to the PC tool Bürkert Communicator (only for device versions with EtherNet/IP, PROFINET, Modbus TCP and bÜS - Bürkert System Bus)	772551 
bÜS cable extension M12, length 1 m	772404 
bÜS cable extension M12, length 3 m	772405 
bÜS cable extension M12, length 5 m	772406 
bÜS cable extension M12, length 10 m	772407 
SIM Card	291773 
Silencer G 1/8	780779 
Sensor puck (spare part)	682240 
USB interface for serial communication (only for device versions with PROFIBUS / DeviceNet or with fluid flow controller Type 8750)	227093 
Bürkert Communicator Software	https://www.burkert.com/en/type/8920

Digital electropneumatic positioner for the integrated mounting on process control valves

8694

- Fieldbus interface AS-Interface (option)
- Compact, robust stainless steel design
- Start-up by automatic Tune function
- Contact-free position sensor
- Integrated control air routing



Compact positioner for integrated mounting on pneumatically operated process valves. Remote setpoint adjustment via a 4...20 mA signal or through AS-Interface. A contact-free analog position sensor measures the position of the valve spindle. Simple installation through automatic tune function and setting through DIP-switch: DIP-switch:

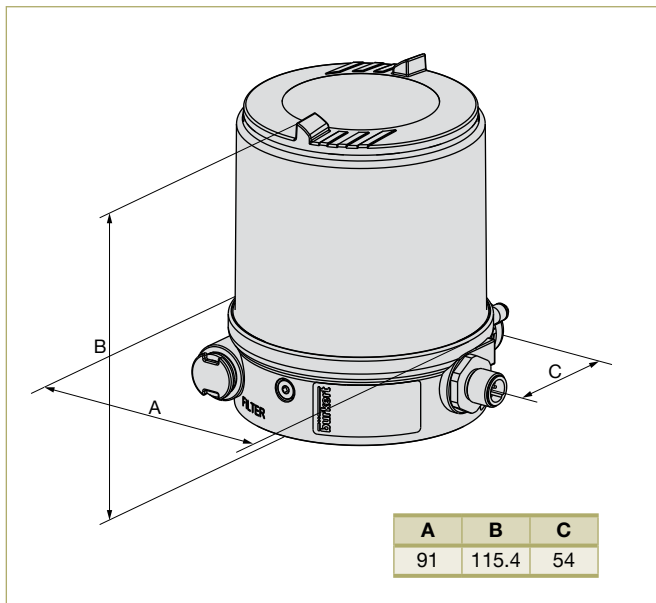
- Close tight function
- Characteristic curves selection
- Reversal of effective direction
- Switching manual /automatic operation
- Binary input

Additional parametrisation options are possible through DTM devices. A software interface can be used for, amongst others, linearisation of the operation characteristics by using free programmable fixed points. The valve position indication is shown through LED components. As an option an analogue position feedback can be integrated.

Technical data

General data	
Material	
Body	PPS, stainless steel
Cover	PC
Sealing	EPDM
Power supply	24 V DC ± 10 %
Residual ripple	Max. 10 %
Setpoint setting	4...20 mA (0...20 mA adjustable via communication interface)
Output resistance	180 Ω
Control medium	
Dust concentration	Class 7: (<40 µm particle size)
Particle density	Class 5 (<10 mg/m ³)
Pressure condensation point	Class 3 (<-20 °C)
Oil concentration	Class X (<25 mg/m ³)
Ambient temperature	0 °C...+60 °C
Pilot air ports	Threaded ports G 1/8 stainless steel or Push-in connectors (Ø 6 mm and 1/4" tube)
Supply pressure	Low air flow rate: 0...7 bar ¹⁾ High air flow rate: 3...7 bar (in preparation)
Air input filter	Exchangeable (mesh aperture ~0.1 mm)

Dimensions [mm]



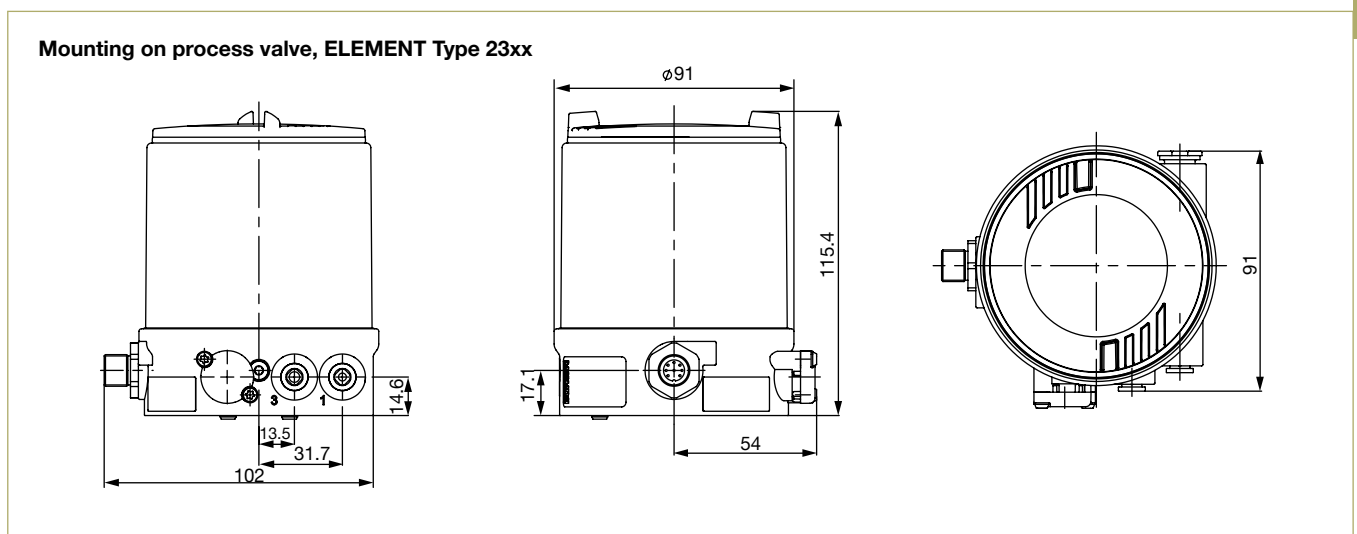
Actuator system	
Actuator series	Low air flow rate: Ø Actuator 70/90 mm
ELEMENT 23xx	High air flow rate: Ø Actuator 130 mm
Position detection module	
	Contact-free, wear-free
Stroke range valve spindle	
	3...45 mm
Installation	
	As required, preferably with actuator in upright position
Protection class	
	IP65/IP67 acc. to EN 60529, Type 4X acc. to NEMA 250 standard
Protection class	
	3 acc. to DIN EN 61140
Approvals	
ATEX	Ⓢ II 3D Ex tc IIIC T135 °C Dc / Ⓢ II 3G Ex ec IIC T4 Gc Certificate; BVS 14 ATEX E 008 X
IECEX	Ex tc IIIC T135 °C Dc / Ex ec IIC T4 Gc Certificate; IECEX BVS 14.0009 X
UL	cULus Certificate; E238179
Ignition protection class	
	II 3D Ex tc IIIC T135 °C Dc II 3G Ex ec IIC T4 Gc
Conformity	
	EMC directive 2014/30/EU
Options	
	Analogue position feedback, 4...20 mA
Fieldbus communication	
	AS-Interface, IO-Link, bÜS-Bürkert System Bus (based on CANopen)

1) The supply pressure has to be 0.5...1 bar above the minimum required pilot pressure for the valve actuator.

Technical data continued

Without filed bus communication	
Power supply	24 V DC \pm 10 %
Risidual ripple	10 %
Power consumption	<3.5 W
Electrical connection	
Multipole	M12 (8 pins), stainless steel
Cable gland	M16x1.5 (cable \varnothing 5...10 mm) with screw terminals for cable cross-sections 0.14...1.5 mm ²
Technical data AS-interface - (Option)	
Profile	S-7.3.4 Output: 16 Bit setpoint / Certificate no. 87301 acc. to Version 3.0-7.A S.5 Output: 16 Bit setpoint; Input: 16 Bit feedback / Certificate no. 95401 acc. to version 3.0
Programmed Information	See operating instructions
Power supply through bus line	29.5...31.6 V DC acc. to specification
Max. Current consumption	150 mA
Electrical connection	M12 x 1, 4 pin stainless steel plug assembled to 80 cm cable and flat cable clip

Dimensions [mm]



Ordering chart

Control function Pilot valve system	Communication	Electrical connection	Analogue feedback	Pilot air ports threaded ports	Article no.	
					Standard	ATEX II cat. 3G/D
Actuator series ELEMENT Type 23xx, size \varnothing 70/90 mm						
Low air capacity single-acting	-	M12 multipole	-	G 1/8	227405	265046
			yes	G 1/8	227406	265047
		Cable gland	-	G 1/8	227401	265044
			yes	G 1/8	227402	265045
	AS-Interface S-7.A.5	M12 connector/ flat cable clip/ 80 cm cable	16 Bit via Bus	G 1/8	239615	265043
Actuator series ELEMENT Type 23xx, size \varnothing 130 mm						
High air capacity single-acting	-	M12 multipole	-	G 1/8	227426	265059
			yes	G 1/8	227427	265060
		Cable gland	-	G 1/8	227422	265057
			yes	G 1/8	227423	265058
	AS-Interface S-7.A.5	M12 connector/ flat cable clip/ 80 cm cable	16 Bit via Bus	G 1/8	239616	265056



Accessories

Description	Actuator size	Control function	Article no.
Adapter kit actuator series Type 23xx/2103	Ø 70 / 90 / 130 mm	universal	679917

For installation kits to 3rd party process valves please see data sheet **Type KK01** ▶ adapter kits for hygienic process valves or contact your sales office for related drawings or individual engineering support.

Description	Article no.
M12 socket 8 pin with 5 m cable for power supply and input/output signals	919267
Silencer G 1/8	780779
Silencer, push-in connector	902662
Sensor puck (spare part)	682240
USB interface for serial communication	227093

8694

Control head for decentralized automation of ELEMENT process valves

8695

- Contact-free inductive valve position registration (Teach function)
- Coloured illuminated status display
- Internal control air routing
- Fieldbus AS-Interface or DeviceNet (option)
- With ATEX II cat. 3G/D approval

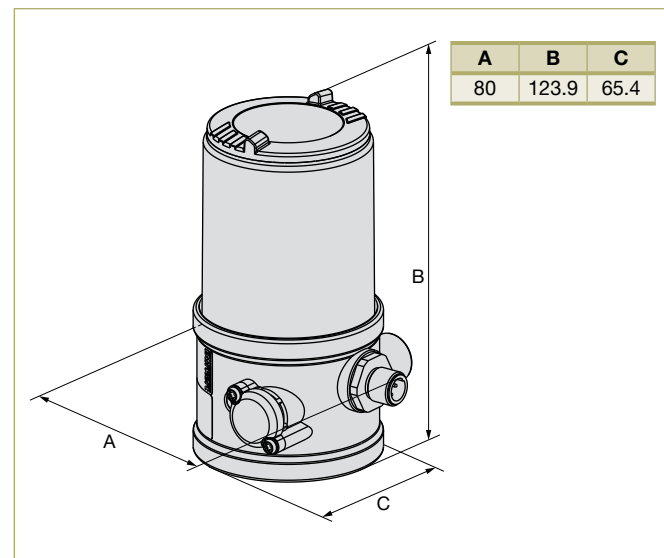


The control head Type 8695 is designed for decentralized automation of ELEMENT Type 21xx pneumatic process valves with smaller nominal size. The registration of the valve position is done through a contact-free analog position sensor, which automatically recognises and saves the valve end position through the teach function when starting up. The integrated pilot valve controls single or double-acting actuators. The design of the control unit and the actuator is specially designed for the requirements of a hygienic process environment and enables an internal control air channel without external tubings. Besides the electrical position feedback signal the status of the device is shown directly on the control head itself through coloured LEDs showing a clear visible valve position status. As an option a fieldbus interface, AS-Interface, can be chosen. The housing is easy to clean and features proven IP protection and chemically resistant materials for use in hygienic processing in the food, beverage and pharmaceutical industries. Combined with Bürkert ELEMENT actuators the unique pilot valve system enables a compressed air recycling that avoids contamination from the environment in the actuator chambers.

Technical data

General data	
Material	
Body	PPS, Stainless steel
Cover	PC
Sealing	EPDM
Control medium	Neutral gases, air ISO 8573-1
Dust concentration	Class 7: (<40 µm particle size)
Particle density	Class 5 (<10 mg/m ³)
Pressure condensation point	Class 3 (<-20 °C)
Oil concentration	Class X (<25 mg/m ³)
Supply pressure	0...7 bar ¹⁾
Actuator system	For single or double-acting actuators
Actuator series 21xx	Actuator Ø 50 mm
Pilot air ports	Threaded ports G 1/8 stainless steel or Push-in connectors (Ø 6 mm and 1/4" tube)
Position feedback	Analog position sensor (contact-free) with autotune switchpoint (PNP) (NPN on request)
Stroke range valve spindle	2.5...32 mm
Ambient temperature	0 °C...+55 °C
Installation	As required, preferably with actuator in upright position
Protection class	IP65/IP67 acc. to EN 60529, Type 4X acc. to NEMA 250 standard

Envelope Dimensions [mm]



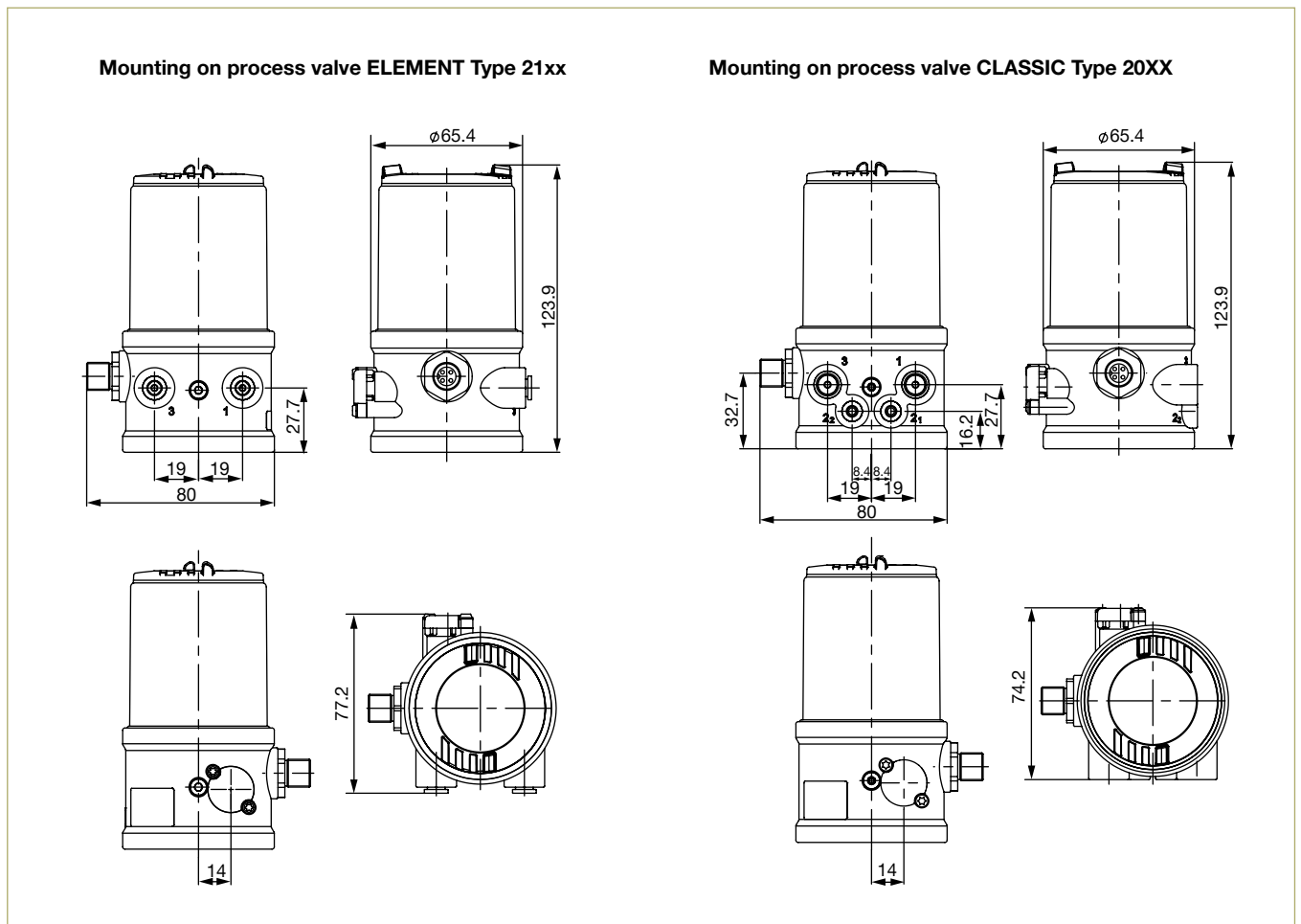
Protection class	3 according to DIN EN 61140
Approvals	
ATEX	⊕ II 3D Ex tc IIIC T135 °C Dc / ⊕ II 3G Ex ec IIC T4 Gc
IECEX	Certificate; BVS 14 ATEX E 008 X Ex tc IIIC T135 °C Dc / Ex ec IIC T4 Gc
UL	Certificate; IECEX BVS 14.0009 X cULus Certificate; E238179
Ignition protection class	II 3D Ex tc IIIC T135 °C Dc II 3G Ex ec IIC T4 Gc
Fieldbus communication	AS-Interface, DeviceNet
Conformity	EMC directive 2014/30/EU
Power supply	24 V DC ± 10 %
Residual ripple with DC	10 %
Power consumption	<2 W
Electrical connection	Multipole M12, 8 pin
Output	Max. 100 mA per output

1) The supply pressure has to be 0.5 bar...1 bar above the minimum required pilot pressure for the valve actuator.

Technical data continued















With Fieldbus communication; AS-Interface	
Profile	S-B.A.E. (A/B slave, max. 62 slaves/master) Certificate No. 87301 acc. to version 3.0
Power supply; through bus line separated from bus signal	29.5...31.6 V DC According to specification On request
Power consumption Units without external power supply	
Max. power consumption	120 mA
Power consumption in normal operation (after current reduction; Valve + 1 end position achieved)	90 mA
Output	
Contact rating	≤ 1 W over AS-Interface
Watchdog function	Integrated
Electrical connection	M12 4-pins
Programming data	See operating instructions
With Fieldbus communication; DeviceNet	
Profile	Group 2 Only Slave Device; MAC-ID and transfer rate adjustable through DIP-switch
Power supply	11...25 V DC UL: NEC Class 2
Power consumption	≤ 80 mA
Output	
Inrush current	≤ 50 mA
Hold current	≤ 30 mA
Input	
"0"	0...1.5 V
"1"	≥ 8 V
Electrical connection	M12-Micro Style flange connector 5-pins (configuration according DeviceNet specification)

Dimensions [mm]




Ordering chart





8695

Electrical connection	Communication	Control function	Pilot air ports threaded ports	Article no.	
				Standard	ATEX II cat. 3G/D
M12 multipole	AS-Interface S-B.A.E	single-acting	G 1/8	227444 	265075 
		double-acting	G 1/8	227440 	265069 
	DeviceNet	single-acting	G 1/8	238724 	265076 
		double-acting	G 1/8	265081 	265070 
		single-acting	G 1/8	227446 	265077 
	double-acting	G 1/8	227442 	265071 	
			G 1/8	234246 	265067 

Accessories

Specifications	Actuator size [mm]	Control function	Article no.
Adapter kit ELEMENT Types 21xx	Ø 50	universal	679918 

For installation kits to 3rd party process valves please see data sheet **Type KK01** ▶ adapter kits for hygienic process valves or contact your sales office for related drawings or individual engineering support.

Specifications	Article no.
M12 socket 8 pin with 5 m cable for power supply and input/output signals	919267 
Silencer with G 1/8	780779 
Silencer with push-in connector	902662 
Sensor puck (spare part)	677245 

Digital electropneumatic positioner for the integrated mounting on process control valves

86991

- Compact, robust stainless steel design
- Start-up by automatic Tune function
- Contact-free position sensor
- Integrated control air routing
- Analogue Feedback (option)



Compact positioner for integrated mounting on pneumatically operated process valves. Remote setpoint adjustment via a 4...20 mA signal. A contact-free continuous sensor measures the position of the valve spindle. Simple installation through automatic tune function and setting through DIP-switch

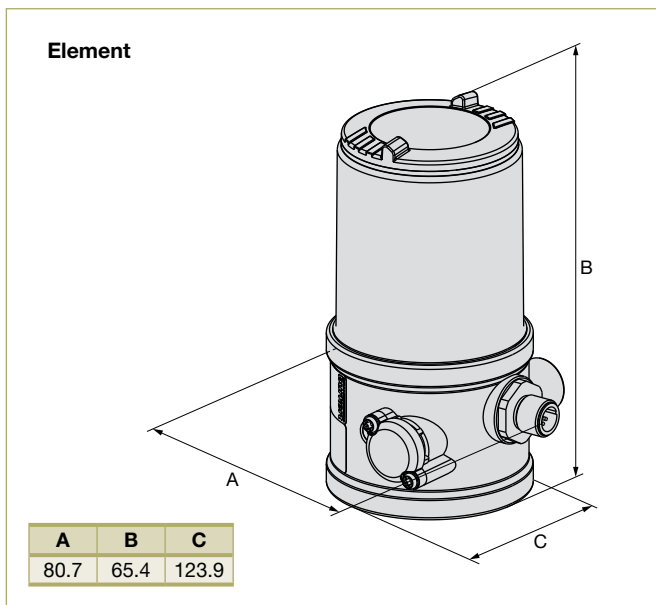
- Close tight function,
- Characteristic curves selection
- Reversal of effective direction
- Switching manual /automatic operation
- Binary input

A software interface can be used for, amongst others, linearisation of the operation characteristics by using free programmable fixed points. The valve position indication is shown through LED components. As an option an analogue position feedback can be integrated.

Technical data

Material	
Body	PPS, Stainless steel
Cover	PC
Sealing	EPDM
Power supply	24 V DC \pm 10 %
Residual ripple	10 %
Setpoint setting	4...20 mA (default setting)/0...20 mA
Output resistance	180 Ω
Control medium	Neutral gases, air ISO 8573-1
Dust concentration	Class 7: (< 40 μ m particle size)
Particle density	Class 5 (< 10 mg/m ³)
Pressure condensation point	Class 3 (< -20 °C)
Oil concentration	Class X (< 25 mg/m ³)
Ambient temperature	0 °C...+55 °C
Pilot air ports	Threaded ports G 1/8 stainless steel or push-in connector (tube \varnothing 6 mm / 1/4")
Supply pressure	0...7 bar ¹⁾
Actuator system	For single-acting actuators
Actuator series 23xx/2103	Actuator \varnothing 50 mm
Position detection module	Contact-free, wear-free
Stroke range valve spindle	3...32 mm
Installation	As required, preferably with actuator in upright position
Protection class	IP65/IP67 acc. to EN 60529, Type 4X acc. to NEMA 250 standard

Dimensions [mm]

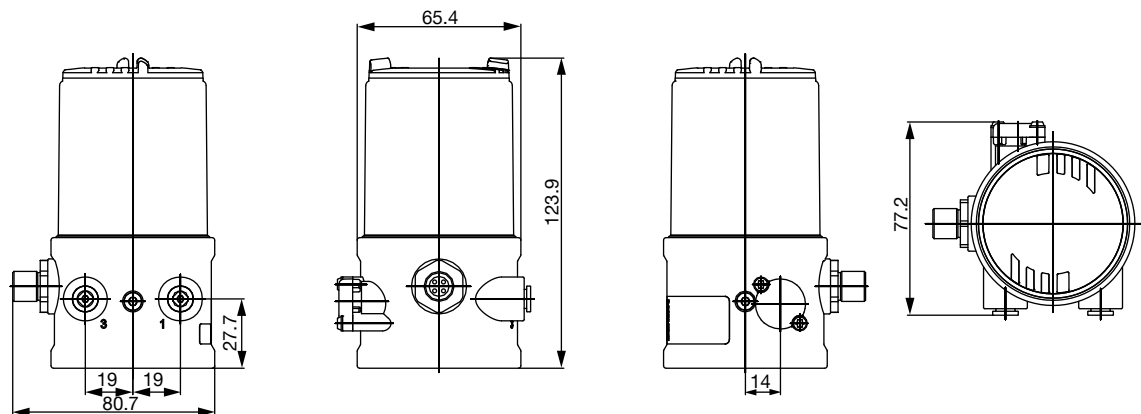


Approvals	
ATEX	⊗ II 3D Ex tc IIIC T135 °C Dc / ⊗ II 3G Ex ec IIC T4 Gc
IECEX	Certificate; BVS 14 ATEX E 008 X Ex tc IIIC T135 °C Dc / Ex ec IIC T4 Gc
UL	Certificate; IECEX BVS 14.0009 X cULus Certificate; E238179
Ignition protection class	II 3D Ex tc IIIC T135 °C Dc II 3G Ex ec IIC T4 Gc
Power consumption	<3.5 W
Electrical connection	Multipole connection M12 (8-pins), Stainless steel
Protection class	3 acc. to DIN EN 61140
Conformity	EMC directive 2014/30/EU
Options	Analogue position feedback, 4...20 mA

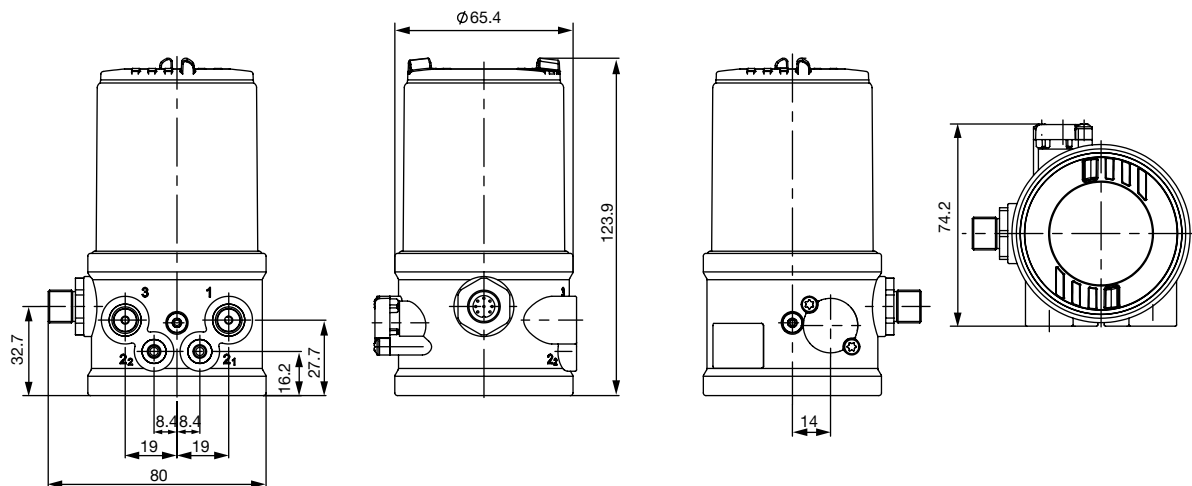
1) The supply pressure has to be 0.5...1 bar above the minimum required pilot pressure for the valve actuator.

Dimensions [mm]

Mounting on ELEMENT process control valves, Type 27XX (external control air routing)



Mounting on hygienic process valves with external air routing



Ordering chart

Control function	Electrical connection	Analogue feedback	1 Binary input	Pilot air ports threaded ports	Article no. Standard	Article no. ATEX II cat. 3G/D
Actuator series ELEMENT Types 23xx actuator size Ø 50 mm (internal control air routing)						
Single acting	M12 multipole	-	yes	G 1/8	227448	265082
		Yes	yes	G 1/8	227449	265083
Mounting on 3rd party actuators (external control air routing)						
Single acting	M12 multipole	-	yes	G 1/8	223897	265084
		Yes	yes	G 1/8	223898	265085



Accessories

Specifications	Actuator size [mm]	Control function	Article no.
Adapter kit ELEMENT Types 21xx	Ø 50	universal	679918

For installation kits to 3rd party process valves please see data sheet **Type KK01** ▶ adapter kits for hygienic process valves or contact your sales office for related drawings or individual engineering support.

Specifications	Article no.
M12 socket 8 pin with 5 m cable for power supply and input/output signals	919267
Silencer with G 1/8	780779
Silencer with push-in connector 6 mm	902662
USB interface for serial communication	227093

8696

Pneumatic control unit for decentralized automation of ELEMENT process valves

8697

- Compact design
- Integrated pilot valve with manual override
- Internal control air routing
- Automatic end position adjustment
- With ATEX II cat. 3G/D and cat. 2D/G approval

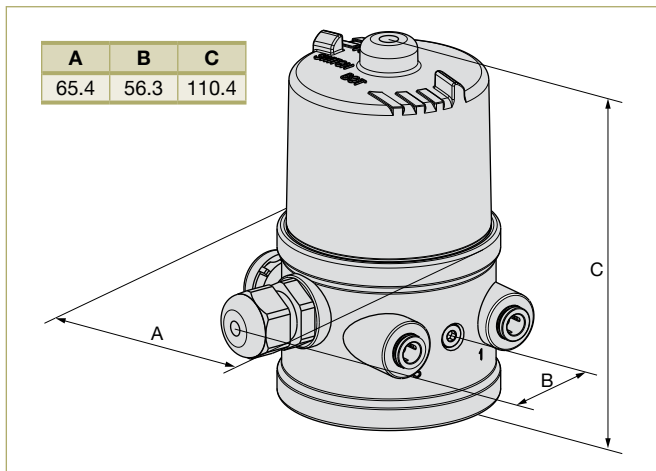


The pneumatic control unit Type 8697 is designed for decentralized automation of process valves ELEMENT Type 21xx. Mechanical or inductive limit switches register the position of the valve. The integrated pilot valve controls single-acting actuators. The design of the control unit and the actuator enables an internal control air routing without external tubings. Besides the electrical position feedback signal the status of the device is shown directly on the control unit itself via LEDs. The housing is easy to clean and features proven IP protection and chemically resistant materials for use in hygienic processing, in food, beverage and pharmaceutical industries. Combined with Bürkert ELEMENT actuators the unique pilot valve system enables a compressed air recycling that avoids actuator chambers contamination from the environment.

Technical data

Materials	
Body	PPS
Cover	PC
Sealing	EPDM
Operating voltage	
Pilot valve	24 V DC \pm 10 % - residual ripple 10 %, consumption 1 W
Micro switch	24 V-Version: 0...48 V AC/DC, max. 2 A 230 V-Version: 50...250 V AC/DC, max. 2 A
Initiator	10...30 V DC - max. 100 mA per initiator
Control medium	
Dust concentration	Class 7: max. particle size 40 μ m
Particle density	Class 5: max. particle size 10 mg/m ³
Pressure condensation point	Class 3: max. -20 °C or min. 10 °C below the lowest operating temperature
Oil concentration	Class X: max. 25 mg/m ³
Supply pressure	
	3...7 bar ¹⁾
Pilot air ports	
	Threaded ports G 1/8 or push-in connector (tube \varnothing 6 mm / 1/4")
Position feedback	
	2x micro switch (0...48 V AC/DC, max. 2 A) 2x micro switch (50...250 V AC/DC, max. 2 A) 2x initiator (24 V DC), PNP shutter 3-wire with LEDs 2x initiator NAMUR (8.2 V DC) (2-wire) with LEDs 2x initiator (24 V DC), shutter (2-wire) with LEDs
Stroke range valve spindle	
	2...36 mm

Dimensions [mm]



Ambient temperature

with/without pilot valve	0 °C...+55 °C (II 3D Ex tc IIIC T135 °C Dc, II 3G Ex nA IIC T4 Gc)
with/without pilot valve	0 °C...+55 °C (II 2D Ex IIIC ia T135 °C Db, II 2G Ex ia IIC T4 Gb)
with pilot valve	-10...+55 °C (without ATEX or for II 2G Ex ia IIC T4 Gb)
without pilot valve	-20...+60 °C (without ATEX or for II 2G Ex ia IIC T4 Gb)

Installation

As required, preferably with actuator in upright position

Protection class

IP65 / IP67 acc. to EN 60529,
4X acc. to NEMA 250 Standard

Protection class

3 acc. to DIN EN 61140

Conformity

EMC directive 2014/30/EU

Ignition protection class

II 3D Ex tc IIIC T135 °C Dc
II 3G Ex ec IIC T4 Gc
II 3D Ex ia IIIC T135 °C Dc Db IP64
II 2G Ex ia IIC T4 Gb

Zulassung

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IECEX	Ex tc IIIC T135 °C Dc / Ex ec IIC T4 Gc Certificate; IECEX BVS 14.0009 X
UL	Ex tc IIIC T135 °C Dc / Ex ec IIC T4 Gc Certificate; IECEX BVS 14.0009 X cULus Certificate; E238179

Technical data continued

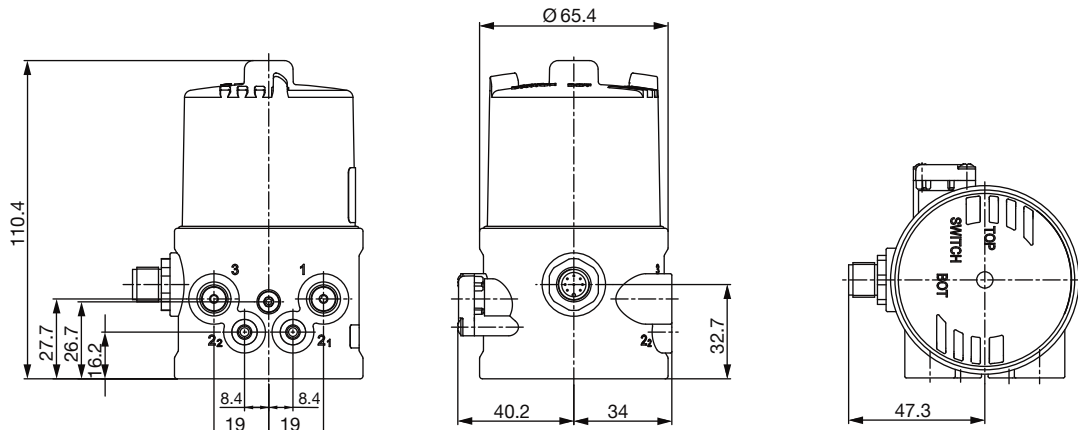
Electrical connection

Multipole	M12, 8 pin
Cable gland	M16 × 1.5 SW22 (cable diameter 5...10 mm), terminal screws 0.14...1.5 mm ²

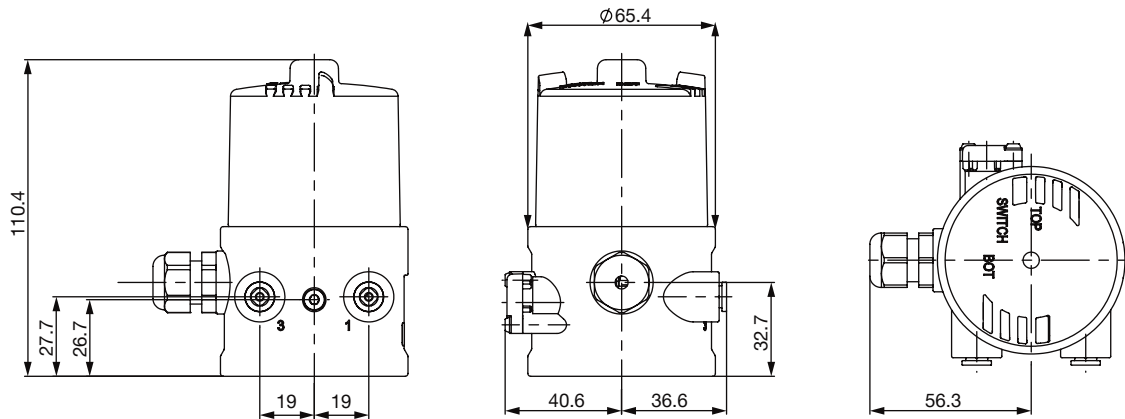
1) The supply pressure has to be 0.5...1 bar above the minimum required pilot pressure for the valve actuator.

Dimensions [mm]

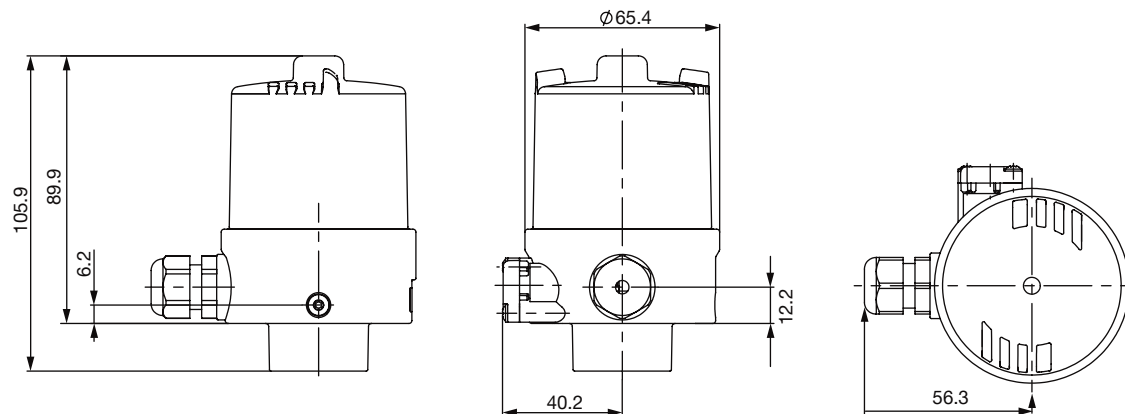
Control Unit for mounting on process valve CLASSIC Types 20XX



For ELEMENT valves



Feedback for mounting on process valve CLASSIC Types 20XX





Ordering chart

8697

End position feedback												
Inductive Switch 3-wire PNP	Inductive Switch 2-wire NAMUR	Inductive Switch 2-wire 24 V DC	Micro Switch 24 V DC	Micro Switch 50...250 V AC/DC	Feed- back status LEDs	Electri- cal con- nection	ATEX/ IECEX Cat. 3D/G Zone 22/2 ¹⁾	ATEX/ IECEX Cat. 2D/G Zone 21/1 ²⁾	ATEX/ IECEX Cat. 2G Zone 1 ³⁾	cULus	Pilot air ports threaded ports	Article no.
Pneumatic control unit for decentralized automation of ELEMENT On/Off process valves Type 21xx												
Pneumatic control unit (pilot valve 3/2 way, single acting NO/NC)												
2	-	-	-	-	yes	Cable gland	-	-	-	yes	G 1/8	248816
2	-	-	-	-	yes	Cable gland	yes	-	-	-	G 1/8	255847
2	-	-	-	-	yes	M12 multipole	yes	-	-	-	G 1/8	255849
2	-	-	-	-	yes	M12 multipole	-	-	-	yes	G 1/8	248818
-	2	-	-	-	yes	Cable gland	-	yes	-	-	G 1/8	248822
-	2	-	-	-	yes	Cable gland	-	-	yes	-	G 1/8	255862
-	-	2	-	-	yes	Cable gland	-	-	-	yes	G 1/8	248814
-	-	2	-	-	yes	Cable gland	yes	-	-	-	G 1/8	255845
Without end position feedback						M12 multipole	-	-	-	yes	G 1/8	260278
						Cable gland	-	-	-	yes	G 1/8	260279
						Cable gland	yes	-	-	-	G 1/8	260280
Feedback (without pilot valve)												
2	-	-	-	-	yes	Cable gland	-	-	-	yes	G 1/8	248812
2	-	-	-	-	yes	Cable gland	yes	-	-	-	G 1/8	255843
2	-	-	-	-	yes	M12 multipole	yes	-	-	-	G 1/8	255857
2	-	-	-	-	yes	M12 multipole	-	-	-	yes	G 1/8	250471
-	2	-	-	-	yes	Cable gland	-	yes	-	-	G 1/8	248820
-	2	-	-	-	yes	Cable gland	-	-	yes	-	G 1/8	255860
-	-	2	-	-	yes	Cable gland	-	-	-	yes	G 1/8	248810
-	-	2	-	-	yes	Cable gland	yes	-	-	-	G 1/8	255841
-	-	-	2	-	-	-	-	-	-	yes	G 1/8	248824
-	-	-	-	2	-	-	-	-	-	yes	G 1/8	248808

Ordering chart

End position feedback						Electrical connection	ATEX/IECEX Cat. 3D/G Zone 22/2 ¹⁾	ATEX/IECEX Cat. 2D/G Zone 21/1 ²⁾	ATEX/IECEX Cat. 2G Zone 1 ³⁾	cULus	Pilot air ports threaded ports	Article no.
Inductive Switch 3-wire PNP	Inductive Switch 2-wire NAMUR	Inductive Switch 2-wire 24 V DC	Micro Switch 24 V DC	Micro Switch 50...250 V AC/DC	Feedback status LEDs							
Electrical position feedback for combination for central automation of On/Off CLASSIC valve systems Type 20xx												
Feedback (without pilot valve)												
2	-	-	-	-	yes	Cable gland	-	-	-	yes	without	248827
2	-	-	-	-	yes	M12 Multipole	yes	-	-	-	without	255851
2	-	-	-	-	yes		-	-	-	yes	without	250472
-	2	-	-	-	yes	Cable gland	-	yes	-	-	without	248831
-	2	-	-	-	yes	M12 Multipole	-	-	yes	-	without	255863
-	-	2	-	-	yes		-	-	-	yes	without	248826
-	-	2	-	-	yes		yes	-	-	-	without	255850
-	-	-	2	-	-		-	-	-	yes	without	248833
-	-	-	-	2	-	-	-	-	-	yes	without	248825

1) II 3D Ex tc IIIC T135 / II 3G Ex nA IIC T4 Gc

2) II 2D Ex ia IIIC T135 °C Db IP64 / II 2G Ex ia IIC T4 Gb

3) II 2G Ex ia IIC T4 Gb

Note: cULus only valid for versions without ATEX approval

Accessories

Adapter kit			
Specifications	Actuator size	Control function	Article no.
Adapter kit ELEMENT Types 21xx	Ø 50 mm	single-acting / universal	682259
Adapter kit CLASSIC Types 20xx	Ø 40 mm	universal	682263
	Ø 50/63/80 mm	universal	682264
	Ø 100/125/80 mm	universal	682265
	Ø 175/225 mm	universal	684944
Retrofit kit CLASSIC Type 20xx	Ø 40 mm	universal	698573

4) Retrofit kit for retrofitting old CLASSIC drives without clear hood on the drive cover or as a replacement for Type 1062 (phase out). Please note the general installation instructions in the manual.

For installation kits to 3rd party process valves please see data sheet **Type KK01** ▶ adapter kits for hygienic process valves or contact your sales office for related drawings or individual engineering support.

Accessories for ELEMENT

Specifications	Article no.
M12 socket, 8-pins, 5 m assembled cable	919267
Silencer G 1/8	780779
Silencer, push-in connector	902662

Digital electropneumatic positioner SideControl

8791

- Compact and robust design
- Easy to start using tune function
- Dynamic positioning system with no air consumption in controlled state
- AS-Interface Fieldbus (optional)
- Mounting acc. to IEC 60534-6-1/ VDI VDE 3845 or Remote



The robust and compact positioner is designed to a standardisation acc. to IEC 534-6 or VDI/ VDE 3845 for assembly with linear and rotary actuators. In addition, the remote version with the displacement position sensor can be combined with Bürkert process control valves. The setpoint setting for the electropneumatic digital positioner SideControl BASIC occurs using a standard signal 4...20 mA or with AS-Interface as an option. In addition there is a binary input and an optional analogue feedback available. The valve opening is signalled by a mechanical indicator element and the device status is shown on three coloured LEDs. All the operational elements are found in the housing. The start-up happens automatically, and directly at the device the following functions can be activated through DIP switches:

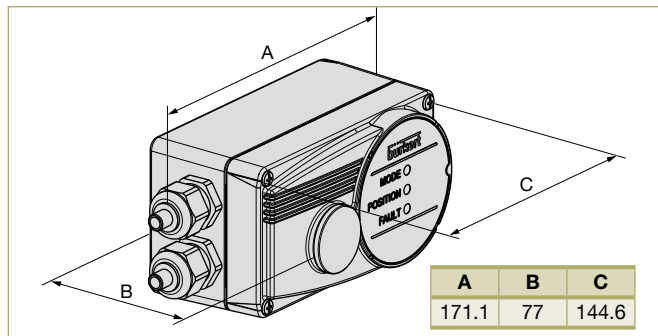
- Close tight function
- Inversion of the operating direction of the setpoint signal
- Characteristic curves selection
- Switching - manual and automatic operation

Additional possibilities on configuration and parameter setting, for example, linearisation of the operation characteristics by using communications software which allows customised programming. The pilot valve system can be used equally for single and double-acting drives. It is characterised by a defined safety feature in case of failure of the electrical or pneumatic power supply and possesses an enormous air capacity range with pressure supply up to 7 bar.

Technical data

General data	
Material	
Body	Aluminium plastic-coated
Seal	EPDM, NBR, FKM
Operating voltages	24 V DC \pm 10 %
Residual ripple	Max. 10 %
Setpoint setting	4...20 mA (0...20 mA adjustable using configurations software)
Input resistance	0/4...20 mA: 180 Ω
Analogue feedback	4...20 mA (0...20 mA adjustable using configurations software, max. Burden 560 Ω)
Binary input	0...5 V = log "0", 10...30 V = log "1"

Dimensions [mm]




Control medium	Neutral gases, air DIN ISO 8573-1
Dust concentration	Class 7 (< 40 μ m particle size)
Particle density	Class 5 (< 10 mg/m ³)
Pressure condensation point	Class 3 (< -20 °C)
Oil concentration	Class X (< 25 mg/m ³)
Ambient temperature	-10 °C...+60 °C (without Ex-Approval) 0 °C...+60 °C (with ATEXIECEx-Approval)
Pilot air ports	Threaded ports G 1/4
Supply pressure	1.4...7 bar ¹⁾²⁾
Air supply filter	Exchangeable (mesh aperture ~0.1 mm)
Actuator system	Single and double-acting up to 150 lN/min. Air capacity 95 lN/min (with 1.4 bar ²⁾) for aeration and ventilation 150 lN/min (with 6 bar ²⁾) for aeration and ventilation (Q _{Nn} = 100 lN/min (acc. to the definition with decrease in pressure from 7...6 bar absolute)
Position detection module	Potentiometer max. angle 180°
Stroke range valve spindle	Min. 30° on the rotary shaft, depending on lever
Installation	As required, LEDs above or sideways
Protection class	IP65/IP67 acc. to EN 60529, Type 4X acc. to NEMA 250 standard
Power consumption	< 3.5 W
Electrical connection	
Multipole connection	M12, 8 pin
Cable gland	2x M20 x 1.5 (cable \varnothing 6...12 mm) on screw terminals (0.14...1.5 mm ²)
Remote Version	1x M12 x 1.5 (cable \varnothing 3...6.5 mm)

1) The supply pressure has to be 0.5...1 bar above the minimum required pilot pressure for the valve actuator

2) Pressure values [bar]: Overpressure with respect to atmospheric pressure

Technical data continued

Technical data	
Protection class	III acc. to DIN EN 61140
Conformity	EMC directive 2014/30/EU
CSA approval information	
Product category code	Class 3221 82-VALVES - Actuators - Certified to US standards Class 3221 02-VALVES - Actuators
Ex approvals	
ATEX	⊕ II 3G Ex ec ic IIC T4 Gc / ⊕ II 3D Ex tc IIIC T135 °C Dc
IECEX	Certificate; BVS 16 ATEX E 118 X Ex ec ic IIC T4 Gc / Ex tc IIIC T135 °C Dc Certificate; IECEX BVS 16.0091 X
Considered standards	CAN/CSA-C22 2 No. 139 UL 429
CSA trademark	
Technical data - AS-interface (Option)	
Profile	S-7.3.4 Output: 16 Bit Set point/Certificate No. 87301 acc. to Version 3.0 S-7.A.5 Output: 16 Bit set point; Input: 16 Bit feedback/certificate No. 95401 acc. to Version 3.0
Programmed data	See instruction manual
Operating voltage	over Bus connection 29.5...31.6 V DC acc. to AS-Interface specification
Max. current consumption	150 mA
Electrical connection	M12 x 1, 4 pin stainless steel connection assembled with 80 cm cable and fl at cable clamp
Technical data - Linear Remote Position Sensor (ELEMENT, CLASSIC)	
Electrical connection	
Cable gland	1xM16 x 1.5 (cable Ø 5...10 mm) on terminal screws
Connection cable length	(0.14...1.5 mm ²) 10 m
Operating voltage	24 V DC ± 10 %
Power consumption	< 0.3 W
Sensor measurement range	3...45 mm (Stroke range valve spindle)
Actual position signal	Digital (RS485)
Ambient temperature	-25 °C...+80 °C
Protection class	III acc. to DIN EN 61140
Protection class	IP65 and IP67 acc. to EN 60529, Type 4X acc. to NEMA 250 standard
Ignition protection class	II 3D Ex tc IIIC T135 °C Dc II 3G Ex nA IIC T4 Gc
Conformity	EMC directive 2014/30/EU
Approvals	cCSAus

Technical data	
Technical data - rotative Remote position Sensor (NAMUR)	
Electrical connection	2 m round cable (shielded)
Operating voltage	10...30 V DC
Power consumption	< 0.8 W
Sensor measurement range	0°...360°
Actual position signal	Digital (RS485)
Ambient temperature	-25 °C...+80 °C
Protection class	III acc. to DIN EN 61140
Protection class	IP65 acc. to EN 60529
Conformity	EMC directive 2014/30/EU
Approvals	UL (cULus) Certificate no. E226909
Technical data - Position feedback with proximity switches (Accessory)	
Electrical connection	M12, 4 pin
Output function	3-wire, normally open contact, PNP
Operating voltage	10...30 V DC
Residual ripple	≤ 10 % U _{ss}
DC rated current	≤ 100 mA
Protection class	IP65 and IP67
Protection class	III acc. to DIN EN 61140
Conformity	EMC directive 2014/30/EU
Approvals	cCSAus

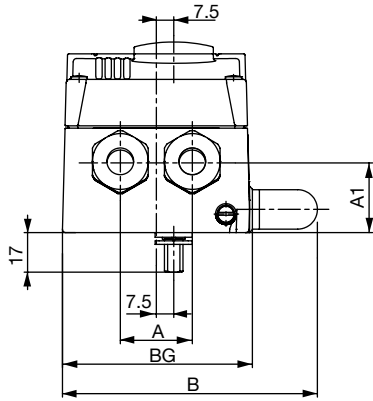
Note: The position feedback has two proximity switches which are independently adjustable via switch lugs.

Using a remote positioner the length of the control air pipes influences the dynamics and attainable accuracy of the position control loop. The length of the control air pipes therefore should be as short as possible.

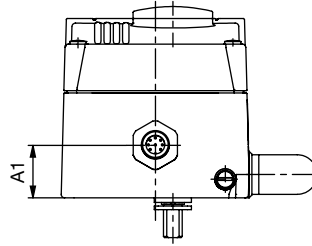
Dimensions [mm]

8791

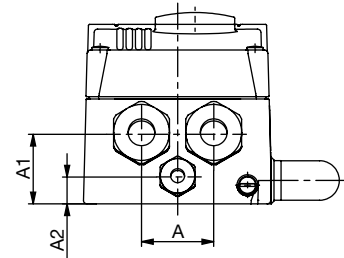
Standard version



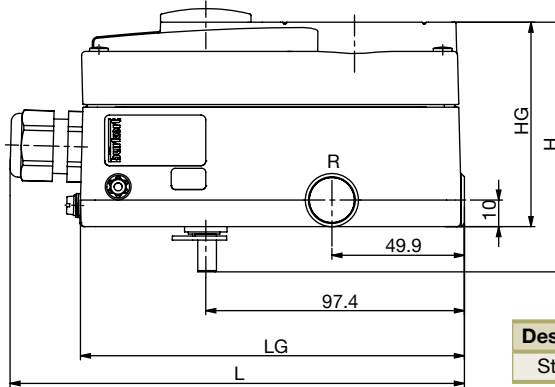
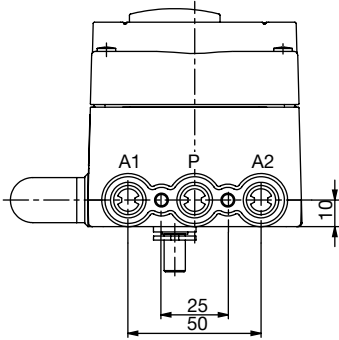
Multiple version



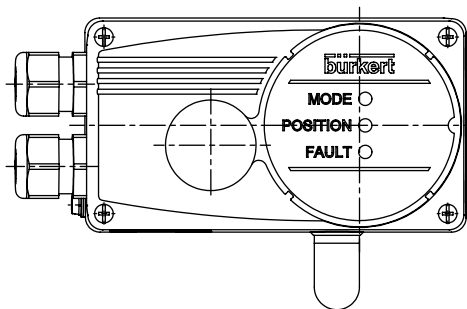
Remote version



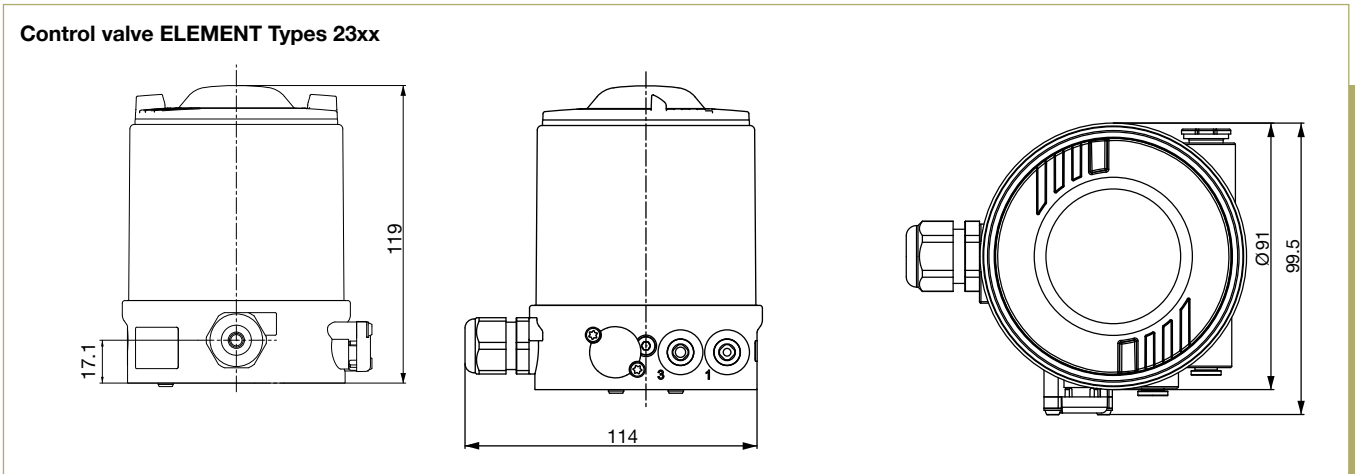
Description	BG	B	A	A1	A2
Standard	81.8	109.8	31	30	-
Remote	81.8	109.8	31	30	11.5
Multipole	81.8	109.8	-	22.5	-



Description	LG	L	HG	H
Standard	144.6	171.1	77	94.1



Dimensions [mm]



8791

Ordering chart

Assembly variations	ELEMENT Actuator size	Control function	Pilot valve system/Air capacity	Communi-cation	Electrical connection	Binary input	Analogue feedback	ATEX II 3GD/IECEX	Article no.	
NAMUR IEC 60534-6-1 VDI/VDE 3845 (IEC 60534-6-2)	-	single and double-acting	universal	no	Cable gland	yes	no	-	211521 🔗	
						yes	yes	-	211522 🔗	
						yes	no	yes	310303 🔗	
						yes	yes	yes	310304 🔗	
					Multipole	yes	no	-	211523 🔗	
						yes	yes	-	211524 🔗	
						AS-Interface	no	yes/16 bit	-	239617 🔗
							no	yes/16 bit	yes	310305 🔗
Remote	Ø 70/90 mm	single-acting	low	no	Cable gland	yes	no	-	224868 🔗	
						yes	yes	-	224869 🔗	
						yes	no	-	211531 🔗	
	Ø 130 mm	single and double-acting	universal	no	Cable gland	yes	yes	-	211532 🔗	
						yes	no	-	234576 🔗	
						yes	yes	-	234578 🔗	
Remote IP20	Ø 70/90 mm	single-acting	low	no	Cable gland	yes	no	-	234576 🔗	
						yes	yes	-	234578 🔗	
	Ø 130 mm	single and double-acting	universal	no	Cable gland	yes	no	-	211533 🔗	
						yes	yes	-	211534 🔗	

Assembly variations	Electrical connection	Article no.	
		Standard	ATEX II 3 GD/ IECEx
Remote Position Sensor			
ELEMENT Type 23xx	Cable gland - 10 m round cable	212360 🔗	226860 🔗
NAMUR (rotative)	Cable gland - 2 m round cable (max. extension 10 m)	211536 🔗	-



8791

Accessories

Description	Article no.
Accessories for SideControl BASIC NAMUR	
Assembly bridge VDI/VDE 3845 (IEC 60534-6-2), stainless steel	770294
Adapter kit VDI/VDE 3845 (IEC 60534-6-2), stainless steel	787338
Adapter kit linear actuators IEC 60534-6-1, stainless steel	787215
Position feedback with proximity switches (optional upgrade feature) ¹⁾	677218
Accessories for SideControl BASIC Remote	
Bracket for wall mounting, stainless steel	675715
DIN rail assembly kit, Aluminium/stainless steel	675702
Adapter kit - remote sensor, ELEMENT Type 23xx control valves	
Actuator size Ø 70/90/130 mm	679917
Sensor Puck (replacement part)	682240
Standard Accessories	
USB Interface for serial communication	227093
M12 socket 8 pin with 5 m cable for power supply and input/output signals	919267
Silencer G ¼ (spare part)	780780

1) External end position feedback for upgrading SideControl NAMUR

Digital electropneumatic positioner SideControl

- Compact and robust design
- Easy to start using Tune function
- Integrated diagnostic functions for valve monitoring
- Dynamic positioning system with no air consumption in controlled state
- PROFIBUS DP-V1, DeviceNet, EtherNet/IP, PROFINET, Modbus TCP or būs (Bürkert System Bus)

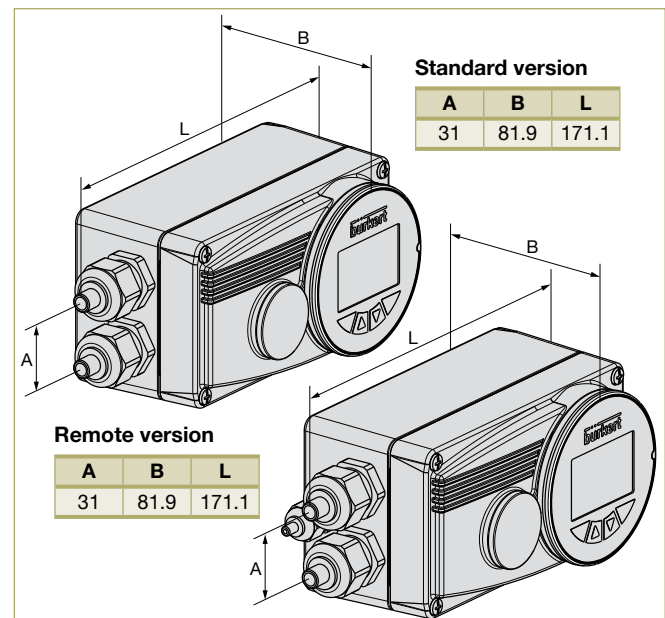


The robust and compact positioner is designed to standardisation acc. to IEC 60534-6-1 or VDI/VDE 3845 (IEC 60534-6-2) for assembly with linear and rotary actuators. In addition, the remote version with the displacement position sensor can be combined with Bürkert process control valves. The digital electropneumatic positioner SideControl can be operated with the usual current and voltage standard signals and can also be equipped with the fieldbus interface. The Positioner is equipped with additional diagnostic functions to monitor the state of the valve. Through status signals, valve diagnostic messages are transmitted according to NAMUR NE 107 recommendations and recorded as history. With the diagnosis, the operating conditions of the control valve can be monitored. This allows planned maintenance and optimises plant availability. Operation occurs via the external operation and display module with a backlit graphical display. The user operation is very simple and clear, identical to the Bürkert positioner or process controller TopControl, Type 8692/8693. The pilot valve system can be used equally for single and double-acting actuators. It is characterised by a defined safety feature in case of failure of the electrical or pneumatic power supply and possesses an enormous air capacity range with pressure supply up to 7 bar.

Technical data

General data	
Material	
Body	Aluminium plastic-coated
Seal	EPDM, NBR, FKM
Operating voltages	24 V DC \pm 10 %
Residual ripple	Max. 10 %
Setpoint setting	0/4...20 mA and 0...5/10 V
Input resistance	0/4...20 mA: 180 Ω 0...5/10 V: 19 k Ω
Analogue feedback	4...20 mA, 0...20 mA 0...10 V, 0...5 V
Binary input	Galvanically isolated, 0...5 V = log "0", 10...30 V = log "1"
Binary output	2 Outputs (optional), galvanically separated 100 mA, Output will be synchronised when overloaded
Control medium	Neutral gases, air DIN ISO 8573-1
Dust concentration	Class 7 (<40 μ m particle size)
Particle density	Class 5 (<10 mg/m ³)
Pressure condensation point	Class 3 (<-20 °C)
Oil concentration	Class X (<25 mg/m ³)

Dimensions [mm]




Ambient temperature	-10 °C...+60 °C (without Ex-Approval) 0 °C...+60 °C (with ATEX/IECEx-Approval)
Pilot air ports	Threaded ports G 1/4
Supply pressure	1.4...7 bar ^{1) 2)}
Air supply filter	Exchangeable (aperture size ~0.1 mm)
Actuator system	Single and double-acting to 150 IN/min.
Air capacity	50 IN/min (with 1.4 bar ²⁾) for aeration and ventilation 150 IN/min (with 6 bar ²⁾) for aeration and ventilation (QNn = 100 IN/min (acc. to the definition with decrease in pressure from 7 ... 6 bar absolute)
Position detection module	Potentiometer, max. angle 180°
Stroke range valve spindle	Min. 30° on the rotary shaft, depending on lever
Installation	As required, display above or sideways
Protection class	IP65/IP67 acc. to EN 60529, Type 4X acc. to NEMA 250 standard
Power consumption	<5 W

1) The supply pressure has to be 0.5...1 bar above the minimum required pilot pressure for the valve actuator

2) Pressure specifications: Overpressure with respect to atmospheric pressure

Technical data continued

Electrical connection	
Multipole connection	M12, 8 pin/4 pin; M8, 4 pin
Cable gland	2xM20×1.5 (cable Ø 10 mm) on screw terminals (0.14...1.5 mm ²)
Remote version	1xM12×1.5 (cable Ø 3...6.5 mm)
Bus communication	
	PROFIBUS DP-V1, DeviceNet, EtherNet/IP, PROFINET, Modbus TCP or bÜS (based on CANopen)
Protection class	
	III acc. to DIN EN 61140
Conformity	
	EMC directive 2014/30/EU
CSA approval information	
Product category code	Class 3221 82-VALVES - Actuators - Certified to US standards Class 3221 02-VALVES - Actuators
Considered standards	
	CAN/CSA-C22 2 No. 139, UL 429
CSA trademark	
	
Ex-Approval	
ATEX	⊕ II 3G Ex ec ic IIC T4 Gc / ⊕ II 3D Ex tc IIIC T135 °C Dc
IECEX	Certificate; BVS 16 ATEX E 118 X Ex ec ic IIC T4 Gc / Ex tc IIIC T135 °C Dc Certificate; IECEX BVS 16,0091 X
Technical data - Linear Remote Position Sensor (ELEMENT)	
Electrical connection	
Cable gland	1xM16×1.5 (cable Ø 5...10 mm) on terminal screws (0.14...1.5 mm ²)
Connection cable length	10 m
Operating voltage	
	24 V DC ± 10 %
Power consumption	
	< 0.3 W
Sensor measurement range	
	3...45 mm (Stroke range valve spindle)
Actual position signal	
	Digital (RS485)
Ambient temperature	
	-25 °C...+80 °C
Protection class	
	III acc. to DIN EN 61140
Protection class	
	IP65/IP67 acc. to EN 60529, Type 4X acc. to NEMA 250 standard
Ignition protection class	
	II 3D Ex tc IIIC T135 °C Dc II 3G Ex nA IIC T4 Gc
Conformity	
	EMC directive 2014/30/EU
Approvals	
	cULus Certificate no. 238179

Technical data - rotative Remote Position Sensor (NAMUR)	
Electrical connection	
	2 m round cable (shielded)
Operating voltage	
	10...30 V DC
Residual ripple	
	< 0.8 W
Sensor measurement range	
	0°...360°
Actual position signal	
	Digital (RS485)
Ambient temperature	
	-25 °C...+80 °C
Protection class	
	III acc. to DIN EN 61140
Protection class	
	IP65 acc. to EN 60529
Conformity	
	EMC directive 2014/30/EU
Approvals	
	UL (cULus) Certificate no. E226909
Technical data - Position feedback with proximity switches (Accessory)	
Electrical connection	
	M12, 4 pin
Output function	
	3-wire, normally open contact, PNP
Operating voltage	
	10...30 V DC
Residual ripple	
	≤ 10 % U _{ss}
DC rated current	
	≤ 100 mA
Protection class	
	IP65 and IP67
Protection class	
	III acc. to DIN EN 61140
Conformity	
	EMC directive 2014/30/EU
Approvals	
	cCSAus

Note: The position feedback has two proximity switches which are independently adjustable via switch lugs.

Using a remote positioner the length of the control air pipes influences the dynamics and attainable accuracy of the position control loop. The length of the control air pipes therefore should be as short as possible.



Ordering chart

8792 Positioner
SideControl

Communication	Electrical connection	Analogue feedback	2 Binary outputs	Diagnostic functions ¹⁾	cCSAus	ATEX II 3 GD / IECEx	Article no.
Positioner SideControl Type 8792 NAMUR version NAMUR IEC 60534-6-1 VDI/VDE 3845 (IEC 60534-6-2)							
Single and double-acting, universal air capacity							
without fieldbus communication	Cable gland	no	no	-	yes	-	206610
		no	yes	yes	yes	-	206612
		yes	yes	yes	yes	-	206611
		yes	yes	yes	-	yes	310306
	Multipole	no	no	-	yes	-	206613
		no	yes	yes	yes	-	206615
		yes	yes	yes	yes	-	206614
PROFIBUS DP-V1	Multipole	via Bus	no	-	yes	-	206616
		via Bus	no	-	-	yes	310308
		via Bus	yes	yes	-	yes	310309
		via Bus	yes	yes	yes	-	206617
DeviceNet	Multipole	no	no	-	yes	-	239094
		no	yes	yes	-	yes	239095
EtherNet/IP	Multipole	via Bus	no	yes	-	-	317932
		via Bus	yes	yes	-	-	317933
		via Bus	no	yes	-	yes	317938
		via Bus	yes	yes	-	yes	317939
PROFINET	Multipole	via Bus	no	yes	-	-	317942
		via Bus	yes	yes	-	-	317943
		via Bus	no	yes	-	yes	317948
		via Bus	yes	yes	-	yes	317949
Modbus TCP	Multipole	via Bus	no	yes	-	-	317952
		via Bus	yes	yes	-	-	317953
		via Bus	no	yes	-	yes	317958
		via Bus	yes	yes	-	yes	317959
bÜS - Bürkert System Bus	Multipole	via Bus	no	yes	-	-	317962
		via Bus	yes	yes	-	-	317963
		via Bus	no	yes	-	yes	317968
		via Bus	yes	yes	-	yes	317969

Ordering chart continued

Communication	Electrical connection	Analogue feedback	2 Binary outputs	Diagnostic functions ¹⁾	cCSAus	ATEX II 3 GD / IECEx	Article no.
Positioner SideControl Type 8792 remote version							
Single-acting with low air capacity for actuator series Type 23xx (Ø 70/90 mm)							
without fieldbus communication	Cable gland	yes	yes	yes	yes	-	224870
		no	yes	yes	yes	-	224871
EtherNet/IP	Multipole	via Bus	yes	yes	-	-	317936
PROFINET		via Bus	yes	yes	-	-	317946
Modbus TCP		via Bus	yes	yes	-	-	317956
büS - Bürkert System Bus		via Bus	yes	yes	-	-	317966
Single and double-acting with universal air capacity for actuator series Type 23xx (Ø 130 mm) and 27xx (Ø 175/225 mm)							
without fieldbus communication	Cable gland	no	no		yes	-	206623
		yes	yes	yes	yes	-	206624
		no	yes	yes	yes	-	206625
		yes	yes	yes	-	yes	310310
EtherNet/IP	Multipole	via Bus	yes	yes	-	-	317935
PROFINET		via Bus	yes	yes	-	-	317945
Modbus TCP		via Bus	yes	yes	-	-	317955
büS - Bürkert System Bus		via Bus	yes	yes	-	-	317965

1) See additional software functions parametrisable diagnostic functions in datasheet **Type 8792** ▶.

Note: cCSAus approval in preparation for device versions with EtherNet/IP, PROFINET, Modbus TCP and büS

Assembly variations	Electrical connection	cULus	ATEX II 3 GD / IECEx	Article no.
Remote Position Sensor for SideControl Type 8792 remote version				
Control valve Type 23xx	Cable gland - 10 m round cable	yes	no	212360
	Cable gland - 10 m round cable	no	yes	226860
Control valve Type 27xx	Cable gland - 10 m round cable	yes	no	211535
	Cable gland - 10 m round cable	no	yes	226859
NAMUR (rotative)	Cable gland - 2 m round cable (max. extension 10 m)	yes	no	211536



Accessories

8792 Positioner
SideControl

Description	Article no.
Accessories for SideControl NAMUR	
Assembly bridge VDI/VDE 3845 (IEC 60534-6-2), stainless steel	770294
Adapter kit VDI/VDE 3845 (IEC 60534-6-2), stainless steel	787338
Adapter kit linear actuators IEC 60534-6-1, stainless steel	787215
Position feedback with proximity switches (optional upgrade feature) ¹⁾	677218
Accessories for SideControl Remote	
Bracket for wall mounting, stainless steel	675715
DIN rail assembly kit, Aluminium/stainless steel	675702
Adapter kit - remote sensor control valves Type 23xx Actuator size Ø 70/90/130 mm	679917
Adapter kit - remote sensor control valves Type 27xx Actuator size Ø 175 / 225 mm	679945
Sensor Puck (replacement part)	682240
Standard Accessories	
M12 socket 8 pin with 5 m cable for power supply and input/output signals	919267
M8 plug 4 pin for binary outputs, with solder joints	917131
USB büS-Interface Set (büS-Stick + connection cable with M12 plug + connection cable M12 on micro USB for the büS service interface) to connect with PC-Tool Bürkert Communicator (only for device versions with EtherNet/IP, PROFINET, Modbus TCP and büS - Bürkert System Bus)	772551
büS cable extension M12, length 1 m	772404
büS cable extension M12, length 3 m	772405
büS cable extension M12, length 5 m	772406
büS cable extension M12, length 10 m	772407
SIM card	291773
Silencer G ¼ (replacement part)	780780
Sensor puck (replacement part)	682240
USB interface for serial communication (only for device versions with PROFIBUS / DeviceNet or without fieldbus communication)	227093
Software Bürkert Communicator	http://www.buerkert.com/en/type/8920

1) External end position feedback for upgrading SideControl NAMUR

Digital electropneumatic process controller SideControl

8793

- Compact and robust design
- Easy Start-up using Tune function of the Positioner and Process controller
- Integrated diagnostic functions for valve monitoring
- Dynamic positioning system with no air consumption in controlled state
- PROFIBUS DP-V1, DeviceNet, EtherNet/IP, PROFINET, Modbus TCP or bÜS (Bürkert System Bus)

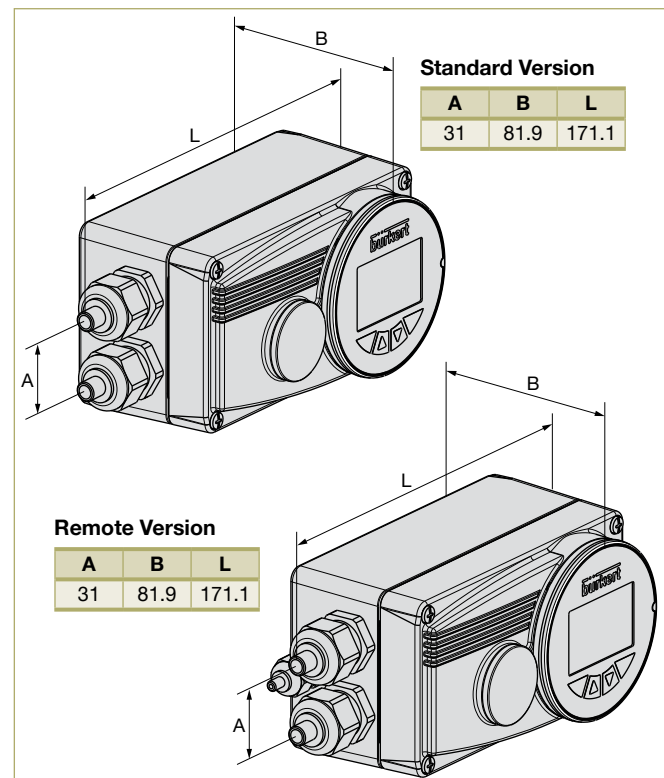


The digital process controller Type 8793 is designed to standardization acc. to IEC 60534-6-1 or VDI/VDE 3845 (IEC 60534-6-2) for assembly with linear and rotary actuators. In addition, the remote version can be combined with Bürkert process control valves. The process controller can be operated by the usual current and voltage standard signals and can also be equipped with the fieldbus interface. The actual process value is directly supplied to the device as 4...20 mA, PT100 or as frequency signal. The process controller calculates the position setpoint for the subordinated positioner through variance comparison. The parameterization of process controller can be carried out automatically via Tune function. The handling is easily done either on a graphic display with keypad or via COMMUNICATOR. The process controller is equipped with diagnostic functions to monitor the state of the valve. With the diagnostics, the operating conditions of the control valve can be monitored. This allows planned maintenance and optimizes plant availability. The pilot valve system can be used equally for single and double acting actuators. It is characterized by a defined safety feature in case of failure of the electrical or pneumatic power and possesses an enormous air capacity range with pressure supply up to 7 bar.

Technical data


General data	
Material:	
Body	Aluminium plastic-coated
Seal	EPDM, NBR, FKM
Operating voltages	24 V DC \pm 10 %
Residual ripple	Max. 10 %
Setpoint setting	0/4...20 mA and 0...5/10 V
Input resistance	0/4...20 mA: 180 Ω 0...5/10 V: 19 k Ω
Input data for actual value signal	
Setting 4...20 mA	180 Ω Input resistance / Resolution 12 bit
Frequency setting	17 k Ω Input resistance, 0...1000 Hz/1 % o.R. measuring range, Input signal > 300 mV/88
Setting Pt 100	Signal form Sine, rectangle, triangle Measuring range -20 $^{\circ}$ C...+220 $^{\circ}$ C, Resolution <0.1 $^{\circ}$ C, M
Analogue feedback	4...20 mA, 0...20 mA 0...10 V, 0...5 V

Dimensions [mm]



Binary input	Galvanically isolated, 0...5 V = log "0", 10...30 V = log "1"
Binary Output	2 Outputs (optional), galvanically isolated Current limit 100 mA, Output will be synchronised when overloaded
Control medium	Neutral gases, air DIN ISO 8573-1 Dust concentration Class 7 (<40 μ m particle size) Particle density Class 5 (<10 mg/m ³) Pressure condensation point Class 3 (<-20 $^{\circ}$ C) Oil concentration Class X (<25 mg/m ³)
Ambient temperature	0 $^{\circ}$ C...+60 $^{\circ}$ C
Pilot air ports	Threaded port G 1/4
Supply pressure	1.4...7 bar ^(1) 2)
Air input filter	Exchangeable (aperture size -0.1 mm)

Technical data continued

Pilot valve system	Single and double-acting up to 150 l _v /min. 95 l _v /min (with 1.4 bar ²) for aeration and ventilation 150 l _v /min (with 6 bar ²) for aeration and ventilation (Q _{Nn} = 100 IN/min (acc. to the definition with decrease in pressure from 7...6 bar absolute)
Position detection module	Potentiometer, max. angle 180°
Stroke range valve spindle	Min. 30° on the rotary shaft, independent of lever
Technical data	
Installation	As required, display above or sideways
Protection class	IP65/IP67 acc. to EN 60529, Type 4X acc. to NEMA 250 standard
Power consumption	< 5 W
Electrical connection	
Multi-pin connection	M12, 8 pin / 4 pin; M8, 4 pin
Cable gland	2xM20 × 1.5 (cable Ø 6...12 mm) on screw terminals (0.14...1.5 mm ²)
Remote Version	1x M12 × 1.5 (cable Ø 3...6.5 mm)
Bus communication	PROFIBUS DP-V1, DeviceNet, EtherNet/IP, PROFINET, Modbus TCP or bÜS (based on CANopen)
Inductive proximity switch	On request
Protection class	III acc. to DIN EN 61140
Ignition protection class	II 3 G nA II B T4 II 3 D tD A22 T135°
Conformity	EMC directive 2014/30/EU
CSA approval information	Class 3221 82-VALVES - Actuators - Certified to US standards Class 3221 02-VALVES - Actuators
Considered standards	CAN/CSA-C22 2 No. 139 UL 429
CSA trademark	
Ex-Approval	
ATEX	⊕ II 3G Ex ec ic IIC T4 Gc / ⊕ II 3D Ex tc IIIC T135 °C Dc Certificate: BVS 16 ATEX E 118 X
IECEX	Ex ec ic IIC T4 Gc / Ex tc IIIC T135 °C Dc Certificate: IECEX BVS 16.0091 X
Technical data – Linear Remote Position Sensor (ELEMENT)	
Electrical connection	
Cable gland	1xM16 × 1.5 (cable Ø 5...10 mm) on terminal screws (0.14...1.5 mm ²)
Connection cable length	10 m
Operating voltage	24 V DC ± 10 %
Power consumption	< 0.3 W
Sensor measurement range	3...45 mm (Stroke range valve spindle)
Actual position signal	digital (RS485)
Ambient temperature	-25 °C...+80 °C
Protection class	III acc. to DIN EN 61140
Protection class	IP65 and IP67 acc. to EN 60529, Type 4X acc. to NEMA 250 standard
Ignition protection class	II 3D Ex tc IIIC T135 °C Dc II 3G Ex nA IIC T4 Gc
Conformity	EMC directive 2014/30/EU
Approvals	cULus Certificate no. 238179

Technical data – rotative Remote Position Sensor (NAMUR)	
Electrical connection	2 m round cable (shielded)
Operating voltage	10...30 V DC
Residual ripple	< 0.8 W
Sensor measurement range	0°...360°
Actual position signal	Digital (RS485)
Ambient temperature	-25 °C...+80 °C
Protection class	III acc. to DIN EN 61140
Protection class	IP65 acc. to EN 60529
Conformity	EMC directive 2014/30/EU
Approvals	UL (cULus) Certificate no. E226909
Technical data – Position feedback with proximity switches (Accessory)	
Electrical connection	M12, 4 pin
Output function	3-wire, normally open contact, PNP
Operating voltage	10...30 V DC
Residual ripple	≤ 10 % U _{ss}
DC rated current	≤ 100 mA
Protection class	IP65 and IP67
Protection class	III acc. to DIN EN 61140
Conformity	EMC directive 2014/30/EU
Approvals	cCSAus

1) The supply pressure has to be 0.5...1 bar above the minimum required pilot pressure for the valve actuator

2) Pressure specifications: Overpressure with respect to atmospheric pressure

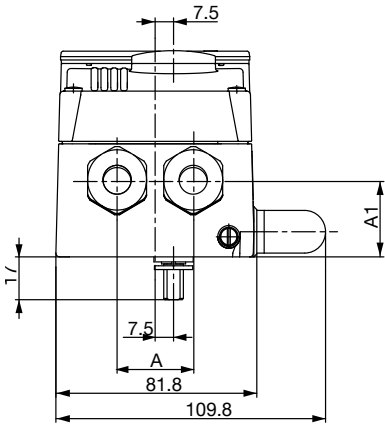
Note: The position feedback has two proximity switches which are independently adjustable via switch lugs.

Using a remote positioner the length of the control air pipes influences the dynamics and attainable accuracy of the position control loop. The length of the control air pipes therefore should be as short as possible.

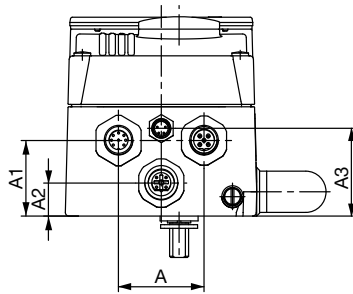
Dimensions [mm]

8793

Standard version

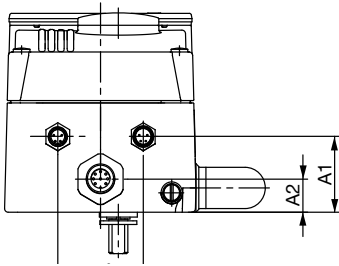


NAMUR Profibus Multipol version

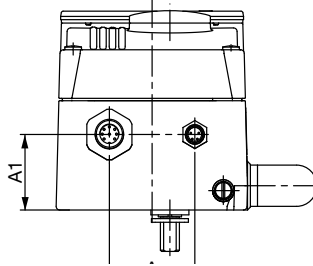


Description	A	A1	A2	A3
NAMUR version	31	30	-	-
NAMUR PROFIBUS Multi-pin	36	31	13.5	36.1
NAMUR Multi-pin with binary output	36	31	13.5	-
NAMUR Multi-pin	36	31	-	-
Remote version	31	30	11.5	-

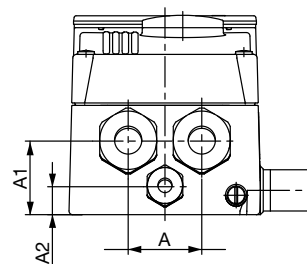
NAMUR Multi-pin with binary output



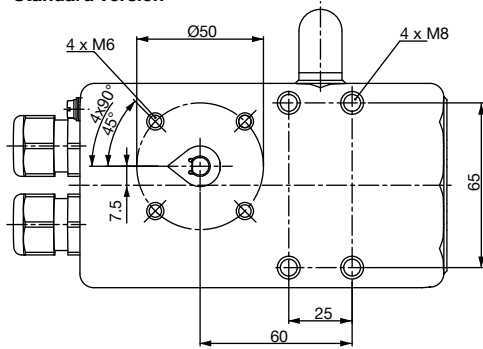
NAMUR Multi-pin version



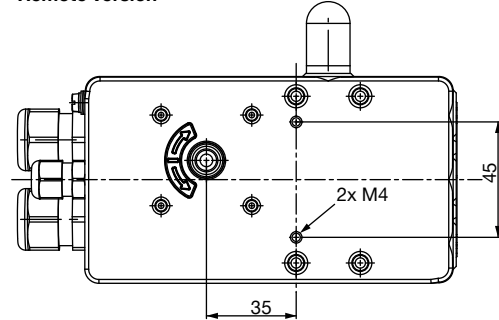
Remote version



Standard version



Remote version

















Ordering chart

Communication	Electrical connection	Analogue feedback	2 Binary outputs	Diagnostic functions ¹⁾	cCSAus	ATEX II 3 GD / IECEx	Article no.	
Process controller SideControl Type 8793 NAMUR version NAMUR IEC 534-6 VDI/VDE 3845								
Single and double-acting with universal air capacity								
without fieldbus communication	Cable gland	no	no	–	yes	–	206593	
		no	yes	yes	yes	–	206595	
		yes	yes	yes	yes	–	206594	
		yes	yes	yes	–	yes	310312	
		no	yes	yes	–	yes	310313	
	Multipole	no	no	–	yes	–	206596	
		no	yes	yes	yes	–	206599	
		yes	yes	yes	yes	–	206598	
	PROFIBUS DP-V1	Multipole	via Bus	no	–	yes	–	206600
			via Bus	yes	yes	yes	–	206601
DeviceNet	Multipole	no	no	–	yes	–	239097	
		no	yes	yes	yes	–	239098	
EtherNet/IP	Multipole	via Bus	no	yes	–	–	317930	
		via Bus	yes	yes	–	–	317931	
PROFINET	Multipole	via Bus	no	yes	–	–	317940	
		via Bus	yes	yes	–	–	317941	
Modbus TCP	Multipole	via Bus	no	yes	–	–	317950	
		via Bus	yes	yes	–	–	317951	
bÜS - Bürkert System Bus	Multipole	via Bus	no	yes	–	–	317960	
		via Bus	yes	yes	–	–	317961	

1) See additional software functions parametrisable diagnostic functions






Ordering chart continued

8793





















Communication	Electrical connection	Analogue feedback	2 Binary outputs	Diagnostic functions ¹⁾	cCSAus	ATEX II 3 GD / IECEx	Article no.
Process controller SideControl Type 8793 remote version							
Single-acting with low air capacity for actuator series Type 23xx (Ø 70/90 mm)							
without fieldbus communication	Cable gland	no	no	–	yes	–	226828 
		no	yes	yes	yes	–	224873 
		yes	yes	yes	yes	–	224872 
EtherNet/IP	Multipole	via Bus	yes	yes	–	–	317937 
PROFINET		via Bus	yes	yes	–	–	317947 
Modbus TCP		via Bus	yes	yes	–	–	317957 
büS - Bürkert System Bus		via Bus	yes	yes	–	–	317967 
Single and double-acting with universal air capacity for actuator series Type 23xx (Ø 130 mm) and 27xx (Ø 175/225 mm)							
without fieldbus communication	Cable gland	no	no		yes	–	206607 
		yes	yes	yes	yes	–	206608 
		no	yes	yes	yes	–	206609 
		yes	yes	yes	yes	–	yes
EtherNet/IP	Multipole	via Bus	yes	yes	–	–	317934 
PROFINET		via Bus	yes	yes	–	–	317944 
Modbus TCP		via Bus	yes	yes	–	–	317954 
büS - Bürkert System Bus		via Bus	yes	yes	–	–	317964 

¹⁾ See additional software functions parametrisable diagnostic functions

Note: cCSAus approval in preparation for device versions with EtherNet/IP, PROFINET, Modbus TCP und büS

Assembly variations	Electrical connection	cULus	ATEX II 3 GD / IECEx	Article no.
Remote Position Sensor for SideControl Type 8793 remote version				
Remote Position Sensor				
Control valve Type 23xx	Cable gland - 10 m round cable	yes	no	212360 
	Cable gland - 10 m round cable	no	yes	226860 
Control valve Type 27xx	Cable gland - 10 m round cable	yes	no	211535 
	Cable gland - 10 m round cable	no	yes	226859 
NAMUR (rotative)	Cable gland - 2 m round cable (max. extension 10 m)	yes	no	211536 

Accessories

Description	Article no.
Accessories for SideControl BASIC NAMUR	
Assembly bridge VDI/VDE 3845 (IEC 60534-6-2), stainless steel	770294 
Adapter kit VDI/VDE 3845 (IEC 60534-6-2) stainless steel	787338 
Adapter kit linear actuators IEC 60534-6-1 stainless steel	787215 
Position feedback with proximity switches (optional upgrade feature) ¹⁾	677218 
Accessories for SideControl BASIC Remote	
Bracket for wall mounting, stainless steel	675715 
DIN rail assembly kit Aluminium/stainless steel	675702 
Adapter kit - remote sensor, control valves Type 23xx Actuator size Ø 70/90/130 mm	679917 
Adapter kit - remote sensor, control valves Type 27xx Actuator size Ø 175 / 225 mm	679945 
Sensor Puck (replacement part)	682240 
Standard Accessories	
M12 socket 8 pin with 5 m cable for power supply and input/output signals	919267 
M8 plug 4 pin for binary outputs, with solder joints	917131 
M8 socket 4 pin with 5 m cable for process actual value from sensor	264602 
M8 plug 4 pin for binary outputs, with solder joints	917131 
USB büS-Interface Set (büS-Stick + connection cable with M12 plug + connection cable M12 on micro USB for the büS service interface) to connect with PC-Tool Bürkert Communicator (only for device versions with EtherNet/IP, PROFINET, Modbus TCP and büS - Bürkert System Bus)	772551 
büS cable extension M12, length 1 m	772404 
büS cable extension M12, length 3 m	772405 
büS cable extension M12, length 5 m	772406 
büS cable extension M12, length 10 m	772407 
SIM card	291773 
Silencer G ¼ (replacement part)	780780 
Sensor puck (replacement part)	682240 
USB interface for serial communication (only for device versions with PROFIBUS / DeviceNet or without fieldbus communication)	227093 
Software Bürkert Communicator ²⁾	http://www.buerkert.de/de/type/8920

1) External end position feedback for upgrading SideControl NAMUR

2) Related Communication software can be downloaded from **Type 8793** ▶



Overview for Ball Valves

Note: The following product overview does not show the complete product range of this catalogue. A complete overview can be found [here](#) ▶

Overview Ball Valves	Species	Type	Valve design	Orifice
	2-piece socket ball valve with flange head ISO 5211	2651 ▶	2/2 or 3/2 way	DN10...DN50 (2/2 way) DN10...DN40 (3/2 way)
	2-piece socket ball valve with flange head ISO 5211	2654 ▶	2/2 way	DN10...DN100
	3-piece socket ball valve with flange head ISO 5211 and hand lever	2654 Hygienic ▶	2/2 way	DN08...DN100
	Plastic ball valve with flange head and hand lever	2657 ▶	2/2 or 3/2 way	DN10...DN100
	Stainless steel ball valve with electric motor drive	8804 ▶	2/2 or 3/2 way	DN10...DN65
	Plastic ball valve with electric motor drive	8804 ▶	2/2 way	DN10...DN50
	2- and 3-piece stainless steel socket ball valve with pneumatic rotary actuator	2652 / 2655¹⁾ ▶	2/2 way	DN10...DN50
	2- and 3-piece stainless steel socket ball valve with pneumatic part-turn actuator	8805 ▶	2/2 or 3/2 way	DN10...DN100
	Butterfly valve in intermediate flange design with hand lever or free shaft	2671 ▶	2/2 way	DN40...DN300
	Plastic butterfly valve in intermediate flange design with hand lever or free shaft	2674 ▶	2/2 way	DN40...DN200

¹⁾ available until 01.11.2020

Housing material	Ball/disc material	Seal material
Stainless steel 1.4408	Stainless steel 1.4401	PTFE (ball seal) FKM (actuating shaft seal)
Stainless steel 1.4408	Stainless steel 1.4401	PTFE (ball seal) FKM (actuating shaft seal)
Stainless steel 1.4435 (316L) electropolished	Stainless steel 1.4435 (316L)	PTFE (FDA compliant)
PVC-U PP (PVDF, PVC-C on request)	As housing material	PTFE/EPDM PTFE/FKM
Stainless steel 1.4408	Stainless steel 1.4401	PTFE (ball seal) FKM (actuating shaft seal)
PVC-U PP (PVDF, PVC-C on request)	As housing material	PTFE/EPDM PTFE/FKM
Stainless steel 1.4408	Stainless steel 1.4401	PTFE (ball seal) FKM (actuating shaft seal)
Stainless steel 1.4408	Stainless steel 1.4401	PTFE (ball seal) FKM (actuating shaft seal)
GG 25 grey cast iron GGG 50 spheroidal graphite iron (other materials on request)	CF8M (other materials or coatings on request)	EPT (W-EPT, FKM, EPDM, NBR, CSM, Silicon on request)
PVC-U (FE version) PP-GR (FK version)	PVC-U (FE- and FK Version) PP-H (FK Version) PVDF (FK Version) PVC-C (on request)	EPDM FPM

2/2 or 3/2 way ball valve, 2-Piece

2651

- Stainless steel ball valve
- High flow rate
- High medium pressure
- Long lifespan
- ISO 5211 Top flange

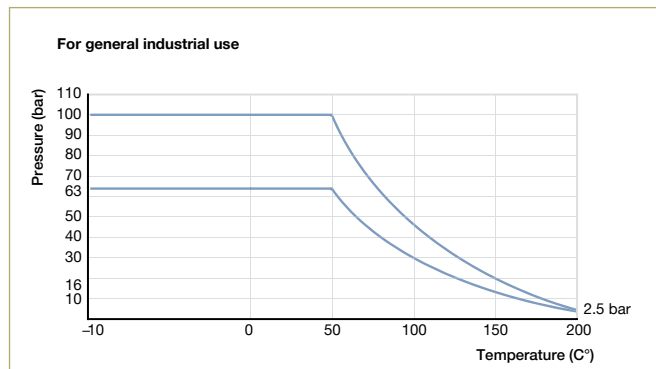


2/2 and 3/2 way stainless steel ball valve used to shut off and distributing medium flows. The ball valves can be connected via the mechanical interface to ISO 5211 with a pneumatic (for example, Type 2051 or 2052) or electrical rotary actuator (eg, Types 3003, 3004 or 3005). 3/2 way Version with L- or T-boring

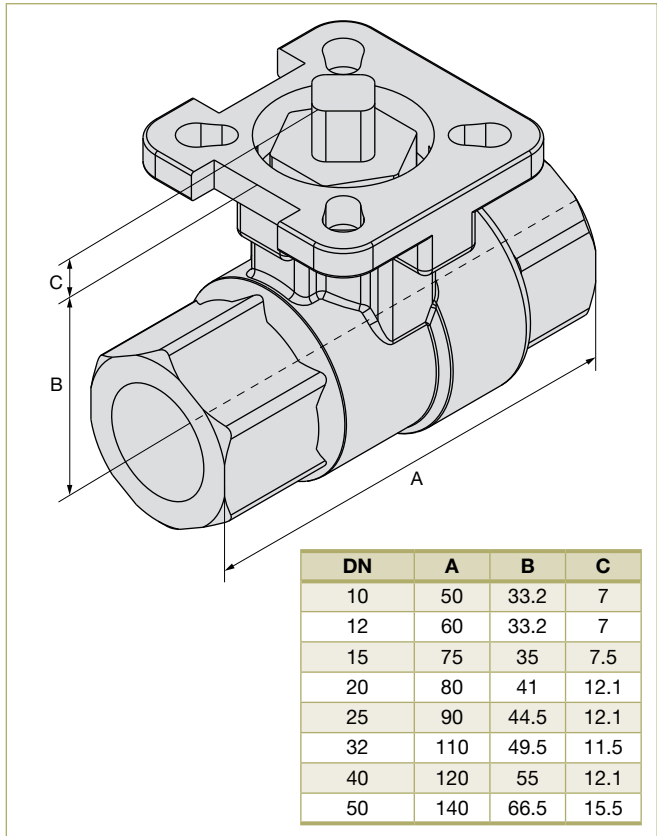
Technical data

Orifice	DN10...DN50 (2/2 way) DN10...DN40 (3/2 way)
Ball bore (3/2- Wege)	L-Boring T-Boring
Body material	Stainless steel 1.4408
Ball material	Stainless steel 1.4401
Selector shaft material	Stainless steel 1.4401
Seal material	PTFE (Ball seal) FKM (Stem Seal)
Medium temperature (see pressure temperature diagram)	-10 °C...200 °C
Medium pressure (see pressure temperature diagram)	Max. 100 bar (2/2 way) Max. 63 bar (3/2 way)
Medium	Stainless steel body: aggressive mediums, which do not affect the body or seal materials
Port connection	Rp 1/4...Rp 2 Whitworth Thread acc. DIN EN 10226-1 (old DIN 2999)
ISO Top flange	EN ISO 5211

Pressure/temperature chart



Dimensions [mm]



Torques

2/2 way

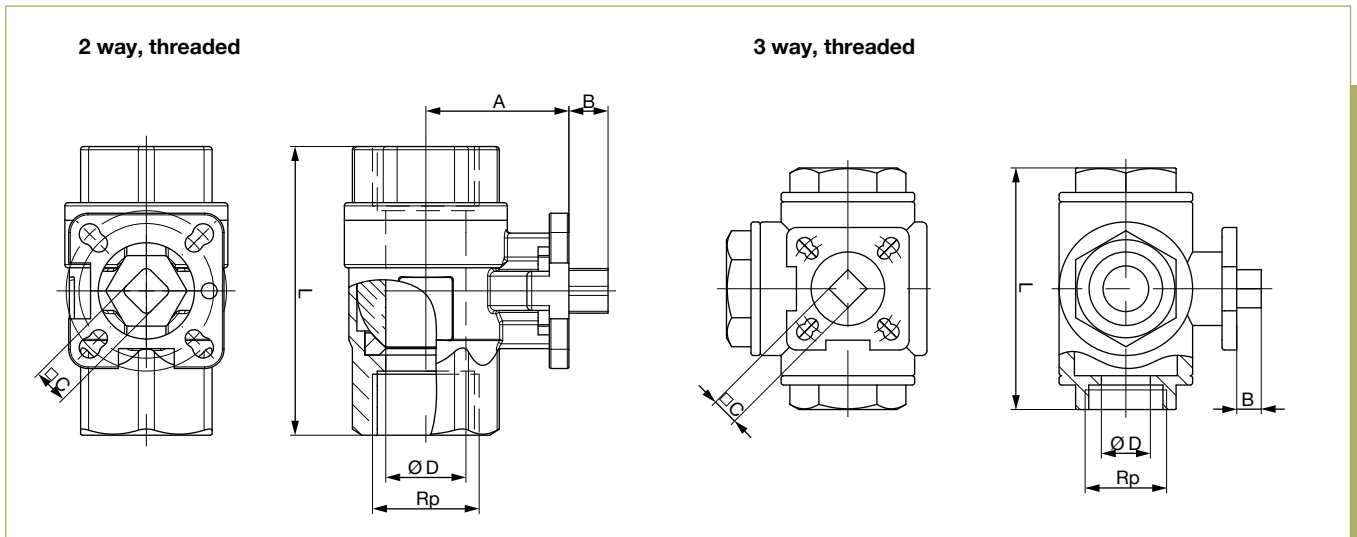
DN	10	12	15	20	25	32	40	50
Breakaway torque [Nm]	13	13	16	25	31	53	76	99
Running torque [Nm]	10	10	13	20	24	43	60	80

3/2 way

DN	10	12	15	20	25	32	40
Breakaway torque [Nm]	13	13	18	22	35	42	68
Running torque [Nm]	9	9	12	14	23	28	45

The given values were measured at max. delta P with water at ambient temperature.

Dimensions [mm]



Ordering chart

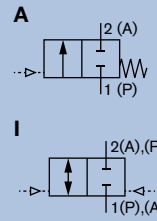
DN [mm]	Rp	D	L	A	B	C	ISO 5211	Article no.
2 way, threaded								
10	¼	11.6	50	33.2	7	9	F03	185972 🛒
12	⅜	12.7	60	33.2	7	9	F03 / F04	185973 🛒
15	½	15	75	35	7.5	9	F03 / F04	185974 🛒
20	¾	20	80	41	12.1	11	F03 / F04	185975 🛒
25	1	25	90	44.5	12.1	11	F04 / F05	185976 🛒
32	1¼	31.8	110	49.5	11.5	11	F04 / F05	185977 🛒
40	1½	38	120	55	12.1	11	F04 / F05	185978 🛒
50	2	50.8	140	66.5	15.5	14	F05 / F07	185979 🛒

DN [mm]	Rp	D	L	B	C	ISO 5211	Article no.	
							L-Boring	T-Boring
3 way, threaded								
10	¼	10	80	7.4	9	F03 / F04	172844 🛒	185984 🛒
12	½	12	80	7.4	9	F03 / F04	185853 🛒	185987 🛒
15	¾	15	87.5	7.4	9	F03 / F04	172845 🛒	185988 🛒
20	1	20	100	12.8	11	F04 / F05	172847 🛒	185989 🛒
25	1¼	25	123	11.4	11	F04 / F05	172848 🛒	185990 🛒
32	1½	32	142.2	12.4	11	F04 / F05	172849 🛒	185992 🛒
40	2	40	170.6	9.8	11	F04 / F05	172851 🛒	185993 🛒

2/2 way Ball Valve with Pneumatic Rotary Actuator

2652 / 2655

- 2 or 3 piece ball valve
- Pneumatic actuator
- Compact design
- Optical position indicator
- Pilot valve connection NAMUR



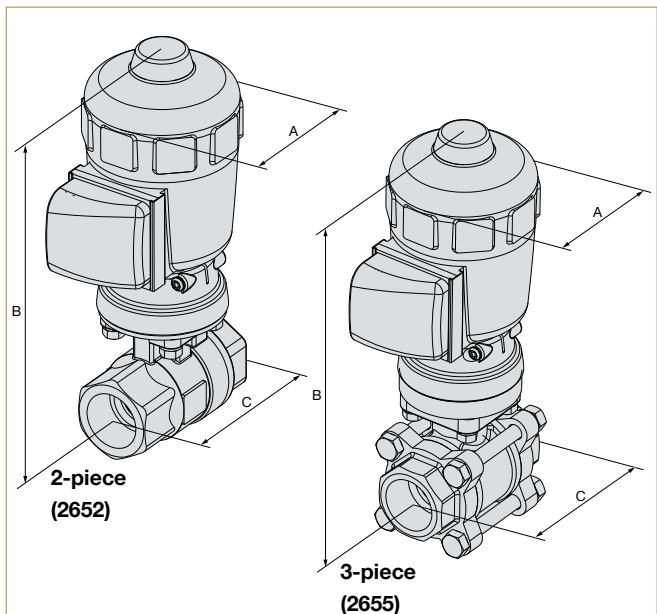
Complete ball valves of Types 2652 and 2655 consist of a pneumatic rotary actuator (Type 2050) and a 2/2 way ball valve. The ball valve body is 2 piece (Type 2652) or 3 piece (Type 2655). The connection between the actuator and the ball valve takes place via a standard interface (flange connection).

The rotary movement in the drive is produced by a linear piston with quick-acting screw thread coupling. The rotary actuator moves the ball valve through 90° and thus opens or closes the line cross-section. The actuator has an optical display of the piston position. The compact, pneumatically actuated ball valve can be employed for a wide range of applications, even under heavy-duty, slightly aggressive conditions.

Technical data

Orifice	DN10...DN50
Body material	Stainless steel 1.4408
Actuator material	PA (polyamide, glass-fibre reinforced)
Control air connection material	Stainless steel 1.4305
Seal material	PTFE
Medium	Gaseous and liquid medium, which do not attack the body and seal materials
Medium temperature	-10...+120 °C
Ambient temperature	-10...+60 °C
Control medium	Neutral gases; air
Port connection	Rp 1/4 to Rp 2 Whitworth threaded port acc. to DIN EN 10226-1 (old DIN 2999)
Pilot pressure	
Double acting actuator	2...10 bar (Ø 63 mm), 2...6 bar (Ø 100 mm)
Single acting actuator	5...10 bar (Ø 63 mm), 5...6 bar (Ø 100 mm)
Connection between actuator and ball valve	Flange acc. to ISO 5211 or DIN 3337
Rotation	90° ±3°
Rotation time for 90°	1...3.5 sec. (depending on load and pilot pressure)
Installation	As required, preferably with actuator in upright position

Dimensions [mm]



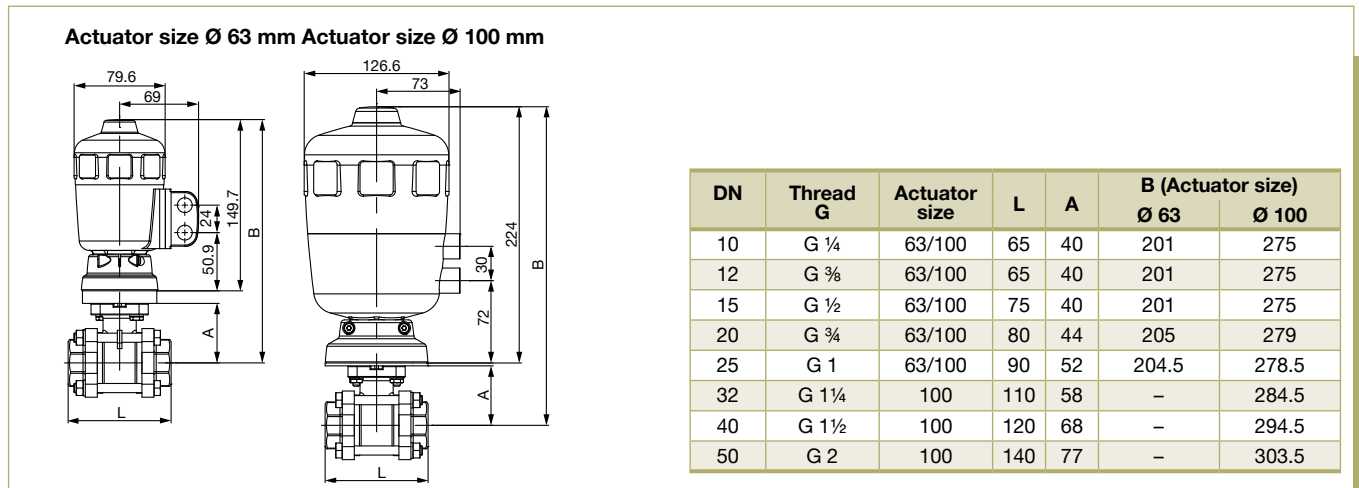
DN	A (Actuator size)		B (Actuator size)		C
	Ø 63	Ø 100	Ø 63	Ø 100	
10	79.6	126.6	201	275	65
12	79.6	126.6	201	275	65
15	79.6	126.6	201	275	75
20	79.6	126.6	205	279	80
25	79.6	126.6	204.5	278.5	90
32	–	126.6	–	284.5	110
40	–	126.6	–	294.5	120
50	–	126.6	–	303.5	140

Options

- Control head **Type 8631** ▶
- Electrical position feedback **Type 1062** ▶

Dimensions [mm]

(Dimensions for Type 2652 see data sheet)



Ordering chart

Control function	Orifice [mm]	Port connection	K _v value water [m³/h]	Pressure range [bar]	Single-acting actuator			Double-acting actuator		
					Actuator size Ø [mm]	Article no. Type 2652 2 piece	Article no. Type 2655 3 piece	Actuator size Ø [mm]	Article no. Type 2652 2 piece	Article no. Type 2655 3 piece
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	10	G ¼	7	0...63	63	435172	435175	63	429203	431195
	12	G ⅜	9	0...63	63	435173	435176	63	429204	431196
	15	G ½	35	0...63	63	435174	435177	63	429205	431197
	20	G ¾	46	0...63	100	431109	431205	63	429206	431198
	25	G 1	72	0...63	100	431110	431206	63	429207	431199
or										
I Open/close operation on either side without spring, bidirectional	32	G 1¼	105	0...63	–	–	–	100	429208	431200
	40	G 1½	170	0...63	–	–	–	100	429209	176177
	50	G 2	275	0...63	–	–	–	100	429210	–

Accessories

Actuator size Ø [mm]	Material	Article no.
NAMUR adapter for connections with NAMUR pilot valve		
63	Plastic (PA)	427405
100	Brass	637114
	Stainless steel	634275

Valve for actuator size Ø [mm]	Type	Pressure inlet P	Service port A	Orifice [mm]	Q _{Nn} value air [l/min]	Pressure range [bar]	Electrical connection	Power consumption [W]	Article no. voltage/frequency [V/Hz]	
									024/DC	230/50
3/2 way Pilot valve with banjo bolt										
Seal material valve FKM, seal material banjo bolt NBR										
63...100	6014P	G ¼	G ¼	2	120	0...10	Form A	8	424103	424107

Description	Voltage	Article no.
Cable plug Type 2508 (will be replaced with Type 2518) acc. to DIN 175301-803 Form A - see Type 2508 ▶		
without circuitry (standard), without cable	0...250 V AC/DC	008376

2/2 way Ball valve, 3 pieces

2654

- Stainless steel ball valve
- High flow rates
- High medium pressure
- Long life
- ISO 5211 top flange



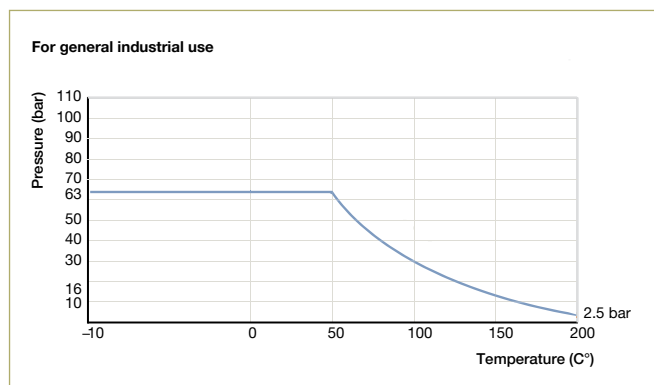
2/2 way Ball valve in stainless steel for separating medium flow. The ball valves can be connected via the mechanical interface to ISO 5211 with a pneumatic (e.g. type 2051 or type 2052) or electrical rotary actuator (e.g. types 3003, 3004 or 3005).

- low torques
- maintenance friendly

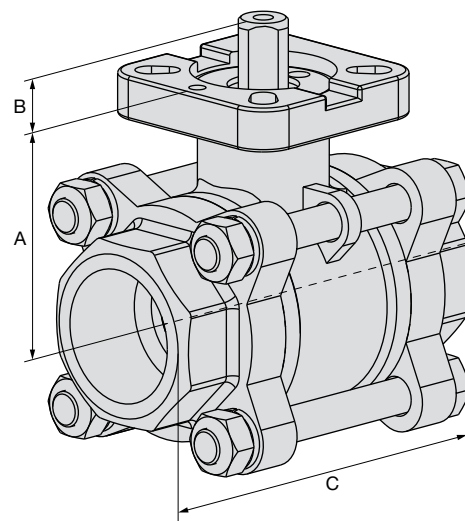
Technical data

Orifice	DN10...DN100
Body material	Stainless steel 1.4408
Ball material	Stainless steel 1.4401
Selector shaft material	Stainless steel 1.4401
Seal material	PTFE (Ball seal) FKM (stem seal)
Medium temperature	-10 °C...200 °C (see pressure temperature diagram)
Medium pressure	Max. 63 bar (see pressure temperature diagram)
Medium	Stainless steel body: aggressive fluids, which will not attack the body and seal
Port connections	Rp 1/4...Rp 2 Whitworth Thread acc. to DIN EN 10226-1 (alt DIN 2999) weld end
ISO head flange	EN ISO 5211

Pressure Temperature Chart



Dimensions [mm]



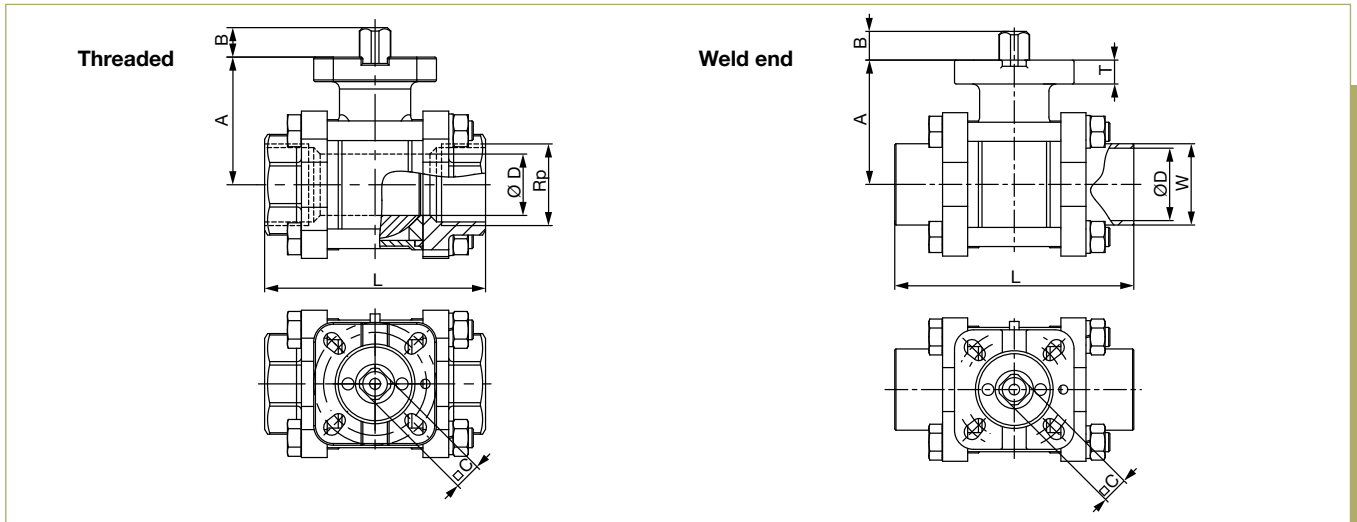
DN	A	B	C
10	40	7	65
12	40	7	65
15	40	7	75
20	44	7	80
25	52	12	90
32	58	12	110
40	68	16	120
50	77	16	140
65	98	19	185
80	110	19	205
100	138	24	240

Torques

DN	8	10	15	20	25	32	40	50	65	80	100
Breakaway torque [Nm]	6	6	10	14	17	24	29	44	78	112	140
Running torque [Nm]	4	4	7	9	11	16	19	30	52	89	112

The given values were measured at max. delta P with water at ambient temperature.

Dimensions [mm]



2654

Ordering chart

Orifice [mm]	Rp	D	L	A	B	C	ISO 5211	Article no.
Threaded								
10	¼	10	65	40	7	9	F03 / F04	185994 🛒
12	⅜	12	65	40	7	9	F03 / F04	185995 🛒
15	½	16	75	40	7	9	F03 / F04	185996 🛒
20	¾	20	80	44	7	9	F03 / F04	185997 🛒
25	1	25	90	52	12	11	F04 / F05	185998 🛒
32	1¼	32	110	58	12	11	F04 / F05	185999 🛒
40	1½	40	120	68	16	14	F05 / F07	186000 🛒
50	2	50	140	77	16	14	F05 / F07	186001 🛒
65	2½	65	185	98	19	17	F07 / F10	186002 🛒
80	3	80	205	110	19	17	F07 / F10	186003 🛒
100	4	100	240	138	24	22	F10	217975 🛒
Weld end								
Orifice [mm]	W	D	L	A	B	C	ISO 5211	Article no.
12	19.3	12	75	40	9	9	F03 / F04	186004 🛒
15	23.3	16	75	40	9	9	F03 / F04	186005 🛒
20	28.2	20	90	44	9	9	F03 / F04	186006 🛒
25	33.8	25	100	52	12	11	F04 / F05	186007 🛒
32	41.1	32	110	58	12	11	F04 / F05	186008 🛒
40	49	40	125	68	16	14	F05 / F07	186009 🛒
50	62	50	150	77	16	14	F05 / F07	186010 🛒
65	78	65	190	98	19	17	F07 / F10	205429 🛒
80	94.3	80	220	110	19	17	F07 / F10	203221 🛒
100	125.2	100	270	138	24	22	F10	203222 🛒

2/2 way Ball Valve with Pneumatic Rotary Actuator

2654
Hygienic

- High performance and low maintenance
- Suitable for CIP and SIP (cleaning in process)
- PTFE Seal: conform to EC Regulation 1935/2004/EC, Regulation (EU) No. 10/2011, FDA, USP Class VI
- ISO 5211 head flange



The ball valves are manufactured using high quality materials and fulfill the requirements of many international standards. They offer maximum flow performance for hygienic duties.

They boast a high quality finish and are available in different variations.

Through their simple construction the ball valves are very low-maintenance.

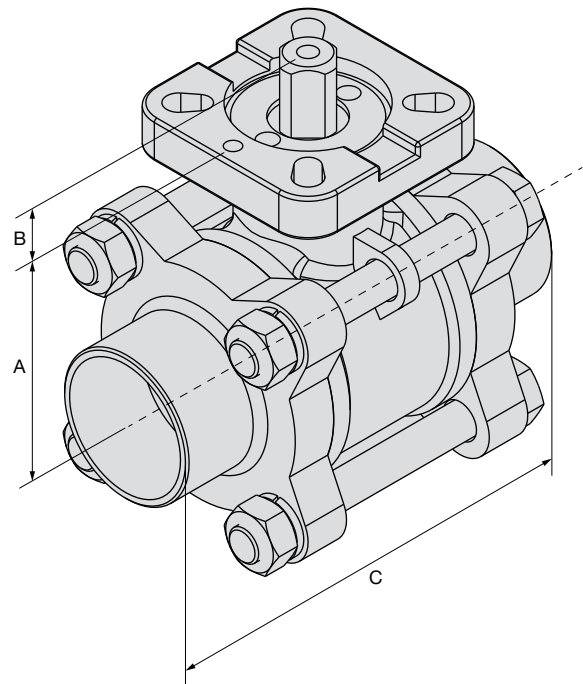
They are available with and without manual lever. Next to this, they can be connected via the mechanical interface (acc. to ISO 5211) with pneumatic (for example, type 2051, 2052) and electrical rotary actuators (for example, type 3003, 3004, 3005).

Technical data

Available standard sizes	Orbital welded end versions acc. DIN 11850 R2 ISO1127/ISO 4200 ASME BPE
Material medium contact	Stainless steel 1.4435 (316L)
Material medium separated	1.4435
Seals	Seat, body gasket, thrust-washer and stem packing in PTFE (FDA conform)
Surface quality	Wetted surface RA < Ra 0.8 µm Body surface electropolished
Medium temperature	-10 °C...200 °C Max. 6 bar for steam with sealing PTFE/ stainless steel reinforced (optionally)
Medium pressure	Max. 63 bar (see pressure temperature diagram)
Conformity (PTFE seal)	1935/2004/EC, FDA, USP Class VI
Lever	Electropolished, CFM8 (1.4408)
ISO head flange	EN ISO 5211

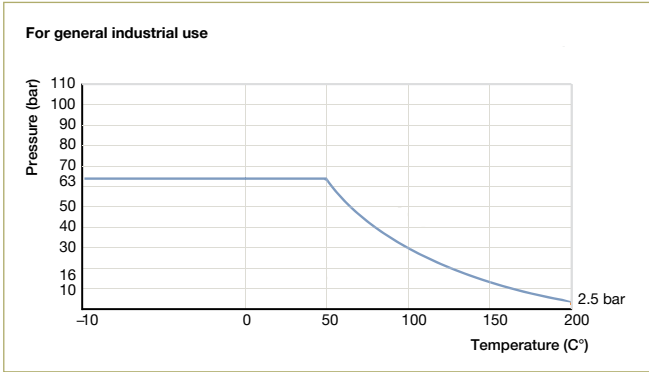
Dimensions [mm]

See ordering chart for complete dimensions.



Orifice	A	B	C
10	40	9	100
15	40	9	100
20	44	9	105
25	52	12	115
32	58	12	140
40	68	12	150
50	77	16	170
65	98	19	220
80	110	19	300
100	138	24	325

Pressure Temperature Chart

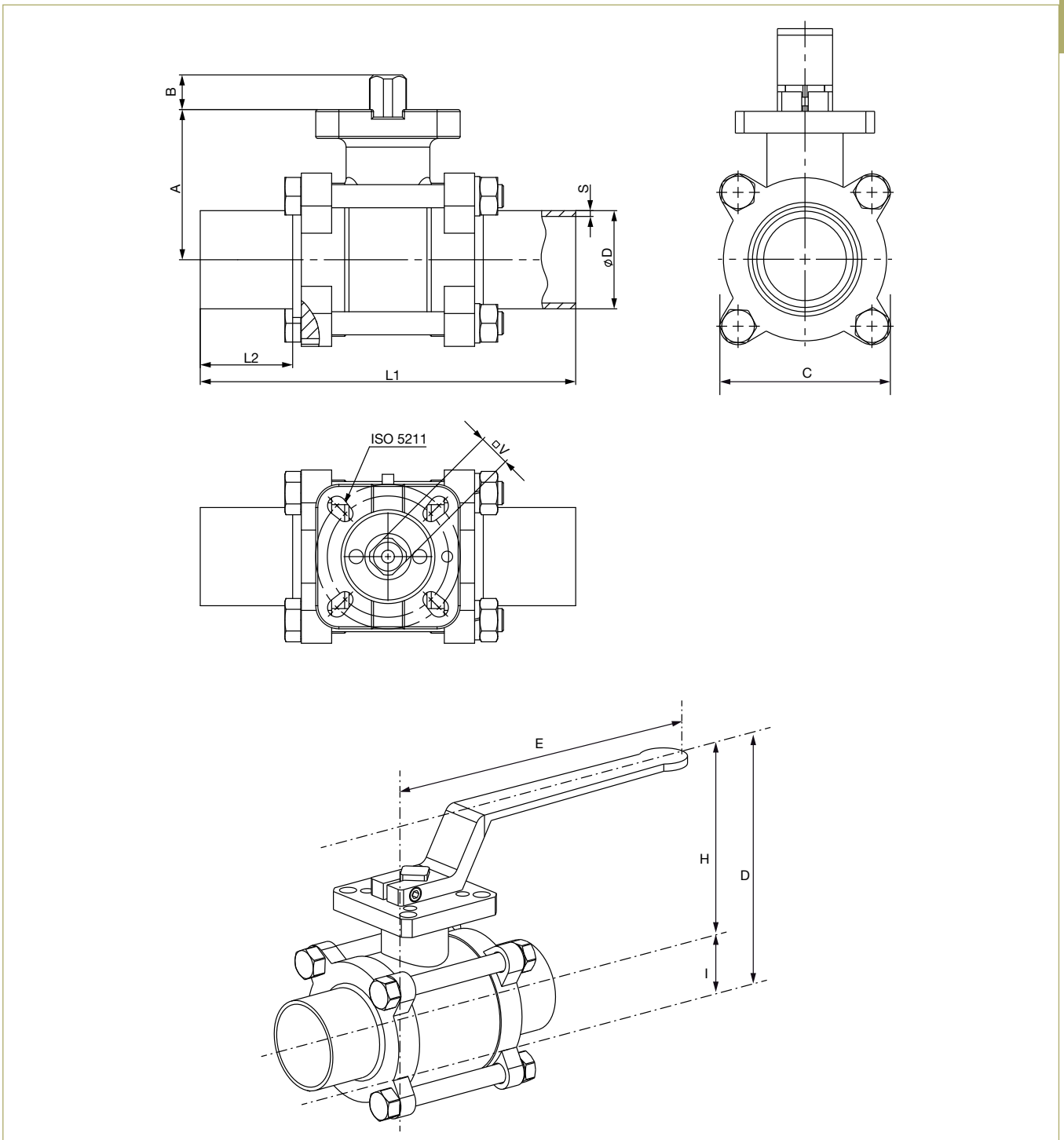


Torques

DN	8	10	15	20	25	32	40	50	65	80	100
Breakaway torque [Nm]	6	6	10	14	17	24	29	44	78	112	140
Running torque [Nm]	4	4	7	9	11	16	19	30	52	89	112

The given values were measured at max. delta P with water at ambient temperature.

Dimensions [mm]





Ordering chart

2654
Hygienic

Orifice [mm]	A	B	C	D	E	H	I	L1	L2	Ø D	S	V	ISO 5211	Article no. manual operated	Article no. bare shaft
Ball valve with weld end, DIN 11850 R2															
10	40	9	47.5	90	125	64	26	100	23	13	1.5	9	F03/F04	772642	772592
15	40	9	47.5	90	125	64	26	100	25	19	1.5	9	F03/F04	772643	772593
20	44	9	52.5	96	125	68	28	105	25	23	1.5	9	F03/F04	772644	772594
25	52	12	58	123	189	91	32	115	25	29	1.5	11	F04/F05	772645	772595
32	58	12	71	134.5	189	97	37.5	140	33	35	1.5	11	F04/F05	772646	772596
40	68	12	78.5	149	221	107	42	150	33	41	1.5	14	F05/F07	772647	772597
50	77	16	94.5	167	221	116.5	50.5	170	33	53	1.5	14	F05/F07	772648	772598
65	98	19	122	218.5	302	154.5	64	220	40	70	2	17	F07/F10	772649	772599
80	110	19	186	252	302	166.5	85.5	300	65	85	2	17	F07/F10	772650	772600
100	138	24	217.5	316.5	350	219.5	97	325	65	104	2	22	F10	772651	772601

Orifice [mm]	A	B	C	D	E	H	I	L1	L2	Ø D	S	V	ISO 5211	Article no. manual operated	Article no. bare shaft
Ball valve with weld end, ISO 1127/ISO 4200															
10	40	9	47.5	90	125	64	26	100	23	17.2	1.6	9	F03/F04	772653	772604
15	40	9	47.5	90	125	64	26	100	25	21.3	1.6	9	F03/F04	772654	772605
20	44	9	52.5	96	125	68	28	105	25	26.9	1.6	9	F03/F04	772655	772606
25	52	12	58	123	189	91	32	115	25	33.7	2	11	F04/F05	772656	772607
32	58	12	71	134.5	189	97	37.5	140	33	42.4	2	11	F04/F05	772657	772608
40	68	12	78.5	149	221	107	42	150	33	48.3	2	14	F05/F07	772658	772609
50	77	16	94.5	167	221	116.5	50.5	170	33	60.3	2	14	F05/F07	772659	772610
65	98	19	122	218.5	302	154.5	64	220	40	76.1	2	17	F07/F10	772660	772611
80	110	19	186	252	302	166.5	85.5	300	65	88.9	2.3	17	F07/F10	772661	772612
100	138	24	217.5	316.5	350	219.5	97	325	65	114.3	2.3	22	F10	772662	772613

Ordering chart continued

Orifice [inch]	A	B	C	D	E	H	I	L1	L2	Ø D	S	V	ISO 5211	Article no. manual operated	Article no. bare shaft
Ball valve with weld end, ASME BPE															
3/8	40	9	47.5	90	125	64	26	100	23	9.53	0.89	9	F03/F04	772633	772579
1/2	40	9	47.5	90	125	64	26	90	20	12.7	1.65	9	F03/F04	772634	772580
3/4	44	9	52.5	96	125	68	28	105	25	19.05	1.65	9	F03/F04	772635	772581
1	52	12	58	123	189	91	32	115	25	25.4	1.65	11	F04/F05	772636	772582
1 1/2	68	12	78.5	149	221	107	42	150	33	38.1	1.65	14	F05/F07	772637	772583
2	77	16	94.5	167	221	116.5	50.5	170	33	50.8	1.65	14	F05/F07	772638	772584
2 1/2	98	19	122	218.5	302	154.5	64	220	40	63.5	1.65	17	F07/F10	772639	772585
3/4	110	19	186	252	302	166.5	85.5	300	65	76.2	1.65	17	F07/F10	772640	772586
4	138	24	217.5	316.5	350	219.5	97	325	65	101.6	2.11	22	F10	772641	772587

2654
Hygienic

2/2 and 3/2 way Ball Valve with manual override, plastic body, DN10...DN100

2657

- Application for aggressive media
- High flow-rate
- Safe blocked union nuts with Dual Block® Technology¹⁾



2/2 and 3/2 way ball valves with manual override in plastic for separating medium flow. There are different body versions and materials can be ordered to suit various applications.

Special feature

The ball valves are equipped with the so-called Dual Block® Technology. This system serves as a safety device for the union nuts. It prevents these separating during operation.

Technical data

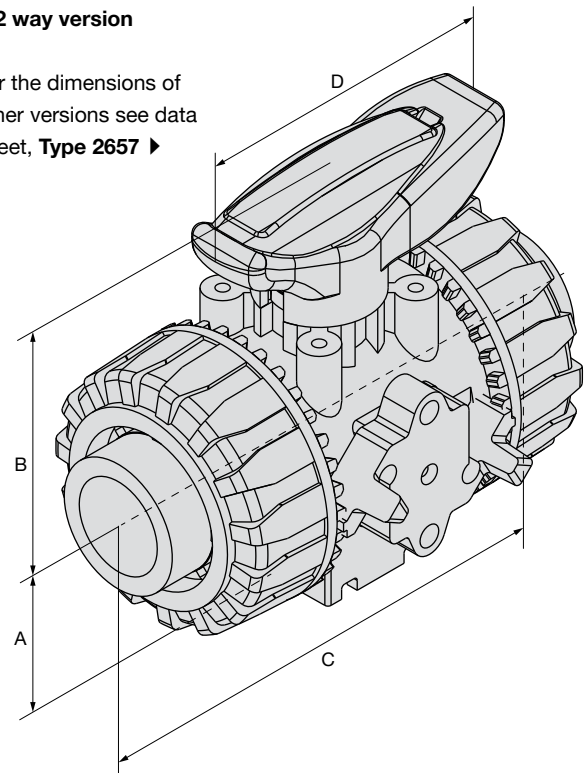
Body material	PVC-U, PP (PVDF, PVC-C on request)
Seal material	PTFE/EPDM, PTFE/FKM
Media temperature	
PVC-U	0 °C...+60 °C
PP	+10 °C...+80 °C
PVDF	0 °C...+120 °C
Port connection	
PVC-U	True union
PP, (PVDF on request)	Fusion spigot
Operating pressure	0...10 bar; 0...16 bar

1) Dual Block® Technology is a registered trademark of FIP – Formatura Iniezione Polimeri S.p.A

Dimensions [mm]

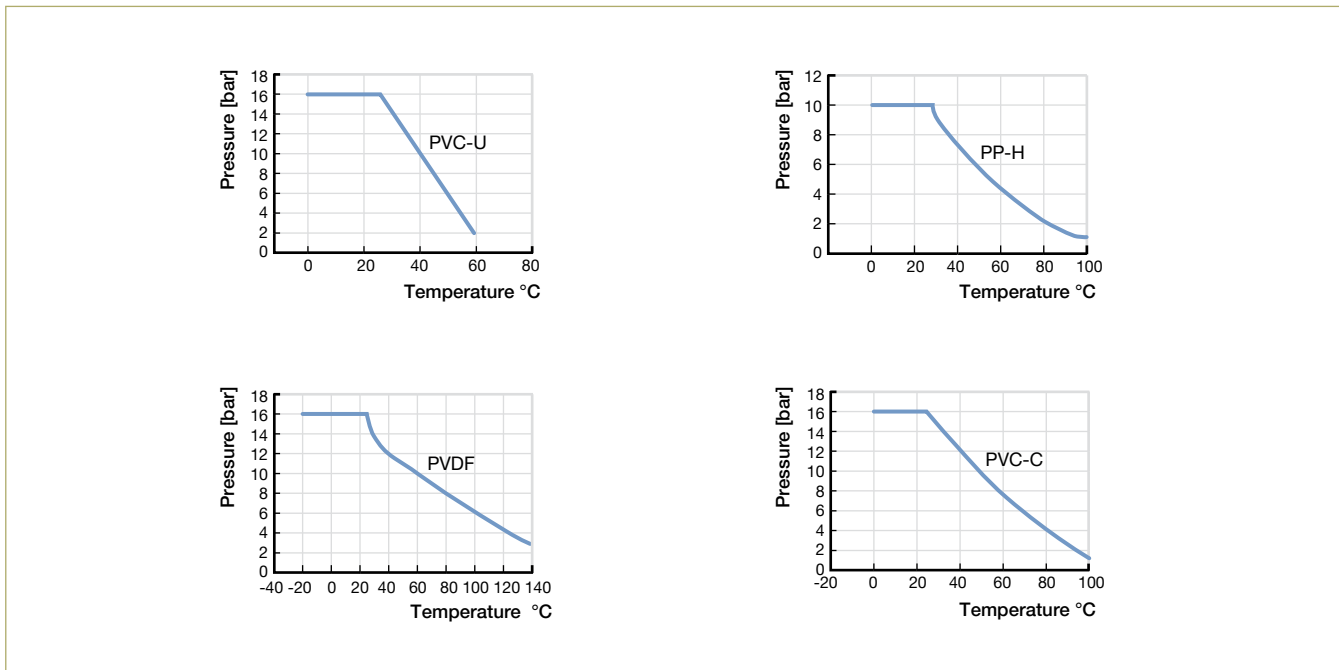
2/2 way version

For the dimensions of other versions see data sheet, **Type 2657** ▶



DN	A	B	C	D
10	29	54	103	67
15	29	54	103	67
20	34.5	65	115	85
25	39	69.5	128	85
32	46	82.5	146	108
40	52	89	164	108
50	62	108	199	134
65	87	164	235	225
80	105	177	270	327
100	129	195	308	385


















Pressure Temperature chart



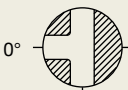
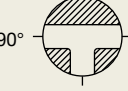















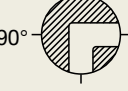














Ordering chart

Orifice [mm]	Port connection Ø [mm]	K _{vs} value for water [m³/h]	Pressure range PVC-U [bar]	Pressure range PP [bar]	Article no. true union PVC	Article no. fusion spigot PP
2/2 way Ball Valve (further versions on request)						
Seal material PTFE/EPDM						
10	16	4.8	0...16	0...10	176462	176469
15	20	12	0...16	0...10	176463	176470
20	25	23	0...16	0...10	176464	176471
25	32	46	0...16	0...10	176465	176472
32	40	66	0...16	0...10	176466	176473
40	50	105	0...16	0...10	176467	176474
50	63	204	0...16	0...10	176468	176475
65	75	315	0...16	0...10	202660	252587
80	90	426	0...16	0...10	185991	238514
100	110	570	0...16	0...10	202750	254604

Ordering chart

Orifice [mm]	Port connection Ø [mm]	K_{vs} value for water [m³/h]	Pressure range PVC-U [bar]	Pressure range PP [bar]	Article no. true union PVC	Article no. fusion spigot PP
Seal material PTFE/FKM						
10	16	4.8	0...16	0...10	176476 	176483 
15	20	12	0...16	0...10	176477 	176484 
20	25	23	0...16	0...10	176478 	176485 
25	32	46	0...16	0...10	176479 	176486 
32	40	66	0...16	0...10	176480 	176487 
40	50	105	0...16	0...10	176481 	176488 
50	63	204	0...16	0...10	176482 	176489 
65	75	315	0...16	0...10	182519 	on request
80	90	426	0...16	0...10	185855 	on request
100	110	570	0...16	0...10	205537 	on request

2657

Switched position	Orifice [mm]	Port connection Ø [mm]	K_{vs} value for water [m³/h]	Pressure range PP [bar]	Article no. seal material EPDM	Article no. seal material FKM
3/2 way Ball Valve, PVC (further versions on request)						
T1  0°  90°	10	16	1.5	0...16	209890 	186022 
	15	20	2.1	0...16	209891 	186023 
	20	25	5.7	0...16	209892 	186024 
	25	32	8.4	0...16	209893 	186025 
	32	40	16.2	0...16	209894 	186026 
	40	50	19.8	0...16	209895 	186027 
	50	63	37.2	0...16	209896 	186028 
L4  0°  90°	10	16	2.8	0...16	209897 	186015 
	15	20	4.3	0...16	209898 	186016 
	20	25	9	0...16	209899 	186017 
	25	32	15.9	0...16	209900 	186018 
	32	40	28.5	0...16	202689 	186019 
	40	50	37.2	0...16	209901 	186020 
	50	63	67.2	0...16	209902 	186021 

Butterfly valve (wafer and lug)

2671

- Manually operated / automatable
- High flow rate
- Shaft and housing: non-wetted parts
- Low torque through self-lubricating bearing bush
- Zero leakage



Metal butterfly valves are used for control and on/off operations. Due to the fact, that the valves are available with different body designs (wafer or lug type) and materials, they perfectly meet the requirements of diverse applications and processes. Usually they are used in application fields such as the metal industry, power generation, pulp and paper, mining, shipbuilding, environmental and mechanical engineering.

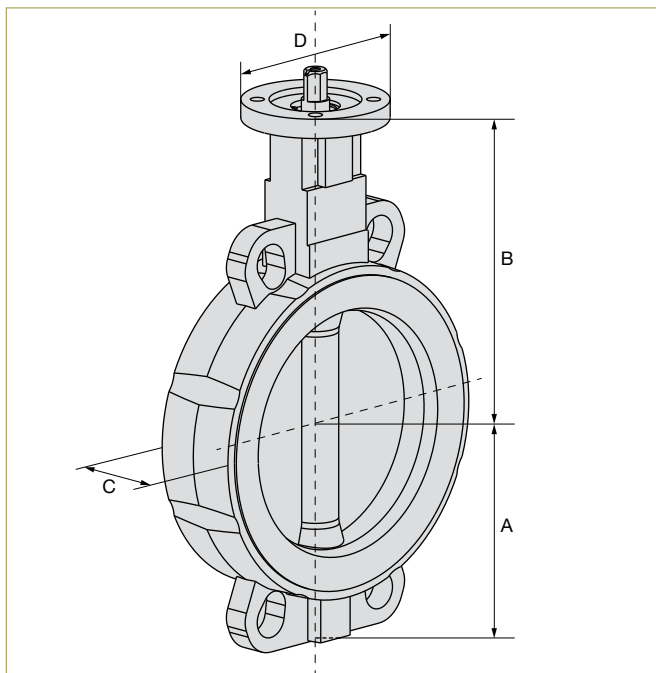
Further features and benefits are:

- Through shaft for self centering disc --> even wear and low torques
- Blow-out proof shaft seal
- Spherically shaped disc
- Sturdy notched handle in ductile iron: lockable in 10 adjustable positions

Technical data

Orifice	DN40...DN300
Body	Wafer, lug
Body material	GG25 - Cast Iron, GGG50 - Ductile Iron (other materials on request)
Disc material	CF8M (other materials or coatings on request)
Seal material	EPT (W-EPT, FKM, EPDM, NBR, CSM, Silicone on request)
Medium temperature	-20 °C...140 °C (for EPT, see pressure/temperature chart) Butterfly valves with different maximum pressure ratings on request
Max. medium pressure	Max. 16 bar for lubricating media & 10 bar for dry media (see pressure/temperature chart)
Port connections	EN1092-1 & EN1092-2 ASME/ANSI B16.1 Class 125 ASME/ANSI B16.5 Class 150
ISO top flange	EN ISO 5211
Considered standards	ISO 5208 ASME B16.34 API 609

Dimensions [mm]

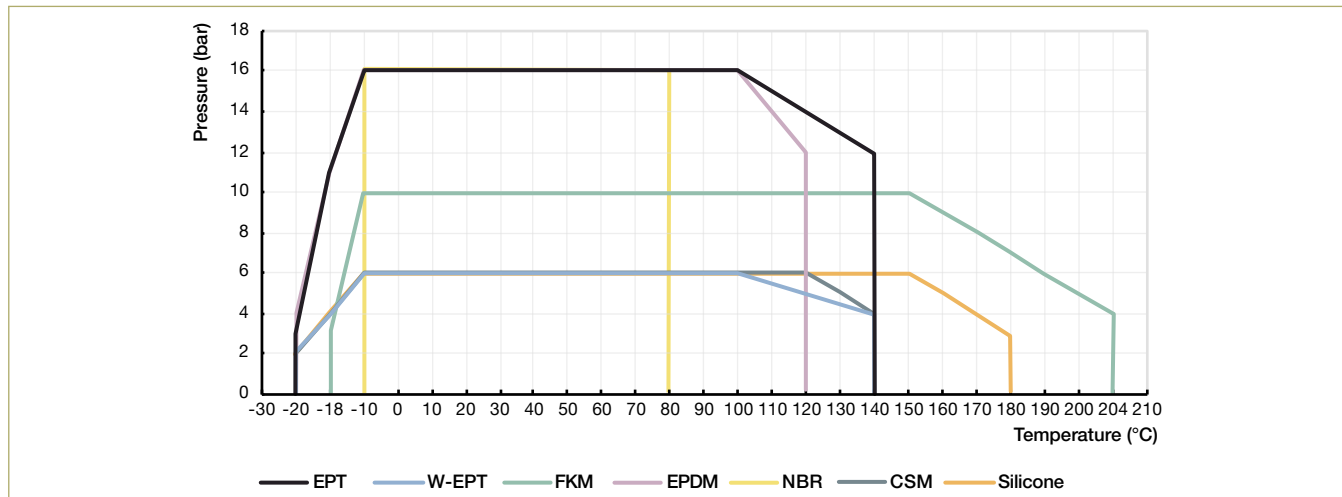


Orifice	A	B	C	G
40	57	130	32	65
50	62	136	43	65
65	84	145	46	65
80	89	151	46	65
100	106	175	52	65
125	120	190	56	90
150	131	203	56	90
200 ¹⁾	166	225	60	90
200 ²⁾	164	245.5	60	125
250	200	271	68	125
300	235	296	78	150

1) Standard butterfly valve (Body material: GG 25, Liner: EPDM, Disc: 316)

2) Butterfly valves - beyond the defined standard ones (for example with ductile iron body material)

Pressure/Temperature diagram



Torque [Nm]

Size		Differential pressure (kg/cm ²) Lubricating (non corrosive)		
mm	inch	6	10	16
40	1½	4.5	4.5	4.5
50	2	10	10	11.5
65	2½	13	13.5	15
80	3	19.6	19.6	19.6
100	4	29.4	29.4	34.3
125	5	44.1	44.1	54
150	6	58	72	80
200	8	120	125	130
250	10	170	185	200
300	12	352	357	450

To use torque chart, note the following:

1. Seating / unseating torque values above included friction bearing torque for stated Δp
2. For actuator dimensioning we recommend considering a safety factor of minimum 30 %.
3. Test medium: water / room temperature

Flow rate C_v [m³/h]

Size		C_v FLOW COEFFICIENT / Opening angle								
mm	inch	10°	20°	30°	40°	50°	60°	70°	80°	90°
40	1½	0.8	2.8	8.1	16.6	25.7	42.1	69.0	94.8	132.2
50	2	1.3	4.4	11.9	25.7	44.5	70.2	117.0	154.4	225.8
65	2½	2.3	8.8	21.3	41.0	71.4	111.2	218.8	280.8	368.6
80	3	2.9	11.5	30.4	56.2	97.1	147.4	250.4	395.5	497.3
100	4	4.4	17.1	45.6	84.2	139.2	258.6	422.4	709.0	845.9
125	5	7.6	28.1	72.5	138.1	253.9	461.0	700.8	1214.5	1454.3
150	6	11.7	48.0	111.2	204.8	381.4	634.1	1021.4	1474.2	2175.0
200	8	22.2	74.9	193.1	358.0	670.4	1164.2	1833.4	2702.7	3655.1
250	10	32.8	118.2	286.7	527.7	978.1	1710.5	2636.0	3809.5	5565.7
300	12	39.8	150.9	365.0	719.6	1330.3	2486.3	3800.2	5839.5	8257.9

When require $C_v = 1.17KV$

Butterfly valves can be used as a control valve at an opening angle between 30° and 90°. A regulation to an opening angle below 30° is not recommended due to high flow rates and cavitation, which results in early damage of the valve.

The max. flow rate of the medium through the butterfly valve must not be exceeded:

- 3 m/s for liquid media. The use between 3 and 5 m/s is possible. However, this increases the risk of cavitation, noise, vibrations and pressure surges
- 20 m/s for gas. The use between 20 and 25 m/s is possible. However, this increases the risk of cavitation, noise, vibrations and pressure surges













Ordering chart

Orifice	Body	Body material	Disc material	Liner	Max. pressure [bar]	C _v [m ³ /h]	Weight - bare shaft [kg]	Article no. bare shaft	Article no. with hand lever
Wafer version									
40	Wafer	GGG 50	CF8M	EPT	16	132.2	2	773687	773649
50	Wafer	GG 25	CF8M	EPT	16	225.8	3	773688	773650
65	Wafer	GG 25	CF8M	EPT	16	368.6	4	773669	773651
80	Wafer	GG 25	CF8M	EPT	16	497.3	4	773670	773652
100	Wafer	GG 25	CF8M	EPT	16	845.9	6	773671	773653
125	Wafer	GG 25	CF8M	EPT	16	1454.3	8	309094	773654
150	Wafer	GG 25	CF8M	EPT	16	2175.0	9	773673	773655
200	Wafer	GGG 50	CF8M	EPT	16	3655.1	14	773674	773656
250	Wafer	GGG 50	CF8M	EPT	16	5565.7	22	773675	773657
300	Wafer	GGG 50	CF8M	EPT	16	8257.9	33	773676	773658
Lug version									
40	Lug	GGG 50	CF8M	EPT	16	132.2	3	773689	773686
50	Lug	GGG 50	CF8M	EPT	16	225.8	4	773677	773659
65	Lug	GGG 50	CF8M	EPT	16	368.6	4	773678	773660
80	Lug	GGG 50	CF8M	EPT	16	497.3	5	309102	773661
100	Lug	GGG 50	CF8M	EPT	16	845.9	8	773680	773662
125	Lug	GGG 50	CF8M	EPT	16	1454.3	10	773681	773663
150	Lug	GGG 50	CF8M	EPT	16	2175.0	11	773682	773664
200	Lug	GGG 50	CF8M	EPT	16	3655.1	18	773683	773665
250	Lug	GGG 50	CF8M	EPT	16	5565.7	27	773684	773666
300	Lug	GGG 50	CF8M	EPT	16	8257.9	44	773685	773667

2671

Ordering chart

Orifice	Article no.
EPT replacement liners	
40	773949 
50	773950 
65	773951 
80	773952 
100	773953 
125	773954 
150	773955 
200	773956 
250	773957 
300	773958 

Plastic butterfly valve

2674

- Manually operated/automatable
- For aggressive media
- Low torques
- Long lifespan
- Maintenance friendly

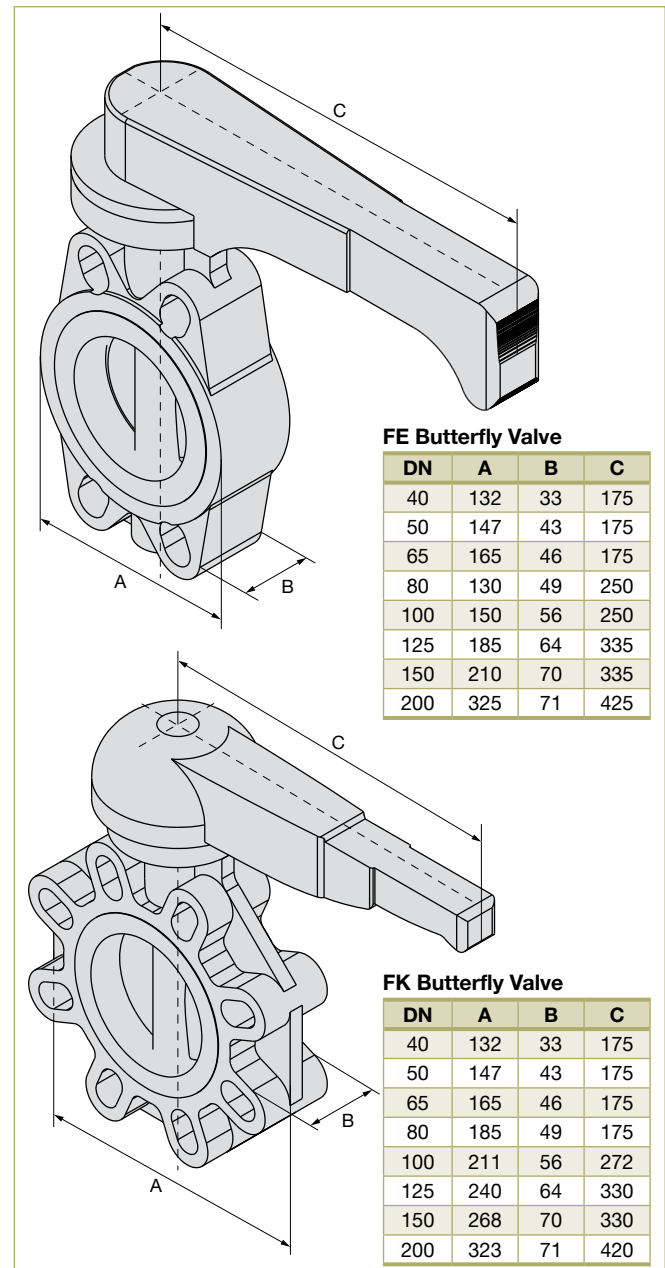


2/2 way plastic butterfly valves used for control and on/off operations. Type 2674 can be connected via the mechanical interface (acc. to ISO 5211) with pneumatic (for example, type 2052 or 2051) and electrical rotary actuators (for example, type 3003, 3004 or 3005). Next to this, the valve is available with different kinds of liner (EPDM, FPM), housing (PVC-U, PP-GR) and disc (PVC-U, PP-H, PVDF, PVC-C) materials. Consequently, type 2674 is suited for various aggressive media and meets the requirements of different applications and processes.

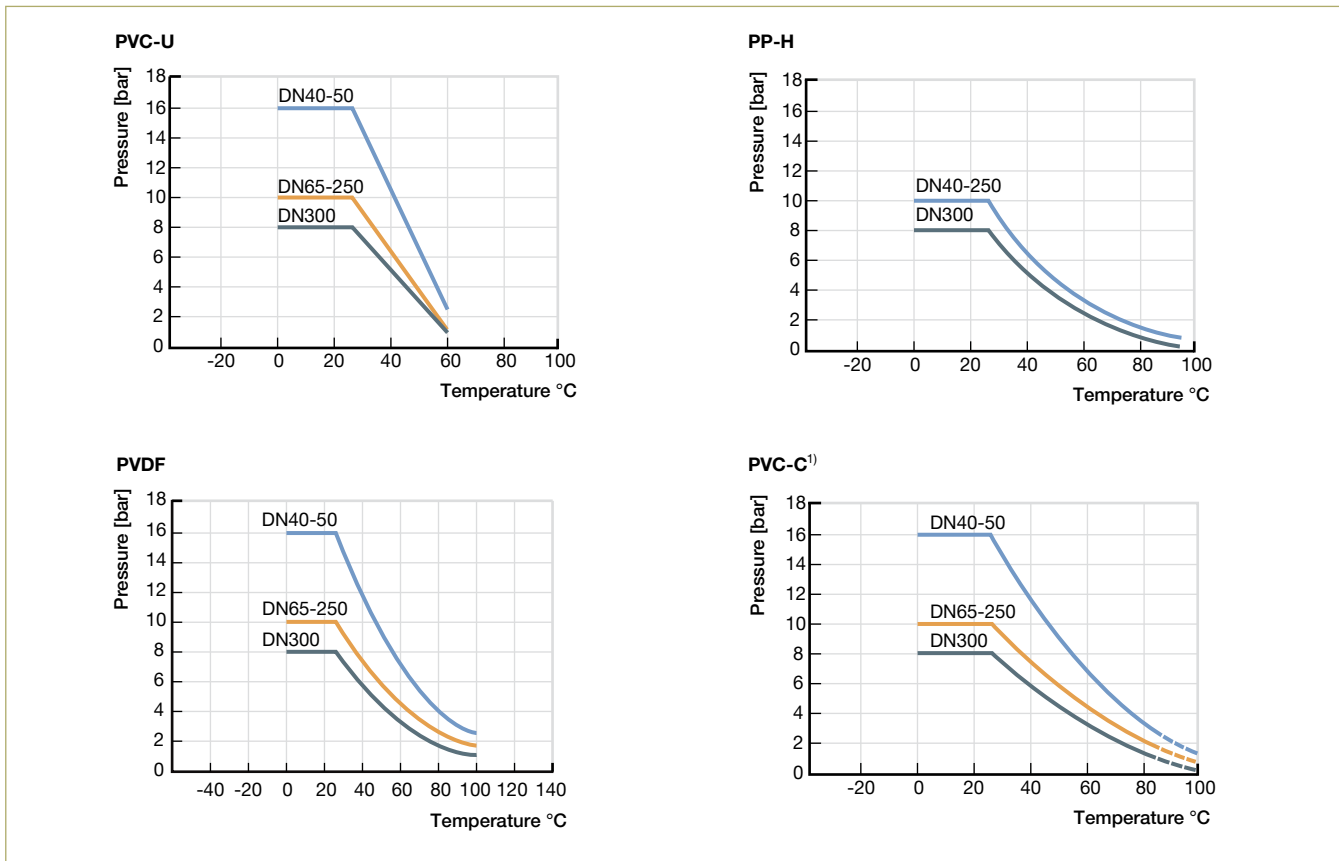
Technical data

Body	Wafer Lug (on request)
Body material	PVC-U (FE version) PP-GR (FK version)
Disc material	PVC-U (FE and FK version) PP-H (FK version) PVDF (FK version) PVC-C (on request)
Seal material	EPDM, FPM
Temperature range	
PVC-U	0 °C...+60 °C
PP	0 °C...+90 °C
PVDF	0 °C...+100 °C
PVC-C	0 °C...+100 °C
Port connection	DIN 2501, ISO DIS 9624, UNI 2223 BS 10 table D/E ASA B16.5 class 150 JIS 2212 (K10 except for DN200 / DN300), JIS 2212 (K5 except for DN50)
Medium pressure	See pressure temperature chart
ISO top flanges	EN ISO 5211

Dimensions [mm]

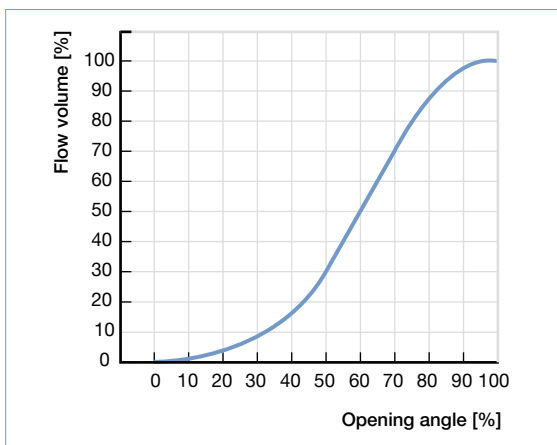


Pressure temperature chart



1) PVC-C on request

Flow rate



Torque chart

Ø Leitungsanschluss [mm]	50	63	75	90	110	140	160	225	280	315
DN	40	50	65	80	100	125	150	200	250	300
Drehmoment [Nm] FE-Absperrklappe	9	10	14	25	43	58	91	142	-	-
Drehmoment [Nm] FK-Absperrklappe	11	17	23	34	45	64	89	138	306	336

K_{vs} values (for water)

Ø Leitungsanschluss [mm]	50	63	75	90	110	140	160	225	280	315
DN	40	50	65	80	100	125	150	200	250	300
K _{vs} [m³/h]	60	77.1	102	213	354	591	1122	1830	3192	4896



Ordering chart

2674

Orifice DN	Port connection [mm]	Pressure range [bar]	Weight – bare shaft [kg]	Weight – with lever [kg]	Article no. bare shaft		Article no. with lever (DN40...DN200); with manual gear box (DN250...DN300)	
					EPDM liner	FPM liner	EPDM liner	FPM liner
FK Butterfly Valve								
Body: PP-GR / Disc: PVC-U								
40	50	16	0.57	0.9	293953	293966	293957	293974
50	63	16	0.75	1.08	293954	208206	282059	293975
65	75	10	1	1.47	266067	293967	282061	293976
80	90	10	1.4	1.87	265713	277934	282062	277933
100	110	10	1.75	2.22	268247	293968	282063	293977
125	140	10	2.55	3.1	293955	293969	270796	293978
150	160	10	3.3	3.85	264866	293970	265983	293979
200	225	10	6	6.75	264864	293971	282064	293980
250 ¹⁾	280	10	12	18.6	293956	293972	293964	293987
300 ¹⁾	315	8	19	25.6	284675	293973	293965	293988
Body: PP-GR / Disc: PP-H								
40	50	10	0.47	0.8	293989	208209	293998	294020
50	63	10	0.65	0.98	293990	208210	293999	294021
65	75	10	0.9	1.37	273125	208211	294000	294022
80	90	10	1.3	1.77	293991	208212	294002	294023
100	110	10	1.65	2.12	293992	209928	294003	294024
125	140	10	2.45	3	293993	294015	294004	294025
150	160	10	3.2	3.75	293994	294016	294005	294026
200	225	10	5.9	6.65	293995	294017	294006	294027
250 ¹⁾	280	10	11.8	18.4	293996	294018	294013	294034
300 ¹⁾	315	8	18.7	25.45	293997	294019	294014	294035

Ordering chart continued

Orifice DN	Port connection [mm]	Pressure range [bar]	Weight – bare shaft [kg]	Weight – with lever [kg]	Article no. bare shaft		Article no. with lever (DN40...DN200); with manual gear box (DN250...DN300)	
					EPDM liner	FPM liner	EPDM liner	FPM liner
Body: PP-GR / Disc: PVDF								
40	50	16	0.67	1	294216	294036	294229	294044
50	63	16	0.85	1.18	294218	294037	294230	294045
65	75	10	1.1	1.57	294219	294038	294232	277324
80	90	10	1.55	2.02	294220	294039	294233	277325
100	110	10	1.9	2.37	294221	267777	294234	277326
125	140	10	2.75	3.3	294222	294040	294236	294046
150	160	10	3.55	4.1	294224	289253	294237	294047
200	225	10	6.3	7.05	294225	294041	294238	294048
250 ¹⁾	280	10	13	19.6	294227	294042	294249	294055
300 ¹⁾	315	8	21	27.6	294228	294043	294250	294056

1) acc. ISO-DIN ASA B.16.5 150 (on request)

Orifice	Port connection [mm]	Pressure range [bar]	Weight [kg]	Article no	
				EPDM liner	FPM liner
FE Butterfly Valve					
Body: PVC-U / Disc: PVC-U					
40	50	16	0.83	254375	208205
50	63	16	1.01	254376	293948
65	75	10	1.42	254378	208207
80	90	10	1.64	254379	208208
100	110	10	1.99	212081	293949
125	140	10	3.03	254384	293950
150	160	10	3.73	254385	293951
200	225	10	8.24	254386	293952

2/2 or 3/2 way ball valve with electric rotary actuator

8804

- High flow rate value
- Actuator with adjustable limit switches
- Visual position indicator



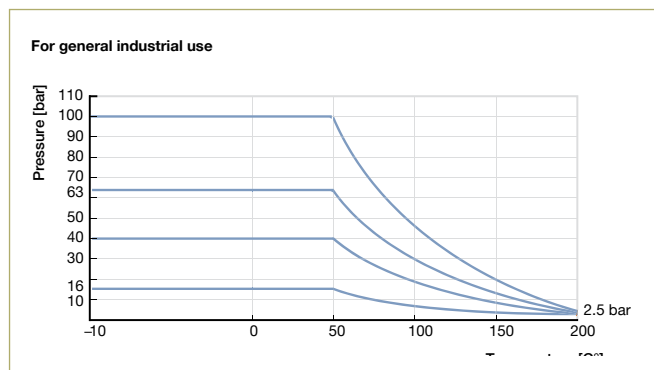
The electric ball valve Type 8804 consists of an electrical rotary actuator and a 2/2 or 3/2 way ball valve made of stainless steel. 2 way variants are available with a 2-piece or 3-piece ball valve for various applications. The 3-way version is offered with L or T bore holes (on request).

The rotary actuator is compactly built. It can be used also as single device for the operation of other control elements (see datasheet Type 3003). Heat resistor and torque limiter are standard. The body is made of low inflammable material, classified acc. to UL 94 V0.

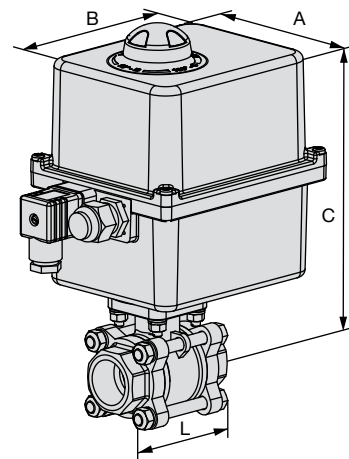
Technical data

Pressure range	0...63 bar
Medium temperature	-10 °C...+130 °C, depending on the medium pressure - see diagram
Ambient temperature	-10 °C...+55 °C
Body material	Stainless steel 1.4408
Seal material	PTFE
Duty rating acc. to IEC34 S4	50 %
Operating voltage	15...30 V AC 50/60 Hz/12...48 V DC 100...240 V AC 50/60 Hz/100...350 V DC
Voltage tolerance	± 10 %; from 12...48 V DC the operating voltage should not go below 11.5 V
Protection class	IP66 with cable plug installed
Limit switches	4 adjustable (2 for motor and 2 additional for feedback) max. 230 V/5 A
Electrical connection	Cable plug acc. to EN175301-803 (supply voltage) Cable glands ISO M20 (included)

Pressure/temperature diagram



Dimensions [mm]



Actuator [Nm]	Port connection [inch]	A	B	C	L
20	1/4	91.7	136.5	163.7	65
20	3/8	91.7	136.5	163.7	65
20	1/2	91.7	136.5	163.7	75
20	3/4	91.7	136.5	167.7	80
35...100	1/4	127.7	150.3	190.8	65
35...100	3/8	127.7	150.3	190.8	65
35...100	1/2	127.7	150.3	190.8	75
35...100	3/4	127.7	150.3	194.8	80
35...100	1	127.7	150.3	202.8	90
35...100	1 1/4	127.7	150.3	208.8	110
35...100	1 1/2	127.7	150.3	218.8	120
35...100	2	127.7	150.3	227.8	140
35...100	2 1/2	127.7	150.3	248.8	185

Options

- Also available as 2-piece ball valve
- Also available as a 3/2 way ball valve
- With weld ends
- Ball valve in plastic version

Ordering chart

Orifice [mm]	Port connection [inch]	Actuator [Nm]	Rotation time for 90° (s)	K _v value [m³/h]	Voltage	Article no.
Type 8804, 3-piece globe valve with thread, pressure range 0...63 bar						
10.0	¼	20	12	7	100...240 V, 50/60 Hz and 100...350 V DC	226483
12.7	⅜	20	12	9		226484
15.0	½	20	12	19		226485
20.0	¾	35	12	46		226486
25.0	1	35	7	72		226487
32.0	1¼	60	7	105		226488
40.0	1½	100	12	170		241107
50.0	2	100	12	275		226490
65.0	2½	100	23	507		226491
10.0	¼	20	12	7		15...30 V, 50/60 Hz and 12...48 V DC
12.7	⅜	20	12	9	226497	
15.0	½	20	12	19	226498	
20.0	¾	35	12	46	226499	
25.0	1	35	7	72	226500	
32.0	1¼	35	7	105	225945	
40.0	1½	100	12	170	241109	
50.0	2	100	12	275	226502	
65.0	2½	100	23	507	226503	

8804



2/2 way ball valve with electric rotary actuator, ball valve in plastic, DN10...DN50

8804 plastic

- Suitable for aggressive media
- High flow rate value
- Actuator with adjustable limit switches
- Visual position indicator
- Safe blocked union nuts with Dual Block® Technology¹⁾
- Multivoltage



The electric ball valve Type 8804 consists of an electrical rotary actuator and a 2/2 or 3/2 way ball valve made of plastic. Different housings and materials are available for various applications. The rotary actuator is compactly built. It can be used also as single device for the operation of other control elements (see datasheet Type 3003).

Special features

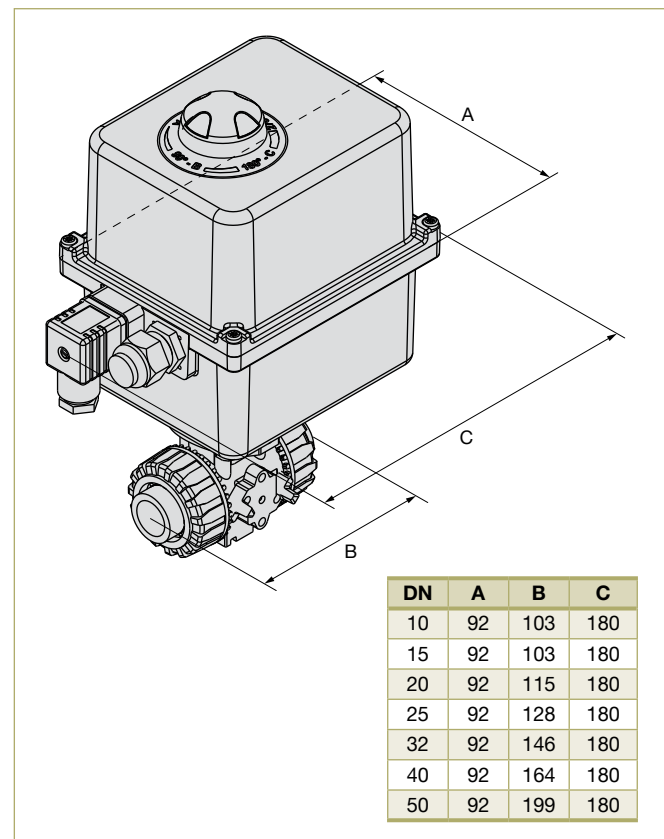
The ball valves are equipped with the so-called Dual Block® Technology. This system allows you to lock the union nuts in the preset position. It prevents them separating during operation.

Heat resistor and torque limiter are standard. The body is made of low inflammable material, classified acc. to UL 94 V0.

Technical data

Body material	PVC-U, (PP, PVDF, PVC-C on request)
Seal material	PTFE/EPDM, (PTFE/FKM)
Media	Gaseous and liquid media, which do not attack the housing and sealing materials
Media temperature	(See pressure temperature chart)
PVC-U	0 °C...+60 °C
PP	+10 °C...+80 °C
PVDF	0 °C...+120 °C
Ambient temperature	-10 °C...+55 °C
Port connections	
PVC-U	True union
(PP, PVDF on request)	(weld end coupling)
Operating pressure	0...10 bar; 0...16 bar
Connection between actuator and ball valve	Flange acc. to ISO 5211
Operating voltage	15...30 V AC 50/60 Hz / 12...48 V DC 100...240 V AC 50/60 Hz / 100...350 V DC
Voltage tolerance	±10 %; for 12...48 V DC the operating voltage should not go below 11.5 V
Duty rating	acc. to IEC34 S4 = 50 %
Electrical connection	Cable Plug acc. to EN175301-803 (supply voltage) Cable glands ISO M20
Protection class	IP66 with cable plug installed
Rotation angle	90° (±5°)
Rotation time	See ordering chart

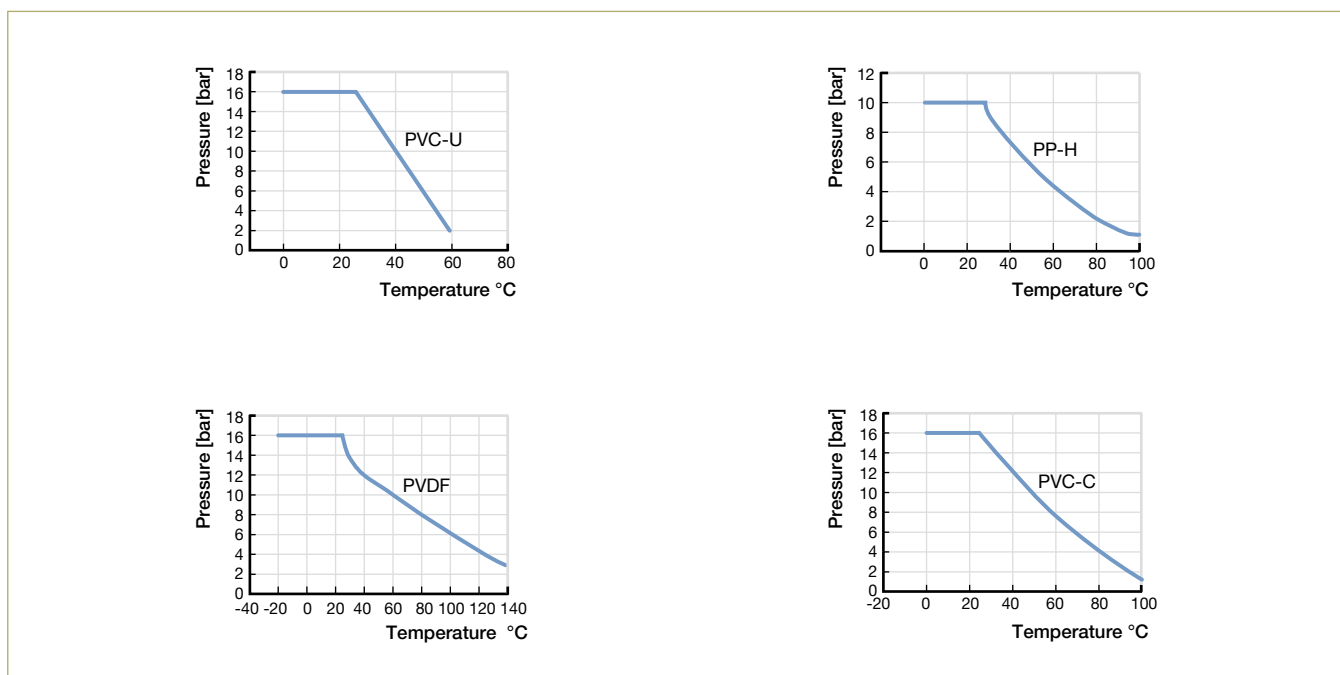
Dimensions [mm]



Limit switches	4 adjustable (2 for motor and 2 additional for feedback) Max. 250 V AC/1.5 A
Material (Actuator)	
Cover/Body	Nylon/PA 6.6
Axis/Screws	Stainless steel
gearbox	stainless steel and PC
Installation	Don't mount the actuator upside down

¹⁾ Dual Block® Technology is a registered trademark of FIP –
Formatura Iniezione Polimeri S.p.A

Pressure Temperature chart



Ordering chart

Orifice (mm)	Port connection Ø (mm)	K _v value water (m³/h)	Pressure range PVC-U, PVDF (bar)	Pressure range PP (bar)	Rotation time for 90° (s)	Actuator (Nm)	Voltage ¹⁾	Article no. True union PVC-U
Seal material PTFE/EPDM								
10	16	4.8	0...16	0...10	12	20	100...240 V AC 50/60 Hz 100...350 V DC	226440
15	20	12	0...16	0...10	12	20		226453
20	25	23	0...16	0...10	12	20		226454
25	32	46	0...16	0...10	12	20		226455
32	40	66	0...16	0...10	12	20		226456
40	50	105	0...16	0...10	12	20		226457
50	63	204	0...16	0...10	12	20		226178
10	16	4.8	0...16	0...10	12	20	15...30 V AC 50/60 Hz 12...48 V DC	226459
15	20	12	0...16	0...10	12	20		226460
20	25	23	0...16	0...10	12	20		226461
25	32	46	0...16	0...10	12	20		226462
32	40	66	0...16	0...10	12	20		226463
40	50	105	0...16	0...10	12	20		226464
50	63	204	0...16	0...10	12	20		226465

1) For 12...48 V DC the operating voltage should not go below 11.5 V

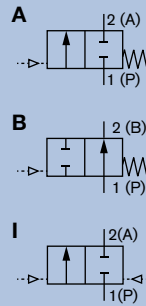
Accessories

Description	Article no.
Key for adjustment of limit switches	665296

2/2 or 3/2 way ball valve with pneumatic rotary actuator

8805

- Pneumatic rotary actuator
- Stainless steel ball valve
- External regulation of the pistons
- Full bore
- Favourable flow rate



Bürkert's range of precision activated ball valves fulfil a wide variety of on-off process applications. Available in 2 or 3 way and both single acting and spring return they exhibit high flow rates by virtue of their reliable fullbore design.

Technical data

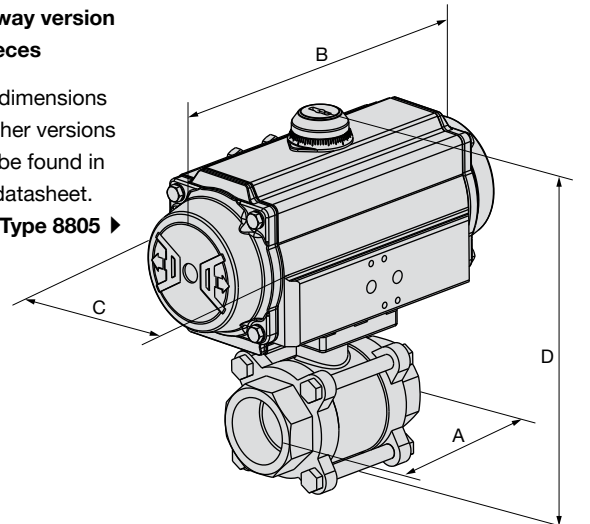
Orifice	
2/2 way ball valve	10...100 mm
3/2 way ball valve	10...40 mm
Body material	
2/2 way ball valve	Stainless steel 1.4408
3/2 way ball valve	Stainless steel 1.4408
Actuator material	
Aluminium	
Ball material	
2/2 way ball valve	Stainless steel 1.4401
3/2 way ball valve	Stainless steel 1.4401
Selector shaft material	
2/2 way ball valve	Stainless steel 1.4401
3/2 way ball valve	Stainless steel 1.4401
Seal materials	
Ball seal	PTFE
Actuating shaft seal	FKM
Pressure range	
See ordering charts	
Medium	
Stainless steel body: aggressive fluids, which will not attack the body and seal	
Medium temperature	
-10 °C...+100 °C (see pressure temperature diagram)	
Ambient temperature	
-10 °C...+80 °C (see pressure temperature diagram)	
Control medium	
Compressed air, filtered, dry or oiled	
Pilot pressure	
6...8 bar ¹⁾	
Port connection	
2/2 way ball valve	2/2 way ball valve: Rp ¼-Rp 4 Whitworth Thread acc. DIN EN 10226-1 (old DIN 2999) Weld end Flange
3/2 way ball valve	3/2 way ball valve: Rp ¼-Rp 2 Whitworth Thread acc. DIN EN 10226-1 (old DIN 2999)
Installation	
As required, preferably with actuator upright	

1) Pressure values [bar]: Measured as overpressure with respect to the atmospheric pressure

Dimensions [mm]

2/2 way version 3 pieces

The dimensions of other versions can be found in the datasheet. See **Type 8805** ▶

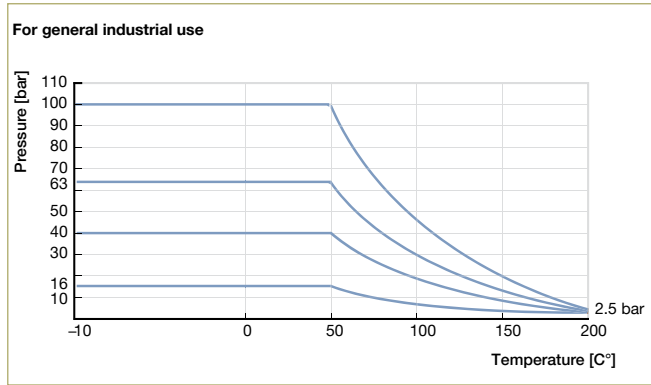


Port connection	A	B	C	D
G ¼	65	136	72	129
G ⅜	65	136	72	129
G ½	75	154	85	145
G ¾	80	154	85	145
G 1	90	204	93	174
G 1¼	110	204	93	174
G 1½	120	241	106	203
G 2	140	241	106	203
G 2½	185	259	119	245
G 3	205	304	136	285
G 4	240	333	147	325

Options

- Actuator normally opened or double acting
- Feedback
- NAMUR Pilot valve

Pressure temperature diagram



Switching position

Ball configuration	T			L
Position				
0°				
90°				
Switching position	T1	T2	T3	L4

Ordering chart

Control function	Orifice DN [mm]	Port connection	K _v value water [m ³ /h]		Nominal pressure ¹⁾ [bar]		Actuator		Article no.		
			StSt 2 pieces	StSt 3 pieces	StSt 2 pieces	StSt 3 pieces	StSt 2 pieces	StSt 3 pieces	StSt 3 pieces weld end port connection	StSt 2 pieces threaded port connection	StSt 3 pieces threaded port connection
2/2 way ball valve, brass and stainless steel (StSt) (Minimum pilot pressure 6 bar)											
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	10	1/4"	9	9	100	63	15	15	-	217232	217250
	12	3/8"	13	13	100	63	15	15	217261	217233	217251
	15	1/2"	19	19	100	63	30	30	217262	217234	217252
	20	3/4"	46	46	100	63	60	30	217263	217235	217253
	25	1"	72	72	100	63	60	60	217264	217236	217254
	32	1 1/4"	105	105	100	63	100	60	217265	217237	217255
	40	1 1/2"	170	170	100	63	150	100	217266	217238	217256
	50	2"	275	275	100	63	220	100	217267	217239	217257
	65	2 1/2"	-	507	-	63	-	150	217268	-	217258
	80	3"	-	905	-	63	-	220	217269	-	217259
100	4"	-	1414	-	63	-	300	217270	-	217260	
B Single-acting actuator for pneumatically activated open/closed valve, normally opened by spring force.	10	1/4"	-	9	-	63	-	15	on request	on request	217292
	12	3/8"	9	9	-	63	-	15	on request	on request	217293
	15	1/2"	19	19	-	63	-	30	on request	on request	217294
	20	3/4"	46	46	-	63	-	30	on request	on request	217295
	25	1"	72	72	-	63	-	60	on request	on request	217296
	32	1 1/4"	105	105	-	63	-	60	on request	on request	217297
	40	1 1/2"	170	170	-	63	-	100	on request	on request	217298
	50	2"	275	275	-	63	-	100	on request	on request	217299
	65	2 1/2"	-	507	-	63	-	150	on request	-	217300
	80	3"	-	905	-	63	-	220	on request	-	217301
100	4"	-	1414	-	63	-	300	on request	-	217302	



Ordering chart continued

8805

Control function	Orifice DN [mm]	Port connection	K _v value water [m ³ /h]		Nominal pressure ¹⁾ [bar]		Actuator		Article no.		
			StSt 2 pieces	StSt 3 pieces	StSt 2 pieces	StSt 3 pieces	StSt 2 pieces	StSt 3 pieces	StSt 3 pieces weld end port connection	StSt 2 pieces threaded port connection	StSt 3 pieces threaded port connection
2/2 way ball valve, brass and stainless steel (StSt) (Minimum pilot pressure 6 bar)											
I Open/close operation on either side without spring, flow direction above seat	10	¼"	9	9	100	63	15	15	–	217240	217271
	12	⅜"	9	9	100	63	15	15	217282	217241	217272
	15	½"	19	19	100	63	15	15	217283	217242	217273
	20	¾"	46	46	100	63	30	15	217284	217243	217274
	25	1"	72	72	100	63	30	15	217285	217244	217275
	32	1¼"	105	105	100	63	60	30	217286	217245	217276
	40	1½"	170	170	100	63	100	30	217287	217246	217277
	50	2"	275	275	100	63	100	60	217288	217247	217278
	65	2½"	–	507	–	63	–	100	217289	–	217279
	80	3"	–	905	–	63	–	150	217290	–	217280
100	4"	–	1414	–	63	–	150	217291	–	217281	

Control function	Orifice [mm]	K _v value water [m ³ /h]	Nominal pressure ¹⁾ [bar]	Actuator	Weight [kg]	Article no.
2/2 way compact flange ball valve						
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	20	46	40	30	3.8	217306
	25	72	40	60	6.0	217307
	32	105	40	60	7.7	217308
	40	170	40	100	9.8	217309
	50	275	40	150	12.8	217310
	65	507	16	220	20	217311
	80	905	16	300	26.3	217312
	100	1414	16	300	29.0	217313
I Open/close operation on either side without spring, flow direction above seat	20	46	40	15	2.1	217314
	25	72	40	30	4.4	217315
	32	105	40	30	6.2	217316
	40	170	40	60	8.1	217317
	50	275	40	60	9.0	217318
	65	507	16	100	14.0	217319
	80	905	16	100	17.3	217320
	100	1414	16	150	21.8	217321

¹⁾ Operating pressure: see pressure temperature chart

Ordering chart continued

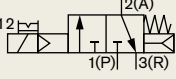
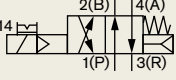
Switching position	Orifice [mm]	Port connection	K _v value water [m ³ /h]	Nominal pressure ¹⁾ [bar]	Actuator single acting CFA	Article no. single acting CFA	Actuator double acting CFI	Article no. double acting CFI
3/2 way stainless steel, (reduced orifice) Minimum pilot pressure 6 bar, T2 and T3 on request								
T1	10	1/4"	4.7 / 6.9 ²⁾	63	30	217342	15	217352
0° 	12	3/8"	4.7 / 6.9 ²⁾	63	30	217343	15	217353
	12	1/2"	6.9 / 11.2 ²⁾	63	30	217344	15	217354
	15	3/4"	6.9 / 11.2 ²⁾	63	60	217345	15	217355
90° 	20	1"	18.9 / 29.2 ²⁾	63	60	217346	30	217356
	25	1 1/4"	35.3 / 46.4 ²⁾	63	100	217347	60	217357
	32	1 1/2"	46.4 / 72.2 ²⁾	63	100	217348	60	217358
	40	2"	83.4 / 135.6 ²⁾	63	150	217349	100	217359
L4	10	1/4"	5.6	63	30	217325	15	217333
0° 	12	3/8"	5.6	63	30	217326	15	217334
	12	1/2"	9.5	63	30	217327	15	217335
	15	3/4"	9.5	63	60	217328	15	217336
90° 	20	1"	25.8	63	60	217329	30	217337
	25	1 1/4"	40.4	63	100	217330	60	217338
	32	1 1/2"	60.2	63	100	217331	60	217339
	40	2"	114.4	63	150	217332	100	217340

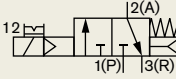
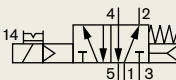
1) Operating pressure: see pressure temperature chart

2) Switching position 0° / 90°

Accessories



8805

Circuit function	Orifice [mm]	Q _{Nn} value air [l/min]	Pressure range [bar]	Power consumption (1 and 3 / 2 and 4)	Voltage/frequency [V/Hz]	Power consumption [W]	Article no.
5470 Namur (only recommended up to actuator size 220, see also datasheet type 5470)							
 <p>3/2 way servo-controlled solenoid valve, normally closed, with manual override</p>	4.0	300	2...10	1/8 (connections 1 and 3) Namur flange (conn. 2 and 4)	24/DC	2	136761
					110...120/DC	3	136762
					220...240/DC	3	136763
				Push-in connection Ø 6 mm (connections 1 and 3) Namur flange (Anschl. 2 and 4)	24/DC	2	136764
					110...120/DC	3	136765
					220...240/DC	3	136766
 <p>4/2 way servo-controlled solenoid valve, with manual override</p>	4.0	300	2...10	1/8 (connections 1 and 3) Namur flange (Anschl. 2 and 4)	24/DC	2	136767
					110...120/DC	3	136768
					220...240/DC	3	136769
				Push-in connection Ø 6 mm (connections 1 and 3) Namur flange (conn. 2 and 4)	24/DC	2	136770
					110...120/DC	3	136771
					220...240/DC	3	136772
				1/8 (connections 1 and 3) Namur flange with oneway flow restrictor (conn. 2 and 4)	24/DC	2	136773
					110...120/DC	3	136774
					220...240/DC	3	136775



Circuit function	Orifice [mm]	Seal material body	Thread insert material ¹⁾	Port connection threaded porf	Q _{Nn} value air ²⁾ [l/min]	Pressure range ³⁾ [bar]	Weight [g]	Power consumption [W]	Voltage/frequency [V/Hz]	Article no.
6519 Namur (see also datasheet Type 6519)										
 <p>3/2 way servo-controlled solenoid valve, normally closed, with manual override</p>	6.0	NBR and PUR	stainless steel	1/4	900	2...8	460	2	24/DC	131425
									24/50...60	131426
									110/50...60	131427
									230/50...60	131428
 <p>5/2 way servo-controlled solenoid valve, with manual override</p>	6.0	NBR and PUR	brass, nickel-plated	1/4	900	2...8	460	2	24/DC	131421
									24/50...60	131422
									110/50...60	131423
									230/50...60	131424

- 1) If the connectors are from stainless steel, the mounting screws will also be from stainless steel
 2) Flow rate: Q_{Nn} value air [l/min]: Measured at +20 °C, 6 bar pressure at valve inlet, 1 bar pressure difference
 3) Pressure values [bar]: Gauge pressures with respect to the prevailing atmospheric pressure

Accessories continued

Description	Voltage	Article no.
Cable plug Type 2516 acc. to DIN 43650 Form C - see Type 2516 ▶		
without circuitry (standard)	0...250 V AC/DC	008353 
Cable plug Type 2508 (will be replaced with Type 2518)¹⁾ acc. to DIN 175301-803 Form A - see Type 2508 ▶		
without circuitry (standard), without cable	0...250 V AC/DC	008376 

1) For standard version 6518/19 fixing screw in steel (zinc plated and chromatised)

Description	Article no.
Accessories for mounting Positioner	
Universal adapter for wave	787338 
Universal assembly bridge	770294 



Overview for Rotary Actuators

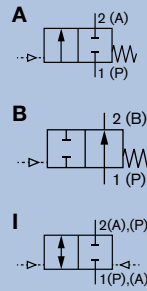
Note: The following product overview does not show the complete product range of this catalogue. A complete overview can be found [here](#) ▶

Overview Rotary Actuators	Species	Type	Function	Torque
	Electromotive rotary actuator	3003 ▶	On/Off or regulation	20...100 Nm
	Electromotive rotary actuator	3005 ▶	On/Off	25...300 Nm
	Pneumatic rotary actuator	2051 ▶	On/Off	10...433 Nm
	Pneumatic rotary actuator	2052 ▶	On/Off	7.9...631 Nm

Pneumatic rotary drive

2051

- Modular program for mounting of quarter turn valves such as ball valves and butterfly valves
- NAMUR and ISO 5211 interfaces
- Position feedback (including Ex-Versions)
- SideControl Positioner ready

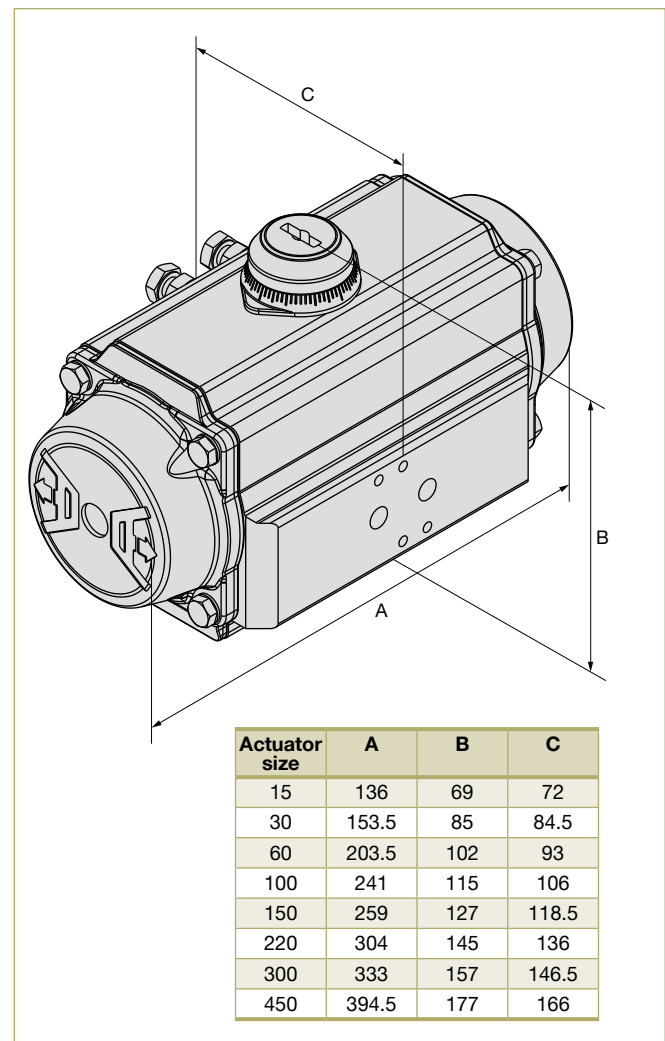


The 2051 pneumatic rotary drives are low maintenance single or double-acting pneumatic linear piston actuators where linear movement of the piston due to the pilot air causes a 90° rotation of the connected valve. Actuator-valve coupling is made via a universal ISO 5211 mechanical interface and the status of ball or butterfly valve can be monitored at a control system through a range of rugged feedback switches. The drives can also be used as modulating control actuators by the addition of Bürkert's range of SideControl positioners.

Technical data

Materials	
Actuator	Aluminium alloy
Piston	Aluminium
Seal	Special NBR
Control medium	
	Filtered compressed air with or without oil
Control pressure	
	3...8 bar single-acting
	2.5...8 bar double-acting
	Max. 8 bar
Ambient temperature	
	-40 °C...+80 °C (FKM: -15 °C...+150 °C)
Rotation	
	90°, adjustable before -5°...95°
Adjustable angle	
	Every 20°
Interface	
Pilot air ports	NAMUR Flange interface VDE/VDI 3845 Size 10...100: G 1/8, Size 150...450: G 1/4
Feedback signal	NAMUR VDE/VDI 3845
Fittings	ISO 5211

Dimensions [mm]



Ordering chart

Circuit function	Actuator size	Torque (Nm) dependent on control pressure							Air volume (l)		Weight [kg]	Article no.
		Control pressure (bar)							opening	closing		
		3	4	5	5.5	6	7	8				
Double-acting actuator												
I Open/close operation on either side without spring, bi-directional	15	10	13.3	16.6	18.3	19.9	23.3	26.6	0.09	0.15	1	214520
	30	17.6	23.5	29.3	32	35.2	41	46.9	0.16	0.26	1.6	214522
	60	34.9	46.5	58.2	64	69.8	81.4	93.1	0.31	0.49	2.7	214524
	100	54.9	7.2	91.5	101	110	128	146	0.51	0.78	3.7	214525
	150	79.8	106	133	146	160	186	213	0.71	1.11	5.2	214526
	220	129	172	215	236	258	301	344	1.19	1.8	8	214527
	300	166	222	277	305	332	388	433	1.54	2.34	9.8	214528

Circuit function	Actuator size	Torque (Nm) dependent on control pressure								Air volume (l)		Weight [kg]	Article no. (Control function A)	Article no. (Control function B)	
		Control pressure (bar)								opening	closing				
		5.5		6		8		spring force							
0°		90°		0°		90°		90°		0°					
Single-acting actuator (6 spring packages per side)															
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	15	10.2	6.6	11.9	8.2	18.5	14.9	11.7	8.1	0.09	0.15	1.1	214529	214537	
	30	18.9	12	21.9	14.9	33.6	26.7	20.2	13.3	0.16	0.26	1.7	214530	214538	
	60	37.5	22.4	43.3	28.3	66.5	51.5	41.5	26.5	0.31	0.49	3.1	214531	214539	
	100	56.7	31.4	65.8	40.5	102	77.1	69.3	44	0.51	0.78	4.3	214532	214540	
	150	85.4	51.7	99	65	152	118	94.5	60.8	0.71	1.11	6.1	214533	214541	
	220	138	79	159	101	245	187	157	98.4	1.19	1.8	9.3	214534	214542	
	300	179	107	206	135	317	245	198	126	1.54	2.34	12	214535	214543	
B Single-acting actuator for pneumatically activated open/closed valve, normally opened by spring force.	450	281	169	324	213	498	386	309	198	2.41	3.78	17	214536	214545	

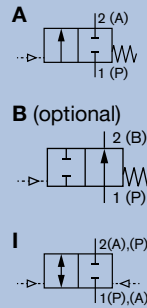
Accessories

Specifications	Article no.
Universal adapter for shaft	787338
Universal assembly bridge	770294

Pneumatic rotary drive

2052

- Modular program for mounting of quarter turn valves such as ball valves and butterfly valves
- NAMUR and ISO 5211 interfaces
- Position feedback (including Ex-Versions)
- SideControl Positioner ready



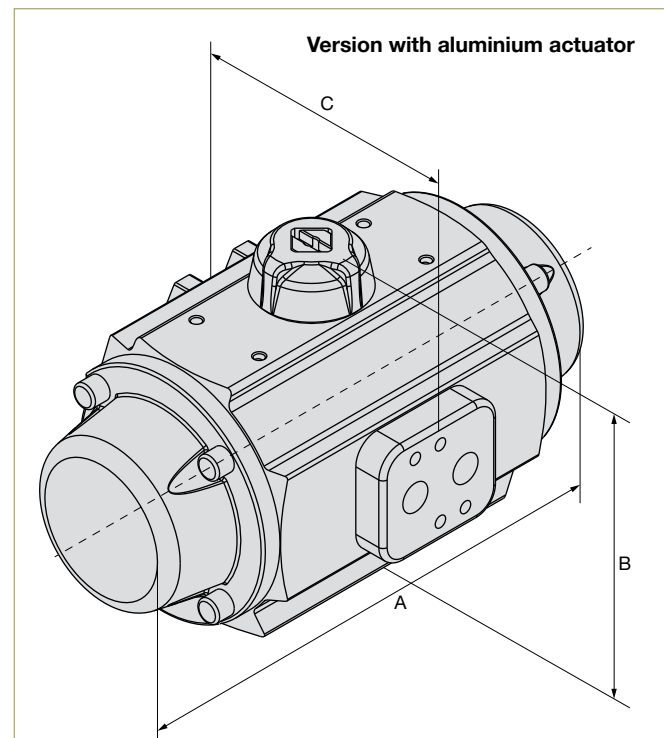
The 2052 pneumatic rotary drives are single or double-acting pneumatic linear piston actuators where linear movement of the piston due to the pilot air causes a 90° rotation of the connected valve. Actuator-valve coupling is made via a universal ISO 5211 mechanical interface and the status of ball or butterfly valve can be monitored at a control system through a range of rugged feedback switches. The drives can also be used as modulating control actuators by the addition of Bürkert's range of SideControl positioners. The actuators are available in an aluminium and in a polyamide version. Both kinds of actuators have the advantage, that they are maintenance free and highly resistant to corrosion.

Technical data

	Aluminium Actuator	Polyamide Actuator
Materials		
Actuator	Aluminium (cataphoresis/polyamide coating)	Polyamide + glass fibre
Piston	Aluminium (cataphoresis coating); polyarylamid ¹⁾	Polyarylamide
Seal	NBR	NBR
Control medium	Filtered compressed air with or without oil; water	Filtered compressed air with or without oil; water
Control pressure	3...8 bar	3...8 bar
Ambient temperature	-32 °C...+90 °C	-32 °C...+90 °C
Rotation	90° (optional 180°)	90°
Adjustable angle	-2°...5° / 85°...92°	-
Interface		
Pilot air ports	NAMUR flange interface VDI/VDE 3845 G 1/4	NAMUR flange interface VDI/VDE 3845 G 1/4
Feedback signal	NAMUR VDI/VDE 3845	NAMUR VDI/VDE 3845
Fittings	ISO 5211	ISO 5211
Certifications		
	ATEX 94/9/EC Pressure Equipment Directive 97/23/EC (PED) IEC 61508 SIL3 ²⁾ Det Norske Veritas (DNV)	ATEX 94/9/EC Pressure Equipment Directive 97/23/EC (PED) IEC 61508 SIL3 Det Norske Veritas (DNV)

1) Only for actuator in size W
2) Exceptions are marked in ordering chart

Dimensions [mm]



Actuator size	A	B	E
Aluminium			
W	140.2	89.3	76.1
J / 00	152.3	102.1	84.1
5 / 05	201.2	119	101.6
K / 10	225.1	123.1	103.6
L / 15	264.2	138.6	119.4
Q / 20	311	147.3	127.5
Y / 25	356.2	174.6	153.5
M / 30	427.5	191	169
Polyamide			
W	144	89	70.4
J / 00	158	101.4	77.6
K / 10	230	123	97.1
Q / 20	313	146.4	120.6

Ordering chart

Circuit function	Actuator size	Torque [Nm] dependent on control pressure							Air volume [l]		Weight [kg]	Article no.
		Control pressure [bar]							Opening	Closing		
		3	4	5	5.5	6	7	8				
Aluminium actuator, double-acting actuator												
I Open/close operation on either side without spring, bi-directional	W	7.9	11.3	14.1	15.5	17	19.8	22.9	0.075	0.11	0.92	254851
	J / 00	11.6	16.1	20.5	22.7	25	29.5	33.9	0.15	0.18	1.4	254852
	5 / 05	23.5	32.3	41	45.3	49.7	58.4	67.1	0.28	0.37	2.57	254853
	K / 10	32.9	45.6	58.3	65	71	83.7	96.4	0.35	0.45	3.08	254854
	L / 15	55.2	75.6	96	106.2	116.5	136.9	157.4	0.65	0.82	4.2	254855
	Q / 20	77.7	107	136.3	151	165.5	194.8	224	0.8	1.15	5.61	254856
	Y / 25	140.1	190.1	240	264.9	290	339.9	393.9	1.5	2.02	9.3	254857
	M / 30	226.5	307.4	388	428.7	469	550.1	631	2.05	3	11.6	254858

Circuit function	Actuator size	Torque [Nm] dependent on control pressure								Air volume [l]		Weight [kg]	Article no.
		Control pressure [bar]						Spring force		Opening	Closing		
		5		6		8		90°	0°				
		0°	90°	0°	90°	0°	90°	90°	0°				
Aluminium actuator, single-acting actuator (6 spring packages per side)													
A Single-acting actuator for pneumatically activated open/closed valve, normally closed by spring force.	W	7.4	4.1	10.3	7	16.2	12.9	10	6.7	0.075	0.11	1	254859
	J / 00	9.4	4	13.9	8.5	22.8	17.4	16.5	11.1	0.15	0.18	1.63	254860
	5 / 05	20.1	9.6	28.8	18.3	46.2	35.7	31.4	20.9	0.28	0.37	2.94	254861
	K / 10	27.5	12.7	40.2	25.4	65.6	50.8	45.6	30.8	0.35	0.45	3.48	254862
	L / 15	47	24.5	67.5	45	108.4	85.9	71.5	49	0.65	0.82	5.04	254863
	Q / 20	70.5	31.6	99.7	60.8	158.2	119.3	104.7	65.8	0.8	1.15	6.63	254864



Ordering chart

2052

Actuator size	Torque [Nm] dependent on control pressure							Air volume [l]		Weight [kg]	Article no.
	Control pressure [bar]							Opening	Closing		
	3	4	5	5.5	6	7	8				
Polyamide actuator, double-acting actuator (Control function I)											
W	7.9	11.3	14.1	15.5	17	19.8	22.9	0.075	0.05	0.47	276763
J / 00	13.3	18.3	23.4	26	28.5	33.6	38.7	0.15	0.18	0.83	276764
K / 10	32.9	45.6	58.3	65	71	83.7	96.4	0.35	0.45	1.65	276765
Q / 20	77.7	107	136.3	150.9	165.4	194.8	224	0.8	1.15	3.22	276766

Actuator size	Torque [Nm] dependent on control pressure								Air volume [l]		Weight [kg]	Article no.
	Control pressure [bar]								Spring force			
	5		6		8		90°		Opening	Closing		
0°	90°	0°	90°	0°	90°	90°	0°					
Polyamide actuator, single-acting actuator (Control function A, 6 spring packages per side)												
W	7.4	4.1	10.3	7	16.2	12.9	10	6.7	0.075	0.05	0.55	276767
J / 00	10.7	4.6	15.8	9.7	26	19.9	18.8	12.7	0.15	0.18	1	276768
K / 10	27.5	12.7	40.2	25.4	65.6	50.8	45.6	30.8	0.35	0.45	2.03	260114
Q / 20	70.5	31.6	99.7	60.8	158.2	119.3	104.7	65.8	0.8	1.15	4.22	276769

Accessories

Specifications	Article no.
universal adapter for shaft	787338
universal assembly bridge	770294

Electrical Rotary Actuator - On/Off

3003

- Direct mounting on quarter-turn valves
- Manual override standard
- Adjustable limit switches
- Multi-voltage



The electrical rotary actuator, Type 3003, is a compact and powerful actuator system which provides a long service life. Materials and components have been chosen for maintenance-free operation even in aggressive environments and ensure low thermal loading on the actuator. The modular design offers many additional features to be added to the basic device such as extra limit switches, potentiometers and emergency power.

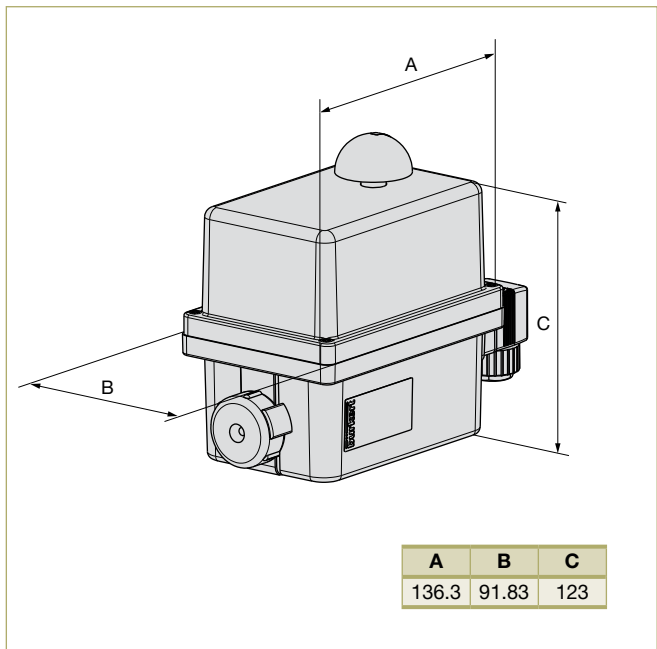
With the control actuator version the input signals (e.g. 4...20 mA, 0...20 mA, 0...10 V) as well as the output signals can be programmed.

Heating resistor and torque limiter are in standard, the housing is made of flame resistant material classified according to UL 94 V0

Technical data

Materials	Cover/body: Nylon / PA 6.6, Axis screws: stainless steel Transmission: stainless steel and PC
Torque	20, 35, 60 and 100 Nm (see ordering chart)
Angle of rotation	90° (±5°) (extra angle on request)
90° rotation time	See ordering chart
Duty rating	According to IEC34 S4 = 50 %
Power supply	15...30 V AC 50/60 Hz/12...48 V DC 100...240 V AC 50/60 Hz/100...350 V DC
Power consumption	15...45 W (see ordering chart)
Motor protection	Torque limiter
Standard signal (programmable)	Input: 0...10 V, 4...20 mA, 0...20 mA Output: 0...10 V, 4...20 mA, 0...20 mA
Mechanical limit	Standard
Electrical connection	Cable plug acc. to EN175301-803 (supply voltage) (included) Cable glands ISO M20
Mounting	Acc. ISO 5211 Motor 20 Nm F05 (removable fixation plate F03/F04/F05) Motor 35, 60, 100 Nm F05/F07
Drive	Motor 20 Nm Female star 14 mm; conversion sleeve 14/11 mm and 14/9 mm enclosed Motor 35, 60 Nm Female star 22 mm; conversion sleeve star 22/14 mm enclosed Motor 100 Nm Female star 22 mm; conversion sleeve star 22/17 mm enclosed
Ambient temperature	-10 °C...+55 °C (emergency power version -10 °C...+40 °C)

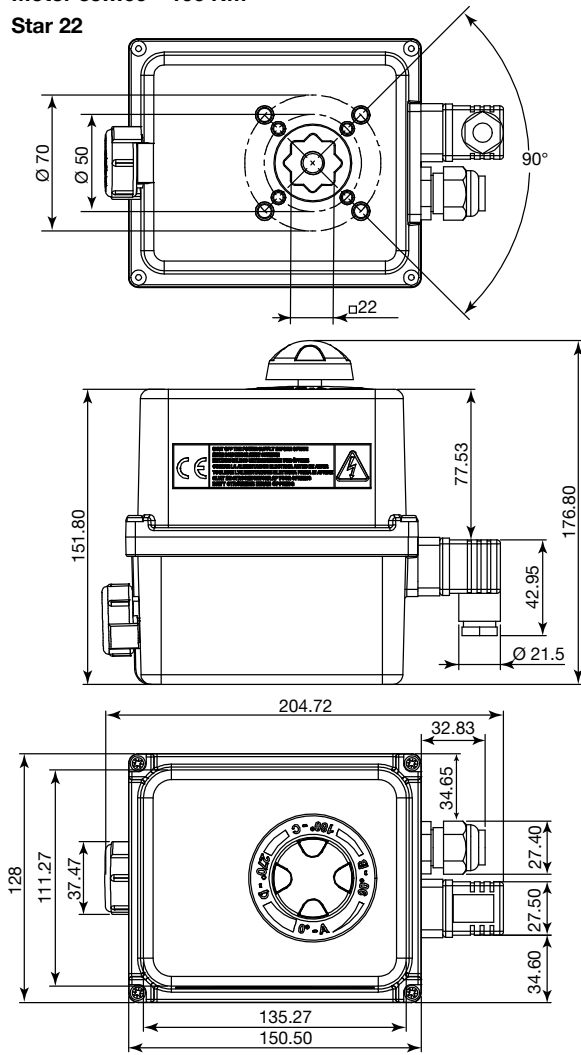
Dimensions [mm]



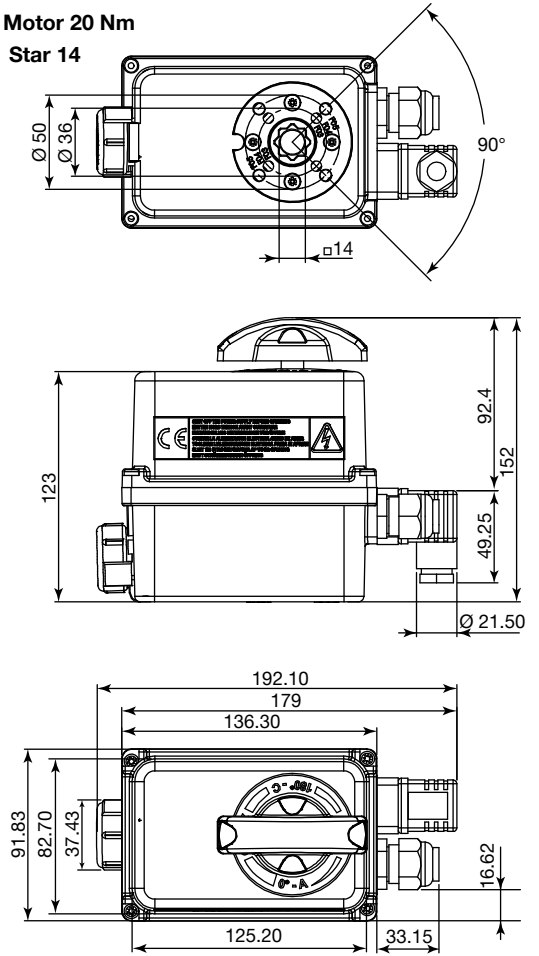
Limit switches	4 adjustable (2 for the motor and 2 additional for feedback), max. 250 V AC/5 A
Protection class	IP66 with mounted cable plug
Installation	Do not mount the actuator upside down!
Installation site	Up to 2000 m high

Dimensions [mm]

Motor 35...60 – 100 Nm
Star 22



Motor 20 Nm
Star 14



Square / Star	Depth
14	16
17	19
22	24

ISO F fixation	Diameter	M threaded	Depth	Screws quantity
F03	Ø 36	M5	14.2	4
F04	Ø 42	M5	14.2	4
F05	Ø 50	M6	14.2/16.4	4
F07	Ø 70	M8	16.4	4



Ordering chart

3003










Drive stars [mm]	Conversion sleeve star [mm]	Connection flange	Torque	90° rotation time ¹⁾ ± 1 sec. (Information on load)	Power consumption	Voltage / frequency	Article no.
Multi-voltage version without analogue signal input							
14	14/11 and 14/9	F05 (F03-F04)	20 Nm	12 sec.	15 W	15...30 V AC, 50/60 Hz / 12...48 V DC ²⁾	225192
						100...240 V AC, 50/60 Hz / 100...350 V DC	225193
22	22/14	F05-F07	35 Nm	7 sec.	45 W	15...30 V AC, 50/60 Hz / 12...48 V DC ²⁾	225194
						100...240 V AC, 50/60 Hz / 100...350 V DC	225195
			60 Nm	12 sec.	45 W	15...30 V AC, 50/60 Hz / 12...48 V DC ²⁾	225196
						100...240 V AC, 50/60 Hz / 100...350 V DC	225197
	22/17	F05-F07	100 Nm	23 sec.	45 W	15...30 V AC, 50/60 Hz / 12...48 V DC ²⁾	225198
						100...240 V AC, 50/60 Hz / 100...350 V DC	225225
Multi-voltage version with emergency reset switch							
14	14/11 and 14/9	F05 (F03-F04)	20 Nm	12 sec.	15 W	15...30 V AC, 50/60 Hz / 12...48 V DC ²⁾	225207
						100...240 V AC, 50/60 Hz / 100...350 V DC	225208
22	22/14	F05-F07	35 Nm	7 sec.	45 W	15...30 V AC, 50/60 Hz / 12...48 V DC ²⁾	225209
						100...240 V AC, 50/60 Hz / 100...350 V DC	225210
			80 Nm	12 sec.	45 W	15...30 V AC, 50/60 Hz / 12...48 V DC ²⁾	225211
						100...240 V AC, 50/60 Hz / 100...350 V DC	225212
	22/17	F05-F07	100 Nm	23 sec.	45 W	15...30 V AC, 50/60 Hz / 12...48 V DC ²⁾	225213
						100...240 V AC, 50/60 Hz / 100...350 V DC	225214
Multi-voltage version with analogue signal input							
14	14/11 and 14/9	F05 (F03-F04)	20 Nm	25 sec.	15 W	15...30 V AC, 50/60 Hz / 12...48 V DC ²⁾	225199
						100...240 V AC, 50/60 Hz / 100...350 V DC	225200
22	22/14	F05-F07	35 Nm	40 sec.	45 W	15...30 V AC, 50/60 Hz / 12...48 V DC ²⁾	225201
			35 Nm	40 sec.	45 W	100...240 V AC, 50/60 Hz / 100...350 V DC	225202
			60 Nm	79 sec.	45 W	15...30 V AC, 50/60 Hz / 12...48 V DC ²⁾	225203
						100...240 V AC, 50/60 Hz / 100...350 V DC	225204
	22/17	F05-F07	100 Nm	119 sec.	45 W	15...30 V AC, 50/60 Hz / 12...48 V DC ²⁾	225205
						100...240 V AC, 50/60 Hz / 100...350 V DC ²⁾	225206

1) Other rotation time and rotation angle on request

2) The operating voltage must not fall below 11.5 V

Remark: For the actuator choice, we recommend a safety torque equal to 1.5 times of the valve maximal torque (2 times for the control version).

Accessories

Description	Article no.
Removable flange plate F04 for actuators with torque 10 and 20 Nm	665293 
Key to adjust the limit switches	679946 
Conversion sleeve star/square 14/9 mm	665288 
Conversion sleeve star/square 14/11 mm	665289 
Conversion sleeve star/star 22/14 mm	666684 
Conversion sleeve star/square 22/17 mm	684858 
Conversion sleeve square/square 17/14 mm	665290 
Adapter external square 14/10 mm (for actuators with torque 10 and 20 Nm)	668234 
Adapter external square 14/10 mm (for actuators with torque from 35 Nm)	677877 

Electrical Rotary Actuator – On/Off and control

3003 PS

- Direct mounting on ball & butterfly valves
- Manual override standard
- Adjustable limit switches
- Robust housing



The electrical rotary actuator type 3003 PS is a compact and powerful actuator system, which provides a long lifetime.

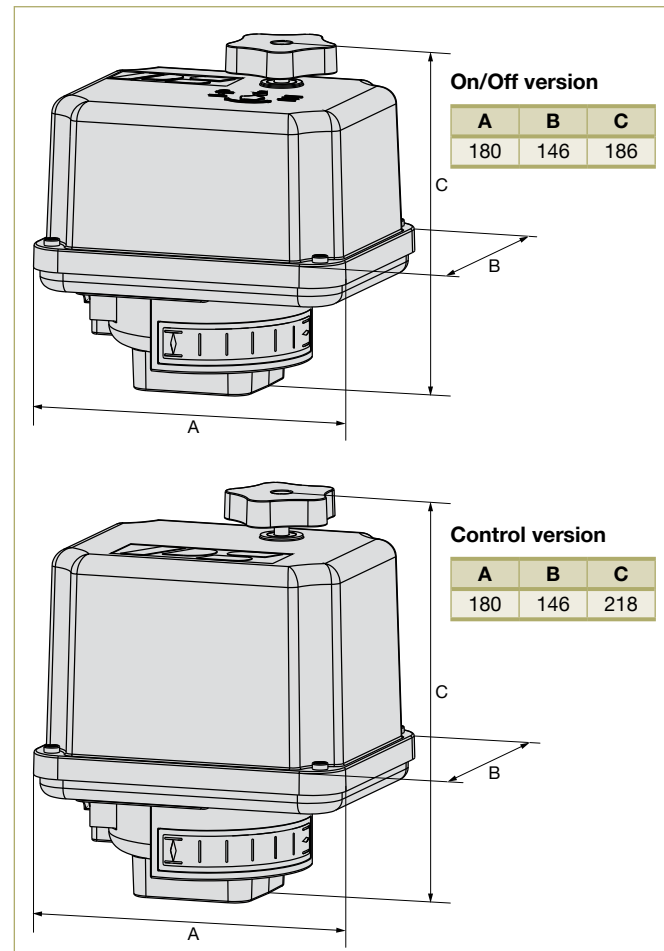
Materials and components have been chosen for maintenance-free operation even in aggressive environments and ensure low thermal loading on the actuator.

The robust housing protects the actuator against environmental influences and impacts. Moreover the modular design offers to add many additional features such as heating resistors and potentiometers.

Technical data

Torque	
On/Off version	25, 50 Nm
Control version	25, 45 Nm
Angle of rotation 90° (adjustable)	
90° rotation time 5...80 sec. (see ordering chart)	
Power supply	
Synchronous motor	24 V AC / 115 V AC 1~ / 230 V AC 1~ / 400 V 3~
DC motor	24 V DC
Power consumption 8...55 W	
Motor protection	
	Thermo switch
	Multifuse for On/Off version with 24 V DC
Electrical connection Cable glands M20 x 1.5	
Mounting (acc. ISO 5211) F05/07 or F04/07 optional	
Drive Double square 17 mm	
Installation Do not mount the actuator upside down!	
Limit switches	
	4 adjustable (2 for the motor & 2 for the position feedback)
	max. 250 V AC
	1 A inductive load
	3 A ohmic load
Standard signal (programmable)	
Input	0/4...20mA & 0/2...10 V
Output	0...10 V
Optical position indicator Standard	
Material	
Cover	Polycarbonate (Lexan 943 A)
Body	Aluminium-silicon alloy (AlSi12)
Duty cycle acc. to IEC60034-1.8:	
	S2 short-term operation (on/off) 20 min;
	S3/S4 control operation 1200 cycles/hour
	-25 % ED at 25 °C
Protection class IP65 according to EN 60529	

Dimensions [mm]



Ambient temperature range

On/Off version	-25 °C...+70 °C (S2)
Control version	-20 °C...+60 °C (S4)

Overvoltage Category

II

Weight

2.5 kg - On/Off version (without accessories)
4 kg - Control version (without accessories)

Options

Heating resistor (except at 400 V 3~)
Potentiometer (100/200/500/1000/2000 Ohm)

Ordering chart

Torque [Nm]	Rotation Time [s]			Flange	Double Square [mm]	Article no.				
	AC		DC			Voltage				
	50 Hz	60 Hz				230 V AC 1~	115 V AC 1~	24 V AC 1~	400 V 3~	24 V DC
On/Off actuator										
25	17	14	-	F05/07	17	329988	329989	329990	-	-
			-	F04/07		329991	329992	329993	-	-
	-	-	9	F05/07		-	-	-	-	329994
			-	F04/07		-	-	-	-	329995
50	6	5	-	F05/07	17	329996	329997	329998	329999	-
			-	16		-	-	-	-	330000
	33	28	-	-		330001	330002	330003	-	-
			-	80		67	-	330004	330005	330006
Control actuator with analogue signal input										
25	17	14	-	F05/07	17	330007	330008	330010	-	-
			-	F04/07		330011	330012	330013	-	-
45	17	14	-	F05/07	17	330014	330015	330016	-	-
			-	F04/07		330017	330018	330019	-	-

Remark:

On/Off actuator: For the actuator choice we recommend a safety torque equal to 1.5 times of the valve maximum torque.

Control actuator: For the actuator choice we recommend a safety torque equal to 2 times of the valve maximum torque.

Accessories

Description	Article no.
Heating resistor (for 230 V AC and 115 V AC actuators)	774106
Heating resistor (for 24 V AC/DC actuators)	774210
Position transmitter - 2-wire technology	774107
Position transmitter - 3-wire technology	774108
Potentiometer 100 Ω (for On/Off version)	774109
Potentiometer 200 Ω (for On/Off version)	774110
Potentiometer 500 Ω (for On/Off version)	774111
Potentiometer 1000 Ω (for On/Off version)	774112
Potentiometer 2000 Ω (for On/Off version)	774113
for conversion sleeves	
Conversion sleeve square/square 11/9 mm	666575
Conversion sleeve star/square 14/9 mm	665288
Conversion sleeve star/square 14/11 mm	665289
Conversion sleeve square/square 17/14 mm	665290
Conversion sleeve square/square 17/11 mm	665369

Electric Rotary Actuator – On/Off or programmable control actuator

3005

- Direct mounting on quarter-turn valves
- Manual override standard
- Corrosion resistant
- Adjustable limit switches
- Multi-voltage version
- Protection class IP68

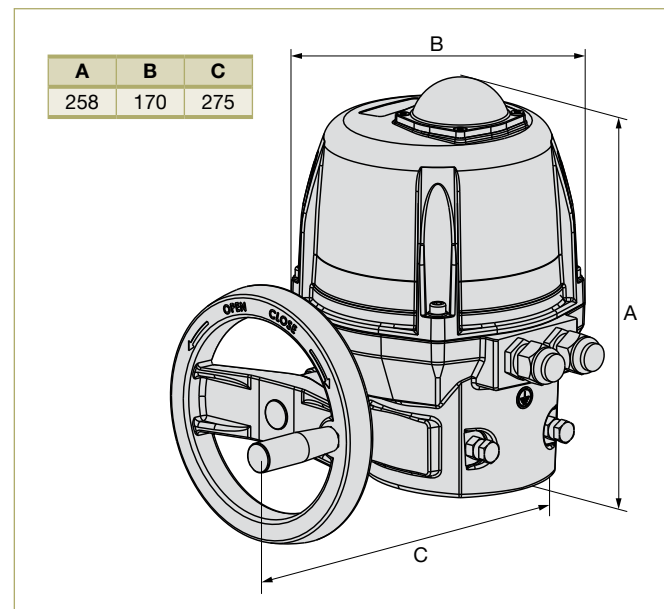


The rotary actuator type 3005 is a compact and powerful actuator system which provides a long service life. Materials and components have been chosen for maintenance-free operation and ensure low thermal loading on the actuator. The modular design offers many options such as extra limit switches or potentiometers to be added to the basic unit.

Technical data

Torque	25 and 300 Nm (see ordering chart) (600 and 1000 Nm on request)
Angle of rotation	90° (±5°)
90° rotation time	7...60 sec. (see ordering chart)
Duty rating	At max. torque: 50 % of the time Control actuator: 50 % of max. torque
Power supply	15...30 V AC 50/60 Hz / 12...48 V DC 100...240 V AC 50/60 Hz / 100...350 V DC Tolerance ± 10 %
Power consumption	45 W
Motor protection	Electronic torque limitation
Electrical connection	2 cable glands ISO 20 (Cable plug acc. EN 175301-803 on request)
Mounting	Acc. ISO 5211 F05/F07 F07/F10v
Drive	Motor 25 Nm Female star 17 mm; Conversion sleeve star 17/11 mm enclosed Motor 45, 75 Nm Female star 17 mm; Conversion sleeve star 17/14 mm enclosed Motor 100, 150, 300 Nm Female star 22 mm; conversion sleeve star 22/17 mm enclosed
Installation	Do not mount the actuator upside down!
Limit switches	4 adjustable (2 for motor and 2 additional for feedback) Max. 250 V AC/5 A
Analogue signals control version (programmable)	
Input	– 0...10 V – 4...20 mA – 0...20 mA
Output	– 0...10 V – 4...20 mA – 0...20 mA
Manual override	By hand wheel (from 100 Nm)

Dimensions [mm]



Mechanical limit stops	Standard
Optical position indicator	Standard
Material	
Cover, Housing	Nylon / Epoxy coated aluminium
Axis, screw	Stainless steel
Gear	Zinc-plated Steel
Protection class	IP68
Ambient temperature	–20 °C up to +70 °C –20 °C up to +40 °C (emergency reset)
Weight	5.6 kg
Heating resistor	10 W
Options	Three position actuator (180°) Rotation 180° or 270° Feedback On/Off actuators: – Potentiometer 0.1K, 1K, 5K or 10K – Analogue signal 4...20 mA Fail safe option 2 extra limit switches

Note: Electrical connections see operating instructions.

Ordering chart

Drive stars [mm]	Conversion sleeve star [mm]	Connection flange	Torque [Nm]	90° travel [s] ¹⁾	Power consumption [W]	Voltage / Frequency [V / Hz]	Article no.
Standard version without analogue signal input							
17	17/11	F05/F07	25	7	45	100...240 V AC, / 50/60 Hz / 100...350 V DC	207170
						15...30 V AC, 50/60 Hz / 12...48 V DC	180864
	17/14		45	15	45	100...240 V AC, / 50/60 Hz / 100...350 V DC	189194
						15...30 V AC, 50/60 Hz / 12...48 V DC	189199
			75	20	45	100...240 V AC, / 50/60 Hz / 100...350 V DC	203454
						15...30 V AC, 50/60 Hz / 12...48 V DC	216012
22	22/17	F07/F10	100	15	45	100...240 V AC, / 50/60 Hz / 100...350 V DC	205547
						15...30 V AC, 50/60 Hz / 12...48 V DC	224608
	150		30	45	100...240 V AC, / 50/60 Hz / 100...350 V DC	181303	
					15...30 V AC, 50/60 Hz / 12...48 V DC ²⁾	181304	
			300	60	45	100...240 V AC, / 50/60 Hz / 100...350 V DC	181305
						15...30 V AC, 50/60 Hz / 12...48 V DC ²⁾	181306

3005

Drive stars [mm]	Conversion sleeve star [mm]	Connection flange	Torque [Nm]	90° travel [s] ¹⁾	Power consumption [W]	Voltage / Frequency [V / Hz]	Article no.
Control version with 4...20 mA, 0...20 mA or 0...10 V, analogue signal input or output							
22	22/17	F07-F10	150	30	45	100...240 V AC, / 50/60 Hz / 100...350 V DC	181293
						15...30 V AC, 50/60 Hz / 12...48 V DC ²⁾	228177
	300		60	45	100...240 V AC, / 50/60 Hz / 100...350 V DC	181307	
					15...30 V AC, 50/60 Hz / 12...48 V DC ²⁾	179726	

1) Other regulating times and delay angles on request

2) The operating voltage mustn't to fall below 11.5 V

Remark: For the actuator choice, we recommend a safety torque equal to 1.5 times of the valve maximal torque (2 times for the control version).

Accessories

Description	Article no.
Key to adjust limit switches	679946
Conversion sleeve star/square 14/9 mm	665288
Conversion sleeve star/square 14/11 mm	665289
Conversion sleeve star/star 22/14 mm	666684
Conversion sleeve star/square 22/17 mm	684858
Conversion sleeve square/square 17/14 mm	665290



Sensors Chapter Overview



[Overview for Flow Sensors ▶](#)

[Overview for Level Sensors ▶](#)

[Overview for Analysis Sensors ▶](#)

[Overview for Pressure and Temperature Sensors ▶](#)

[Overview for Mass Flow Controller \(MFC\) / Meter \(MFM\) ▶](#)

[Overview for Controller/Transmitter ▶](#)

Sensors Types Overview

Flow Sensors 487	8702..... 695
8011..... 491	8703..... 699
8012..... 494	8710..... 701
8020..... 499	8711..... 703
8025 Batch controller c.. 503	8712..... 707
8025 Batch controller re. 507	8713..... 711
8025 Flowmeter compa.. 511	8741..... 713
8025 Transmitter remote. 515	8742..... 717
8025 Transmitter UNI..... 517	8745..... 721
8026..... 519	8746..... 725
8030 / SE30..... 523	ME43 729
SE30..... 525	ME44 731
8032 / SE32..... 527	Controller/Transmitter.. 733
SE32..... 529	8611..... 735
8035 / SE35 Batch con .. 531	8619..... 739
SE35 Batch controller..... 533	8620..... 749
8035 / SE35 Flowmeter.. 537	
SE35 Transmitter 539	
8036 / SE36..... 541	
SE30 Ex..... 543	
SE36..... 547	
8041..... 549	
8045..... 553	
8051 / 8055 / 8056 557	
SE56..... 563	
8077..... 567	
8081..... 569	
8098..... 573	
S020 579	
S030 585	
S077 591	
Level Sensors..... 595	
8110 / 8111 597	
8112..... 601	
8136..... 603	
8137 / 8138 607	
8177..... 611	
8188..... 613	
8189..... 619	
Analysis Sensors 623	
8202 ELEMENT 625	
8202 ELEMENT neutrino 629	
8220..... 633	
8221..... 637	
8222 ELEMENT 643	
8222 ELEMENT neutrino 647	
S022 651	
8228..... 659	
Pressure/Tem Sensor... 663	
8311..... 665	
8316..... 669	
8323..... 671	
8400..... 675	
MFC/MFM 677	
8006..... 679	
8626..... 683	
8700..... 687	
8701..... 691	



Overview for Flow Sensors

Note: The following product overview does not show the complete product range of this catalogue. A complete overview can be found [here](#) ▶

Overview Flow Sensors	Category	Type	Basic functions	Operating principle	Flow range [l/min] [GPM]	Fluid pressure max. ¹⁾	Fluid temperature ¹⁾ [°C]	Nominal diameter ¹⁾	Sensor armature
	Sensor with paddle-wheel	8011 ▶	Sensor, measuring device	Hall effect	0.5...1000 0.13...265	PN10 PN16	-15...+100	DN06...DN50 (DN65 on request)	PVDF
8012 ▶		Sensor, switch, measuring device	Hall effect or optical	0.5...1000 0.13...265	PN10 PN16	-15...+100	DN06...DN50 (DN65 on request)	PVDF	
8020 ▶		Sensor, measuring device	Hall effect	0.5...75000 0.13...19.813	PN10	-15...+80	DN20...DN400	PVDF	
8025 ▶		Sensor, switch, measuring device, batch controller, totalizers	Hall effect	0.5...75000 0.13...19.813	PN10	-15...+80	DN20...DN400	PVDF	
8026 ▶		Sensor, switch, measuring device, totalizers	Hall effect	0.5...75000 0.13...19.813	PN10	-15...+100	DN20...DN400	PVDF	
8030 ▶		Sensor, measuring device	Hall effect	0.5...1000 0.13...265	PN10 or PN16 (PN40 on request)	-15...+100	DN06...DN65	PVDF	
8032 ▶		Sensor, switch, measuring device	Hall effect	0.5...1000 0.13...265	PN10 or PN16 (PN40 on request)	-15...+100	DN06...DN65	PVDF	
8035 ▶		Sensor, switch, measuring device, batch controller, totalizers	Hall effect	0.5...1000 0.13...265	PN10 or PN16 (PN40 on request)	-15...+100	DN06...DN65	PVDF	
8036 ▶		Sensor, switch, measuring device, totalizers	Hall effect	0.5...1000 0.13...265	PN10 or PN16 (PN40 on request)	-15...+100	DN06...DN65	PVDF	
8030/ SE30 Ex ▶		Sensor, measuring device	Hall effect	0.5...1000 0.13...265	PN10 or PN16 (PN40 on request)	-15...+80	DN06...DN65	PVDF	
Sensor with oval rotors	8077 ▶	Sensor	Hall effect	0.008...8.33 0.002...2.2	55 bar	-20...+120	Thread 1/8"; 1/4" (G or NPT)	SS	
	SE30 ▶ +S077 ▶	Sensor, measuring device	Hall effect	2...1200 0.5...320	up to 55 bar (de- pending on DN)	-20...+120	DN15...DN100	PPS, AI, SS	
	SE32 ▶ +S077 ▶	Sensor, switch, measuring device	Hall effect	2...1200 0.5...320	up to 55 bar (de- pending on DN)	-20...+120	DN15...DN100	PPS, AI, SS	
	SE35 ▶ +S077 ▶	Sensor, switch, measuring device, batch controller, totalizers	Hall effect	2...1200 0.5...320	up to 55 bar (de- pending on DN)	-20...+120	DN15...DN100	PPS, AI, SS	
	SE36 ▶ +S077 ▶	switch, measuring device, totalizers	Hall effect	2...1200 0.5...320	up to 55 bar (de- pending on DN)	-20...+120	DN15...DN100	PPS, AI, SS	
	SE30Ex ▶ +S077 ▶	Sensor, measuring device	Hall effect	2...1200 0.5...320	up to 55 bar (de- pending on DN)	-20...+120	DN15...DN100	SS	

1) Depending on the material of the fitting used

2) On request

Wetted parts material			Fluid properties	Viscosity [cSt]	Conductivity [$\mu\text{S}/\text{cm}$]	Measuring span	Construction: Electronics and Fitting/Sensor-fitting Type	Signal output	Display	Special features and versions
Electrodes	Seal	Fitting/Sensor-fitting								
Ceramics	FKM, EPDM	PVC, PP, brass, SS	No fibres, no metallic particles. Max. 1 % solids (particle size 0.5 mm max.)	<300	n/a	1:33	SE11 S012	Pulse	No	Compact
Ceramics	FKM, EPDM	PVC, PP, brass, SS		<300	n/a	1:33	SE12 S012	Pulse, 4...20 mA,	No	Compact
Ceramics	FKM, EPDM	Depending on the used S020 fitting PVC, PP, PVDF, brass, SS		<300	n/a	1:33	8020 S020	Pulse	No	Insertion compact
Ceramics	FKM, EPDM			<300	n/a	1:33	8025 S020	Pulse, 4...20 mA, relay	Yes	Insertion compact, panel or wall mounting, universal remote
Ceramics	FKM, EPDM			<300	n/a	1:33	8026 S020	Pulse, 4...20 mA,	Yes, removable	Compact
Ceramics	FKM, EPDM	Depending on the used S030 sensor-fitting PVC, PP, PVDF, brass, SS		<300	n/a	1:33	SE30 S030	Pulse	No	Inline compact
Ceramics	FKM, EPDM			<300	n/a	1:33	SE32 S030	Pulse, 4...20 mA, relay	Yes	Inline compact, panel or wall mounting
Ceramics	FKM, EPDM			<300	n/a	1:33	SE35 S030	Pulse, 4...20 mA, relay	Yes	Inline compact
Ceramics	FKM, EPDM			<300	n/a	1:33	SE36 S030	Pulse, 4...20 mA,	Yes, removable	Inline compact
Ceramics	FKM, EPDM			<300	n/a	1:33	SE30Ex S030	Pulse, NAMUR	No	Inline compact
SS	FEP/PTFE	Aluminium, SS	No fibres, no ferromagnetic parts. Fluid filtered.	<1000 <1 Mio ²⁾	n/a	1:50	8077	Pulse	No	Compact
SS	FKM, FEP/PTFE	Aluminium, SS		<1000 <1 Mio ²⁾	n/a	1:25	SE30 S077	Pulse	No	Inline compact
SS	FKM, FEP/PTFE	Aluminium, SS		<1000 <1 Mio ²⁾	n/a	1:25	SE32 S077	Pulse, 4...20 mA, relay	Yes	Inline compact
SS	FKM, FEP/PTFE	Aluminium, SS		<1000 <1 Mio ²⁾	n/a	1:25	SE35 S077	Pulse, 4...20 mA, Relay	Yes	Inline compact
SS	FKM, FEP/PTFE	Aluminium, SS		<1000 <1 Mio ²⁾	n/a	1:25	SE36 S077	Pulse, 4...20 mA,	Yes, removable	Inline compact
SS	FKM, FEP/PTFE	Aluminium, SS		<1000 <1 Mio ²⁾	n/a	1:25	SE30Ex S077	Pulse, NAMUR	No	Inline compact

Overview for Flow Sensors

Note: The following product overview does not show the complete product range of this catalogue. A complete overview can be found [here](#) ▶

Overview Flow Sensors	Category	Type	Basic functions	Operating principle	Flow range [l/min] [GPM]	Fluid pressure max. ¹⁾	Fluid temperature ¹⁾ [°C]	Nominal diameter ¹⁾	Sensor armature
	Magnetic		8041 ▶	Sensor, measuring device	Insertion magmeter	0.3...75000 0.8...19.813	PN10 PN16	-15...+150	DN06...DN400
		8045 ▶	Sensor, switch, measuring device, totalizers	Insertion magmeter	0.3...75000 0.8...19.813	PN10 PN16	-15...+110	DN06...DN400	PVDF, SS
		8051 ▶	Sensor, switch, measuring device, batch controller, totalizers	Full bore magmeter	0.02...208 0.005...55	PN16	-20...+130 (display dependent)	DN03...DN20	–
		8055 ▶	Sensor, switch, measuring device, batch controller, totalizers	Full bore magmeter	0.02...4666 0.005...1.233	PN16	-20...+130 (display dependent)	DN25...DN200	–
		8056 ▶	Sensor, switch, measuring device, batch controller, totalizers	Full bore magmeter	0.02...4666 0.005...1.233	PN16	-20...+130 (display dependent)	DN03...DN100	–
Ultrasonic		8081 ▶	Sensor, measuring device	Ultrasound	0.06...200 0.016...53	PN16	+5...+90	Thread ¾", 1" or 1¼" (G or NPT)	PES (measuring tube)
Acoustic waves surface		8098 ▶	Switch, sensor, measuring device, 2 volume flow totalizers	SAW (Surface Acoustic Waves)	0...7 m³/h to 0...90 m³/h	PN16 PN25	-20...+110	¾", 1", 1½", 2", DN15, DN25, DN40, DN50	–

1) Depending on the material of the fitting used

2) On request

Wetted parts material			Fluid properties	Viscosity [cSt]	Conductivity [μ S/cm]	Measuring span	Construction: Electronics and Fitting/Sensor-fitting Type	Signal output	Display	Special features and versions
Electrodes	Seal	Fitting/Sensor-fitting								
SS	FKM, EPDM, FEP	Depending on the S020 fitting used -	Clean and contaminated media, ferromagnetic parts < 1 %	< 1000	> 20	1:50	8041 S020	Pulse, 4...20 mA, relay	No	Compact
SS, Alloy	FKM, EPDM, FEP	PVC, PP, PVDF, brass, SS	Ferromagnetic parts < 1 %	< 1000	> 20	1:50	8045 S020	Pulse, 4...20 mA, relay	Yes	Compact
SS	FKM, EPDM, FFKm	SS	Contaminated or sterile fluids	< 2000 ¹⁾	> 5	1:500	SE56 S051	Pulse, 4...20 mA, relay	Yes/No	Compact, wall mounting
SS	FKM, EPDM	SS	Contaminated or sterile fluids	< 2000 ¹⁾	> 5	1:500	SE56 S054 S055	Pulse, 4...20 mA, relay	Yes/No	Compact, wall mounting
SS	FKM, EPDM	SS	Contaminated or sterile fluids	< 2000 ¹⁾	> 5	1:500	SE56 S056	Pulse, 4...20 mA, relay	Yes/No	Compact, wall mounting
-	EPDM	Brass	Liquids similar to water and less than 1 % solid particles	< 4	No effect	1:250	8081	Pulse, 4...20 mA	No	5 different flow ranges
-	-	SS 316L / 1.4435 BN2	To realize the special uncertainty factor: No gas bubbles or particles, no gas, no steam	< 2	No effect	1:100	S097 SE98	2 AO, 1 DO or 1 AO, 2 DO (selectable according to configuration)	Yes/No	Compact

Flowmeter for continuous flow measurement

8011

- Economic integration in pipe systems without any additional piping
- Magnetic measuring principle (paddle wheel with hall sensor)
- Output: transistor output (frequency signal)



The paddle wheel flowmeter for continuous flow measurement is especially designed for use in neutral, slightly aggressive, solid free liquids. Type 8011 consists of a fitting (S012) and an electronic module (SE11) connected together with screws. The Bürkert designed fitting system ensures simple installation into all pipes from DN06... DN65. It can also be installed in fluid block systems. Type 8011 produces a frequency signal, proportional to the flow rate, which can be processed by a Bürkert remote transmitter/controller.

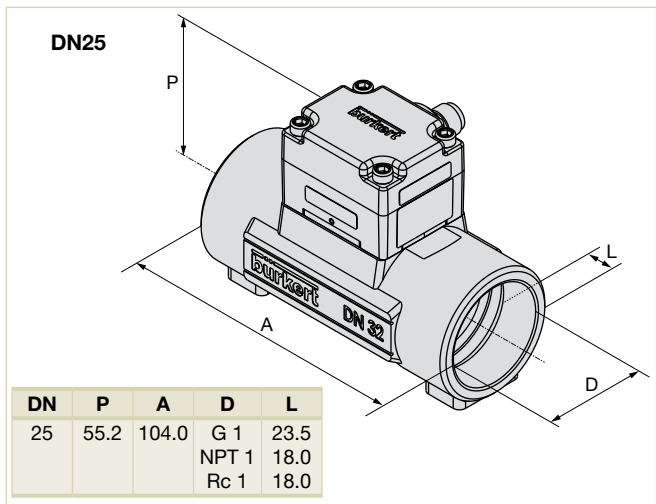
Type 8011 is available in two versions:

- with one pulse output: transistor NPN
- with two pulse outputs: transistor NPN and PNP

Technical data

General data	
Compatibility	With fittings S012
Fitting process connections	
Metal	Internal or external thread (weld ends, clamp or flange on request)
Plastic	True union or external thread (spigot on request)
Materials	
Housing / Seal	PPS / EPDM
Fixed connector M12, cable gland	PA
1 meter cable	PVC
Wetted parts materials	
Fitting	Brass, stainless steel 1.4404/316L, PVC, PP
Paddle wheel / Holder	PVDF blue / PVDF
Axis and bearing / Seal	Ceramics (Al ₂ O ₃) / FKM (EPDM option)
Electrical connection	Fixed connector 5 pin M12 (or with 1 m cable via cable gland, on request)
Connection cable	1.5 mm ² max. cross-section
Complete device data (fitting + electronic module)	
Pipe diameter	DN06...DN50 (DN65 on request)
Measuring range	0.3...10 m/s
Measuring element	Magnetic hall sensor
Fluid temperature with	
PVC fitting	0...+60 °C
PP fitting	0...+80 °C
Stainless steel, brass fitting	-15...+100 °C (if T [°] ambient ≤ 45 °C) or -15...+90 °C (if 45 °C ≤ T [°] ambient ≤ 60 °C)
Fluid pressure max. (see pressure/temperature diagram)	PN10 (with plastic fitting) PN16 (with metal fitting)
Viscosity / Pollution	Max. 300 cSt. / max. 1 % (size of particles 0.5 mm max.)

Dimensions [mm]



Measurement deviation	with standard K-factor ±(0.5 % of FS. ¹⁾ + 2.5 % of Reading ²⁾
Linearity	±0.5 % of FS. ¹⁾
Repeatability	±0.4 % of Reading ²⁾
Electrical data	
Operating voltage (V+)	
One pulse output version	4.5...24 V DC, filtered and regulated
Two pulse outputs version	6...36 V DC, filtered and regulated
Current consumption	<5 mA (without load)
Reversed polarity of DC	Protected
Voltage peak	Protected
Short circuit	Protected for transistor output
Output	
One pulse output version	Transistor NPN open collector, max. 20 mA, NPN output: 0.2...24 V DC, frequency up to 300 Hz (Frequency [Hz] = K factor [pulse/litre] x flow rate [l/s])
Two pulse outputs version	Transistor NPN and PNP open collector, max. 700 mA, NPN output: 0.2...36 V DC, PNP output: operating voltage, frequency up to 300 Hz (Frequency [Hz] = K factor [pulse/litre] x flow rate [l/s])

1) FS. = Full scale (10 m/s)

2) Under reference conditions i.e. measuring fluid = water, ambient and water temperature = 20 °C, applying the minimum inlet and outlet pipe straights, matched inside pipe dimensions.

Technical data continued

Environment	
Ambient temperature	- 15...+60 °C (operating and storage)
Relative humidity	≤ 80 %, without condensation
Standards, directives and certification	
Protection class	IP67 with multipin M12 (IP65 with cable)
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable) Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ¹⁾
Pressure	
Certification/Certificate on request	Inspection certificate 3.1 (acc. to EN-ISO 10204); Test report 2.2 (acc. to EN-ISO 10204); Certification of Conformity for the surface Quality (DIN4762-DIN4768-ISO/4287/1); 3 points Flow calibration certificate

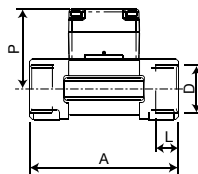
1) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).

Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

Dimensions [mm]

8011 with internal thread connection

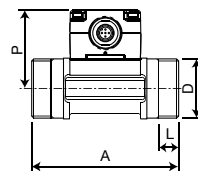
G, NPT or Rc
in stainless steel (316L - 1.4404) or
brass (CuZn₃₉Pb₂)



DN	P	A	D	L
15	57.5	84.0	G 1/2	16.0
			NPT 1/2	17.0
			Rc 1/2	15.0
20	55.0	94.0	G 3/4	17.0
			NPT 3/4	18.3
			Rc 3/4	16.3
25	55.2	104.0	G 1	23.5
			NPT 1	18.0
			Rc 1	18.0
32	58.8	119.0	G 1 1/4	23.5
			NPT 1 1/4	21.0
			Rc 1 1/4	21.0
40	62.6	129.0	G 1 1/2	23.5
			NPT 1 1/2	20.0
			Rc 1 1/2	19.0
50	68.7	148.5	G 2	27.5
			NPT 2	24.0
			Rc 2	24.0

8011 with external thread connection

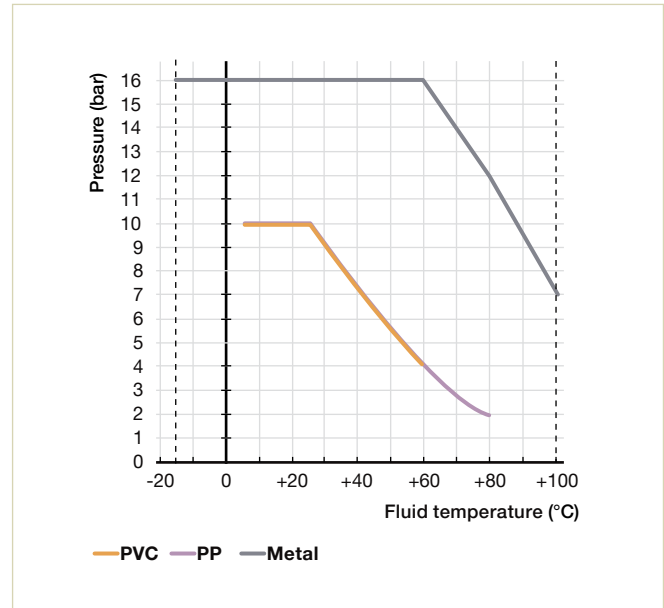
G, NPT or Rc
in stainless steel (316L - 1.4404),
brass (CuZn₃₉Pb₂) or PVC



DN	P	A	D	-	L
06	52.5	90.0	G 1/2	-	14.0
08	52.5	90.0	1/2 ²⁾	M16x1.5	14.0

2) G, NPT, Rc according to fitting version

Pressure/Temperature diagram





Ordering chart

For Type 8011, 4.5...24 V DC, 5 pin M12, NPN output											
Process connection	Standard	Output	Article no. DN06 - 1/4"	Article no. DN06 - 1/2"	Article no. DN08 - 1/2"	Article no. DN15	Article no. DN20	Article no. DN25	Article no. DN32	Article no. DN40	Article no. DN50
Brass - Fluid temperature max. 100 °C, PN16											
Internal thread	G (ISO 228)	NPN-Pulse	-	-	-	559918	559919	559920	559921	559922	559923
External thread	G (ISO 228)	NPN-Pulse	559915	559916	559917	-	-	-	-	-	-
Stainless steel - Fluid temperature max. 100 °C, PN16											
Internal thread	G (ISO 228)	NPN-Pulse	-	-	-	559939	559940	559941	559942	559943	559944
External thread	G (ISO 228)	NPN-Pulse	559936	559937	559938	-	-	-	-	-	-

Accessories

Specification	Article no.
4 short screws (M4x35 - A4) + 4 long screws (M4x60 - A4)	555775
5 pin M12 female straight cable plug moulded on cable (2 m, shielded)	438680
5 pin M12 female straight cable plug with plastic threaded locking ring, to be wired	917116
O-ring set for metal fitting - FKM - DN06...DN50	426340

Flowmeter with paddle wheel for continuous flow measurement

8012

- Economic integration in pipe systems without any additional piping
- Optic or magnetic measuring principle
- Configurable output: 1 analog 4...20 mA and/or 1 transistor output (frequency or switch)
- Outputs configurable (through interface on USB port with PC)



The paddle wheel flowmeter for continuous flow measurement is especially designed for use with neutral, slightly aggressive, solid free liquids in its magnetic measuring version and for use with liquids which let pass the infra-reds in its optic measuring version.

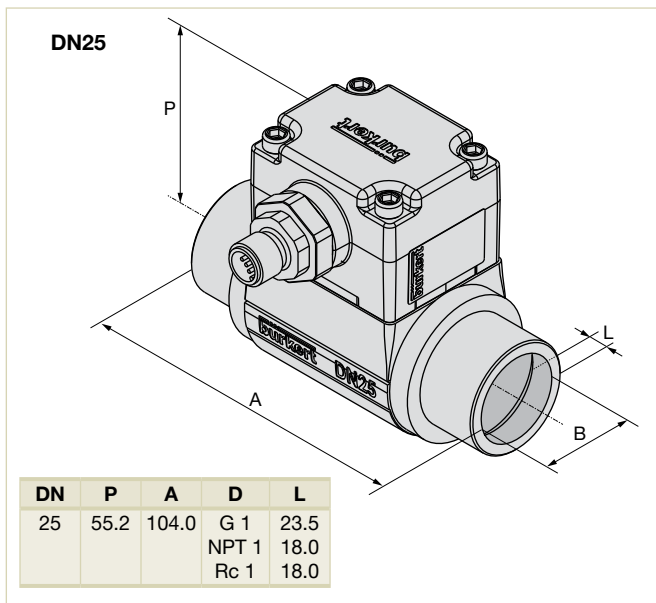
The 8012 is made up of a fitting (S012) and an electronic module (SE12) which are connected together with screws. The Bürkert designed fitting system ensures simple installation into all pipes from DN06...DN65. It can also be installed in fluid block systems.

The 8012 produces a configurable frequency pulse signal, proportional to the flow rate, which can easily be transmitted and processed by a Bürkert remote transmitter/controller, or a configurable switch output or a 4...20 mA signal.

Technical data

General data	
Compatibility	With Bürkert S012 fitting (see ordering chart)
Fitting process connections	
Metal	Internal or external thread (weld ends, clamp or flange on request)
Plastic	True union or external thread (spigot on request)
Materials	
Housing / Seal	PPS / EPDM
M12 fixed connector, (gland on request)	PA
1 meter cable	PVC
Wetted parts materials	
Fitting	Brass, stainless steel 1.4404/316L, PVC, PP
Paddle wheel, holder	PVDF
Axis and bearing / Seal	Ceramics (Al ₂ O ₃) / FKM (EPDM option)
Electrical connections	
	Free positionable 5 pin M12 male fixed connector (or with 1 m cable via cable gland, on request)
Connection cable	1.5 mm ² max. cross-section
Complete device data (fitting + electronic module)	
Pipe diameter	DN06...DN50 (DN65 on request)
Measuring range	0.3...10 m/s
Measuring element	Optical – infra-reds (or magnetic paddle wheel, on request)
Fluid temperature with	
PVC fitting	0...+60 °C
PP fitting	0...+80 °C
Stainless steel, brass fitting	-15...+100 °C (if T°ambient ≤ 45 °C) or -15...+90 °C (if 45 °C ≤ T°ambient ≤ 60 °C)

Dimensions [mm]



Fluid pressure max. (see pressure/temperature diagram)	PN10 (with plastic fitting) PN16 (with metal fitting)
Viscosity / Pollution	max. 300 cSt./max. 1 % (size of particles 0.5 mm max.)
Measurement deviation	
Teach-In	± 1 % of Reading ²⁾ (at the teach flow rate value)
Standard K-factor	± 2.5 % of Reading ²⁾
Linearity	± 0.5 % of FS. ¹⁾
Repeatability	± 0.4 % of Reading ²⁾

1) FS. = Full scale (10 m/s)

2) Under reference conditions i.e. measuring fluid = water, ambient and water temperature = 20 °C, applying the minimum inlet and outlet pipe straights, matched inside pipe dimensions.

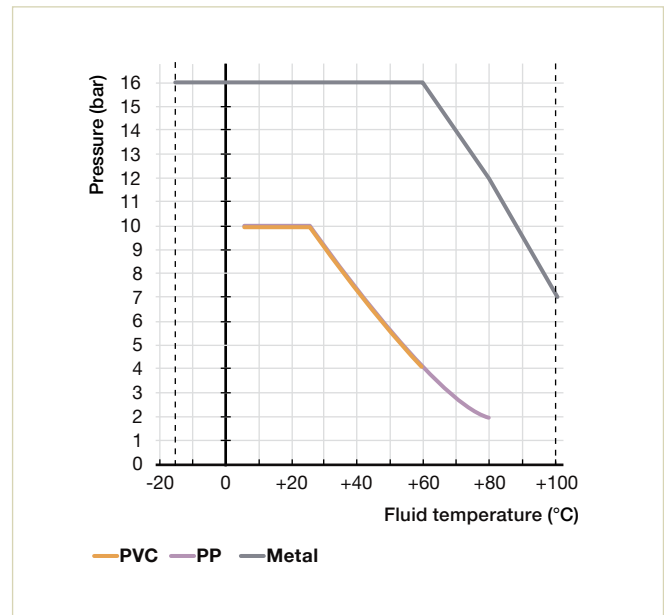
Technical data continued

Electrical data	
Power supply (V+)	12...36 V DC, filtered and regulated
Current consumption	<60 mA (at 12 V DC for current version - without load)
Reversed polarity of DC	Protected
Voltage peak	Protected
Short circuit	Protected for transistor output
Output	
Transistor version	Transistor NPN (default setting) / PNP (configurable on request), open collector, max. 700 mA, NPN output: 0.2...36 V DC (default setting) PNP output: operating voltage frequency or switching mode
Current version	4...20 mA, sinking (default setting), image of flow velocity (default setting), configurable on request (sourcing mode); Loop impedance max.: 1125 Ω at 36 V DC; 650 Ω at 24 V DC; 140 Ω at 12 V DC
4...20 mA output uncertainty	±1 % of range
Environment	
Ambient temperature	-15...+60 °C (operating and storage)
Relative humidity	≤80 %, without condensation
Standards, directives and certifications	
Protection class	IP67 with device wired and M12 cable plug mounted and tightened IP65 (with cable gland)
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable) Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ¹⁾
Pressure	
Certification/Certificate on request	Inspection certificate 3.1 (acc. to EN-ISO 10204); Test report 2.2 (acc. to EN-ISO 10204); Certification of Conformity for the surface Quality (DIN4762-DIN4768-ISO/4287/1); 3 points Flow calibration certificate; FDA (only for device with EPDM seal and stainless steel fitting)

1) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).

Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

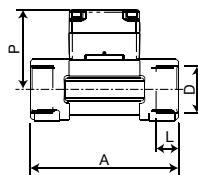
Pressure/Temperature diagram



Dimensions [mm]

8012 with internal thread connection

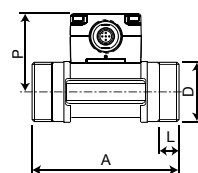
G, NPT or Rc
in stainless steel (316L - 1.4404) or
brass (CuZn₃₉Pb₂)



DN	P	A	D	L
15	57.5	84.0	G 1/2	16.0
			NPT 1/2	17.0
			Rc 1/2	15.0
20	55.0	94.0	G 3/4	17.0
			NPT 3/4	18.3
			Rc 3/4	16.3
25	55.2	104.0	G 1	23.5
			NPT 1	18.0
			Rc 1	18.0
32	58.8	119.0	G 1 1/4	23.5
			NPT 1 1/4	21.0
			Rc 1 1/4	21.0
40	62.6	129.0	G 1 1/2	23.5
			NPT 1 1/2	20.0
			Rc 1 1/2	19.0
50	68.7	148.5	G 2	27.5
			NPT 2	24.0
			Rc 2	24.0

8012 with external thread connection

G, NPT or Rc
in stainless steel (316L - 1.4404),
brass (CuZn₃₉Pb₂) or PVC



DN	P	A	D	-	L
06	52.5	90.0	G 1/2	-	14.0
08	52.5	90.0	1/2 ⁴⁾	M16x1.5	14.0

4) G, NPT, Rc according to fitting version



Ordering chart

For Type 8012 with optical measuring method, 12...36 V DC, 5 pin M12											
Process connection	Standard	Output ¹⁾	Article no.								
			DN06-¼"	DN06-½"	DN08-½"	DN15	DN20	DN25	DN32	DN40	DN50
Brass – Fluid temperature max. 100 °C, PN16											
Internal thread	G	Pulse	-	-	-	556003	556004	556005	556006	556007	556008
		Pulse + 4...20 mA	-	-	-	556012	556013	556014	556015	556016	556017
	NPT	Pulse	-	-	-	556018	556019	556020	556021	556022	556023
		Pulse + 4...20 mA	-	-	-	556024	556025	556026	556027	556028	556029
	Rc	Pulse	-	-	-	556030	556031	556032	556033	556034	556035
		Pulse + 4...20 mA	-	-	-	556036	556037	556038	556039	556040	556041
External thread	G	Pulse	556000	556001	556002	-	-	-	-	-	-
		Pulse + 4...20 mA	556009	556010	556011	-	-	-	-	-	-
Stainless steel – Fluid temperature max. 100 °C, PN16											
Internal thread	G	Pulse	-	-	-	556045	556046	556047	556048	556049	556050
		Pulse + 4...20 mA	-	-	-	556054	556055	556056	556057	556058	556059
	NPT	Pulse	-	-	-	556061	556062	556063	556064	556065	556066
		Pulse + 4...20 mA	-	-	-	556068	556069	556070	556071	556072	556073
	Rc	Pulse	-	-	-	556074	556075	556076	556077	556078	556079
		Pulse + 4...20 mA	-	-	-	556080	556081	556082	556083	556084	556085
External thread	G	Pulse	556042	556043	556044	-	-	-	-	-	-
		Pulse + 4...20 mA	556051	556052	556053	-	-	-	-	-	-
	NPT	Pulse	-	-	556060	-	-	-	-	-	-
		Pulse + 4...20 mA	-	-	556067	-	-	-	-	-	-
PVC – Fluid temperature max. 60 °C, PN10											
True union	DIN 8063	Pulse	-	-	-	556088	556089	556090	556091	556092	556093
		Pulse + 4...20 mA	-	-	-	556094	556095	556096	556097	556098	556099
	ASTM	Pulse	-	-	-	556100	556101	556102	556103	556104	556105
		Pulse + 4...20 mA	-	-	-	556106	556107	556108	556109	556110	556111
	JIS	Pulse	-	-	-	556112	556113	556114	556115	556116	556117
		Pulse + 4...20 mA	-	-	-	556118	556119	556120	556121	556122	556123
External thread	G	Pulse	-	556086	556124	-	-	-	-	-	-
		Pulse + 4...20 mA	-	556087	556125	-	-	-	-	-	-

1) Factory setting: – pulse NPN (raw frequency)
 – pulse NPN (raw frequency) + 4...20 mA (sinking mode, 0...250 Hz)
 – other configurations on request

Accessories

Specification	Article no.
4 short screws (M4x35 – A4) + 4 long screws (M4x60 – A4)	555775
5 pin M12 female straight cable plug moulded on cable (2 m, shielded)	438680
5 pin M12 female straight cable plug with plastic threaded locking ring, to be wired	917116
Configuration tool TACTIC (1 m length USB cable + 1 TACTIC cable with M12 connection + 1 TACTIC electronic housing + 1 configuration CD)	556500
Connecting cables: 8012-TACTIC and TACTIC-PC (1 m length USB cable + 1 TACTIC cable with M12 connection)	556160

Specification	Article no.							
	DN06	DN08	DN15	DN20	DN25	DN32	DN40	DN50
For metal fitting – FKM	426340	426340	426340	426340	426340	426340	426340	426340
For metal fitting – EPDM	426341	426341	426341	426341	426341	426341	426341	426341
For plastic fitting – FKM	–	448679	431555	431556	431557	431558	431559	431560
For plastic fitting – EPDM	–	448680	431561	431562	431563	431564	431565	431566

Insertion flowmeter with paddle wheel for continuous flow measurement

8020

- Economic integration in pipe systems without any additional piping
- 3-wire frequency pulse version to directly interface with PLC's (both PNP and NPN)
- Connection to Bürkert devices in remote versions



Suitable fitting:
see Type S020 ▶

The paddle wheel flowmeter for continuous flow measurement is especially designed for use in neutral, slightly aggressive, solid free liquids.

The Bürkert designed fitting system ensures simple installation of the devices into all pipes from DN20...DN400 mm. The flowmeter produces a frequency pulse signal, proportional to the flow rate, which can easily be transmitted and processed by a Bürkert transmitter/controller.

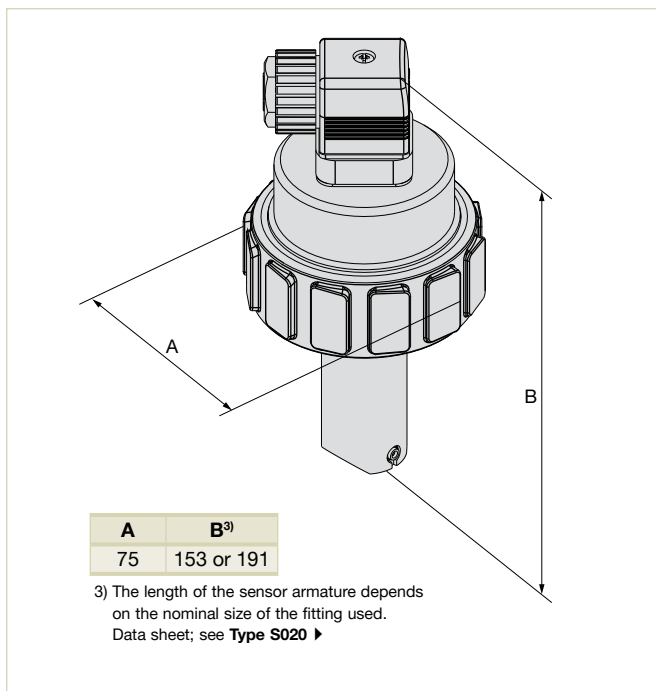
Technical data

General data	
Compatibility	With fittings S020 (data sheet; see Type S020 ▶)
Materials	
Housing / Union nut	PE / PC
Cable plug	PA
Wetted parts materials	
Fitting	Brass, stainless steel 1.4404/316L, PVC, PP, PVDF
Sensor armature, paddle wheel	PVDF
Axis, bearing / Seal	Ceramics / FKM (EPDM option)
Electrical connection	Cable plug EN 175301-803 (included)
Connection cable	1.5 mm ² cross section; Max. 50 m length, shielded
Complete device data (fitting + electronic module)	
Pipe diameter	DN20...DN400
Measuring range	0.3...10 m/s
Fluid temp. with fitting in	
PVC	0...+50 °C
PP	0...+80 °C
Stainless steel, brass, PVDF	-15...+80 °C
Fluid pressure max.	PN10 (see pressure/temperature diagram)
Viscosity / Pollution	300 cSt. max. / max. 1 % (size of particles 0.5 mm max.)
Measurement deviation	
Teach-In	±0.5 % of F.S. ¹⁾ (at 10 m/s) ²⁾
Standard K-factor	±(0.5 % of F.S. ¹⁾ + 2.5 % of Reading) ²⁾
Linearity	±0.5 % of F.S. ¹⁾ (at 10 m/s) ²⁾
Repeatability	≤0.4 % of Reading ²⁾
Environment	
Ambient temperature	-15...60 °C (operating and storage)
Relative humidity	≤80 %, without condensation

1) FS. = Full scale (10 m/s)

2) Under reference conditions i.e. measuring fluid = water, ambient and water temperature = 20 °C, applying the minimum inlet and outlet pipe straights, matched inside pipe dimensions.

Dimensions [mm]




Electrical data

Operating voltage	12...36 V DC (via Bürkert transmitter for "Low Power" version)
Current consumption	With sensor
Pulse version	≤50 mA
Pulse "Low power" version	≤0.8 mA
Output: Frequency	
Pulse version	Transistor NPN/PNP, open collector, max. 100 mA, frequency: 0...300 Hz; duty cycle ½
Pulse "Low Power" version	Transistor NPN, open collector, max. 10 mA, frequency: 0...300 Hz; duty cycle ½
Reversed polarity of DC	Protected

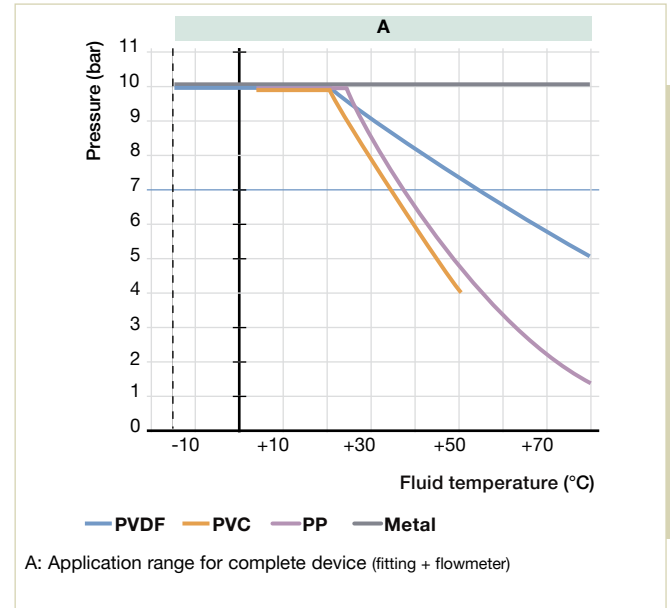


If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Technical data continued

Standards and certifications	
Protection class	IP65 with connector plugged-in and tightened
Standard and directives 	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Pressure	Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ¹⁾
1) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).	
Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.ii	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.i	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

Pressure/Temperature diagram



Dimensions [mm]

DN	H with S020 fitting			
	T-Fitting	Saddle	Plastic spigot	Metal spigot
20	153.5	-	-	-
25	153.5	-	-	-
32	157.0	-	-	-
40	161.0	-	-	-
50	167.0	191.5	-	162.5
65	167.0	190.5	172.5	167.0
80	-	194.5	177.5	173.0
100	-	199.5	184.0	183.5
110	-	195.5	-	-
125	-	202.5	-	194.5
150	-	212.5	230.0	205.5
180	-	236.5	-	-
200	-	248.5	251.0	226.0
250	-	-	269.0	286.0
300	-	-	280.5	305.5
350	-	-	294.0	317.5
400	-	-	308.5	-

Note: The Type 8020 can easily be installed into any Bürkert Insertion fitting system (S020) by just fixing the main nut. The length of the sensor armature depends on the nominal size of the fitting used. Data sheet; see **Type S020** ▶

Ordering chart

Description	Operating voltage	Output	Sensor version	Electrical connection	Article no.
Pulse version flowmeter (pluggable to Types 8025 Universal transmitter, batch controller; 8032; PLC)	12...36 V DC	Frequency with PNP or NPN	short	Cable plug DIN EN 175301-803	419587
			long	Cable plug DIN EN 175301-803	419589
Pulse "Low Power" version flowmeter (pluggable to Types 8025, 8032 transmitter)	from Transmitter	Frequency with NPN Pulse	short	Cable plug DIN EN 175301-803	419591
			long	Cable plug DIN EN 175301-803	419593






Note regarding the ordering of a complete flowmeter:

The complete 8020 flowmeter consists of the Type S020 Insertion fitting and the Type 8020 flowmeter.

FKM seal in standard; 1 Kit including a black EPDM seal and a green FKM seal is supplied with each flowmeter.

Please enter the appropriate flowmeter according to the table "Compatible and recommended combinations with Bürkert Insertion Fitting" and order the respective Insertion Fitting and the selected flowmeter separately.

Compatible and recommended combinations with Bürkert Insertion Fitting

		DN20	DN50	DN65	DN100	DN200	DN350	DN400
Available S020 fitting DN	T-fitting 	Short sensor						
	Weld-in socket 			Short sensor		Long sensor		
	Fusion spigot 			Short sensor		Long sensor		
	Screw-on S020 				Long sensor			
	Saddle 			Long sensor				

Accessories

Description	Article no.
Set with 1 green FKM and 1 black EPDM gasket	552111
Ring	619205
Union nut	619204
Cable plug EN 175301-803 with cable gland - see Type 2508 ▶ (will be replaced with Type 2518)	438811
Cable plug EN 175301-803 with NPT ½ reduction without cable gland - see Type 2509 ▶	162673

Insertion batch controller with paddle wheel compact

- DN06...DN400
- 4...20 mA output
- On-site calibration by TEACH-IN
- Check of input/output signals
- Total and daily totalizers for batch quantity and number of batches, volume or mass totalizers displayed



Suitable fitting:
see Type S020 ▶

The compact batch controller combines a paddle-wheel flow sensor and an electronic module with a display in an IP65 enclosure. The electrical connection is provided via two cable glands.

Bürkert designed fitting S020 ensures simple installation of the Bürkert sensor into pipes from DN20...DN400.

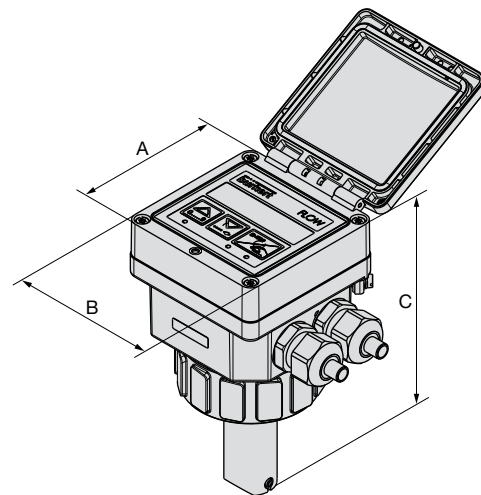
Technical data

General data	
Display	15x60 mm, 8 digit LCD, alphanumeric, 15 segments, 9 mm high
Compatibility	With fittings S020 (see Type S020 ▶) or corresponding data sheet Type S020 ▶
Materials	
Housing, cover, lid, nut	PC
Front panel foil/Screws	Polyester/Stainless steel
Cable glands	PA
Wetted parts materials	
Fitting	Brass, stainless steel 1.4404/316L, PVC, PP or PVDF
Sensor holder, paddle-wheel	PVDF
Axis and bearing/Seal	Ceramics/FKM (EPDM included, but not mounted)
Electrical connections	Cable glands M20 x 1.5
Recommended cable	Cable with maximum operating temperature greater than 80 °C Max. 50 m, shielded, 0.2...1.5 mm ² max. cross-section
Device data (Fitting S020 + batch controller)	
Pipe diameter	DN20...DN400
Measuring range	0.3...10 m/s (Hall transducer version)
Fluid temperature with fitting in	
PVC / PP	0...+50 °C / 0...+80 °C
PVDF, brass or stainless steel	-15...+80 °C
Fluid pressure max.	PN10 (see pressure/temperature diagram)
Viscosity/Pollution	300 cSt. max./1 % max.
Measurement deviation	
Teach-In	±1 % of Reading ¹⁾ (at the teach flow rate value)
Standard K-factor	±2.5 % of Reading ¹⁾
Linearity	±0.5 % of F.S. ^{1,2)}
Repeatability	±0.4 % of Reading ¹⁾

1) Under reference conditions i.e. measuring fluid = water, ambient and water temperature = 20 °C, applying the minimum inlet and outlet pipe straights, matched inside pipe dimensions.

2) FS. = Full scale (10 m/s)

Dimensions [mm]



A	B	C ³⁾
88	88	164.50 or 203

3) The length of the sensor armature depends on the nominal size of the fitting used.
Data sheet; see **Type S020** ▶

Electrical data	
Power supply (V+)	12...36 V DC (max tolerance: -5 % or +10 % at 12 V DC; ±10 % at 36 V DC), filtered and regulated, SELV (safety extra low voltage), circuit with a non dangerous energy level or 115/230 V AC 50/60 Hz (see technical specifications 115/230 V AC)
Reversed polarity of DC	Protected
Current consumption with sensor	Without consumption of digital input and pulse output
with relay	≤ 100 mA at 12 V DC; ≤ 50 mA at 26 V DC; ≤ 55 mA at 115/230 V AC
without relay	≤ 70 mA at 12 V DC; ≤ 35 mA at 26 V DC; ≤ 40 mA at 115/230 V AC
Inputs DI (1...4)	Switching threshold V_{on} : 5...36 V DC; Switching threshold V_{off} max: 2 V DC; Input impedance: 9.4 kΩ; Galvanic insulation, protected against polarity reversals and voltage spike

Technical data continued

Outputs

Transistors (DO1 and DO4)

NPN or PNP (wiring dependent), potential free; function: pulse output (by default for DO1), batch state (by default for DO4), configurable and parameterizable 0.6...2200 Hz, 5...36 V DC, 100 mA max., line drop 2.7 V DC at 100 mA

Duty cycle:

■ > 0.45 if 0.6 < frequency < 300 Hz

■ > 0.4 if 300 < frequency < 1500 Hz

■ < 0.4 if 1500 < frequency < 2200 Hz

Galvanic insulation, protected against over-voltage, polarity reversals and short-circuits 2 relays (normally open), parameterizable (by default: DO2 always configured to control the valve, parameterized of 100 % of the batch quantity and DO3 configured as alarm), 230 V AC/3 A or 40 V DC/3 A (resistive load), max. cutting power of 750 VA (resistive load)

Relays (DO2 and DO3)

Environment

Ambient temperature (operation and storage) -10...+60 °C (version 12...36 V DC)
-10...+50 °C (version 115/230 V AC)

Height above sea level Max. 2000 m

Relative humidity Max. 80 %, without condensation

Technical specifications 115/230 V AC

Voltage supply (available inside the device) 27 V DC regulated, max. current: 125 mA
Integrated protection: fuse 125 mA temporised
Power: 3 VA

Standards, directives and certifications

Protection class (according to EN60529) IP65 with cable gland mounted and tightened or with obturator locked if not used.

Standard and directives CE The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)

Pressure Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU¹⁾

Certifications

CE; UL-Recognized for US and Canada (61010-1 + CAN/CSA-C22.2 No.61010-1)

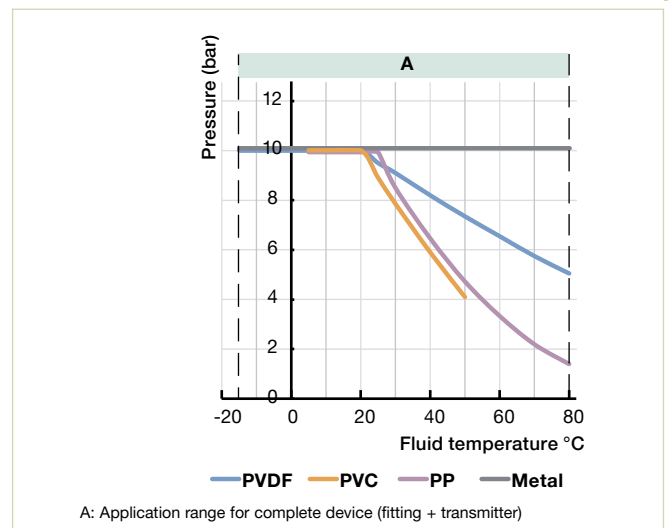


1) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).

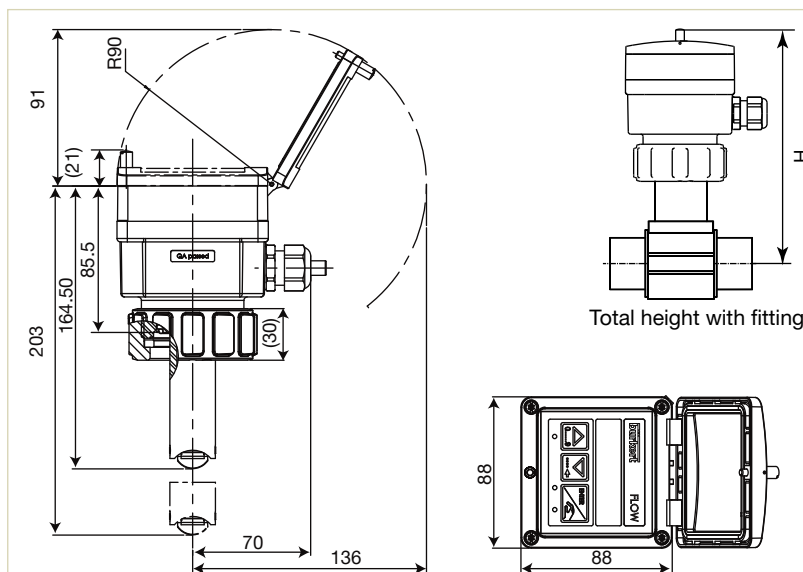
Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Pressure/Temperature diagram



Dimensions [mm]



DN	H with S020 fitting			
	T-Fitting	Saddle	Plastic spigot	Metal spigot
20	185	-	-	-
25	185	-	-	-
32	188	-	-	-
40	192	-	-	-
50	198	223	-	193
65	198	221	206	199
80	-	226	212	204
100	-	231	219	214
110	-	227	-	-
125	-	234	254	225
150	-	244	261	236
180	-	268	-	-
200	-	280	282	257
250	-	-	300	317
300	-	-	312	336
350	-	-	325	348
400	-	-	340	-

Note: The Type 8025 can easily be installed into any Bürkert Insertion fitting system (S020) by just fixing the main nut. The length of the sensor armature depends on the nominal size of the fitting used. Data sheet; see **Type S020** ▶



Operation and display (common to the various versions)

When mounted in a pipe (compact version) or connected to a flowmeter (remote version) in series with one or two valves, the 8025 batch controller makes it possible to carry out a dosing of one or several quantities of liquids. The unit controls the opening of the valves and measures the quantity of the fluid which flows. The unit also closes the valves when the preset quantity has been delivered.

The electronic component needs a voltage supply of 12...36 V DC or 115/230 V AC.

The device is equipped with 4 digital inputs (DI1 up to DI4), 2 transistor outputs (DO1 configured as a pulse output and DO4 configured as state output, by default), 2 relay outputs (DO2 always configured to control the valve and by default parameterize of 100 % of the batch quantity and DO3 configured as alarm output by default), two volume or mass totalizers and two batch totalizers.

The second relay output can be used to activate another valve, to initiate alarms or to generate warnings.

The following dosing modes are possible:

- Locally started dosing of free quantity:

the user enters the quantity to be filled and starts the dosing from the keypad.

- Locally started dosing of preset quantity:

the user selects a quantity which has been preset and starts the dosing from the keypad.

- Locally started dosing of free/preset quantity

the user enters the quantity to be filled or selects a quantity which has been preset and starts the dosing from the keypad.

- Dosing controlled by a PLC unit

the user selects a quantity which has been preset and starts the dosing using binary inputs.

- Locally/remote selection of preset quantity and dosing controlled by a PLC unit:

the user selects a quantity which has been preset from the keypad or using binary inputs and starts the dosing using binary inputs.

- Automatic dosing controlled by variation of pulse duration:

the quantity of the dosing is directly proportional to the duration of a pulse.

- Remote dosing determined by Teach-In:

Teach-In of the dosing quantity using binary inputs.

- Local dosing determined by Teach-In:

Teach-In of the dosing quantity from the keypads.

The device is calibrated by means of the K-factor which is either entered or determined via the Teach-In functions.

User adjustments, such as measuring range, engineering units, pulse output, etc. are carried out via the device operators interface.

The operation is specified according to five levels:

Indication in operating mode/display	Parameter definition	Test	Information	History
<ul style="list-style-type: none"> Dosing amount Dosing mode Main quantity totalizer Daily quantity totalizer with reset function Main batch totalizer Mainly batch totalizer with reset function 	<ul style="list-style-type: none"> Language Engineering units K-factor/Teach-In function Selection of dosing mode Over run correction Alarm Outputs configuration Reset both quantity/batch totalizers (main and daily) Brightness of the display (backlight) 	<ul style="list-style-type: none"> Input test Output test Frequency test Warning and fault messages generating Configuration mode 	<ul style="list-style-type: none"> Display of error, alarm and/or warning messages 	<ul style="list-style-type: none"> Display of the 10 latest batches

Ordering chart

Description	Voltage supply	Relay	Sensor version	Electrical connection	Article no.
Compact batch controller Type 8025					
2 totalizers	12...30 V DC	2	Hall, short	2 cable glands	419520
			Hall, long	2 cable glands	419522
	115/230 V AC	2	Hall, short	2 cable glands	419521
			Hall, long	2 cable glands	419529

Note regarding the ordering of a complete batch controller:

The complete 8025 batch controller consists of the Type S020 Insertion fitting and the Type 8025 batch controller

FKM seal in standard; 1 Kit including a black EPDM seal and a green FKM seal is supplied with each batch controller.

Please enter the appropriate batch controller according to the table "Compatible and recommended combinations with Bürkert Insertion Fitting" and order the respective Insertion Fitting and the selected batch controller separately.

Compatible and recommended combinations with Bürkert Insertion Fitting

Available S020 fitting DN	DN20		DN50	DN65	DN100	DN200	DN350	DN400
	T-fitting	Short sensor						
Weld-in socket				Short sensor		Long sensor		
Fusion spigot				Short sensor		Long sensor		
Screw-on S020						Long sensor		
Saddle				Long sensor				

Accessories

Description	Article no.
Set with 2 cable glands M20 x 1.5 + 2 neoprene flat seals for cable gland or plug + 2 screw-plugs M20 x 1.5 + 2 multiway seals 2 x 6 mm	449755
Set with 2 reductions M20 x 1.5 /NPT 1/2 + 2 neoprene flat seals for cable gland or plug + 2 screw-plugs M20 x 1.5	551782
Set with 1 stopper for unused cable gland M20 x 1.5 + 1 multiway seal 2 x 6 mm for cable gland + 1 black EPDM seal for the sensor + 1 mounting instruction sheet	551775
Ring	619205
Union nut	619204
Set with 1 green FKM and 1 black EPDM seal	552111

Batch controller for panel or wall mounting

7 batch sizes, 2 relay outputs

- Controls 7 batches automatically
- Fast fill and fine control for accuracy
- Shows both flow rate and volume

Suitable flow sensor:
see Type 8020 ▶, 8030 ▶, 8070 ▶



The remote 8025 batch controller can be connected (with pulse output signal) with Bürkert flowmeters Type 8020, 8030, 8070 or other flow sensor devices which emit a frequency signal.

The remote 8025 is a batch controller with display, available in wall-mounted and panel versions:

The panel version

is made up of an electronics integrated in an open housing with display. The electrical connection is carried out on the terminal blocks of the electronics board

The wall-mounted version

is made up of an electronics board which is integrated in a housing with a cover and display. The electrical connection is made via the terminal blocks of the electronic board via 5 cable glands.

Technical data

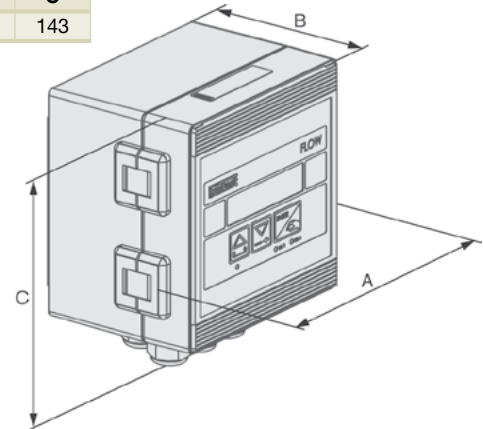
General data

Display	15x60 mm, 8-digit LCD, alphanumeric, 15 segments, 9 mm high
Compatibility with Bürkert sensors	Any Bürkert flow sensor with frequency output (8020, 8030, 8030HT, 8041, 8031, SE30+S077, 8071)
Compatibility with other sensors	Any open collector NPN, coil, TTL, CMOS
Materials	
Housing, cover	PC (panel-mounted version); ABS (wall-mounted version)
Front panel foil	Polyester
Screws	Stainless steel
Cable glands	PA (wall-mounted version)
Cable clips	PA (panel-mounted version)
Electrical connections	Terminal (panel-mounted version) or terminal via gland (wall-mounted version)
Recommended cable	Cable with maximum operating temperature greater than 80 °C, Max. 50 m, shielded, 0.2...1.5 mm ² max. cross-section, 5...8 mm external diameter (for the cable glands of the wall-mounted version)

Dimensions [mm]

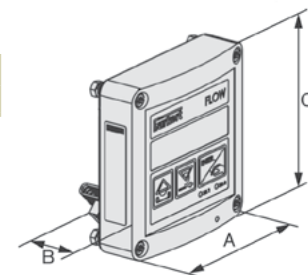
Wall Mount

A	B	C
126	90	143



Panel Mount

A	B	C
88	40	88




Option

- Compact Inline mount

Technical data continued

Electrical data	
Power supply (V+)	
Panel- and wall-mounted version	12...36 V DC (max tolerance: -5 % or +10 % at 12 V DC; ±10 % at 36 V DC), filtered and regulated, SELV (safety extra low voltage) circuit with a non dangerous energy level,
Wall-mounted version	115/230 V AC 50/60 Hz (see technical specifications 115/230 V AC)
Reversal polarity of DC	
	Protected
Current consumption with sensor	
with relay	Without consumption of the flowmeter output of the flowmeter ≤ 70 mA at 12 V DC; ≤ 45 mA at 26 V DC; ≤ 55 mA at 115/230 V AC (wall-mounted version)
without relay	≤ 50 mA at 12 V DC; ≤ 30 mA at 26 V DC; ≤ 35 mA at 115/230 V AC (wall-mounted version)
Controller input (from sensor)	
	Frequency range: 0.6...2.2 kHz, max. voltage: 36 V DC Open collector NPN (with 470 Ω or 2.2 kΩ resistance) or PNP, Coil, TTL, CMOS (with 39 kΩ resistance)
Controller output (to sensor)	
Voltage supply	- With a 12...36 V DC powered controller: ■ 10.5...34.5 V DC [= (V+) - 1.5 V DC], 140 mA max. ■ 0...23.5 V DC [= (V+) - 12.5 V DC], 80 mA max. non regulated ■ 5 V DC, 30 mA max. - With a 115/230 V AC powered controller: ■ +27 V DC, 80 mA max. ■ +14.5 V DC [= (V+) - 12.5 V DC] 80 mA max. non regulated ■ 5 V DC, 30 mA max.
Inputs DI (1...4)	
	Switching threshold V_{on} : 5...36 V DC; Switching threshold V_{off} max: 2 V DC; Input impedance: 9.4 KΩ; Galvanic insulation, protected against polarity reversals and voltage spike
Outputs	
Transistors (DO1 and DO4)	NPN or PNP (wiring dependent), potential free; function: pulse output (by default for DO1), state (by default for DO4), configurable and parameterizable 0.6...2200 Hz, 5...36 V DC, 100 mA max., line drop 2.7 V DC at 100 mA Duty cycle: ■ >0.45 if 0.6 < frequency < 300 Hz ■ >0.4 if 300 < frequency < 1500 Hz ■ <0.4 if 1500 < frequency < 2200 Hz Galvanic insulation, protected against overvoltage, polarity reversals and short-circuits
Relays (DO2 and DO3)	2 relays (normally open), parameterizable (by default: DO2 always configured to control the valve, parameterized of 100 % of the batch quantity and DO3 configured as alarm), 230 V AC/3 A or 40 V DC/3 A (resistive load), max. cutting power of 750 VA (resistive load)

Environment	
Ambient temperature	-10...+60 °C (operation and storage)
Height above sea level	Max. 2000 m
Relative humidity	Max. 80 %, without condensation
Technical specifications 115/230 V AC	
Supply voltage (available inside the device)	Wall-mounted version: Voltage supply: 27 V DC regulated, Max. current: 250 mA Integrated protection: fuse 250 mA temporised Power: 6 VA
Standards, directives and certifications	
Protection class (according to EN60529)	IP65 (panel-mounted and wall-mounted version) device wired and cable glands tightened screwed tight IP20 (panel-mounted version, inside the cabinet)
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Certifications	CE; UL-Recognized for US and Canada (61010-1 + CAN/CSA-C22.2 No.61010-1) 

Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of



Operation and display (common to the various versions)

When mounted in a pipe (compact version) or connected to a flowmeter (remote version) in series with one or two valves, the 8025 batch controller makes it possible to carry out a dosing of one or several quantities of liquids. The unit controls the opening of the valves and measures the quantity of the fluid which flows. The unit also closes the valves when the preset quantity has been delivered.

The electronic component needs a voltage supply of 12...36 V DC or 115/230 V AC.

The device is equipped with 4 digital inputs (DI1 up to DI4), 2 transistor outputs (DO1 configured as a pulse output and DO4 configured as state output, by default), 2 relay outputs (DO2 always configured to control the valve and by default parameterize of 100 % of the batch quantity and DO3 configured as alarm output by default), two volume or mass totalizers and two batch totalizers.

The second relay output can be used to activate another valve, to initiate alarms or to generate warnings.

The following dosing modes are possible:

- Locally started dosing of free quantity:

the user enters the quantity to be filled and starts the dosing from the keypad.

- Locally started dosing of preset quantity:

the user selects a quantity which has been preset and starts the dosing from the keypad.

- Locally started dosing of free/preset quantity

the user enters the quantity to be filled or selects a quantity which has been preset and starts the dosing from the keypad.

- Dosing controlled by a PLC unit

the user selects a quantity which has been preset and starts the dosing using binary inputs.

- Locally/remote selection of preset quantity and dosing controlled by a PLC unit:

the user selects a quantity which has been preset from the keypad or using binary inputs and starts the dosing using binary inputs.

- Automatic dosing controlled by variation of pulse duration:

the quantity of the dosing is directly proportional to the duration of a pulse.

- Remote dosing determined by Teach-In:

Teach-In of the dosing quantity using binary inputs.

- Local dosing determined by Teach-In:

Teach-In of the dosing quantity from the keypads.

The device is calibrated by means of the K-factor which is either entered or determined via the Teach-In functions.

User adjustments, such as measuring range, engineering units, pulse output, etc. are carried out via the device operators interface.

The operation is specified according to five levels:

Indication in operating mode/display	Parameter definition	Test	Information	History
<ul style="list-style-type: none"> Dosing amount Dosing mode Main quantity totalizer Daily quantity totalizer with reset function Main batch totalizer Daily batch totalizer with reset function 	<ul style="list-style-type: none"> Language Engineering units K-factor/Teach-In function Selection of dosing mode Over run correction Alarm Outputs configuration Reset both quantity/batch totalizers (main and daily) Brightness of the display (backlight) 	<ul style="list-style-type: none"> Input test Output test Frequency test Warning and fault messages generating Configuration mode 	<ul style="list-style-type: none"> Display of error, alarm and/or warning messages 	<ul style="list-style-type: none"> Display of the 10 latest batches

Ordering chart

Specifications	Voltage supply	Sensor version	Electrical connection	Article no.
Batch controller, panel mounted	12...36 V DC	see note	Terminal strip	419536
Batch controller, panel mounted UL-Recognized for US and Canada	12...36 V DC	see note	Terminal strip	564415
Batch controller, wall-mounted	12...36 V DC	see note	3 cable glands	433740
	115/230 V AC	see note	3 cable glands	433741

Note: See the chart below about compatible and recommended interconnection possibilities with Bürkert flowmeters.

Interconnection possibilities with Bürkert flowmeter

Sensor Type	Remote batch controller	
	Panel-mounted	Wall-mounted
8020 Hall version (short or long) - Frequency output with pulse signal (NPN, PNP, Open Collector)	X	X
8020 Hall "Low Power" version (short or long) - Frequency output with pulse signal (NPN, Open Collector)	X	X
8030/8070 Hall version - Frequency output with pulse signal (NPN, PNP, Open Collector)	X	X
8030/8070 Hall "Low Power" version - Frequency output with pulse signal (NPN, Open Collector)	X	X
8030 High temperature - Frequency output with pulse signal (NPN, PNP, Open Collector)	X	X
SE30 Ex	X	X
8031 - Frequency output with pulse signal (NPN)	X	X
8041 - Frequency output with pulse signal (NPN)	X	X ¹⁾
8071 - Frequency output with pulse signal (NPN)	X	X
8077 - Frequency output with pulse signal (NPN)	X	X

X = Compatible or recommended interconnection possibilities
1) except sensor with article no. 419543

Accessories

Specifications	Article no.
Spare part, panel version	
Mounting set (screws, washer, nuts, cable clips)	554807
Seal	419350
Set with 8 FLOW foils	553191
Spare part, wall version	
Power supply board 115/230 V AC + mounting instruction sheet	555722

Insertion Flowmeter with paddle wheel and flow transmitter

8025 Flowmeter
compact version

- Up to PN10, size of measurement pipes: DN06...DN400
- Display for indication of flow rate and volume with two flow totalizers
- Automatic calibration using Teach-In
- All outputs can be checked without the need of actual flow



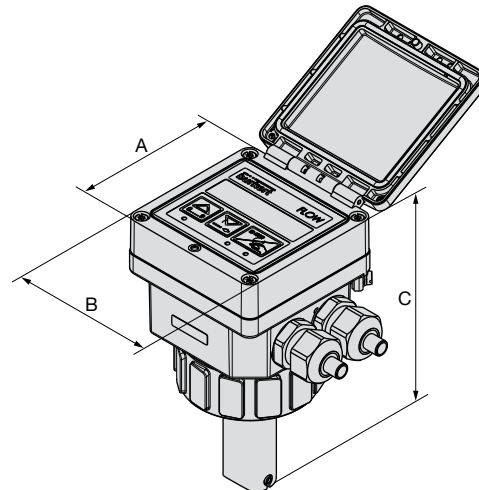
Suitable fitting:
see Type 8020 ▶

The 8025 flowmeter is specially designed for measuring the flow rate in neutral, slightly aggressive, solid-free liquids.

Technical data

General Data	
Display	15x60 mm, 8 digit LCD, alphanumeric, 15 segments, 9 mm high
Compatibility	With fittings S020 (see Type S020 ▶) or corresponding data sheet Type S020 ▶
Materials	
Housing, cover, lid, nut	PC
Front panel foil	Polyester
Screws	Stainless steel
Cable plug or glands	PA
Wetted parts materials	
Fitting	Brass, stainless steel 1.4404/316L, PVC, PP or PVDF
Sensor holder, paddle-wheel	PVDF
Axis and bearing	Ceramics
Seal	FKM (EPDM included, but not mounted)
Electrical connections	Cable plug or cable glands M20 x 1.5 or none (for battery version)
Recommended cable	Cable with maximum operating temperature greater than 80 °C, max. 50 m, shielded, 0.2...1.5 mm ² wires cross-section
External diameter (cable)	5...8 mm (with cable plug), 6...12 mm or 3...5 mm when using a multiway seal (with cable glands)
Cross-section (local earthing wire)	0.75 mm ²
Device data (fitting S020 + flowmeter)	
Pipe diameter	DN20...DN400
Measuring range	0.3...10 m/s
Fluid temperature with fitting in	
PVC	0...+50 °C
PP	0...+80 °C
PVDF, brass or stainless steel	-15...+80 °C ¹⁾
Fluid pressure max.	PN10 (see pressure/temperature diagram)
Viscosity/Pollution	300 cSt. max./1 % max.
Measurement deviation	
Teach-In	±1 % of Reading ²⁾ (at the teach flow rate value)
Standard K-factor	±2.5 % of Reading ²⁾
Linearity	±0.5 % of F.S. * ²⁾³⁾
Repeatability	±0.4 % of Reading ²⁾

Dimensions [mm]



A	B	C ⁴⁾
88	88	164.50 or 203

4) The length of the sensor armature depends on the nominal size of the fitting used. Data sheet; see **Type S020** ▶

Electrical data

Power supply (V+)	
Standard signal version	12...36 V DC ± 10 %, filtered and regulated, safety extra low voltage (SELV) circuit with a non dangerous energy level or 115/230 V AC 50/60 Hz (see technical specifications 115/230 V AC)
Battery indicator/totalizer version	4 x 1.5 V DC non rechargeable alkaline AA batteries, lifetime min. 4 years at 20 °C
Reversed polarity of DC	protected
Current consumption with sensor	Without consumption of pulse output ≤ 70 mA at 12 V DC - flowmeter with relays ≤ 25 mA at 12 V DC - flowmeter without relay

1) with Battery version = 100 °C


2) Under reference conditions i.e. measuring fluid = water, ambient and water temperature = 20 °C, applying the minimum inlet and outlet pipe straights, matched inside pipe dimensions.

3) FS. = Full scale (10 m/s)

Technical data continued

Output	
Standard signal version	
Signal current	4...20 mA (3-wire with relays; 2-wire without relay), sourcing or sinking (wiring dependant), max. loop impedance: 900 Ω at 30 V DC, 600 Ω at 24 V DC, 50 Ω at 12 V DC, 800 Ω with a 115/230 V AC voltage supply
Pulse	Polarized, NPN or PNP (wiring dependant); function: pulse output, adjustable pulse value, 2.5...400 Hz; 5...36 V DC; 100 mA, line drop at 100 mA: 2.5 V DC; Duty cycle: 0.5
Relay	Galvanic insulation and protected against overvoltage, polarity reversals and short circuit 2 relays, hysteresis, adjustable thresholds, normally open, 230 V AC/3 A or 40 V DC/3 A (resistive load)
Battery indicator/totalizer version	None
4...20 mA output uncertainty	± 1 % of range

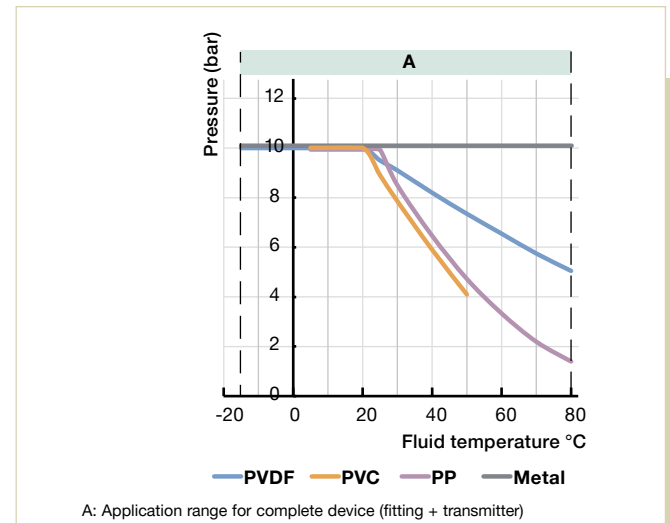
Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Environment	
Height above sea level	Max. 2000 m
Relative humidity	Max. 80 %, without condensation
Ambient temperature (operation and storage)	- 10...+60 °C (version 12...36 V DC) - 10...+50 °C (version 115/230 V AC) - 10...+55 °C (version batteries)
Technical specifications 115/230 V AC	
Voltage supply available inside the device	27 V DC regulated, max. current: 125 mA Integrated protection: fuse 125 mA temporised Power: 3 VA
Standards, directives and certifications	
Protection class (according to EN60529)	IP65 with cable plug or gland mounted and tightened or with obturator locked if not used
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Pressure	Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ¹⁾
Certifications	CE; UL-Recognized for US and Canada (61010-1 + CAN/CSA-C22.2 No.61010-1) 

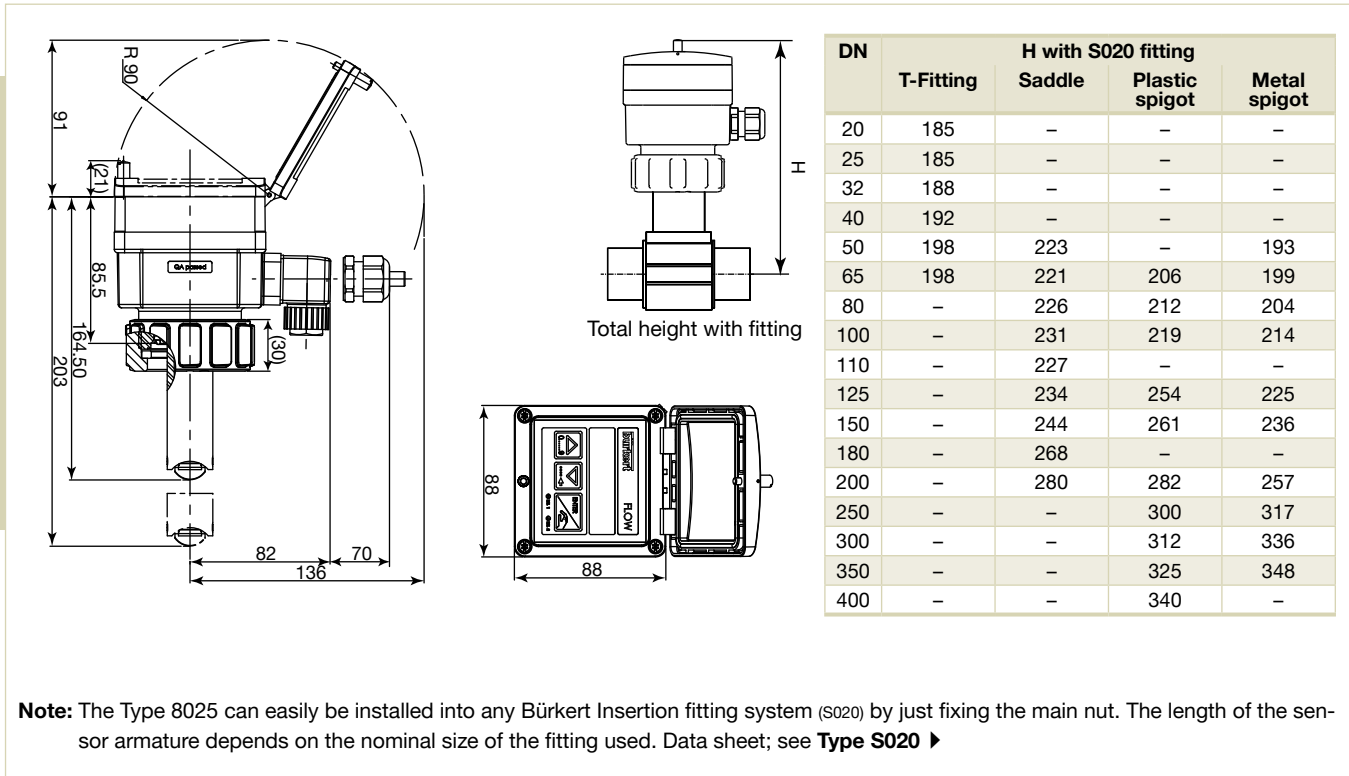
1) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).

Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

Pressure/Temperature diagram



Dimensions [mm]



Ordering chart

Description	Voltage supply	Output	Relay	Sensor version	Electrical connection	Article no.		
Compact Flowmeter Type 8025								
Standard output signal flowmeter, 2 totalizers	12...30 V DC	4...20 mA (2-wire) + pulse	none	Hall, short	Cable plug	418762		
					2 cable glands	418802		
				Hall, long	Cable plug	418763		
					2 cable glands	418803		
	115/230 V AC	4...20 mA (2-wire) + pulse	none	Hall, short	2 cable glands	418778		
					2 cable glands	418779		
				Hall, long	2 cable glands	418423		
					2 cable glands	418424		
				4...20 mA (3-wire) + pulse	2	Hall, short	2 cable glands	418431
						Hall, long	2 cable glands	418432
Indicator, 2 totalizers	4 × 1.5 V DC AA AA batteries	none	none	Coil, short	none	418403		
				Coil, long	none	418405		






Note regarding the ordering of a complete flowmeter:

The complete 8025 flowmeter consists of the Type S020 Insertion fitting and the Type 8025 flowmeter

FKM seal in standard; 1 Kit including a black EPDM seal and a green FKM seal is supplied with each flowmeter.









Please enter the appropriate flowmeter according to the table "Compatible and recommended combinations with Bürkert Insertion Fitting" and order the respective Insertion Fitting and the selected flowmeter separately.

Compatible and recommended combinations with Bürkert Insertion Fitting

		DN20	DN50	DN65	DN100	DN200	DN350	DN400
Available S020 fitting DN	T-fitting 	Short sensor						
	Weld-in socket 		Short sensor		Long sensor			
	Fusion spigot 		Short sensor		Long sensor			
	Screw-on S020 				Long sensor			
	Saddle 		Long sensor					

8025 Flowmeter compact version

Accessories

Description	Article no.
Set with 2 cable glands M20x1.5+2 neoprene flat seals for cable gland or plug +2 screw-plugs M20x1.5+2 multiway seals 2x6 mm	449755 
Set with 2 reductions M20x1.5 /NPT 1/2 +2 neoprene flat seals for cable gland or plug +2 screw-plugs M20x1.5	551782 
Set with 1 stopper for unused cable gland M20x1.5+1 multiway seal 2x6 mm for cable gland +1 black EPDM seal for the sensor +1 mounting instruction sheet	551775 
Ring	619205 
Union nut	619204 
Set with 1 green FKM and 1 black EPDM seal	552111 
Cable plug EN 175301-803 with cable gland - see Type 2508 ▶ (will be replaced with Type 2518)	438811 
Cable plug EN 175301-803 with NPT 1/2 reduction without cable gland - see Type 2509 ▶	162673 

Transmitter, remote Version

- Only for Bürkert flowmeters in „Low Power“ version
- Displays both flow rate and volume (with two totalizers)
- On site calibration by Teach-In
- Simulation of all output signals

Suitable flow sensor:
see Type 8020 ▶, 8030 ▶, 8070 ▶



The 8025 flow transmitter with display, is available in wall-mounted and panel versions:

The panel version

is made up of an electronics integrated in an open housing with display. The electrical connection is carried out on the terminal blocks of the electronic board.

The wall-mounted version

is made up of an electronics integrated in a housing with cover, display. The electrical connection is carried out on the terminal blocks of the electronic board via 3 cable glands.

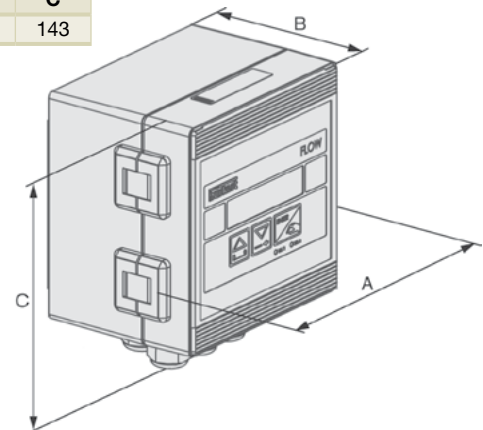
Technical data

General data	
Display	15x60 mm, 8 digit LCD, alphanumeric, 15 segments, 9 mm high
Compatibility	Bürkert flow sensor with frequency output 8020, 8030 or SE30+S077 (pulse "Low Power" version).
Materials	
Housing, cover	PC (panel-mounted version); ABS (wall-mounted version)
Front panel foil	Polyester
Screws	Stainless steel
Cable glands	PA (wall-mounted version)
Cable clips	PA (panel-mounted version)
Electrical connections	Terminals (panel-mounted version) or terminals via cable gland (wall-mounted version)
Recommended cable	Cable with maximum operating temperature greater than 80 °C, max. 50 m, shielded, 0.2...1.5 mm ² wires cross-section, 4...8 mm diameter (for the cable glands of the wall-mounted version)
Electrical data	
Power supply (V+)	
Panel-mounted version	12...36 V DC ± 10 %, filtered and regulated, safety extra low voltage (SELV) circuit with a non dangerous energy level
Wall-mounted version	12...36 V DC ± 10 %, filtered and regulated, safety extra low voltage (SELV) circuit with a non dangerous energy level or 15/230 V AC 50/60 Hz (see technical specifications 115/230 V AC)
Reversal polarity of DC	Protected
Current consumption with sensor	Without consumption of pulse output
Version 12...36 V DC	≤ 70 mA (with relays) ≤ 25 mA (without relays)

Dimensions [mm]

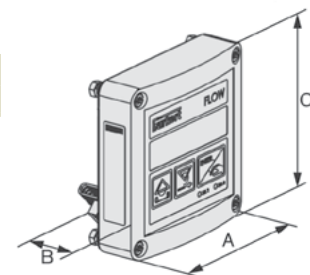
Wall Mount

A	B	C
126	90	143



Panel Mount

A	B	C
88	38	88



Transmitter input (from sensor)

Frequency range	2.5...400 Hz,
Pulse signal (Hall)	pulse "Low Power" (open collector NPN)

Transmitter output (to sensor)

Voltage supply	10...34 V DC (= V+) - 2 V DC),
Current consumption	max. current available from transmitter: 1 mA

Technical data continued

Outputs	
Pulse (Transistor)	Polarized, potential free, NPN or PNP (wiring dependant), function: pulse output, adjustable pulse value, 2.5...400 Hz, 5...36 V DC; 100 mA, line drop at 100 mA: 2.5 V DC, duty cycle: 0.5 Galvanic insulation and protected against over-voltage, polarity reversals and short circuit
Relay	2 relays, hysteresis, adjustable thresholds, normally open; 230 V AC/3 A or 40 V DC/3 A (resistive load)
Current	4...20 mA (3-wire with relays; 2-wire without relay), sourcing or sinking (wiring dependant) Max. loop impedance: 900 Ω at 30 V DC, 600 Ω at 24 V DC, 50 Ω at 12 V DC, 800 Ω with a 115/230 V AC voltage supply
4...20 mA output uncertainty ± 1 % of range	
Environment	
Ambient temperature	- 10...+60 °C (operation and storage)
Height above sea level	Max. 2000 m
Relative humidity	Max. 80 %, without condensation

Technical specifications 115/230 V AC

Supply voltage (available inside the device)	Wall-mounted version: Voltage supply: 27 V DC regulated, Max. current: 250 mA Integrated protection: fuse 250 mA temporised Power: 6 VA
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Standards, directives and certifications

Protection class	IP65 (panel-mounted and wall-mounted version) device wired and cable glands tightened screwed tight IP20 (panel-mounted version, inside the cabinet)
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Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
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Certifications	CE; UL-Recognized for US and Canada (61010-1 + CAN/CSA-C22.2 No.61010-1)
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Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Ordering chart

Description	Voltage supply	Output	Relays	Sensor version	Electrical connection	Article no.
Transmitter, panel mounted, 2 totalizers	12...36 V DC	4...20 mA (2 wires) + pulse	None	8020/8030 ¹⁾ /8070 ²⁾	Terminal strip	418992 𐀀
		4...20 mA (3 wires) + pulse	2	8020/8030 ¹⁾ /8070 ²⁾	Terminal strip	418994 𐀀
Transmitter, wall-mounted, 2 totalizers	12...36 V DC	4...20 mA (2 wires) + pulse	None	8020/8030 ¹⁾ /8070 ²⁾	3 cable glands	418397 𐀀
	115/230 V AC	4...20 mA (3-wires) + pulse	None	8020/8030 ¹⁾ /8070 ²⁾	3 cable glands	418400 𐀀

1) 8030 = SE30 + S030

2) 8070 = SE30 + S070

Accessories for remote transmitter Type 8025 (has to be ordered separately)

Description	Article no.
Spare part, panel version	
Mounting set (screws, washer, nuts, cable clips)	554807 𐀀
Seal	419350 𐀀
Set with 8 FLOW foils	553191 𐀀
Spare part, wall version	
Power supply board 115/230 V AC + mounting instruction sheet	555722 𐀀

Transmitter UNIVERSAL, remote version

- Displays both flow rate and volume (with two totalizers)
- On site calibration by Teach-In
- Simulation of all output signals

Suitable flow sensor:
see Type 8020 ▶, 8030 ▶, 8070 ▶



The 8025 universal flow transmitter with display, is available in wall-mounted and panel versions:

The panel version

is made up of an electronics integrated in an open housing with display. The electrical connection is carried out on the terminal blocks of the electronic board

The wall-mounted version

is made up of an electronics integrated in a housing with cover, display. The electrical connection is carried out on the terminal blocks of the electronic board via 3 cable glands.

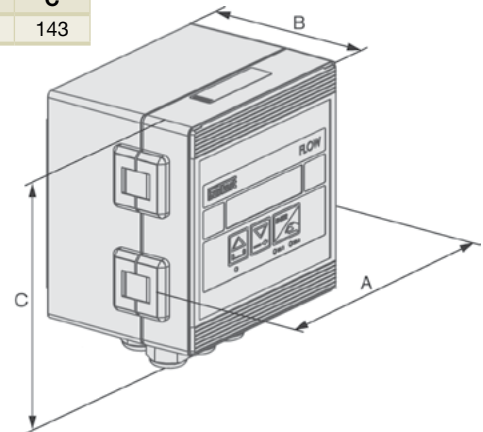
Technical data

General data	
Display	15x60 mm, 8 digit LCD, alphanumeric, 15 segments, 9 mm high
Compatibility	Bürkert flow sensor with frequency output (8020, 8030, 8030HT, 8041, 8031, SE30+S77, 8071) or other sensors with compatible electrical data.
Materials	
Housing, cover	PC (panel-mounted version); ABS (wall-mounted version)
Front panel foil	Polyester
Screws	Stainless steel
Cable glands	PA (wall-mounted version)
Cable clips	PA (panel-mounted version)
Electrical connections	Terminals (panel-mounted version) or terminals via gland (wall-mounted version)
Recommended cable	Cable with maximum operating temperature greater than 80 °C, max. 50 m, shielded, 0.2...1.5 mm ² wires cross-section, 4...8 mm external cable diameter (for the cable glands of the wall-mounted version)
Electrical data	
Power supply (V+)	
Panel- and wall-mounted version	12...36 V DC (max tolerance: -5 % or +10 % at 12 V DC; ±10 % at 36 V DC), filtered and regulated, safety extra low voltage (SELV) circuit with a non dangerous energy level,
Wall-mounted version	115/230 V AC 50/60 Hz (see technical specifications 115/230 V AC)
Reversal polarity of DC	Protected

Dimensions [mm]

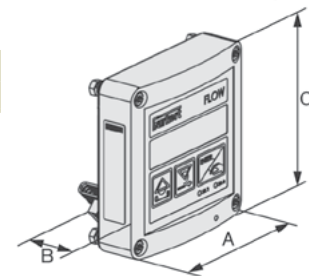
Wall Mount

A	B	C
126	90	143



Panel Mount

A	B	C
88	40.2	88




Current consumption	Without consumption of current output of the flowmeter
with sensor	≤ 70 mA (at 12 V DC); ≤ 45 mA (at 36 V DC)
Version with relay	≤ 50 mA (115/230 V AC wall-mounted version) ≤ 50 mA (at 12 V DC); ≤ 30 mA (at 36 V DC); ≤ 35 mA (115/230 V AC wall-mounted version)
Version without relays	

Transmitter input (from sensor)	
Frequency range	0.6...2.2 kHz, can be adjusted -
Voltage	Max. 36 V DC
Type of the signal	- Pulse: open collector NPN (with 470 Ω or 2.2 kΩ resistance) or PNP, TTL, CMOS (with 39 kΩ resistance) - Sine-wave, coil (with 39 kΩ resistance - with minimum sensitivity of 50 mV peak to peak)







Technical data continued

Transmitter output (to sensor)	
Voltage supply	<ul style="list-style-type: none"> - With a 12...36 V DC powered transmitter: <ul style="list-style-type: none"> ■ 10.5...34.5 V DC [= (V+) - 1.5 V DC], 140 mA max. ■ 0...23.5 V DC [= (V+) - 12.5 V DC], 80 mA max. non regulated ■ 5 V DC, 30 mA max. - With a 115/230 V AC powered transmitter: <ul style="list-style-type: none"> ■ +27 V DC, 80 mA max. ■ +14.5 V DC [= (V+) - 12.5 V DC] 80 mA max. non regulated ■ 5 V DC, 30 mA max.
Digital outputs	
Transistor (DO1)	Polarized, potential free, NPN or PNP (wiring dependant) Function: pulse output, adjustable pulse value, 0.6...2200 Hz, 5...36 V DC; 100 mA, line drop at 100 mA: 2.7 V DC, Duty cycle: <ul style="list-style-type: none"> • >0.45 if 0.6 < frequency <300 Hz • >0.4 if 300 < frequency <1500 Hz • <0.4 if 1500 < frequency <2200 Hz Galvanic insulation, protected against polarity reversals and short-circuits
Relay (DO2 and DO3)	2 relays, hysteresis, adjustable thresholds, normally open; 230 V AC/3 A or 40 V DC/3 A (resistive load) Max. cutting power of 750 VA (resistive load) Life span of min. 100000 cycles
Current (AO1)	4...20 mA, sourcing or sinking (wiring dependant), 22 mA to indicate a fault (can be activated); Max. loop impedance: 1300 Ω at 36 V DC, 1000 Ω at 30 V DC, 750 Ω at 24 V DC, 300 Ω at 15 V DC, 200 Ω at 12 V DC; 900 Ω with a 115/230 V AC voltage supply
4...20 mA output uncertainty	± 1 % of range





Environment	
Ambient temperature	- 10...+60 °C (operation and storage)
Height above sea level	Max. 2000 m
Relative humidity	Max. 80 %, without condensation
Technical specifications 115/230 V AC	
Supply voltage available inside the device	Wall-mounted version: Voltage supply: 27 V DC regulated, Max. current: 250 mA Integrated protection: fuse 250 mA temporised Power: 6 VA
Standards, directives and certifications	
Protection class (according to EN60529)	IP65 (panel-mounted and wall-mounted version) device wired and cable glands tightened screwed tight IP20 (panel-mounted version, inside the cabinet)
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Certifications	CE; UL-Recognized for US and Canada (61010-1 + CAN/CSA-C22.2 No.61010-1) 

Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Ordering chart

Version	Description	Voltage supply	Output	Relay	Electrical Connection	Article no.
Remote Transmitter Type 8025						
Panel mounting	Universal transmitter, 2 totalizers	12...30 V DC	4...20 mA (3-wire) + pulse	None	Terminal strip	419538 
				2	Terminal strip	419537 
Wall mounting	Universal Transmitter, 2 totalizers	12...30 V DC	4...20 mA (3-wire) + pulse	None	3 cable glands	419541 
				2	3 cable glands	419540 
		115/230 V AC	4...20 mA (3-wire) + pulse	None	3 cable glands	419544 
				2	3 cable glands	419543 

Accessories

Description	Article no.
Spare part, panel version	
Mounting set (screws, washer, nuts, cable clips)	554807 
Seal	419350 
Set with 8 FLOW foils	553191 
Spare part, wall version	
Power supply board 115/230 V AC + mounting instruction sheet	555722 

Insertion flowmeter with paddle wheel, ELEMENT design

8026

- Up to PN10, size of measurement pipes: DN20...DN400
- Configurable outputs: one or two transistor output(s) and one or two 4...20 mA analog output(s)
- Removable backlit display/configuration module for indication of flow rate and volume with two flow totalizers
- Automatic calibration using Teach-In, all outputs can be checked without the need of actual flow



Suitable fitting:
see Type S020 ▶

The 8026 flowmeter is a compact device, specially designed for measuring the flow rate in solid-free liquids, in a variety of applications (water, waste water monitoring, chemical processing etc.).

Type 8026 converts the measured signal, displays different values in different units (if display/configuration module mounted) and computes the output signals, which are provided via one or two M12 fixed connectors. Thanks to 1 or 2 transistor outputs, the flowmeter can be used to switch a solenoid valve, activate an alarm and, thanks to 1 or 2 current outputs, establish one or two control loops.

Technical data

General data

Compatibility Any pipe from DN20¹⁾...DN400 which are fitted out with Bürkert Insertion Fitting S020 (see **Type S020** ▶ or corresponding data sheet **Typ S020** ▶)

Materials

Housing	Stainless steel 1.4404, PPS
Cover	PC
Gaskets	EPDM, silicone
Screws	Stainless steel
Fixed connector mounting plate	Stainless steel 1.4404 (316L)
Fixed connector	Brass nickel plated (stainless steel on request)
Display/configuration module	PC
Navigation key	PBT
Nut	PC

Wetted part materials

Sensor finger	PVDF
Seal	FKM standard (EPDM included, but not mounted)
Axis and bearings	Ceramic (Al ₂ O ₃)
Paddle wheel	PVDF

Display/configuration module (accessories) Grey dot matrix 128×64 with backlighting

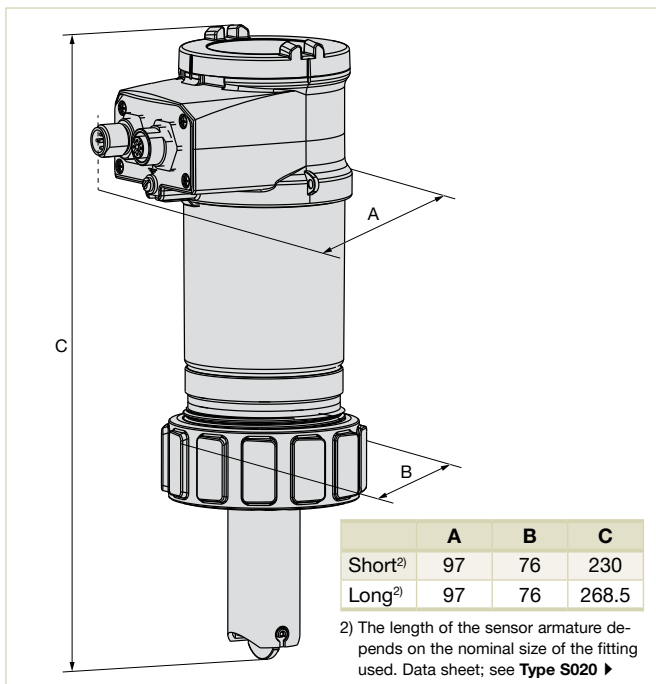
Electrical connections

2 or 3 outputs transmitter	1×5 pin M12 male fixed connector
4 outputs transmitter	1×5 pin M12 male and 1×5 pin M12 female fixed connectors

Connection cable

Shielded cable

Dimensions [mm]



Options

- PVC, PVDF and PP, Stainless steel and brass fitting
- Various sealing materials
- Individual calibration certificate
- Pre-wired connection ports, M12 plug and cable



1) Restricted to some fitting process connections

Complete device data (pipe + flowmeter)

Pipe diameter	DN20...DN400
Measuring range	0.3...10 m/s
Fluid temperature with fitting in	
PVC	0...+50 °C
PP	0...+80 °C
PVDF, brass or stainless steel	-15...+100 °C
Fluid pressure max.	PN10 (see pressure/temperature diagram)
Viscosity / Particles rate	300 cSt max. / 1 % max.

Technical data continued

Measurement deviation	
Teach-In	± 1 % of the Reading (at Teach-In flow rate value) ¹⁾
Standard K-factor	± 2.5 % of the Reading ¹⁾
Linearity	
	± 0.5 % of F.S. ^{1) 2)}
Repeatability	
	± 0.4 % of the Reading ¹⁾
Electrical data	
Power supply	
2 or 3 outputs transmitter (2-wire)	14...36 V DC, filtered and regulated
4 outputs transmitter (3-wire)	12...36 V DC, filtered and regulated
Characteristics of the power source (not provided) of UL recognized devices	
	Limited power source (according to § 9.4 of the UL61010-1 standard) or Class 2 type power source (according to the 1310/1585 and 60950-1 standards)
Reversed polarity of DC	
	Protected
Current consumption with sensor	
	≤ 1 A (with transistors load)
2 or 3 outputs transmitter (2-wire)	≤ 25 mA (at 14 V DC without transistors load, with current loop)
4 outputs transmitter (3-wire)	≤ 5 mA (at 12 V DC without transistors load, without current loop)
Power consumption	
	Max. 40 W
Output	
Transistor	Galvanic insulation and protected against overvoltage, polarity reversals and short circuit
1 Transistor output (Transmitter 2-wire)	NPN, open collector, 1...36 V DC, max. 700 mA
2 Transistor outputs (Transmitter 2 or 3-wire)	Adjustable as sourcing or sinking (respectively both as PNP or NPN), open collector, max. 700 mA, 0.5 A max. per transistor if the 2 transistor outputs are wired NPN-output: 1...36 V DC PNP-output: power supply
Current	4...20 mA adjustable as sourcing or sinking (in the same mode as transistor), Max. loop impedance: 1100 Ω at 36 V DC ; 610 Ω at 24 V DC; 180 Ω at 14 V DC Max. loop impedance: 1100 Ω at 36 V DC; 610 Ω at 24 V DC; 100 Ω at 12 V DC
1 Current output (Transmitter 2-wire)	
2 Current outputs (Transmitter 3-wire)	
4...20 mA output uncertainty	
	± 1 % of range

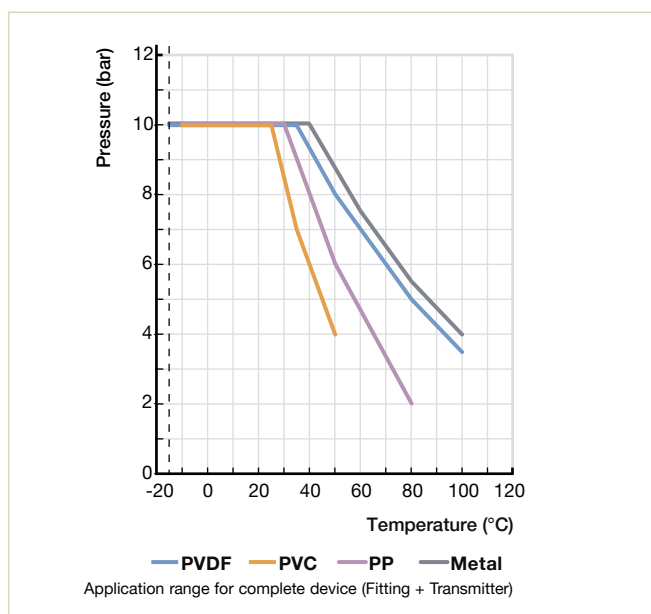
Environment	
Ambient temperature	- 10...+60 °C (operating and storage)
Relative humidity	≤ 85 %, without condensation
Standards, directives and certifications	
Protection class	IP65, IP67 (according to EN60529), NEMA 4X (according to NEMA250) with device wired and M12 cable plug mounted and tightened and cover fully screwed down
Standard and directives 	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable) Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ³⁾
Pressure	
Certification	CE; UL-Recognized for US and Canada (61010-1 + CAN/CSA-C22.2 No.61010-1) 

- 1) Under reference conditions i.e. measuring fluid = water, ambient and water temperature = 20 °C, applying the minimum inlet and outlet pipe straights, matched inside pipe dimensions.
- 2) F.S. = Full scale (10 m/s)
- 3) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).

Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

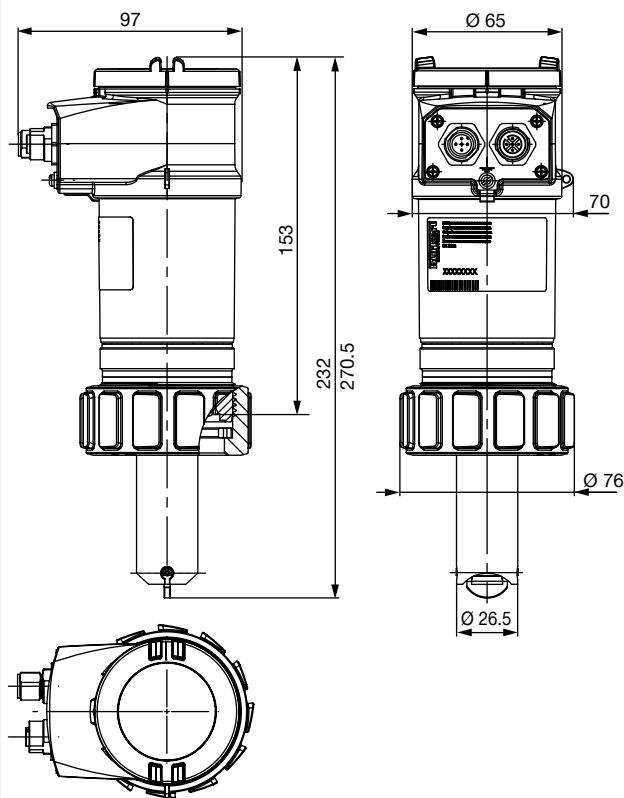
Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Pressure/Temperature diagram



Dimensions [mm]

8026



DN	T-Fitting	H with S020 fitting		
		Saddle	Plastic spigot	Metal spigot
20	231.5	-	-	-
25	231.5	-	-	-
32	234.5	-	-	-
40	238.5	-	-	-
50	244.5	269.5	-	239.5
65	244.5	267.5	252.5	245.5
80	-	272.5	258.5	250.5
100	-	277.5	265.5	260.5
110	-	273.5	-	-
125	-	280.5	300.5	271.5
150	-	250.5	307.5	282.5
180	-	314.5	-	-
200	-	326.5	328.5	303.5
250	-	-	346.5	363.5
300	-	-	358.5	382.5
350	-	-	371.5	394.5
400	-	-	386.5	-

Note: The Type 8026 can easily be installed into any Bürkert Insertion fitting system (S020) by just fixing the main nut. The length of the sensor armature depends on the nominal size of the fitting used. Data sheet see **Type S020** ▶

Ordering chart

Description	Voltage supply	Output	Sensor version	Electrical connection	UL certification	Article no.	
						without display/ configuration module	with display/ configuration module
2 outputs	14...36 V DC	1 x transistor NPN + 1 x 4...20 mA (2 wires)	Short	5 pin M12 male fixed connector	No	560860	561860
					UL-Recognized	560863	561863
			Long	5 pin M12 male fixed connector	No	560870	561870
					UL-Recognized	560873	561873
3 outputs	14...36 V DC	2 x transistors NPN/PNP + 1 x 4...20 mA (2 wires)	Short	5 pin M12 male fixed connector	No	560861	561861
					UL-Recognized	560864	561864
			Long	5 pin M12 male fixed connector	No	560871	561871
					UL-Recognized	560874	561874
4 outputs	12...36 V DC	2 x transistors NPN/PNP + 2 x 4...20 mA (2 wires)	Short	5 pin M12 male and 5 pin M12 female fixed connectors	No	560862	561862
					UL-Recognized	560865	561865
			Long	5 pin M12 male and 5 pin M12 female fixed connectors	No	560872	561872
					UL-Recognized	560875	561875

Note regarding the ordering of a complete flowmeter:

A complete 8026 flowmeter with integrated paddle wheel sensor consists of a compact 8026 flow ELEMENT flowmeter, a removable display/configuration module and a Bürkert S020 Insertion fitting.






FKM seal in standard; 1 Kit including a black EPDM seal and a green FKM seal is supplied with each flowmeter.

Please enter the appropriate flowmeter according to the table “Compatible and recommended combinations with Bürkert Insertion Fitting” and order the respective Insertion Fitting and the selected flowmeter separately.











Attention!

When you order devices without the display/configuration module, please take care that you also order at least one display/configuration module for the operation. Article no. of the removable display/configuration module (see ordering chart).

Compatible and recommended combinations with Bürkert Insertion Fitting

		DN20	DN50	DN65	DN100	DN200	DN350	DN400
Available S020 fitting DN	T-fitting 	Short sensor						
	Weld-in socket 			Short sensor		Long sensor		
	Fusion spigot 			Short sensor		Long sensor		
	Screw-on S020 					Long sensor		
	Saddle 			Long sensor				

Accessories

Description	Article no.
Removable display/configuration module (with instruction sheet)	559168 
Blind cover with seal (1 screw cover with EPDM seal + 1 quarter turn closing cover with silicone seal)	560948 
Transparent cover with seal (1 screw cover with EPDM seal + 1 quarter turn closing cover with silicone seal)	561843 
Ring	619205 
Nut	619204 
Set with 1 green FKM and 1 black EPDM seal	552111 
5 pin M12 female straight cable plug with plastic threaded locking ring, to be wired	917116 
5 pin M12 male straight cable plug with plastic threaded locking ring, to be wired	560946 
5 pin M12 female straight cable plug moulded on cable (2 m, shielded)	438680 
5 pin M12 male straight cable plug moulded on cable (2 m, shielded)	559177 

Note: M12 cable plugs must be ordered separately (only female for one 4...20 mA output, 1 male + 1 female for two 4...20 mA outputs flowmeter)

Inline Flowmeter for continuous flow measurement

8030 / SE30

- Economic integration in pipe systems
- 3-wire frequency pulse version to directly interface with PLC's (both PNP and NPN)
- Connection to Bürkert devices in remote versions



Suitable fitting:
see Type S030 ▶

The 8030 flowmeter consists of an SE30 transmitter and an S030 sensor-fitting with paddle wheel. Perfect for neutral, solid free liquids. A hall-effect sensor produces a square wave frequency proportional to the flow rate.

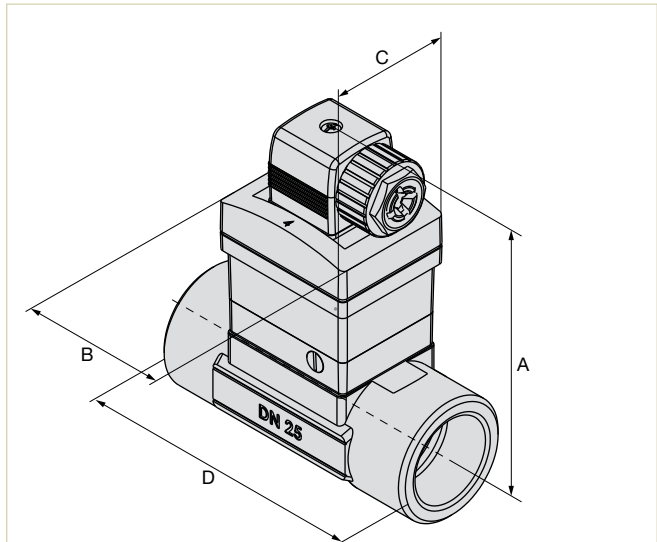
Technical data Standard

General data	
Compatibility	With sensor-fittings S030 (see Type S030 ▶ or corresponding data sheet Type S030 ▶)
Materials	
Housing, cover, male conn.	PC
Cable plug / Seal / Screws	PA / NBR / Stainless steel
Wetted parts materials	
Fitting, sensor armature	Brass, stainless steel 1.4404/316L, PVC, PP, PVDF
Paddle wheel	PVDF
Axis, bearing	Ceramics
Seal	FKM or EPDM (depending on Sensor-Fitting version)
Electrical connection	Cable plug EN 175301-803 (Type 2508 will be replaced with Type 2518 – included in delivery)
Connection cable	Max. 1.5 mm ² cross section; max. 50 m length, shielded
Complete device data (sensor-fitting + transmitter)	
Pipe diameter	DN06...DN65
Measuring range	0.3...10 m/s
Fluid temp. with sensor-fitting in	
PVC / PP	0...+50 °C / 0...+80 °C
Stainless steel, brass, PVDF	-15...+100 °C
Fluid pressure max. (see pressure/temperature diagram)	PN10 (with plastic sensor-fitting) PN16 (with metal sensor-fitting) (PN40 on request. Data sheet; see Type S030 ▶)
Viscosity / Pollution	300 cSt. max. / max. 1 % (size of particles 0.5 mm max.)
Measurement deviation	
Teach-In	± 1 % of Reading ¹⁾ (at the teach flow rate value)
Standard K-factor	± 2.5 % of Reading ¹⁾
Linearity	± 0.5 % of F.S. ¹⁾²⁾
Repeatability	± 0.4 % of Reading ¹⁾
Environment	
Ambient temperature	-15...+60 °C (operating and storage)
Relative humidity	≤ 80 %, without condensation

1) Under reference conditions i.e. measuring fluid = water, ambient and water temperature = 20 °C, applying the minimum inlet and outlet pipe straights, matched inside pipe dimensions.

2) F.S. = Full scale (10 m/s)

Dimensions [mm]



DN	A	B	C	D
06	95.5	54	44	³⁾
08	95.5	54	44	³⁾
15	100.5	54	44	³⁾
20	98.0	54	44	³⁾
25	98.0	54	44	³⁾
32	102.0	54	44	³⁾
40	105.5	54	44	³⁾
50	112.0	54	44	³⁾
65	112.0	54	44	³⁾

³⁾ Depend on the sensor-fitting used. See **Type S030** ▶ or corresponding data sheet **Type S030** ▶


Options

- Measuring device SE30 for high temperatures
- AS-i Connection
- Hygienic clamp and ASME weld end connections
- ANSI flange connection
- PVDF and PP sensor-fittings.
- High flow sensor-fittings up to DN350 (see **Type 8020** ▶)
- Various sealing materials
- Individual calibration certificate

Technical data continued

Electrical data	
Operating voltage	12...36 V DC filtered and regulated (via Bürkert transmitter the device is connected for "Low Power" version)
Reversed polarity of DC	Protected
Current consumption	With sensor
Hall version	≤30 mA
Hall "Low power" version	≤0.8 mA
Output: Frequency	
Hall version	2 transistors NPN and PNP, open collector, max. 100 mA, frequency: 0...300 Hz; duty cycle ½ ± 10 % NPN output: 0.2...36 V DC PNP output: supply voltage
Hall "Low Power" version	1 transistor NPN, open collector, max. 10 mA, frequency: 0...300 Hz; duty cycle ½ ± 10 %

Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Standards, directives and certifications	
Protection class	IP65 with connector plugged-in and tightened
Standard and directives 	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Pressure	Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ¹⁾

¹⁾ The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).

Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

Ordering chart

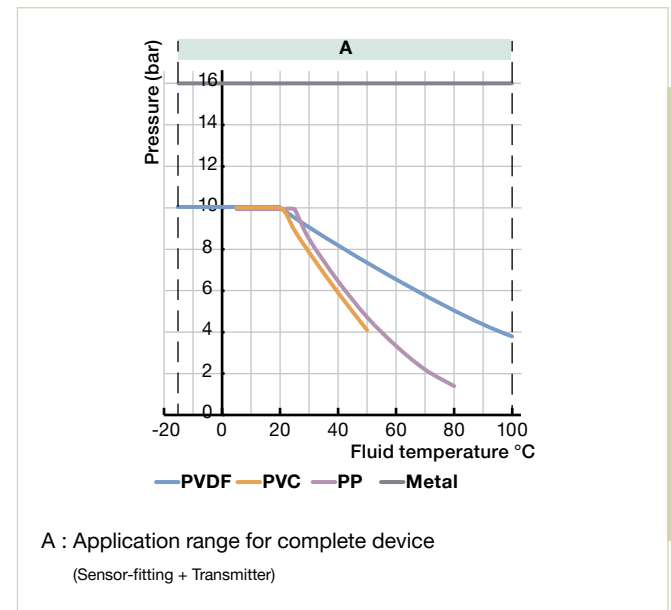
Note regarding the ordering of a complete flowmeter:

A complete 8030 flowmeter with integrated paddle wheel sensor consists of a SE30 transmitter and a Bürkert S030 Inline sensor-fitting, combined by means of a bayonet fitting.

The SE30 transmitter and the S030 sensor-fitting must be ordered separately. Please refer to the corresponding ordering tables in the catalogue;

- ordering chart transmitter, see **Type SE30** ▶
- ordering chart sensor-fitting, see **Type S030** ▶

Pressure/Temperature diagram



Transmitter for continuous flow measurement

SE30

For use with sensor-fitting

- **S030** ▶ with paddle wheel or
- **S077** ▶ with oval gears

- Economic integration in pipe systems
- 3-wire frequency version for direct connection to PLC (PNP and NPN)
- Connection to Bürkert evaluators in remote versions



Suitable fitting:
see Type S030 ▶
or Type S077 ▶

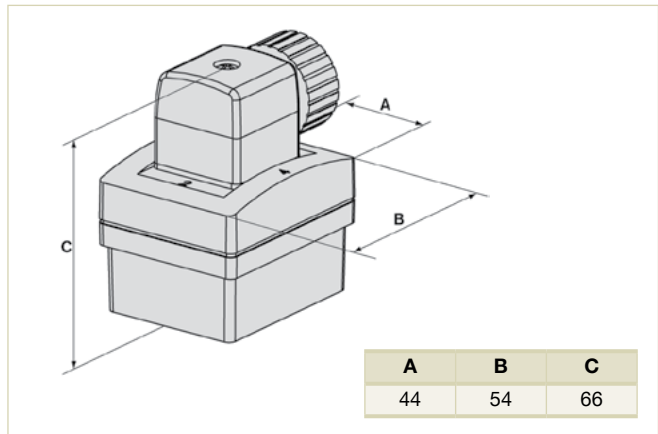
The SE30 electronic module is a flow transmitter. It must be combined with sensor-fitting S030 or S077. It is designed for use with clean, neutral or aggressive liquids (S030) or with highly viscous fluid like glue, honey or oil (S077). A hall effect sensor produces a square wave frequency proportional to the flow rate.

Technical data

General data	
Compatibility	With sensor-fittings S030 (see Type S030 ▶) or corresponding data sheet Type S030 ▶) or S077 (see Type S077 ▶) or corresponding data sheet Type S077 ▶)
Materials	
Housing, cover, male conn.	PC
Cable plug / Seal	PA / NBR
Screws	Stainless steel
Wetted parts materials	
Fitting, sensor armature	Brass, stainless steel 1.4404/316L, PVC, PP, PVDF
Paddle wheel	PVDF
Axis, bearing	Ceramics
Seal	FKM or EPDM (depending on sensor-fitting version)
Electrical connection	Cable plug EN 175301-803 (Type 2508 will be replaced with Type 2518 – included in delivery)
Connection cable	Max. 1.5 mm ² cross section; max. 50 m length, shielded
Electrical data	
Operating voltage	12...36 V DC filtered and regulated (via Bürkert transmitter the device is connected for "Low Power" version)
Reversed polarity of DC	Protected
Current consumption	With sensor
Hall version	≤30 mA
Hall "Low power" version	≤0.8 mA
Output: Frequency	
Hall version	2 transistors NPN and PNP, open collector, max. 100 mA, frequency: 0...300 Hz; duty cycle ½ ± 10 % NPN output: 0.2...36 V DC PNP output: supply voltage
Hall "Low Power" version	1 transistor NPN, open collector, max. 10 mA, frequency: 0...300 Hz; duty cycle ½ ± 10 %


Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Dimensions [mm]





Options

- AS-i Connection



Environment	
Ambient temperature	- 15...+60 °C (operating and storage)
Relative humidity	≤ 80 %, without condensation
Standards, directives and certifications	
Protection class	IP65 with connector plugged-in and tightened
Standard and directives 	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)

Ordering chart

Description	Voltage supply	Output	Electrical connection	Article no.
Hall version flowmeter (connectable to Type 8025 universal transmitter, batch controller; 8032; 8619; PLC)	12...36 V DC	Frequency, 2 transistors NPN and PNP	Cable plug EN 175301-803	423913 
Hall "Low Power" version flowmeter (connectable to Types 8025, 8032 transmitter)	from associated transmitter	Frequency, 1 transistor NPN	Cable plug EN 175301-803	423914 

Note: The SE30 transmitter and the S030 or S077 sensor-fitting must be ordered separately. See **Type S030 ▶** or **Type S077 ▶**

Accessories

Specifications	Artikel-Nr.
Cable plug EN 175301-803 with cable gland - see Type 2508 ▶ (will be replaced with Type 2518)	438811 
Cable plug EN 175301-803 with NPT ½ reduction without cable gland - see Type 2509 ▶	162673 

Inline Flowmeter with paddle wheel for monitoring, switching and display

8032 / SE32

- Indication, monitoring, transmitting and On/Off control in one device
- Selectable outputs (transistor or relay)
- Automatic calibration using Teach-In
- Process value output: 4...20 mA
- Flow threshold detector



Suitable fitting:
see Type S030 ▶

The 8032 flowmeter/flow threshold detector consists of a SE32 transmitter and a S030 sensor-fitting. It is used for measuring clean, neutral or aggressive liquids. It is available with freely configurable switching outputs (transistor or relay) or 4...20 mA process output value.

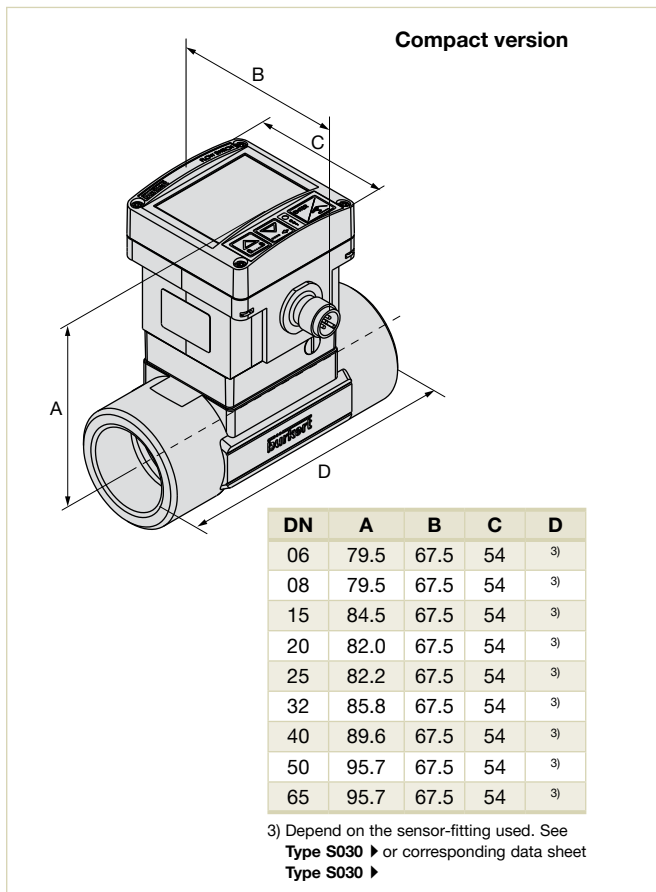
Technical data

General data	
Compatibility	With sensor-fittings S030 (see Type S030 ▶) or corresponding data sheet Type S030 ▶
Materials	
Housing, cover	PC, glass fibre reinforced
Front panel folio / Screws	Polyester / Stainless steel
Cable plug / Connector M12	PA / PA or CuZn, nickel-plated
Wetted parts materials:	
Sensor-fitting, sensor armature	Brass, stainless steel, PVC, PP or PVDF
Seal	FKM or EPDM (depends on S030 version)
Paddle-wheel	PVDF
Axis, bearings	Ceramics
Display	8-digit LCD with backlighting
Electrical connections	Cable plug acc. to EN 175301-803, free positionable male M12 fixed connector, 5 pins or male M12 connector, 8 pins
Voltage supply cable	Max. 100 m long, shielded
Complete device data (sensor-fitting S030 + transmitter SE32)	
Pipe diameter	DN06...DN65
Measuring range	0.3...10 m/s
Fluid temperature with sensor-fitting in	
PVC / PP	0...+50 °C / 0...+80 °C
Stainless steel, brass, PVDF	-15...+100 °C
Fluid pressure max. (see pressure/temperature diagram)	PN10 (with plastic sensor-fitting) PN16 (with metal sensor-fitting)
Viscosity / Pollution	300 cSt. max. / 1 % max. (particle size 0.5 mm max.)
Measurement deviation	
Teach-In	± 1 % of the Reading ¹⁾ (at the Teach-In flow rate value)
Standard K-factor	± 3 % of the Reading ¹⁾
Operating mode	Threshold: window or hysteresis
Linearity	± 0.5 % of F.S. ²⁾
Repeatability	± 0.4 % of the Reading ¹⁾


1) Under reference conditions i.e. measuring fluid = water, ambient and water temperature = 20 °C, while maintaining the minimum inlet and outlet distances and the appropriate internal diameters of the pipes.

2) F.S. = Full scale (10 m/s)

Dimensions [mm]



Options


- AS-i Connection (on request)
- Hygienic clamp and ASME weld end connections
- ANSI flange connection
- PVDF and PP fittings
- Various sealing materials
- Individual calibration certificate
- UL-Recognized for US and Canada 

(UL61010-1 + CAN/CSA-C22.2 No.61010-1)

Technical data continued

Electrical data	
Operating voltage	12...36 V DC \pm 10 %, filtered and regulated
Reversed polarity of DC	Protected
Current consumption	\leq 80 mA (without load)
Outputs	
Transistor	NPN and/or PNP (configurable), open collector, 700 mA max., 500 mA max. per transistor if both transistor outputs are wired, 0...300 Hz NPN-output: 0.2...36 V DC PNP-output: Power supply Protected against short circuit.
Relay	3 A/250 V AC or 3 A/30 V DC; [3 A/48 V AC or 3 A/30 V DC] ¹⁾
Process value	4...20 mA, galvanic insulation Loop resistance: 1300 Ω at 36 V DC, 1000 Ω at 30 V DC, 700 Ω at 24 V DC, 450 Ω at 18 V DC, 200 Ω at 12 V DC
4...20 mA output uncertainty	\pm 1 % of range

Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Environment	
Ambient temperature	-10...+60 °C (operating and storage)
Relative humidity	\leq 80 %, without condensation
Standards, directives and certifications	
Protection class	IP65 (according to EN 60529) with device wired and connectors mounted and tightened or sealed
Standards and directives 	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable) Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ²⁾
Pressure	

1) If 4... 20 mA and relay

2) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).

Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN \leq 25
Fluid group 2, article 4, §1.c.i	DN \leq 32, or PS*DN \leq 1000
Fluid group 1, article 4, §1.c.ii	DN \leq 25 or PS*DN \leq 2000
Fluid group 2, article 4, §1.c.ii	DN \leq 200 or PS \leq 10 or PS*DN \leq 5000

Ordering chart

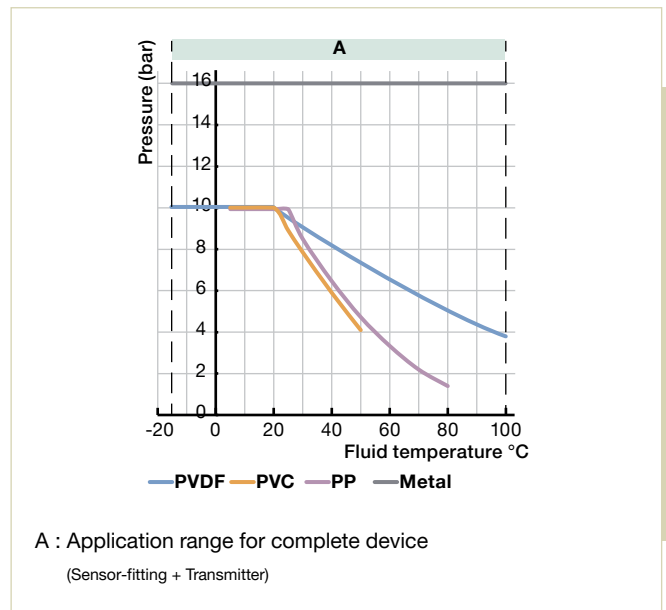
Note regarding the ordering of a complete flowmeter:

A complete 8032 flowmeter with integrated paddle wheel sensor consists of a SE32 transmitter and a Bürkert S030 Inline sensor-fitting, combined by means of a bayonet fitting.

The SE32 transmitter and the S030 sensor-fitting must be ordered separately. Please refer to the corresponding ordering tables in the catalogue:

- ordering chart transmitter, see **Type SE32** ▶
- ordering chart sensor-fitting, see **Type S030** ▶

Pressure/Temperature diagram



Transmitter/threshold detector for Inline sensor-fitting for flow measurement

SE32

For use with sensor-fitting

- S030 ▶ with paddle wheel or
- S077 ▶ with oval gears

- Monitor, switch and transmit functions
- Large display
- Free configurable switching point



Suitable fitting:
see Type S030 ▶
or Type S077 ▶

The SE32 electronic module is flow transmitter or flow threshold detector with display. It must be combined with sensor-fitting S030 or S077. It is designed for use with clean, neutral or aggressive liquids (with S030) or with highly viscous fluid like glue, honey or oil (with S077). It is available with freely configurable switching outputs (transistor or relay) and/or 4...20 mA process output value.

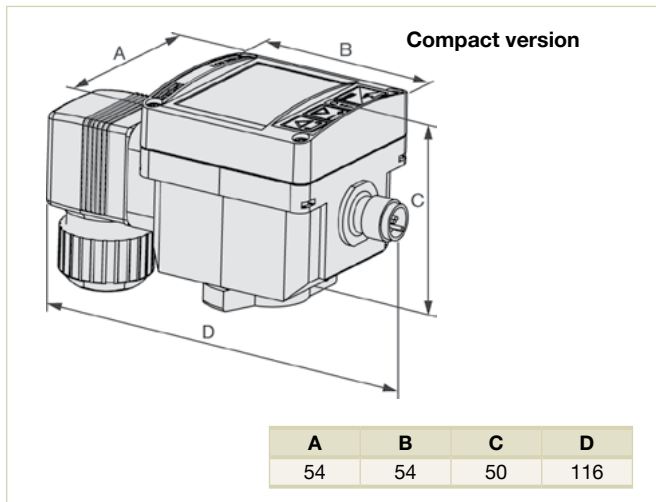
Technical data

General data	
Compatibility	With sensor-fittings S030 (see Type S030 ▶ or corresponding data sheet Type S030 ▶) or S077 (see Type S077 ▶ or corresponding data sheet Type S077 ▶)
Materials	
Housing, cover	PC, glass fibre reinforced
Front panel folio	Polyester
Screws	Stainless steel
Cable plug	PA
Connector M12	PA or CuZn, nickel-plated
Display	8-digit LCD with backlighting
Electrical connections	Cable plug acc. to EN 175301-803, free positionable male M12 fixed connector, 5 pins or male M12 fixed connector, 8 pins
Voltage supply cable	Max. 100 m long, shielded
Electrical Data	
Operating voltage	12...36 V DC $\pm 10\%$, filtered and regulated
Reversed polarity of DC	Protected
Current consumption	≤ 80 mA (without load)
Outputs	
Transistor	NPN and/or PNP (configurable), open collector, 700 mA max., 500 mA max. per transistor if both transistor outputs are wired, 0...300 Hz NPN-output: 0.2...36 V DC PNP-output: Power supply protected against short circuit.
Relay	3 A/250 V AC or 3 A/30 V DC; [3 A/48 V AC or 3 A/30 V DC] ¹⁾
Process value	4...20 mA, galvanic insulation Loop resistance: 1300 Ω at 36 V DC, 1000 Ω at 30 V DC, 700 Ω at 24 V DC, 450 Ω at 18 V DC, 200 Ω at 12 V DC
4...20 mA output uncertainty	$\pm 1\%$ of range


1) If 4... 20 mA and relay

Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Dimensions [mm]








Options

- AS-i Connection (on request)
- UL-Recognized for US and Canada 
(UL61010-1 + CAN/CSA-C22.2 No.61010-1)







Environment	
Ambient temperature	-15...+60 °C (operating and storage)
Relative humidity	$\leq 80\%$, without condensation
Standards, directives and certifications	
Protection class	IP65 (according to EN 60529) with device wired and connectors mounted and tightened
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)

Ordering charts

Specification	Output	Connection	Article no.
Flow threshold detector	NPN	Cable plug	436474 
	PNP	Cable plug	434871 
	NPN & PNP	Free positionable 5 pin M12 fixed male connector	436473 
	Relay	Cable plug & free positionable 5 pin M12 male fixed connector	436475 
Flow transmitter	4...20 mA + relay	Cable plug & 8 pin M12 male fixed connector	560547 

Note: The SE30 transmitter and the S030 or S077 sensor-fitting must be ordered separately. See **Type S030** ▶ or **Type S077** ▶

Accessories

Connection	Article no.
For NPN/PNP: 5 pin M12 female straight cable plug with plastic threaded locking ring, to be wired	917116 
For NPN/PNP: 5 pin M12 plug - 5 m, prewired	560365 
For 4...20 mA: 8 pin M12 plug, to be wired	444799 
For 4...20 mA: 8 pin M12 plug - 10 m, prewired	555675 
Cable plug EN 175301-803 with cable gland - see Type 2508 ▶ (will be replaced with Type 2518)	438811 
Cable plug EN 175301-803 with NPT ½ reduction without cable gland - see Type 2509 ▶	162673 

Note: Other cable lengths on request

Digital batch controller Inline

DN06...DN65

- Dosing
- On site calibration by Teach-In
- Check of input/output signals
- Total and daily totalizers for batch quantity and number of batches, volume or mass totalizers displayed



Suitable fitting:
see Type S030 ▶

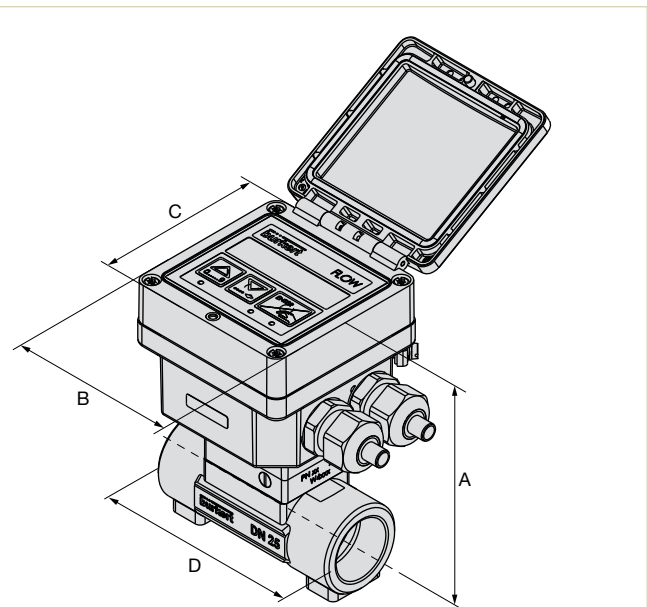
The 8035 batch controller is specially designed for use in neutral, slightly aggressive, solid-free liquids. The batch controller is made up of a compact sensor-fitting with paddle-wheel (S030) and a transmitter (SE35) quickly and easily connected together by a Quarter-Turn.

The Bürkert designed sensor-fitting system ensures simple installation of the sensors into all pipes from DN06...DN65.

Technical data

General data	
Compatibility	With sensor-fittings S030 (see Type S030 ▶) or corresponding data sheet Type S030 ▶
Materials	
Housing, cover, lid, nut	PC
Front panel foil	Polyester
Screws / Cable glands	Stainless steel / PA
Wetted parts materials	
Sensor-fitting, sensor armature	Brass, stainless, steel 1.4404/316L, PVC, PP or PVDF
Paddle-wheel	PVDF
Axis and bearing	Ceramics
Seal	FKM (EPDM included, but not mounted)
Display	15x60 mm, 8 digit LCD, alphanumeric, 15 segments, 9 mm high
Electrical connections	Cable glands M20x1.5
Recommended cable	Cable with maximum operating temperature greater than 80 °C; max. 50 m, shielded, 0.2...1.5 mm ² wires cross-section, 6...12 mm or 4 mm when using a multiway seal
Device data (sensor-Fitting S030 + transmitter)	
Pipe diameter	DN06...DN65 mm
Measuring range	0.3...10 m/s (Hall transducer version)
Fluid temperature with sensor-fitting in	
PVC / PP	0...+50 °C / 0...+80 °C
PVDF, brass or st. st.	-15...+100 °C
Fluid pressure max. (see pressure/temperature diagram)	PN10 (with plastic sensor-fitting) - PN16 (with metal sensor-fitting) (PN40 on request. Data sheet; see Type S030 ▶)
Viscosity / Pollution	300 cSt. max. / 1 % max. (size: max. 0.5 mm)
Measurement deviation	
Teach-In	± 1 % of Reading ¹⁾ (at the teach flow rate value)
Standard K-factor	± 2.5 % of Reading ¹⁾

Dimensions [mm]



DN	A ³⁾	B	C	D
06	113	88	88	⁴⁾
08	113	88	88	⁴⁾
15	118	88	88	⁴⁾
20	116	54	44	⁴⁾
25	116	54	44	⁴⁾
32	119	54	44	⁴⁾
40	123	54	44	⁴⁾
50	130	54	44	⁴⁾
65	130	54	44	⁴⁾

3) The dimension of A is increased by 21 mm when the cover is closed.

4) Depend on the sensor-fitting used.

See **Type S030** ▶ or corresponding data sheet **Type S030** ▶

Linearity	±0.5 % of F.S. ¹⁾²⁾
Repeatability	≤0.4 % of Reading ¹⁾

1) Under reference conditions i.e. measuring fluid = water, ambient and water temperature = 20 °C, applying the minimum inlet and outlet pipe straights, matched inside pipe dimensions.

2) F.S. = Full scale (10 m/s)

Technical data (continued)

Electrical data	
Power supply (V+)	12...36 V DC (max tolerance: -5 % or +10 % at 12 V DC; ± 10 % at 36 V DC), filtered and regulated, safety extra low voltage (SELV) circuit with a non dangerous energy level or 115/230 V AC 50/60 Hz (see technical specifications 115/230 V AC)
Reversed polarity of DC	Protected
Current consumption with sensor	Without consumption of digital input and pulse output
Version with relay	≤ 100 mA (at 12 V DC); ≤ 50 mA (at 36 V DC); ≤ 55 mA (115/230 V AC)
Version without relays	≤ 70 mA (at 12 V DC); ≤ 35 mA (at 36 V DC); ≤ 40 mA (115/230 V AC)
Inputs DI (1...4)	Switching threshold V_{on} : 5...36 V DC; Switching threshold V_{off} max: 2 V DC; Input impedance: 9.4 K Ω ; Galvanic insulation, protected against polarity reversals and voltage spike
Outputs	
Transistors (DO1 and DO4)	NPN or PNP (wiring dependent), potential free; function: pulse output (by default for DO1), batch state (by default for DO4), configurable and parameterizable 0.6...2200 Hz, 5...36 V DC, 100 mA max., line drop 2.7 V DC at 100 mA Duty cycle: <ul style="list-style-type: none"> ■ > 0.45 if $0.6 < \text{frequency} < 300$ Hz ■ > 0.4 if $300 < \text{frequency} < 1500$ Hz ■ < 0.4 if $1500 < \text{frequency} < 2200$ Hz Galvanic insulation, protected against overvoltage, polarity reversals and short-circuits
Relays (DO2 and DO3)	2 relays (normally open), parameterizable (by default: DO2 always configured to control the valve, parameterized of 100 % of the batch quantity and DO3 configured as alarm), 230 V AC/3 A or 40 V DC/3 A (resistive load), max. cutting power of 750 VA (resistive load)

Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Technical specifications 115/230 V AC	
Voltage supply available inside the device	27 V DC regulated Max. current: 125 mA Integrated protection: fuse 125 mA temporised Power: 3 VA
Environment	
Ambient temperature (operation and storage)	-10...+60 °C (version 12...36 V DC) -10...+50 °C (version 115/230 V AC)
Height above sea level	Max. 2000 m
Relative humidity	≤ 80 %, without condensation


Ordering chart

Note regarding the ordering of a complete flowmeter:

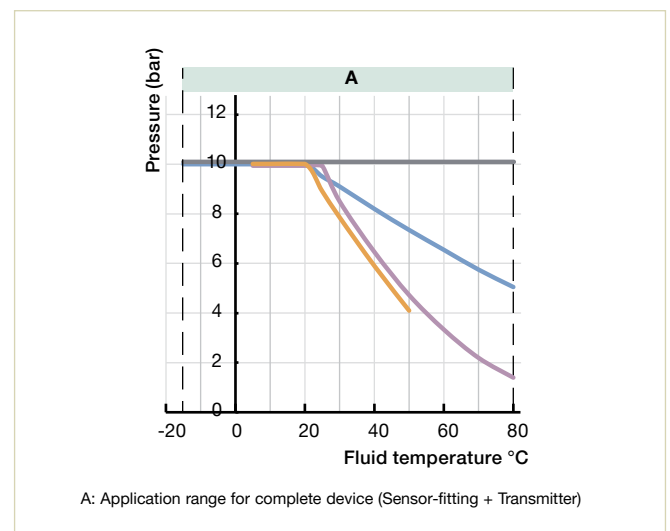
A complete 8035 batch controller with integrated paddle wheel sensor consists of a SE35 batch controller and a Bürkert S030 Inline sensor-fitting, combined by means of a bayonet fitting.

The SE35 batch controller and the S030 sensor-fitting must be ordered separately. Please refer to the corresponding ordering tables in the catalogue;

- ordering chart batch controller, see **Type SE35** ▶
- ordering chart sensor-fitting, see **Type S030** ▶

Standards, directives and certifications	
Protection class (according to EN60529)	IP65 with device wired, cover and lid screwed tight and cable plug or glands mounted and tightened or with blind plug if not used.
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable) Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ¹⁾
Certifications	CE; UL-Recognized for US and Canada (61010-1 + CAN/CSA-C22.2 No.61010-1) 
1) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).	
Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32 , or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

Pressure/Temperature diagram



Digital batch controller Inline

For use with sensor-fitting

- **S030** ▶ with paddle wheel or
- **S077** ▶ with oval gears

- Dosing
- On site calibration by Teach-In
- Check of input/output signals
- Total and daily totalizers for batch quantity and number of batches, volume or mass totalizers displayed



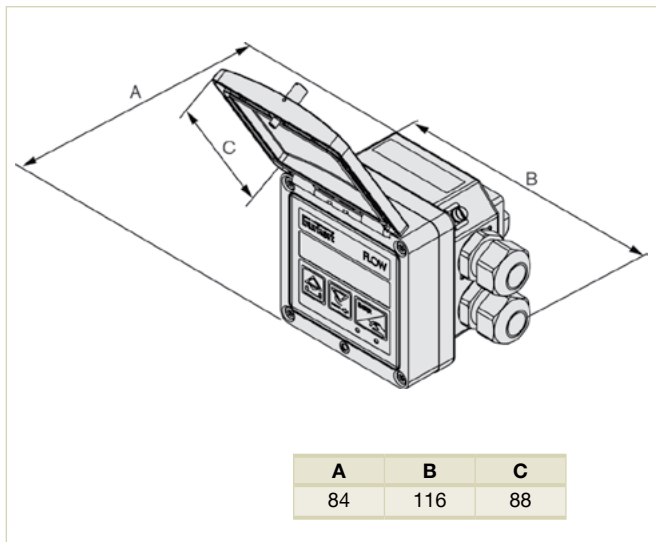
Suitable fitting:
see Type S030 ▶
or Type S077 ▶

The SE35 electronic module is a batch controller. It must be combined with sensor-fitting S030 or S077. It is designed for use with clean, neutral or aggressive liquids (S030) or with highly viscous fluid like glue, honey or oil (S077). A hall effect sensor produces a square wave frequency proportional to the flow rate.


Technical data

General data	
Compatibility	With sensor-fittings S030 (see Type S030 ▶ or corresponding data sheet Type S030 ▶) or S077 (see Type S077 ▶ or corresponding data sheet Type S077 ▶)
Materials	
Housing, cover, lid, nut	PC
Front panel foil	Polyester
Screws	Stainless steel
Cable glands	PA
Display	15x60 mm, 8 digit LCD, alphanumeric, 15 segments, 9 mm high
Electrical connections	Cable glands M20x1.5
Recommended cable	Cable with maximum operating temperature greater than 80 °C; max. 50 m, shielded, 0.2...1.5 mm ² wires cross-section, 6...12 mm or 4 mm when using a multiway seal
Electrical data	
Power supply (V+)	12...36 V DC (max tolerance: -5 % or +10 % at 12 V DC; ±10 % at 36 V DC), filtered and regulated, safety extra low voltage (SELV) circuit with a non dangerous energy level or 115/230 V AC 50/60 Hz (see technical specifications 115/230 V AC)
Reversed polarity of DC	Protected
Current consumption with sensor	Without consumption of digital input and pulse output
Version with relay	≤ 100 mA (at 12 V DC); ≤ 50 mA (at 36 V DC); ≤ 55 mA (115/230 V AC)
Version without relays	≤ 70 mA (at 12 V DC); ≤ 35 mA (at 36 V DC); ≤ 40 mA (115/230 V AC)
Inputs DI (1...4)	Switching threshold V_{on} : 5...36 V DC; Switching threshold V_{off} max: 2 V DC; Input impedance: 9.4 kΩ; Galvanic insulation, protected against polarity reversals and voltage spike

Dimensions [mm]




Options

- UL-Recognized for US and Canada 
(UL61010-1 + CAN/CSA-C22.2 No.61010-1)

Technical data (continued)

Outputs	
Transistors (DO1 and DO4)	<p>NPN or PNP (wiring dependent), potential free; function: pulse output (by default for DO1), batch state (by default for DO4), configurable and parameterizable</p> <p>0.6...2200 Hz, 5...36 V DC, 100 mA max., line drop 2.7 V DC at 100 mA</p> <p>Duty cycle:</p> <ul style="list-style-type: none"> ■ > 0.45 if 0.6 < frequency < 300 Hz ■ > 0.4 if 300 < frequency < 1500 Hz ■ < 0.4 if 1500 < frequency < 2200 Hz <p>Galvanic insulation, protected against overvoltage, polarity reversals and short-circuits</p>
Relays (DO2 and DO3)	<p>2 relays (normally open), parameterizable (by default: DO2 always configured to control the valve, parameterized of 100 % of the batch quantity and DO3 configured as alarm), 230 V AC/3 A or 40 V DC/3 A (resistive load), max. cutting power of 750 VA (resistive load)</p>

Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Technical specifications 115/230 V AC	
Voltage supply available inside the device	<p>27 V DC regulated</p> <p>Max. current: 125 mA</p> <p>Integrated protection: fuse 125 mA temporised</p> <p>Power: 3 VA</p>
Environment	
Ambient temperature (operation and storage)	<p>-10...+60 °C (version 12...36 V DC)</p> <p>-10...+50 °C (version 115/230 V AC)</p>
Height above sea level	Max. 2000 m
Relative humidity	≤ 80 %, without condensation
Standards, directives and certifications	
Protection class (according to EN60529)	IP65 with device wired, cover and lid screwed tight and cable plug or glands mounted and tightened or with blind plug if not used.
Standard and directives	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Certifications	<p>CE; UL-Recognized for US and Canada (61010-1 + CAN/CSA-C22.2 No.61010-1)</p> 



Operation and display

When the device (electronic module + sensor-fitting) is mounted in a pipe in series with one or two valves, the SE35 batch controller makes it possible to carry out a dosing of one or several quantities of liquids. The unit controls the opening of the valves and measures the quantity of the fluid which flows. The unit also closes the valves when the preset quantity has been delivered.

The electronic component needs a voltage supply of 12...36 V DC or 115/230 V AC.

The device is equipped with 4 digital inputs (DI1 up to DI4), 2 transistor outputs (DO1 configured as a pulse output and DO4 configured as state output, by default), 2 relay outputs (DO2 always configured to control the valve and by default parameterize of 100 % of the batch quantity and DO3 configured as alarm output by default), two volume or mass totalizers and two batch totalizers.

The second relay output can be used to activate another valve, to initiate alarms or to generate warnings.

The following dosing modes are possible:

- **Locally started dosing of free quantity:**
the user enters the quantity to be filled and starts the dosing from the keypad.
- **Locally started dosing of preset quantity:**
the user selects a quantity which has been preset and starts the dosing from the keypad.
- **Locally started dosing of free/preset quantity**
the user enters the q uantity to be filled or selects a quantity which has been preset and starts the dosing from the keypad.
- **Dosing controlled by a PLC unit**
the user selects a quantity which has been preset and starts the dosing using binary inputs.
- **Locally/remote selection of preset quantity and dosing controlled by a PLC unit:**
the user selects a quantity which has been preset from the keypad or using binary inputs and starts the dosing using binary inputs.
- **Automatic dosing controlled by variation of pulse duration:**
the quantity of the dosing is directly proportional to the duration of a pulse.
- **Remote dosing determined by Teach-In:**
Teach-In of the dosing quantity using binary inputs.
- **Local dosing determined by Teach-In:**
Teach-In of the dosing quantity from the keypads.



The device is calibrated by means of the K-factor which is either entered or determined via the Teach-In functions.

User adjustments, such as measuring range, engineering units, pulse output, etc. are carried out via the device operators interface.

The operation is specified according to five levels:




Indication in operating mode/display	Parameter definition	Test	Information	History
<ul style="list-style-type: none"> • Dosing amount • Dosing mode • Main quantity totalizer • Daily quantity totalizer with reset function • Main batch totalizer • Daily batch totalizer with reset function 	<ul style="list-style-type: none"> • Language • Engineering units • K-factor/Teach-In function • Selection of dosing mode • Over run correction • Alarm • Outputs configuration • Reset both quantity/batch totalizers (main and daily) • Brightness of the display (backlight) 	<ul style="list-style-type: none"> • Input test • Output test • Frequency test • Warning and fault messages generating • Configuration mode 	<ul style="list-style-type: none"> • Display of error, alarm and/or warning messages 	<ul style="list-style-type: none"> • Display of the 10 latest batches

Ordering chart

Description	Voltage supply	Relay	Sensor version	Electrical connection	Article no.
Electronic module Type SE35 for batch controller					
Batch controller, compact version	12...30 V DC	2	Hall	2 Cable glands	443360 
	115/230 V AC	2	Hall	2 Cable glands	423926 

Note: The SE35 batch controller and the S030 or S077 sensor-fitting must be ordered separately. See **Type S030** ▶ or **Type S077** ▶

Accessories

Description	Article no.
Set with 2 cable glands M20 × 1.5 + 2 neoprene flat seals for cable gland or plug + 2 screw-plugs M20 × 1.5 + 2 multiway seals 2 × 6 mm	449755 
Set with 2 reductions M20 × 1.5 /NPT ½ + 2 neoprene flat seals for cable gland or plug + 2 screw-plugs M20 × 1.5	551782 
Set with 1 stopper for unused cable gland M20 × 1.5 + 1 multiway seal 2 × 6 mm for cable gland + 1 black EPDM seal for the sensor + 1 mounting instruction sheet	551775 

Inline flowmeter with paddle wheel for continuous flow measurement

8035 / SE35
Flowmeter

- Up to PN16, size of measurement pipes: DN06 to DN65
- Display both flow rate and volume (with two totalizers)
- Automatic calibration using Teach-In
- Simulation: all outputs signals



Suitable fitting:
see Type S030 ▶

The flowmeter is specially designed for measuring the flow rate in neutral, slightly aggressive, solid free liquids. The 8035 flowmeter consists of an SE35 transmitter and an S030 sensor-fitting with paddle wheel. It is available as a flowmeter with standard output signal or as a battery powered indicator without output.

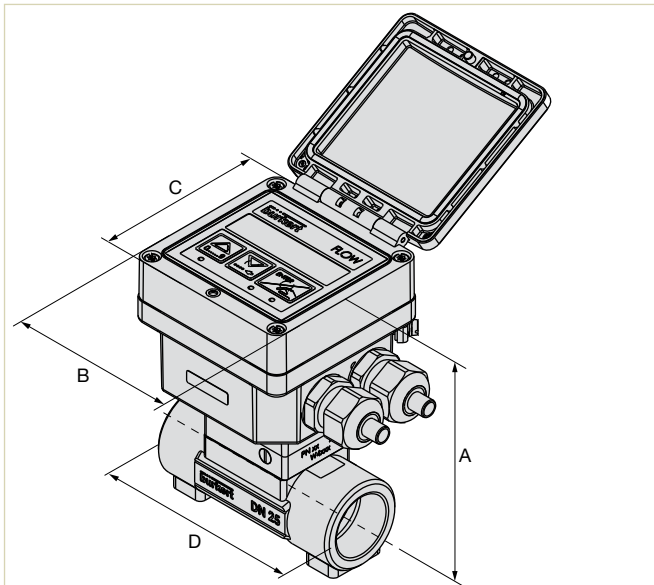
Technical data

General data	
Compatibility	With sensor-fittings S030 (see Type S030 ▶) or corresponding data sheet Type S030 ▶)
Materials	Housing, cover, lid, nut PC Front panel foil / Screws Polyester / Stainless steel Cable plug or glands PA
Wetted parts materials:	Sensor-fitting, armature Brass, stainless steel, PVC, PP or PVDF Seal / Paddle-wheel FKM (EPDM included but non-mounted) / PVDF Axis, bearings Ceramics
Display	15×60 mm, 8-digit LCD, alphanumeric, 15 segments, 9 mm high
Electrical connections	Cable plug acc. to EN 175301-803 or cable glands M20 × 1.5 or none (for battery version)
Recommended cable	Cable with maximum operating temperature greater than 80 °C, max. 50 m, shielded, 0.2...1.5 mm ² wires cross-section
External diameter (cable)	5...8 mm (with cable plug), 6...12 mm or 3...5 mm when using a multiway seal (with cable glands)
Cross-section (local earthing wire)	0.75 mm ²
Complete device data (sensor-fitting S030 + transmitter SE35)	
Pipe diameter	DN06...DN65
Measuring range	0.3...10 m/s
Fluid temperature	0...+50 °C (with PVC sensor-fitting); 0...+80 °C (with PP sensor-fitting); -15...+100 °C (with stainless steel, brass or PVDF sensor-fitting)
Fluid pressure max.	PN10 (145.1 PSI) (with plastic sensor-fitting) PN16 (232.16 PSI) (with metal sensor-fitting) (PN40 on request. Data sheet; see Type S030 ▶)
Viscosity / Pollution	300 cSt. max. / 1 % max. (particle size 0.5 mm max.)
Measurement deviation	Teach-In ± 1 % of the Reading ¹⁾ (at the Teach-In flow rate value) Standard K-factor ± 2.5 % of the Reading ¹⁾
Linearity	± 0.5 % of F.S. ¹⁾²⁾
Repeatability¹⁾	± 0.4 % of the Reading ²⁾

1) Under reference conditions i.e. measuring fluid = water, ambient and water temperature = 20 °C, applying the minimum inlet and outlet pipe straights, matched inside pipe dimensions.

2) F.S. = Full scale (10 m/s)

Dimensions [mm]




DN	A ³⁾	B	C	D
06	113	88	88	4)
08	113	88	88	4)
15	118	88	88	4)
20	116	54	44	4)
25	116	54	44	4)
32	119	54	44	4)
40	123	54	44	4)
50	130	54	44	4)
65	130	54	44	4)

3) The dimension of A is increased by 21 mm when the cover is closed.

4) Depend on the sensor-fitting used.

See **Type S030** ▶ or corresponding data sheet **Type S030** ▶

Options

- Electrical connection acc. to EN 75301-803 Type 2508 (article no. 438811) or Type 2509 (article no. 162673)
- High flow rates up to DN350 (see **Type 8025** ▶)
- Various seal materials
- Special calibration certificate
- UL-Recognized for US and Canada  (UL61010-1 + CAN/CSA-C22.2 No. 61010-1)

Technical data continued

Electrical Data	
Power supply (V+)	
Standard signal version	12...36 V DC \pm 10 %, filtered and regulated, extra low safety voltage (SELV) circuit with a non dangerous energy level or 115/230 V AC 50/60 Hz (see tech. spec. 115/230 V AC)
Battery indicator/totalizer version	4 x 1.5 V DC non-rechargeable alkaline AA-batteries, lifetime min. 4 years at 20 °C
Reversed polarity of DC	protected
Current consumption with sensor (without consumption of pulse output)	\leq 70 mA at 12 V DC - transmitter with relays \leq 25 mA at 12 V DC - transmitter without relay
Outputs	
Standard signal version	
Pulse (potential free transistor)	Polarized, NPN or PNP (wiring dependant); Function: pulse output, adjustable pulse value, 2.5...400 Hz; 5...36 V DC; 100 mA, line drop at 100 mA: 2.5 V DC; duty cycle: 0.5 Galvanic insulation and protected against overvoltage, polarity reversals and short circuit
Relay	2 relays, hysteresis, adjustable thresholds, normally open, 230 V AC/3 A or 40 V DC/3 A (resistive load)
Current	4...20 mA (3-wire with relays; 2-wire without relay), sourcing or sinking (wiring dependant), Max. loop impedance: 900 Ω at 30 V DC, 600 Ω at 24 V DC, 50 Ω at 12 V DC, 800 Ω with a 115/230 V AC voltage supply
Response time (10%...90%)	6 sec. (default)
Battery indicator version	None
4...20 mA output uncertainty	\pm 1 % of range

Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Environment	
Height above sea level	Max. 2000 m
Ambient temperature (operation and storage)	- 10...+ 60 °C (12...36 V DC version) - 10...+ 50 °C (115/230 V AC version) - 10...+ 55 °C (batteries version)
Relative humidity	\leq 80 %, without condensation
Technical specifications 115/230 V AC	
Voltage supply (available inside the device)	27 V DC regulated, Max. current: 125 mA Integrated protection: fuse 125 mA temporised, Power: 3 VA


Ordering chart

Note regarding the ordering of a complete flowmeter:

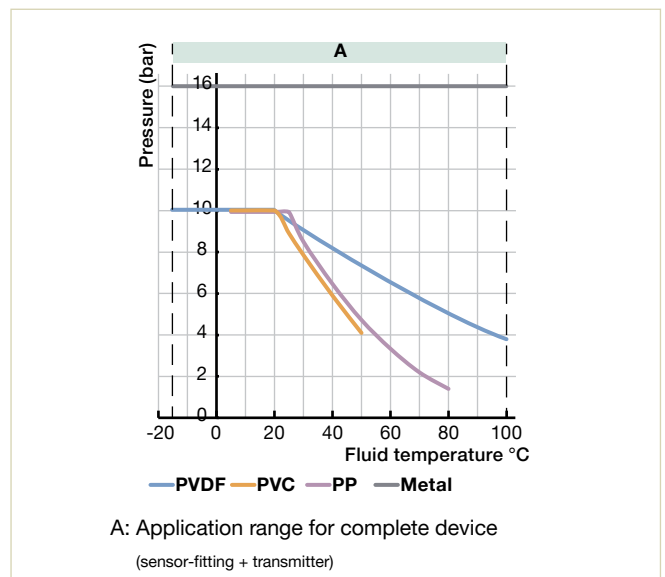
A complete 8035 flowmeter with integrated paddle wheel sensor consists of a SE35 transmitter and a Bürkert S030 Inline sensor-fitting, combined by means of a bayonet fitting.

The SE35 transmitter and the S030 sensor-fitting must be ordered separately. Please refer to the corresponding ordering tables in the catalogue:

- ordering chart transmitter, see **Type SE35** ▶
- ordering chart sensor-fitting, see **Type S030** ▶

Standard, directives and certifications	
Protection class (according to EN60529)	IP65 with device wired, cover and lid screwed tight and cable plug or glands mounted and tightened or with blind plug if not used.
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable) Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ¹⁾
Pressure	
Certifications	CE; UL-Recognized for US and Canada (61010-1 + CAN/CSA-C22.2 No.61010-1) 
1) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).	
Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN \leq 25
Fluid group 2, article 4, §1.c.i	DN \leq 32, or PS*DN \leq 1000
Fluid group 1, article 4, §1.c.ii	DN \leq 25 or PS*DN \leq 2000
Fluid group 2, article 4, §1.c.ii	DN \leq 200 or PS \leq 10 or PS*DN \leq 5000

Pressure/Temperature diagram



Transmitter for continuous flow measurement

For use with sensor-fitting

- **S030** ▶ with paddle wheel or
- **S077** ▶ with oval gears

- Display both flow rate and volume (with two totalizers)
- Automatic calibration using Teach-In
- Simulation: all outputs signals



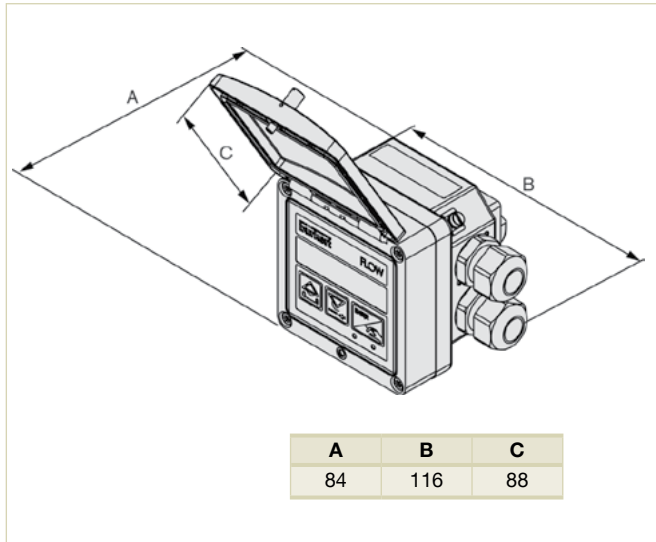
Suitable fitting:
see Type S030 ▶
or Type S077 ▶

The SE35 electronic module is a flow transmitter or an indicator with display. It must be combined with sensor-fitting S030 or S077. It is designed for use with neutral, slightly aggressive, solid free liquids (with S030) or with highly viscous fluid like glue, honey or oil (with S077). It is available as a flowmeter with standard output signal or as a battery powered indicator without output.

Technical data

General data	
Compatibility	With sensor-fittings S030 (see Type S030 ▶) or corresponding data sheet Typ S030 ▶) or S077 (see Type S077 ▶) or corresponding data sheet Typ S077 ▶)
Materials	
Housing, cover, lid, nut	PC
Front panel foil / Screws	Polyester / Stainless steel
Cable plug or glands	PA
Display	15 x 60 mm, 8-digit LCD, alphanumeric, 15 segments, 9 mm high
Electrical connections	Cable plug acc. to EN 175301-803 or cable glands M20 x 1.5 or none (for battery version)
Recommended cable	Cable with maximum operating temperature greater than 80 °C, max. 50 m, shielded, 0.2...1.5 mm ² wires cross-section
External diameter (cable)	5...8 mm (with cable plug), 6...12 mm or 3...5 mm when using a multiway seal (with cable glands)
Cross-section (local earthing wire)	0.75 mm ²
Electrical Data	
Power supply (V+)	
Standard signal version	12...36 V DC ± 10 %, filtered and regulated, extra low safety voltage (SELV) circuit with a non dangerous energy level or 115/230 V AC 50/60 Hz (see tech. spec. 115/230 V AC)
Battery indicator/totalizer version	4 x 1.5 V DC non-rechargeable alkaline AA-batteries, lifetime min. 4 years at 20 °C
Reversed polarity of DC	protected
Current consumption with sensor (without consumption of pulse output)	≤ 70 mA at 12 V DC - transmitter with relays ≤ 25 mA at 12 V DC - transmitter without relay

Dimension [mm]



Outputs

Standard signal version


Pulse (potential free transistor)	Polarized, NPN or PNP (wiring dependant); Function: pulse output, adjustable pulse value, 2.5...400 Hz; 5...36 V DC; 100 mA, line drop at 100 mA: 2.5 V DC; duty cycle: 0.5
Relay	Galvanic insulation and protected against over-voltage, polarity reversals and short circuit 2 relays, hysteresis, adjustable thresholds, normally open, 230 V AC/3 A or 40 V DC/3 A (resistive load)
Current	4...20 mA (3-wire with relays; 2-wire without relay), sourcing or sinking (wiring dependant), Max. loop impedance: 900 Ω at 30 V DC, 600 Ω at 24 V DC, 50 Ω at 12 V DC, 800 Ω with a 115/230 V AC voltage supply
Response time (10 %...90 %)	6 sec. (default)
Battery indicator version	None

4...20 mA output uncertainty ± 1 % of range


Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Technical data continued

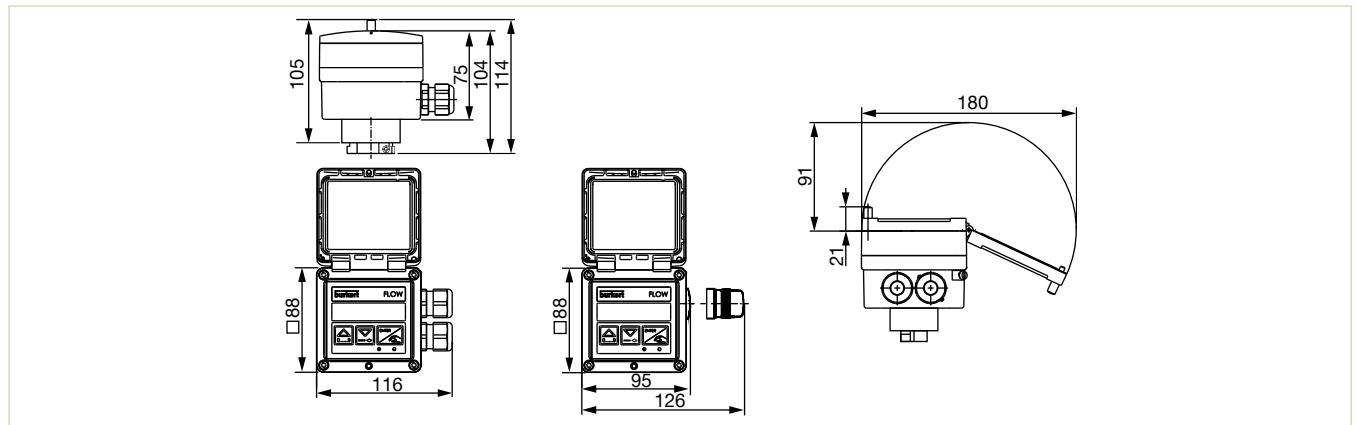
Environment	
Height above sea level	Max. 2000 m
Ambient temperature (operation and storage)	-10...+60 °C (12...36 V DC version) -10...+50 °C (115/230 V AC version) -10...+55 °C (batteries version)
Relative humidity	≤80 %, without condensation
Technical specifications 115/230 V AC	
Voltage supply (available inside the device)	27 V DC regulated, Max. current: 125 mA Integrated protection: fuse 125 mA temporised, Power: 3 VA

Standard, directives and certifications	
Protection class (according to EN60529)	IP65 with device wired, cover and lid screwed tight and cable plug or glands mounted and tightened or with blind plug if not used.
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Certifications	CE; UL-Recognized for US and Canada (61010-1 + CAN/CSA-C22.2 No.61010-1) 







Options

- Electrical connection acc. to EN 75301-803 Type 2508 (Article no. 438 811) or Type 2509 (Article no. 162 673)
- High flow rates up to DN350 (see **Type 8025** ▶)
- UL-Recognized for US and Canada 
(UL61010-1 + CAN/CSA-C22.2 No. 61010-1)

Dimensions [mm]







Ordering chart

Supply voltage	Outputs	Electrical connection	Article no.
12...36 V DC	4...20 mA (2-wire) + Pulse	Cable plug	444005 
		2 cable glands	444006 
	4...20 mA (3-wire) + Pulse + Relays	2 cable glands	444007 
115/230 V AC	4...20 mA (2-wire) + Pulse	2 cable glands	423922 
	4...20 mA (3-wire) + Pulse + Relays	2 cable glands	423924 
4 × 1.5 V DC AA-Batteries	-	None	423921 

Note: The SE35 transmitter and the S030 or S077 sensor-fitting must be ordered separately. See **Type S030** ▶ or **Type S077** ▶

Accessories

Specifications	Article no.
Set with 2 cable glands M20 × 1.5 + 2 neoprene flat seals for cable gland or plug + 2 screw-plugs M20 × 1.5 + 2 multiway seals 2 × 6 mm	449755 
Set with 1 stopper for unused cable gland M20 × 1.5 + 1 multiway seal 2 × 6 mm for cable gland + 1 black EPDM seal for the sensor + 1 mounting instruction sheet	551775 
Cable plug EN 175301-803 with cable gland - see Type 2508 ▶ (will be replaced with Type 2518)	438811 
Cable plug EN 175301-803 with NPT ½ reduction without cable gland - see Type 2509 ▶	162673 

Inline flowmeter with paddle wheel, ELEMENT design

8036 / SE36

- Size of measurement pipes: DN06...DN65
- Configurable outputs: one or two transistor output(s) and single or dual 4...20 mA analog output(s)
- Removable backlit display/configuration module for indication of flow rate and volume with two flow totalizers
- Automatic calibration using Teach-In, all outputs can be checked without the need of actual flow



Suitable fitting:
see Type S030 ▶

The Bürkert flowmeter Type 8036 is a compact device, specially designed for measuring the flow rate in solid-free liquids, in a variety of applications (water, waste water monitoring, chemical processing etc.). The 8036 flowmeter consists of an SE36 transmitter and an S030 sensor-fitting with paddle wheel.

The device Type 8036 is available with:

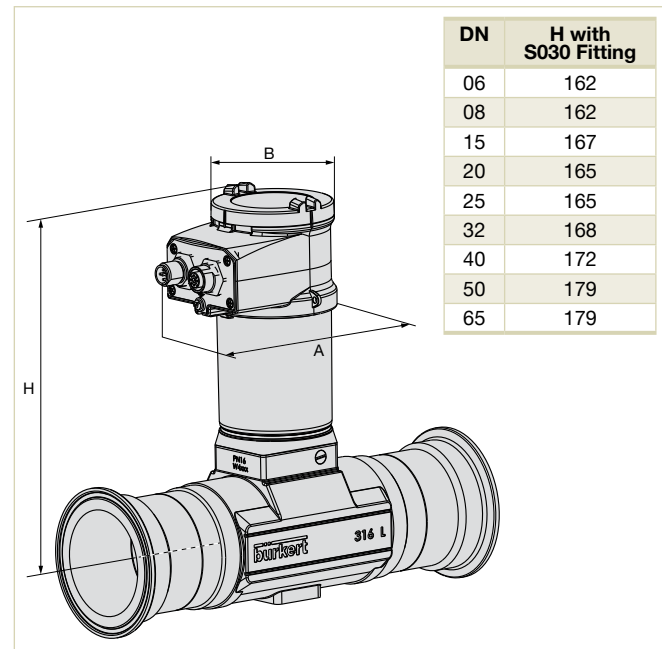
- 2 configurable outputs: one transistor output (NPN) and one 4...20 mA current output (2-wire)
- 3 configurable outputs: two transistor outputs (NPN/PNP) and one 4...20 mA current output (2-wire)
- 4 configurable outputs: two transistor outputs (NPN/PNP) and two 4...20 mA current outputs (3-wire)

The device Type 8036 converts the measured signal, displays different values in different units (if display/configuration module mounted) and computes the output signals, which are provided via one or two M12 fixed connectors. Thanks to 1 or 2 transistor outputs, the flowmeter can be used to switch a solenoid valve, activate an alarm and, thanks to 1 or 2 current outputs, establish one or two control loops.

Technical data

General data	
Compatibility	With sensor-fittings S030 (see Type S030 ▶ or corresponding data sheet Type S030 ▶)
Materials	
Housing	Stainless steel 1.4404, PPS
Cover	PC
Seals	EPDM, silicone
Screws	Stainless steel
Fixed connector mounting plate	Stainless steel 1.4404 (316L)
Fixed connector	Brass nickel plated (stainless steel on request)
Display	PC
Navigation key	PBT
Bayonet locking system	PC
Wetted parts	
Sensor-fitting, sensor armature	Brass, stainless steel 1.4404/316L, PVC, PP or PVDF
Seal	FKM or EPDM (depending on S030 version)
Axis and bearings	Ceramics (Al ₂ O ₃)
Paddle wheel	PVDF
Display/configuration module (accessories)	Grey dot matrix 128×64 with backlighting

Dimensions [mm]



Options

- High flow rate to DN350 (see [Type 8026](#) ▶)
- Hygienic clamp and weld end connections
- ANSI/DIN flange connection
- Various sealing materials
- Individual calibration certificate

Electrical connections	
2 or 3 outputs transmitter (2-wire)	1 × 5 pin M12 male fixed connector,
4 outputs transmitters (3-wire)	1 × 5 pin M12 male and 1 × 5 pin M12 female fixed connectors
Connection cable	Shielded cable

Technical data continued

Complete device data (sensor-fitting S030 + transmitter SE36)	
Pipe diameter	DN06...DN65
Measuring range	0.3...10 m/s
Fluid temperature with sensor-fitting in	
PVC / PP	0 °C...+50 °C / 0 °C...+80 °C
PVDF, brass or stainless steel	-15 °C...+100 °C
Fluid pressure max. (see pressure/temperature diagram)	PN10 (with plastic sensor-fitting) PN16 (with metal sensor-fitting) (PN40 on request. Data sheet; see Type S030 ▶)
Viscosity / Particles rate	300 cSt. max. / 1 % max. (particle size 0.5 mm max.)
Measurement deviation	
Teach-In	± 1 % of Reading ¹⁾ (at Teach-In flow rate value)
Standard K-factor	± 2.5 % of Reading ¹⁾
Linearity	± 0.5 % of F.S. ^{1/2)}
Repeatability	± 0.4 % of Reading ¹⁾
Electrical data	
Power supply	
2 or 3 outputs transmitter (2-wire)	14...36 V DC, filtered and regulated
4 outputs transmitter (3-wire)	12...36 V DC, filtered and regulated
Reversed polarity of DC	Protected
Characteristics of the power source (not provided) of UL recognized devices	Limited power source (according to § 9.4 of the UL61010-1 standard) or, Class 2 type power source (according to the 1310/1585 and 60950-1 standards)
Current consumption with sensor	
2 or 3 outputs transmitter (2-wire)	≤ 1 A (with transistors load) ≤ 25 mA (at 14 V DC without transistors load, with current loop)
4 outputs transmitter (3-wire)	≤ 5 mA (at 12 V DC without transistors load, without current loop)
Power consumption	Max. 40 W.
Output	
Transistor	Protected against voltage peak, polarity reversals and short circuit
1 transistor output (transmitter 2-wire)	NPN, open collector, 1...36 V DC, max. 700 mA
2 transistor outputs (transmitter 2 or 3-wire)	Adjustable as sourcing or sinking (respectively both as PNP or NPN), open collector, max. 700 mA, 500 mA max. per transistor if the 2 transistor outputs are wired NPN-output: 1...36 V DC PNP-output: Power supply
Current	4...20 mA adjustable as sourcing or sinking (in the same mode as transistors)
1 current output (transmitter 2-wire)	Max. loop impedance: 1100 Ω at 36 V DC; 610 Ω at 24 V DC; 180 Ω at 14 V DC
2 current outputs (transmitter 3-wire)	Max. loop impedance: 1100 Ω at 36 V DC; 610 Ω at 24 V DC; 100 Ω at 12 V DC
4...20 mA output uncertainty	± 1 % of range

Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.


Ordering chart

Note regarding the ordering of a complete flowmeter:

A complete 8036 flowmeter with integrated paddle wheel sensor consists of a SE36 transmitter and a Bürkert S030 Inline sensor-fitting, combined by means of a bayonet fitting.

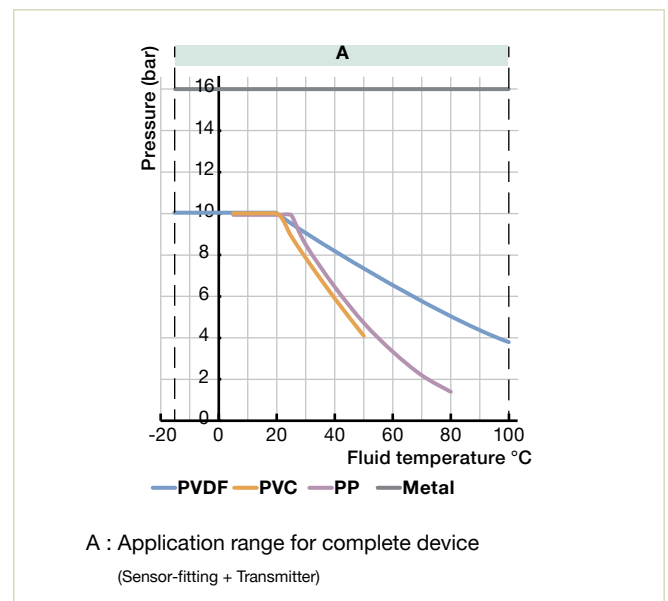
The SE36 transmitter and the S030 sensor-fitting must be ordered separately. Please refer to the corresponding ordering tables in the catalogue:

- ordering chart transmitter, see **Type SE36** ▶
- ordering chart sensor-fitting, see **Type S030** ▶

Environment	
Ambient temperature	-10 °C...+60 °C (operating and storage)
Relative humidity	≤ 85 %, without condensation
Standards, directives and certifications	
Protection class (according to EN60529)	IP65, IP67 with device wired and M12 cable plug mounted and tightened and cover fully screwed down
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable) Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ³⁾
Certifications	CE; UL-Recognized for US and Canada (61010-1 + CAN/CSA-C22.2 No.61010-1) 
Pressure	
Type of fluid	
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.ii	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

- 1) Under reference conditions i.e. measuring fluid = water, ambient and water temperature = 20 °C, applying the minimum inlet and outlet pipe straights, matched inside pipe dimensions.
- 2) F.S. = Full scale (10 m/s)
- 3) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).

Pressure/Temperature diagram



Flow transmitter to use on Inline sensor-fitting for hazardous areas II 1 G/D - II 3 GD

SE30 Ex

For use with sensor-fitting

- S030 ▶ with paddle wheel or
- S077 ▶ with oval gears

- Flowmeter with NAMUR or NPN/PNP output signal
- Mounting, dismounting of electronics by a quarter-turn
- Intrinsic safety approvals (see ordering chart)



Example with S030 sensor-fitting

Suitable fitting: see Type S030 ▶ or Type S077 ▶

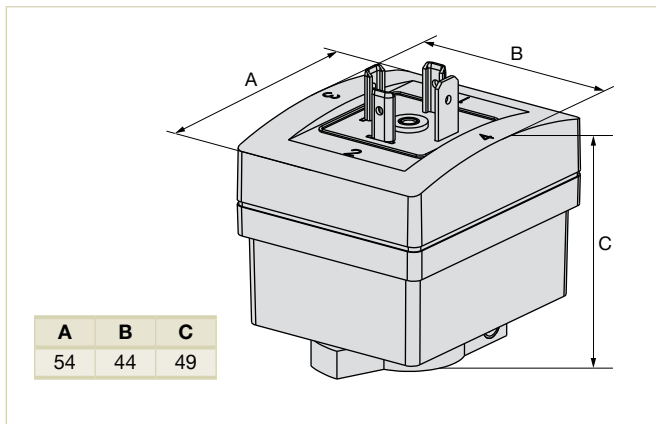
The flowmeter, SE30 Ex, for continuous flow measurement is especially designed for use in neutral, slightly aggressive, solid-free liquids, in hazardous environments.

The complete flowmeter SE30 Ex is made up of an electronic module and a measuring element, either a sensor-fitting S030 with PVDF paddle-wheel or a sensor-fitting S077 and is quickly and easily connected by a bayonet locking system.

Technical data

General data	
Compatibility¹⁾	With sensor-fittings S030 (see Type S030 ▶ or corresponding data sheet Type S030 ▶) or S077 (see Type S077 ▶ or corresponding data sheet Type S077 ▶)
Materials	
Body, cover	PPS (NAMUR version) glass fibre reinforced PC (NPN/PNP version)
Cable plug	PA with silicon seal (NAMUR version) or with NBR seal (NPN/PNP version)
Wetted parts	Selection of the appropriate sensor-fittings (see Type S030 ▶ or Type S077 ▶)
Sensor-Fitting S030¹⁾	
Body	Brass, Stainless steel, PVDF
Paddle wheel	PVDF
Axis and bearings	Ceramic
Seal	FKM
Sensor-Fitting S077¹⁾	
Body	Aluminium, stainless steel
Rotor	PPS, aluminium, stainless steel
Shaft	Stainless steel
Seal	FKM (EPDM or PTFE on request)
Electrical connection	
Namur version	Cable plug Form A according to EN 175301-803 (supplied)
NPN/PNP version	Cable plug Form A acc. to EN 175301-803 with 5 or 12 m cable (not supplied)
Voltage supply cable	0.5...1.5 mm ² cross section, 5...8 mm diameter; shielded, max. 50 m length; line impedance < 50 Ω; (not included in delivery)
Environment	
Ambient temperature	0...+60 °C (operating and storage)
Relative humidity	≤ 80 %, without condensation
Electrical data	
Power supply¹⁾	8...15 V DC (NAMUR version, from connected intrinsic safety barrier) 12...36 V DC (NPN/PNP version)
Current consumption (with sensor)	max. 7 mA (NAMUR version) 30 mA (NPN/PNP version)

Dimensions [mm]



Output (depends on the device model and application area)	- 2-wire current modulation acc. to Namur (0.5 or 2.5 mA) - NPN/PNP (I _{max} < 100 mA max., 0...300 Hz, duty cycle ½)
Reversed polarity (of DC)	Protected
Complete device data (sensor-fitting + electronic module)	
Pipe diameter	
S030 sensor-fitting	DN06...DN65
S077 sensor-fitting	DN15...DN50
Measuring range	
S030 sensor-fitting	0.5...1200 l/min (velocity 0.3...10 m/s)
S077 sensor-fitting	2...350 l/min (viscosity > 5 cps) 3...300 l/min (viscosity < 5 cps)
Fluid temperature	Max. 80 °C
Fluid pressure max.	
S030 sensor-fitting	PN10 (PVDF), PN16 (stainless steel, brass - PN40 on request)
S077 sensor-fitting	55 bar (for DN15...DN25) / 18 bar (for DN40...DN50) / 10 bar (for flange version)
Viscosity	
S030 sensor-fitting	300 cSt. max. - 1 % max. pollution
S077 sensor-fitting	1 Pa.s max (higher on request)
Measurement deviation	
S030 + SE30 Ex	
Teach-In (via remote transmitter)	± 1 % of Reading ²⁾ (at the teach flow rate value)
Standard K-factor	± 2.5 % of Reading ²⁾
S077 + SE30 Ex	± 0.5 % of Reading
Linearity	± 0.5 % of F.S. ³⁾

Technical data continued

Repeatability

S030 sensor-fitting	±0.4 % of Reading ²⁾
S077 sensor-fitting	±0.3 % of Reading

Standards, directives and certifications

Protection class (according to EN 60529) IP67 with connector plugged-in and tightened

Standard and directives C€ The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable) Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU⁴⁾

Pressure

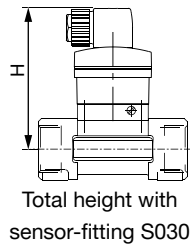
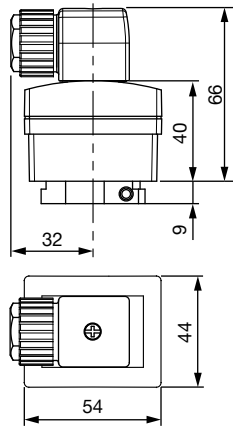
Certifications

ATEX	"Safety instructions - Notice of ATEX instructions" in the data sheet, see Type SE30 Ex ▶
NAMUR	EN 60947-5-6

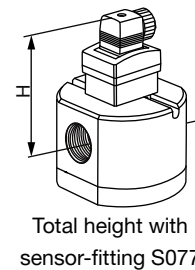
- 1) See data sheet overview: "SAFETY INSTRUCTIONS - NOTICE OF ATEX INSTRUCTIONS", to choose the appropriate sensor-fitting for the area of application
- 2) Under reference conditions i.e. measuring fluid = water, ambient and water temperature = 20 °C, while maintaining the minimum inlet and outlet distances and the appropriate internal diameter of the pipes.
- 3) F.S. = Full scale (10 m/s)
- 4) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).

Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

Dimensions [mm]



DN	H
06	96
08	96
15	101
20	98
25	98
32	102
40	106
50	112
65	112



DN	H
15	87
25	96
40	108
50	118
80	168
100	184

Note: The SE30 Ex electronics can easily be installed into

- any Bürkert Inline sensor-fitting system S030 with integrated PVDF paddle wheel. See **Type S030** ▶ or
- any Bürkert Inline sensor-fitting system S077. See **Type S077** ▶

Overview of hazardous areas depending on SE30 Ex flowmeter models (according to ATEX)

	Equipment for explosive atmospheres (surface industries) - GROUP II					
	Very high level of protection		High level of protection		Normal level of protection	
	Gas Zone 0	Dust Zone 20	Gas Zone 1	Dust Zone 21	Gas Zone 2	Dust Zone 22
CATEGORY 1 SE30 Ex -NAMUR II 1 G/D EEx ia IIC T6 - IP6X T80 °C associated with PVDF, brass, stainless steel or aluminium sensor fittings	to use with intrinsic safety barrier with NAMUR input (with open circuit voltage included between 8...15 V)					
CATEGORY 3 SE30 Ex -II 3 GD - NPN/PNP Ex nA IIC T4 Gc Ex tc IIIC T135 °C Dc IP6X associated with PVDF, brass, stainless steel or aluminium sensor fittings	Not to be used		Not to be used		to use with a 12...36 V supply source	



Safety Barrier



- 2 or 4 channels, intrinsic safety digital inputs: proximity detectors NAMUR, contacts...
- Rail mount on hat profile 35 mm
- All connections by removable screw terminals

Specifications

Digital inputs	Each of the 4 x intrinsic safety inputs can be configured independently for a contact or a proximity detector NAMUR as per DIN 19234
Intrinsic safety inputs	Proximity detector NAMUR as per DIN 19234 or free potential contacts, relays, pressure or temperature switches or push buttons in hazardous area.
Non intrinsic safety recopy outputs	According to the type of sensor and the chosen logic: a green LED on the front panel displays a free-potential contact for each channel without common wire.
Collector cut-off power	15 V, 60 mA, 0.9 VA, 350 Hz
Selection of the sensor type	Inductive or capacitive intrinsic safety certified NAMUR proximity detector or free-potential contacts.
Selection of the logic	By a mini-DIP choice of active proximity switches or when contact is NO (Normally Open) or NC (Normally Closed).
Fault detector	For all inputs configured as NAMUR, all models are provided with fault detector (broken line or short-circuit). In faulty case, the green front LED switches off, the contact of the defective channel opens and the red LED corresponding to the defective channel switches on. Other channels are not affected.
Power supply	24 V DC \pm 10 % 230 V AC \pm 10 % 1 front panel yellow LED is "ON" when supply is active
Consumption	5 VA
Connections	All connections by removable screw terminals. Supply distribution by means of a flat cable from one unit to the next one.

Specifications (continued)

Classification for explosive areas	Intrinsic safety associated apparatus. It must be installed in safe area and connected to materials installed in zone 0, 1 or 2 - Gas (G) or in zone 20, 21 or 22 - Dust (D) Classification according to 2014/34/EU ATEX Directive: (Ex) I/II (M1)/(1) G/D [Ex ia] IIC Safety parameters see EC-type certificate LCIE 00ATEX 6034X
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Ambient Temperature

Operating	-20...+60 °C
	-20...+50 °C (recommended)
Storage	-40 ...+80 °C

Dimensional & mechanical

Housing for symmetrical DIN rail (hat profile 35 mm as per standard NFC63015/EN50022) -
Depth: 120 mm ; - Height: 90 mm - 145 mm overall including space for cables ; Width on rail 29.5 mm. Minimal distance between rails: 180 mm.

Installations conditions

Mounting on DIN rail:	Must take into account thermal dissipation and risk of overheating generated by housings installed side by side. In case of a high concentration inherent safety barrier, we recommend to leave a free space of 10 mm between each group of 8 units (horizontal rail) and between each group of 4 units (vertical rail).
Mounting inside a cabinet:	It is recommended to close the electrical cabinet and to ensure a circulation of fresh air even by means of an air conditioner to keep the inside temperature at the level compatible with the recommended operating temperature among the units.

Ordering chart

Description	Voltage supply	Output	Electrical connection	Article no.
Flowmeter Type SE30 Ex for sensor-fitting S030 or S077				
SE30 Ex - NAMUR II 1 G/D for explosive gas and dust environments: zones 0, 1 or 2 and 20, 21 or 22	8...15 V DC - via an intrinsic safety barrier with NAMUR input ¹⁾	NAMUR current modulation - 2-wire	1 cable plug EN 175301-803	552901
SE30 Ex - II 3 GD for explosive gas and dust environments: zones 2 or 22	12...36 V DC	NPN/PNP	1 cable plug EN 175301-803	552353

1) The open circuit voltage for the NAMUR input must be included between 8 and 15 V.

Note regarding the ordering of a complete flowmeter:

A SE30 Ex flowmeter consists of the Type SE30 Ex electronic module and the Inline sensor-fitting Type S030 (see [Type S030](#) ▶) or Type S077 (see [Type S077](#) ▶).

Please order the relevant Inline sensor-fitting and the electronics separately!

Accessories

Description	Article no.
For Namur version: cable plug EN 175301-803 with blue cable gland and silicone seal - see Type 2508 ▶ (will be replaced with Type 2518)	167526
For NPN/PNP version: cable plug EN 175301-803 with 5 m cable and NBR seal - see Type 2513 ▶ (The cable output is always oriented perpendicularly to the pipe.)	565558
For NPN/PNP version: cable plug EN 175301-803 with 12 m cable and NBR seal - see Type 2513 ▶ (The cable output is always oriented perpendicularly to the pipe.)	565559

Classifications for explosive areas	Voltage supply	Output	Number of channels	Article no.
Intrinsic safety barrier				
2014/34/EU ATEX Directive I/II (M1)/(1) G/D [Ex ia] IIC	24 V DC	open collector, 15 V, 60 mA	2, with NAMUR input	553456
		open collector, 15 V, 60 mA	4, with NAMUR input	553457
	230 V AC	open collector, 15 V, 60 mA	2, with NAMUR input	553458
		open collector, 15 V, 60 mA	4, with NAMUR input	553459

Transmitter for continuous flow measurement

SE36

For use with sensor-fitting

- S030 ▶ with paddle wheel or
- S077 ▶ with oval gears

- Up and download of the data through removable display
- Automatic calibration using Teach-In
- All output signals without presence of flow

Suitable fitting:
see Type S030 ▶
or Type S077 ▶



The SE36 electronic module is a flow transmitter. It must be combined with sensor-fitting S030 or S077. This two-wire 4...20 mA transmitter is manufactured to provide true, reliable flow for neutral, solid free liquids. A backlit removable display allows the system to be flexible and adds more value.

Technical data

General data

Compatibility With sensor-fittings S030 (see **Type S030 ▶** or corresponding data sheet **Type S030 ▶**) or S077 (see **Type S077 ▶** or corresponding data sheet **Type S077 ▶**)

Materials

Housing	Stainless steel 1.4404, PPS
Cover	PC
Seals	EPDM, silicone
Screws	Stainless steel
Fixed connector mounting plate	Stainless steel 1.4404 (316L)
Fixed connector	Brass nickel plated (stainless steel on request)
Display	PC
Navigation key	PBT
Bayonet locking system	PC

Display/configuration module (accessories) Grey dot matrix 128×64 with backlighting

Electrical connections

2 or 3 outputs transmitter (2-wire)	1 × 5 pin M12 male fixed connector,
4 outputs transmitters (3-wire)	1 × 5 pin M12 male and 1 × 5 pin M12 female fixed connectors

Connection cable

Shielded cable

Electrical data

Power supply

2 or 3 outputs transmitter (2-wire)	14...36 V DC, filtered and regulated
4 outputs transmitter (3-wire)	12...36 V DC, filtered and regulated

Reversed polarity of DC

Protected

Characteristics of the power source (not provided) of UL recognized devices

Limited power source (according to § 9.4 of the UL61010-1 standard) or, Class 2 type power source (according to the 1310/1585 and 60950-1 standards)

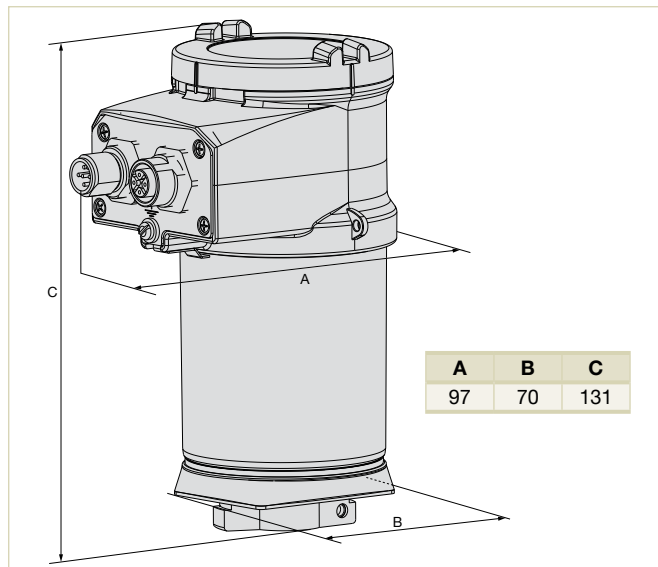
Current consumption with sensor

2 or 3 outputs transmitter (2-wire)	≤ 1 A (with transistors load) ≤ 25 mA (at 14 V DC without transistors load, with current loop)
4 outputs transmitter (3-wire)	≤ 5 mA (at 12 V DC without transistors load, without current loop)

Power consumption

Max. 40 W.

Dimensions [mm]




Options

- High flow rate to DN350 (see **Type 8026 ▶**)
















Technical data continued

Output	
Transistor	Protected against voltage peak, polarity reversals and short circuit
1 transistor output (transmitter 2-wire)	NPN, open collector, 1...36 V DC, max. 700 mA
2 transistor outputs (transmitter 2 or 3-wire)	Adjustable as sourcing or sinking (respectively both as PNP or NPN), open collector, max. 700 mA, 500 mA max. per transistor if the 2 transistor outputs are wired
Current	NPN-output: 1...36 V DC PNP-output: Power supply
1 current output (transmitter 2-wire)	4...20 mA adjustable as sourcing or sinking (in the same mode as transistors)
2 current outputs (transmitter 3-wire)	Max. loop impedance: 1100 Ω at 36 V DC; 610 Ω at 24 V DC; 180 Ω at 14 V DC
	Max. loop impedance: 1100 Ω at 36 V DC; 610 Ω at 24 V DC; 100 Ω at 12 V DC
4...20 mA output uncertainty	± 1 % of range

Environment	
Ambient temperature	- 10 °C...+ 60 °C (operating and storage)
Relative humidity	≤ 85 %, without condensation
Standards, directives and certifications	
Protection class (according to EN60529)	IP65, IP67 with device wired and M12 cable plug mounted and tightened and cover fully screwed down
	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Certifications	CE; UL-Recognized for US and Canada (61010-1 + CAN/CSA-C22.2 No.61010-1) 








Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Ordering chart

Description	Voltage supply	Output	Electrical connection	UL certification	Article no.	
					without display/configuration module	with display/configuration module
2 outputs	14...36 V DC	1 x Transistor NPN + 1 x 4...20 mA (2-wire)	5 pin M12 male fixed connector male fixed connector	No	560880 	561880 
				 Recognized	560883 	561883 
3 outputs	14...36 V DC	2 x Transistor NPN/PNP + 1 x 4...20 mA (2-wire)	5 pin M12 male fixed connector male fixed connector	No	560881 	561881 
				 Recognized	560884 	561884 
4 outputs	12...36 V DC	2 x Transistor NPN/PNP + 2 x 4...20 mA (3-wire)	1 x 5 pin M12 male +	No	560882 	561882 
			1 x 5 pin M12 female fixed connector	 Recognized	560885 	561885 

Note: The SE36 transmitter and the S030 or S077 sensor-fitting must be ordered separately. See **Type S030** ▶ or **Type S077** ▶

Accessories

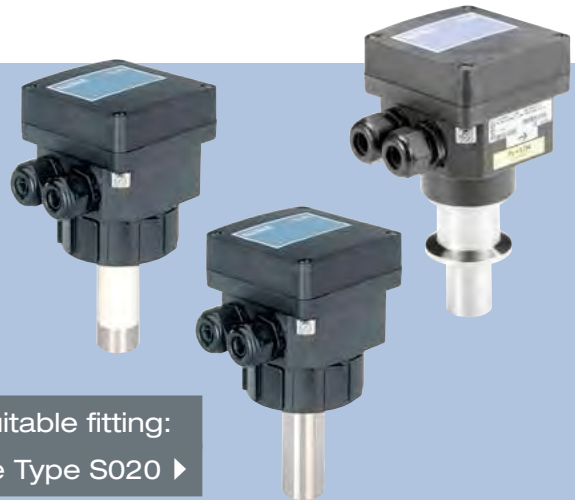
Specification	Article no.
Removable display/configuration module (with instruction sheet)	559168 
Blind cover with seal (1 screw cover with EPDM seal + 1 quarter turn closing cover with silicone seal)	560948 
Transparent cover with seal (1 screw cover with EPDM seal + 1 quarter turn closing cover with silicone seal)	561843 
5 pin M12 female straight cable plug with plastic threaded locking ring, to be wired	917116 
5 pin M12 male straight cable plug with plastic threaded locking ring, to be wired	560946 
5 pin M12 female straight cable plug moulded on cable (2 m, shielded)	438680 
5 pin M12 male straight cable plug moulded on cable (2 m, shielded)	559177 

Important note: Please be careful when ordering devices without a display, that you purchase at least one display module.

Insertion magnetic inductive flowmeter

8041

- Sensor without moving parts
- Flowmeter with On/Off control
- Application related calibration by Teach-In function
- Clean in place (CIP)
- FDA-compliant materials



Suitable fitting:
see Type S020 ▶

The electromagnetic flowmeter 8041 is made up of an electronic module and a sensor consisting of PVDF or stainless steel material. It has been designed to measure a flow rate of neutral and slightly aggressive fluids with a conductivity of more than 20 $\mu\text{S}/\text{cm}$ in DN06...DN400 pipes.

It is fitted with a 4...20 mA output, a pulse output and a relay output. The different parameters can be set by means of 5 DIP switches, a push-button and a 10- field LED bargraph.

It is available:

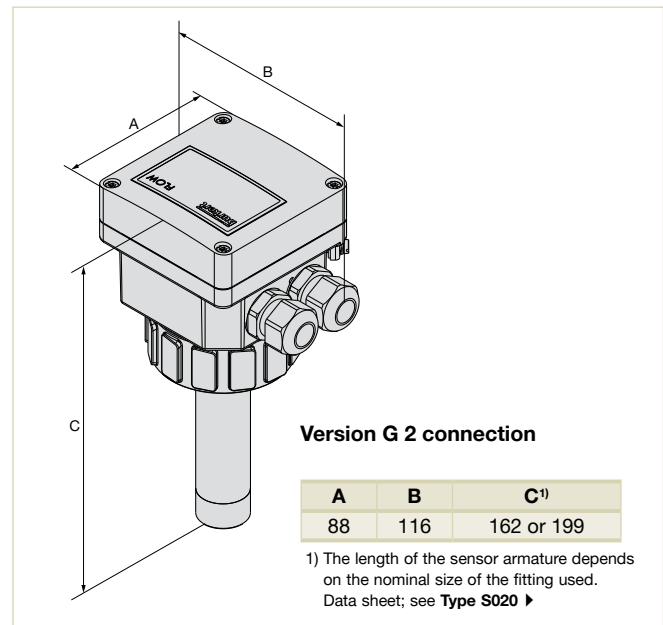
- with G 2 connection for the version with a PVDF sensor
- with G 2 or clamp connection for the version with a stainless steel sensor.

The version with a stainless steel sensor can be used in applications with higher pressures (PN16) and higher temperatures (150 °C).

Technical data

General data	
Compatibility	With fittings S020 (Data sheet; see Type S020 ▶)
Materials	
Housing, cover, nut	
PVDF sensor version	PC (glass fibre reinforced for housing)
Stainless steel sensor version	PPA (glass fibre reinforced)
Screws / Seal	Stainless steel / NBR
Cable glands	PA with neoprene seal
Wetted parts materials	
Sensor holder	PVDF or Stainless steel 1.4404/316L
Electrodes	Stainless steel 1.4404/316L
Seals	G 2 connection: FKM or EPDM (conform to FDA), Clamp connection: EPDM or FEP (to be ordered separately)
Earth ring (PVDF sensor version)	Stainless steel 1.4404/316L
Electrode holder (Stainless steel sensor version)	PEEK (conform to FDA)
Surface finishing quality	Ra < 0.8 mm (Clamp connection)
Electrical connections	2 cable glands M20 x 1.5
Recommended cable	0.5...1.5 mm ² cross-section, shielded cable, 6...12 mm diameter (if only one cable is used per cable gland) or 4 mm diameter (if two cables are used per cable gland with using the supplied multi-way seal)

Dimensions [mm]



Options

- Stainless steel finger for + 150 °C and 16 bar with PPA housing
- FDA approved wetted materials, - Hastelloy C Electrodes

Complete device data (fitting S020 + flowmeter)	
Pipe diameter	
G 2 connection	DN06...DN400
Clamp connection	DN32...DN100
Measuring range	0.2...10 m/s
Sensor element	Electrodes
Fluid temperature	
PVDF sensor version	0...+80 °C (depends on fitting)
Stainless steel sensor version	-15...+150 °C (depends on fitting)
Fluid pressure max.	See pressure/temperature diagram
PVDF sensor version	PN10
Stainless steel sensor version	PN10 (with plastic fitting) - PN16 (with metal fitting)
Conductivity	Min. 20 mS/cm
Viscosity	<1000 mPa.s

Technical data continued

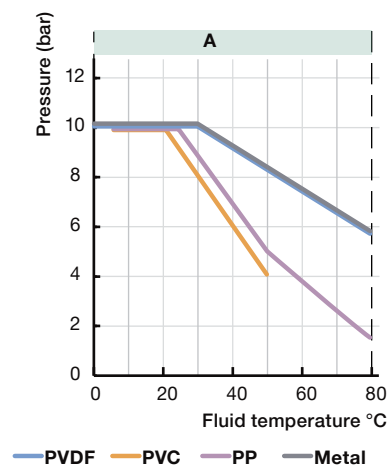
Measurement deviation	
Teach-In	±0.5 % of Reading ¹⁾ (at the teach flow rate value)
Standard K-factor	±3.5 % of Reading ¹⁾
Linearity	±0.5 % of F.S. ¹⁾²⁾
Repeatability	±0.25 % of Reading ¹⁾
1) Under reference conditions i.e. measuring fluid = water, ambient and water temperature = 20 °C, applying the minimum inlet and outlet pipe straights, matched inside pipe dimensions.	
2) FS. = Full scale (10 m/s)	
Electrical data	
Power supply	18...36 V DC filtered and regulated (3 wires)
Reversed polarity of DC	Protected
Current consumption	≤220 mA (at 18 V DC)
Output	
Signal current	4...20 mA (sink or source by wiring), 100 ms refresh time; Max. loop impedance: 1100 Ω at 36 V DC; 330 Ω at 18 V DC
Frequency	0... 240 Hz, duty cycle = 50 % ± 1 %; 100 mA max., protected against short-circuits and polarity reversals.
Relay	Normally open or normally closed (depending on wiring), 250 V AC/3 A or 40 V DC/2 A (resistive load)
4... 20 mA output uncertainty	± 1 % of range
Alarm	
Full scale exceeding	22 mA and 256 Hz
Fault signalling	22 mA and 0 Hz
User parameter	Saved in EEPROM

Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Pressure/Temperature diagrams

Please be aware of the fluid pressure/temperature dependence according to the respective fitting+flowmeter material as shown in the diagrams.

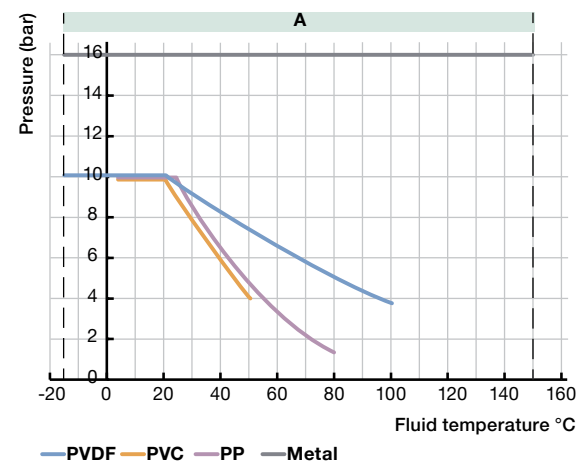
8041 with a PVDF sensor
(depending on the fitting material)



A: Application range for complete device
(fitting + flowmeter)

Environment	
Ambient temperature	- 10...+ 60 °C (operating) - 20...+ 60 °C (storage)
Relative humidity	< 80 %, without condensation
Height above sea level	Max. 2000 m
Standard, directives and certifications	
Protection class	IP65
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable) Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ³⁾
Pressure	
Certificates	
	FDA declaration of conformity (for stainless steel or PVDF sensor with FKM or EPDM seal) ECR1935/2004 declaration (only for stainless steel sensor with EPDM seal)
3) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).	
Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

8041 with a stainless steel sensor
(depending on the fitting material)



Main features and programming

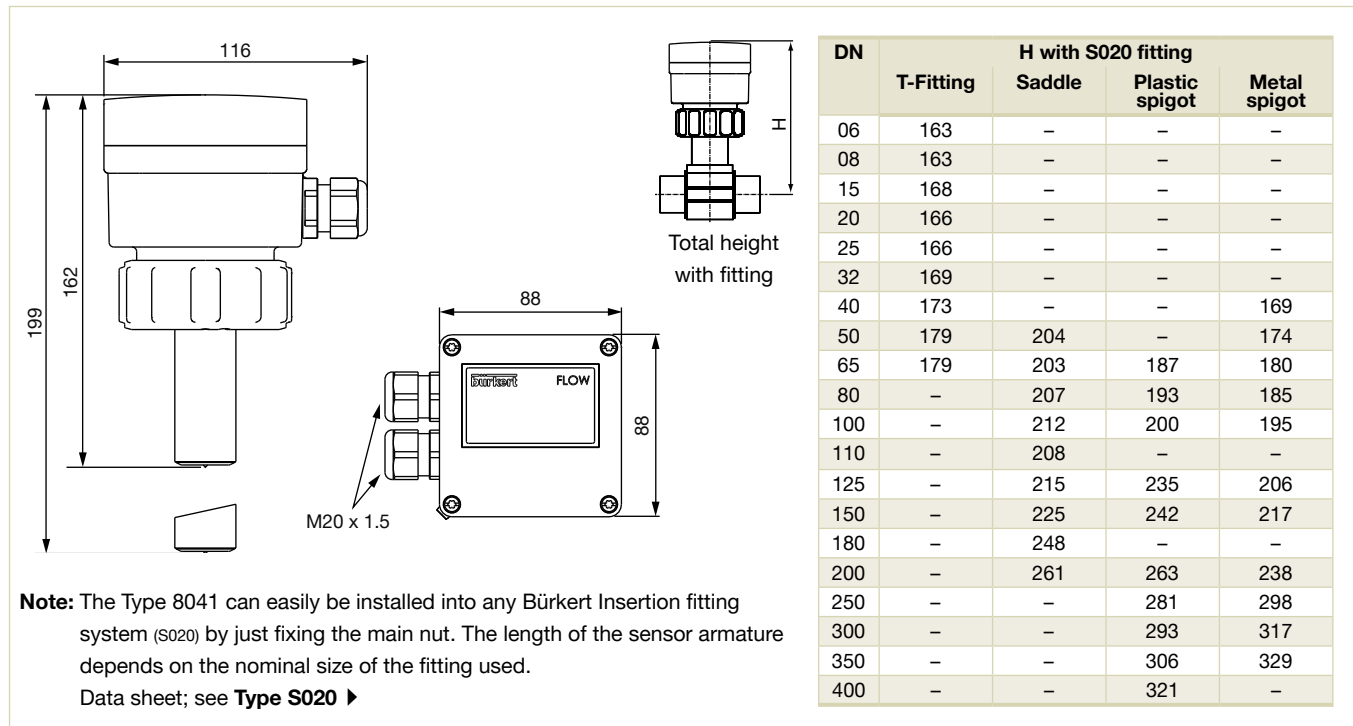
Using as a flowmeter

- Programming of the full scale
 - selection of a predefined measuring range: 0...2, 0...5 or 0...10 m/s
 - selection by Teach-In: with the actual max. flow velocity of the application
- 4...20 mA current output
- 0...240 Hz frequency output
- Relay output: switching mode either window or hysteresis, on low or high switching threshold
- Relay Time delay before switching
- Filter
- Alarm:
 - for full scale exceeding with 22 mA and 256 Hz
 - for fault signalling with 22 mA and 0 Hz

Using as an ON/OFF control

- Flow detection with switching thresholds, defined as a percentage of max. flow rate.
- Adjustment of the full scale of the device accordingly to the customer process full scale.

Dimensions [mm]



Ordering chart

Voltage supply	Output	Relay	Housing material	Seals	Sensor version	Certificates		UL® Certifications	Electrical connection	Article no.
						FDA	ECR1935/2004 ¹⁾			
G 2 connection to use with S020 Fitting for flowmeter with G 2 connection										
18...36 V DC	4...20 mA, frequency	1	PC	FKM	short, PVDF	✓	×	×	2 cable glands	558064
					long, PVDF	✓	×	×	2 cable glands	558065
			PPA	FKM	short, stainless steel)	✓	✓	×	2 cable glands	552779
					long, stainless steel	✓	✓	×	2 cable glands	552780
			PPA	FKM	short, stainless steel	✓	✓	✓	2 cable glands	561606
					long, stainless steel	✓	✓	✓	2 cable glands	561607

1) If FKM seal mounted as standard at factory is replaced with the EPDM seal included in the delivery.

Note regarding the ordering of a complete flowmeter:

The complete 8041 flowmeter consists of the Type S020 Insertion fitting and the Type 8041 flowmeter.

FKM seal in standard; 1 EPDM seal contained in the kit 551775, 1 relay connection kit 552812 are supplied with each flowmeter.

Please enter the appropriate flowmeter according to the table "Compatible and recommended combinations with Bürkert Insertion Fitting" and order the respective Insertion Fitting and the selected flowmeter separately.

Compatible and recommended combinations with Bürkert Insertion Fitting

Available S020 fitting DN	T-fitting	Weld-in socket	Fusion spigot	Screw-on S020	Saddle	DN06	DN08	DN20	DN50	DN65	DN100	DN200	DN350	DN400
						(1)	Short sensor							
									Short sensor			Long sensor		
									Short sensor			Long sensor		
												Long sensor		
									Long sensor					

(1) DN06 and DN08 in stainless steel S020 only, 8041 with stainless steel sensor recommended

Accessories

Specifications	Article no.
Set with 2 cable glands M20x1.5+2 neoprene flat seals for cable gland or plug +2 screw-plugs M20x1.5+2 multiway seals 2x6 mm	449755
Set with 2 reductions M20x1.5 /NPT 1/2 +2 neoprene flat seals for cable gland or plug +2 screw-plugs M20x1.5	551782
Relay connection kit with 1 screw terminal strip +1 protection cap +1 rilsan +1 mounting instruction sheet	552812
3 points calibration certificate (device combined with a S020 fitting, only for DN ≤200)	550676
FDA declaration of conformity (for stainless steel or PVDF sensor with FKM or EPDM seal)	803724
For G 2 connection version	
Set with 1 stopper for unused cable gland M20x1.5+1 multiway seal 2x6 mm for cable gland +1 green FKM seal for the sensor +1 mounting instruction sheet	558102
Snap ring	619205
PC union nut	619204
PPA union nut	440229
Set with 1 green FKM and 1 black EPDM seal	552111

Insertion magnetic inductive flowmeter

8045

- Sensor without moving parts
- Indicates both flow rate and volume
- Simulation of all output signals
- Clean in place (CIP), FDA-compliant materials



Suitable fitting:
see Type S020 ▶

The electromagnetic flowmeter 8045 is made up of an electronic module including a backlit display, operating keys for configurations and a sensor consisting of PVDF or stainless steel material. It has been designed to measure a flow rate of neutral and slightly aggressive fluids with a conductivity of more than 20 $\mu\text{S}/\text{cm}$ in DN06... DN400 pipes.

It is equipped with a 4...20 mA output, a digital output (pulse output by default). Some versions are equipped with two relay outputs and one digital input. Two independent totalizers allow counting the flow rate.

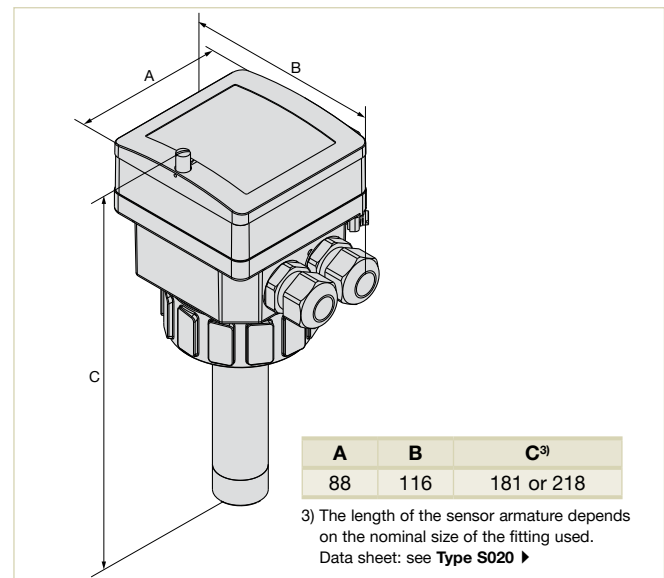
The available process connections are:

- G 2 connection for the version with a PVDF sensor
 - G 2 or clamp connection for the version with a stainless steel sensor.
- The version with a stainless steel sensor can be used in applications with higher pressures (PN16) and higher temperatures (110 °C). The version with Alloy C22 electrodes has been designed for applications with aggressive fluids (chemicals) and especially sea water applications.

Technical data

General data	
Compatibility	With fittings S020 (Data sheet; siehe Type S020 ▶)
Materials	
Housing, cover, nut / seal	
PVDF sensor version	PC (glass fibre reinforced for housing) / NBR
Stainless steel sensor version	Black PPA (glass fibre reinforced) / NBR
Front panel foil	Polyester
Protection lid / seal	
PVDF sensor version	PC / Silicone
Stainless steel sensor version	PSU / Silicone
Screws / Seal	Stainless steel / NBR
Cable glands	PA with neoprene seal
Wetted parts material	
Sensor holder	PVDF or Stainless steel 1.4404/316L
Electrodes	Stainless steel 1.4404/316L or Alloy C22
Seals	G 2 connection: FKM or EPDM (conform to FDA) Clamp connection: EPDM or FEP (to be ordered separately)
Earth ring (PVDF sensor version)	Stainless steel 1.4404/316L or Alloy C22
Electrode holder (St. Steel sensor version)	PEEK (conform to FDA)
Surface finishing quality	Ra < 0.8 μm (clamp connection)
Electrical connections	2 cable glands M20x1.5

Dimensions [mm]



Recommended cable	0.5...1.5 mm ² cross-section, shielded cable, 6...12 mm diameter (if only one cable is used per cable gland) or 4 mm diameter (if two cables are used per cable gland with using the supplied multi-way seal)
Complete device data (fitting S020 + flowmeter)	
Pipe diameter	
G 2 connection	DN06...DN400
Clamp connection	DN32...DN100
Measuring range	0.2...10 m/s
Sensor element	Electrodes
Fluid temperature	
PVDF sensor version	0...+ 80 °C (depends on fitting)
Stainless steel sensor version	- 15...+ 110 °C (depends on fitting)
Fluid pressure max.	See pressure/temperature diagram
PVDF sensor version	PN10
Stainless steel sensor version	PN10 (with plastic fitting); PN16 (with metal fitting)
Conductivity	Min. 20 mS/cm
Viscosity	< 1000 mPa.s
Measurement deviation	
Teach-In	± 0.5 % of Reading ¹⁾ (at the teach flow rate value)
Standard K-factor	± 3.5 % of Reading ¹⁾

Technical data continued

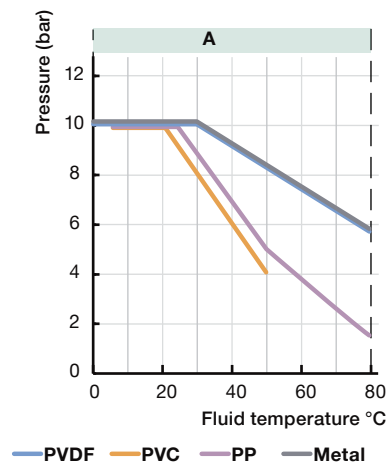
Linearity	±0.5 % of F.S. ¹⁾²⁾
Repeatability	±0.25 % of Reading ¹⁾
Electrical data	
Operating voltage	18...36 V DC filtered and regulated (3 wires) Tolerance: ±0.5 %
Reversed polarity of DC	Protected
Current consumption	≤300 mA (at 18 V DC)
Digital input DI1	Supply voltage: 18...36 V DC, Input impedance 15 kΩ Min. pulse duration: 200 ms Galvanic insulation, protected against polarity reversals of DC and voltage spikes
Digital outputs	
Transistor (DO1)	Type: NPN or PNP (wiring dependent), open collector; Function: pulse output (by default), user configurable; 0...250 Hz, 5...36 V DC, 100 mA max.; Duty cycle if frequency > 2 Hz: ½; Min. pulse duration if frequency < 2 Hz: 250 ms Galvanic insulation, protected against polarity reversals of DC and short-circuits
Relay (DO2 and DO3)	2 normally open relays, freely adjustable (hysteresis by default), 250 V AC/3 A or 40 V DC/3 A (resistive load), max. cutting power of 750 VA (resistive load); life span of min. 100000 cycles
Analogue output	
Current (AO1)	4...20 mA, sink or source (wiring dependent), 22 mA to indicate a fault Max. loop impedance: 1300 Ω at 36 V DC, 1000 Ω at 30 V DC, 700 Ω at 24 V DC, 450 Ω at 18 V DC
4...20 mA output accuracy	±1 % of range

Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Pressure/Temperature diagrams

8045 with a PVDF sensor

(depending on the fitting material)

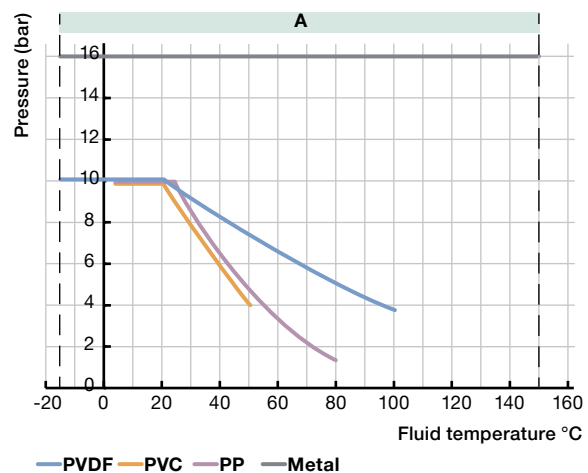


A : Application range for complete device
(fitting + flowmeter)

Environment	
Ambient temperature	-10...+60 °C (operating) -20...+60 °C (storage)
Relative humidity	<85 %, without condensation
Height above sea level	Max. 2000 m
Standards, directives and certifications	
Protection class	IP65, device wired and cable glands tightened and lid screwed tight
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable) Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ³⁾
Pressure	
Certificates	FDA declaration of conformity (for stainless steel or PVDF sensor with FKM or EPDM seal) ECR1935/2004 declaration (only for stainless steel sensor with EPDM seal)
<p>1) Under reference conditions i.e. measuring fluid=water, ambient and water temperature =20 °C (68 °F), applying the minimum inlet and outlet straight pipe lengths, matched inside pipe dimensions. 2) F.S.= of Full scale (10 m/s) 3) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).</p>	
Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤25
Fluid group 2, article 4, §1.c.i	DN ≤32, or PS*DN ≤1000
Fluid group 1, article 4, §1.c.ii	DN ≤25 or PS*DN ≤2000
Fluid group 2, article 4, §1.c.ii	DN ≤200 or PS ≤10 or PS*DN ≤5000

8045 with a stainless steel sensor

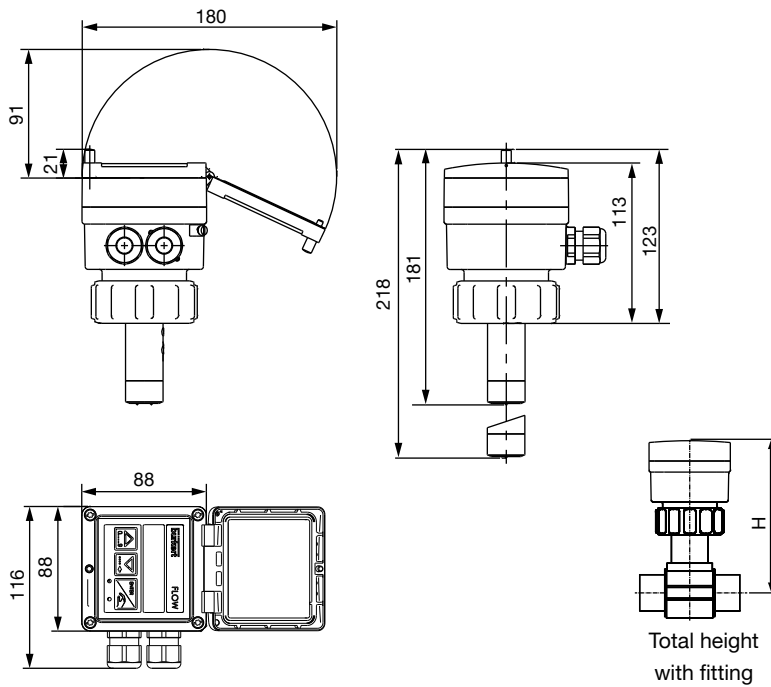
(depending on the fitting material)



Software main features

- Choice of the display language
- International measuring units
- Teach-In for a better accuracy, or K-factor setting
- 4...20 mA current output (AO1)
- Transistor output (DO1)
- 2 relays (DO2 and DO3 - if equipped)
- Detection of flow direction possible
- ON/OFF digital input (DI1 - if equipped)
- Filter function
- Reset both totalizers (main and daily)
- Low flow "Cut-Off"
- Brightness of the display
- Password for parameter settings
- Warning and fault messages generating
- Simulation mode to adjust Zero and Span and simulate flow in dry-run condition

Dimensions [mm]



DN	H with S020 fitting			
	T-Fitting	Saddle	Plastic spigot	Metal spigot
06	182	-	-	-
08	182	-	-	-
15	187	-	-	-
20	185	-	-	-
25	185	-	-	-
32	188	-	-	-
40	192	-	-	188
50	198	223	-	193
65	198	222	206	199
80	-	226	212	204
100	-	231	219	214
110	-	227	-	-
125	-	234	254	225
150	-	244	261	236
180	-	268	-	-
200	-	280	282	257
250	-	-	300	317
300	-	-	312	336
350	-	-	325	348
400	-	-	340	-

Note: The Type 8041 can easily be installed into any Bürkert Insertion fitting system (S020) by just fixing the main nut. The length of the sensor armature depends on the nominal size of the fitting used.

Data sheet; see [Type S020](#) ▶

Ordering chart

Operating voltage	Digital input	Relay output	Housing material	Seal	Sensor version	Electrode material	Certificates		Electrical connection	Article no.
							FDA	ECR1935/2004 ¹⁾		
G 2 connection to use with S020 Fitting for flowmeter with G 2 connection										
18...36 V DC	No	No	PC	FKM	Short, PVDF	Stainless steel	✓	*	2 cable glands M20x1.5	426498
							✓	*	2 cable glands M20x1.5	426499
	1 (DI1)	2 (DO2, DO3)	PC	FKM	Short, PVDF	Stainless steel	✓	*	2 cable glands M20x1.5	426506
							✓	*	2 cable glands M20x1.5	426507
	No	No	PPA	FKM	Short, st. steel	Stainless steel	✓	✓	2 cable glands M20x1.5	449670
							✓	✓	2 cable glands M20x1.5	449672
	1 (DI1)	2 (DO2, DO3)	PPA	FKM	Short, st. steel	Stainless steel	✓	✓	2 cable glands M20x1.5	449671
							✓	✓	2 cable glands M20x1.5	449673

Ordering chart continued

Operating voltage	Digital input	Relay output	Housing material	Seal	Sensor version	Electrode material	Certificates		Electrical connection	Article no.
							FDA	ECR1935/2004 ¹⁾		
G 2 connection to use with S020 Fitting for flowmeter with G 2 connection										
18...36 V DC	No	No	PC	FKM	Short, PVDF	Alloy C22	*	*	2 cable glands M20 x 1.5	558675
					Long, PVDF	Alloy C22	*	*	2 cable glands M20 x 1.5	558676

1) if FKM seal mounted as standard at factory is replaced with the EPDM seal included in the delivery.

Note regarding the ordering of a complete flowmeter:

The complete 8045 flowmeter consists of the Type S020 Insertion fitting and the Type 8045 flowmeter.

FKM seal in standard; 1 EPDM seal contained in the kit 551775 is supplied with each flowmeter.

Please enter the appropriate flowmeter according to the table "Compatible and recommended combinations with Bürkert Insertion Fitting" and order the respective Insertion Fitting and the selected flowmeter separately.

Compatible and recommended combinations with Bürkert Insertion Fitting

Available S020 fitting DN	T-fitting	Weld-in socket	Fusion spigot	Screw-on S020	Saddle	DN06	DN08	DN20	DN50	DN65	DN100	DN200	DN350	DN400
						(1)	Short sensor							
									Short sensor			Long sensor		
									Short sensor			Long sensor		
												Long sensor		
									Long sensor					

(1) DN06 and DN08 in stainless steel S020 only, 8045 with stainless steel sensor recommended

Accessories

Specifications	Article no.
Set with 2 cable glands M20x1.5+2 neoprene flat seals for cable gland or plug +2 screw-plugs M20x1.5+2 multiway seals 2x6 mm	449755
Set with 2 reductions M20x1.5 /NPT 1/2 +2 neoprene flat seals for cable gland or plug +2 screw-plugs M20x1.5	551782
3 points calibration certificate (device combined with a S020 fitting, only for DN ≤200)	550676
FDA declaration of conformity (for stainless steel or PVDF sensor with FKM or EPDM seal)	803724
For G 2 connection version	
Set with 1 stopper for unused cable gland M20x1.5+1 multiway seal 2x6 mm for cable gland +1 green FKM seal for the sensor +1 mounting instruction sheet	558102
Snap ring	619205
PC union nut	619204
PPA union nut	440229
Set with 1 green FKM and 1 black EPDM seal	552111

Full bore Inline Magmeter

8051 / 8055 / 8056

DN03...DN150

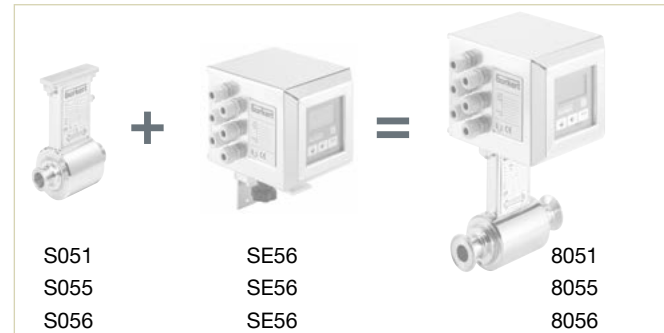
- High frequency sampling
- Flow or Batch Control
- Compact or remote version
- 3 different electronics can be connected to 3 different types of sensor fittings



Shown is the remote flanged sensor fitting and the hygienic clamp compact version

These full bore magflowmeters accurately measure the flow of liquids with conductivities as low as 5 µS/cm with or without solids. Varied application environments such as water, wastewater, sludge, slurries, pastes, acids, alkalis, juices, fruit pulp can easily be handled. This extremely robust, time tested design incorporates the latest electronics and when combined with a valve as the actuating element they can control high-precision dosing operations.

System Architecture



Technical data

	8051	8055	8056
Pipe diameter	DN03...DN20	DN25...DN200 (to DN2000 on request)	DN03...DN100
Measuring range	0...10 l/h to 0...12500 l/h	0...0.72 m³/h to 0...1130 m³/h	0...10 l/h to 0...280 m³/h
Process connection	Thread ISO 228-1, NPT (DIN 11851, SMS 1145, Clamp ISO 2852 or BS 4825, Flanges DIN 2501, ANSI on request)	S054: wafer - S055: Flange EN1092-1, ANSI B16.5, (JIS on request)	DIN11851, Clamp ISO2852 or Clamp BS4825 (SMS1146 (from DN10) on request)
Fluid temperature	Data sheet; see Type 8051 ▶	Data sheet; see Type 8055 ▶	Data sheet; see Type 8056 ▶
Fluid pressure max.	PN16 or (PN40, on request)	PN16 (with PP lining) or (up to PN64 (with Ebonite or PTFE lining) on request)	PN16
Vacuum resistance	200 mbar absolute at 100 °C	200 mbar absolute at 100 °C	200 mbar absolute at 100 °C
Measurement deviation¹⁾	±0.2 % of reading (SE56 standard; SE56 blind) ±0.8 % of reading (SE56 basic)	±0.2 % of reading (SE56 standard; SE56 blind) ±0.8 % of reading (SE56 basic)	±0.2 % of reading (SE56 standard; SE56 blind) ±0.8 % of reading (SE56 basic)
Repeatability	±0.1 % (SE56 standard; SE56 blind) ±0.2 % (SE56 basic)	±0.1 % (SE56 standard; SE56 blind) ±0.2 % (SE56 basic)	±0.1 % (SE56 standard; SE56 blind) ±0.2 % (SE56 basic)
Minimum conductivity	5 µS/cm (or 20 µS/cm with demineralized water)	5 µS/cm (or 20 µS/cm with demineralized water)	5 µS/cm (or 20 µS/cm with demineralized water)
Environment			
Ambient temperature with			
SE56 standard	-20...60 °C (operating and storage)	-20...60 °C (operating and storage)	-20...60 °C (operating and storage)
SE56 basic	-10...50 °C (operating), -20...50 °C (storage)	-10...50 °C (operating), -20...+50 °C (storage)	-10...50 °C (operating), -20...50 °C (storage)
SE56 blind	-20...40 °C (operating and storage)	-20...40 °C (operating and storage)	-20...40 °C (operating and storage)
Standards, directives and certifications			
Protection class	IP65 and IP67 (compact version, SE56 standard or SE56 blind) IP65 (remote version, SE56 standard) IP68 (remote version and junction box filled with resin, SE56 standard) IP65 (compact version, SE56 basic)		
Standards and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)		

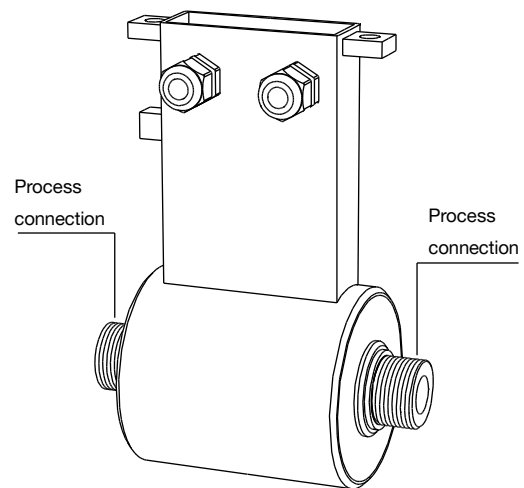
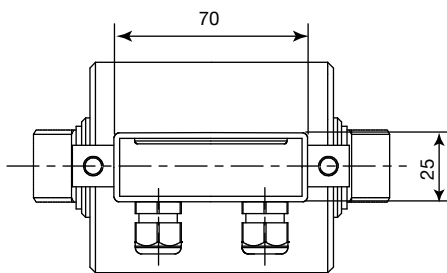
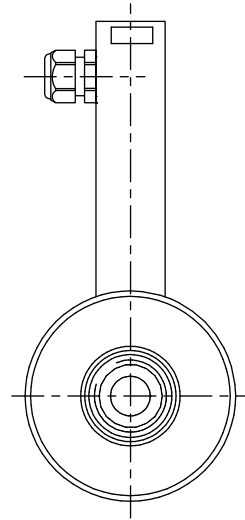
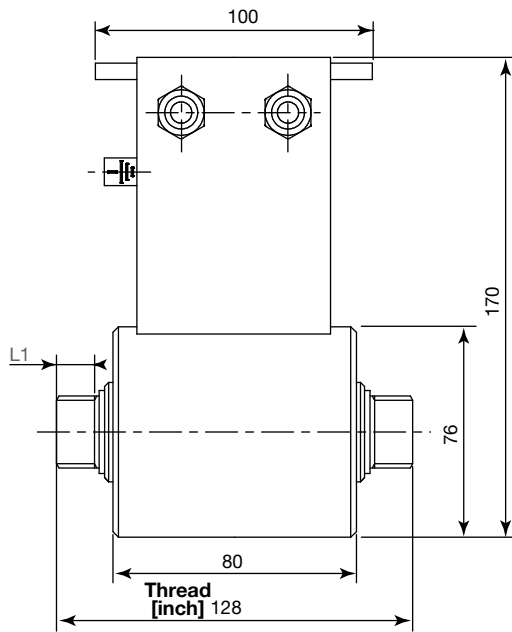
¹⁾ under reference conditions: water temperature = 20 °C, ambient temperature = 25 °C, constant flow rate during the test, liquid speed > 1 m/s

Options

- Various sealing materials
- Larger sizes are available as standard
- Individual calibration certificate
- Remote versions (10/20 m cable, IP68), blind version
- Stainless steel body and EN or ANSI/DIN flanges for S055
- PTFE lining and PN40 pressure class for S054 and S055
- 2 relay outputs NO/NC 2A-250V AC, 60W 125V AC
- Hart, Profibus, RS232, RS485

Dimensions [mm] of Type S051 sensor fitting (without full lining) – compact version

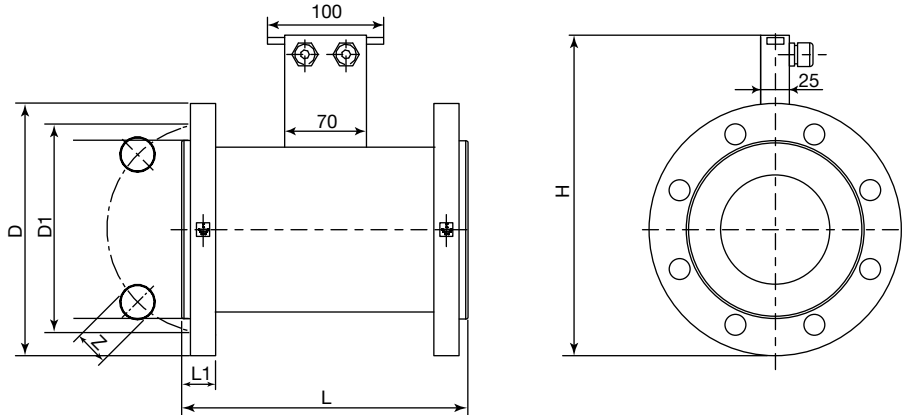
NOTE: Dimensions of SE56 electronics



DN	Thread	L1
03	G or NPT ¼	16.4
06	G or NPT ⅜	16.4
10	G or NPT ½	17.4
15	G or NPT ¾	20.0
20	G or NPT 1	20.0

Dimensions [mm] of Type S055 sensor fitting – compact flanges version

NOTE: Dimensions of SE56 electronics

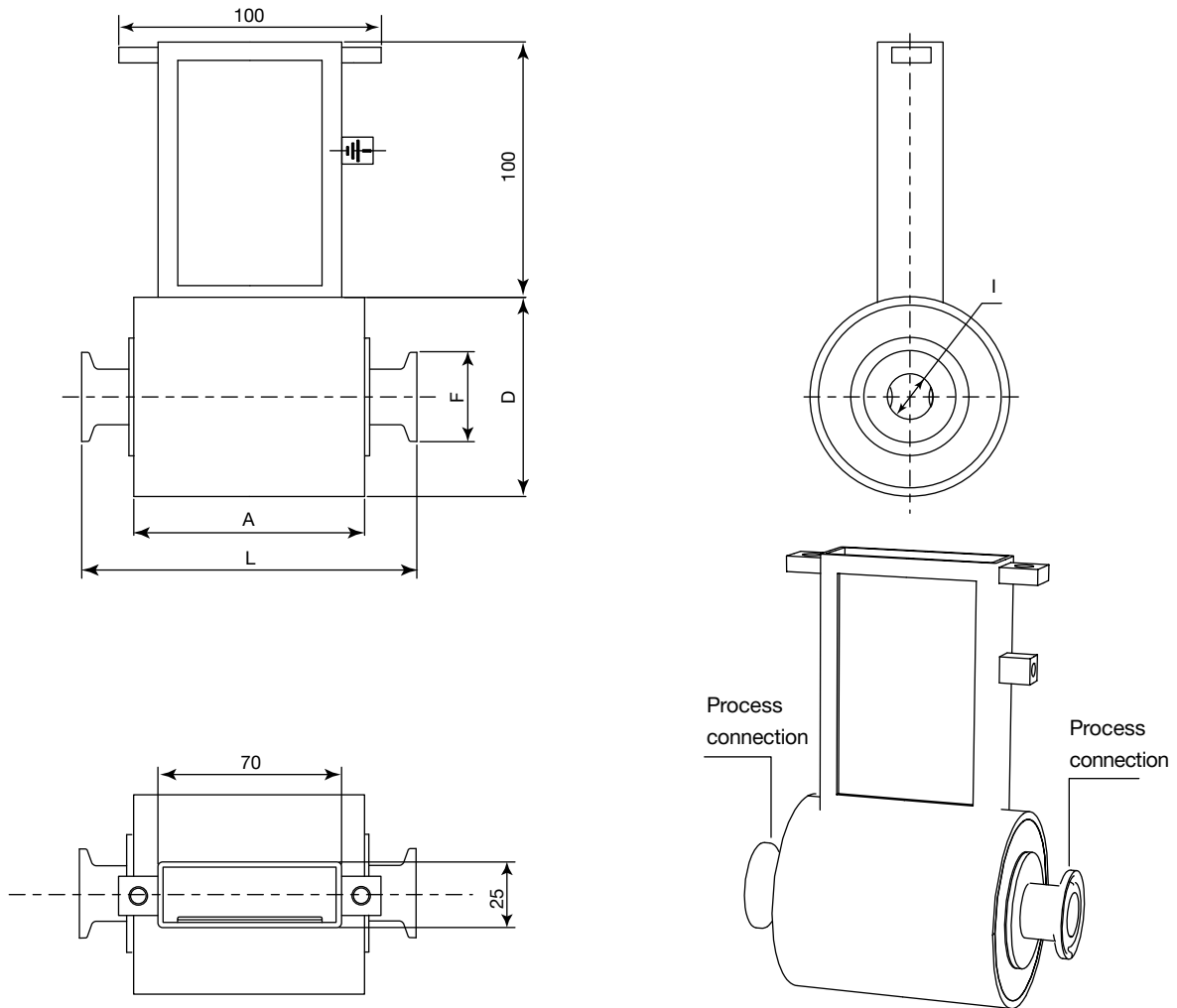


S055 compact or remote, with flanges PN16

DN	H	L	Standard	L1	Z	D1	D
25	185	200	EN1092-1	18	4x14	85	115
	182		ANSI 150 RF	16,3	4x15,9	79,4	107,9
32	203	200	EN1092-1	18	4x18	100	140
	192		ANSI 150 RF	17,9	4x15,9	88,9	117,5
40	213	200	EN1092-1	18	4x18	110	150
	202		ANSI 150 RF	19,5	4x15,9	98,4	127
50	228	200	EN1092-1	18	4x18	125	165
	222		ANSI 150 RF	21,1	4x19	120,7	152,4
65	248	200	EN1092-1	18	4x18	145	185
	245		ANSI 150 RF	24,3	4x19	139,7	177,8
80	263	200	EN1092-1	20	8x18	160	200
	258		ANSI 150 RF	25,9	4x19	152,4	190,5
100	283	250	EN1092-1	20	8x18	180	220
	287		ANSI 150 RF	25,9	8x19	190,5	228,6
125	313	250	EN1092-1	22	8x18	210	250
	315		ANSI 150 RF	25,9	8x22,2	215,9	254
150	344	300	EN1092-1	22	8x22	240	285
	341		ANSI 150 RF	27,4	8x22,2	241,3	279,4
200	399	350	EN1092-1	24	12x22	295	340
	401		ANSI 150 RF	30,6	8x22,2	298,5	342,9

Dimensions [mm] of Type S056 sensor fitting – compact version –
 Process connection according to Clamp ISO2852 or BS4825

NOTE: Dimensions of SE56 electronics



DN	A	L	D	Standard	F	I
03	77	128	76	Clamp ISO2852	34	12.7
				Clamp BS4825	25.4	9.5
06	77	128	76	Clamp ISO2852	34	12.7
				Clamp BS4825	25.4	9.5
10	77	128	76	Clamp ISO2852	34	12.7
				Clamp BS4825	25.4	9.5
15	77	128	76	Clamp ISO2852	34	17.2
				Clamp BS4825	25.4	15.85
20	77	128	76	Clamp ISO2852	34	21.3
				Clamp BS4825	50.5	22.2
25	100	180	76	Clamp ISO2852	50.5	22.6
				Clamp BS4825	50.5	22.2
40	100	180	89	Clamp ISO2852	50.5	35.6
				Clamp BS4825	50.5	34.9
50	100	180	114	Clamp ISO2852	64	48.6
				Clamp BS4825	64	47.6
65	100	180	140	Clamp ISO2852	77.5	60.3
				Clamp BS4825	77.5	60.3
80	100	200	140	Clamp ISO2852	91	72.9
				Clamp BS4825	91	72.9



Ordering chart

8051 / 8055 / 8056

Electronics for electromagnetic flowmeters - SE56		Item no.
Stainless steel		558 306
Aluminium		558 747

Inline Flow Meter				
Connection [inch]	Orifice [mm]	Flow Range	Lining	Item no.
ISO 228-1 Inline sensor fitting - S051 - Stainless steel body				
1/4	3	0...250 l/h	PTFE	554 321
3/8	6	0...1000 l/h	PTFE	553 065
1/2	10	0...3000 l/h	PTFE	553 374
3/4	15	0...6000 l/h	PTFE	553 481
1	20	0...12500 l/h	PTFE	553 539
DIN 2501 Inline sensor fitting - S055 - Carbon steel body				
1	25	0...18 m³/h	PP	553 540
1 1/2	40	0...45 m³/h	PP	553 542
2	50	0...72 m³/h	PP	553 485
2 1/2	65	0...120 m³/h	PP	553 393
3	80	0...180 m³/h	PP	553 394
4	100	0...280 m³/h	PP	553 489
6	150	0...640 m³/h	PP	557 512
BS 4825 Hygienic clamp Inline sensor fitting - S056 - Stainless steel body				
1/8	3	0...250 l/h	PTFE	559 786
1/4	6	0...1000 l/h	PTFE	553 325
3/8	10	0...3000 l/h	PTFE	554 350
1/2	15	0...6000 l/h	PTFE	553 533
3/4	20	0...12500 l/h	PTFE	553 534
1	25	0...18 m³/h	PTFE	553 535
1 1/2	40	0...45 m³/h	PTFE	553 536
2	50	0...72 m³/h	PTFE	553 537
2 1/2	65	0...120 m³/h	PTFE	553 538
3	80	0...180 m³/h	PTFE	559 791

Transmitter for electromagnetic-inductive flow sensor fittings

SE56

- Must be equipped with sensor fitting S051, S055 or S056 (see **Type 8051, 8055 and 8056** ▶)
- Continuous measurement or batch control
- High accuracy
- PROFIBUS DP, HART available



SE56 standard with display, housing in stainless steel



SE56 Basic



SE56 blind

The electronics Type SE56 (blind in compact version or with display in compact or remote version) connected to the magnetic flow sensor fitting Type S051, S054, S055 or S056 is designed for applications with liquids with a minimum conductivity of 5 $\mu\text{S}/\text{cm}$.

The device can be parameterize either with 3 keypads (version with display) or by computer via a serial interface.

As standard, the equipment is supplied with one or two transistor outputs and one digital input. As options, other features are available: such as high frequency output, current output, PROFIBUS DP, HART.

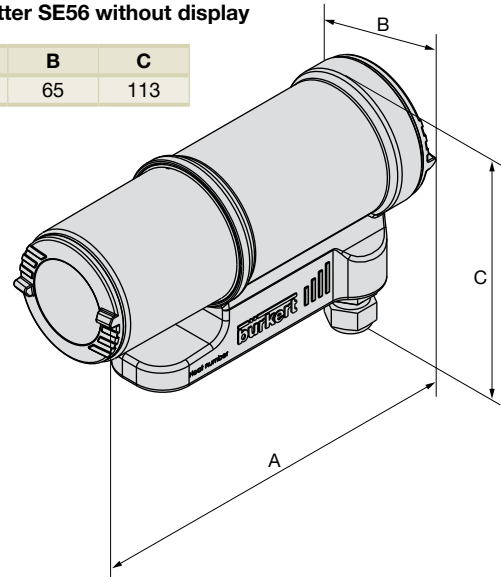
Technical data

General data - transmitter SE56 standard with display	
Housing materials	Die casting aluminium or stainless steel 304 electro-polish
Display	Graphic display 8 lines x 16 Characters, 128x64 pixels with back light
Keyboard	3 membrane keys
Electrical connection	6 cable glands PG11
Electrical data	
Power supply	90...265 V AC - 44 Hz...66 Hz
Power consumption	Max. 25 VA
Cable length	Max. 20 m (distance between sensor fitting and electronics)
Input circuit	1 digital, selectable function
Outputs	
Transistor	2 outputs, selectable open collector as pulse/frequency (1250 Hz, 100 mA, 40 V DC) or alarm (adjustable usage)
Current	1 output, 4...20 mA - RL = 1000 Ω (+ a second output, on request)
Serial interface (on request)	RS 485, RS232, PROFIBUS DP or HART
Velocity range	0.4...10 m/s
Measurements tolerance	Flow rate (volume) = ± 0.05 % of reading Out 4/20 mA = ± 0.08 % of reading Frequency out = ± 0.08 % of reading
Measurement deviation¹⁾	± 0.2 % of reading (see diagram)
Repeatability	± 0.1 % of reading
Galvanic isolation	All the input/outputs are galvanically isolated from power supply
Data storage	An EEPROM stores the measured values (in case of power failure)

Dimensions [mm]

Transmitter SE56 without display

A	B	C
184	65	113



Special functions	Bidirectional measure; Dual measurement range; Diagnostic function; Empty pipe detection Remote configuration (for connection to PC or hand terminal through remote configuration tool kit); Batch function
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Environment	
Ambient temperature	Operating and storage -20...+60 °C
Relative humidity	≤ 85 %, without condensation
Height above sea level	-200...6000 m
Standards, directives and certifications	
Protection class	Class I, IP67, category of installation II
Standards and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)

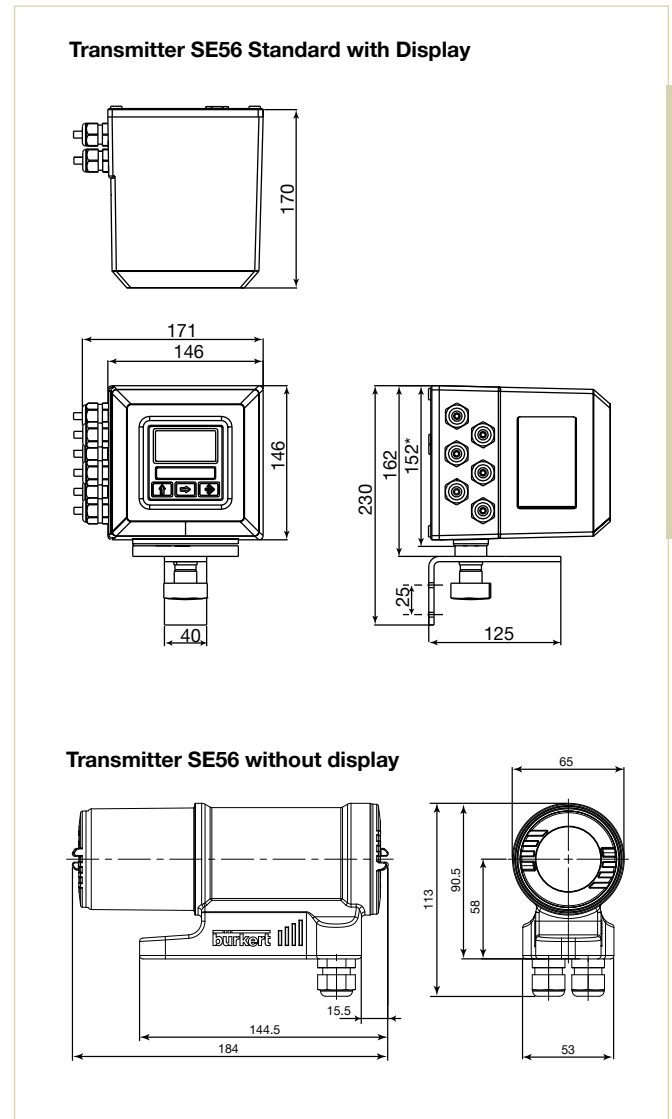
¹⁾ under reference conditions: water temperature = 20 °C, ambient temperature = 25 °C, constant flow rate during the test, liquid speed > 1 m/s

Technical data continued

General data - transmitter SE56 blind	
Materials	
Housing	Stainless steel
Cover	PPS
Seal	EPDM
Display	None
Parameterization	Through remote configuration tool kit (accessories Article no. 559374)
Electrical connection	2 cable glands PG9
Electrical data	
Power supply	20...30 V DC
Power consumption	Max. 10 W
Input	1 digital, selectable function
Outputs	
Transistor	2 outputs, selectable open collector as pulse/frequency (1250 Hz, 100 mA, 40 V DC) or alarm (adjustable usage)
Current	1 output, 4...20 mA - RL = 800 Ω passive
Serial interface (on request)	RS 485 or PROFIBUS DP
Measurement deviation¹⁾	±0.2 % of reading (see diagram)
Repeatability	±0.1 % of reading
Galvanic isolation	All the input/outputs are galvanically isolated from power supply
Data storage	An EEPROM stores the measured values (in case of power failure)
Special functions	Bidirectional measure; Diagnostic function; Empty pipe detection; Remote configuration (for connection to PC or hand terminal); Batch function
Velocity range	0.4...10 m/s
Environment	
Ambient temperature	Operating and storage -20...40 °C
Relative humidity	≤ 85 %, without condensation
Height above sea level	-200...6000 m
Standard	
Protection	Class I, IP67, category of installation II
Standard	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)


















¹⁾ under reference conditions: water temperature = 20 °C, ambient temperature = 25 °C, constant flow rate during the test, liquid speed > 1 m/s

Dimensions [mm]



Ordering chart

SE56

Description	Power supply	Output	Body material	Electrical connection	Article no.
Standard compact version with display	90...265 V AC	2 transistors	Aluminium	6 cable glands	558745 
			Stainless steel	6 cable glands	559780 
		2 transistors + 4...20 mA	Aluminium	6 cable glands	558747 
			Stainless steel	6 cable glands	558306 
Standard wall-mounting version with display	90...265 V AC	2 transistors	Aluminium	6 cable glands	559781 
			Stainless steel	6 cable glands	558310 
		2 transistors + 4...20 mA	Aluminium	6 cable glands	558750 
			Stainless steel	6 cable glands	558308 
Basic compact version with display	90...265 V AC	2 transistors	Nylon	3 cable glands	562439 
		2 transistors + 4...20 mA	Nylon	3 cable glands	562440 
	12...60 V DC	2 transistors	Nylon	3 cable glands	562443 
		2 transistors + 4...20 mA	Nylon	3 cable glands	562444 
Basic compact version without display	90...265 V AC	2 transistors	Nylon	3 cable glands	562441 
		2 transistors + 4...20 mA	Nylon	3 cable glands	562442 
	12...60 V DC	2 transistors	Nylon	3 cable glands	562445 
		2 transistors + 4...20 mA	Nylon	3 cable glands	562446 
Blind compact version	20...30 V DC	up to 4 transistors	Stainless steel	2 cable glands	559132 
		up to 4 transistors + 4...20 mA	Stainless steel	2 cable glands	559133 
		up to 4 transistors + PROFIBUS DP	Stainless steel	2 cable glands	559134 

Note:

The SE56 transmitter and the selected S051, S055 or S056 sensor fitting must be ordered separately

Accessories

Description	Article no.
Remote configuration tool kit	559374 

Positive displacement low flow sensor

8077

- For highly viscous fluids
- Value indication, monitoring, transmitting, On/Off control and batch control in combination with different transmitters



This positive displacement sensor is specially designed for measurement or batch control of highly viscous fluids like glue, honey or oil. It allows an easy connection to transmitters like type 8025 and 8619 for more functionality.

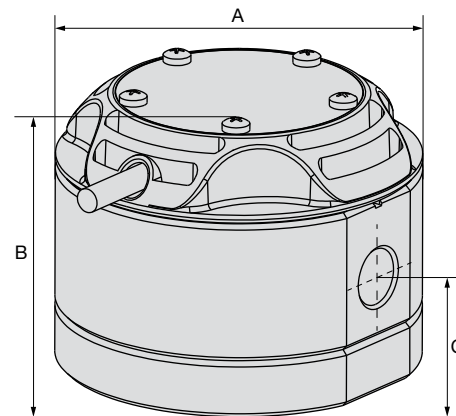
The design of this low flow sensor is based on the oval rotor principle. This has proven to be a reliable and highly accurate volumetric method of measuring flow. Exceptional repeatability and high accuracy over a wide range of viscosities and flowrates are features of that design. The low pressure drop and high pressure rating make it suitable for both gravity and pump (in-line) applications.

All sensors provide Open Collector NPN frequency output and frequency output on Reed contact via 1 meter 5-wire cable with open ends.

Technical data

General data	
Compatibility	With Type 8025 Universal transmitter/batch controller (see Type 8025 ▶ or corresponding data sheet Type 8025 ▶) or Typ 8619 multiCELL transmitter/Controller (see Type 8619 ▶ or corresponding data sheet Type 8619 ▶)
Materials	
Electronic module	PP (20 % glass fiber)
Tag plate	Aluminium
Wetted parts materials	
Body	Aluminium, stainless steel 316L (1.4401)
Rotor	Stainless steel 316L (1.4401)
Shaft	Stainless steel 316L (1.4401)
Seal	FEP/PTFE
Electrical connections	5-wire cable, 1 m length
Environment	
Ambient temperature	-15...+60 °C (operating and storage)
Relative humidity	≤85 %, non condensated
Complete device data	
Process connection	Thread 1/8; 1/4 (G or NPT)
Measuring range	0.5...500 l/h (depends on the version)
Fluid temperature max.	
Aluminium body	-20...+80 °C
Stainless steel body	-20...+120 °C
Fluid pressure max.	
Aluminium body:	55 bar
Stainless steel body:	55 bar (550 bar on request)
Viscosity	1 Pa.s. max. (higher on request)

Dimensions [mm]



A	B	C
74	59	25

Max. particle size	75 mm - To prevent damage from dirt or foreign matter, we strongly recommend the installation of a 75 mm (200 mesh) strainer as close as possible to the inlet side of the meter.
Measurement deviation	± 1 % of Reading (if "standard" K-factor is used) ± 0.5 % of Reading (if "specific" K-factor is used, on label of the product)
Repeatability	≤0.03 % of Reading
Electrical data	
Sensor type	Hall effect sensor or Reed contact
Current consumption	≤9 mA (Hall effect sensor)
Output frequency	
Hall effect sensor	Open collector, NPN, max. 25 mA, 4.5...24 V DC
Reed contact	Switching voltage 30 V DC, max. current, 0.5 A
Standard K-factor	
0.5...100 l/h	1000 pulses/l
15...500 l/h	400 pulses/l

Technical data continued

Standards, directives and certifications	
Protection class	IP67, IP66, NEMA 6
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Pressure	Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ¹⁾

Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

1) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).

Ordering chart

Process connection	Flow range		Body material	Max. pressure	Rotor / shaft material	Seal	Article no.		
	>5 mPa.s	<5 mPa.s							
G 1/8	0.5...100 l/h (0.13...26.4 gph)	2...100 l/h (0.53...26.4 gph)	Aluminium	55 bar	Stainless steel	FEP/PTFE	567202		
			Stainless steel	55 bar	Stainless steel	FEP/PTFE	567203		
NPT 1/8	0.5...100 l/h (0.53...26.4 gph)	2...100 l/h (0.53...26.4 gph)	Aluminium	55 bar	Stainless steel	FEP/PTFE	567204		
			Stainless steel	55 bar	Stainless steel	FEP/PTFE	567205		
G 1/4	0.5...100 l/h (0.13...26.4 gph)	2...100 l/h (0.53...26.4 gph)	Stainless steel	55 bar	Stainless steel	FEP/PTFE	567206		
			15...500 l/h (4.00...132 gph)	40...500 l/h (10.56...132 gph)	Stainless steel	55 bar	Stainless steel	FEP/PTFE	567207
			15...500 l/h for high viscosity ²⁾		Stainless steel	55 bar	Stainless steel	FEP/PTFE	567208
NPT 1/4	0.5...100 l/h (0.53...26.4 gph)	2...100 l/h (0.53...26.4 gph)	Stainless steel	55 bar	Stainless steel	FEP/PTFE	567209		
			15...500 l/h (4.00...132 gph)	40...500 l/h (10.56...132 gph)	Stainless steel	55 bar	Stainless steel	FEP/PTFE	567210
			15...500 l/h for high viscosity ²⁾		Stainless steel	55 bar	Stainless steel	FEP/PTFE	567211

2) >1 Pa.s.

Accessories

Description	Article no.
Set of two rotors in stainless steel for measuring range 0.5...100 l/h	567766
Set of two rotors in stainless steel for measuring range 15...500 l/h	567767
FEP/PTFE seal for measuring range 0.5...100 l/h	567768
FEP/PTFE seal for measuring range 15...500 l/h	567769
Set of plastic cap with hall sensor and Reed contact	567770

Flowmeter for water continuous measurement

8081

- Ultrasonic flowmeter using transit time method
- Dynamic range $\geq 1:250$
- Low pressure drop
- No flow-settling section necessary in the inlet and/or outlet



The Type 8081 ultrasonic flowmeter is intended for the measurement of water flows which may be slightly charged with contaminants. It consists of an electronic module and a brass fitting with a built-in measuring tube. It enables a control loop to be established. The electrical connection is made via a 5 pin M12 fixed connector.

The flowmeter features, depending on the version:

- A pulse output or
- A pulse output and a 4...20 mA current output.

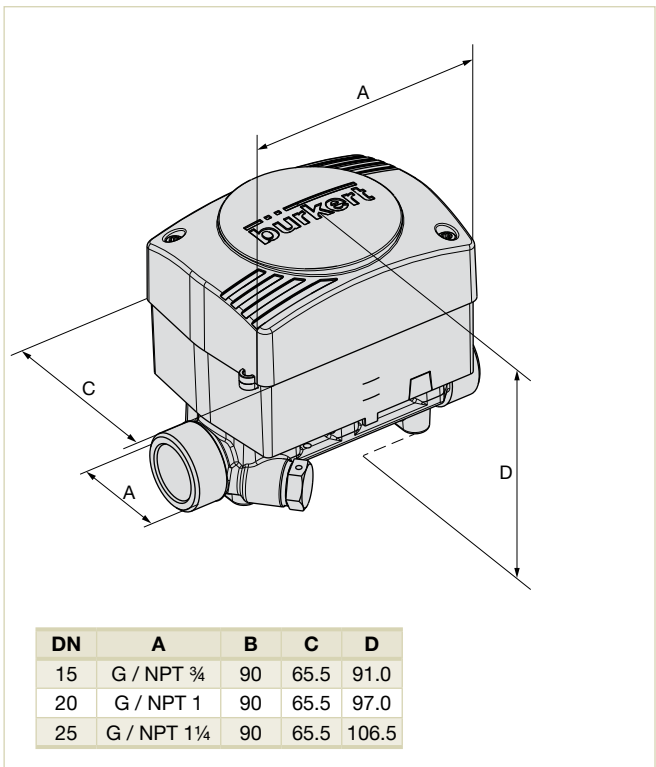
Each version is available for 5 flow ranges:

- Model QN 0.6 DN15: 0.06...20 l/min
(nominal flow rate 0.6 m³/h namely 10 l/min)
- Model QN 1.5 DN15: 0.1...50 l/min
(nominal flow rate 1.5 m³/h namely 25 l/min)
- Model QN 2.5 DN20: 0.16...82 l/min
(nominal flow rate 2.5 m³/h namely 41 l/min)
- Model QN 3.5 DN25: 0.6...116 l/min
(nominal flow rate 3.5 m³/h namely 58 l/min)
- Model QN 6.0 DN25: 1...200 l/min
(nominal flow rate 6.0 m³/h namely 100 l/min)

Technical data

General data	
Process connection	G or NPT External thread; ¾, 1 or 1¼
Materials	
Housing, cover	PPS
Fixed connector M12	PA
Seal	Silicone
Materials wetted parts	
Fitting	Brass
Measuring tube	PES
Seal	EPDM
Electrical connection	5 pin M12 male fixed connector for female 5 pin M12 cable plug (not provided)
Connection cable	1.5 mm ² max. cross-section
Complete device data (fitting + electronic module)	
Pipe diameter	DN15...DN25
Measuring range	0.06...200 l/min
Measuring element	2 ultrasound emitter-receiver cells
Fluid temperature	+5...+90 °C

Dimensions [mm]




Fluid pressure max.	PN16
Accuracy (Flowrate)	≤ 0.01 % of full scale ¹⁾ + 2 % of measuring value ²⁾ (see measurement deviation diagram)
Repeatability	≤ 1 %

1) Full scale, see flow range on measurement deviation diagram

2) Under reference conditions i.e. measuring fluid = water, ambient and water temperature = +20 °C.

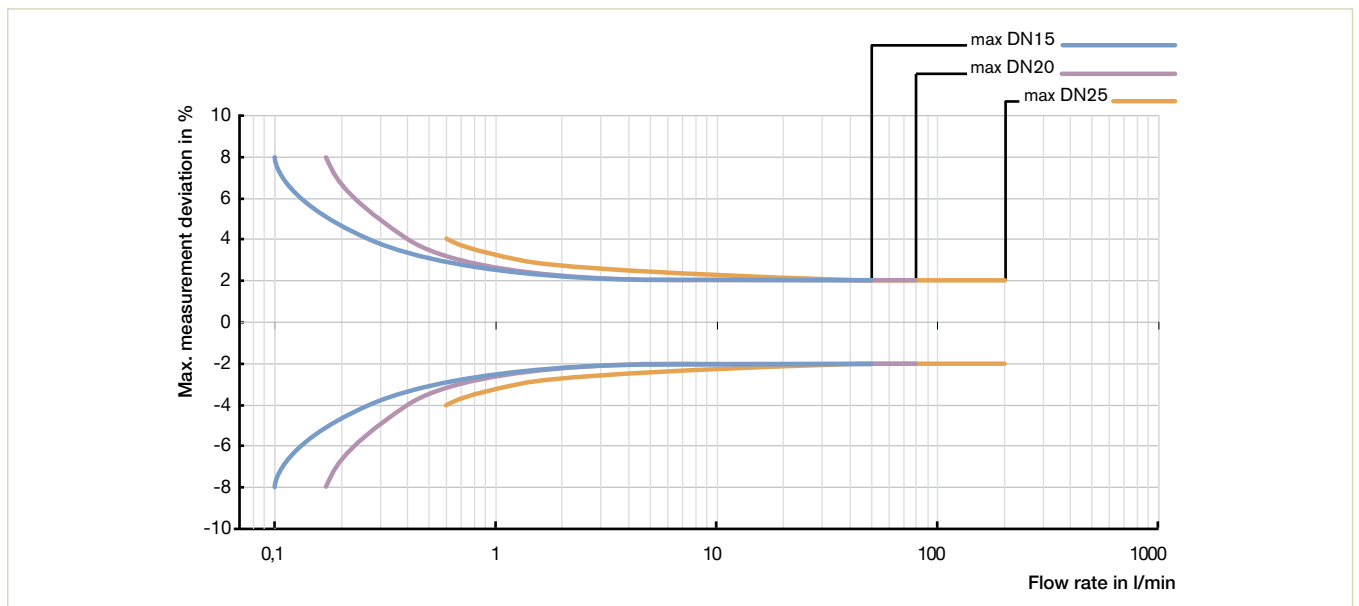
Technical data continued

Electrical data	
Power supply (V+)	12...36 V DC
Reversed polarity of DC	Protected
Current consumption	Own consumption: <4 mA Consumption with load: <1 A
Output	
Pulse (transistor)	Protected against overvoltage, polarity reversals and short circuit
Version without current output	NPN (as default setting) or PNP (on request), open collector, 700 mA max., 5 mA min., NPN output: 0.2...36 V DC
Version with current output	PNP (as default setting) or NPN (on request), open collector, 700 mA max., 5 mA min., PNP output: supply voltage (V+)
Current	4...20 mA (sourcing mode and PNP transistor as default setting, sinking mode and NPN transistor on request) Loop resistance max. : 1100 Ω at 36 V DC 610 Ω at 24 V DC; 100 Ω at 12 V DC
Scaling	
Pulse (Transistor)	K-factor: 500 Pulse/Litre (QN 0.6 and 1.5) 200 Pulse/Litre (QN 2.5...3.5) 100 Pulse/Litre (QN 6.0)
Current	4 mA correspond to 0 l/min and 20 mA correspond to Q_{max} of flow range (by default)
Environment	
Ambient temperature	+5...+55 °C (operating and storage)
Relative humidity	≤80 %, without condensation

Standards, directives and certifications	
Protection class	IP65 with M12 cable plug plugged-in and tightened
Standard and directives 	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Pressure	Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ¹⁾
Certificates (on request)	Test report 2.2; Calibration certificate
1) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).	
Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤25
Fluid group 2, article 4, §1.c.i	DN ≤32, or PS*DN ≤1000
Fluid group 1, article 4, §1.c.ii	DN ≤25 or PS*DN ≤2000
Fluid group 2, article 4, §1.c.ii	DN ≤200 or PS ≤10 or PS*DN ≤5000





















8081

Measurement deviation diagram





Ordering chart

8081

Model	DN [mm]	Flow range	Process connection	Outputs	Article no.
QN 0.6	15	0.06...20 l/min	External thread G 3/4	NPN-Pulse	560131 
				PNP-Pulse + 4...20 mA as source	560113 
			External thread NPT 3/4	NPN-Pulse	560612 
				PNP-Pulse + 4...20 mA as source	560617 
QN 1.5	15	0.1...50 l/min	External thread G 3/4	NPN-Pulse	559865 
				PNP-Pulse + 4...20 mA as source	559868 
			External thread NPT 3/4	NPN-Pulse	560613 
				PNP-Pulse + 4...20 mA as source	560618 
QN 2.5	20	0.16...82 l/min	External thread G 1	NPN-Pulse	559866 
				PNP-Pulse + 4...20 mA as source	559869 
			External thread NPT 1	NPN-Pulse	560614 
				PNP-Pulse + 4...20 mA as source	560619 
QN 3.5	25	0.6...116 l/min	External thread G 1 1/4	NPN-Pulse	559867 
				PNP-Pulse + 4...20 mA as source	559870 
			External thread NPT 1 1/4	NPN-Pulse	560615 
				PNP-Pulse + 4...20 mA as source	560620 
QN 6.0	25	0.4...200 l/min	External thread G 1 1/4	NPN-Pulse	560132 
				PNP-Pulse + 4...20 mA as source	560114 
			External thread NPT 1 1/4	NPN-Pulse	560616 
				PNP-Pulse + 4...20 mA as source	560621 

Accessories

Description	Article no.
5 pin M12 female cable plug with plastic threaded locking ring	917116 
5 pin M12 female cable plug moulded on cable (2 m, shielded)	438680 

FLOWave SAW-Flowmeter

8098
FLOWave

- No parts in the measurement tube
- Conform to hygienic requirements, CIP/SIP capable
- Ideal for low conductivity or non conductive fluids
- Digital communication
- Compact, low weight and energy-efficient



The flowmeter Type 8098 is a product of the FLOWave range. It uses the SAW (Surface Acoustic Waves) technology and is at first designed for the use in applications requiring that all hygienic conditions are fulfilled.

FLOWave offers a range of features, including advantages by flexibility, cleanability (e.g. CIP and SIP), compact size, light weight, easy installation and handling, and is compliant with numerous standards.

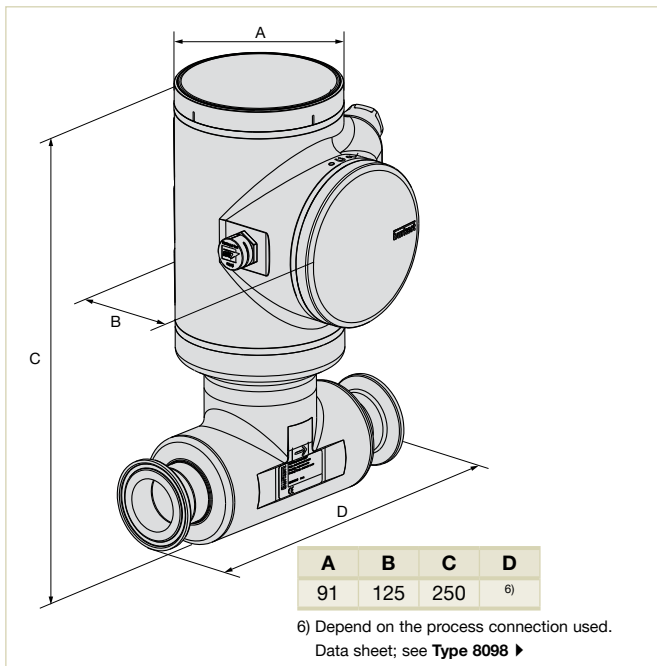
Technical data

General data	
Fluids	Non dangerous liquids complying with article 4, §1 of 2014/68/EU directive (see "Standard and directives" on page 575 ▶)
Process connection/pipe size acc. to	
DIN 32676 series B (ISO 1127)	DN15, DN25, DN40 and DN50
DIN 32676 series C (ASME BPE)	¾", 1", 1½", 2"
DIN 32676 series A (DIN 11850)	DN15, DN25, DN40 and DN50
DIN 11864-2 form A series A or B	Aseptic collar flange (BF) ¹⁾ : DN15, DN25, DN40 and DN50
DIN 11864-2 form A series C	Aseptic collar flange (BF) ¹⁾ : ¾", 1", 1½", 2"
DIN 11864-3 form A series A or B	Aseptic collar flange (BKS) ²⁾ : DN25, DN40 and DN50
DIN 11864-3 form A series C	Aseptic collar flange (BKS) ²⁾ : ¾", 1", 1½" and 2"
SMS 3017 (SMS 3008)	DN25, DN40, DN50
Materials	
Wetted parts	
Measurement tube, Clamp	Stainless steel 316L/1.4435 BN2
Unwetted parts	
Transmitter and sensor housings	Stainless steel 304/1.4301
Seal / Display	VMQ ³⁾ silicone / Float glass, st. st. 304/1.4301
Cable glands and blind plugs	Nickel plated brass and black POM ⁴⁾ or stainless steel and PA6
4 pin M12 female connector and screwed plug	Stainless steel
5 pin M12 male connector and screwed plug	Nickel plated brass or stainless steel
Pressure compensating element	Diaphragm in ePTFE, o-ring in silicone 60 Shore A, body in stainless steel
Name plate	Matt white top coated polyester

1) BF = Bundflansch
3) VMQ= Methyl-Vinyl-Silikon

2) , BKS= Bundklemmstutzen
4) POM= Polyoxymethylen

Dimensions [mm]



Surface finish⁹⁾	
Measurement tube (inner surface)	Ra < 0.8 µm or Ra < 0.4 µm (electro polished)
Measurement tube (outer surface) and housing	Ra < 1.6 µm (excluding welding seams)
Weight [approx. - kg]	
Clamp	DN15/¾" 2 DN25/1" 2.2 DN40/1½" 3 DN50/2" 3.2
Flange	2.4 2.7 3.6 3.8
Display	2.4", monochrome graphic (240 x 160 pixel) German, English, French languages
Wi-Fi module (Can be used in conjunction with the display. Approved for Europe, USA and Canada)	Wi-Fi module (wireless standards 802.11b/g/n) with integrated web server. Offers the same features as the display. Transmission power: approx. 50 mW Radio range limited to approx. 10 m. Integration into existing Wi-Fi infrastructure possible. Requirements: - Windows 7, 8.1 or 10: IE11, Edge, Google Chrome, from version 53 - Android with Google: Chrome, from version 53 - Apple: Safari, from iOS 9.3.5

5) According to ISO 4288

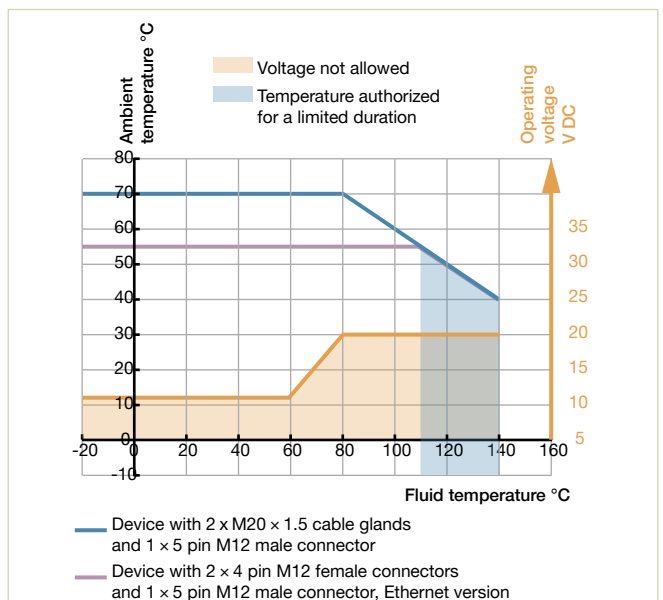
Technical data continued

Electrical connection	2 x M20 x 1.5 cable glands and 1 x 5 pin M12 male fixed connector (A-coded) or 2 x 4 pin M12 female fixed connectors (D-coded) and 1 x 5 pin M12 male fixed connector (A-coded)
Recommended cable for	
Cable glands	0.2...1.5 mm ² cross-section
-in nickel plated brass	-cable with maximum operating temperature greater than +90 °C; 5...14 mm diameter, shielded cable,
-in stainless steel	-cable with maximum operating temperature greater than +100 °C; 6...12 mm diameter, shielded cable
5 pin M12 male connector (A-coded)	Cable with maximum operating temperature greater than +80 °C; 3...6.5 mm diameter, shielded cable, 0.75 mm ² cross-section to connect to 5 pin M12 female connector (A-coded, not supplied)
4 pin M12 female connector (D-coded)	Cable with maximum operating temperature greater than +90 °C; 5e / CAT-5 min. category, 100 m max. length, shielded conductor with minimum STP
Volume flow rate measurement¹⁾	
Measuring range	0...7 m ³ /h to 0...90 m ³ /h (see ordering chart)
Measurement deviation from 10 % of F.S. ²⁾ up to F.S. ²⁾	± 0.4 % of the Reading
from 1 % of F.S. ²⁾ up to 10 % F.S. ²⁾	± 0.08 % of F.S. ²⁾
Repeatability from 10 % of F.S. ²⁾ up to F.S. ²⁾	± 0.2 % of the Reading
from 1 % of F.S. ²⁾ up to 10 % F.S. ²⁾	± 0.04 % of F.S. ²⁾
Refresh time	40 ms; 80 ms; 130 ms selectable
Temperature measurement	
Measuring range	-20...+140 °C
Measurement deviation for T° ≤ 100 °C	± 1 °C
100 °C < T° < 140 °C	± 1.5 %
Refresh time	1 s
Additional measurement (optional)	- ATF: acoustic transmission factor - DF: density factor
Fluid temperature	-20...+110 °C
(The maximum fluid temperature can be restricted by the ambient operating temperature)	Max. conditions for sterilisation process: up to +140 °C for 60 min.
Maximum temperature gradient	10 °C/s (measured by the integrated sensor on the device)
Fluid nominal pressure max for	
DN15, DN25, ¾", 1", 1 ½"	PN25
DN40	-PN25 for DIN 11866 series A (DIN 11850)- & SMS 3008 pipe -PN16 DIN 11866 series B (ISO 1127) pipe
DN50, 2"	PN16
Electrical data	
Operating voltage	12...35 V DC, filtered and regulated, Tolerance: ± 10 %
(The minimum voltage to be supplied depends on the fluid temperature and on the ambient operating temperature)	Connection to main supply: permanent (through external SELV (Safety Extra Low Voltage) and LPS (Limited Power Source) power supply)
Reversed polarity of DC	Protected
Power consumption (without any consumption of output)	Max. 5 W (for device with 2 x M20 x 1.5 cable glands and 1 x 5 pin M12 connector) or max. 8 W (for device with 2 x 4 pin M12 connectors and 1 x 5 pin M12 connector, Ethernet version) or max. 9 W (for device with 2 x 4 pin M12 connectors and 1 x 5 pin M12 connector, Ethernet version, with display and Wi-Fi module)
Power Source (not supplied)	Limited power source according to UL/EN 60950-1 standards or limited energy circuit according to UL/EN 61010- §9.4
Outputs	3 (1 digital, 1 analogue and 1 configurable: digital or analogue)

Digital outputs	Overload information (through diagnostic software function)
Transistor	Type: NPN or PNP (wiring dependent), open collector, galvanically isolated; Operating modes: pulse (by default), On/Off, threshold, frequency (user configurable) 0...2 kHz, 5...35 V DC, 700 mA max., Max. pulse duration: 65 ms; Protected against polarity reversals of DC and overloads
Frequency resolution	0.05 Hz over 0...2 kHz range
Analogue output	Open loop detection (through diagnostic software function)
Current	4...20 mA; 3.6 mA or 22 mA to indicate an error (only if 4...20 mA scale selected); Galvanically isolated Max. loop impedance: 1300 Ω at 35 V DC, 1000 Ω at 30 V DC, 700 Ω at 24 V DC, 450 Ω at 18 V DC
4...20 mA output uncertainty	± 0.04 mA
4...20 mA output resolution	0.8 µA
Environment conditions	
Ambient temperature	Depends on the fluid temperature (see diagram)
Operation	- 10...+70 °C (for device with 2 x M20 x 1.5 cable glands and 1 x 5 pin M12 connector) or - 10...+55 °C (for device with 2 x 4 pin M12 female connectors and 1 x 5 pin M12 connector, Ethernet version)
Storage	-20...+70 °C
Relative humidity	<85 %, without condensation
Height above sea level	Max. 2000 m
Operating condition	Continuous
Equipment mobility	Fixed
Use	Indoor and outdoor (Protect the device against electromagnetic interference, ultraviolet rays and, when installed outdoors, against the effects of climatic conditions)
Pollution degree	Degree 2, according to UL/EN 61010-1
Installation category	Category I, according to UL/EN 61010-1

- 1) Under reference conditions i.e. measuring fluid = water free from gas bubbles and solids, ambient and water temperature = 23 °C, and standard refresh time 130 ms, while maintaining the minimum inlet (40 x DN) and outlet (1 x DN) distances and the appropriate internal diameter of the pipes. Deviation from reference conditions can be adjusted through the use of a built-in K factor adjustment or Teach in Procedure.
- 2) F.S. = of full scale (see ordering chart)

Ambient and fluid temperatures



Technical data continued

Standards, directives and certifications


Protection class¹⁾ IP65, IP67 (according to IEC/EN 60529), NEMA 4X (according to NEMA250), if the product is wired and if the cable glands are tightened and the covers are screwed tight. Unused cable glands must be sealed with the stopper gaskets provided (mounted upon delivery of the product). An unused M12 fixed connector must be protected by the screwed plug.

Standard and directives CE The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)

Pressure Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU²⁾

Certificates EHEDG (Type EL - CLASS I)³⁾; 3A (28-05); FDA certificate; Inspection certificate 3.1; Certification of compliance ASME BPE; Calibration certificate; On request: ECR1935/2004 declaration; Test report 2.2; Certification of conformity for the surface quality DIN 4762, EN ISO 4287, EN ISO 4288; Certification of conformity for passivating and electropolishing processes

Certification

UL-Listed for US and Canada  UL 61010-1 + CAN/CSA-C22.2 No.61010-1

PROFINET Pending

EtherNet/IP  (pending)

EtherCAT  (pending)

1) Not evaluated by UL

2) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).

Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

3) The EHEDG compliance is only valid if used in combination with gaskets from Combit International B.V.

Industrial communication (Ethernet version)

Supported network protocols Modbus TCP, PROFINET, EtherNet/IP or EtherCAT

LEDs

- 2 Link/Act LEDs (green)
- 2 Link LEDs (yellow)

Electrical connection 2 ports 4 pin M12 (D-coded)

Modbus TCP protocol

Protocol Internet protocol, version 4 (IPv4)

Network topology

- Tree
- Star

IP configuration

- Line (open daisy chain)
- Static IP address
- Not supported: BOOTP (Bootstrap Protocol); DHCP (Dynamic Host Configuration)

Transmission speed 10 or 100 MBit/s

PROFINET protocol

PROFINET IO specification V2.3

Network topology

- Tree
- Star
- Ring (closed daisy chain)
- Line (open daisy chain)

Network management

- LLDP (Link Layer Discovery Protocol)
- SNMP V1 (Simple Network Management Protocol)
- MIB (Management Information Base)

IP configuration

- DCP (Discovery and Configuration Protocol)
- Manual (Device naming and IP setting)

Transmission speed 100 MBit/s full duplex

Maximum supported conformance class CC-B

Media Redundancy (for ring topology) MRP client is supported

GSDml file Available at / Download from: www.burkert.com

EtherNet/IP protocol

Protocol Internet protocol, version 4 (IPv4)

Network topology

- Tree
- Star
- Ring (closed daisy chain)
- Line (open daisy chain)

IP configuration

- Static IP address
- BOOTP (Bootstrap Protocol)
- DHCP (Dynamic Host Configuration Protocol)

Transmission speed 10 or 100 MBit/s

Duplex modes Half duplex, full duplex, auto-negotiation

MDI modes (Medium Dependant Interface) Auto-MDIX

Predefined standard objects Identity, Message Router, Assembly, Connection Manager, DLR, QoS, TCP/IP Interface, Ethernet Link object

EDS file Available at / Download from: www.burkert.com

EtherCAT protocol⁴⁾

Industrial Ethernet interface X1, X2 X1: EtherCAT IN, X2: EtherCAT OUT

Maximum number of cyclic input/output data 512 bytes in total

Maximum number of cyclic input data 1024 bytes

Maximum number of cyclic output data 1024 bytes

Acyclic communication (CoE)

- SDO
- SDO master-slave
- SDO slave-slave (depends on master capacity)

Type Complex slave

Fieldbus Memory Management Units (FMMUs) 8

Sync Managers 4

Transmission speed 100 Mbit/s

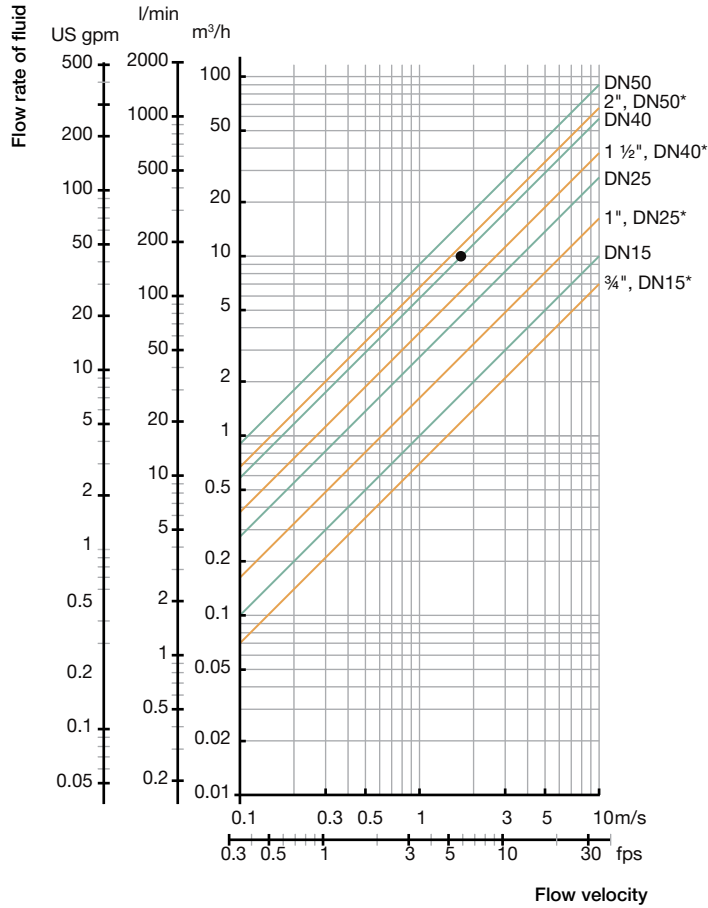
4) EtherCAT® is a registered trademark and patented technology, licensed by Beckhoff Automation GmbH.

Diagram flow rate/velocity/DN

Example:

- Flow rate: 10 m³/h
- Ideal flow velocity: 1...3 m/s

For these specifications, the diagram indicates a pipe size of DN40



*for:

DIN 32676 series C (ASME BPE)
 DIN 32676 series A (DIN 11850)
 SMS 3017
 DIN 11864-2 form A series A
 DIN 11864-3 form A series A





















Measurement deviation per measurement area

DN	Pipe standard	Flow velocity [m/s] in sensor tube	Flow velocity [m/s]		
			0.1	1	10
3/4" 15	ASME BPE DIN 11850	Volume flow rate range [m ³ /h]	0.07	0.7	7
			< ±0.08 % of F.S. ¹⁾ ±0.4 % of the Reading		
15	ISO 1127	Volume flow rate range [m ³ /h]	0.10	1.0	10
			< ±0.08 % of F.S. ¹⁾ ±0.4 % of the Reading		
1" 25 25	ASME BPE DIN 11850 SMS 3008	Volume flow rate range [m ³ /h]	0.14	1.4	14
			< ±0.08 % of F.S. ¹⁾ ±0.4 % of the Reading		
25	ISO 1127	Volume flow rate range [m ³ /h]	0.25	2.5	25
			< ±0.08 % of F.S. ¹⁾ ±0.4 % of the Reading		
1 1/2" 40 40	ASME BPE DIN 11850 SMS 3008	Volume flow rate range [m ³ /h]	0.35	3.5	35
			< ±0.08 % of F.S. ¹⁾ ±0.4 % of the Reading		
40	ISO 1127	Volume flow rate range [m ³ /h]	0.56	5.6	56
			< ±0.08 % of F.S. ¹⁾ ±0.4 % of the Reading		
2" 50 50	ASME BPE DIN 11850 SMS 3008	Volume flow rate range [m ³ /h]	0.64	6.4	64
			< ±0.08 % of F.S. ¹⁾ ±0.4 % of the Reading		
50	ISO 1127	Volume flow rate range [m ³ /h]	0.90	9.0	90
			< ±0.08 % of F.S. ¹⁾ ±0.4 % of the Reading		

1) F.S. = of full scale (see ordering chart)

Ordering chart

8098
FLOWave

Clamp and pipe size [mm]	Measurement tube (outer surface), housing	Measurement tube (inner surface)	Clamp Dimensions D1 x s-D2 (s = wall thickness)	Operating voltage	Maximal flow rate	Electrical connection	Display	Certifications		Article no.
								3 A (28-04)	EHEDG ¹⁾	
Clamp acc. to DIN 32676 series B (ISO 1127) process connection for pipe acc. to DIN 11866 series B (ISO 1127)										
15	1.6 µm	0.8 µm	21.3 x 1.6...50.5	12...35 V DC	10 m³/h	2 cable glands M20x1.5 + 1 male fixed connector M12	Yes	Yes	Yes	566187 
			21.3 x 1.6...34.0				Yes	Yes	No	566235 
			21.3 x 1.6...50.5				No	Yes	Yes	566191 
			21.3 x 1.6...34.0				No	Yes	No	566236 
	0.4 µm	21.3 x 1.6...50.5	Yes				Yes	Yes	566195 	
		21.3 x 1.6...34.0	Yes				Yes	No	566237 	
		21.3 x 1.6...50.5	No				Yes	Yes	566199 	
		21.3 x 1.6...34.0	No				Yes	No	566238 	
25	1.6 µm	0.8 µm	33.7 x 2.0...50.5	12...35 V DC	25 m³/h	2 cable glands M20x1.5 + 1 male fixed connector M12	Yes	Yes	Yes	566188 
							No	Yes	Yes	566192 
	0.4 µm	Yes					Yes	Yes	566196 	
		No					Yes	Yes	566200 	
40	1.6 µm	0.8 µm	48.3 x 2.0...64.0	12...35 V DC	56 m³/h	2 cable glands M20x1.5 + 1 male fixed connector M12	Yes	Yes	Yes	566189 
							No	Yes	Yes	566193 
	0.4 µm	Yes					Yes	Yes	566197 	
		No					Yes	Yes	566201 	
50	1.6 µm	0.8 µm	60.3 x 2.0...77.5	12...35 V DC	90 m³/h	2 cable glands M20x1.5 + 1 male fixed connector M12	Yes	Yes	Yes	566190 
							No	Yes	Yes	566194 
	0.4 µm	Yes					Yes	Yes	566198 	
		No					Yes	Yes	566202 	

1) The EHEDG compliance is only valid if used in combination with gaskets from Combifit International B.V.

Ordering chart

Clamp and pipe size [inch]	Measurement tube (outer surface), housing	Measurement tube (inner surface)	Clamp Dimensions D1 x s-D2 (s = wall thickness)	Operating voltage	Maximal flow rate	Electrical connection	Display	Certifications		Article no.
								3 A (28-04)	EHEDG ¹⁾	
Clamp acc. to ASME BPE (DIN 32676 series C) process connection for pipe acc. to DIN 11866 series C (ASME BPE)										
3/4	1.6 µm	0.8 µm	19.05 x 1.65...25.0	12...35 V DC	7 m³/h	2 cable glands M20x1.5 + 1 male fixed connector M12	Yes	Yes	Yes	566203
							No	Yes	Yes	566207
		0.4 µm					Yes	Yes	Yes	566211
							No	Yes	Yes	566215
1	1.6 µm	0.8 µm	25.4 x 1.65...50.5	12...35 V DC	14 m³/h	2 cable glands M20x1.5 + 1 male fixed connector M12	Yes	Yes	Yes	566204
							No	Yes	Yes	566208
		0.4 µm					Yes	Yes	Yes	566212
							No	Yes	Yes	566216
1 1/2	1.6 µm	0.8 µm	38.1 x 1.65...50.5	12...35 V DC	35 m³/h	2 cable glands M20x1.5 + 1 male fixed connector M12	Yes	Yes	Yes	566205
							No	Yes	Yes	566209
		0.4 µm					Yes	Yes	Yes	566213
							No	Yes	Yes	566217
2	1.6 µm	0.8 µm	50.8 x 1.65...64.0	12...35 V DC	64 m³/h	2 cable glands M20x1.5 + 1 male fixed connector M12	Yes	Yes	Yes	566206
							No	Yes	Yes	566210
		0.4 µm					Yes	Yes	Yes	566214
							No	Yes	Yes	566218

1) The EHEDG compliance is only valid if used in combination with gaskets from Combifit International B.V.

Accessories

Description	Article no.
Bürkert system bus (bÜS)-Interface	772426
Unlocking magnetic key	690309
5 pin M12 female straight cable plug with plastic threaded locking ring, to be wired	917116
5 pin M12 female and male straight cable plug moulded on cable (1 m, shielded)	772404
5 pin M12 female and male straight cable plug moulded on cable (3 m, shielded)	772405

Insertion fitting for flow or analytical measurement

- Universal fitting for Insertion measuring device in pure, aggressive or contaminated liquids
- Large range of process connections: DN06 to DN400 in PVC, PP, PVDF, PE, stainless steel, brass
- Transmitter available for:
 - Indication, Monitoring, Transmitting
 - On/Off control, Batch control

Example
S020 PVC



The fitting can be used to connect any Insertion device for a measurement in the pipe. e.g. for flow, pH, oxidation reduction potential (O.R.P) and conductivity measurement.

The fitting is available for paddle wheel and electromagnetic flowmeters and analytical measurement devices having a G 2 or a clamp connection.

Technical data

General data

Pipe diameter

G 2 flowmeter connection	DN06...DN400 ¹⁾
Clamp flowmeter connection	DN32...DN100

Fitting process connections

Metal	Internal or external thread, weld ends, clamp or flange
Plastic	True union, spigot or external thread

Materials

G 2 flowmeter connection	
Seal	FKM or EPDM
Body & adapter	Brass (CuZn ₃₈ Pb ₂) & stainless steel (316L - 1.4404) or all in PVC, PP, PVDF, PE or stainless steel (316L - 1.4404)
Clamp flowmeter connection	Stainless steel 316L

Surface finish

Clamp flowmeter connection	Ra < 0.8 µm
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Fluid data

Fluid temperature²⁾	0...+50 °C for fitting in PVC 0...+80 °C for fitting in PP -15...+100 °C for fitting in PVDF -15...+160 °C for fitting in stainless steel or brass
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Fluid pressure (max.)²⁾ See pressure/temperature diagram

Metal	PN16
Plastic	PN10

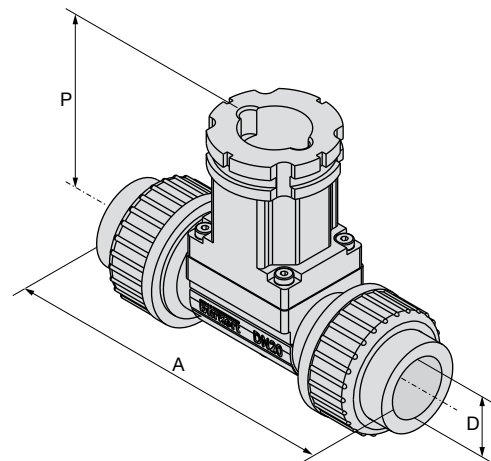
Environment

Ambient temperature	Temperature limits may depend on the inserted device. Refer to the relevant data sheet or instruction manual for more details
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1) Combination between fitting and measuring device is sometimes restricted to some DN.

2) Temperature and pressure limits may depend on the inserted device. Refer to the relevant data sheet or instruction manual and the Pressure/Temperature diagram of the fluid on next page. If the temperature or pressure ranges given for the adapter and the inserted device are different, use the most restrictive range.

Dimensions [mm]



True union process connection

DIN 8063 in PVC, DIN 16962 in PP or ISO 10931 in PVDF

DN	P	A	D
15	80.4	128.0	20.00
20	77.8	144.0	25.00
25	78.0	160.0	32.00
32	81.4	168.0	40.00
40	85.2	188.0	50.00
50	91.5	212.0	63.00

Note: short sensor version

Technical data continued

Standards, directives and certifications	
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Pressure	Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ¹⁾
Certificates	Inspection certificate 3.1 (acc. to EN-ISO 10204); Test report 2.2 (acc. to EN-ISO 10204); Certification of Conformity for the surface Quality (DIN4762-DIN4768-ISO/4287/1); 3 points Flow calibration certificate; FDA (with EPDM seal) - stainless steel fitting only
1) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).	
Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

Pressure/Temperature diagram

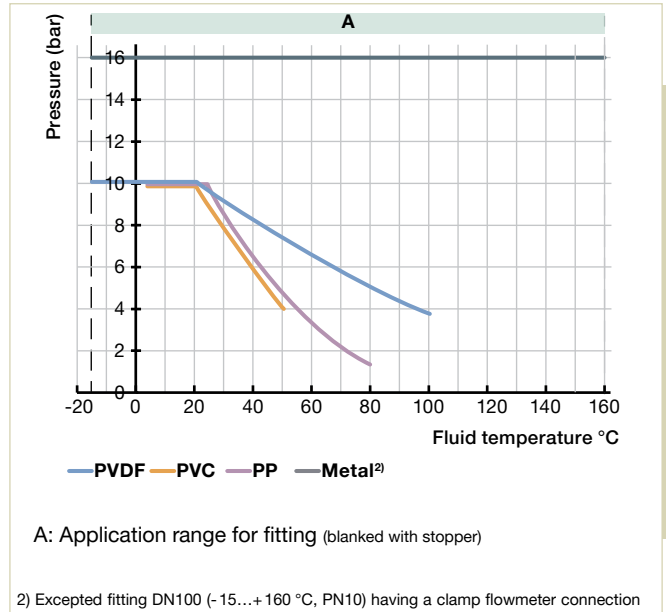


Diagram Flow/Velocity/DN

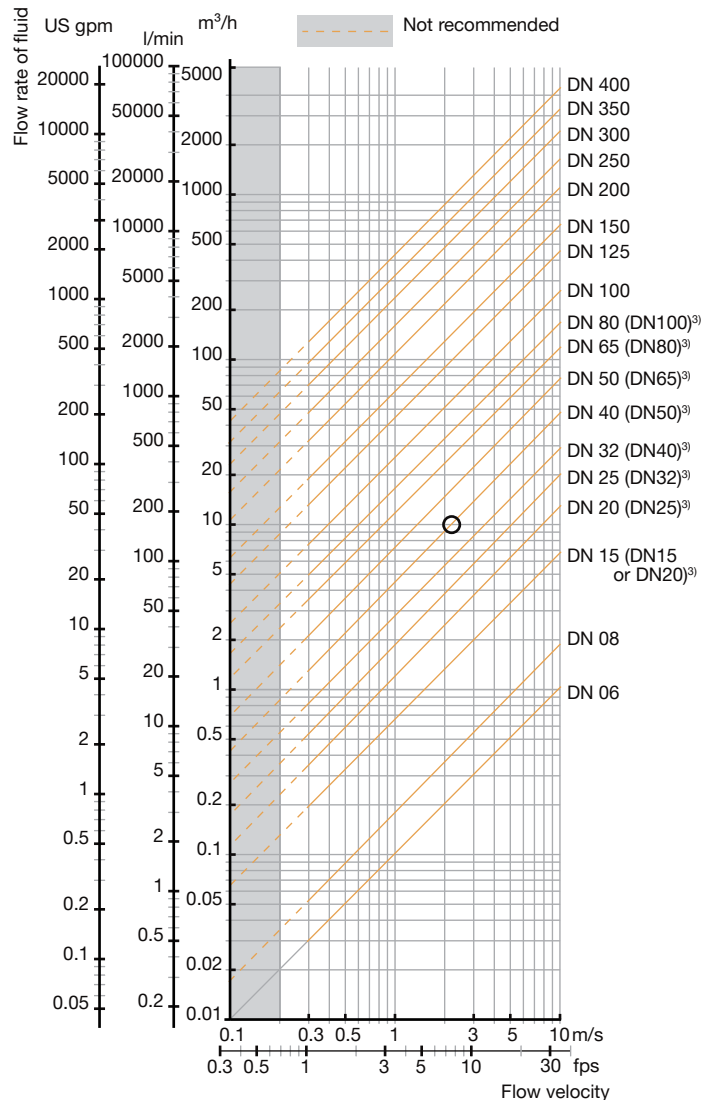
Selection help – flow velocity considerations

Depending on the sensor type, the right flow rate has to be chosen to get the best accuracy. The higher the flow velocity, the lower the measurement error, but the higher the pressure loss. The following chart will help you find the correct fitting diameter for your application depending on flow velocity and sensor technology. Pipes for fluids similar to water are generally designed for an average flow velocity of approx. 2...3 m/s.

Example:

- Flow: 10 m³/h
- Ideal flow velocity: 2...3 m/s

For these specifications, the diagram indicates a pipe size of DN40 [or DN50 for ⁽³⁾] mentioned sensor-fittings]



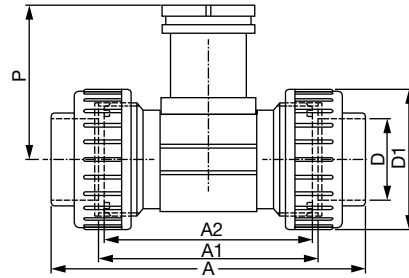
3) for following sensor-fittings with:
 - external threads acc. to SMS 1145
 - weld ends acc. to SMS 3008, BS4825-1/ASME BPE/DIN 11866 series C or DIN 11850 series 2/DIN 11866 series A/DIN EN 10357 series A
 - Clamp acc. to SMS 3017, BS 4825-3/ASME BPE or DIN 32676 series A

Dimensions [mm]

True union process connection

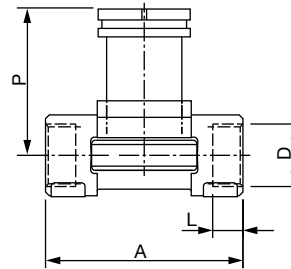
DIN 8063 in PVC, DIN 16962 in PP or ISO 10931 in PVDF

DN	P	A	A1	A2	D	D1
15	80.4	128.0	96	90	20.00	43
20	77.8	144.0	106	100	25.00	53
25	78.0	160.0	116	110	32.00	60
32	81.4	168.0	116	110	40.00	74
40	85.2	188.0	127	120	50.00	83
50	91.5	212.0	136	130	63.00	103

Note: short sensor version

Internal thread process connection

 G in stainless steel (316L - 1.4404) or brass (CuZn₃₉Pb₂)

DN	P	A	D	L
15	80.3	84.0	G ½	16.0
20	77.8	94.0	G ¾	17.0
25	78.0	104.0	G 1	23.5
32	81.6	119.0	G 1¼	23.5
40	85.4	129.0	G 1½	23.5
50	91.5	148.5	G 2	27.5

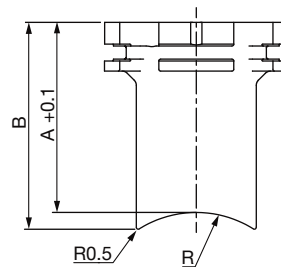
Note: short sensor version

Welding socket with radius

in stainless steel (316L - 1.4404)

DN	A	B	R
50	56.6	61.6	30.2
65	54.5	58.6	36.7
80	53.1	56.4	44.5
100	50.7	53.2	57.2
125	48.2	50.3	70.7
150	45.7	47.4	84.2
200	41.0	42.3	109.6
250	73.6	74.7	136.6
300	67.8	68.7	162.0
350	63.9	64.7	177.8

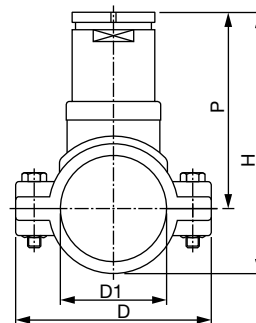
Note: sensor version:

- short for DN50...DN200
- long for DN250...DN350


Saddle

in PP & PVC

DN	P	H	D	D1
50	116.0	155	116	63
65	115.0	160	129	75
80	119.0	171	144	90
100	124.0	187	166	110
110	120.0	191	181	125
125	127.0	205	196	140
150	137.0	225	216	160
180	161.0	271	266	200
200	173.0	291	290	225

Note: long sensor version

 Body material: PP & PVC adapter
 Seal material: EPDM

Ordering chart

Port connection	Seal	Standard	Article no								
			DN06 - ½"	DN08 - ½"	DN15	DN20	DN25	DN32	DN40	DN50	DN65
Fitting DN6...DN65 for flowmeter with G 2 connection											
Brass body & stainless steel adapter – T-fitting – Fluid temperature max. 160 °C, PN16											
Internal thread	FKM	G	-	-	428712	428713	428714	428715	428716	428717	-
		NPT	-	-	428718	428719	428720	428721	428722	428723	-
		Rc	-	-	428724	428725	428726	428727	428728	428729	-
External thread	FKM	G	-	-	428730	428731	428732	428733	428734	428735	-
Stainless steel body & stainless steel adapter – T-fitting – Fluid temperature max. 160 °C, PN16											
Internal thread	FKM	G	-	-	428736	428737	428738	428739	428740	428741	-
		NPT	-	-	428742	428743	428744	428745	428746	428747	-
		Rc	-	-	428748	428749	428750	428751	428752	428753	-
External thread	FKM	G	552434	552432	428754	428755	428756	428757	428758	428759	-
	EPDM	SMS 1145	-	-	-	-	443317	-	443318	443319	-
Weld end	FKM	EN ISO 1127/ ISO 4200/ DIN 11866 series B	-	-	428760	428761	428762	428763	428764	428765	-
	EPDM	SMS 3008	-	-	-	-	443309	-	443310	443311	443944
	EPDM	BS 4825-1/ ASME BPE/ DIN 11866 series C	-	-	-	443734	443735	443736	443942	443943	443944
Clamp	FKM	DIN 32676 series B	-	-	428766	428767	428768	428769	428770	428771	-
	EPDM	SMS 3017	-	-	-	-	443313	-	443314	443315	443969
		SMS 3017 ⁴⁾	-	-	-	-	443957	-	443958	443959	443974
		BS 4825-3/ ASME BPE	-	-	-	443965	443966	-	443967	443968	443969
		BS 4825-3/ ASME BPE ⁴⁾	-	-	-	443970	443971	-	443972	443973	443974
Flange	FKM	EN 1092-1/B1/ PN16	-	-	428772	428773	428774	428775	428776	428777	-
		ANSI B16-5	-	-	428778	428779	428780	428781	428782	428783	-
PVC & PVC adapter – T-fitting – Fluid temperature max. 50 °C, PN10											
True union	FKM	DIN 8063	-	-	428670	428671	428672	428673	428674	428675	-
		ASTM D 1785/76	-	-	428682	428683	428684	428685	428686	428687	-
		JIS K	-	-	429078	429079	429080	429081	429082	429083	-
Spigot	FKM	DIN 8063	-	-	428676	428677	428678	428679	428680	428681	-
External thread	FKM	G	552561	550062	-	-	-	-	-	-	-
Analytical true union	FKM	DIN 8063	-	-	430837	430838	430839	428673	428674	428675	-

1) Please refer to ASME BPE

2) DN20 only available in ASME BPE

3) Refer to Clamp with D dimensions of 34 mm

4) Internal surface finish Ra = 0.8 µm



Ordering chart continued

S020 Fittings

Port connection	Seal	Standard	Article no.								
			DN06 - ½"	DN08 - ½"	DN15	DN20	DN25	DN32	DN40	DN50	DN65
PP & PP adapter – T-fitting – Fluid temperature max. 80 °C, PN10											
True union	FKM	DIN 16962	-	-	428688	428689	428690	428691	428692	428693	-
Spigot	FKM	DIN 16962	-	-	428694	428695	428696	428697	428698	428699	-
Analytical true union	FKM	DIN 16962	-	-	430840	430841	430842	428691	428692	428693	-
PVDF & PVDF adapter – T-fitting – Fluid temperature max. 100 °C, PN10											
True union	FKM	ISO 10931	-	-	428700	428701	428702	428703	428704	428705	-
Spigot	FKM	ISO 10931	-	-	428706	428707	428708	428709	428710	428711	-
Analytical true union	FKM	ISO 10931	-	-	430843	430844	430845	428703	428704	428705	-

Port connection	Article no.										
	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400
Fitting DN50...DN400 for flowmeter with G 2 connection											
Stainless steel - welding socket with radius - Fluid temperature max. 160 °C, PN16											
Welding socket	418111	418112	418113	418114	418115	418116	418117	418756	420070	416637	-
PVC - Screw-on fitting - Fluid temperature max. 50 °C, PN10											
Screw-on	-	-	-	418170	418170	418170	418170	-	-	-	-
PVDF - Fusion spigot - Fluid temperature max. 100 °C, PN10											
Fusion spigot	-	418658	418659	418660	-	-	-	-	-	-	-
Analytical fusion spigot	-	418660	418660	418660	-	-	-	-	-	-	-
PE - Fusion spigot or screw-on fitting - Fluid temperature max. 70 °C, PN10											
Fusion spigot	-	418642	418643	418644	418590	418645	418646	418647	418648	418649	418598
Screw-on	-	-	-	436489	436489	436489	436489	436489	436489	436489	436489
Analytical fusion spigot	-	418644	418644	418644	-	-	-	-	-	-	-
PP - Fusion spigot or screw-on fitting - Fluid temperature max. 80 °C, PN10											
Fusion spigot	-	418650	418651	418652	-	418653	418654	418655	418656	418657	-
Screw-on	-	-	-	436488	436488	436488	436488	436488	436488	436488	436488
Analytical fusion spigot	-	418652	418652	418652	-	-	-	-	-	-	-

Port connection	Seal	Article no.								
		DN50	DN65	DN80	DN100	DN110	DN125	DN150	DN180	DN200
PP & PVC adapter - Saddle - Fluid temperature max. 60 °C, PN10 (for PVC or PP pipe)										
Saddle	EPDM	425138	425139	425140	425141	425142	425143	425144	433873	425416

Ordering chart continued

Port connection	Seal	Article no.					
		DN32 PN16	DN40 PN16	DN50 PN16	DN65 PN16	DN80 PN16	DN100 PN10
Fitting DN32...DN100 for flowmeter with clamp connection (Type 8041/8045 clamp version)							
Stainless steel T-fitting - Fluid temperature max. 160 °C							
Weld end	SMS 3008	-	564915	564916	564917	564918	1)
	BS 4825-1/ASME BPE/DIN 11866 series C	-	564920	564921	564922	564923	564924
	DIN 11850 series 2/DIN 11866 series A/ DIN EN 10357 series A	-	564925	564926	564927	564928	564929
Stainless steel socket - Fluid temperature max. 160 °C							
Welding socket	SMS 3008	-	564696	564696	564697	564697	1)
	BS 4825-1/ASME BPE/DIN 11866 series C	-	564698	564698	564699	564699	564699
	DIN 11850 series 2/DIN 11866 series A/ DIN EN 10357 series A	-	565069	565069	565069	565069	565390

1) Please refer to BS 4825-1/ASME BPE/DIN 11866 series C or to DIN 11850 series 2/DIN 11866 series A/DIN EN 10357 series A

Accessories

Description	Article no.
Fitting for flowmeter with G 2 connection	
Stopper with ring, union nut and O-ring	
Stainless steel	438755
PVC	438754
PP	627614
Adapter with 4 screws (DN06...DN65)	
Stainless steel	555484
PVC	561175
PP	561176
PVDF	561177
O-Ring set (DN06...DN65)	
FKM - for metal fitting (5 units)	428971
EPDM - for metal fitting (5 units)	428972
FKM - for plastic fitting (1 flat gasket + 1 O-ring)	561043
EPDM - for plastic fitting (1 flat gasket + 1 O-ring)	561044
Measuring chamber	
Stainless steel ²⁾ 316L - 1.4404	553611

Description	Article no.
Fitting for flowmeter with clamp connection	
1 EPDM fitting/flowmeter seal	730837
1 FEP fitting/flowmeter seal	730839
Clamp collar	731164
Stopper for fitting	565200
Approvals/Certificate (for both versions)	
Inspection certificate 3.1 (acc. to EN-ISO 10204)	803723
Test report 2.2 (acc. to EN-ISO 10204)	803722
3 points Flow calibration certificate (S020 combined with the flow device inserted, only for DN ≤ 200)	550676
Certification of Conformity for the surface Quality (DIN4762-DIN4768-ISO/4287/1)	804175
FDA approval	803724

2) Other material on request

Inline sensor-fitting with paddle wheel for flow measurement

- Closed pipe system, sensor inside fitting
- Wide range of materials and process connections
- Metal 0...16 bar
- Plastic 0...10 bar



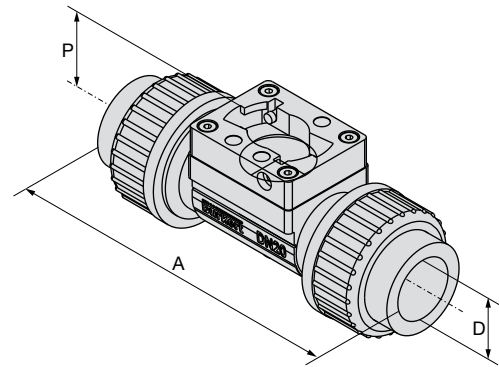
The S030 sensor-fitting has a built-in paddle wheel to measure the flow rate. When liquid flows through the pipe, the paddle wheel is set in rotation producing pulses whose frequency is proportional to the flow rate.

The Bürkert "Inline quarter-turn" technology is a construction ensuring a leakage free operation. The paddle wheel rotation (permanent magnets included in the wheels) is detected contactless through the sensor-fitting wall. The transmitter can be snapped-on or removed without opening the pipe or interrupting the process.

Technical data

General data	
Compatibility	With transmitter SE30, SE32, SE35, SE36 (see separate data sheet)
Pipe diameter	DN06...DN65
Process connections	
Metal	Internal or external thread, weld ends, clamp or flange
Plastic	True union, spigot or external thread
Materials	
Seal	FKM or EPDM (depending on version, see ordering chart)
Body	Stainless steel (316L - 1.4404), brass (CuZn ₃₈ Pb ₂), PVC, PP, PVDF
Screws	Stainless steel (316L - 1.4404)
Paddle wheel	PVDF (PP on request or st. st., see Type 8030HT ▶)
Shaft and bearings	Ceramics (Al ₂ O ₃)
Measurement range	0.5...1200 l/min
Flow velocity	0.3...10 m/s (see flow diagram)
Measurement error	
Teach-In (via a remote transmitter)	± 1 % of Reading ¹⁾ (at the teach flow rate value) ± 2.5 % of Reading ¹⁾
Standard K-factor	
Linearity	± 0.5 % of F.S. ¹⁾²⁾
Repeatability	± 0.4 % of Reading ¹⁾
Fluid data	
Fluid temperature	0...+50 °C for sensor-fitting in PVC; 0...+80 °C for sensor-fitting in PP; -15...+100 °C for sensor-fitting in stainless steel, brass or PVDF
Fluid pressure (max.)	
Metal	PN16 (PN40 on request)
Plastic	PN10
Fluid properties	
Pollution	Clean, neutral or slightly aggressive, solid-free liquids
Viscosity	Max. 1 %, size of particles 0.5 mm max. 300 cSt. max.

Dimensions [mm]



True union connection

DIN 8063 in PVC

DN	P	A	D
15	34.5	128.0	20.00
20	32.0	144.0	25.00
25	32.2	160.0	32.00
32	35.8	168.0	40.00
40	39.6	188.0	50.00
50	45.7	212.0	63.00

Environment

Ambient temperature (operating and storage)	-15...+60 °C for sensor-fitting in PVC; -15...+80 °C for sensor-fitting in PP; -15...+100 °C for sensor-fitting in stainless steel, brass or PVDF Depending on associated transmitter
--	--

- 1) Under reference conditions i.e. measuring fluid = water, ambient and water temperature = 20 °C, while maintaining the minimum inlet and outlet distances and the appropriate internal diameter of the pipes.
2) F.S. = Full scale (10 m/s)

Technical data continued

Standards, directives and certifications	
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Pressure	Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ¹⁾
Certification/Certificates on request	Inspection certificate 3.1 (acc. to EN-ISO 10204); Test report 2.2 (acc. to EN-ISO 10204); Certification of Conformity for the surface Quality (DIN4762-DIN4768-ISO/4287/1); 3 points Flow calibration certificate; FDA declaration of conformity (stainless steel fitting only with EPDM seal)
1) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).	
Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

Pressure/temperature diagram

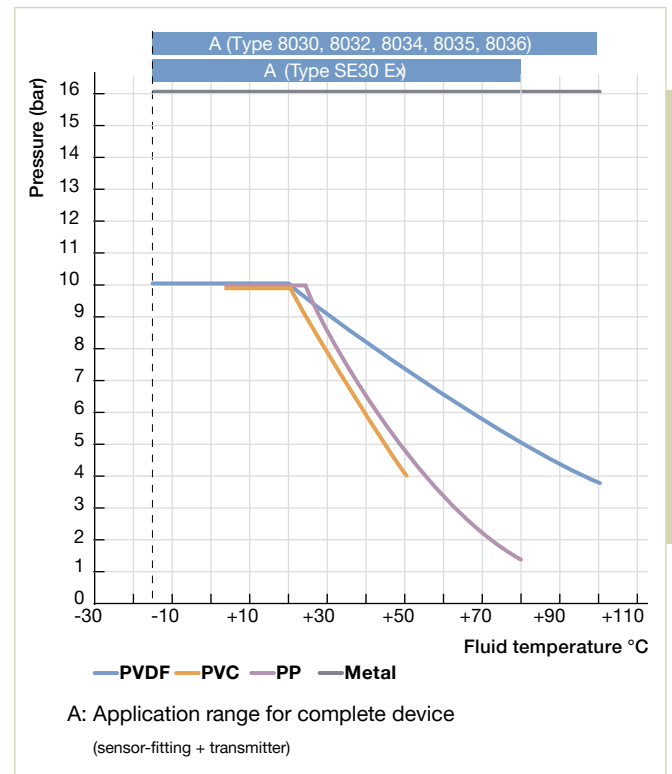


Diagram Flow/Velocity/DN

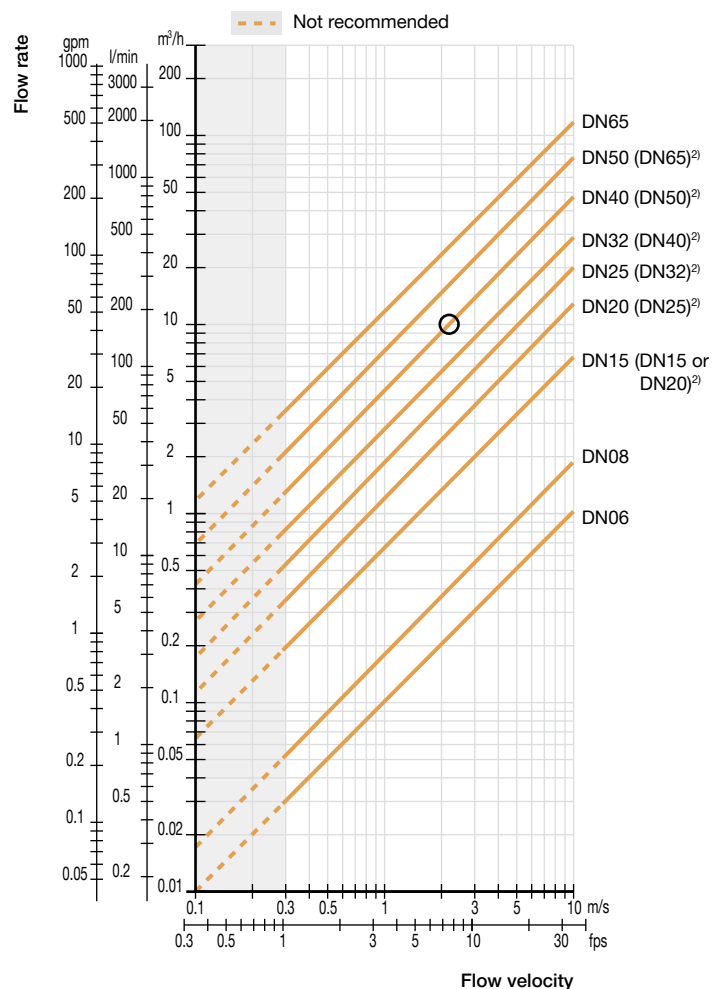
Selection help – flow velocity considerations

Depending on the sensor type, the right flow rate has to be chosen to get the best accuracy. The higher the flow velocity, the lower the measurement error, but the higher the pressure loss. The following chart will help you find the correct fitting diameter for your application depending on flow velocity and sensor technology. Pipes for fluids similar to water are generally designed for an average flow velocity of approx. 2...3 m/s.

Example:

- Flow: 10 m³/h
- Ideal flow velocity: 2...3 m/s

For these specifications, the diagram indicates a pipe size of DN40 [or DN50 for ⁽²⁾] mentioned sensor-fittings]



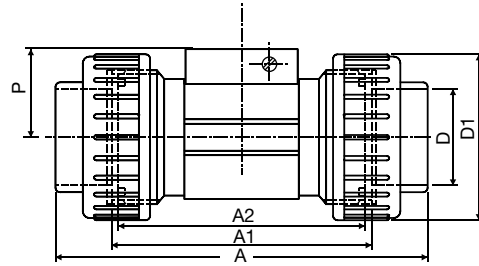
2) for following sensor-fittings with:
 – external threads acc. to SMS 1145
 – weld ends acc. to SMS 3008, BS4825-1/ASME BPE/DIN 11866 series C or DIN 11850 series 2/DIN 11866 series A/DIN EN 10357 series A
 – Clamp acc. to SMS 3017, BS 4825-3/ASME BPE or DIN 32676 series A

Dimensions [mm]

True union connection

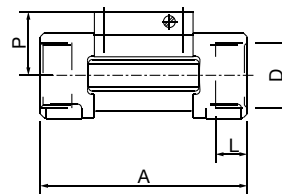
DIN 8063 in PVC

DN	P	A	Norm	A1	A2	D	D1
15	34.5	128.0	DIN/ISO	96	90	20.00	43
20	32.0	144.0	DIN/ISO	106	100	25.00	53
25	32.2	160.0	DIN/ISO	116	110	32.00	60
32	35.8	168.0	DIN/ISO	116	110	40.00	74
40	39.6	188.0	DIN/ISO	127	120	50.00	83
50	45.7	212.0	DIN/ISO	136	130	63.00	103


Internal thread connection

 G in stainless steel (316L - 1.4404) or brass (CuZn₃₉Pb₂)

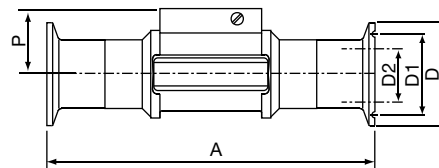
DN	P	A	D	L
15	34.5	84.0	G ½	16.0
20	32.0	94.0	G ¾	17.0
25	32.2	104.0	G 1	23.5
32	35.8	119.0	G 1¼	23.5
40	39.6	129.0	G 1½	23.5
50	45.7	148.5	G 2	27.5


Clamp connection

BS 4825/ASME BPE* in stainless steel (316L - 1.4404)

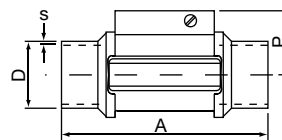
DN	P	A	Norm	D2	D1	D
20	34.5	119	ASME BPE	15.75	19.6	25.0
25	32.0	129	BS 4825/ASME BPE	22.10	43.5	50.5
40	35.8	161	BS 4825/ASME BPE	34.80	43.5	50.5
50	39.6	192	BS 4825/ASME BPE	47.50	56.5	64.0
65	45.7	216	BS 4825/ASME BPE	60.20	70.5	77.5

* Available with internal surface finish Ra = 0.8 µm


Weld end connection

BS 4825 in stainless steel (316L - 1.4404)

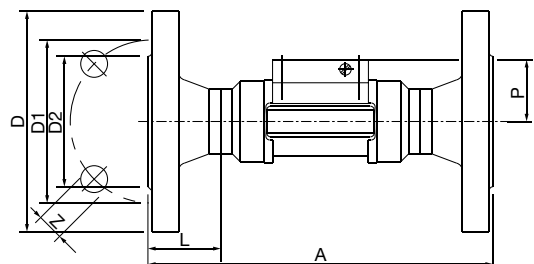
DN	P	A	Norm	D	s
20	34.5	84.0	BS 4825	19.05	1.20
25	32.0	94.0	BS 4825	25.40	1.65
40	35.8	119.0	BS 4825	38.10	1.65
50	39.6	128.0	BS 4825	50.80	1.65
65	45.7	147.0	BS 4825	63.50	1.65


Flange connection

EN1092-1/B1/PN16, ANSI B16-5 or JIS 10 K

in stainless steel (316L - 1.4404)

DN	P	A	Norm	L	Z	D2	D1	D
15	34.5	130	EN	23.5	4x14.0	45.0	65.0	95.0
20	32.0	150	EN	28.5	4x14.0	58.0	75.0	105.0
25	32.2	160	EN	28.5	4x14.0	68.0	85.0	115.0
32	35.8	180	EN	31.0	4x18.0	78.0	100.0	140.0
40	39.6	200	EN	36.0	4x18.0	88.0	110.0	150.0
50	45.7	230	EN	41.0	4x18.0	102.0	125.0	165.0



Ordering chart

Port connection	Seal	Standard	Article no.										
			DN06 ¹⁾ - ¼"	DN06 ¹⁾ - ½"	DN08 ¹⁾ - ½"	DN15	DN20	DN25	DN32	DN40	DN50	DN65	
Brass - with PVDF paddle wheel - Fluid temperature max. 100 °C, PN16													
Internal thread	FKM	G	-	-	-	423980 ₺	423981 ₺	423982 ₺	423983 ₺	423984 ₺	423985 ₺	-	
		NPT	-	-	-	423986 ₺	423987 ₺	423988 ₺	423989 ₺	423990 ₺	423991 ₺	-	
		Rc	-	-	-	423992 ₺	423993 ₺	423994 ₺	423995 ₺	423996 ₺	423997 ₺	-	
External thread	FKM	G	552557 ₺	552527 ₺	444023 ₺	423998 ₺	423999 ₺	424000 ₺	424001 ₺	424002 ₺	424003 ₺	-	
		NPT	-	-	449182 ₺	-	-	-	-	-	-	-	
		Rc	-	-	448668 ₺	-	-	-	-	-	-	-	
Metric	FKM		-	-	16 × 1.5mm 552526 ₺	-	-	-	-	-	-		
Stainless steel - with PVDF paddle wheel - Fluid temperature max. 100 °C, PN16													
Internal thread	FKM	G	-	-	-	424004 ₺	424005 ₺	424006 ₺	424007 ₺	424008 ₺	424009 ₺	-	
		NPT	-	-	-	424010 ₺	424011 ₺	424012 ₺	424013 ₺	424014 ₺	424015 ₺	-	
		Rc	-	-	-	424016 ₺	424017 ₺	424018 ₺	424019 ₺	424020 ₺	424021 ₺	-	
External thread	FKM	G	552733 ₺	552559 ₺	444029 ₺	424022 ₺	424023 ₺	424024 ₺	424025 ₺	424026 ₺	424027 ₺	-	
		NPT	-	-	449050 ₺	-	-	-	-	-	-	-	
		Rc	-	-	448669 ₺	-	-	-	-	-	-	-	
	EPDM	SMS 1145	-	-	-	-	-	443306 ₺	-	443307 ₺	443308 ₺	-	
Weld end	FKM	EN ISO 1127/ ISO 4200/ DIN 11866 series B	-	-	552845 ₺ ²⁾	424028 ₺	424029 ₺	424030 ₺	424031 ₺	424032 ₺	424033 ₺	-	
		EPDM	SMS 3008	-	-	-	-	-	443298 ₺	-	443299 ₺	443300 ₺	443374 ₺ ³⁾
	EPDM	BS 4825-1/ ASME BPE/ DIN 11866 series C	-	-	-	-	443369 ₺ ⁴⁾	443370 ₺	443371 ₺	443372 ₺	443373 ₺	443374 ₺	
		DIN 11850 series 2/DIN 11866 series A/ DIN EN 10357 series A	-	-	551788 ₺	551789 ₺	551790 ₺	551791 ₺	-	551792 ₺	551793 ₺	-	
Clamp	FKM	DIN 32676 series B	-	-	-	424034 ₺ ⁵⁾	424035 ₺	424036 ₺	424037 ₺	424038 ₺	424039 ₺	-	
		EPDM	SMS 3017	-	-	-	-	-	443302 ₺	-	443303 ₺	443304 ₺	443399 ₺ ³⁾
	EPDM	SMS 3017 ⁶⁾	-	-	-	-	-	-	443387 ₺	-	443388 ₺	443389 ₺	443720 ₺ ³⁾
		BS 4825-3/ ASME BPE	-	-	-	-	443395 ₺ ⁴⁾	443396 ₺	-	443397 ₺	443398 ₺	443399 ₺	
		BS 4825-3/ ASME BPE ⁶⁾	-	-	-	-	443400 ₺	443717 ₺	-	443718 ₺	443719 ₺	443720 ₺	
		DIN 32676 series A	-	-	551794 ₺ ⁵⁾	551795 ₺ ⁵⁾	551796 ₺	551797 ₺	-	551798 ₺	551799 ₺	-	
Flange	FKM	EN 1092-1/B1/ PN16	-	-	-	424040 ₺	424041 ₺	424042 ₺	424043 ₺	424044 ₺	424045 ₺	-	
		ANSI B16-5	-	-	-	424046 ₺	424047 ₺	424048 ₺	424049 ₺	424050 ₺	424051 ₺	-	
		JIS 10K	-	-	-	430108 ₺	430109 ₺	430110 ₺	430111 ₺	430112 ₺	430113 ₺	-	
Stainless steel - with PVDF paddle wheel - Fluid temperature max. 100 °C, PN40													
Internal thread	FKM	G	-	-	-	427138 ₺	425737 ₺	425729 ₺	427152 ₺	427153 ₺	427154 ₺	-	

1) External thread

2) EPDM seal

3) Please refer to ASME BPE

4) DN20 only available in ASME BPE

5) Refer to Clamp with D dimensions of 34 mm

6) internal surface finish Ra = 0,8 µm



Ordering chart continued

S030 Sensor-fittings

Port connection	Seal	Standard	Article no.									
			DN06 ¹⁾ - ¼"	DN06 ¹⁾ - ½"	DN08 ¹⁾ - ½"	DN15	DN20	DN25	DN32	DN40	DN50	DN65
PVC - with PVDF paddle wheel - Fluid temperature max. 50 °C, PN10												
True union ²⁾	FKM	DIN 8063	-	-	444022	423938	423939	423940	423941	423942	423943	-
		ASTM D 1785/76	-	-	-	423950	423951	423952	423953	423954	423955	-
		JIS K	-	-	-	429072	429073	429074	429075	429076	429077	-
Spigot	FKM	DIN 8063	-	-	-	423944	423945	423946	423947	423948	423949	-
Extern. thr.	FKM	G	-	552560	444025	-	-	-	-	-	-	-
True union ²⁾ without spigot	FKM		-	-	-	430734	430735	430736	430737	430738	430739	-
	EPDM		-	-	-	430740	430741	430742	430743	430744	430745	-
PP - with PVDF paddle wheel - Fluid temperature max. 80 °C, PN10												
True union**	FKM	DIN 16962	-	-	-	423956	423957	423958	423959	423960	423961	-
Spigot	FKM	DIN 16962	-	-	-	423962	423963	423964	423965	423966	423967	-
PVDF - with PVDF paddle wheel - Fluid temperature max. 100 °C, PN10												
True union ²⁾	FKM	ISO 10931	-	-	-	423968	423969	423970	423971	423972	423973	-
Spigot	FKM	ISO 10931	-	-	-	423974	423975	423976	423977	423978	423979	-
Extern. thr.	FKM	ISO 10931	-	-	444028	-	-	-	-	-	-	-

1) external thread

2) with spigot and nut

Accessories

Description	Article no.
Sensor holder	
Stainless steel with paddle wheel (PVDF), seal (FKM), screws and certificate for DN06, DN08, DN15 v2 and DN20 v2	448678
Stainless steel with paddle wheel (PVDF), seal (FKM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65	432306
Stainless steel with paddle wheel (PVDF), seal (EPDM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65	432305
Stainless steel with paddle wheel (PVDF), seal (EPDM), screws and certificate, Ra int. = 0.8 µm for DN15 (except DN15 v2 and DN20 v2)...DN65	434149
Stainless steel with paddle wheel (PP), seal (EPDM), screws and certificate for DN06, DN08, DN15 v2 and DN20 v2	554896
Stainless steel with paddle wheel (PP), seal (EPDM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65	449425
Brass with paddle wheel (PVDF), seal (FKM), screws and certificate for DN06, DN08, DN15 v2 and DN20 v2	448677
Brass with paddle wheel (PVDF), seal (FKM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65	432304
Brass with paddle wheel (PVDF), seal (EPDM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65	432303
Brass with paddle wheel (PP), seal (EPDM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65	449866
PVC with paddle wheel (PVDF), seal (FKM), screws and certificate for DN06, DN08, DN15 v2 and DN20 v2	448674
PVC with paddle wheel (PVDF), seal (FKM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65	432298
PVC with paddle wheel (PVDF), seal (EPDM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65	432297
PVC with paddle wheel (PP), seal (EPDM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65	443982
PP with paddle wheel (PVDF), seal (FKM), screws and certificate for DN15...DN65	432300
PP with paddle wheel (PVDF), seal (EPDM), screws and certificate for DN15...DN65	432299

Accessories continued

Description	Article no.
PP with paddle wheel (PP), seal (FKM), screws and certificate for DN15...DN65	552881
PP with paddle wheel (PP), seal (EPDM), screws and certificate for DN15...DN65	443983
PVDF with paddle wheel (PVDF), seal (FKM), screws and certificate for DN06, DN08, DN15 v2 and DN20 v2	448676
PVDF with paddle wheel (PVDF), seal (FKM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65	432302
PVDF with paddle wheel (PVDF), seal (EPDM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65	432301
O-ring set	
FKM - for metal sensor-fitting, DN06...DN65	426340
EPDM - for metal sensor-fitting, DN06...DN65	426341
FKM - for plastic sensor-fitting, DN08	448679
FKM - for plastic sensor-fitting, DN15	431555
FKM - for plastic sensor-fitting, DN20	431556
FKM - for plastic sensor-fitting, DN25	431557
FKM - for plastic sensor-fitting, DN32	431558
FKM - for plastic sensor-fitting, DN40	431559
FKM - for plastic sensor-fitting, DN50	431560
EPDM - for plastic sensor-fitting, DN08	448680
EPDM - for plastic sensor-fitting, DN15	431561
EPDM - for plastic sensor-fitting, DN20	431562
EPDM - for plastic sensor-fitting, DN25	431563
EPDM - for plastic sensor-fitting, DN32	431564
EPDM - for plastic sensor-fitting, DN40	431565
EPDM - for plastic sensor-fitting, DN50	431566
Approvals/Certificates	
Inspection certificate 3.1 (acc. to EN-ISO 10204)	803723
Test report 2.2 (acc. to EN-ISO 10204)	803722
Certification of Conformity for the surface Quality (DIN4762-DIN4768-ISO/4287/1)	804175
3 points Flow calibration certificate (S020 combined with the flow device inserted, only for DN ≤200)	550676
FDA approval	803724

Positive displacement sensor-fitting for Inline continuous flow measurement

- DN15...DN100
- Inline quarter-turn technology
- Electronics available for indication, monitoring, transmitting, On/Off control and batch control



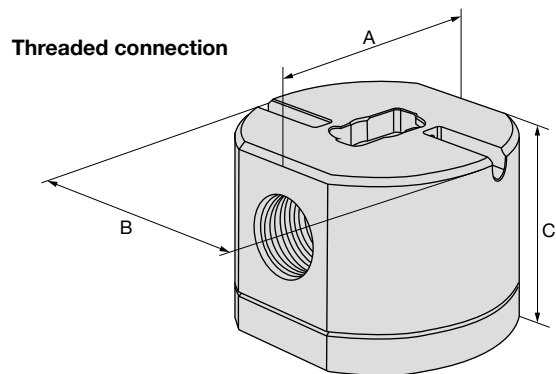
This positive displacement sensor fitting is specially designed for flow measurement and/or batch control of highly viscous fluids like glue, honey or oil.

This measuring element must be associated to a transmitter SE30, SE32, SE35, SE36 with hall sensor principle only, quickly and easily connected together by a quarter-turn. The design of this fitting is based on the oval rotor principle. This has proven to be a reliable and highly accurate volumetric method of measuring flow. Exceptional repeatability and high accuracy over a wide range of viscosities and flowrates are features of that design. The low pressure drop and high pressure rating make it suitable for both gravity and pump (in-line) applications

Technical data

General data	
Compatibility	With transmitter SE30, SE32, SE35, SE36 with Hall sensor principle (see separate data sheet)
Pipe diameter	DN15...DN100
Thread connection	½; 1; 1½; 2; 3 (G or NPT)
Flange connection	25; 40; 50; 80 or 100 mm DIN PN16 flange 1"; 1½"; 2"; 3" or 4" ANSI 150LB flange
Wetted parts materials	
Body	Aluminium, stainless steel 316L (1.4401)
Rotor	PPS, aluminium, stainless steel 316L (1.4401)
Shaft	Stainless steel 316L (1.4401)
Seal	FKM or FEP/PTFE encapsulated
Measuring range	
Viscosity >5 mPa.s	2...1200 l/min
Viscosity <5 mPa.s	3...616 l/min
Viscosity	1 Pa.s max. (higher on request)
Max. particles size	250 µm - To prevent damage from dirt or foreign matter, we strongly recommend the installation of a 250 µm strainer as close as possible to the inlet side of the meter.
Measurement deviation	± 1 % of the Reading (if "standard" K-factor is used); ± 0.5 % of the Reading (if "specific" K-factor is used, on label of the product)
Repeatability	± 0.03 % of Reading
Fluid data	
Fluid temperature max.	Aluminium body: -20...+80 °C Stainless steel body: -20...+120 °C
Fluid pressure max.	
DN15	55 bar (threaded process connection)
DN25	55 bar ¹⁾
DN40 or DN50	18 bar
DN80 / DN100	12 bar / 10 bar
Environment	
Ambient temperature	0...+60 °C (operation and storage)

Dimensions [mm]



Orifice DN	A		B	C	D
	Stainless steel	Aluminium			
15	81	81	87	49	28
25	100	100	112	75	45
40	120	120	137	103	61
50	140	140	163	124	72
80	260	302	220	180	80

Standards, directives and approvals

Standard and directives	CE
Pressure	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable) Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ²⁾

- 1) or in accordance to the value of the used flanges
- 2) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).

Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

Ordering chart

Orifice DN	Process connection	Flow Range		Body material	Rotor material	Seal	Article no.
		>5 mPa.s	<5 mPa.s				
15	G ½	2...30 l/min	3...25 l/min	Aluminium	PPS	FKM	567223
				Stainless steel	Stainless steel	FEP/PTFE	567224
	NPT ½	2...30 l/min	3...25 l/min	Aluminium	PPS	FKM	567225
				Stainless steel	Stainless steel	FEP/PTFE	567226
25	G 1	6...120 l/min	10...100 l/min	Aluminium	PPS	FKM	567227
				Stainless steel	Stainless steel	FEP/PTFE	567228
	NPT 1	6...120 l/min	10...100 l/min	Aluminium	PPS	FKM	567229
				Stainless steel	Stainless steel	FEP/PTFE	567230
	25 mm DIN PN16 flange	6...120 l/min	10...100 l/min	Aluminium	PPS	FKM	567231
				Stainless steel	Stainless steel	FEP/PTFE	567232
	1" ANSI 150 LB flange	6...120 l/min	10...100 l/min	Aluminium	PPS	FKM	567233
				Stainless steel	Stainless steel	FEP/PTFE	567234
40	G 1½	10...250 l/min	15...235 l/min	Aluminium	PPS	FKM	567235
				Stainless steel	Stainless steel	FEP/PTFE	567236
	NPT 1½	10...250 l/min	15...235 l/min	Aluminium	PPS	FKM	567237
				Stainless steel	Stainless steel	FEP/PTFE	567238
	40 mm DIN PN16 flange	10...250 l/min	15...235 l/min	Aluminium	PPS	FKM	567239
				Stainless steel	Stainless steel	FEP/PTFE	567240
	1½" ANSI 150 LB flange	10...250 l/min	15...235 l/min	Aluminium	PPS	FKM	567241
				Stainless steel	Stainless steel	FEP/PTFE	567242
50	G 2	15...350 l/min	30...300 l/min	Aluminium	PPS	FKM	567243
				Stainless steel	Stainless steel	FEP/PTFE	567244
	50 mm DIN PN16 flange	15...350 l/min	30...300 l/min	Aluminium	PPS	FKM	567245
				Stainless steel	Stainless steel	FEP/PTFE	567246
	2" ANSI 150 LB flange	15...350 l/min	30...300 l/min	Aluminium	PPS	FKM	567247
				Stainless steel	Stainless steel	FEP/PTFE	567248
80	G 3	20...733 l/min	66...616 l/min	Aluminium	Aluminium	FKM	567249
				Stainless steel	Stainless steel	FEP/PTFE	567250
	80 mm DIN PN16 flange	20...733 l/min	66...616 l/min	Aluminium	Aluminium	FKM	567251
				Stainless steel	Stainless steel	FEP/PTFE	567252
3" ANSI 150 LB flange	20...733 l/min	66...616 l/min	Aluminium	Aluminium	FKM	567252	
			Stainless steel	Stainless steel	FEP/PTFE	567253	
100	100 mm DIN PN16 flange	120...1200 l/min	---	Aluminium	Aluminium	FKM	567253
	4" ANSI 150 LB flange	120...1200 l/min	---	Aluminium	Aluminium	FKM	567254



Accessories

S077 Sensor-fittings

Description	Orifice Size		Materials	Article no.	
	[mm]	[inch]			
Rotor	DN15	1/2	PPS	567741	
			Stainless steel	567742	
	DN25	1	PPS	567743	
			Stainless steel	567744	
	DN40	1 1/2	PPS	567745	
			Stainless steel	567746	
	DN50	2	PPS	567747	
			Stainless steel	567748	
	O-ring	DN15	1/2	FEP/PTFE	567754
				FKM	567755
		DN25	1	FEP/PTFE	567756
				FKM	567757
DN40		1 1/2	FEP/PTFE	567758	
			FKM	567759	
DN50		2	FEP/PTFE	567760	
			FKM	567761	

Overview for Level Sensors

Note: The following product overview does not show the complete product range of this catalogue. A complete overview can be found [here](#) ▶

Operating principle	Type	Basic functions	Measuring range [m]	Vessel pressure [bar]	Fluid temperature [°C]	Wetted parts material		Measurement deviation	Process connection
						Seal	Housing		
Oscillation	8110 ▶	Switch	–	-1...64	-40...+150	Klingersil®	Stainless steel	Approx. 2 mm	Thread G or NPT, ½", ¾" or 1"; clamp 2"
	8111 ▶	Switch	–	-1...64	-50...+150	Klingersil®	Stainless steel	Approx. 2 mm	Thread G or NPT, ¾" or 1"; clamp 2"
	8112 ▶	Switch	–	-1...64	-15...+80	Klingersil®	Stainless steel	Approx. 2 mm	Thread G or NPT, ¾" or 1"; clamp 2"
Radar	8136 ▶	Sensor, transmitter	0.05...20	-1...3	-40...+80	FKM	PVDF	Approx. 2 mm	Thread G or NPT, 1½"; mounting bracket
	8137 ▶	Sensor, transmitter	0.05...30	-1...40	-40...+130	Klingersil® FKM	Stainless steel	Approx. 2 mm	Thread G or NPT, 1½", flange DN50, DN100, 2", 4"
	8138 ▶	Sensor, transmitter	0.05...20	-1...16	-40...+200	EPDM	Stainless steel, TFP, PTFE	Approx. 2 mm	Clamp 2", DN25 connection suitable for GEA Tuchenhausen VARINLINE process connection, flange DN50, DN100
Ultrasonic	8177 ▶	Sensor, transmitter	0.4...8	-0.2...2	-40...+80	EPDM	PVDF	Approx. 4 mm	Thread G or NPT, 2"
Guided microwave	8188 ▶	Sensor, transmitter	0.03...75	-1...40	-40...+150	FKM	Stainless steel	Approx. 2 mm	Thread G or NPT, ¾" or 1"
	8189 ▶	Sensor, transmitter	0.08...4	-1...16	-20...+150	EPDM	Stainless steel, PEEK	Approx. 2 mm	Clamp 2", DIN 11851 DN50

Influence coating	Influence steam/ condensate	To avoid	Wiring	Signal output	Echo filtration	Display	Special features and versions
Low	No	-	3 wire	Transistor output PNP or contactless electrical switch	-	LED	Compact
Low	No	-	2 wire 4 wire	Double relay (DPDT- Double Pole Double Throw), 2 potential-free contacts (SPDT- Single Pole Double Throw) or Namur signal	-	LED	Compact
Low	No	-	2 wire 4 wire	Double relay (DPDT- Double Pole Double Throw), 2 potential-free contacts (SPDT- Single Pole Double Throw) or Namur signal	-	LED	Compact, available in different sensor lengths
Low	No	Foam dielectric constant <1.6	2 wire	4...20 mA HART	Yes	Yes, removable	ATEX compact
Low	No	Foam dielectric constant <1.6	2 wire	4...20 mA HART	Yes	Yes, removable	ATEX compact
Low	No	Foam dielectric constant <1.6	2 wire	4...20 mA HART	Yes	Yes, removable	ATEX compact
High	High	Dust, foam, vacuum	2 wire	4...20 mA HART	Yes	Yes, removable	ATEX compact
Low	No	Dielectric constant <1.6	2 wire	4...20 mA HART	Yes	Yes, removable	ATEX, IEC compact
Low	No	Dielectric constant <1.6	2 wire	4...20 mA HART	Yes	Yes, removable	ATEX, IEC compact

Tuning-Fork Level Switch

8110 / 8111

- For universal use as overflow or dry run protection system
- Hygienic surface finish
- Extension tubes available



Type 8110

Type 8111

Level switch for liquids with a tuning fork as a sensor element. Simple setup without adjustment makes this perfect for deployment into process environments. This device provides peace of mind from overflow or run dry

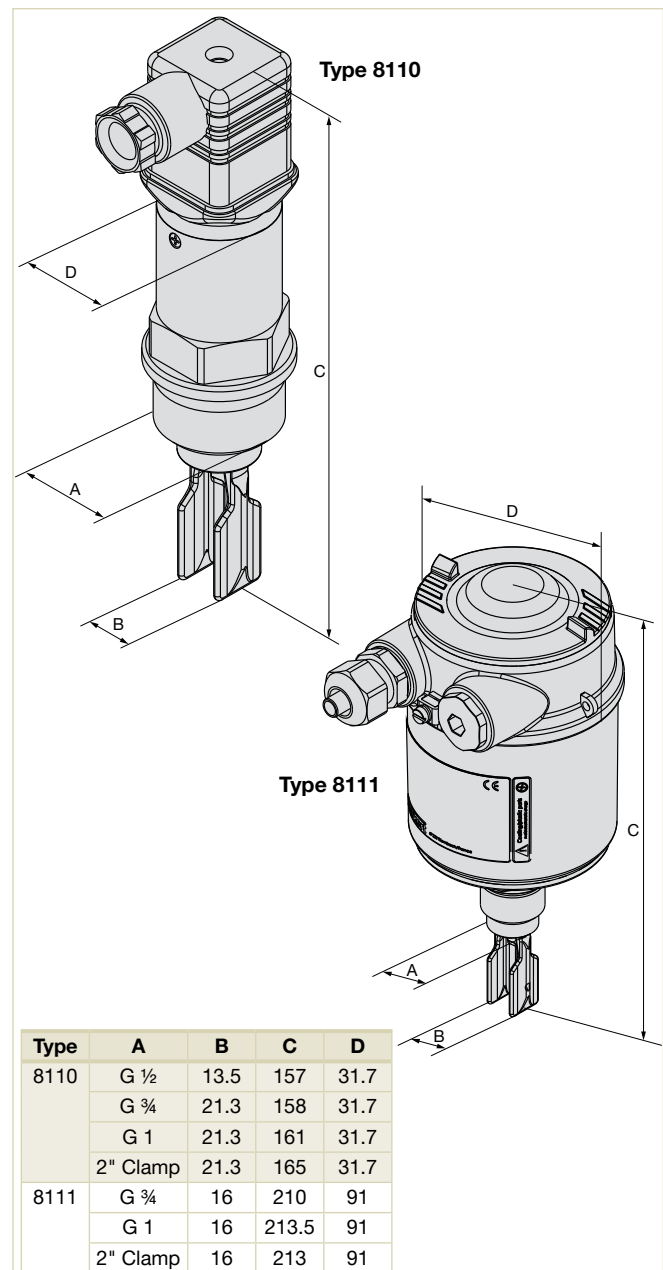
Type 8110 – The small tuning fork (40 mm length) can be used in vessels, tanks or pipes.

Type 8111 – SuperBRIGHT visual output lets the user know the status from a distance.

Technical data

Type	8110	8111
Process fitting	Thread G or NPT, ½, ¾ or 1; clamp 2"	Thread G or NPT, ¾ or 1; clamp 2"
Fluid temperature max.	-40...+100 °C (150 °C for clamp process connection)	-50...+150 °C
Materials		
Housing	Stainless steel 316L and plastic PEI	PBT, Stainless steel 316L (1.4404) / PC / EPDM
Tuning fork and fitting	Stainless steel 316L (1.4435)	Stainless steel 316L (1.4435)
Process seal	Klingersil® C 4400	Klingersil® C 4400
Fluid pressure	-1...64 bar	-1...64 bar
Power supply	10...35 V DC	20...253 V AC, 50/60 Hz or 20...72 V DC (at U > 60 V DC the ambient temperature must be max. +50 °C)
Electrical connections	Cable plug acc. to EN 175301-803 or M12 × 1 male fixed connector	1 or 2 cable glands M20 × 1.5 (depends on output version)
Outputs	Transistor output PNP or contactless electronic switch	Double relay output or NAMUR output
Protection class	IP65 with cable plug EN175301-803 mounted and tightened IP66/IP67 with M12 × 1 plug mounted	IP66/IP67 with M20 × 1.5 gland mounted and tightened II (relay output); II (NAMUR output)
Surface finishing quality	Ra < 3.2 µm (thread) Ra < 0.8 µm (clamp)	Ra < 3.2 µm (thread) Ra < 0.8 µm (clamp)
Dynamic viscosity	0.1...10000 mPa.s	0.1...10000 mPa.s (requirement: with density ¹⁾)
Fluid temperature	-40...+100 °C (150 °C for clamp process connection)	-50...+150 °C
Fluid pressure	-1...64 bar	-1...64 bar

Dimensions [mm]



Technical data continued

Type	8110	8111
Measurement deviation		
Hysteresis	Approx. 2 mm with vertical installation	Approx. 2 mm with vertical installation
Delay time/ Frequency	Approx. 500 ms / Approx. 1200 Hz	Approx. 500 ms / Approx. 1200 Hz
Voltage loss	Max. 3 V DC	—
Turn-on voltage	Max. 34 V DC	Min.: 10 mV; Max.: 253 V AC, 253 V DC
Switching current	—	Min.: 10 mA; Max.: 5 A (AC), 1 A (DC)
Power consumption	Max. 0.5 W	1...8 VA (AC); Approx. 1.3 W (DC)
Switching capacity	—	Max. 1250 VA, 50 W
Delay time	—	When immersed: 0.5 s When laid bare: 1 s
Blocking current	< 10 µA	—
Mode	Min./max changeover by electrical connection Max.: overfill protection - Min.: dry run protection LED indication: green and red	Max. detection or overflow protection Min. detection or dry run protection
Ambient temperature		
Operating	-40...+70 °C	-40...+70 °C
Storage	-40...+80 °C	-40...+80 °C
Standard		
EMC	EN 61326	EN61326
Security	EN 61010-1	EN61010-1
ATEX ¹⁾		EN50014; EN50020; EN50284
NAMUR		IEC 60947-5-6 (EN 50227)

Type	8110	8111
Specifications Ex		
Ex-Protection	—	Categories G ½, G 2
Ex-Certification	—	Ex ia IIC T6
Conformity specifications¹⁾	—	
Power supply Ui		20 V
Short circuit rating Ii		103 mA
Power limitation Pi		516 mW
Ambient temperature		-40...+85 °C (depends on categories)
Internal capacity Ci		Negligible
Internal inductivity Li		Negligible

¹⁾ Homologation certificate PTB 07 ATEX 2004X

Options















Type 8110

- DIN 11851, Flange, SMS
- Higher temperatures on request

Type 8111

- DIN 11851, Flange, SMS
- ECTFE, enamel, Hastelloy C4 or PFA
- Higher temperatures on request

Ordering chart

Output	Power supply	Process connection	Electrical connection	Article no.		
Type 8110						
Transistor PNP	10...35 V DC	G ½	Cable plug EN 175301-803	563554 		
			Multipin M12 x 1	563474 		
		NPT ½	Cable plug EN 175301-803	563556 		
			Multipin M12 x 1	563555 		
		G ¾	Cable plug EN 175301-803	555291 		
			Multipin M12 x 1	555290 		
		NPT ¾	Cable plug EN 175301-803	560986 		
			Multipin M12 x 1	557154 		
		G 1	Cable plug EN 175301-803	555293 		
			Multipin M12 x 1	555292 		
		NPT 1	Multipin M12 x 1	557155 		
			Clamp 2"	Multipin M12 x 1	555294 	
		Contactless electronic switch (Not with PLC)	20...253 V AC, 50/60 Hz or 20...253 V DC	G ¾	Cable plug EN 175301-803	555296 
				G 1	Cable plug EN 175301-803	555298 



Ordering chart continued

8110 / 8111

Output	Power supply	Process connection	Electrical connection	Article no.
Type 8111				
Double relay (DPDT), 2 floating (SPDT)	20...72 V DC / 20...250 V AC (5 A)	G ¾	2 cable glands M20 × 1.5	558110
		NPT ¾	2 cable glands M20 × 1.5	558111
		G 1	2 cable glands M20 × 1.5	558112
		NPT 1	2 cable glands M20 × 1.5	558113
		Clamp 2"	2 cable glands M20 × 1.5	558114
Namur signal - Ex version ATEX approval	8.2 V DC - via an intrinsic safety interface with NAMUR input	G ¾	1 cable gland M20 × 1.5	558115
		G 1	1 cable gland M20 × 1.5	558116

Accessories

Specifications	Article no.
Type 8110	
5 pin M12 female straight cable plug moulded on cable (2 m, shielded)	438680
5 pin M12 female straight cable plug with plastic threaded locking ring, to be wired	917116
Type 8111	
Set with 2 reductions M20 × 1.5 / NPT ½ + 2 neoprene flat seals for cable gland + 2 screw-plugs M20 × 1.5	551782

Vibrating level switch with extension tube

8112

- For universal use as overflow or dry run protection system
- Setup without adjustment
- For food, beverage and pharmaceutical industry thanks to surface finishing <math>< 0.8 \mu\text{m}</math>
- ATEX approvals



The 8112 is a vibrating level switch for liquids, using a tuning fork for level detection.

It is designed for industrial use in areas of process technology and can be used in liquids. Typical applications are overflow or dry run protection.

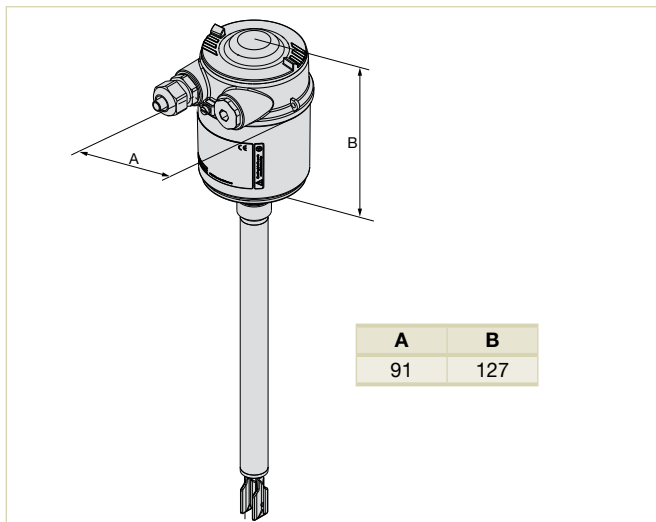
The Type 8112 is available with different sensor length using tube extension. The right length can be adapted thanks to a lock fitting. Due to the simple and rugged measuring system, the Type 8112 is virtually unaffected by the chemical and physical features of the liquid.

It works even under unfavourable conditions such as turbulence, air bubbles, foam generation, buildup or varying products.

Technical data

General data	
Materials	
Housing/Cover/Seal ring	PBT, Stainless steel 316L (1.4435)/PC/EPDM
Wetted parts	
Tuning fork & process fitting	Stainless steel 316L (1.4435)
Extension tube \varnothing 21.3	Stainless steel 316L (1.4435)
Process seal	Klingsil C 4400
Weight	Approx. 890 g + approx. 110 g/m (tube extension)
Electrical connections	1 or 2 cable glands M20 x 1.5 (depends on output version)
Process fitting	Thread G or NPT, $\frac{3}{4}$ or 1; clamp 2"
Surface finishing quality	Ra <math>< 3.2 \mu\text{m}</math> (thread) / Ra <math>< 0.8 \mu\text{m}</math> (Clamp)
Extension tube length	200...1000 mm
Dynamic viscosity	0.1...10000 mPa.s (requirement: with density 1)
Density	0.5...2.5 g/cm ³ (selected by DIP switch) or 0.7...2.5 g/cm ³
Fluid temperature	-50...+150 °C
Fluid pressure	-1...64 bar
Measurement deviation	
Hysteresis	Approx. 2 mm with vertical installation
Delay time/Frequency	Approx. 500 ms/Approx. 1200 Hz
Output	Double relay output or NAMUR output
Ambient temperature	-40...+70 °C (Operating); -40...+80 °C (Storage)

Dimensions [mm]



Electrical data - Sensor with relay output

Output	Relay (DPDT), 2 floating spdts
Power supply	20...253 V AC, 50/60 Hz or 20...72 V DC (at U > 60 V DC the ambient temperature must be max. +50 °C)
Power consumption	1...8 VA (AC); approx. 1.3 W (DC)
Turn-on voltage	Min.: 10 mV; max.: 253 V AC, 253 V DC
Switching current	Min.: 10 mA; max.: 5 A (AC), 1 A (DC)
Switching capacity	Max. 1250 VA, 50 W
Modes (adjustable)	A = max. detection or overflow protection B = min. detection or dry run protection
Delay time	When immersed: 0.5 sec. When laid bare: 1 sec.
Standards and certifications	
Protection class	IP66/IP67 with M20 x 1.5 gland mounted and tightened II (relay output); II (NAMUR output)
Overvoltage category	III
Protection class	I (relay output); II (NAMUR output)
Standards	
EMC	EN61326
Security	EN61010-1
ATEX ¹⁾	EN50014; EN50020; EN50284
NAMUR	IEC 60947-5-6 (EN 50227)

¹⁾ Homologation certificate PTB 07 ATEX 2004X

Ordering chart

Output	Power supply	Extension tube length	Process connection	Electrical connection	Article no.
Double relay (DPDT) ¹⁾ , 2 floating spdts ²⁾	20...72 V DC / 20...250 V AC (5 A)	300	G ¾	2 cable glands M20 × 1.5	558119
			NPT ¾	2 cable glands M20 × 1.5	558120
		500	G ¾	2 cable glands M20 × 1.5	558121
			NPT ¾	2 cable glands M20 × 1.5	558122
		1000	G ¾	2 cable glands M20 × 1.5	558123
			NPT ¾	2 cable glands M20 × 1.5	558124
		300	G 1	2 cable glands M20 × 1.5	558125
			NPT 1	2 cable glands M20 × 1.5	558126
		500	G 1	2 cable glands M20 × 1.5	558127
			NPT 1	2 cable glands M20 × 1.5	558128
		1000	G 1	2 cable glands M20 × 1.5	558129
			NPT 1	2 cable glands M20 × 1.5	558130
		300	Clamp 2"	2 cable glands M20 × 1.5	558131
				2 cable glands M20 × 1.5	558132
				2 cable glands M20 × 1.5	558133
		Namur signal - Ex version ATEX approval	8.2 V DC – via an intrinsic safety interface with NAMUR input	300	G ¾
G 1	1 cable gland M20 × 1.5				558135
500	G ¾			1 cable gland M20 × 1.5	558136
	G 1			1 cable gland M20 × 1.5	558137
1000	G ¾			1 cable gland M20 × 1.5	558138
	G 1			1 cable gland M20 × 1.5	558139

1) Double Pole Double Throw - two simultaneous changeover switches

2) Single Pole Double Throw - single pole changeover switch

Accessories

Description	Article no.
Set with 2 reductions M20 × 1.5 / NPT ½ +2 neoprene flat seals for cable gland +2 screw-plugs M20 × 1.5	551782
Lock fitting - only for pressureless handling, -50...150 °C; G 1	558218
Lock fitting - only for pressureless handling, -50...150 °C; NPT 1	558219

OEM radar measuring device for aggressive medium

8136

- For level measurement up to 20 m, 4...20 mA/Hart – 2 wires
- Adjustable via Display, key operation or PC-Tool with DTM
- ATEX certification
- Insensitive to variations of temperature, pressure, medium data of the product and gas layers



Type 8136 is a non-contact radar level measuring device for continuous level measurement.

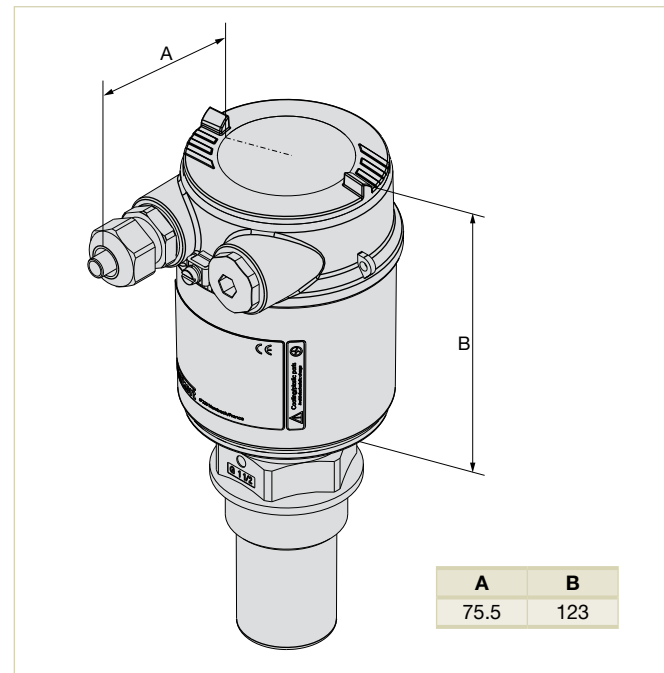
The unit is available in two versions:

- with encapsulated horn antenna particularly suitable for level measurement of aggressive liquids in small vessels.
- with plastic horn antenna particularly suitable for measurement in open flumes or gauge measurement in waters.

Technical data

General data	
Materials	
Housing / Cover	PBT, Stainless steel, 316L / PC
Seal ring / Ground terminal	NBR / St. st. 316Ti/316L (1.4571/1.4435)
Mounting strap / Fixing screws	St. st. 304 (1.4301) / St. st. 316L (1.4435)
Wetted parts	
Encapsulated horn antenna version	
Process connection	PVDF
Antenna / Seal	PVDF (completely encapsulated) / FKM
Plastic horn antenna version	
Process connection	Stainless steel 316L (1.4435)
Horn antenna / Focus lens	PBT-GF30 / PP
Display¹⁾	LCD in full dot matrix (option)
Process connection	Thread G 1½ or NPT 1½ (Encapsulated horn antenna version) Mounting strap 170 mm (Plastic horn antenna version)
Max. torque mounting boss	4 Nm (mounting screws - strap on the sensor housing)
Electrical connection	Cable glands M20 x 1.5
Measuring value	Distance between process connection and product surface
Min. dielectric figure	$\epsilon_r > 1.6$
Dead zone	50 mm ²⁾
Measuring range	0.05...10 m (Encapsulated horn antenna ver.) 0...20 m (Plastic horn antenna version)
Process temperature	-40...+80 °C
Vessel pressure	-1...3 bar (-100...00 kPa)
Vibration resistance	Mechanical vibrations with 4 g and 5...100 Hz
Temperature coefficient	0.03 %/10 K (Average temperature coefficient of the zero signal - temperature error)
Resolution	Max. 1 mm
Frequency	K-band (26 GHz technology)
Interval	Approx. 1 s
Beam angle at 3 dB	22° (Encapsulated horn antenna vers.) 10° (Plastic horn antenna vers.)

Dimensions [mm]



Adjustment time	> 1 s (dependent on the parameter adjustment)
Measurement deviation	± 2 mm
Electrical data	
Operating voltage	14...36 V DC or 14...30 V DC (Ex ia instrument)
Permissible residual ripple	< 100 Hz: U _{ss} < 1 V 100 Hz...10 kHz: U _{ss} < 10 mV
Output signal	4...20 mA/HART
Resolution	1.6 µA
Fault signal	Current output unchanged 20.5 mA, 22 mA or < 3.6 mA (selectable)
Current limitation	22 mA
Load	See load diagram
Damping (63 % of the input variable)	0...999 s, adjustable

1) to be ordered separately

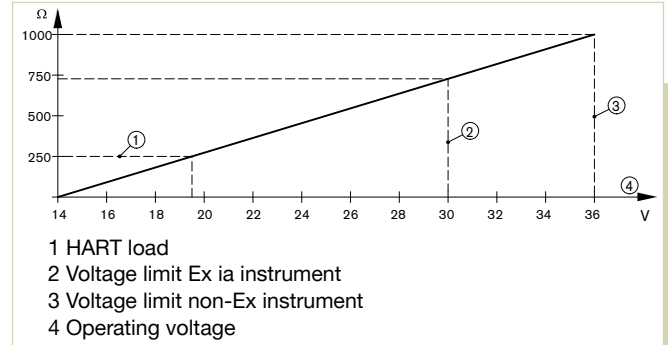
2) Encapsulated horn antenna version. In products with low dielectric value up to 50 cm.

Technical data continued

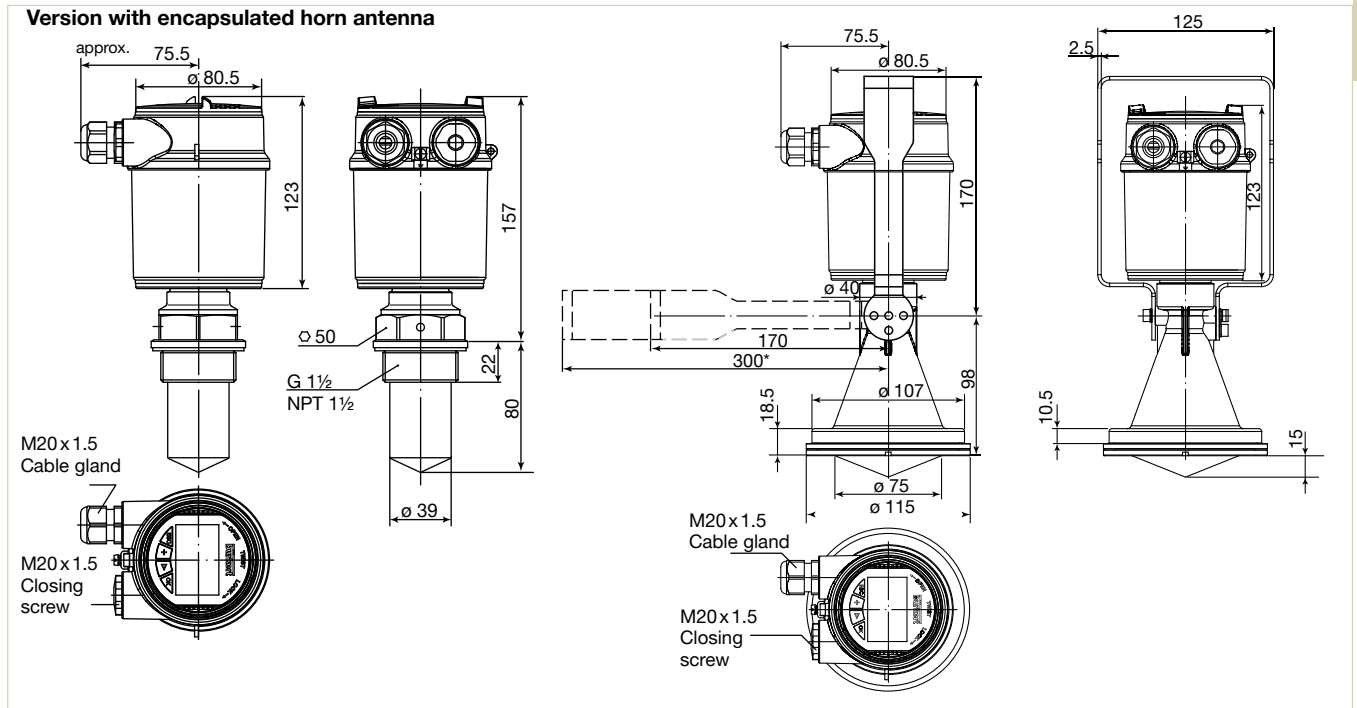
Standards and certifications	
Protection class	IP66/IP67 with M20 x 1.5 gland mounted and tightened
Overvoltage category	III
Protection class	II
Standard	
EMC	EN61326
Security	EN61010-1
NAMUR	NE 21; NE 43
Certifications	ATEX ¹⁾ : EN60079-0; EN60079-11; EN60079-26

1) Certificate PTB 08 ATEX 2002X

Load diagram



Dimensions [mm]



Adapter flange²⁾ for plastic horn antenna Ø 80 mm version

Flange	Ø D	Ø k	Ø d	Number of hole
DN100 PN16	220	180	18	8 x 45° (=360°)
ASME (ANSI B16.5) 4" 150 psi	228.6	190.5	19.1	8 x 45° (=360°)

2) The 300 mm mounting bracket of the flange adapter must be ordered separately.



Ordering chart

Description	Voltage supply	Output	Sensor	Electrical connection	Article no.
Encapsulated horn – 40 mm	14...36 V DC	4...20 mA/HART (2-wire)	G 1½	Cable gland M20 x 1.5	560146
Plastic horn – 80 mm	14...36 V DC	4...20 mA/HART (2-wire)	Mounting bracket or compression flange	Cable gland M20 x 1.5	560150

Note: Display not included, must be ordered separately (see accessories)

Accessories

Description	Article no.
Set with 2 reductions M20x1.5/NPT ½ + 2 neoprene flat seals for cable gland + 2 screw-plugs M20x1.5	551782
Set with a display/configuration module, a transparent cover and a seal ring	559279
Hart-USB Modem	560177
Mounting strap 300 mm	559839
Adapter flange DN100 PN16 FKM/PPH	560437
Adapter flange ASME (ANSI B16.5) 4" 150PSI FKM/PPH	560436

8136

Radar Level Transmitter for Liquids

8137 / 8138

G thread or flange connection

- For filling level measurement up to 30 m
- High Pressure Version
- Two-wire version
- Adjustable via display and buttons as well as PC-Tool with DTM



Radar level transmitter for aggressive media and high pressure. A sleek, compact stainless steel design incorporates a 2-wire HART transmitter which is easily PC configurable.

Technical data

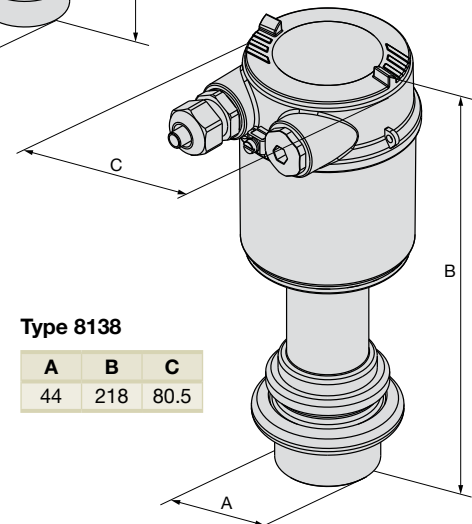
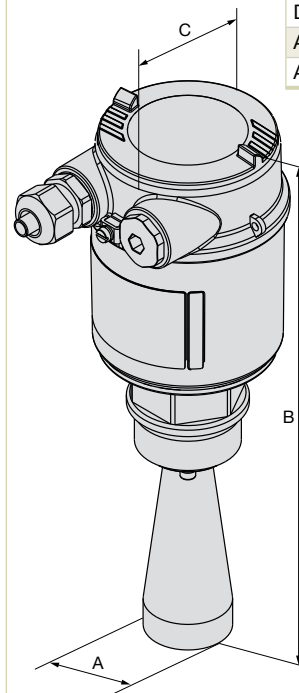
Type	8137	8138
General data		
Materials		
Housing / Cover	PBT, Stainless steel 316L / PC	
Seal ring	NBR	
Ground terminal	Stainless steel 316Ti/316L (1.4571/1.4435)	
Wetted parts		
Process connection	Stainless steel 316L	
Seal (thread version)	KLINGERSIL® C-4400	-
Antenna / Antenna cone	Edelstahl 316L / PTFE (TFM 1600 PTFE)	TFM™ PTFE / -
Seal	FKM (antenna system)	EPDM
Display	LCD in full dot matrix ¹⁾	
Ambient temperature	-40...+80 °C	
Voltage supply	2-wire, 14...36 V DC	
Current consumption max.	22 mA	
Electrical connections	Cable glands M20 x 1.5	
Outputs	4...20 mA/HART	
Dead zone	50 mm	
Measuring range (40 mm antenna)	50 mm...10 m	
Process temperature	-40...+130 °C	-40...+200 °C
Vessel pressure	-1...40 bar (-100...4000 kPa) or according to flange rules	-1...16 bar (-100...1600 kPa)
Vibration resistance	Mechanical vibrations with 4 g and 5...100 Hz	
Accuracy	±3 mm	
Min. dielectric	ε _r > 1.6	
Temperature coefficient	0.03 %/10K (Average temperature coefficient of the zero signal – temperature error)	
Resolution	max. 1 mm	
Frequency	K-band (26 GHz technology)	
Interval	Approx. 1 s	
Beam angle at 3 dB	22° (antenna with Ø 40 mm)	18° (range 0.05...10 m) 10° (range 0.05...20 m)
Adjustment time	> 1 sec. (dependent on the parameter adjustment)	
Measurement deviation	±2 mm	
Protection class	IP66, IP67	

1) must be ordered separately.

Dimensions [mm]

Type 8137

Standards	DN	A	B	C
DIN 2501	50	40	279	80.5
DIN 2501	100	75	395	80.5
ANSI B16.5	2"	40	279	80.5
ANSI B16.5	4"	75	395	80.5



Type 8138

A	B	C
44	218	80.5

Technical data continued

Type	8137	8138
Electrical Specifications		
Operating voltage	14...36 V DC or 14...30 V DC (Ex ia instrument)	
Permissible residual ripple	< 100 Hz: U _{ss} < 1 V 100 Hz... 10 kHz: U _{ss} < 10 mV	
Output signal	4... 20 mA/HART	
Resolution	1.6 µA	
Fault signal	Current output unchanged 20.5 mA, 22 mA or < 3.6 mA (selectable)	
Current limitation	22 mA	
Load	See load diagram	
Damping (63 % of the input variable)	0...999 s, adjustable	
Standards and certifications		
Protection class	IP66/IP67 with mounted and tightened cable gland M20 × 1.5	
Overvoltage category	III	
Protection class	II	
Standard		
EMV	EN61326	EN61326
Security	EN61010-1	EN61010-1
NAMUR	NE 21; NE 43	NE 21; NE 43
Certifications	ATEX ¹⁾ : EN60079-0; EN60079-11; EN60079-26	ATEX ¹⁾ : EN60079-0; EN60079-11; EN60079-26 FDA

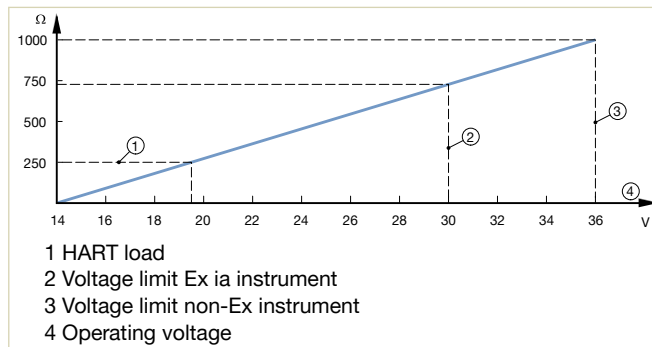
Type	8137	8138
Specifications Ex		
Ex-Protection	Categories G ½ or G 2	
Ex-Certification	EEx ia IIC T6	
Conformity specifications¹⁾		
Operating voltage U _i	30 V	
Short circuit rating I _i	131 mA	
Power limitation P _i	983 mW	
Ambient temperature	-40...+55 °C (depending on the category)	
Internal capacity C _i	Negligible	
Internal inductivity L _i	Negligible	

¹⁾ homologation certificate PTB 08 ATEX 2002X

Option

- Other hygienic fittings

Load diagram

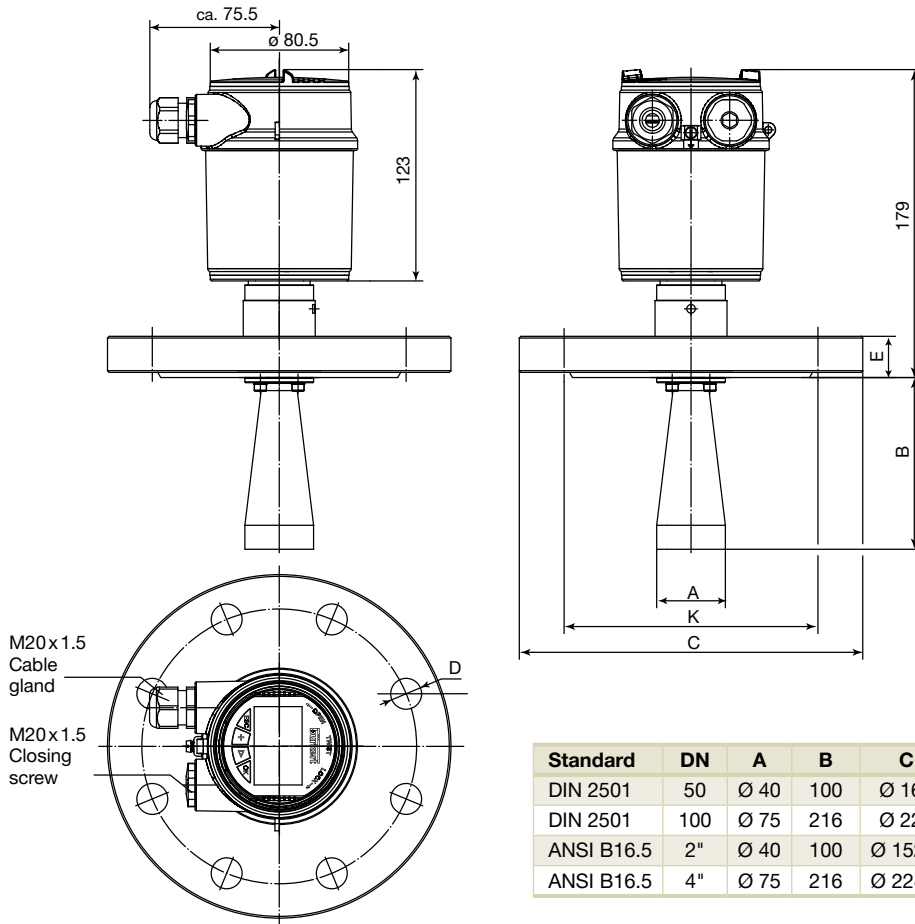








8137/8138



Dimensions [mm]

Flange horn antenna version







Ordering chart

Area of application	Process connection	Electrical connection	Article no.
Type 8137			
Without Ex	G 1½ ISO 228	M20 cable gland	560157 
	Flange DIN 2301 DN50	M20 cable gland	560161 
Ex	G 1½ ISO 228	M20 cable gland	560158 
	Flange DIN 2301 DN50	M20 cable gland	560162 

Area of application	Process connection	Electrical connection	Article no.
Type 8138			
Without Ex	Clamp 2"	M20 cable gland	560169 
Ex	Clamp 2"	M20 cable gland	560170 

Note: Display not included, must be ordered separately (see accessories)

Accessories

Description	Article no.
Set with 2 M20 × 1.5 / NPT ½-Reductions + 2 Neoprene gaskets for cable gland M20 × 1.5 + 2 sealing plugs	551782 
HART-USB Modem	560177 
Set with a display/configuration module, a transparent cover and a seal ring	559279 
Set with a transparent cover and a sealing ring	561006 

Ultrasonic Level Transmitter for General Application

8177

G thread process connection

- Two-wire version
- Reliable non-contact measurement
- HART configuration

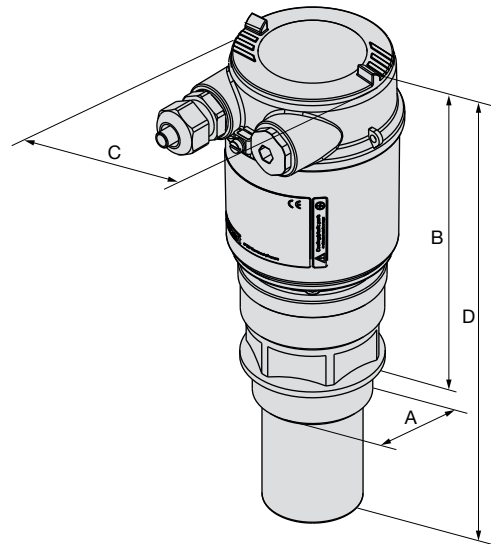


Ultrasonic level transmitters for non-contact measurement of process liquids and solids. Standard HART and 4...20mA HART compatible output.

Technical data

General data	
Materials	
Housing / Cover	PBT, Stainless steel 316L (1.4404) / PC
Seal ring	EPDM
Ground terminal	Stainless steel 316Ti/316L (1.4571/1.4435)
Wetted parts	
Process connection, transducer	PVDF
Process seal	EPDM
Display	LCD in full dot matrix ¹⁾
Process connection	Thread G 2 or NPT 2
Max. torque mounting boss	25 Nm
Electrical connection	Cable glands M20 x 1,5
Measuring value	Distance between lower edge of the transducer and product surface
Dead zone	0.4 m
Measuring range	0.4...8 m (for liquids) 0.4...3.5 m (for solids)
Process temperature	-40...+80 °C
Vessel pressure	-0.2...2 bar (-20...200 kPa)
Vibration resistance	Mechanical vibrations with 4 g and 5...100 Hz
Temperature coefficient	0.06%/10K (Average temperature coefficient of the zero signal - temperature error)
Resolution	Max. 1 mm
Frequency	55 kHz
Interval	>2 s (dependent on the parameter adjustment)
Beam angle at 3 dB	11°
Adjustment time²⁾	>3 s (dependent on the parameter adjustment)
Measurement deviation	<0.2 % or ±4 mm (see diagram)
Electrical data	
Operating voltage	14...36 V DC or 14...30 V DC (Ex ia instrument)
Permissible residual ripple	<100 Hz: U _{ss} <1 V 100 Hz...10 kHz: U _{ss} <10 mV
Output signal	4...20 mA/HART
Resolution	1.6 µA
Fault signal	Current output unchanged; 20.5 mA; 22 mA <3.6 mA (adjustable)

Dimensions [mm]



A	B	C	D
NPT 2	123	80.5	274
G 2	123	80.5	274

Option

- Process connection clamp 2", 3", 3 1/2", 4"

Current limitation	22 mA
Load	see load diagram
Damping (63 % of the input variable)	0...999 s, adjustable

1) Must be ordered separately

2) Time to output the correct level (with max. 10 % deviation) after a sudden level change.

Technical data continued

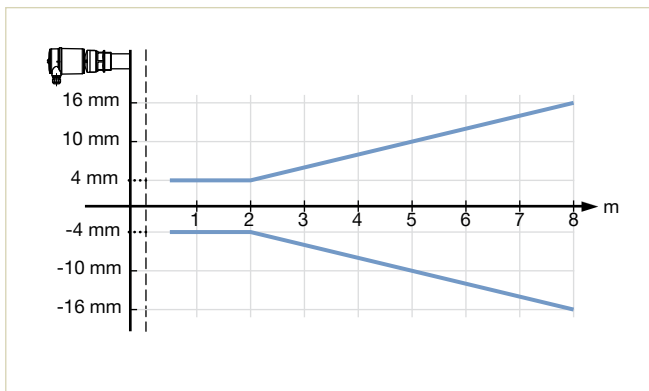
Environment	
Ambient temperature with display, adjustment elements	-20...+70 °C (operation and storage)
Relative humidity	Max. 75 % (operation), max. 85 % (storage); without condensation
Standards and certifications	
Protection class	IP66/IP67 with M20x1.5 gland mounted and tightened
Overvoltage category	III
Protection class	II
Standards and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
NAMUR	NE 21; NE 43
Certifications	ATEX ¹⁾ : EN50014; EN50020; EN50284

Specifications Ex	
Ex-Protection	Categories G ½ or G 2
Ex-Certification	EEx ia IIC T6
Conformity specifications ¹⁾	
Operating voltage U _i	30 V
Short circuit rating I _i	131 mA
Power limitation P _i	983 mW
Ambient temperature	-20...+41 °C (dependent on categories)
Internal capacity C _i	Negligible
Internal inductivity L _i	Negligible

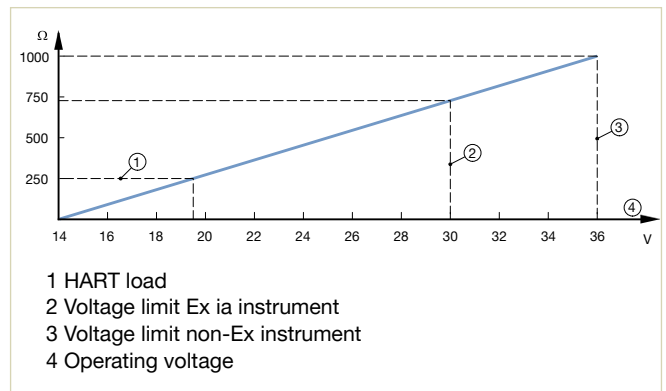
1) Homologation certificate PTB 07 ATEX 2003X

8177

Measurement deviation diagram



Load diagram



Ordering chart (versions with display)

Area of application	Process connection	Range (liquids)	Range (solids)	Electrical connection	Article no.
Type 8177					
Without Ex	G 2 ISO 228	0.4...8 m	0.4...3.5 m	M20 cable gland	558224
Ex	G 2 ISO 228	0.4...8 m	0.4...3.5 m	M20 cable gland	558226


Note: Display not included, must be ordered separately (see accessories)

Accessories

Description	Article no.
Set with 2 reductions M20x1.5/NPT ½ + 2 neoprene flat seals for cable gland + 2 screw-plugs M20x1.5	551782
Set with a display/configuration module, a transparent cover and a seal ring	559279
Set with a transparent cover and a seal ring	561006

Guided microwave level measurement device

8188

- Universal level measurement device for liquids
- Liquid interface measurement
- Insensitive to dust and steam
- 4...20 mA/HART – 2 wires, ATEX/IECEx certification 



The Type 8188 is a level measurement device with cable, rod, both interchangeable probe or with coax probe, designed for continuous level measurement. The unit is suitable for liquids, for industrial use in all areas of process technology. With a measuring range up to 75 m, the 8188 is best suited for tall vessels.

Even process conditions such as strong steam generation, density fluctuations or changes of the dielectric constant do not influence the accuracy of the measurement.

Build-up or condensation on the probe or vessel wall do not influence the measuring result.

A liquid interface measurement is also possible with the Type 8188, typically an oil/water interface.

Technical data

General data

Materials

Housing / Cover	PBT, Stainless steel 316L (1.4404) / PC
Seal ring / Ground terminal	NBR / Stainless steel 316L
Wetted parts	
Process fitting	
Rod and cable	Stainless steel 316L ¹⁾ and PPS (for version up to 6 bar) Stainless steel 316L ¹⁾ and PEEK (for version up to 40 bar)
Coax.-Ø 21.3 mm	Stainless steel 316L ¹⁾ and PEEK
Process seal	EPDM
Inner conductor (up to the separation cable/rod)	Stainless steel 316L ¹⁾
Spacers	PFA (only for coax. probe version)
Rod-Ø 8 mm	Stainless steel 316L ¹⁾
Cable-Ø 4 mm with gravity weight	Stainless steel 316L ¹⁾
Coax.-Ø 21.3 mm (tube)	Stainless steel 316L ¹⁾

Display LCD in full dot matrix

Process connection Thread G or NPT ¾ or 1

Weight

Housing	890 g
Rod-Ø 8 mm	Approx. 400 g/m
Cable-Ø 4 mm	Approx. 60 g/m
Coax.-Ø 21.3 mm	Approx. 1110 g/m
Gravity weight (only with cable version)	Approx. 200 g

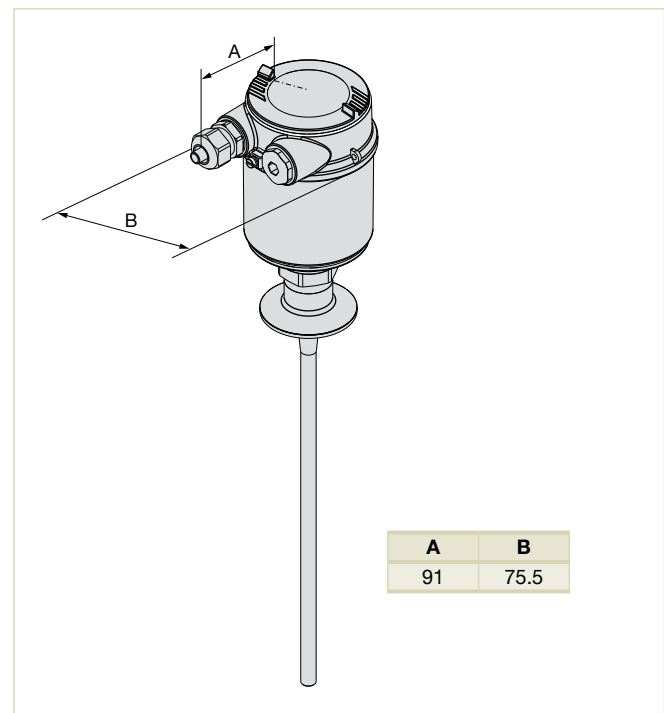
Length

Rod-Ø 8 mm	0.3...6 m - Lateral load: 10 Nm
Cable-Ø 4 mm	0.5...75 m - Max. tensile load: 2.5 KN
Coax.-Ø 21.3 mm	0.3...6 m - Lateral load: 60 Nm

Electrical connection Cable gland M20 x 1.5

Measurement type Level of liquids¹⁾

Dimensions [mm]



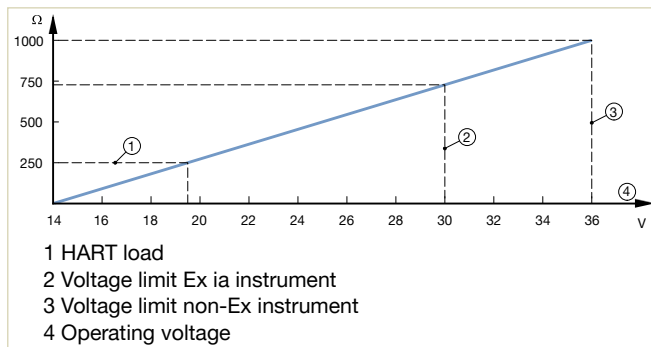
Options

- Other hygienic fittings

Technical data continued

Min. Dielektrizitätszahl	
Stab and Seil	$\epsilon_r > 1.6$
Koax.-Ø 21.3 mm	$\epsilon_r > 1.4$
Dead band	
in water	
Rod-Ø 8 mm	From top of probe: 80 mm - from bottom of probe: 0 mm
Cable-Ø 4 mm	From top of probe: 80 mm - from bottom of probe: 0 mm
Coax.-Ø 21.3 mm	From top of probe: 30 mm - from bottom of probe: 0 mm
in oil	
Rod-Ø 8 mm	From top of probe: 150 mm - from bottom of probe: 50 mm
Cable-Ø 4 mm	From top of probe: 150 mm - from bottom of probe: 150 mm
Coax.-Ø 21.3 mm	From top of probe: 100 mm - from bottom of probe: 50 mm
Measuring range	0.03...6 m or 0.08...75 m (see diagram)
Process temperature	-40...+150 °C (restricted up to 80 °C for rod and cable probe version up to 6 bar)
Process pressure (depends on the fitting)	For process fitting in: Stainless steel 316L ¹⁾ /PPS: -1...+6 bar (-100...+600 kPa) Stainless steel 316L ¹⁾ /PEEK: -1...+40 bar (-100...+4000 kPa)
Temperature drift	0.03 %/10K (Relating to the max. measurement range)
Repeatability	± 1 mm (max.)
Measurement deviation	± 2 mm
Electrical data	
Operating voltage (Un)	9.6...35 V DC or 9.6...30 V DC (Ex ia instrument), filtered and regulated; Connection to main supply: permanent (through external SELV and LPS power supply)
Output signal	4...20 mA/HART (Range of the output signal 3.8...20.5 mA/HART (default setting))
Resolution	0.3 µA
Fault signal (adjustable)	Last valid measured value or ≥ 21 mA; < 3.6 mA
Current limitation	21.5 mA (max. output current)
Load	$(U_n - U_{min})/0.0215 \text{ A}$
Damping (63% of the input variable)	0...999 s, adjustable
Environment	
Ambient temperature with display, adjustment elements	-40...+80 °C (operation and storage)
Relative humidity	Max. 75 % (operation), max. 85 % (storage); without condensation

Load diagram



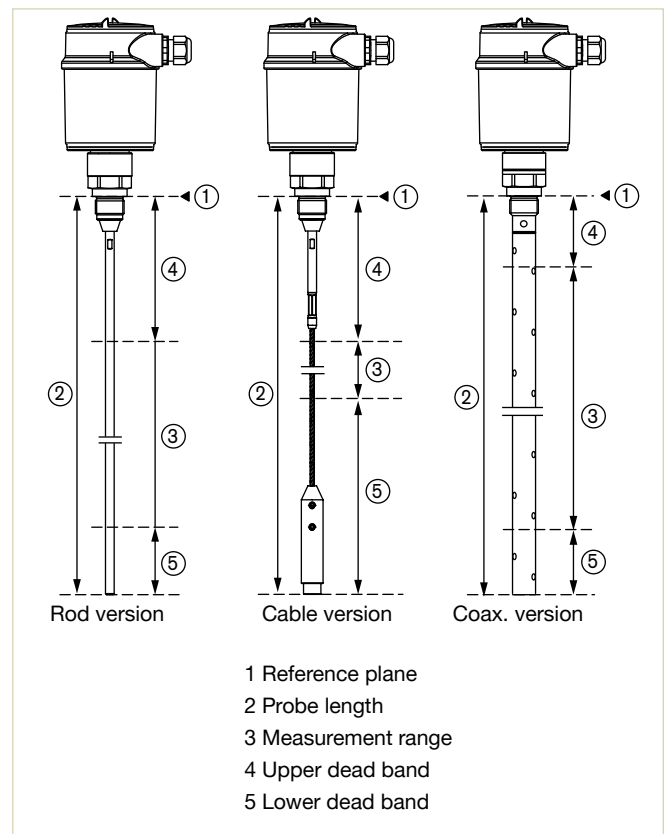
Standards, directives and certifications	
Protection class	IP66/IP67 with M20x1.5 gland mounted and tightened
Overvoltage category	III (IEC 61010-1)
Protection class	III (IEC 61010-1)
Standards and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
NAMUR	NE 21; NE 43; NE 53; NE 107
Certification	ATEX ³⁾ : EN60079-0; EN60079-11; EN60079-26
Specifications Ex	
Ex - Protection	Categories G 1, G 1/2 or G 2
Ex - Certification	EEx ia IIC T6
Conformity specifications³⁾	
Operating voltage Ui	30 V
Short circuit rating Ii	131 mA
Power limitation Pi	983 mW
Ambient temperature	-50...+46 °C (dependent on category)
Internal capacity Ci	Negligible
Internal inductivity Li	≤ 5 µH

1) (1.4404 or 1.4435)

2) For applications regarding solids, please consult your local Bürkert Sales Centre.

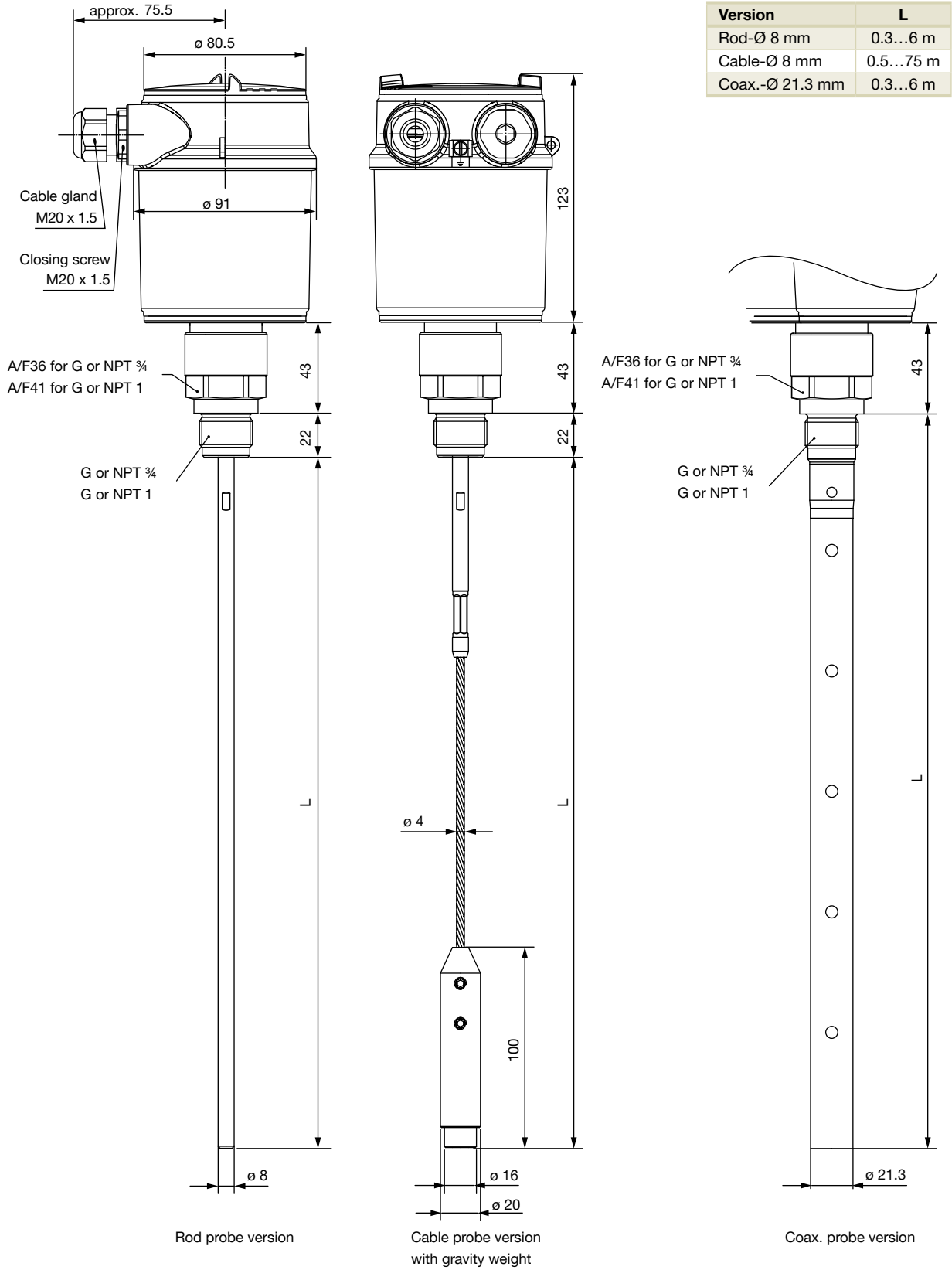
3) Certificate IECEx TUR 14.0014 X / TÜV 14 ATEX 7490 X

Measuring range diagram



Dimensions [mm]

8188



Ordering chart

Description	Operating voltage	Output	Probe	Length	Electrical connection	Article no. (with display/ configuration module)
G 3/4 mounting thread, PN6, temp. max. 80 °C	9.6...35 V DC	4...20 mA/HART (2 wires)	Rod	1 m	Cable gland M20x1.5	565800
				2 m	Cable gland M20x1.5	565804
			Cable	5 m	Cable gland M20x1.5	565812
				10 m	Cable gland M20x1.5	565816
			Coax	1 m	Cable gland M20x1.5	565823
				2 m	Cable gland M20x1.5	565824
G 1 mounting thread, PN40, temp. max. 150 °C	9.6...35 V DC	4...20 mA/HART (2 wires)	Rod	1 m	Cable gland M20x1.5	565802
				2 m	Cable gland M20x1.5	565806
			Cable	5 m	Cable gland M20x1.5	565814
				10 m	Cable gland M20x1.5	565818
			Coax	1 m	Cable gland M20x1.5	565825
				2 m	Cable gland M20x1.5	565826
NPT 3/4 mounting thread, PN6, temp. max. 80 °C	9.6...35 V DC	4...20 mA/HART (2 wires)	Rod	1 m	Cable gland M20x1.5	565801
				2 m	Cable gland M20x1.5	565805
			Cable	5 m	Cable gland M20x1.5	565813
				10 m	Cable gland M20x1.5	565817
			Coax	1 m	Cable gland M20x1.5	565827
				2 m	Cable gland M20x1.5	565828
NPT 1 mounting thread, PN40, temp. max. 150 °C	9.6...35 V DC	4...20 mA/HART (2 wires)	Rod	1 m	Cable gland M20x1.5	565803
				2 m	Cable gland M20x1.5	565807
			Cable	5 m	Cable gland M20x1.5	565815
				10 m	Cable gland M20x1.5	565819
			Coax	1 m	Cable gland M20x1.5	565829
				2 m	Cable gland M20x1.5	565830

Ordering chart continued

8188


Description	Operating voltage	Output	Probe	Length	Electrical connection	Article no. (with display/configuration module)	
Ex version - ATEX certification - G ¾ mounting thread, PN6, temp. max. 80 °C	9.6...30 V DC	4...20 mA/HART (2 wires)	Rod	1 m	Cable gland M20x1.5	565808	
				2 m	Cable gland M20x1.5	565810	
			Cable	5 m	Cable gland M20x1.5	565820	
				Coax	1 m	Cable gland M20x1.5	565831
					2 m	Cable gland M20x1.5	565832
Ex version - ATEX certification - G 1 mounting thread, PN40, temp. max. 150 °C	9.6...30 V DC	4...20 mA/HART (2 wires)	Rod	1 m	Cable gland M20x1.5	565809	
				2 m	Cable gland M20x1.5	565811	
			Cable	5 m	Cable gland M20x1.5	565821	
				Coax	1 m	Cable gland M20x1.5	565833
					2 m	Cable gland M20x1.5	565834
Ex version - IECEx certification - NPT ¾ mounting thread, PN6, temp. max. 80 °C	9.6...30 V DC	4...20 mA/HART (2 wires)	Rod	1 m	Cable gland M20x1.5	565839	
				2 m	Cable gland M20x1.5	565840	
			Cable	5 m	Cable gland M20x1.5	565841	
				Coax	1 m	Cable gland M20x1.5	565835
					2 m	Cable gland M20x1.5	565836
Ex version - IECEx certification - NPT 1 mounting thread, PN40, temp. max. 150 °C	9.6...30 V DC	4...20 mA/HART (2 wires)	Rod	1 m	Cable gland M20x1.5	565842	
				2 m	Cable gland M20x1.5	565843	
			Cable	5 m	Cable gland M20x1.5	565844	
				Coax	1 m	Cable gland M20x1.5	565837
					2 m	Cable gland M20x1.5	565838

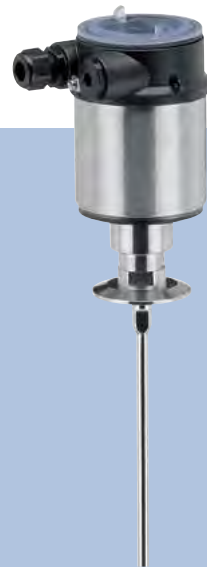
Accessories

Description	Article no.
Set with 2 reductions M20x1.5/NPT ½ + 2 neoprene flat seals for cable gland + 2 screw-plugs M20x1.5	551782
HART-USB Modem	560177
Set with a display/configuration module, a transparent cover and a seal ring	559279
Set with a transparent cover and a seal ring	561006

Guided microwave level measurement device - sanitary version

8189

- Universal level measurement device for liquids
- Liquid interface measurement
- Insensitive to dust and steam
- 4...20 mA/Hart – 2 wires, ATEX/IECEx certifications 



The Type 8189 is a level measurement device with interchangeable rod probe, designed for continuous level measurement. The unit is suitable for liquids, for industrial use in all areas of process technology. But the main application targets are in Food and Beverage (F&B) and pharmaceutical tanks to the new rod in stainless steel 1.4435 with $Ra < 0.76 \mu m$.

For applications with corrosive liquids a PFA coated version is available.

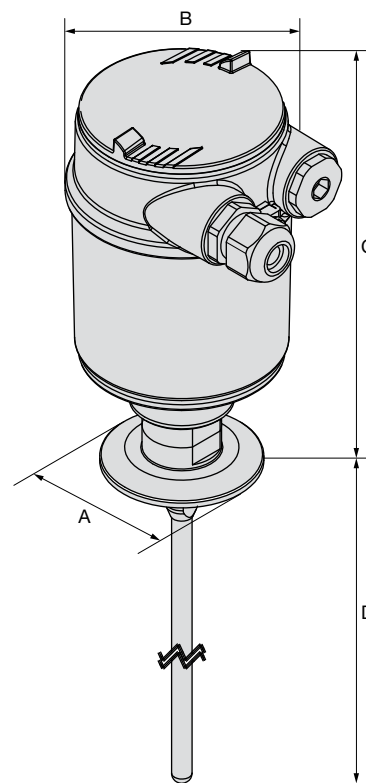
Even process conditions such as strong steam generation, density fluctuations or changes of the dielectric constant do not influence the accuracy of the measurement.

Build-up or condensation on the probe or vessel wall do not influence the measurement result.

Technical data

General data	
Materials	
Housing / Cover	PBT, Stainless steel 316L (1.4404) / PC
Seal ring / Ground terminal	NBR / Stainless steel 316L
Wetted parts	
Process fitting	Stainless steel 316L (1.4404 or 1.4435) and PEEK
Process seal	EPDM
Rod-Ø 8 mm, polished	Stainless steel 316L (1.4435)
Rod surface finish	$Ra < 0.76 \mu m (BN_2)$
Display	LCD in full dot matrix
Weight	
Housing	890 g
Rod-Ø 8 mm	Approx. 400 g/m
Process fitting	Clamp 2" or DIN11851 DN50
Length	0.3...4 m – Lateral load: 10 Nm
Electrical connections	Cable gland M20x1.5
Measurement type	Level of liquids
Min. dielectric figure	$\epsilon_r > 1.6$
Dead band	
in water	From top of probe: 80 mm - from bottom of probe: 0 mm
in oil	From top of probe: 150 mm - from bottom of probe: 100 mm
Measurement range	0.08...4 m (see diagram on next page)
Process temperature	-20...+50 °C
Process pressure	-1...16 bar (-100...+1600 kPa) (depends on the process fitting)
Temperature drift	0.03 %/10K (Relating to the max. measurement range)

Dimensions [mm]



Clamp connection	A Ø	B Ø	C	D [m]
1", 1½"	50.5	91	174.6	0.3...4 (Length see ordering chart)
2"	64.0			
2½"	77.5			
3"	91.0			

Repeatability < ± 1 mm

Deviation ± 2 mm

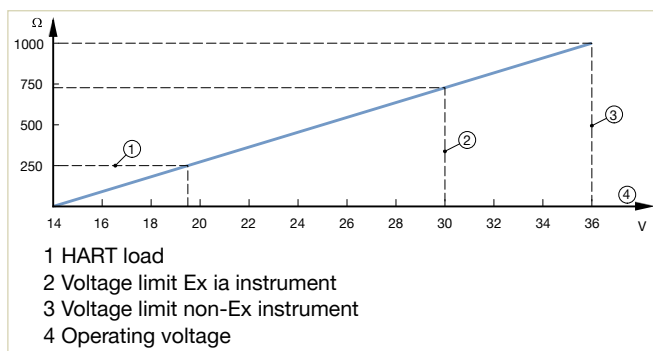
Technical data continued

Electrical data	
Operating voltage (U_n)	9.6...35 V DC or 9.6...30 V DC (Ex ia instrument), filtered and regulated; Connection to main supply: permanent (through external SELV and LPS power supply)
Output signal	4...20 mA/HART (Range of the output signal 3.8...20.5 mA/HART (default setting))
Resolution	0.3 µA
Fault signal (adjustable)	Last valid measured value or ≥21 mA; <3.6 mA
Current limitation	21.5 mA (max. output current)
Load	(U _n - U _{min})/0.0215 A
Damping (63% of the input variable)	0...999 s, adjustable
Environment	
Ambient temperature with display, adjustment elements	-40...+80 °C (operation and storage)
Relative humidity	Max. 75 % (operation), max. 85 % (storage); without condensation

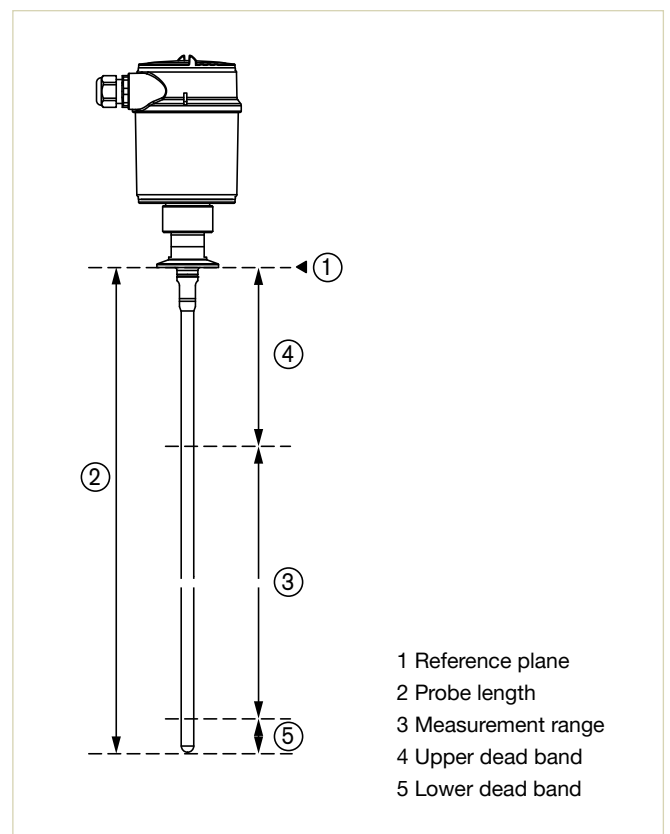
Standards and certifications	
Protection class	IP66/IP67 with M20 x 1.5 gland mounted and tightened
Overvoltage category	III (IEC 61010-1)
Protection class	III (IEC 61010-1)
Standard	EMC / Safety EN61326 / EN61010-1 ATEX ¹⁾ EN60079-0; EN60079-11; EN60079-26 NAMUR NE 21; NE 43
Certifications	FDA
Specifications Ex	
Ex - Protection	Categories G 1, G ½ or G 2
Ex - Certification	EEx ia IIC T6
Conformity specifications¹⁾	30 V Operating voltage U _i 131 mA Short circuit rating I _i 983 mW Power limitation P _i -50...+46 °C (dependent on category) Ambient temperature Negligible Internal capacity C _i ≤5 µH Internal inductivity L _i

1) Certificate IECEx TUR 14.0014 X / TÜV 14 ATEX 7490 X













Load diagram



Measuring range diagram







Ordering chart

Specifications	Voltage supply	Output	Probe	Length	Electrical connection	Article no. with display/configuration module
Compact measurement device Type 8189						
Clamp 2"	9.6...35 V DC	4...20 mA/HART (2 wires)	Rod	1 m	Cable gland M20 x 1.5	565850 
				2 m	Cable gland M20 x 1.5	565852 
DIN11851 - DN50	9.6...35 V DC	4...20 mA/HART (2 wires)	Rod	1 m	Cable gland M20 x 1.5	565851 
				2 m	Cable gland M20 x 1.5	565853 
Ex version - ATEX approval - Clamp 2"	9.6...30 V DC	4...20 mA/HART (2 wires)	Rod	1 m	Cable gland M20 x 1.5	565854 
				2 m	Cable gland M20 x 1.5	565856 
Ex version - ATEX approval - DIN11851 DN50	9.6...30 V DC	4...20 mA/HART (2 wires)	Rod	1 m	Cable gland M20 x 1.5	565855 
				2 m	Cable gland M20 x 1.5	565857 
Ex version - IECEx approval - Clamp 2"	9.6...30 V DC	4...20 mA/HART (2 wires)	Rod	1 m	Cable gland M20 x 1.5	565858 
				2 m	Cable gland M20 x 1.5	565860 
Ex version - IECEx approval - DIN11851 DN50	9.6...30 V DC	4...20 mA/HART (2 wires)	Rod	1 m	Cable gland M20 x 1.5	565859 
				2 m	Cable gland M20 x 1.5	565861 

¹⁾ Other lengths on request

Accessories

Specifications	Article no.
Set with 2 reductions M20 x 1.5/NPT 1/2 + 2 neoprene flat seals for cable gland + 2 screw-plugs M20 x 1.5	551782 
Hart-USB Modem	560177 
Set with a display/configuration module, a transparent cover and a seal ring	559279 
Set with a transparent cover and a seal ring	561006 

Overview for Analysis Sensors

Note: The following product overview does not show the complete product range of this catalogue. A complete overview can be found [here](#) ▶

Overview Analysis Sensors	Category	Type	Basic functions	Operating principle	Measuring range	Fluid temperature [°C]	Fluid pressure [bar]	Temperature compensation
pH/redox potential measurement		8202 Standard ▶	Transmitter, measuring device	Depends on installed probe, Type 8203	pH: -2...16 ORP: -2000...+2000 mV	-20...+130 restricted by connecting nut or adapter Type S022 or probe Type 8203 used	PN16 (depends on installed probe)	Automatic (integrated Pt1000)
		8202 neutrino ▶	Transmitter, measuring device	Depends on installed probe, Type 8203	pH: 0...14 ORP: -2000...+2000 mV	-20...+130 restricted by connecting nut or adapter Type S022 or probe Type 8203 adapter	PN16 (depends on installed probe)	Automatic (integrated Pt1000)
Conductivity measurement		8220 ▶	Sensor	Conductive, 2-pole electrode	0.05 µS/cm...200 mS/cm (depending on the cell constant)	0...+100 (Depending on the S020 fitting used)	PN10	Pt1000
		8221 ▶	Sensor	Conductive, 2- or 4-pole electrode	0.05 µS/cm...500 mS/cm (depending on probe version)	-20...+150 (depending on probe version)	Max. 7 (depending on probe version)	Pt1000
		8222 Standard ▶	Sensor, transmitter, measuring device	Conductive, 2-pole electrode	0.05 µS/cm...10 mS/cm	-20...+100 restricted by connecting nut or adapter Type S022 used	PN16	Yes (integrated Pt1000), de- pending on a predefined or special curve
		8222 neutrino ▶	Sensor, transmitter, measuring device	Conductive, 2-pole electrode	0.05 µS/cm...10 mS/cm	-20...+100 restricted by connecting nut or adapter Type S022 used	PN16	Yes (integrated Pt1000), de- pending on a predefined or special curve
		8228 ▶	Sensor, transmitter, measuring device	Inductive	100 µS/cm...2 S/cm	-15 ... +130 restricted by fitting Type S020 used	PN6 PN10	Yes (integrated Pt1000), de- pending on a predefined or special curve

Wetted parts material		Process connection	Fluid properties	Operating voltage	Signal output	Display	Comments
Seal	Sensor/ Sensor holder						
-	Connecting nut PVC: 50 °C connecting nut PVDF: 130 °C	G ½ for Bürkert adaptor/ fitting, Type S022	pH: clean, contaminated, sulphide- or protein-containing liquids ORP: clean, contaminated, liquids containing sulphide or protein and low conductivity liquids	12...36 V DC	2 x transistors + 1 x 4...20 mA or 2 x transistors + 2 x 4...20 mA	Yes, removable	Insertion compact
-	Connecting nut PVC: 50 °C connecting nut PVDF: 130 °C	G ½ for Bürkert adaptor/ fitting, Type S022	pH: clean, contaminated, sulphide- or protein-containing liquids ORP: clean, contaminated, liquids containing sulphide or protein and low conductivity liquids	12...36 V DC	1 x 4...20 mA	No	Insertion compact
FKM, EPDM	PVDF	G 2 for Bürkert adaptor/ fitting, Type S022	Pure or slightly concentrated fluids	None	Analogue raw signal	No	Compatible with Type 8619 multiCELL - transmitter/controller Tanks and vessels can be used with extended version and immersion fitting.
EPDM	Stainless steel, PEEK, PTFE (de- pending on probe version)	Clamp 1 ½", 2"; G ¼; 2" (DN50/40) Con- nection suitable for GEA Tuchenhausen VARINLINE process connection; PG 13.5	Pure or concentrated fluids	None	Analogue raw signal	No	Compatible with Type 8619 multiCELL - transmitter/controller
-	Connecting nut PVC: 50 °C connecting nut PVDF: 100 °C	G ½ for Bürkert adaptor/ fitting, Type S022	Pure or slightly concentrated fluids	12...36 V DC	2 x transistors + 1 x 4...20 mA or 2 x Transistors + 2 x 4...20 mA	Yes, removable	Insertion compact
-	Connecting nut PVC: 50 °C connecting nut PVDF: 100 °C	G ½ for Bürkert adaptor/ fitting, Type S022	Pure or slightly concentrated fluids	12...36 V DC	1 x 4...20 mA	No	Insertion compact
EPDM FKM	PP, PVDF or PEEK PEEK and SS or PVDF and SS	G 2 for Bürkert Type S020 fitting or pipe from DN32 equipped with a clamp 2".	Concentrated and highly concen- trated fluids	12...36 V DC	1 x transistor + 1 x 4...20 mA or 2 x transistors + 2 x 4...20 mA	Yes, removable	Insertion compact

pH/ORP meter (with removable control unit)

- Integral compact measurement device for direct connection to control level (PLC).
- Thanks to the modular HMI, parameterization, calibration, transferring of parameterization data easily possible.
- Usage of 120 mm standard PG 13.5 pH/ORP-probes with S8 connector (Type 8203 recommended)
- Simulation of process value and diagnostic function



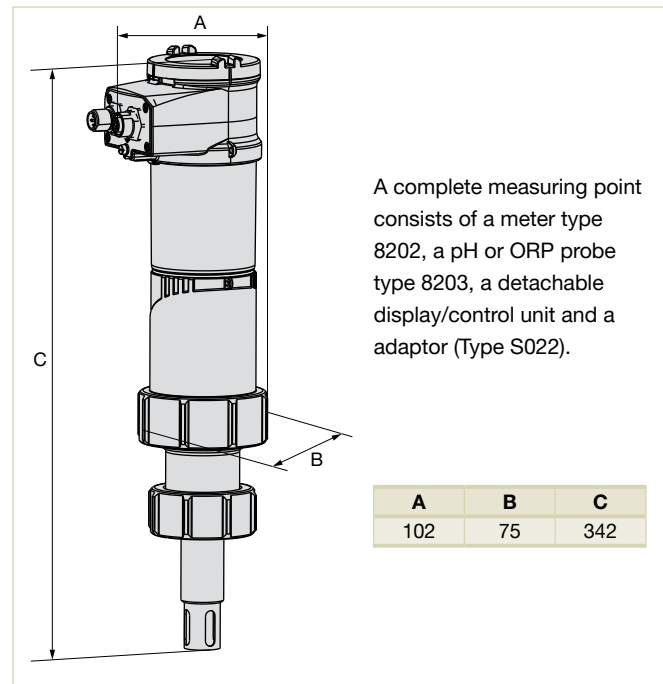
Suitable fitting:
see Type S022 ▶

pH/ORP meter (switchable; depends on attached probe) with programmable outputs. pH or ORP and temperature output via single or dual analog 4...20 mA. Two digital outputs (transistor) are also included. These devices are engineered for a wide scope of measuring ranges and can be delivered in 2-wire or 3-wire configurations. Compatible to standard fittings thanks to the S022 adaptations.

Technical data

Complete device data (Pipe + meter)	
Pipe diameter	DN25...DN110 (DN<25 with reduction)
pH measurement	
Measuring range	-2...16 pH or -580...+580 mV
Resolution	0.001 pH or 0.1 mV
Measurement deviation	±0.02 pH or 0.5 mV
Minimal pH scale	0.5 pH or 30 mV
ORP measurement	
Measurement range	-2000...+2000 mV
Resolution	1 mV
Measurement deviation	±3 mV
Minimal ORP scale	50 mV
Temperature compensation	Automatic via integrated temperature sensor Pt1000
Temperature measurement (via integrated Pt1000)	Measuring range: -20...+130 °C Resolution 0.1 °C Accuracy ±1 °C
Fluid temperature	
with PVC nut connection	0...+50 °C restricted by the used probe
with PVDF nut connection	-20...+130 °C restricted by the used adaptor or probe
	Restriction with adaptor S022 in:
	- PVC: 0...+50 °C
	- PP: 0...+80 °C
	- Metal: -20...+130 °C
Fluid pressure	0...16 bar (see pressure/temperature diagram)
General data	
Compatibility	Any pipe which are fitted out with Bürkert adaptor S022 (see Type S022 ▶ or corresponding data sheet Type S022 ▶)
Materials	
Housing / Cover	Stainless steel 1.4404, PPS / PC
Seals / Screws / Display	EPDM, silicone / Stainless steel / PC
Navigation key	PBT
Fixed connector mounting plate	Stainless steel 1.4404 (316L)
Fixed connector / Nut	Brass nickel plated / PVC or PVDF
Wetted part materials	
Probe holder	PVDF, Stainless steel 1.4571 (316Ti)
Probe	See probe specific technical data

Dimensions [mm]



Options



- Blind version (Neutrino)
- Versions with UR/CSA

Probe	Bürkert pH or ORP probe Type 8203 (recommended) or any other combined 120 mm pH or ORP probe, without temperature sensor, with PG 13.5 head, S7/S8 connector
Temperature sensor	Pt1000 integrated within the holder
Display (accessories)	Grey dot matrix 128 × 64 with backlighting
Electrical connections	
3 outputs meter (2-wire)	1 × 5 pin M12 male fixed connector,
4 outputs meter (3-wire)	1 × 5 pin M12 male and 1 × 5 pin M12 female fixed connectors
Connection cable	Shielded cable

Technical data continued

Electrical data	
Power supply	
3 outputs meter (2-wire)	14...36 V DC, filtered and regulated
4 outputs meter (3-wire)	12...36 V DC, filtered and regulated
Current consumption with sensor	
	≤ 1 A (with transistor loads)
3 outputs meter (2-wire)	≤ 25 mA (at 14 V DC without transistor loads, with current loop)
4 outputs meter (3-wire)	≤ 5 mA (at 12 V DC without transistor loads, without current loop)
Electrical protection	
	Reversed polarity of DC: protected
	Voltage peak: protected
	Short circuit: protected for transistor outputs
Output	
Transistor	Adjustable as sourcing or sinking (respectively both as PNP or NPN), open collector Max. 700 mA, 0.5 A max. per transistor if the 2 transistor outputs are wired Output NPN: 0.2...36 VDC Output PNP: V+ power supply
Current	4...20 mA,
3 outputs meter (2-wire)	Adjustable as sourcing or sinking, max. loop impedance: 1100 Ω at 36 V DC; 610 Ω at 24 V DC; 180 Ω at 14 V DC
4 outputs meter (3-wire)	Adjustable in the same mode as transistor: sourcing or sinking, max. loop impedance: 1100 Ω at 36 V DC; 610 Ω at 24 V DC; 100 Ω at 12 V DC
Response time (10...90 %)	150 ms (standard)
4...20 mA output uncertainty	± 1 % of the range

Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Environment	
Ambient temperature	- 10...+ 60 °C (operating and storage without probe)
Relative humidity	≤ 85 %, without condensation
Standards, directives and certification	
Protection class	IP65 and IP67 with device wired and with M12 cable plug mounted and tightened and cover mounted correctly.
Standard and directives 	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Pressure	Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ¹⁾
Certificate	FDA declaration of conformity
Certification	
UL-Recognized for US and Canada 	UL61010-1 + CAN/CSA-C22.2 No.61010-1

1) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).

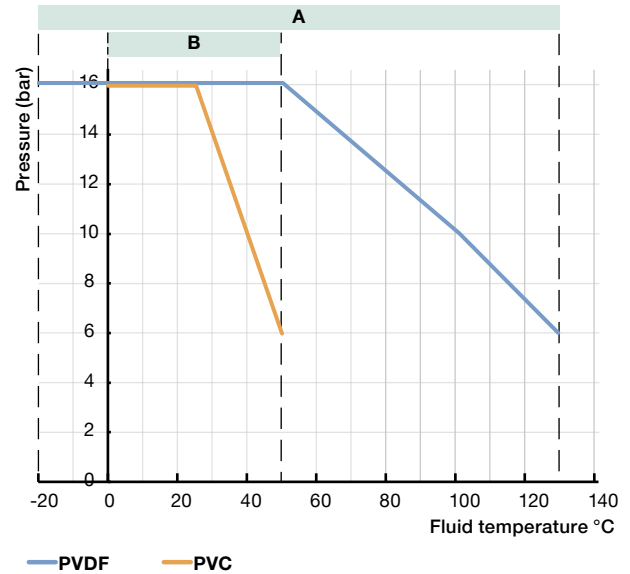
Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

Pressure/Temperature diagrams

Application range of a 8202:

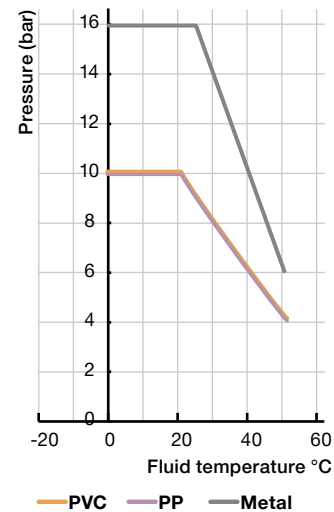
A: with PVDF nut (on request)
B: with PVC nut

The measures have been made at an ambient temperature of 60 °C, without probe.

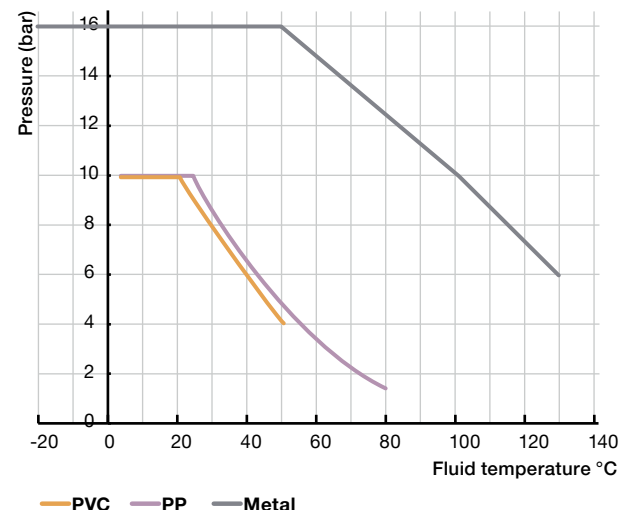


Application range of a 8202 (without probe)

- with PVC nut with S022 adaptor



- with PVDF nut with S022 adaptor



Ordering chart

8202 ELEMENT



Specifications	Voltage supply	Output	Sensor version	Nut material	Electrical connection	UL Certifications	Article no.
Compact meter: probe holder with integrated Pt1000 + electronic module with cover, without display	14...36 V DC	2 x transistors + 1 x 4...20 mA	None	PVC	5 pin M12 male fixed connector	No	559630
						UL-Recognized	559634
	12...36 V DC	2 x transistors + 2 x 4...20 mA	None	PVC	5 pin M12 male and 5 pin M12 female fixed connectors	No	559631
						UL-Recognized	559635
	14...36 V DC	2 x transistors + 1 x 4...20 mA	None	PVDF	5 pin M12 male fixed connector	No	559632
						UL-Recognized	559636
12...36 V DC	2 x transistors + 2 x 4...20 mA	None	PVDF	5 pin M12 male and 5 pin M12 female fixed connectors	No	559633	
					UL-Recognized	559637	

Note: For a complete measurement point the following items must be ordered separately (see accessories):

- Type 8202 ELEMENT
- pH or redox potential probe Type 8203
- Insertion adaptor Type S022
- Display/configuration module
- M12 cable socket, cable connector (only female for single 4...20 mA, 1 male + 1 female for dual 4...20 mA meter)

Probe Type 8203	Description	Article no.
pH probe		
PLASTRODE pH 120 mm	pH probe - 10...+40 °C, 0...6 bar, pH 0...14	560377
FLATRODE pH 120 mm	pH probe 0...+80 °C, 0...6 bar, pH 0...14	561025
LOGOTRODE pH 120 mm	pH probe - 10...+60 °C, 0...6 bar, pH 0...14	427114
UNITRODE PLUS pH 120 mm	pH probe 0...+130 °C, 0...16 bar, pH 0...14	560376
CERATRODE pH 120 mm	pH probe 0...+130 °C, 0...16 bar, pH 0...14	418319
FERMTRODE pH 120 mm	pH probe 0...+140 °C, 0...6 bar, pH 0...14	561727
ORP probe		
FLATRODE ORP 120 mm	ORP probe 0...+80 °C, 0...6 bar, -2000...+2000 mV	561027
LOGOTRODE ORP 120 mm	ORP probe - 10...+60 °C, 0...6 bar, -2000...+2000 mV	560379
UNITRODE PLUS ORP 120 mm	ORP probe 0...+130 °C, 0...16 bar, -2000...+2000 mV	560378

Accessories

Specifications	Article no.
Removable display/configuration module (with instruction sheet)	559168 
Blind cover with seal	560948 
Transparent cover with seal	561843 
One Ø 46 × 2 mm EPDM seal for 120 mm probe holder (with instruction sheet)	559169 
Probe holder with PVC nut	560947 
Probe holder with PVDF nut	561476 
5 pin M12 female straight cable plug with plastic threaded locking ring, to be wired	917116 
5 pin M12 male straight cable plug with plastic threaded locking ring, to be wired	560946 
5 pin M12 female straight cable plug moulded on cable (2 m, shielded)	438680 
5 pin M12 male straight cable plug moulded on cable (2 m, shielded)	559177 

pH/ORP meter (without display and control unit)

- Integral blind measurement device for direct connection to a control level (PLC) with standard signal output
- Fast and easy adaptation of the device between pH and ORP measurement
- Usage of 120 mm standard PG 13.5 pH/ORP-probes with S8 connector (Type 8203 recommended)
- Easy one or two point calibration on the device directly



Suitable fitting:
see Type S022 ▶

The Bürkert 8202 neutrino pH/ORP meter is a compact device designed for the measurement of:

- the pH in clean liquids or liquids containing solids, sulphides or proteins.
- or the oxidation-reduction potential in clean liquids or liquids containing solids, sulphides or proteins which may present low conductivity.

The pH/ORP meter consists of a replaceable standard 120 mm pH or ORP probe, Type 8203, which is screwed into a probe holder with integrated Pt1000 temperature sensor. This ensemble is plugged-in and screwed with a nut to an enclosure with cover, containing the electronic module. Thus, Bürkert simplifies installation and maintenance work.

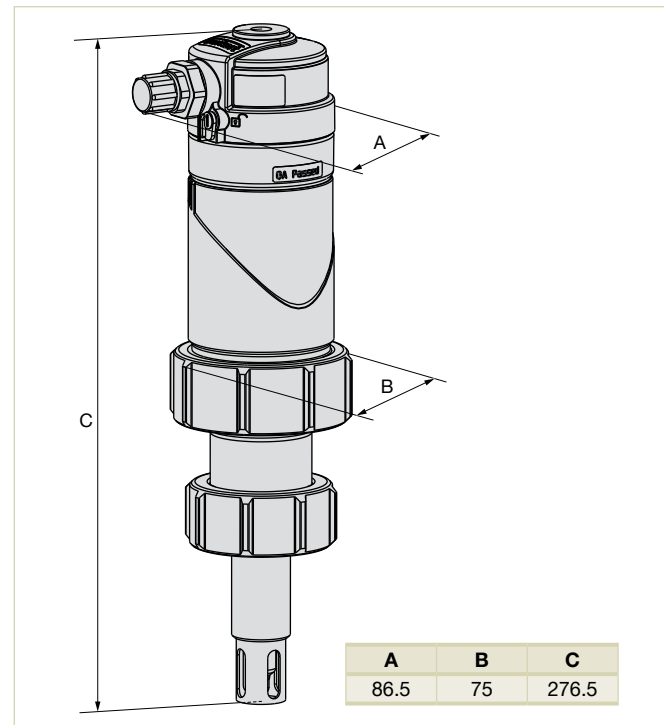
The 8202 neutrino pH/ORP meter is a 2-wire device with a 4...20 mA current output.

The 8202 device converts the measured signal, computes the output signal, which is provided via a free positionable M12 fixed connector or on a terminal strip via a cable gland.

Technical data

Complete device data (Pipe + meter)	
Pipe diameter	DN25...DN110 (DN <25 with reduction)
pH measurement	
Measuring range	0...14 pH
Measuring deviation	±0.05 pH
ORP measurement	
Measuring range	-2000...+2000 mV
Measuring deviation	≤0.2 % of the full scale
Temp. measurement	
Measuring range	-20...+130 °C
Measuring deviation	±1 °C
Temp. compensation	Automatic (integrated Pt1000) - reference temperature 25 °C
Fluid temperature¹⁾	
With PVC nut connection	0...+50 °C restricted by the used probe
With PVDF nut connection (on request)	-20...+130 °C restricted by the used adaptor or probe
	Restriction with adaptor S022 in:
	- PVC: 0...+50 °C
	- PP: 0...+80 °C
	- Metal: -20...+130 °C
Fluid pressure max	PN16 (see pressure/temperature diagram)

Dimensions [mm]



Options

- Version with display (8202 ELEMENT)

Environment


Ambient temperature	-10...+60 °C (operating and storage without probe)
Relative humidity	≤85 %, without condensation

1) If the specific temperature limits for the probe used and the temperature limits given in the above technical data chart are different, please use the more restrictive range

Technical data continued

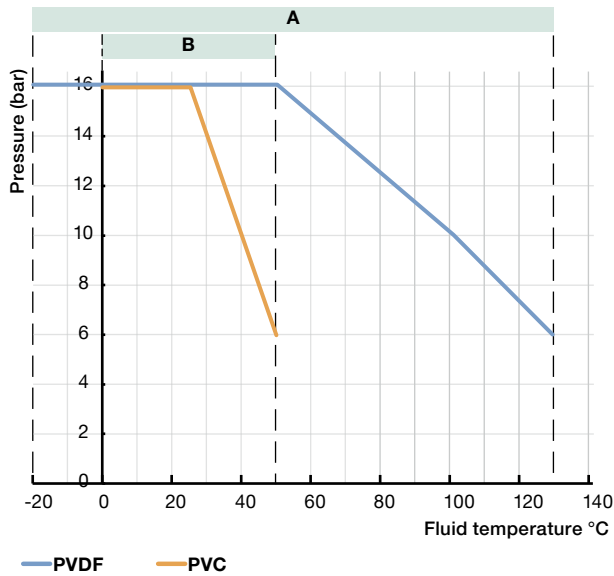
General data	
Compatibility	Any pipe from which are fitted out with Bürkert adaptor S022 (see Type S022 ► or corresponding data sheet Type S022 ►)
Materials	
Housing	Stainless steel 1.4404 (316L), PPS
Cover	PPS
Seals	EPDM
Fixed connector/cable gland	PA66
Nut	PVC (PVDF on request)
Wetted part materials	
Sensor holder	PVDF, Stainless steel 1.4571 (316Ti)
Probe	See specific technical data of the used probe
Probe	120 mm Bürkert pH or ORP probe, Type 8203 (recommended) or any combined 120 mm pH or ORP probe, without temperature sensor, with PG 13.5 head, S7/S8 connector
Temperature sensor	Pt1000 integrated within the holder
Electrical connections	1 × 5 pin free positionable M12 male fixed connector, or terminal strip via 1x cable gland M16 × 1.5
Recommended connection cable for terminal strip	Shielded cable (Measuring data acc. to CEI 664-1/VDE 0110 (4.97))
Solid H05(07) V-U	0.25...1.5 mm ²
Flexible H05(07) V-K	0.25...1.5 mm ²
With wire end ferrule	0.25...1.5 mm ²
With plastic collar ferrule	0.25...0.75 mm ²
Diameter	4...8 mm
Electrical data	
Power supply	12...36 V DC, filtered and regulated
Characteristics of the power source (not provided) of UL recognized devices	Limited power source (according to § 9.4 of the UL61010-1 standard, second edition) or low power source (according to UL60950-1 standard) or Class 2 type power source (according to the UL1310/UL1585 standards)
Current consumption with sensor	≤ 25 mA
Reversed polarity of DC	Protected
Voltage peak	Protected
Output	
Current	4...20 mA Max. loop impedance: 1100 Ω at 36 V DC; 610 Ω at 24 V DC; 100 Ω at 12 V DC;
Response time (10...90 %)	5 s. (standard)
4...20 mA output uncertainty	± 1 % of the range

Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Standards, directives and approvals	
Protection class	IP65, IP67, UL50E 6P, with M12 cable plug or cable gland tightened or obturated and cover properly mounted and secured
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Pressure	Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ¹⁾
Certification	UL-Recognized for US and Canada  UL61010-1 + CAN/CSA-C22.2 No. 61010-1
1) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).	
Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

Pressure/Temperature diagrams

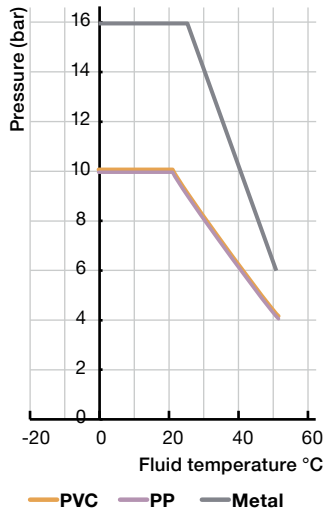
Application range of a 8202 ELEMENT neutrino meter:



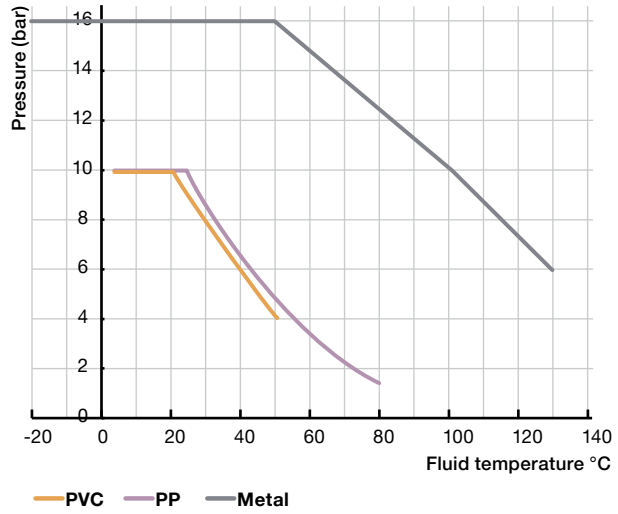
A: application range with PVDF nut (on request)
 B: application range with PVC nut
 The measures have been made at an ambient temperature of 60 °C, without probe.

Application range of a 8202 ELEMENT neutrino meter (without probe):

• with PVC nut with S022 adaptor



• with PVDF nut with S022 adaptor



Ordering chart

Specifications	Voltage supply	Output	Sensor version	Nut material	Electrical connection	UL Certification	Item no.
Compact meter: sensor holder with integrated Pt1000 + electronic module with cover	12...36 V DC	1 x 4...20 mA	None	PVC	5 pin M12 male fixed connector	No	561 685
						UL-Recognized	562 557
					Cable gland	No	561 686
						UL-Recognized	562 558

Note: For a complete measurement point the following items must be ordered separately (see accessories):

- Type 8202 ELEMENT neutrino
- pH or redox potential probe Type 8203
- Insertion adaptor Type S022
- M12 cable plugs

Probe Type 8203	Description	Article no.
pH probe		
PLASTRODE pH 120 mm	pH probe - 10...+40 °C, 0...6 bar, pH 0...14	560377
FLATRODE pH 120 mm	pH probe 0...+80 °C, 0...6 bar, pH 0...14	561025
LOGOTRODE pH 120 mm	pH probe - 10...+60 °C, 0...6 bar, pH 0...14	427114
UNITRODE PLUS pH 120 mm	pH probe 0...+130 °C, 0...16 bar, pH 0...14	560376
CERATRODE pH 120 mm	pH probe 0...+130 °C, 0...16 bar, pH 0...14	418319
FERMTRODE pH 120 mm	pH probe 0...+140 °C, 0...6 bar, pH 0...14	561727
ORP probe		
FLATRODE ORP 120 mm	ORP probe 0...+80 °C, 0...6 bar, -2000...+2000 mV	561027
LOGOTRODE ORP 120 mm	ORP probe - 10...+60 °C, 0...6 bar, -2000...+2000 mV	560379
UNITRODE PLUS ORP 120 mm	ORP probe 0...+130 °C, 0...16 bar, -2000...+2000 mV	560378

Accessories

Description	Item no.
One Ø 46x2 mm EPDM seal for 120 mm probe holder (with instruction sheet)	559 169
EPDM seal for cover/housing sealing	561 752
Probe holder with PVC nut	560 947
5 pin M12 female straight cable plug with plastic threaded locking ring, to be wired	917 116
5 pin M12 female straight cable plug moulded on cable (2 m, shielded)	438 680

Conductivity sensor

8220

- Compact version for DN15...DN200
- Large capabilities of conductivity measurement through different cells
- Large range of process connections with various fittings



Suitable fitting:
see Type S020 ▶

The conductivity sensor is a compact probe with integrated conductivity electrodes. Four conductivity probes having different cell constants are available and offer a large measurement range. The Pt1000 for automatic temperature compensation is integrated in the sensor housing.

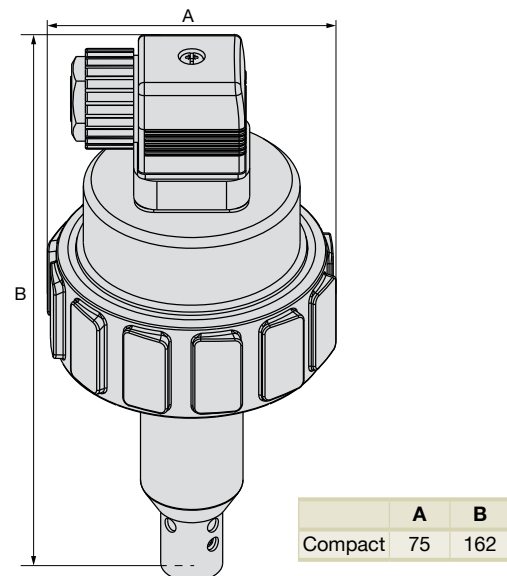
The sensor has to be connected to the Bürkert transmitter/controller Type 8619 multiCELL via a $4 \times 1.5 \text{ mm}^2$ shielded cable (maximal cable length of 10 m).

The conductivity sensor can be installed into a pipe by using Insertion fitting Type S020 which is available in different materials (details see data sheet Type S020). In its longer version it can also be installed in tanks or containers by using an industrial immersion fitting.

Technical data

General data	
Compatibility	With fittings S020 (See Type S020 ▶ or corresponding data sheet Type S020 ▶)
Materials	
Housing	PC
Screws	Stainless steel
Cable plug	PA
Wetted parts materials	
Fitting	Brass, Stainless steel 1.4404/316L, PVC, PP or PVDF
Sensor holder	PVDF
Pt1000	Stainless steel 1.4571 (316Ti)
Seal	FKM (EPDM included in delivery)
Electrode	Stainless steel for cell constant $C = 0.01$ or 0.1 Graphite for cell constant $C = 1.0$ or 10
Electrical connection	Cable plug EN 175301-803
Complete device data (fitting + sensor)	
Pipe diameter	DN15...DN200
Conductivity measurement	
Measuring range	$0.05 \mu\text{S/cm} \dots 200 \text{ mS/cm}$ (depending on cell constant)
Measurement deviation	Typical: 3 % o. Reading - max.: 5 % o. Reading
Temperature measurement	
Measuring range	$0 \dots +100 \text{ }^\circ\text{C}$
Resolution	$0.1 \text{ }^\circ\text{C}$
Measurement deviation	$\pm 1 \text{ }^\circ\text{C}$
For temperature compensation	Automatic (integrated Pt1000) - reference temperature $25 \text{ }^\circ\text{C}$
Fluid temperature	With fitting in PVC: $0 \dots +50 \text{ }^\circ\text{C}$ / PP: $0 \dots +80 \text{ }^\circ\text{C}$ PVDF, stainless steel, brass: $0 \dots +100 \text{ }^\circ\text{C}$
Fluid pressure max.	PN10 (see pressure/temperature diagram)

Dimensions [mm]



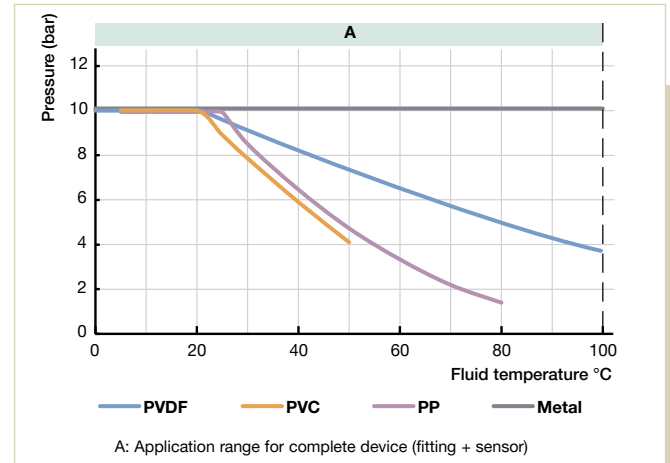
Electrical data	
Power supply	None
Connection cable (between 8220 and 8619)	$4 \times 0.2 \dots 1.5 \text{ mm}^2$ shielded, max. length 10 m
Output	Raw signal, to be connected to the multiCELL transmitter/controller Type 8619
Environment	
Ambient temperature	$0 \dots +60 \text{ }^\circ\text{C}$ (Operation and storage)
Relative humidity	$\leq 80 \%$, without condensation
Standards, directives and certifications	
Protection class	IP65 with cable plug mounted and tightened (according to EN 60529)
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable) Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ¹⁾
Pressure	

¹⁾ The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).

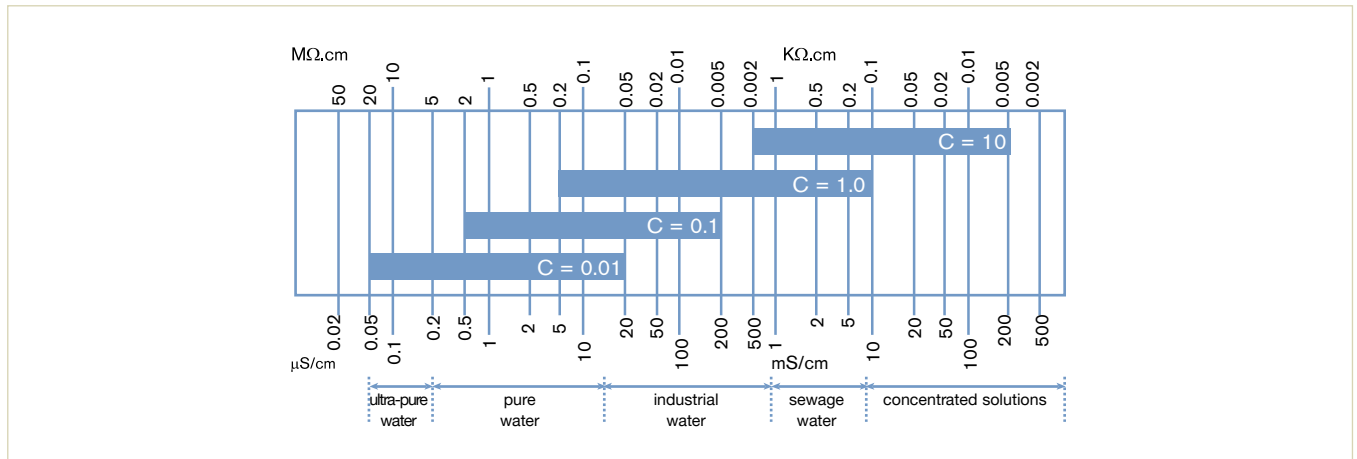
Technical data continued

Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

Pressure/Temperature diagram



Electrodes measuring range



Ordering chart

Specifications	Measuring range	Cellconstant	Electrode materials	Electrical connection	Article no.
Sensor	0.05 μS/cm...20 μS/cm	C = 0.01	Stainless steel	Cable plug (acc. to EN 175301-803)	426872
	0.5 μS/cm...200 μS/cm	C = 0.1	Stainless steel	Cable plug (acc. to EN 175301-803)	426873
	5 μS/cm...10 mS/cm	C = 1	Graphite	Cable plug (acc. to EN 175301-803)	426874
	0.5 μS/cm...200 mS/cm	C = 10	Graphite	Cable plug (acc. to EN 175301-803)	426875

Ordering information: To select a complete device, the following information is required:

- Article no. of the desired conductivity sensor type 8220 (see ordering chart)
- Article no. of the desired multiCELL Transmitter / Controller Type 8619
- Article no. of the selected Insertion fitting type S020



8220

Accessories

Description	Article no.
Set with 2 cable glands M20×1.5+2 neoprene flat seals for cable gland or plug +2 screw-plugs M20×1.5 + 2 multiway seals 2×6 mm	449755
Cable plug EN 175301-803 with cable gland - see Type 2508 ▶ (will be replaced with Type 2518)	438811
Cable plug EN 175301-803 with NPT ½ reduction without cable gland - see Type 2509 ▶	162673
Mounting ring (open) for S020 fitting	619205
PC - nut for S020 fitting	619204
Set with 1 green FKM +1 black EPDM seal	552111
Conductivity probe C =0.01 (with stainless steel electrode) for mounting with immersion kit	633367
Conductivity probe C =0.1 (with stainless steel electrode) for mounting with immersion kit	631647
Conductivity probe C =1 (with graphite electrode) for mounting with immersion kit	418217
Immersion fitting in PP, L =0.5 m	419567
Immersion fitting in PP, L =1.0 m	419568
Immersion fitting in PP, L =1.5 m	419569
Immersion fitting in PP, L =2.0 m	419570
Extension cable kit including a 0.7 m cable (for immersion fitting, L ≤0.5 m to use with 8619 multiCELL transmitter/controller)	437615
Extension cable kit including a 1.7 m cable (for immersion fitting, L ≤1.5 m to use with 8619 multiCELL transmitter/controller)	437617
Extension cable kit including a 2.2 m cable (for immersion fitting, L ≤2.0 m to use with with 8619 multiCELL transmitter/controller)	437618
Fixing kit (flange DN65 with stainless steel screws)	413615
Factory 2-point conductivity calibration certificate	550675

Note: Buffer solutions see accessories Type 8221 Hygienic.

Conductivity sensor for hygienic applications

8221
Hygienic

- Perfect for demanding applications in the hygienic industry (CIP and SIP compatible)
- Variants available for usage over a wide conductivity range
- Support of the most important process connections ensures specific customer requests can be implemented
- Fits perfectly with our multipurpose transmitter/controller type 8619




The 8221 hygienic conductivity probes are used to determine electrical conductivity in a wide range of pure or concentrated liquids. Due to their hygienic design and the robust construction, these conductivity probes are suitable for use under demanding conditions in application sectors including food & beverage, pharmaceutical, biotechnology and the general chemical industry.

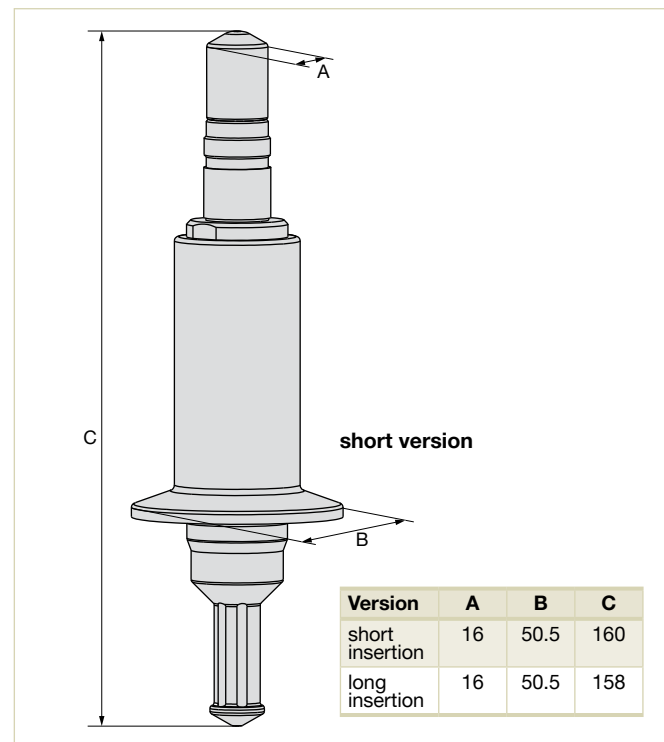
Two technologies of conductivity probes are available:

- probes based on the 2-electrode principle are suited for measurements in liquids, especially (ultra) pure water. Contamination affects the measurements.
- probes based on the 4-electrode principle exclude polarization phenomena and are not sensitive to contamination. This clever design guarantees an excellent linearity over a wide conductivity range.

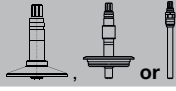
Technical data

4-electrode conductivity probe	
	
short or long insertion version	
Process connection	1½" clamp connection or G 1¼ process connection (on request)
Technology	4-electrode
Measuring range	0.1 µS/cm...500 mS/cm
Linearity¹⁾ (relative)	±0.5...5 %
Cell constant²⁾	0.147 cm ⁻¹
Temperature sensor	Pt1000
Materials	
Electrode	Stainless steel 1.4435/316L
Frame	PEEK (conform to FDA)
	Stainless steel 1.4435/316L
Seal	EPDM (conform to FDA)
Surface quality	0.4 µm, electro-polished
Fluid temperature	-20...+135 °C
Fluid pressure	Max. 6 bar
Electrical connections	VarioPin (VP 6.0)
Certificates	FDA declaration of conformity (only for version with PEEK frame and EPDM seal); ECR1935/2004 declaration, USP class VI declaration; Inspection certificate 3.1; On request: 2-point calibration certificate

Dimensions [mm]




4-electrode conductivity probe

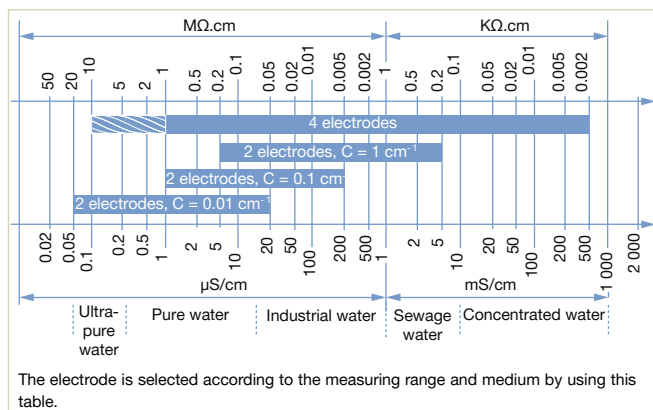
	
Process connection	2" clamp connection 2" (DN50/40) connection adapted for GEA Tuchemhagen VARINLINE PG 13.5 connection
Technology	4-electrode
Measuring range	1 µS/cm...500 mS/cm
Linearity¹⁾ (relative)	±0.5...5 %
Cell constant²⁾	0.360 cm ⁻¹
Temperature sensor	Pt1000


Technical data continued

Materials	
Electrode	Stainless steel 1.4435/316L
Frame	PEEK (conform to FDA) Stainless steel 1.4435/316L (not for PG 13.5 connection)
Seal	EPDM (conform to FDA)
Surface quality	0.4 µm, electro-polished
Fluid temperature	-20...+150 °C
Fluid pressure	Max. 20 bar for -20...+135 °C and max. 10 bar at 150 °C
Electrical connections	VarioPin (VP 6.0)
Certificates	
All connection versions	FDA declaration of conformity (only for version with PEEK frame and EPDM seal); ECR1935/2004 declaration, USP class VI declaration; Inspection certificate 3.1; On request: 2-point calibration certificate

2-electrode conductivity probe with M12 connector	
	
Process connection	1½" clamp connection
Technology	2-electrode
Measuring range	0.05...20 µS/cm
Linearity¹⁾ (relative)	±0.5...5 %
Cell constant²⁾	0.01 cm ⁻¹
Temperature sensor	Pt1000
Response time (t90)	60 s
Materials	
Electrode	Stainless steel 316L
Frame	Stainless steel 316L and PEEK (conform to FDA - 21CFR 177.2415)
Seal	EPDM (conform to FDA - 21CFR 177.2600)
Surface quality	0.4 µm, electro-polished
Fluid temperature	-20...+150 °C
Fluid pressure	Max. 7 bar
Electrical connections	5 pin M12 male fixed connector
Standards, directives and certifications	
Protection class	IP67 (according to EN 60529)
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Pressure	Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ³⁾
Certificates	
	Inspection certificate 3.1; On request: 2-point calibration certificate; FDA declaration of conformity (only for version with stainless steel and PEEK frame and EPDM seal); Test report 2.2 for surface finish

Electrodes measuring range

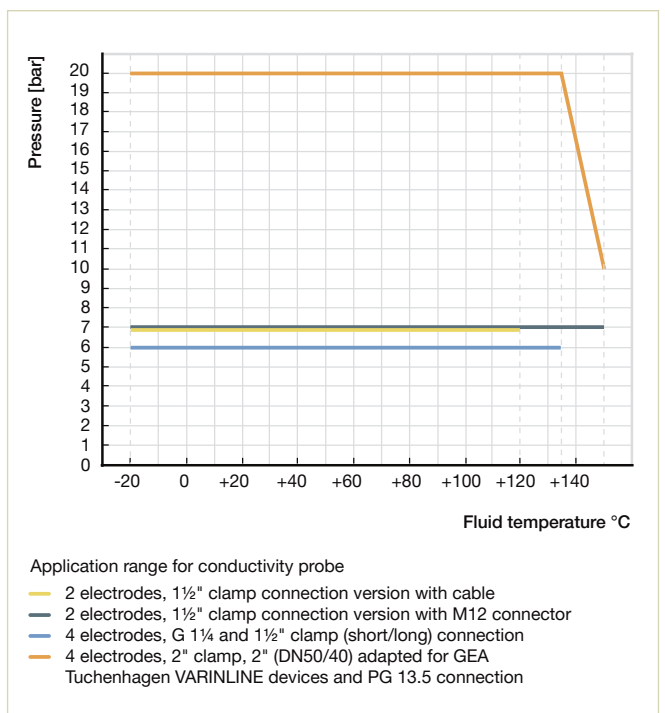


2-electrode conductivity probe with cable			
			
Process connection	1½" clamp connection		
Technology	2-electrode		
Measuring range	0.05...20 µS/cm	1...200 µS/cm	5...5 000 µS/cm
Linearity¹⁾ (relative)	±0.5...5 %	±0.5...5 %	±0.5...5 %
Cell constant²⁾	0.01 cm ⁻¹	0.1 cm ⁻¹	1 cm ⁻¹
Temperature sensor	Pt1000		
Materials			
Electrode	Stainless steel		
Frame	Stainless steel and PTFE		
Seal	EPDM		
Surface quality	0.4 µm, electro-polished		
Fluid temperature	Max. 120 °C		
Fluid pressure	Max. 7 bar		
Electrical connections	Cable, length 3 m, instrument side with open wire		
Certificates	Inspection certificate 3.1; 2-point calibration certificate (on request)		

- 1) Uncertainty of ±5 % arises when using only one single cell constant for the full range. ±0.5 % measurement deviation can be achieved when calibration is performed in a conductivity range close to that of the used solution.
- 2) Individual cell constant measured with the Bürkert standard procedure. The cell constant can be influenced by the assembly situation.
- 3) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).

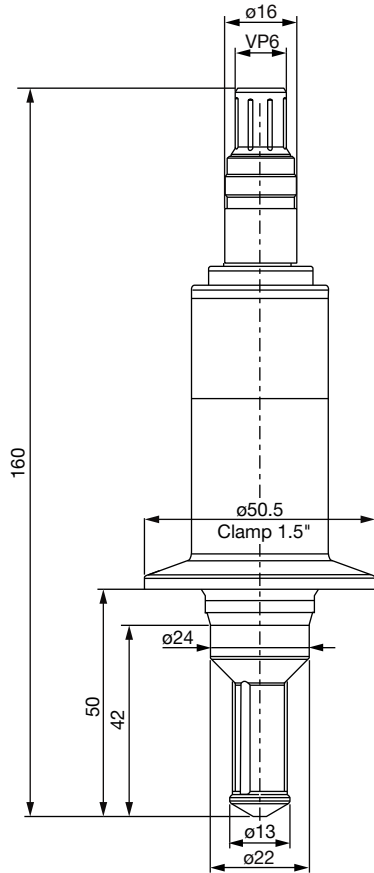
Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32 or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

Pressure/Temperature diagram

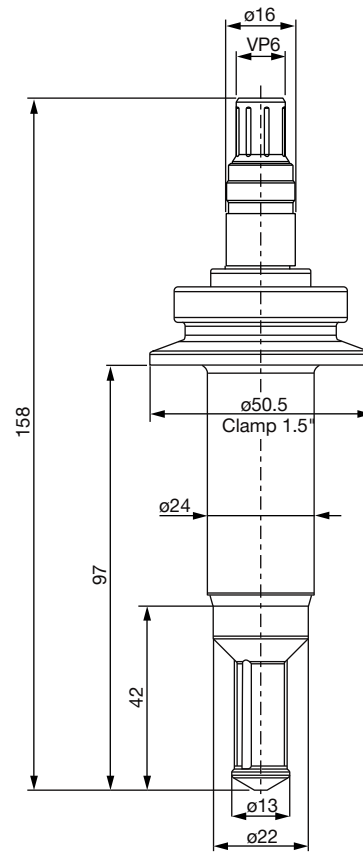


Dimensions [mm]

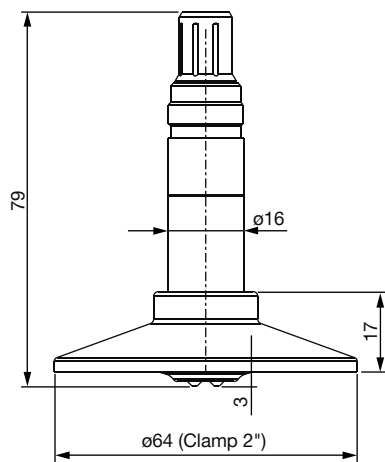
4-electrode probe, short insertion version
with 1½" clamp connection



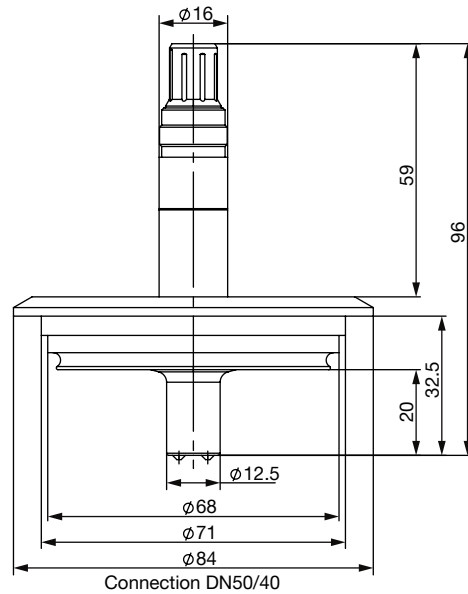
4-electrode probe, long insertion version
with 1½" clamp connection



4-electrode probe version
with 2" clamp connection



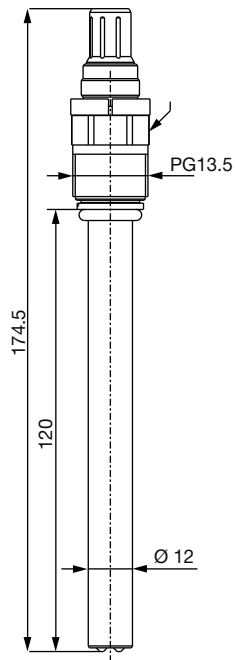
4-electrode probe version
with 2" (DN50/40) connection adapted for GEA Tuchenhagen
VARINLINE process connections



Dimensions [mm] continued

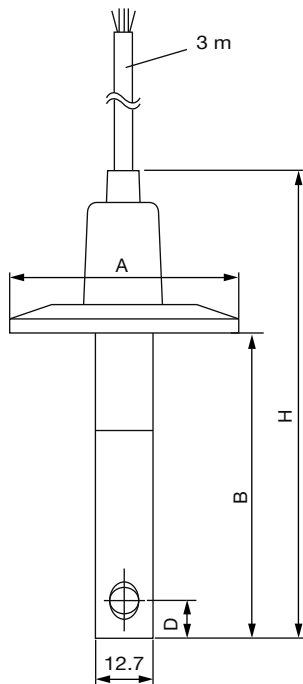
4-electrode probe version

with PG 13.5 connection



2-electrode probe version

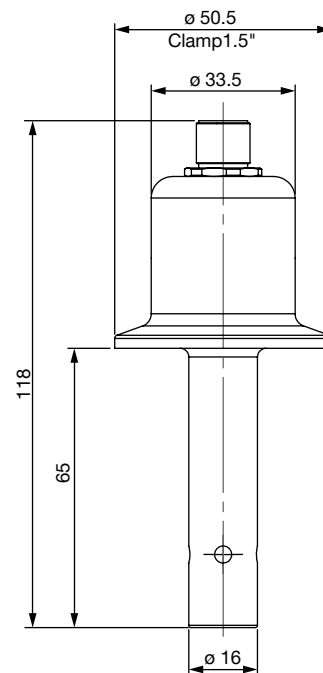
with 1½" clamp connection and with cable 3 m open wire



Probe with	A	H	B	D
C = 0.01	50.5	154	127	50
C = 0.1	50.5	94	67	7.9
C = 1.0	50.5	94	67	7.9

2-electrode probe version

with 1½" clamp connection and with 5 pin M12 male connector





Ordering chart

8221
Hygienic

Specification	Cell constant/ Probe version	Measuring range	Process connection	Certifications			Electrical connection	Article no.
				FDA	ECR1935/2004	USP class VI		
Conductivity probe 4-electrode	0.147 cm ⁻¹ /short	0.1...500000 µS/cm	1½" clamp	Yes	Yes	Yes	VarioPin male connector	562420
	0.147 cm ⁻¹ /long	0.1...500000 µS/cm	1½" clamp	Yes	Yes	Yes	VarioPin male connector	564064
	0.360 cm ⁻¹	1...500000 µS/cm	2" clamp	Yes	Yes	Yes	VarioPin male connector	559120
		1...500000 µS/cm	2" (DN50/40) adapted for GEA Tuchenhausen VARINLINE	Yes	Yes	Yes	VarioPin male connector	563269
		1...500000 µS/cm	PG 13.5	Yes	Yes	Yes	VarioPin male connector	563186
Conductivity probe 2-electrode	0.01 cm ⁻¹	0.05...20 µS/cm	1½" clamp	Yes	No	No	5 pin M12 male connector	568818
				No	No	No	Cable 3 m open wires	564898
	0.1 cm ⁻¹	1...200 µS/cm	1½" clamp	No	No	No	Cable 3 m open wires	562261
	1.0 cm ⁻¹	5...5 000 µS/cm	1½" clamp	No	No	No	Cable 3 m open wires	564899

Accessories

Description	Article no.
Buffer solution, 5 µS/cm conductivity standard, ± 1 % accuracy, 300 ml	440015
Buffer solution, 15 µS/cm conductivity standard, ± 5 % accuracy, 300 ml	440016
Buffer solution, 100 µS/cm conductivity standard, ± 3 % accuracy, 300 ml	440017
Buffer solution, 706 µS/cm conductivity standard, ± 2 % accuracy, 300 ml	440018
Buffer solution, 1413 µS/cm conductivity standard, ± 1 % accuracy, 300 ml	440019
Buffer solution, 100 mS/cm conductivity standard, ± 1 % accuracy, 300 ml	440020
Connection cable VarioPin (VP 6.0) female connector, 3 meters	554855
Connection cable VarioPin (VP 6.0) female connector, 5 meters	554856
Connection cable VarioPin (VP 6.0) female connector, 10 meters	554857
5 pin M12 female straight cable plug with plastic threaded locking ring, to be wired	917116
5 pin M12 female straight cable plug moulded on cable (2 m, shielded)	438680
5 pin M12 female straight cable plug moulded on cable (5 m, shielded)	560365
5 pin M12 female straight cable plug moulded on cable (10 m, shielded)	563108

Conductivity meter (with removable control unit)

- Perfect for clean water and slightly concentrated liquids
- Integral device for direct connection to PLC
- Simulation of process values for diagnostics
- Three cell constants to cover a wide application range e.g. reverse osmosis



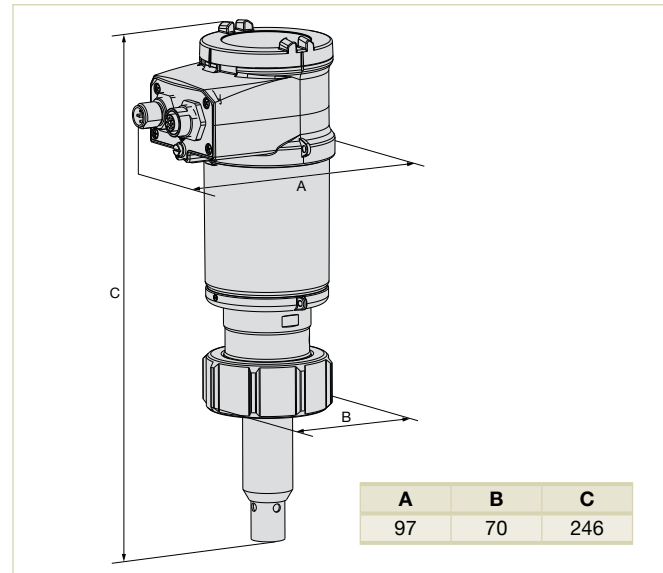
Suitable fitting:
see Type S022 ▶

Conductivity meter with programmable outputs. Conductivity and temperature output via single or dual analog 4...20 mA. Two digital outputs (transistors) are also included. Transmitters are engineered for a wide scope of measuring ranges and can be delivered in 2-wire or 3-wire configurations. Intelligent, integrated, beautiful design fits perfectly with an assortment of easily configured fittings.

Technical data

Complete device data (pipe + conductivity meter)	
Pipe diameter	DN25...DN110 (DN < 25 with reduction)
Conductivity measurement	
Measuring range	0.05 µS/cm...10 mS/cm
Resolution	1 nS/cm
Measurement deviation	±3 % of Reading
Temperature measurement	
Measuring range	-20...+100 °C
Internal resolution	0.1 °C
Accuracy	±1 °C
Temperature compensation	None or according to a predefined graph (NaCl or ultra pure water) or according to a graph defined especially for your process
Fluid temperature	
with G 1½ PVC nut connection	0...+50 °C
with G 1½ PVDF nut connection	-20...+100 °C restricted by the used adaptor; Restriction with adaptor S022 in: - PVC: 0...+50 °C / - PP: 0...+80 °C - Metal: -20...+100 °C
Fluid pressure max	PN16 (see pressure/temperature diagram)
Environment	
Ambient temperature	-10...+60 °C (operating and storage)
Relative humidity	≤85 %, without condensation
Electrical data	
Power supply	
3 outputs meter (2-wire)	14...36 V DC, filtered and regulated
4 outputs meter (3-wire)	12...36 V DC, filtered and regulated
Current consumption with sensor	≤1 A (with the 2 transistors loads)
3 outputs meter (2-wire)	≤25 mA (at 14 V DC without transistors load, with current loop)
4 outputs meter (3-wire)	≤5 mA (at 12 V DC without transistors load, without current loop)
Electrical protection	Reversed polarity of DC: protected Voltage peak: protected Short circuit: protected for transistor outputs

Dimensions [mm]



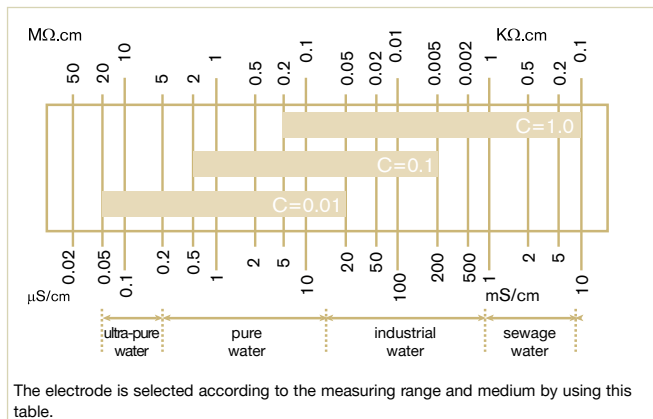
Output	
Transistor	Configurable as sourcing or sinking (respectively both as PNP or NPN), open collector max. 700 mA, 0.5 A max. per transistor if the 2 transistor outputs are wired Output NPN: 0.2...36 V DC Output PNP: V+ power supply
Current	4...20 mA programmable as sourcing or sinking, 3 outputs meter (2-wire) Max. loop impedance: 1100 Ω at 36 V DC; 610 Ω at 24 V DC; 180 Ω at 14 V DC 4 outputs meter (3-wire) Configurable in the same mode as transistor: sourcing or sinking, Max. loop impedance: 1100 Ω at 36 V DC; 610 Ω at 24 V DC; 100 Ω at 12 V DC
Response time (10...90 %)	150 ms (standard)
4...20 mA output uncertainty	±1 % of range

Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

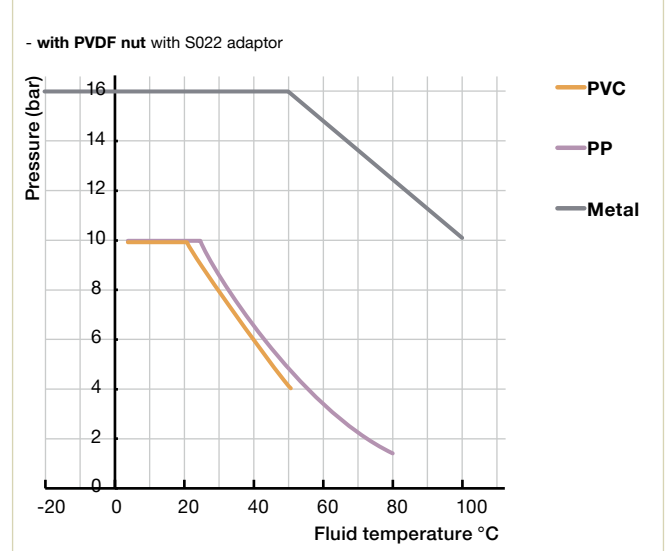
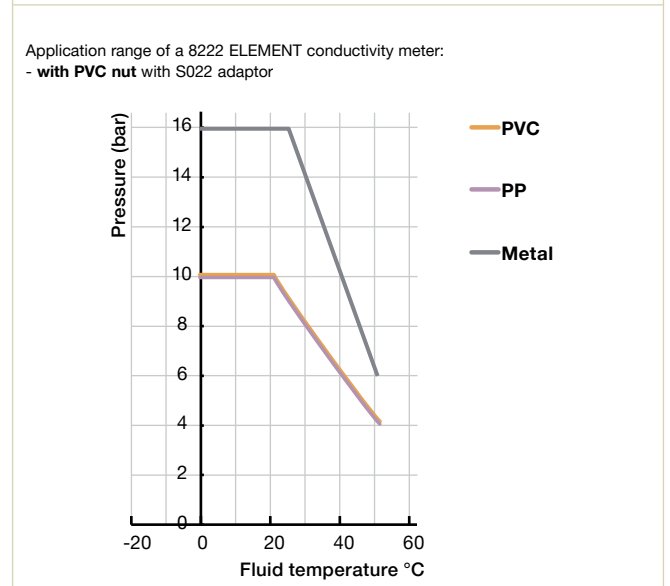
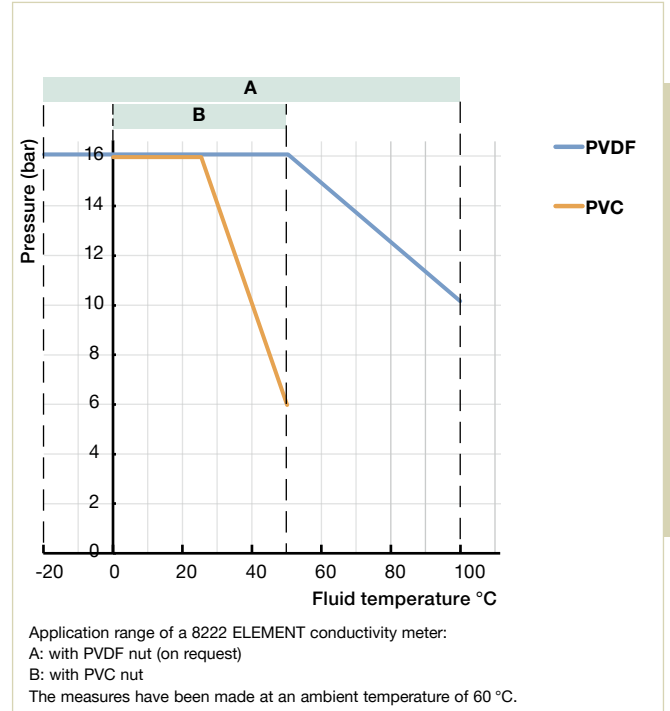
Technical data continued

General data	
Compatibility	Any pipe which are fitted out with Bürkert adaptor S022 (see Type S022 ► or corresponding data sheet Type S022 ►)
Materials	
Housing / cover	Stainless steel 1.4404, PPS / PC
Seals / Screws	EPDM, silicone / Stainless steel
Fixed connector mounting plate	Stainless steel 1.4404
Fixed connector	Brass nickel plated
Display / navigation key	PC / PBT
Nut	PVC or PVDF
Wetted part materials	
Conductivity sensor	PVDF, stainless steel 1.4571 (316Ti), FKM or EPDM
Electrode	Stainless steel 1.4571 (316Ti) for cell constant C=0.01 or C=0.1 or graphite for cell constant C=1.0
Temperature sensor	Pt1000 (316Ti) integrated in the sensor
Display (accessories)	Grey dot matrix 128 x 64 with backlighting
Electrical connections	
3 outputs meter (2-wire)	1 x 5 pin M12 male fixed connector
4 outputs meter (3-wire)	1 x 5 pin M12 male + 1 x 5 pin M12 female fixed connectors
Connection cable	Shielded cable
Standards, directives and certifications	
Protection class	IP65, IP67 (according to EN60529), NEMA 4X (according to NEMA250) with device wired and M12 cable plug mounted and tightened and cover fully screwed down
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable) Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ¹⁾
Pressure	
Certificate	FDA declaration of conformity
Certification	
UL-Recognized for US and Canada	UL61010-1 + CAN/CSA-C22.2 No.61010-1
<small>1) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).</small>	
Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

Electrodes measuring range



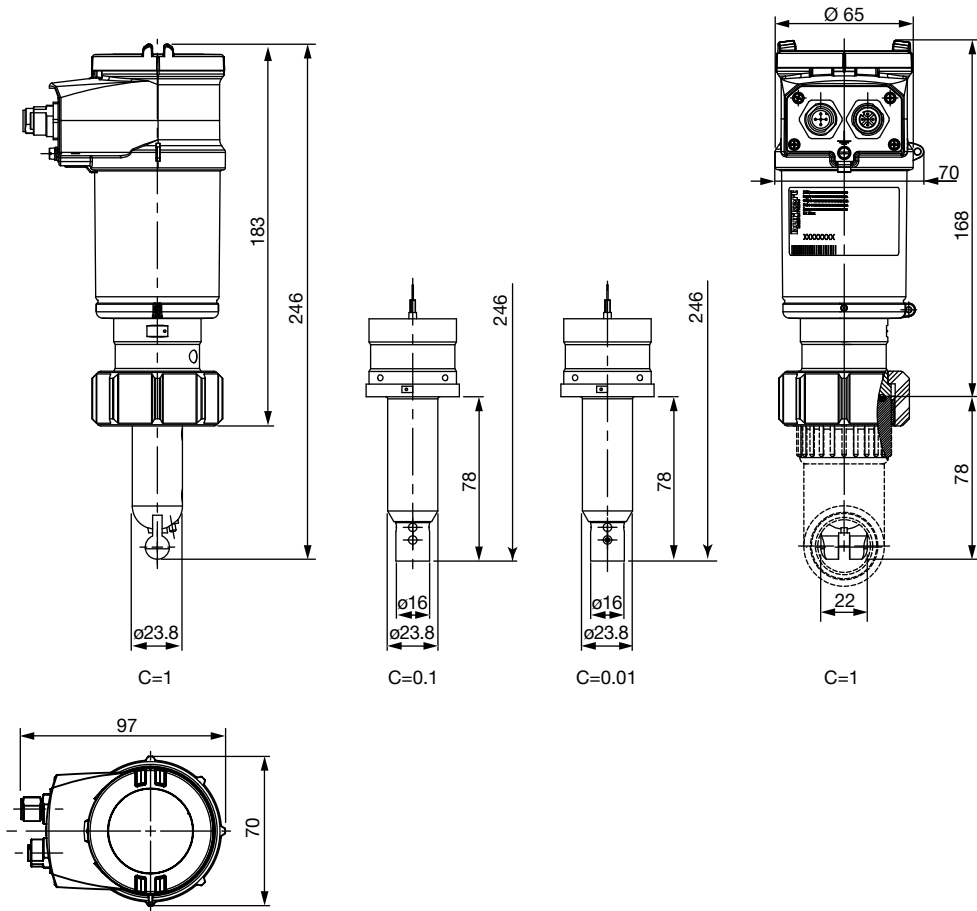
Pressure/Temperature diagrams





Dimensions [mm]

8222 ELEMENT



Ordering chart

Nut material	Cell constant	Electrical connection	Article no
PVC	C=0.01	5 pin M12 male and 5 pin M12 female	559619
	C=0.1	5 pin M12 male and 5 pin M12 female	559615
	C=1.0	5 pin M12 male and 5 pin M12 female	559611
PVDF	C=0.01	5 pin M12 male and 5 pin M12 female	559621
	C=0.1	5 pin M12 male and 5 pin M12 female	559617
	C=1.0	5 pin M12 male and 5 pin M12 female	559613

Note: For a complete measurement point the following items must be ordered separately (see accessories):

- Meter Type 8222 ELEMENT
- Display/configuration module
- Insertion adaptor Type S022
- M12 cable socket, cable connector (only female for single 4...20 mA, 1 male + 1 female for dual 4...20 mA meter)

Accessories

Description	Article no
Removable display/configuration module (with instruction sheet)	559168
Buffer solution, 5 µS/cm conductivity standard, ± 1 % accuracy, 300 ml	440015
Buffer solution, 15 µS/cm conductivity standard, ±5 % accuracy, 300 ml	440016
Buffer solution, 100 µS/cm conductivity standard, ± 3 % accuracy, 300 ml	440017
Buffer solution, 706 µS/cm conductivity standard, ± 2 % accuracy, 300 ml	440018
Buffer solution, 1413 µS/cm conductivity standard, ± 1 % accuracy, 300 ml	440019
5 pin M12 male straight cable plug with plastic threaded locking ring, to be wired	560946
5 pin M12 male straight cable plug moulded on cable (2 m, shielded)	559177
5 pin M12 female straight cable plug with plastic threaded locking ring, to be wired	917116
5 pin M12 female straight cable plug moulded on cable (2 m, shielded)	438680

Conductivity meter without display and operating unit

- Analog 4...20 mA output
- Universal process connection
- Three cell constants for covering a wide measuring range
- Temperature compensated measurement



Suitable fitting:
see Type S022 ▶

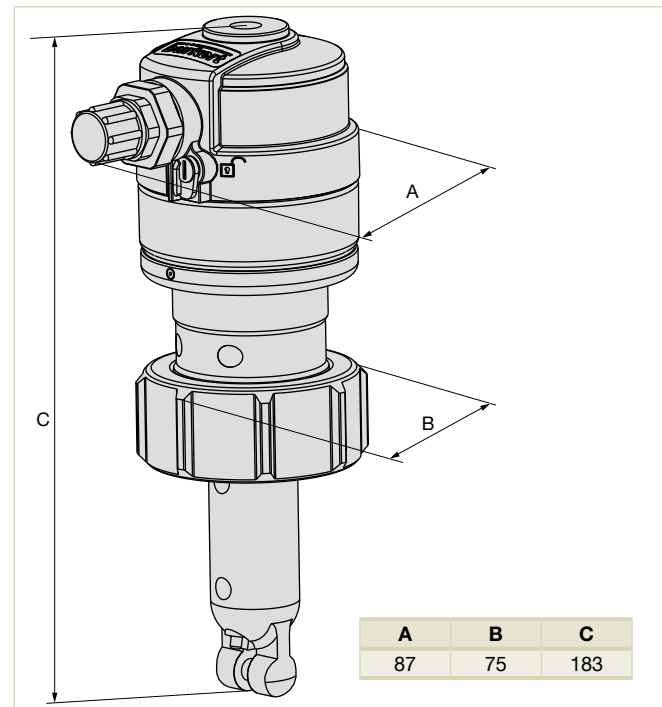
The Bürkert ELEMENT neutrino meter, Type 8222, is a compact device designed for measuring the conductivity of fluids.

Technical data

Complete device data (Pipe + conductivity meter)	
Pipe diameter	DN25...DN110 (DN < 25 with reduction)
Conductivity measurement	
Measuring range	0.05 µS/cm...10 mS/cm
Accuracy	± 3 % of Reading
Temperature measurement	
Measuring range	-20...+100 °C
Accuracy	± 1 °C
Temperature compensation	According to a predefined graph (none, NaCl or ultra pure water), selectable via a switch
Fluid temperature	
with G 1½ PVC connection nut	0...+50 °C
with G 1½ PVDF connection nut (on request)	-20...+100 °C restricted by the used adaptor; Restriction with adaptor S022 in: - PVC: 0...+50 °C - PP: 0...+80 °C - Metal: -20 °C...+100 °C
with G ¾ ext. threaded connection	-20 °C to +100 °C restricted by the used adaptor; r Restriction with adaptor S022 in: - PVC: 0...+50 °C - PVDF: 0...+100 °C - metal: -20...+100 °C
Fluid pressure max	PN16 (see pressure/temperature diagram)
Environment	
Ambient temperature	-10...+60 °C (operating and storage)
Relative humidity	≤ 85 %, without condensation
Electrical data	
Power supply	12...36 V DC, filtered and regulated
Current consumption with sensor	≤ 25 mA
Electrical protection	Reversed polarity of DC: protected Voltage peak: protected
Output	
Current	4...20 mA Max. loop impedance: 1100 Ω at 36 V DC; 610 Ω at 24 V DC; 100 Ω at 12 V DC
Response time (10...90 %)	5 s (standard)
4...20 mA output uncertainty	± 1 % of range

Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Dimensions [mm]



General data

Compatibility	Any pipe which are fitted out with Bürkert adaptor S022 (see Type S022 ▶) or corresponding data sheet Type S022 ▶)
Materials	
Housing / Cover	Stainless steel 1.4404 (316L), PPS / PPS
Seals	EPDM
Fixed connector	PA66
Nut	PVC (PVDF on request)
Wetted part materials	
Temperature sensor	PVDF, stainless steel 1.4571 (316Ti)
Conductivity electrodes	Stainless steel 1.4571 (316Ti) for cell constant C=0.01 or C=0.1 or graphite for cell constant C=1.0
Temperature sensor	Pt1000 (316Ti) integrated in the sensor
Electrical connections	1 × 5 pin M12 male fixed connector, or terminal strip via 1x cable gland M16 × 1.5

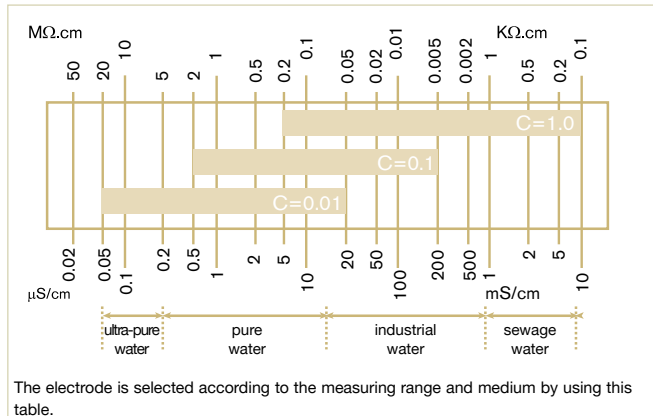
Technical data continued

Recommended connection cable for terminal strip	Shielded cable (Measuring data acc. to CEI 664-1/VDE 0110 (4.97))
Solid H05(07) V-U	0.25...1.5 mm ²
Flexible H05(07) V-K	0.25...1.5 mm ²
With wire end ferrule	0.25...1.5 mm ²
With plastic collar ferrule	0.25...0.75 mm ²
Diameter	4...8 mm
Standards, directives and approvals	
Protection class	IP65, IP67, NEMA 4X and NEMA 6P with M12 cable plug or cable gland tightened or obturated and cover properly mounted and secured
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Pressure	Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ¹⁾

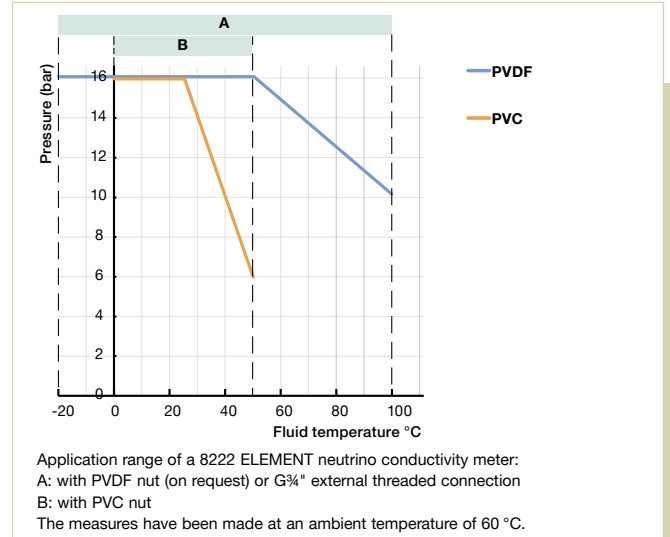
1) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).

Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

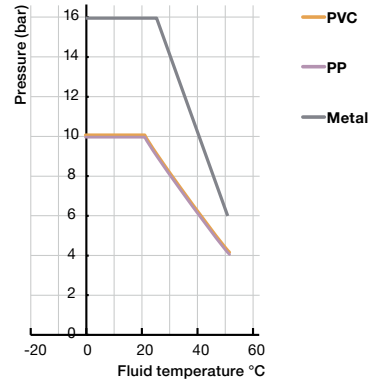
Electrodes measuring range



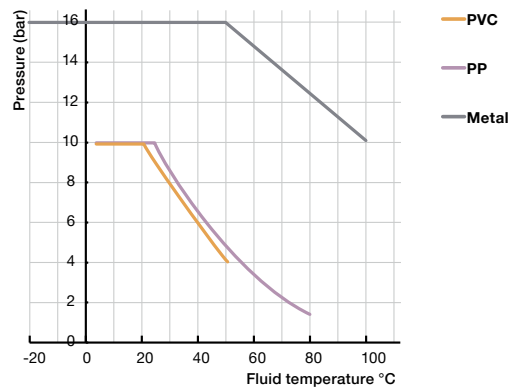
Pressure/Temperature diagrams



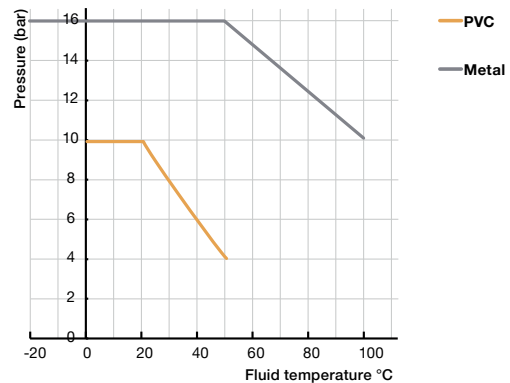
Application range of a 8222 ELEMENT neutrino conductivity meter
 - with PVC nut with S022 adaptor



- with PVDF nut (on request) with S022 adaptor

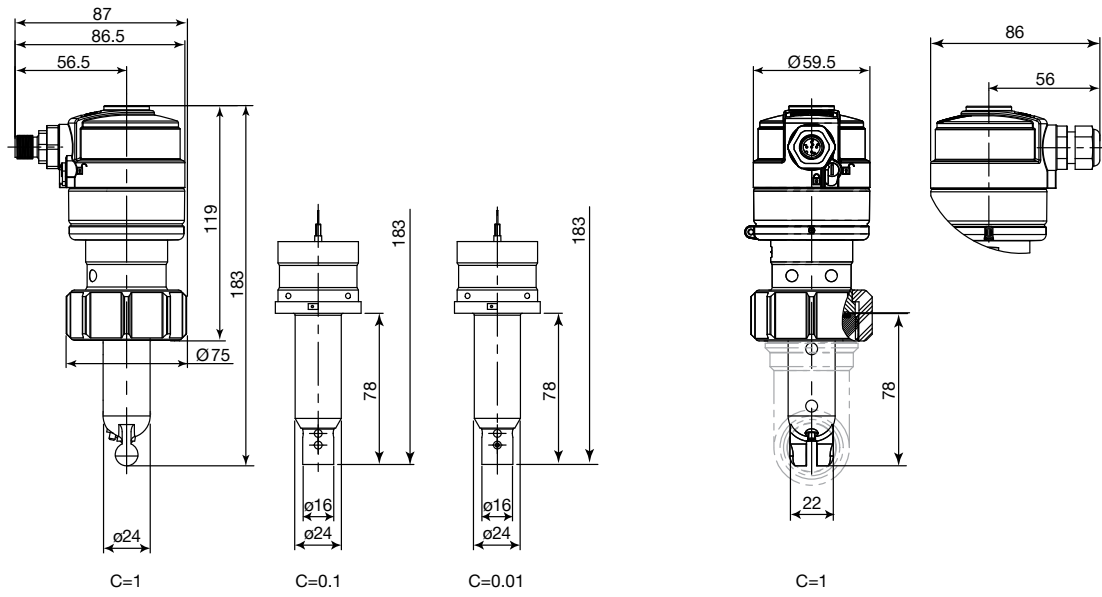


- with G $\frac{3}{4}$ " threaded connection with S022 adaptor



Dimensions [mm]

With a G 1½ union connection nut



Ordering chart

Description	Voltage supply	Output	Sensor version	Nut material	Electrical connection	Article no
Compact conductivity meter with a G 1½ union connection nut	12...36 V DC	4...20 mA	C = 0.01	PVC	5 pin M12 male fixed connector	561661
					Cable glands	561662
			C = 0.01	PVC	5 pin M12 male fixed connector	561663
					Cable glands	561664
			C = 0.01	PVC	5 pin M12 male fixed connector	561665
					Cable glands	561666

Note: For a complete measurement point the following items must be ordered separately (see accessories):

- Meter Type 8222 ELEMENT neutrino
- Insertion adaptor Type S022

Accessories

Description	Article no
EPDM seal for cover/housing sealing	561752
EPDM seal for conductivity meter with G ¾ external thread / S022 adaptor sealing ¹⁾	561955
Buffer solution, 5 µS/cm conductivity standard, ± 1 % accuracy, 300 ml	440015
Buffer solution, 15 µS/cm conductivity standard, ± 5 % accuracy, 300 ml	440016
Buffer solution, 100 µS/cm conductivity standard, ± 3 % accuracy, 300 ml	440017
Buffer solution, 706 µS/cm conductivity standard, ± 2 % accuracy, 300 ml	440018
Buffer solution, 1413 µS/cm conductivity standard, ± 1 % accuracy, 300 ml	440019
5 pin M12 female straight cable plug with plastic threaded locking ring, to be wired	917116
5 pin M12 female straight cable plug moulded on cable (2 m, shielded)	438680

1) **Important!** To ensure the tightness between the meter, with G ¾ thread, and the S022 Insertion adapter, only this O-ring should be used.

Insertion adaptor/fitting for ELEMENT analytical measurement devices

- Universal adaptor/fitting for Type 8202 and 8222 ELEMENT measuring devices in pure, aggressive or contaminated liquids
- Adaptation into standard piping systems or conversion of Bürkert S020 fittings into S022 fittings
- Pipe diameters from DN06 (with reduction) up to DN110 (plastic) or bigger (stainless steel)



Fittings to connect the compact analytical transmitters to the media. Materials included are PVC-U, PP, Stainless steel, and PVC thread. For chemical resistance details you can use the Resist app on our website.

Technical data

General data	
Process connection	
Adaptor	Solvent, fusion, welding, threaded and to connect with screws (to S020-fitting body)
Fitting	Metric or ASTM True union or weld ends; saddle
Materials	
Adaptor	PVC, PP, stainless steel (delivered with 2 seals, 1 FKM and EPDM)
Fitting	
Seal	FKM, EPDM
Body & adaptor	PVC & PVC, PP & PVC
Fluid data	
Fluid temperature	Temperature limits may depend on inserted measuring device ¹⁾
Fluid pressure max. (See pressure/temperature diagram)	PN10 (plastic) or PN16 (metal) Pressure limits may depend on inserted measuring device ¹⁾
Environment	
Ambient temperature	Temperature limits may depend on inserted measuring device ¹⁾ .
Standards, directives and certifications	
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Pressure	Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ²⁾

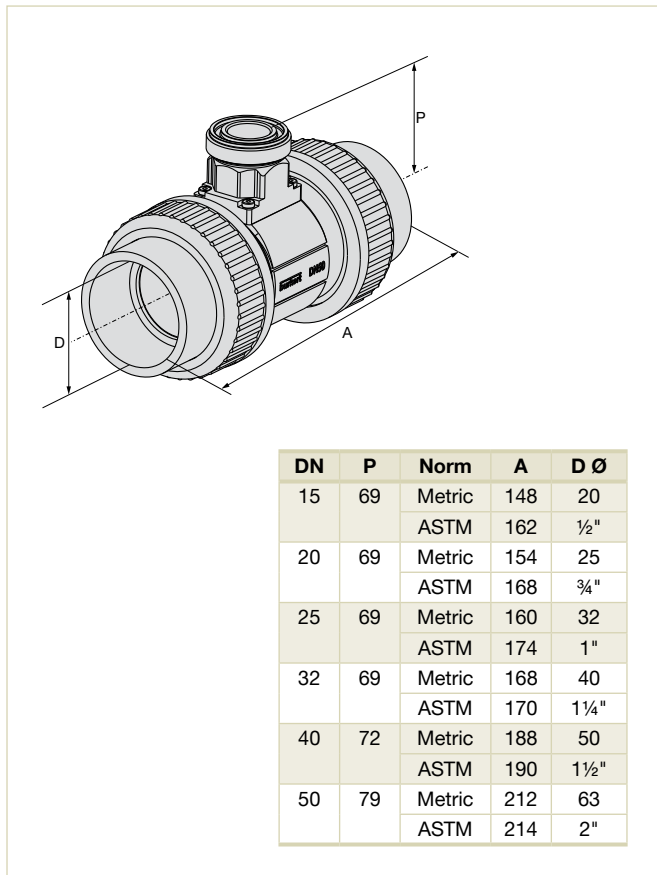
¹⁾ Please refer to appropriate instruction manual or data sheet for more details.

²⁾ The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions:

- Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).

Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

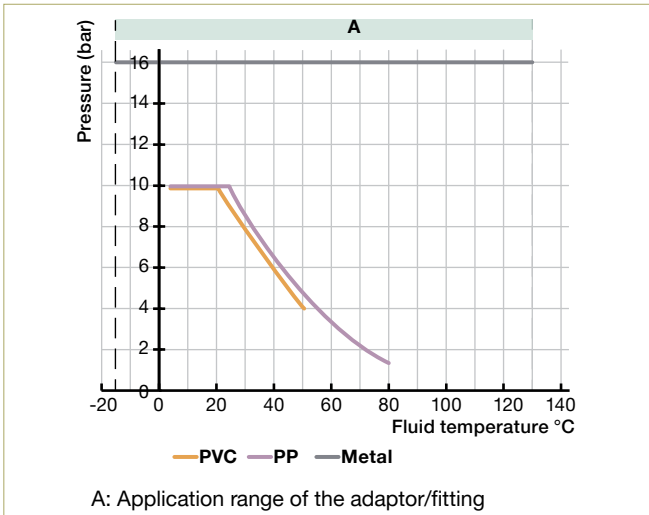
Dimensions [mm]



- Device used on a vessel (PS = maximum admissible pressure).

Type of fluid	Conditions
Fluid group 1, article 4, §1.a.i	PS ≤ 200 bar
Fluid group 2, article 4, §1.a.i	PS ≤ 1000 bar
Fluid group 1, article 4, §1.a.ii	PS ≤ 500 bar
Fluid group 2, article 4, §1.a.ii	PS ≤ 1000 bar

Pressure/temperature diagram



Adaptation overview

Adaptor S022				
	PVC-U, PP metric or ASTM	Stainless steel	PVC-U, G or NPT 1 1/4 screw-on	PVC-U, PP, stainless steel
For connection on piping systems	 Fitting and reduction not supplied			
Final products				
DN	32...110 (06...25 with reduction)	Respect recommendations of installation	Respect recommendations of installation	For Bürkert fitting body ≥ DN32 or analytical true union fitting (DN15...DN25)

Fitting S022			
	PVC / FKM, metric or ASTM	PVC / FKM, metric or ASTM	PP Body & PVC adaptor / EPDM
For connection on piping systems			
DN	10...100	15...50	50...110

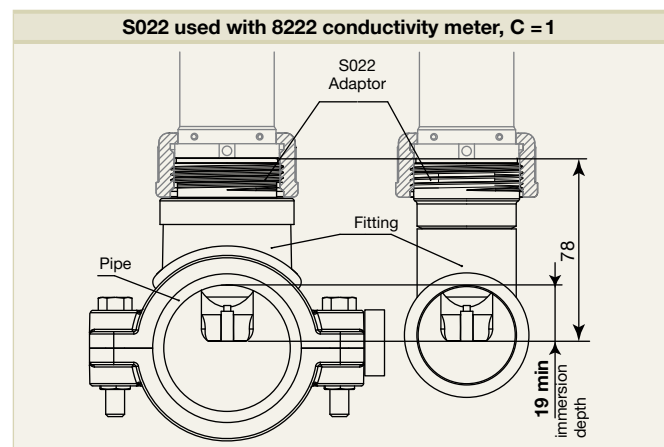
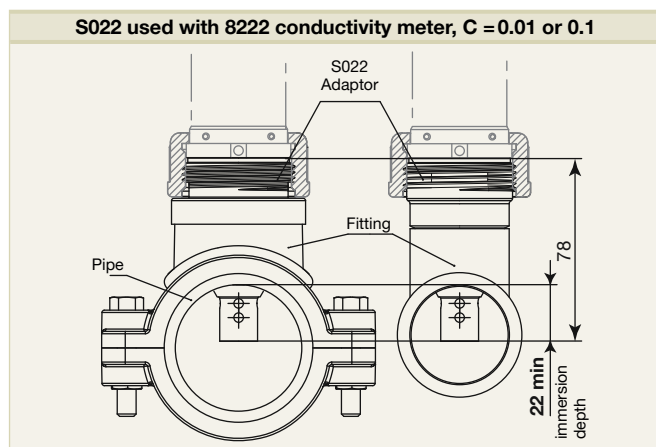
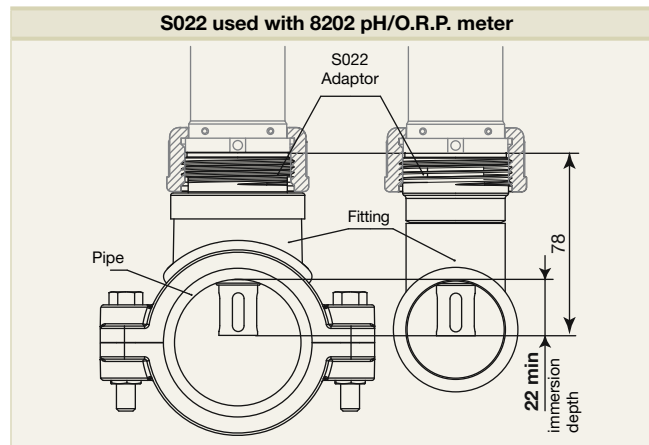
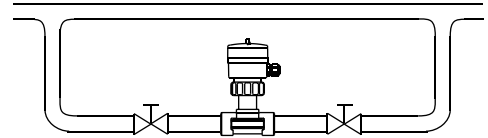
Installation and recommendations

For pH and ORP measurements, we recommend a “U”- form bypass installation to ensure that the electrode is maintained in a wet condition and enable the customer to calibrate the unit without stopping the whole process or to use the special designed measuring chamber.

The specially designed measuring chamber enables to install the measuring device in all pipe systems, either directly in the main stream or in a by-pass line. Additionally it enables to keep the electrode always wet and isolates it easily from the main stream for calibration purposes.

Pressure and temperature ratings must be respected according to the selected adaptor material. Be sure that the sensor element is completely covered with liquid. Avoid dead legs which interfere the local fluid exchange.

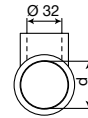
When mounting the adaptor into a T-fitting, a tank or directly into a pipe, please ensure that the minimum immersion depth of the electrode is respected (refer to the under drawing).



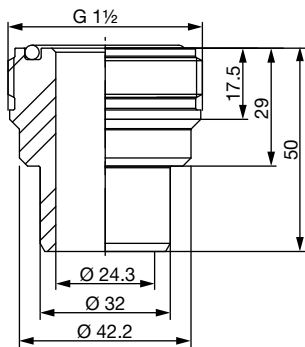
Dimensions [mm]

Insertion adaptor for connection into T-fitting or pipe

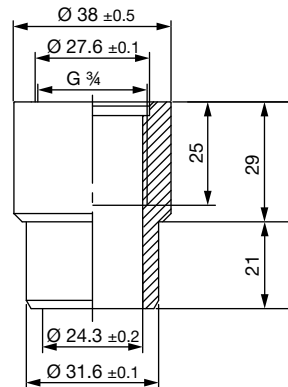
Note: T-fitting to use for mounting the S022, shown in the opposite drawing



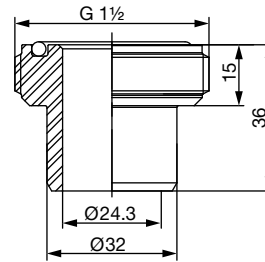
Metric solvent adaptor PVC-U / FKM, EPDM, to stick on Tee fitting d32 × 32 or d40 × 32 with solvent socket with G 1½ external threaded for ELEMENT analyse device



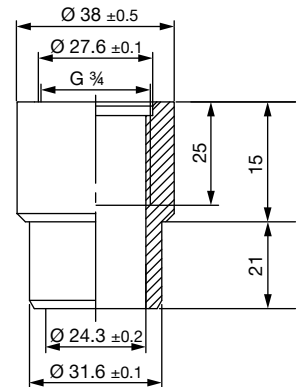
with G ¾ internal thread for ELEMENT neutrino conductivity meter, Type 8222



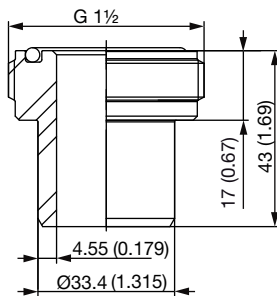
Metric solvent adaptor PVC-U / FKM, EPDM, to stick on Tee fitting d50 × 32 to d110 × 32 with solvent socket with G 1½ external threaded for ELEMENT analyse device



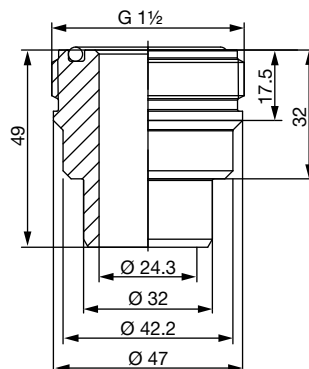
with G ¾ internal thread for ELEMENT neutrino conductivity meter, Type 8222



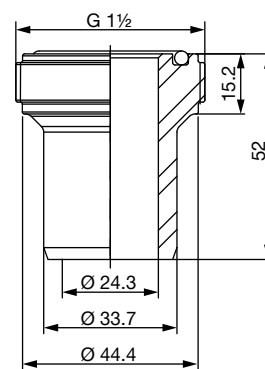
ASTM solvent adaptor PVC-U / FKM, EPDM To stick on Tee fitting 1" × 1" to 3" × 1" with solvent socket



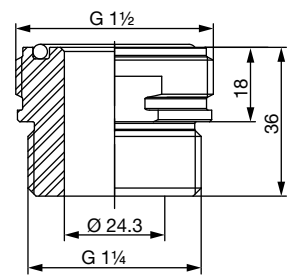
Metric fusion adaptor PP / FKM, EPDM To weld on Tee fitting d32 × 32 with fusion socket



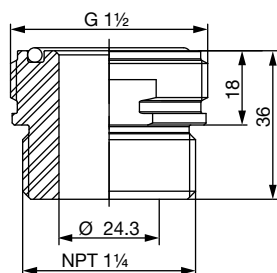
Metric welding Stainless steel / FKM, EPDM To weld directly on pipe



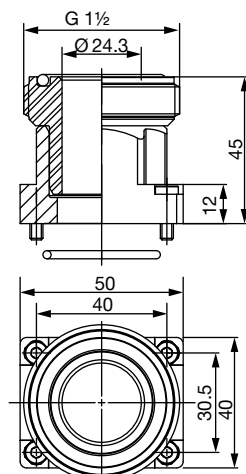
G 1¼ screw-on adaptor PVC-U / FKM, EPDM to screw on tank or pipe



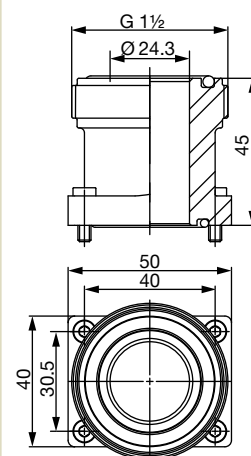
NPT 1¼ screw-on adaptor PVC-U / FKM, EPDM to screw on tank or pipe



Adaptor to convert S020 T-fitting to S022: PVC-U or PP/ FKM, EPDM For Bürkert fitting body - DN32 or bigger






































Stainless steel / FKM, EPDM For Bürkert fitting body - DN32 or bigger



Note: Dimensions of the complete fitting S022, see data sheet, **Type S022** ▶




Ordering chart

Adaptor S022	Description	Materials Body / Seal ¹⁾	Type of installation or DN	Article no.
Insertion adaptor for connection into T-fitting or pipe				
	Metric solvent adaptor with G 1 1/2 external threaded for ELEMENT measuring device connection	PVC-U / FKM, EPDM	To stick on Tee fitting d32 x 32 or d40 x 32 with solvent socket	560705 
	Metric solvent adaptor with G 3/4 internal threaded for ELEMENT neutrino conductivity meter, Type 8222, connection	PVC-U / FKM, EPDM	To stick on Tee fitting d32 x 32 or d40 x 32 with solvent socket	568931 
	Metric solvent adaptor with G 1 1/2 external threaded for ELEMENT measuring device connection	PVC-U / FKM, EPDM	To stick on Tee fitting d50 x 32 to d50...110 x 32 with solvent socket	560706 
	Metric solvent adaptor with G 3/4 internal threaded for ELEMENT neutrino conductivity meter, Type 8222, connection	PVC-U / FKM, EPDM	To stick on Tee fitting d50 x 32 to d50...110 x 32 with solvent socket	568932 
	ASTM solvent adaptor with G 1 1/2 external threaded for ELEMENT measuring device connection	PVC-U / FKM, EPDM	To stick on Tee fitting 1" x 1" to 3" x 1" with solvent socket	561227 
	Metric fusion adaptor with G 1 1/2 external threaded for ELEMENT measuring device connection	PP / FKM, EPDM	To weld on Tee fitting d32 x 32 with fusion socket	561229 
	Metric welding adaptor Ø 33.7 with G 1 1/2 external threaded for ELEMENT measuring device connection	Stainless steel / FKM, EPDM	To weld directly on pipe	561232 
Insertion adaptor for connection into T-fitting or pipe				
	G 1 1/4 screw-on adaptor with G 1 1/2 external threaded for ELEMENT measuring device connection	PVC-U / FKM, EPDM	To screw on tank or pipe	560707 
	NPT 1 1/4 screw-on adaptor with G 1 1/2 external threaded for ELEMENT measuring device connection	PVC-U / FKM, EPDM	To screw on tank or pipe	561228 
Adaptor for conversion of S020 T-fitting to S022 T-fitting				
	Adaptor with G 1 1/2 external threaded for ELEMENT measuring device connection	PVC-U / FKM, EPDM	For Bürkert fitting body ≥ DN32 ²⁾	560854 
	Adaptor with G 1 1/2 external threaded for ELEMENT measuring device connection	PP / FKM, EPDM	For Bürkert fitting body ≥ DN32 ²⁾	561230 
	Adaptor with G 1 1/2 external threaded for ELEMENT measuring device connection	Stainless steel / FKM, EPDM	For Bürkert fitting body ≥ DN32 ²⁾	561233 
Insertion fitting for connection on pipe				
	Fitting with metric solvent ends connection with G 1 1/2 external threaded for ELEMENT measuring device connection	PVC / FKM	10	559640 
			15	559641 
			20	559642 
			25	559643 
			32	559644 
			40	559645 
			50	559646 
			65	559647 
			80	559648 
100	559649 			

1) 1 FKM and 1 EPDM seals for the measuring device connection are supplied with each adaptor.

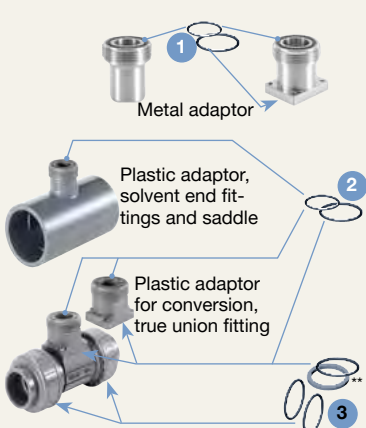












2) or analytical true union fitting (DN15...DN25)

Ordering chart continued

Adaptor S022	Description	Materials Body / Seal ¹⁾	Type of installation or DN	Article no.
	Fitting with ASTM solvent ends connection with G 1½ external threaded for ELEMENT measuring device connection	PVC / FKM	15	560815
			20	560816
			25	560817
			32	560818
			40	560819
			50	560820
			65	560821
			80	560822
Insertion fitting for connection on pipe				
	Fitting with metric true union connection with spigot and nut for pipe connection and with G 1½ external threaded for ELEMENT measuring device connection	PVC / FKM	15	560671
			20	560672
			25	560673
			32	560674
			40	560675
			50	560676
	Fitting with ASTM true union connection with spigot and nut for pipe connection and with G 1½ external threaded for ELEMENT measuring device connection	PVC / FKM	15	560691
			20	560692
			25	560693
			32	560694
			40	560695
			50	560696
	Fitting with saddle with G 1½ external threaded for ELEMENT measuring device connection	PP Body & PVC adaptor / EPDM	50	560700
			65	560701
			80	560702
			100	560703
			110	560704
Measuring chamber				
	Measuring chamber with G 1½ external threaded for ELEMENT measuring device connection	Stainless steel 316L - 1.4404	Pipe connection: G ½	563552

1) 1 FKM and 1 EPDM seals for the measuring device connection are supplied with each adaptor.

Accessories

	Number on drawing	Description	Article no.	
 <p>Metal adaptor</p> <p>Plastic adaptor, solvent end fittings and saddle</p> <p>Plastic adaptor for conversion, true union fitting</p> <p>** O-ring to use for holder with lug, Flat seal to use for holder with groove (old version)</p>		Stopper in stainless steel with union nut and O-ring (EPDM and FKM)	562625 	
			Stopper in PVC with union nut and O-ring (EPDM and FKM)	562541 
	1	FKM O-ring set - for metal adaptor	561654 	
	1	EPDM O-ring set - for metal adaptor	561653 	
	2	FKM O-ring set - for plastic adaptor, solvent end fittings and saddle	561399 	
	2	EPDM O-ring set - for plastic adaptor, solvent end fittings and saddle	561398 	
	3	FKM O-ring set - for plastic adaptor or true union fitting DN15 up DN32	431558 	
	3	FKM O-ring set - for plastic adaptor or true union fitting DN40	431559 	
	3	FKM O-ring set - for plastic adaptor or true union fitting DN50	431560 	
	3	EPDM O-ring set - for plastic adaptor or true union fitting DN15 up DN32	431564 	
	3	EPDM O-ring set - for plastic adaptor or true union fitting DN40	431565 	
	3	EPDM O-ring set - for plastic adaptor or true union fitting DN50	431566 	

Inductive conductivity meter

8228

- Perfect for concentrated liquids and wide conductivity range
- Pre-parameterized versions available for direct start-up
- Integral device for direct connection to PLC
- Simulation of process values for diagnostics



Suitable fitting:
see Type S020 ▶



Bürkert's inductive conductivity meter type 8228, includes a detachable display module. This is used for setup, configuration and calibration or required as a process value display. For temperature calibration, a temperature sensor is included as standard.

Technical data

Complete device data (fitting + conductivity meter)

Conductivity measurement

Measuring range	100 μ S/cm...2 S/cm
Resolution	0.1 μ S/cm
Measurement deviation	\pm (2 % of the Reading + 5 μ S/cm)
Linearity	\pm 2 %
Repeatability	\pm (0.2 % of the Reading + 2 μ S/cm)
Response time (t90)	from 3 sec. (without filter) to 40 sec. (with slow filter)

Temperature measurement

Measuring range	- 15...+ 130 °C
Resolution	0.1 °C
Measuring uncertainty	\pm 1 °C

Temperature compensation None or according to a predefined graph (NaCl, NaOH, HNO₃ or H₂SO₄) or according to a graph defined especially for your process

Fluid temperature with conductivity sensor

in PVDF	- 15...+ 100 °C
in PP	0...+ 80 °C
in PEEK	- 15...+ 130 °C

Temperature limits may depend on the material the S020 fitting used is made of. Refer to the relevant data sheet or instruction manual and the pressure/temperature diagram of the fluid. If the temperature ranges given for the device and the fitting are different, use the most restrictive range.

Fluid pressure (max.) with conductivity sensor

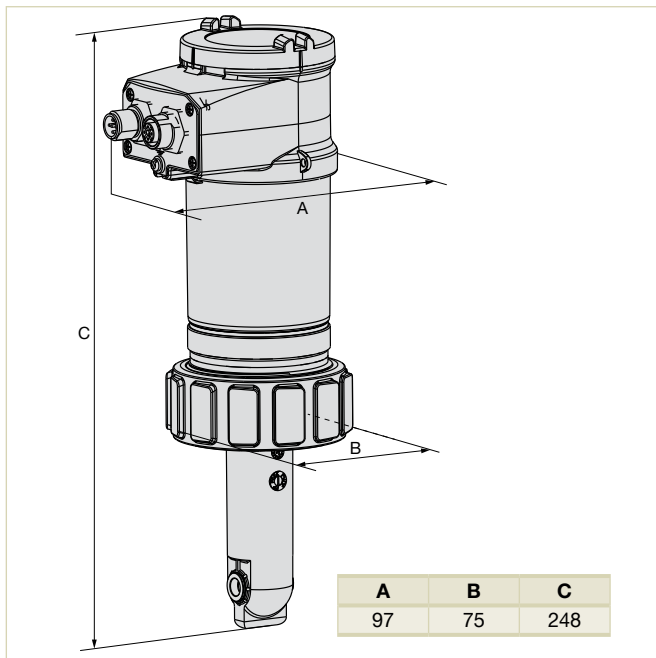
in PVDF, PP	PN6
in PEEK	PN10

Pressure limits may depend on the material the S020 fitting used is made of. Refer to the relevant data sheet or instruction manual and the pressure/temperature diagram of the fluid. If the temperature ranges given for the device and the fitting are different, use the most restrictive range.

Environment

Ambient temperature	- 10...+ 60 °C (operating and storage)
Relative humidity	\leq 85 %, without condensation
Height above sea level	Max. 2000 m

Dimensions [mm]



Options

- UL and CSA approvals
- Preparameterized conductivity meters

General data

Compatibility

with standard version	Any pipe DN15...DN200 which are fitted out with Bürkert Insertion Fitting S020 (see Type S020 ▶ or corresponding data sheet Type S020 ▶)
with CIP version	Any pipe from DN32 which are fitted out with a Clamp 2" according to ASME BPE as process connection for the device

Materials common all version

Housing / Cover	Stainless steel 316L, PPS / PC
Seal / Screws	EPDM, silicone / Stainless steel
Fixed connector holder	Stainless steel 316L
Display / Navigation key	PC / PBT

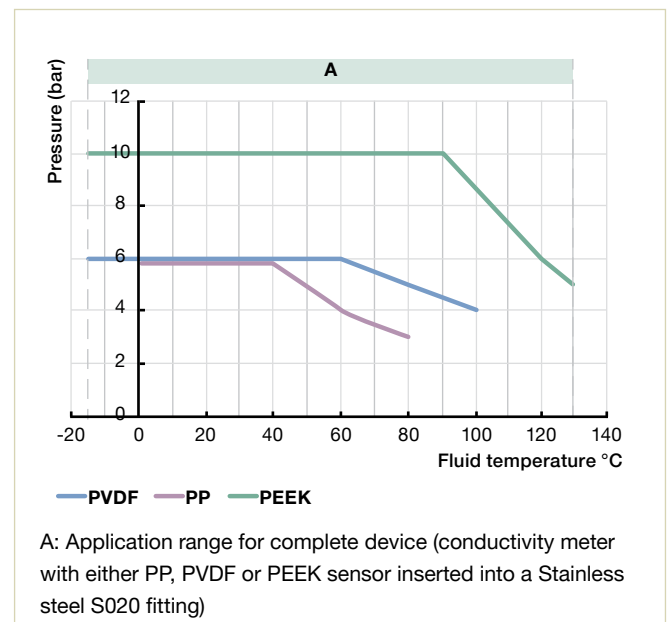
Technical data continued

Materials with standard version	
M12 fixed connectors	Brass nickel plated
Nut	PC or PPA (for PEEK sensor holder)
Wetted part materials	
Sensor holder	PP, PVDF or PEEK
Seal	FKM (standard) or EPDM (option)
Materials with CIP version	
M12 fixed connectors	
Process connection	Stainless steel 316L
Wetted part materials	Stainless steel 316L
Sensor holder	PEEK and Stainless steel 316L (standard) or PVDF and Stainless steel 316L (on request)
Seal	EPDM (standard) or FKM (on request)
Temperature sensor	Integrated in the sensor
Display (accessories)	Grey dot matrix 128 × 64 with backlighting
Electrical connections	
2 outputs meter (3-wire)	1 × 5 pin M12 male fixed connector,
4 outputs meter (3-wire)	1 × 5 pin M12 male + 1 × 5 pin M12 female fixed connectors
Connection cable	Shielded cable, Ø 3... 6.5 mm; Max. 0.75 mm ² cross section
Electrical data	
Supply voltage	12...36 V DC, ± 10 % oscillation rate, filtered and regulated, SELV (safety extra low voltage) circuit with a non dangerous energy level
Current consumption with sensor	- Without the consumption of the current outputs and the transistor outputs: max. 1 W (max. 25 mA at 12 V DC; starting current ~100 mA) - With the consumption of the current outputs and the transistor outputs: max. 40 W (max. 1 for the transistor outputs)
Output	
Transistor	Polarized, galvanically insulated, configurable through wiring and through parameterizing as sourcing (PNP) or sinking (NPN) Output NPN: 1...36 V DC, max. 700 mA (or 500 mA max. per transistor if both transistor outputs are wired) Output PNP: V+ supply voltage, max. 700 mA (or 500 mA max. per transistor if both transistor outputs are wired); galvanically insulated, protected against overvoltages, polarity reversals and short-circuits
Current (3-wire)	4...20 mA configurable through wiring and through parameterizing as sourcing or sinking, 22 mA to indicate a fault (can be parametered) max. loop impedance: 1100 Ω at 36 V DC; 610 Ω at 24 V DC; 100 Ω at 12 V DC
Response time (10...90 %)	150 ms (default value)
4...20 mA output uncertainty	1 % of the range

Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Standards, directives and certifications	
Protection class (according to EN 60529)	IP65 and IP67 with M12 connectors plugged in and tightened and electronic module cover fully screwed down
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable) Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ¹⁾
Pressure	
Certificates	
FDA declaration of conformity ECR1935/2004 Declaration	Only for standard or CIP version with PEEK or PVDF sensor holder and EPDM or FKM seal Only for standard or CIP version with PEEK sensor holder and EPDM seal
1) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).	
Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

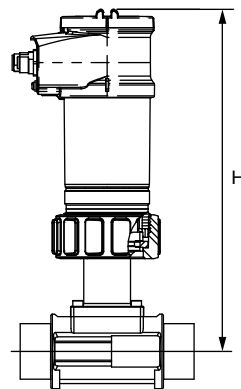
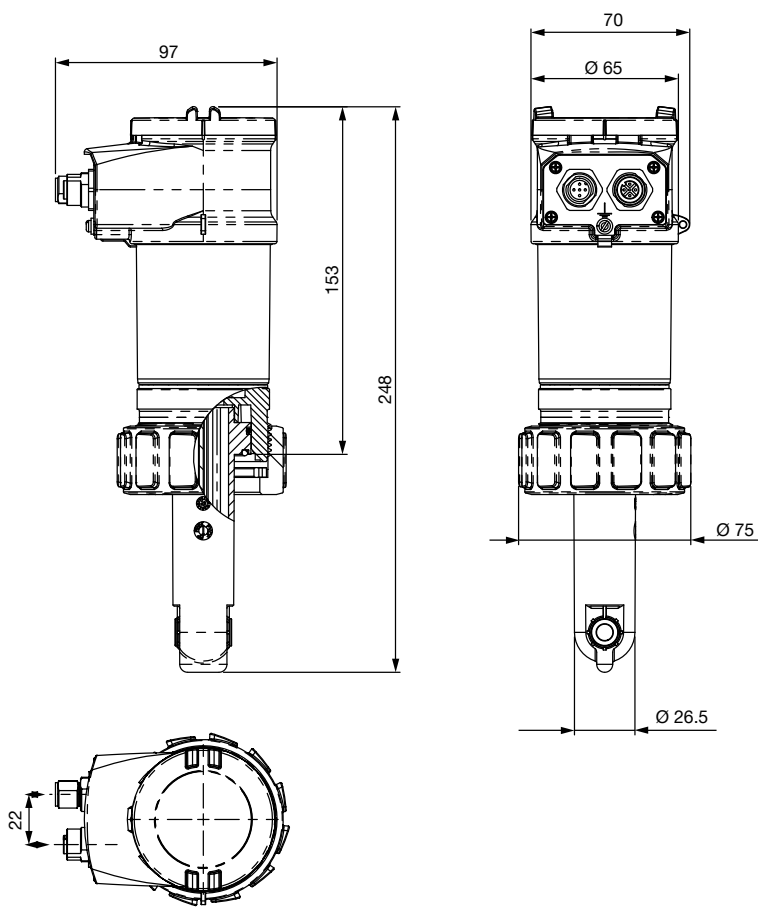
Pressure/temperature chart



Dimensions [mm]

8228

Conductivity meter with G 2 process connection (standard version)

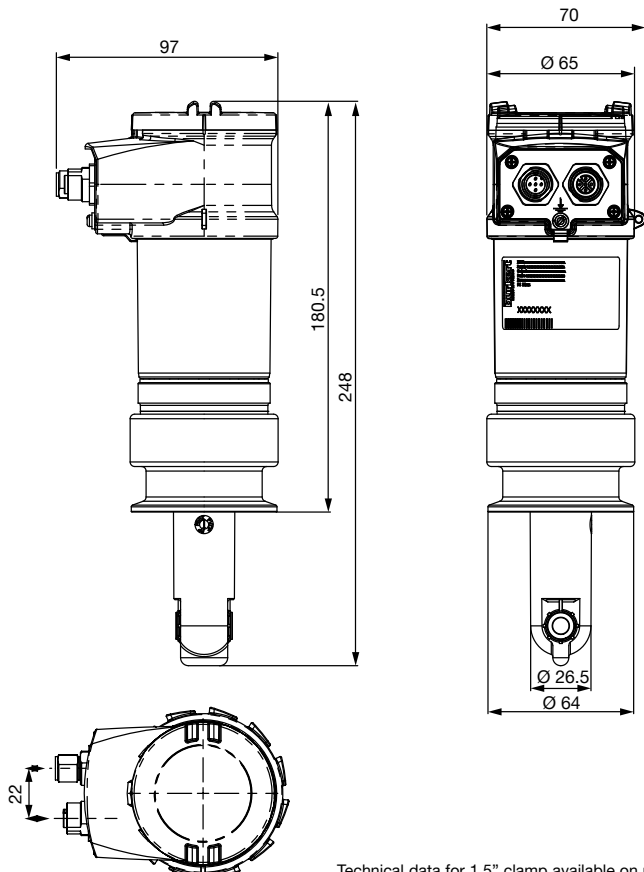


Orifice	T-Fitting	H	
		Plastic spigot	Metal spigot
15	235 ¹⁾		
20	235 ¹⁾		
25	235 ¹⁾		
32	235		
40	239		
50	245		240
65	245	266 ²⁾	246
80		266 ²⁾	251
100		266 ²⁾	261
125		301	272
150		308	283
200		329	304

1) Only use plastic fitting in analytical version with true union acc. to DIN 8063 (PVC), to DIN 16962 (PP) or to ISO 10931 (PVDF)

2) use analytical fusion spigot (Article no. 418652, 418660 or 418644 in PP, PVDF or PE) for orifice DN65...DN100

Conductivity meter with clamp 2" process connection (CIP version)



Technical data for 1.5" clamp available on request

Ordering chart

Holder material	Output	Seal material	Electrical connection	Article no. ¹⁾ without display	Article no. ¹⁾ with display
PP	1 x transistor NPN/PNP + 1 x 4...20 mA	FKM	5 pin M12 male fixed connector	565601	566601
	2 x transistor NPN/PNP + 2 x 4...20 mA	FKM	5 pin M12 male connector + 5 pin M12 female connector	565602	566602
PVDF	1 x transistor NPN/PNP + 1 x 4...20 mA	FKM	5 pin M12 male fixed connector	565603	566603
	2 x transistor NPN/PNP + 2 x 4...20 mA	FKM	5 pin M12 male connector + 5 pin M12 female connector	565604	566604
PEEK	1 x transistor NPN/PNP + 1 x 4...20 mA	FKM	5 pin M12 male fixed connector	565605	566605
	2 x transistor NPN/PNP + 2 x 4...20 mA	FKM	5 pin M12 male connector + 5 pin M12 female connector	565606	566606
Conductivity meter with Clamp 2" process connection according to ASME BPE (CIP version)					
PEEK	1 x transistor NPN/PNP + 1 x 4...20 mA	EPDM	5 pin M12 male fixed connector	567200	567478
PEEK	2 x transistors NPN/PNP + 2 x 4...20 mA	EPDM	5 pin M12 male + 5 pin M12 female fixed connectors	567199	567479

1) Transparent cover as standard

Note for ordering chart:

For a complete conductivity unit the following items must be ordered:

- Transmitter Type 8228
- Insertion Fitting Type S020
- M12 cable socket

Further versions and information in data sheet, see **Type 8228** ►.

Accessories

Description	Artikel-Nr.
Removable display/configuration module (with instruction sheet)	559168
Blind cover with seal (1 screw cover with EPDM seal + 1 quarter turn closing cover with silicone seal)	560948
Transparent cover with seal (1 screw cover with EPDM seal + 1 quarter turn closing cover with silicone seal)	561843
Ring (open) for S020 fitting	619205
Nut in PC for S020 fitting	619204
Buffer solution, 706 µS/cm conductivity standard, ± 2 % accuracy, 300 ml	440018
Buffer solution, 1413 µS/cm conductivity standard, ± 1 % accuracy, 300 ml	440019
Buffer solution, 12880 µS/cm conductivity standard, 500 ml	565741
Buffer solution, 100 mS/cm conductivity standard, ± 1 % accuracy, 300 ml	440020
5 pin M12 female straight cable plug with plastic threaded locking ring, to be wired	917116
5 pin M12 male straight cable plug with plastic threaded locking ring, to be wired	560946
5 pin M12 female straight cable plug moulded on cable (2 m, shielded)	438680
5 pin M12 male straight cable plug moulded on cable (2 m, shielded)	559177

Overview for Pressure and Temperature Sensors

Note: The following product overview does not show the complete product range of this catalogue. A complete overview can be found [here](#) ▶

Overview Pressure and Temperature Sensors	Category	Type	Basic functions	Operating principle	Measuring range	Fluid temperature [°C]	Wetted parts material		Process connection
							Seal	Housing	
Pressure measurement	8311 ▶	Switch, transmitter, measuring device	Ceramic measuring cell	0...50 bar	-20...+150 (with cooling section)	FPM	SS	Any pipe with sensor connection ½"	
	8316 ▶	Transmitter	Ceramic measuring cell	0...100 bar	-15...125	FKM	SS, PVDF	Any pipe with sensor connection ¼"	
	8323 ▶	Transmitter	Thin film piezoresistive	0...25 bar	-30...+150	FKM, EPDM	SS	Any pipe with sensor connection ½", 1"	
Temperature measurement	8400 ▶	Switch, transmitter, measuring device	Pt100	-40...+125 °C	-40...+125	FKM	SS	Any pipe with sensor connection ½"	

Fluid properties	Operating voltage	Signal output	Display	Special features and versions
Clean, contaminated or hygienic (with diaphragm seal), hot (with cooling section) or aggressive (with diaphragm seal)	12...30 V DC	Transmitter 2-wire version: transistor, 4...20 mA; Switch version: transistor, optional relay	Yes	Compact, keypad, bar graph display, Teach-In calibration, simulation mode, hysteresis mode, window mode
Clean, contaminated or hygienic	7...33 V DC	4...20 mA	No	Compact, standard version
Clean, contaminated or hygienic (with flush diaphragm), hot (with cooling section) or aggressive (with diaphragm seal)	10...30 V DC	4...20 mA	No	Compact, standard version Standard flush diaphragm version Hygienic flush diaphragm version
Clean or contaminated	12...30 V DC	Transistor, 4...20 mA, relay	Yes	Compact, wall-mounted version, keypad, bar graph display, Teach-In calibration, simulation mode, hysteresis mode, window mode

Pressure transmitter/Switch

8311

- Pressure measurement and switch in one device
- Switch for alarm or event logging
- Bar graph display for local monitoring
- Continuous or on/off control
- 2-wire transmitter



Programmable pressure sensor with switching and transmitting functions. It has a large display with bar graph and simple menu guided controls. Connection to the process with standard stainless steel connection. The process value can be transmitted to a PLC via a 4...20 mA signal.

Technical data

General data

Materials

Housing, cover	PC, +20 % glass fibre
Front panel folio / Screws	Polyester / Stainless steel
Cable plug, Multipin	PA
Materials wetted parts	Stainless steel
Seal	FKM (EPDM option)

Sensor element Ceramic cell (Al₂O₃)

Service life of pressure cell Min. 100 million cycles

Electrical connections Adjustable 5 pin M12 connector for 5 pin socket (included)

Voltage supply cable 50 m, shielded, 0.14...0.5 mm² max.

Complete device data (pipe + electronic module)

Pipe diameter Any pipe with sensor connection 1/2"

Measuring range 0...1, 2, 5, 10, 20 or 50 bar

Fluid temperature -20...+100 °C (+100 °C for an ambient temperature of max. 40 °C)

Typical measurement deviation

Transmitter 2-wire version	
for 0 °C < T < 70 °C	≤ ± 1 % of F.S. ¹⁾
for -20 °C < T < 0 °C	≤ ± 1 % ± 0.03 % of F.S. ¹⁾ /°C
for 70 °C < T < 100 °C	≤ ± 1 % ± 0.03 % of F.S. ¹⁾ /°C
Switch version	≤ ± 1.5 % of F.S. ¹⁾

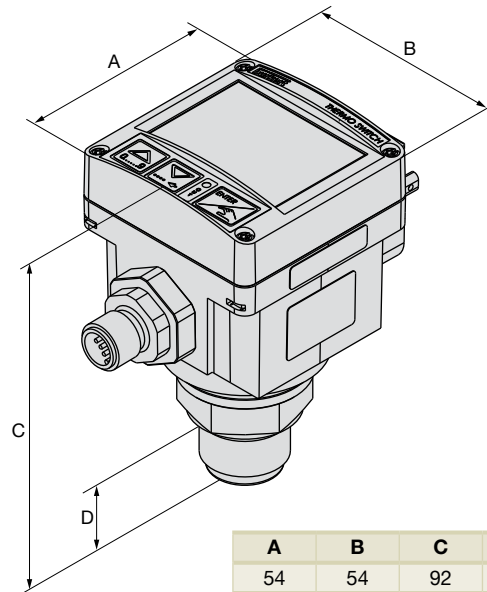
Typical repeatability

Transmitter 2-wire version	≤ ± 0.06 %
Switch version	≤ ± 0.25 %

1) F.S. =Full Scale

Dimensions [mm]

Sensor connection G 1/2




A	B	C	D
54	54	92	18

Options

































































- Cable plug, Type 2508, acc. to EN 175301-803
- Outputs: Relay 3 A/250 or 3 A/30 V DC

Technical data continued

Electrical data	
Power supply	12...30 V DC , filtered and regulated
Overvoltage protection	Yes, for power supply and for transistor outputs
Current consumption	
Transmitter 2-wire version	< 30 mA (+700 mA max. per transistor output used)
Switch version	< 750 mA (with load - PNP output configuration) < 80 mA (with load - Relay version)
Output	
Transmitter 2-wire version	
Transistor (programmable)	Open collector, 2 NPN or 2 PNP, 700 mA max., NPN: [(V+) minus 0.5 V DC] -0 V DC PNP: 0.5 V DC - (V+) Protected against short circuit
Process value	4...20 mA, loop resistance: 800 Ω at 30 V DC, 550 Ω at 24 V DC, 300 Ω at 18 V DC (For more details, see instruction manual)
Switch version	
Transistor (programmable)	Open collector, NPN/PNP, 700 mA max., NPN: 0.2...30 V DC ; PNP: (V+) Protected against short circuit
Optional relay (programmable)	Normally open/normally closed 3 A/250 V AC or 3 A/30 V DC (relay)
Reversed polarity of DC	Protected (for power supply and all outputs)
Environment	
Ambient temperature	0...+60 °C (operating and storage)
Relative humidity	≤ 80 %, non condensated
Standards, directives and certifications	
Protection class	IP65 with connector plug-in
Standard and directives 	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Pressure	Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ¹⁾
1) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).	
Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

Ordering chart





8311

Nominal pressure range [bar]	Pressure max. [bar]	Burst pressure [bar]	Power supply	Output signal	Electrical connection	Article no. sensor connection G ½	Article no. sensor connection NPT ½	Article no. sensor connection Rc ½
Transmitter version								
0...1	2	4	12...30 V DC	4...20 mA +2 NPN or 2 PNP ¹⁾	Swivel 5 pin M12 male fixed connector	557934 	557935 	On request
				4...20 mA	Female cable plug Type 2508 ²⁾	550350 	557937 	On request
0...2	4	7	12...30 V DC	4...20 mA +2 NPN or 2 PNP ¹⁾	Swivel 5 pin M12 male fixed connector	444507 	444762 	551739 
				4...20 mA	Female cable plug Type 2508 ²⁾	444635 	444640 	444768 
0...5	10	12	12...30 V DC	4...20 mA +2 NPN or 2 PNP ¹⁾	Swivel 5 pin M12 male fixed connector	444506 	444763 	551740 
				4...20 mA	Female cable plug Type 2508 ²⁾	444636 	444641 	444769 
0...10	20	25	12...30 V DC	4...20 mA +2 NPN or 2 PNP ¹⁾	Swivel 5 pin M12 male fixed connector	444503 	444764 	551741 
				4...20 mA	Female cable plug Type 2508 ²⁾	550338 	444642 	444770 
0...20	40	50	12...30 V DC	4...20 mA +2 NPN or 2 PNP ¹⁾	Swivel 5 pin M12 male fixed connector	444504 	444765 	551742 
				4...20 mA	Female cable plug Type 2508 ²⁾	550339 	444760 	551737 
0...50	100	120	12...30 V DC	4...20 mA +2 NPN or 2 PNP ¹⁾	Swivel 5 pin M12 male fixed connector	444505 	444767 	551743 
				4...20 mA	Female cable plug Type 2508 ²⁾	444637 	444761 	551738 
Switch version								
0...2	4	7	12...30 V DC	NPN / PNP	Swivel 5 pin M12 male fixed connector	439908 	439916 	439912 
				Relay NO/NC	Swivel 5 pin M12 male fixed connector + Female cable plug Type 2508 ²⁾	439911 	439919 	439915 
0...5	10	12	12...30 V DC	NPN / PNP	Swivel 5 pin M12 male fixed connector	439920 	439928 	439924 
				Relay NO/NC	Swivel 5 pin M12 male fixed connector + Female cable plug Type 2508 ²⁾	439923 	439931 	439927 
0...10	20	25	12...30 V DC	NPN / PNP	Swivel 5 pin M12 male fixed connector	439932 	439940 	439936 
				Relay NO/NC	Swivel 5 pin M12 male fixed connector + Female cable plug Type 2508 ²⁾	439935 	439943 	439939 
0...20	40	50	12...30 V DC	NPN / PNP	Swivel 5 pin M12 male fixed connector	439944 	439952 	439948 
				Relay NO/NC	Swivel 5 pin M12 male fixed connector + Female cable plug Type 2508 ²⁾	439947 	439955 	439951 
0...50	100	120	12...30 V DC	NPN / PNP	Swivel 5 pin M12 male fixed connector	439956 	439964 	439960 
				Relay NO/NC	Swivel 5 pin M12 male fixed connector + Female cable plug Type 2508 ²⁾	439959 	439967 	439963 

1) PNP standard, can be change in NPN with jumpers on electronic board

2) Acc EN175301-803 Europe / Asia (G / Rc) : with cable gland
USA / CDN (NPT) : with NPT ½ reduction

Accessories

Description	Article no.
5 pin M12 female straight cable plug with plastic threaded locking ring, to be wired	917116 
5 pin M12 female straight cable plug moulded on cable (2 m, shielded)	438680 
Cable plug EN 175301-803 with cable gland - see Type 2508 ▶ (will be replaced with Type 2518)	438811 
Cable plug EN 175301-803 with NPT ½ reduction without cable gland - see Type 2509 ▶	162673 

Pressure measuring device

8316

- Ceramic/thick film measurement cell
- Two-wire version for 4...20 mA output
- Compact, stable construction for the highest operational reliability



The compact Type 8316 pressure transmitter meets the highest requirements with regard to mechanical loading, EMC characteristics and operational reliability and is particularly suitable for demanding industrial applications.

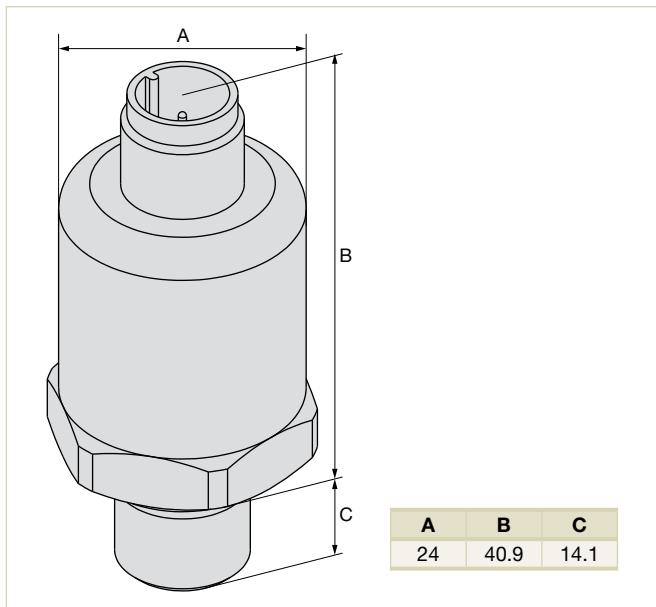
For aggressive fluids against stainless steel the process connection is available in PVDF.


Technical data

General data	
Body material	Stainless steel 1.4404 (316L)
Wetted parts materials	Ceramics (Al ₂ O ₃) stainless steel 1.4404, FKM seal (for pressure 0...100 bar, only stainless steel 1.4404, no FKM seal, no ceramics)
Electrical connection	Round male connector M12 x 1
Process connection	G 1/4 external to DIN 3852 Form E NPT 1/4 external
Installation	As required, preferably with pressure connection in downward position
Measurement technology	Ceramic or thick film
Measurement procedure	Relative pressure measurement
Measuring range	0...1, 4, 6, 10, 16, 40 or 100 bar (0...14.51, 58.04, 87.06, 145.1, 232.16, 580.4, 1451 PSI)
Overload, bursting pressure	3 x full scale at 0...4 bar (0...58.04 PSI) 2.5 x full scale at 6...100 bar (87.06...1451 PSI)
Fluid temperature	-15...+125 °C
Measurement deviation	Sum of linearity, hysteresis and reproducibility, balancing accuracy of zero point and full scale: ≤0.5% of F.S. ¹⁾
Resolution	0.1% of F.S. ¹⁾
Dynamic response	Suitable for static and dynamic measurements response time <2 ms, typ. 1 ms
Electrical data	
Operating voltage (U)	7...33 V DC, unregulated
Output signal	Standard 4...20 mA (two-wire) or 0...10 V DC (three-wire) signal
Load in Ω	<(U - 7 V)/0.02 A
Protected connection	Short-circuit proof & protected against reverse polarity
Environment	
Ambient temperature	-15...+85 °C
Temperature coefficient	<0.2% of F.S. ¹⁾ /10 K














1) F.S. = Full Scale

Dimensions [mm]





Standards, directives and certifications	
Protection class	IP67
EMC	EN 61326-2-3
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Certifications UL-Listed for USA and Canada	 Process Control Equipment E312665 UL 61010-1 + CAN/CSA-C22.2 No.61010-1
Test/Admissions	
Shock acc. EN 60068-2-27	25 g, 6 ms half sine wave, all three directions.
Drop test acc. EN 60068-2-23	From 1 m on concrete
Vibration acc. EN 60770-1	50 m/s, 10...1000 Hz, 1 Octave/min, 20 constant load per axis

Ordering chart

Process connection	Pressure range	Operating voltage	Output signal	Electrical connection	Article no.
G ¼ UL-Listed for USA and Canada 	0...1.00 bar	7...33 V DC	4...20 mA	M12 male connector	563777 
	0...4.00 bar	7...33 V DC	4...20 mA	M12 male connector	563778 
	0...6.00 bar	7...33 V DC	4...20 mA	M12 male connector	563779 
	0...10.0 bar	7...33 V DC	4...20 mA	M12 male connector	563780 
			0...10 V DC	M12 male connector	563784 
	0...16.0 bar	7...33 V DC	4...20 mA	M12 male connector	563781 
	0...40.0 bar	7...33 V DC	4...20 mA	M12 male connector	563782 
0...100.0 bar	7...33 V DC	4...20 mA	M12 male connector	563783 	
NPT ¼ UL-Listed for USA and Canada 	0...60 PSI	7...33 V DC	4...20 mA	M12 male connector	564466 
	0...150 PSI	7...33 V DC	4...20 mA	M12 male connector	564467 
	0...300 PSI	7...33 V DC	4...20 mA	M12 male connector	564468 

8316

Accessories

Specification	Article no.
5 pin M12 female straight cable plug with plastic threaded locking ring, to be wired	917116 
5 pin M12 female straight cable plug moulded on cable (2 m, shielded)	438680 

Pressure transmitter for general applications, 0...25 bar

8323

- Piezoresistive or thin film sensor element
- Available with hygienic flush diaphragm
- Housing and wetted parts in corrosion-resistant stainless steel
- Standard signal 4...20 mA for connection to automation systems
- Plug for quick installation and service

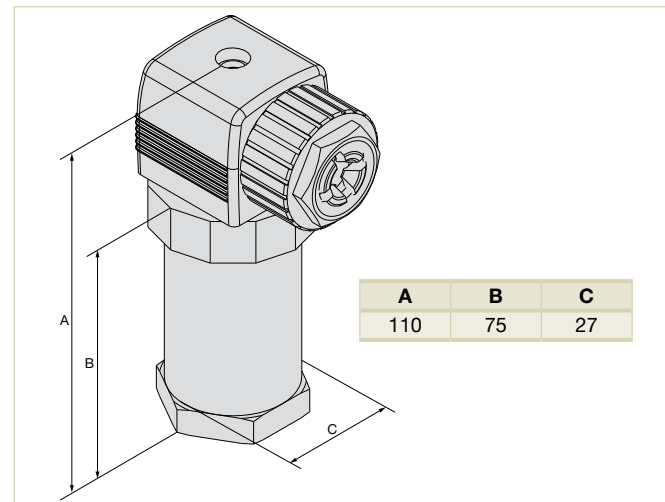


This pressure transmitter is designed to cover the majority of industrial applications in the field of industrial pressure measurement technology. High accuracy, compact design, robust construction and flexibility make this instrument universal and suitable for different measurement functions. For technical reasons the piezoresistive sensor element is used for measuring ranges up to 16 bar and the thin film sensor element for the measuring range of 25 bar. Wetted parts are made of stainless steel and completely welded. Internal seal elements, which could restrict the choice of measuring materials, are excluded.

Technical data

General data	
Pipe diameter	Any pipe with sensor connection:
Standard version	G 1/2 A acc. to DIN 16288
Flush diaphragm version	G 1 B with O-ring (range up to 1.6 bar) G 1/2 B with O-ring (range > 1.6 bar) G 1 B hygienic version (all ranges) (Weld-on socket with connection G 1/2 B, G 1 B)
Material	
Housing	Stainless steel 1.4571
Wetted parts	
Standard version	Stainless steel 1.4571 (and 1.4542 with 25 bar)
Std. flush diaphragm vers.	Stainless steel 1.4571, FKM seal
Hygienic flush diaphragm version	Stainless steel 1.4571, EPDM seal
Internal transmitting liquid	Synthetic oil (only for pressure range up to 16 bar or for flush diaphragm units)
Electrical connection	4 pin cable plug, Type 2508, acc. to DIN EN 175301-803 (included in delivery)
Measurement range (Pressure reference = relative pressure [atmospheric])	0...0.1, 0.16, 0.25, 0.4, 0.6, 1.0, 1.6, 2.5, 4.0, 6.0, 10.0, 16.0 or 25.0 bar
Sensor element	Piezo (≤ 16 bar) / Thin film (≤ 25 bar)
Fluid temperature	
Standard version	-20...+100 °C
Standard flush diaphragm version	-30...+100 °C
Hygienic flush diaphragm version	-20...+150 °C
Compensated T° range	0...+80 °C
Temperature coefficient	In compensated T° range
Average Tc of zero	
Standard version	≤ 0.2 % of F.S. ¹⁾ /10K
Flush diaphragm version	$\leq -0.2...+0.3$ % of F.S. ¹⁾ /10K
Average Tc of Span	≤ 0.2 % of F.S. ¹⁾ /10K
Measurement deviation	≤ 0.5 % of F.S. ¹⁾ (2-point calibration) ²⁾ ≤ 0.25 % of F.S. ¹⁾ (Best fit calibration, BFSL) ²⁾

Dimensions [mm]



Hysteresis	≤ 0.1 % of F.S. ¹⁾
Repeatability	≤ 0.05 % of F.S. ¹⁾
1-year stability	≤ 0.2 % of F.S. ¹⁾ (at reference condition)
Electrical data	
Power supply [Vs]	10...30 V DC
Reversed polarity of DC	Protected
Overvoltage protection	Yes
Short circuit protection	Yes
Output	Standard 4...20 mA signal, 2 wires
Load in Ω	$\leq (V_s [V] - 10 [V])/0.02 [A]$
Adjustability: Zero/span	± 10 %
Response time	≤ 1 ms
Environment	
Ambient temperature	
Standard version	-20...+80 °C
Std. flush diaphragm version	-20...+80 °C
Hygienic flush diaphragm version	-20...+80 °C
Storage temperature	
Standard version	-40...+100 °C
Std. flush diaphragm version	-40...+100 °C
Hygienic flush diaphragm version	-20...+100 °C

1) F.S.=Full scale

2) Calibrated in vertical mounting position with pressure connection bottom.

Technical data continued

Standards, directives and certifications

Protection class IP65 with device wired and with cable plug mounted and tightened

Standard and directives CE The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)

Pressure Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU¹⁾

1) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions:

- Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).

Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

- Device used on a vessel (PS = maximum admissible pressure).

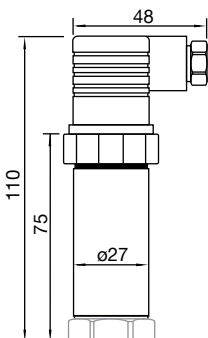
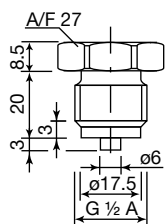
Type of fluid	Conditions
Fluid group 1, article 4, §1.a.i	PS ≤ 200 bar
Fluid group 2, article 4, §1.a.i	PS ≤ 1000 bar
Fluid group 1, article 4, §1.a.ii	PS ≤ 500 bar
Fluid group 2, article 4, §1.a.ii	PS ≤ 1000 bar

Dimensions

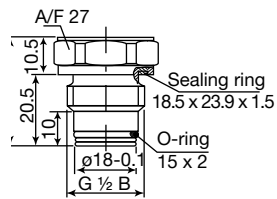
Pressure connection:

Standard version

G ½ A

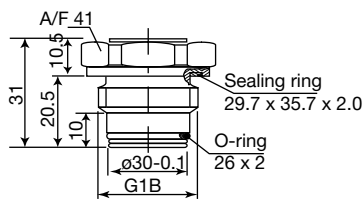


G ½ B

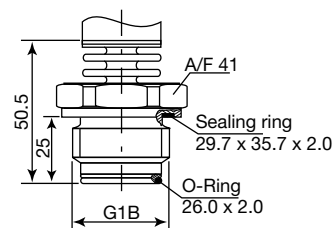


Flush diaphragm version

G 1 B

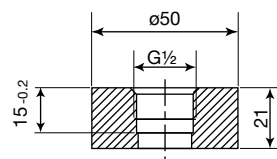


Hygienic G 1 B

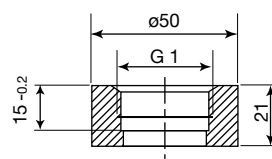


Weld-on socket for pressure connection flush diaphragm version

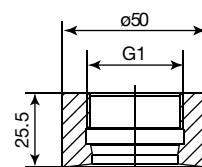
G ½ B



G 1 B






























Hygienic G 1 B






Ordering chart

8323

Pressure range [bar]	Max. pressure [bar]	Bursting pressure [bar]	Power supply	Output signal	Article no.			
					Standard	Standard flush diaphragm G ½ B	Standard flush diaphragm G 1 B	Hygienic flush diaphragm G 1 B
0...0.10	1	2	10...30 V DC	4...20 mA	417692 	—	552063 	551803 
0...0.16	1.5	2	10...30 V DC	4...20 mA	417693 	—	552064 	—
0...0.25	2	2	10...30 V DC	4...20 mA	417694 	—	—	—
0...0.40	2	2	10...30 V DC	4...20 mA	417695 	—	552065 	551675 
0...0.60	4	4	10...30 V DC	4...20 mA	417696 	—	—	551676 
0...1.00	5	5	10...30 V DC	4...20 mA	417697 	—	552066 	551677 
0...1.60	10	10	10...30 V DC	4...20 mA	417698 	—	—	551678 
0...2.50	10	10	10...30 V DC	4...20 mA	417699 	—	—	551679 
0...4.00	17	17	10...30 V DC	4...20 mA	417700 	—	—	—
0...6.00	35	35	10...30 V DC	4...20 mA	417701 	552067 	—	—
0...10.0	35	35	10...30 V DC	4...20 mA	417702 	552068 	—	551684 
0...16.0	80	80	10...30 V DC	4...20 mA	417703 	552069 	—	—
0...25.0	50	250	10...30 V DC	4...20 mA	417704 	—	—	—

Accessories

Description	Article no.
Weld-on socket for Type 8323 with standard flush diaphragm version G ½	443295 
Weld-on socket for Type 8323 with standard flush diaphragm version G 1	444137 
Weld-on socket for Type 8323 with hygienic flush diaphragm version G 1	443296 

Screw-in temperature sensor/switch with display

8400

- Indication, monitoring, transmitting and On/Off control in one device
- Extra-large display
- Menu-guided parametrisation
- Complete control loop with external setpoint

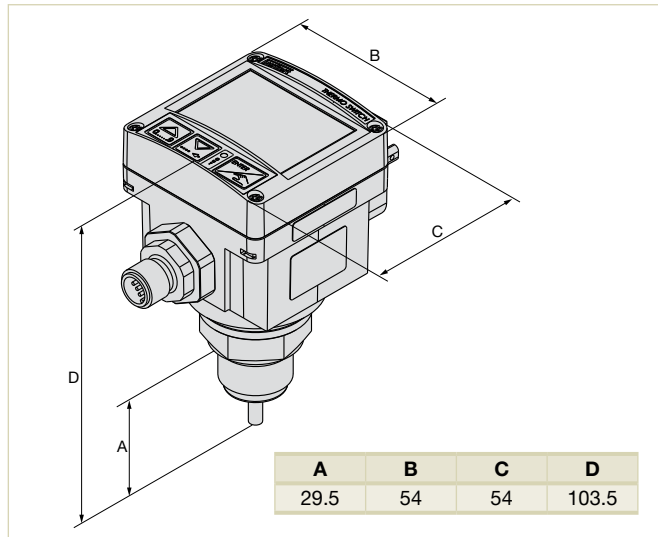


This intelligent sensor/switch with a particularly large display is designed specifically for monitoring limit values or an on/off or continuous control loop. The switching points can be programmed directly via buttons on the display or optionally externally by a PLC via a 4...20 mA standard signal input. In addition, the process value can be transmitted via a 4...20 mA signal to the PLC.

Technical data

General data	
Materials	
Housing	PC, + 20 % glass fibre
Front panel folio / Screws	Polyester / Stainless steel
Cable plug, Multipin	PA
Material wetted parts	
Sensor element / Seal	Stainless steel / FKM
Sensor element	Pt100
Screw-in thread	G, NPT, Rc ½
Electrical connections	Cable plug: EN 175301-803 Multipin: swivel M12, 5 pin or M12, 4 pin or 8 pin
Voltage supply cable	Max. 100 m, shielded, 0.14...0.5 mm ² max. 5 Ω max. cable impedance (Wall-mounted version)
Complete device data (pipe + electronic module)	
Pipe diameter	Any pipe with sensor connection ½"
Measuring range	
Compact version	-40...+125 °C (with ambient temperature between 0...+40 °C) -40...+90 °C (with ambient temperature above +40 °C)
Wall-mounted version	-40...+125 °C
Fluid temperature	+125 °C max.
Fluid pressure max.	PN16
Switching accuracy	±0.5 °C (0...+80 °C) ±1.5 °C (outside of 0...+80 °C)
Repeatability	≤ ±0.4 %
Electrical data	
Power supply	12...30 V DC, filtered and regulated
Outputs	
Compact version	
Transistor (programmable)	NPN and PNP, open collector, 5...30 V DC, 700 mA max., protected against short circuits
Relay (programmable)	3 A/250 V AC or 3 A/30 V DC 3 A/48 V AC or 3 A/30 V DC ¹⁾

Dimensions [mm]



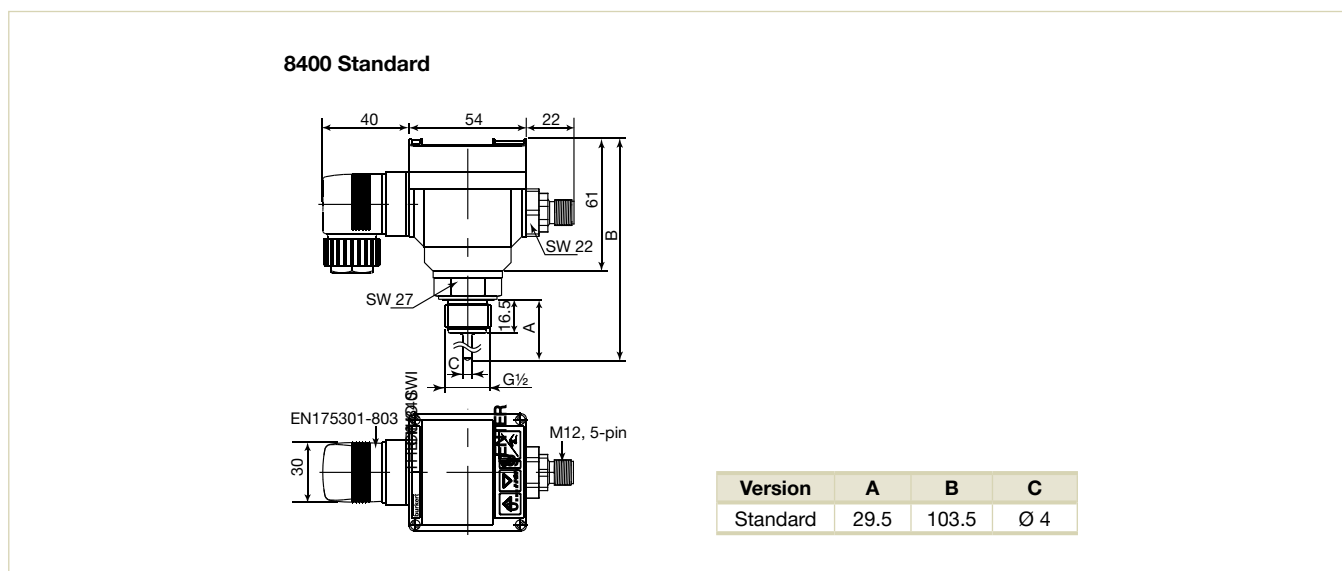
Input external setpoint	
Compact version	4...20 mA, galvanic insulation, Max. input impedance: 250 Ω
Current consumption	
Compact version	Max. 80 mA (no load)
Response time (10...90%)	7 sec. (for one step increment from 0...+100 °C)
Reversed polarity of DC	Protected
Environment	
Ambient temperature	-20...+60 °C
Relative humidity	≤ 80 %, without condensation

1) Valid for: external setpoint input and process value output

Technical data continued

Standards, directives and certifications	
Protection class	IP65 with connector plug-in
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Pressure	Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU ¹⁾
1) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).	
Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32, or PS*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

Dimensions [mm]



Ordering chart

8400 Sensor/Switch for sensor connection G 1/2"	Article no.
NPN and PNP, free positionable 5 pin M12	436501
Transmitter Version is available with 4...20 mA output and relay with 8 pin M12 and cable plug EN175301-803	444696
Relay version is available, free positionable 5 pin M12 and cable plug EN175301-803	436503

Accessories

ON/OFF Temperature Control System 8400	Article no.
5 pin M12 female straight cable plug moulded on cable (2 m, shielded)	438680

Overview for Mass Flow Controller (MFC) / Meter (MFM)

Note: The following product overview does not show the complete product range of this catalogue. A complete overview can be found [here](#) ▶

Overview MFC / MFM	Type	Full scale ranges (273.15 K, 1013.25 mbar)	Sensor technology	Body material	Medium	Turn-down ratio
	8626 (MFC) ▶ 8006 (MFM) ▶	20...1500 I _N /min (N ₂), MFM up to 2500 I _N /min (N ₂)	Inline sensor	Stainless steel, aluminium	Neutral, non-contaminated gases	1:50
8710 (MFC) ▶ 8700 (MFM) ▶	0.005...10 I _N /min (N ₂)	Capillary sensor	Stainless steel	Aggressive, toxic gases	1:50	
8711 (MFC) ▶ 8701 (MFM) ▶	0.01...80 I _N /min (N ₂)	MEMS sensor	Stainless steel, aluminium	Neutral, non-contaminated gases	1:50, optional 1:100	
8712 (MFC) ▶ 8702 (MFM) ▶			Stainless steel			
8713 (MFC) ▶ 8703 (MFM) ▶			Stainless steel, aluminium			
8746 (MFC/MFM) ¹⁾ büS / CANopen ▶	20...2500 I _N /min (N ₂)	Inline sensor	Stainless steel, aluminium	Neutral, non-contaminated gases	1:50	
8741 (MFC/MFM) büS / CANopen ▶	0.01...80 I _N /min (N ₂)	MEMS sensor			1:50, optional 1:100	
8742 (MFC/MFM) ¹⁾ büS / CANopen ▶	0.01...80 I _N /min (N ₂)	MEMS sensor			1:50, optional 1:100	
8745 (MFC/MFM) Standard ▶	20...2500 I _N /min (N ₂)	Inline sensor			1:50	
8741 (MFC/MFM) Standard ▶	0.01...80 I _N /min (N ₂)	MEMS sensor			1:50, optional 1:100	

1) Type suitable for ATEX Zone 2, Cat. 3, IIC, T4

2) In büS-modus up 32 MFC/MFM can be connected to a system control unit (SCU), e.g. of Type ME2X. The SCU processes and translates the internal büS communication to industrial fieldbus / Ethernet standards (PROFIBUS DP, PROFINET, EtherNet/IP, Modbus TCP, EtherCAT).

Furthermore, the SCU can be extended by I/O modules and as an option the graphic programming interface of Type 8922 can be activated.

Max. operating pressure	Medium temperature [°C]	Accuracy	Repeatability	Settling time	Protection class	Communication	Special features
10 bar (MFC), optional up to 25 bar (MFM)	-10 to +70	±1.5 % o.R. ±0.3 % F.S.	±0.1 % F.S.	<500 ms	IP65	Standard signal, RS-232 or RS-485, Modbus-RTU (RS485 adapter) PROFIBUS DP, DeviceNet, CANopen	– Sensor in contact with medium – Real gas calibration – Little sensitivity of the sensor to humidity and particles
10 bar		±1.5 % o.R. ±0.3 % F.S.		<3000 ms	IP40		– Sensor not in contact with medium – Real gas calibration or conversion factor
		±0.8 % o.R. ±0.3 % F.S.		<300 ms	IP40		– Sensor in contact with medium – Real gas calibration – Little sensitivity of the sensor to humidity and particles
		±0.8 % o.R. ±0.3 % F.S.			IP65		
		±0.8 % o.R. ±0.3 % F.S.			IP40	RS-232 or RS-485, Modbus RTU	
25 bar	±1.5 % o.R. ±0.3 % F.S.	<500 ms	IP65 and IP67	CANopen or CAN-based bus ²⁾	– Sensor in contact with medium – Real gas calibration – Little sensitivity of the sensor to humidity and particles		
10 bar	±0.8 % o.R. ±0.3 % F.S.	<300 ms	IP20				
10 bar	±0.8 % o.R. ±0.3 % F.S.	<300 ms	IP65 and IP67				
25 bar	±1.5 % o.R. ±0.3 % F.S.	<500 ms	IP20			Normsignal, PROFINET, EtherNet/IP, EtherCAT, Modbus TCP	
10 bar	±0.8 % o.R. ±0.3 % F.S.	<300 ms	IP20				

Mass Flow Meter (MFM)

8006

- Nominal flow ranges from 20 l_N/min up to 2500 l_N/min
- High accuracy
- Fast response time
- Protection class IP65
- Optional: Fieldbus interface



The mass flow meter (MFM) type 8006 is suited for measuring the mass flow of high gas flows. The thermal inline sensor is located directly in the gas stream and therefore reaches very fast response times.

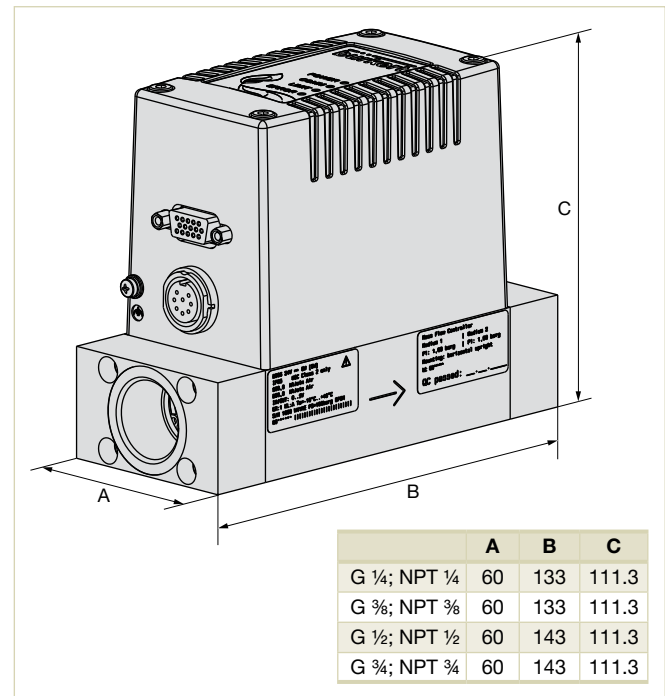
Type 8006 can optionally be calibrated for two different gases; the user can switch between these two gases. As electrical interfaces both, analog standard signals and fieldbuses are available.

The MFM type 8006 is especially designed for use in harsh environments due to a low sensitivity to contamination and the high protection class.

Technical data

Nominal flow range¹⁾ (Q _{nom})	20...2500 l _N /min ²⁾ , N ₂ equivalent see table, higher flows on request
Turn-down ratio	1:50 ³⁾
Operating gas	Neutral, non-contaminated gases, others available on request
Calibration gas	Operating gas or air with correcting function
Max. operating pressure (Inlet pressure)	10 bar, up to 25 bar (N ₂ , air, argon)
Gas temperature	-10...+70 °C (-10...+60 °C with oxygen)
Ambient temperature	-10...+45 °C (higher temperatures on request)
Accuracy (after 15 min warm up time)	±1.5 % o.R. ±0.3 % F.S. (o.R.: of reading; F.S.: of full scale)
Repeatability	±0.1 % F.S.
Response time (t_{95%})	<500 ms
Materials	
Body	Aluminium (black anodized) or stainless steel
Housing	Aluminium (coated)
Seals	FKM, EPDM
Port connection	G ¼, ⅜, ½, ¾, 1 NPT ¼, ⅜, ½, ¾, 1 With compression fittings
Electr. connection	Socket M16, round, 8 pin and socket D-Sub HD15, 15 pin
Additionally with	
- PROFIBUS-DP:	Socket M12 5 pin or D-Sub 9 pin
- CANopen:	Plug M12 5 pin or D-Sub 9 pin
with RS485 version only:	Plug D-Sub 9 pin
Operating voltage	24 V DC
Voltage tolerance	±10 %
Residual ripple	<2 %
Power consumption	3.5...10 W, with fieldbus: 4...12.5 W (acc. to the version)

Dimensions [mm]



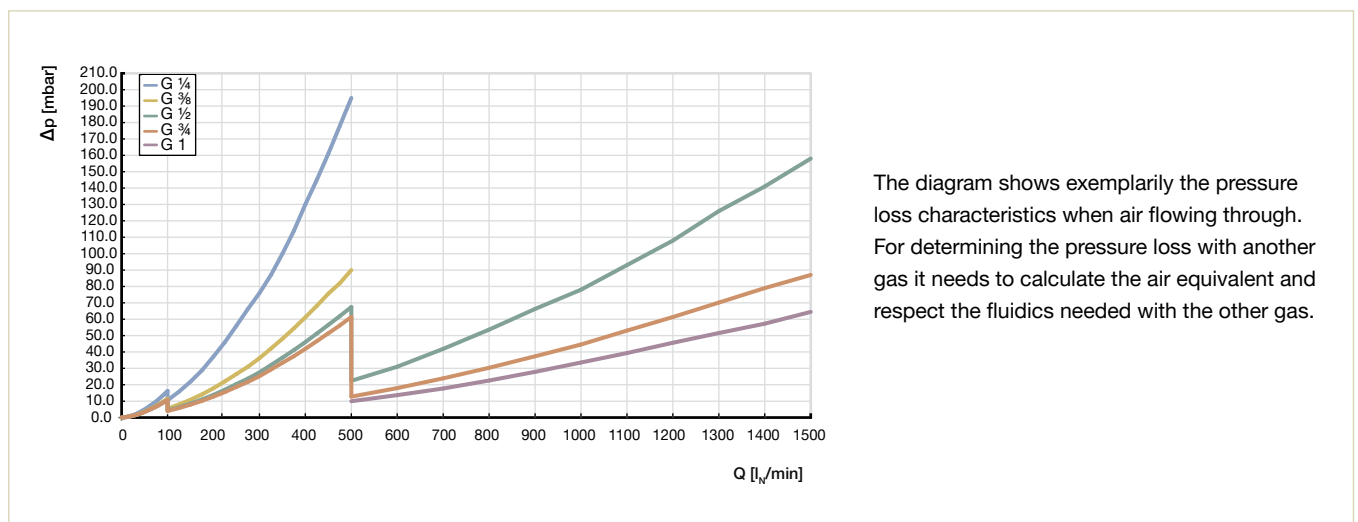
Protection class (with connected cables)	IP65
Total weight (Example standard block)	1.2 kg (Al) 3.0 kg (VA)
Mounting position	Horizontal or vertical
Light emitting diodes (Default, other functions programmable)	Indication for 1. Power 2. Communication 3. Limit 4. Error

1) The nominal flow value is the max. flow value calibrated which can be measured. The nominal flow range defines the range of nominal flow rates (full scale values) possible.
2) Index N: Flow rates referred to 1.013 bar and 0 °C.
Alternatively there is an Index S available which refers to 1.013 bar and 20 °C
3) With vertical installation and flow downwards the turn-down ratio is 1:10

Technical data continued

Device variant	Analog signal version	Fieldbus version	RS485 version (only D-Sub, 9 pin)
Analog communication Output signal (actual flow) Max. current voltage output Max. load current output	0...5 V, 0...10 V, 0...20 mA or 4...20 mA 10 mA 600 Ω	None	None
Fieldbus option (D-Sub HD15 covered with sealed plate for, pins for analogue inputs/ outputs not connected)	None	PROFIBUS-DP, CANopen	Modbus RTU (via RS interface)
Digital communication via adapter possible:	RS232 (supports Modbus RTU) RS485, RS422 or USB		RS485, RS422 USB
Binary inputs (Default, other functions programmable)	Three: 1. not assigned 2. not assigned 3. not assigned		One: not assigned
Binary outputs (Default, other functions programmable)	Two relay outputs 1. Limit (Q_{nom} almost reached) 2. Error (e.g. sensor fault) Load capacity: max. 60 V, 1 A, 60 VA		One relay output 1. Limit (Q_{nom} almost reached) Load capacity: max. 25 V, 1 A, 25 VA

Pressure loss diagram (ref. to air, with 250 μm inlet filter)



Nominal flow range of typical gases

(Other gases on request)

Gas	Min. Q_{nom} [l _N /min]	Max. Q_{nom} [l _N /min]
Acetylene	20	320
Ammonia	20	1000
Argon	20	1600
Carbon dioxide	20	1000
Air	20	2500
Methane	20	500
Propane	20	400
Oxygen	20	2500
Nitrogen	20	2500

All values refer to 1.013 bar(a) und 0°C (Index N)

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Accessories

Article	Article no.	
Connectors / Cables		
Round plug M16 8 pin (Solder connection)		918299
Round plug M16 8 pin with 5 m cable		787733
Round plug M16 8 pin with 10 m cable		787734
Plug D-Sub HD15 15 pin with 5 m cable		787735
Plug D-Sub HD15 15 pin with 10 m cable		787736
Adapters¹⁾		
RS232 adapter for connection to a computer, connection with an extension cable (Article no. 917039)		654757
Extension cable for RS232 9 pin socket/plug 2 m		917039
RS422-Adapter (RS485 compatible)		666370
USB-Adapter (Version 1.1, USB socket type B)		670696
USB connection cable 2 m		772299
Adapter for manual bus adresse settings (instead of SW)		667525
Software MassFlowCommunicator		Download from web page Type 8006
Accessories for Fieldbus	PROFIBUS DP (B-coded)	CANopen (A-coded)
M12-Plug ²⁾	918198	917115
M12-socket ²⁾	918447	917116
Y-junction ²⁾	902098	788643
T-junction	918531	On request
Terminating resistor	902553	On request
GSD-File (PROFIBUS), EDS-File (CANopen)	Download from web page Type 8006	

1) The adapters serve mainly for initial operation or diagnosis. Those are not obligatory for continuous operation.

2) The two M12 connectors as listed above cannot be used together on the same side of the Y-junction. At least one of the two M12 connection needs to be an overmoulded cable which uses typically a thinner connector.

Mass Flow Controller for Gases (MFC)

8626

- Nominal flow ranges from 20 l_N/min up to 2500 l_N/min
- High accuracy and repeatability
- Short settling times
- Protection class IP65
- Optional: Fieldbus interface



The mass flow controller (MFC) type 8626 is suited for regulating the mass flow of high gas flows. The thermal inline sensor is located directly in the gas stream and therefore reaches very fast response times. A direct-acting proportional valve from Bürkert guarantees a high sensitivity. The integrated PI controller ensures outstanding control characteristics of the MFC.

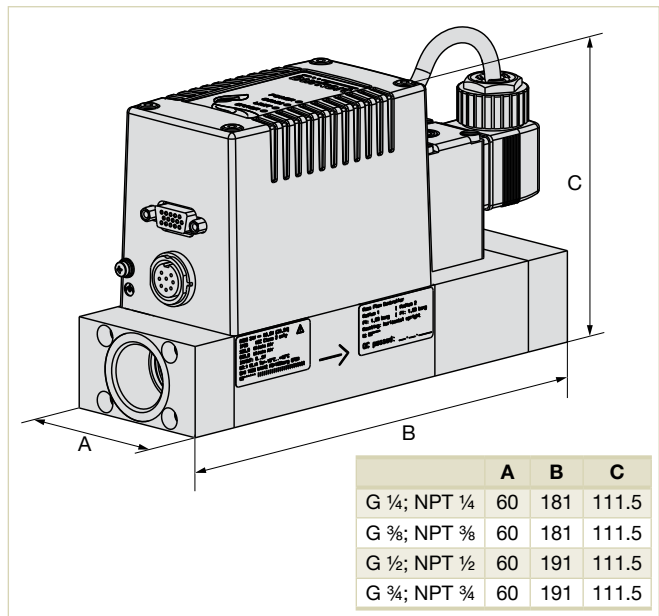
Type 8626 can optionally be calibrated for two different gases; the user can switch between these two gases. As electrical interfaces both, analog standard signals and fieldbuses are available.

The mass flow controller type 8626 is especially designed for use in harsh environments due to a low sensitivity to contamination and the high protection class. The MFC fits for various applications, like e.g. burner controls, heat treatment, metallurgy, food and beverage industry, environmental technology, material coatings, fuel cell technology or test benches.

Technical data

Nominal flow range¹⁾ (Q _{nom})	20...1500 l _N /min ²⁾ , N ₂ equivalent
Turn-down ratio	1:50 ³⁾
Operating gas	Neutral, non-contaminated gases, others available on request
Calibration gas	Operating gas or air with correcting function
Max. operating pressure (inlet pressure)	Up to max. 10 bar, depending on the orifice of the valve
Gas temperature	-10...+70 °C (-10...+60 °C with oxygen)
Ambient temperature	-10...+45 °C (higher temperatures on request)
Accuracy (after 15 min warm up time)	±1.5 % o.R. ±0.3 % F.S. (o.R.: of reading; F.S.: of full scale)
Repeatability	±0.1 % F.S.
Settling time (t_{95%})	<500 ms
Materials	
Body	Aluminium (black anodized) or stainless steel
Housing	Aluminium (coated)
Seals	FKM, EPDM
Port connection	G ¼, ⅜, ½, ¾, 1 NPT ¼, ⅜, ½, ¾, 1
Control valve	Normally closed
Valve orifice	0.8...12 mm
K _{vs} value	0.02...2.8 m ³ /h
Electr. connection	Socket M16, round, 8 pin and socket D-Sub HD15, 15 pin
Additionally with:	
-PROFIBUS-DP	Socket M12 5 pin or D-Sub 9 pin
-CANopen	Plug M12 5 pin or D-Sub 9 pin
with RS485 version only:	Plug D-Sub 9 pin

Dimensions [mm]



Operating voltage	24 V DC
Voltage tolerance	±10 %
Residual ripple	<2 %
Power consumption	12.5...37 W (depending on version)
Protection class	IP65
(with connected cables)	
Total weight	2.5 kg (Al, 16 W-valve)
(examples)	4.5 kg (VA, 16 W-valve)
Mounting position	Horizontal or vertical
Light emitting diodes	Indication for
(Default, other functions programmable)	1. Power, 2. Communication, 3. Limit, 4. Error

1) The nominal flow value is the max. flow value calibrated which can be controlled. The nominal flow range defines the range of nominal flow rates (full scale values) possible.

2) Index N: Flow rates referred to 1.013 bar(a) and 0 °C.

Alternatively there is an Index S available which refers to 1.013 bar(a) and 20 °C

3) With vertical installation and flow downwards the turn-down ratio is 1:10

Nominal flow range of typical gases

(Other gases on request)

Gas	Min. Q_{nom} [l _N /min]	Max. Q_{nom} [l _N /min]
Acetylene	20	320
Ammonia	20	1000
Argon	20	1500
Carbon dioxide	20	800
Air	20	1500
Methane	20	500
Propane	20	400
Oxygen	20	1500
Nitrogen	20	1500

All values refer to 1.013 bar(a) und 0°C (Index N)

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8626

Accessories

Article	Article no.	
Connectors/Cables		
Round plug M16 8 pin (solder connection)	918299	
Round plug M16 8 pin with 5 m cable	787733	
Round plug M16 8 pin with 10 m cable	787734	
Plug D-Sub HD15 15 pin with 5 m cable	787735	
Plug D-Sub HD15 15 pin with 10 m cable	787736	
Adapters¹⁾		
RS232 adapter for connection to a computer, connection with an extension cable (item no. 917039)	654757	
Extension cable for RS232 9 pin socket/plug 2 m	917039	
RS422-Adapter (RS485 compatible)	666370	
USB-Adapter for D-Sub HD15	670696	
USB-Adapter for D-Sub 9 pin (RS485 Version)	670693	
USB connection cable 2 m	772299	
Adapter for manual bus address settings (instead of SW)	667525	
Software MassFlowCommunicator	Download from web page, see Type 8626 ▶	
Accessories for Fieldbus	PROFIBUS DP (B-coded)	CANopen (A-coded)
M12-Plug ²⁾	918198	917115
M12-socket (coupling) ²⁾	918447	917116
Y-junction ²⁾	902098	788643
T-junction	918531	On request
Shut-off resistor	902553	On request
GSD-File (PROFIBUS), EDS-File (CANopen)	Download from web page see Type 8626 ▶	

1) The adapters serve mainly for initial operation or diagnosis. Those are not obligatory for continuous operation.

2) The two M12 connectors as listed above cannot be used together on the same side of the Y-junction. At least one of the two M12 connection needs to be a prefabricated cable which uses typically a thinner connector.

Mass Flow Meter for Gases (MFM)

8700

- Nominal flow ranges from 0.005 I_N/min to 15 I_N/min
- High accuracy
- Applicable for aggressive gases
- Optional: Fieldbus interface



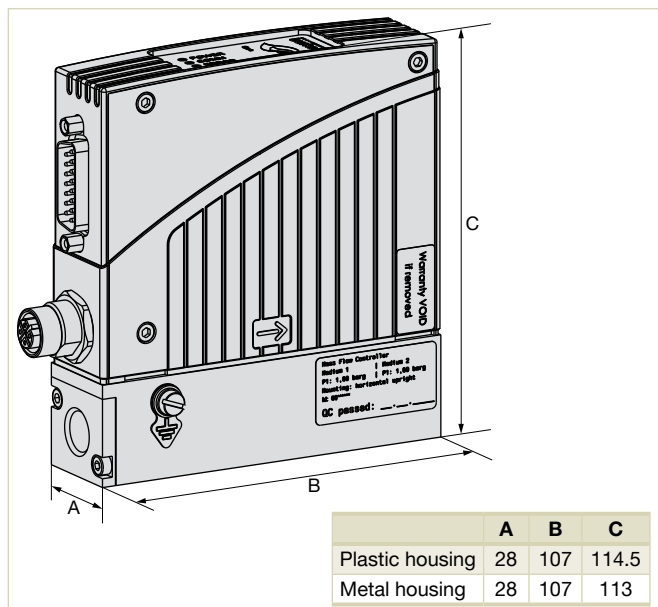
The mass flow meter (MFM) Type 8700 is especially suited for measuring the mass flow of aggressive gases, which need a sensor which is not in direct contact with the gas. The thermal capillary sensor reaches fast response times.

Type 8700 can optionally be calibrated for two different gases; the user can switch between these two gases. As electrical interfaces both, analog standard signals and fieldbuses are available.

Technical data

Full scale ranges¹⁾ (Q_{nom})	5...15000 ml _N /min ²⁾ N ₂ equivalent
Control range	1:50
Operating gases	Neutral, or aggressive gases
Calibration gas	Operating gas or air with conversion factor
Max. operating pressure (inlet pressure)	10 bar (145 psi)
Medium temperature	-10...+70 °C (-10...+60 °C for oxygen)
Ambient temperature	-10...+50 °C, others on request
Accuracy (after 30 min. warm-up time)	± 1.5 % o.R. ± 0.3 % F.S. (o.R.: of reading; F.S.: of full scale)
Repeatability	± 0.1 % F.S.
Response time (t_{95%})	<3 sec..
Materials	
Body	Stainless steel
Housing	PC (Polycarbonate) or metal
Seals	FKM, EPDM or FFKM
Port connections	NPT ¼, G ¼, Screw-in fitting or sub-base, others on request
Electr. connection	D-Sub plug 15 pin With PROFIBUS-DP: Socket M12 5 pin With CANopen: Socket M12 5 pin
Power supply	24 V DC
Voltage tolerance	± 10 %
Residual ripple	<2 %
Power consumption	2.5 W / 5 W (with fieldbus)
Output signal	0...5 V, 0...10 V, 0...20 mA or 4...20 mA
Max. current (voltage output)	10 mA
Max. load (current output)	600 Ω
Digital communication via adapter possible:	RS232, Modbus RTU (via RS adapter) RS485, RS422 or USB (see accessories table)
Fieldbus option	PROFIBUS-DP, CANopen

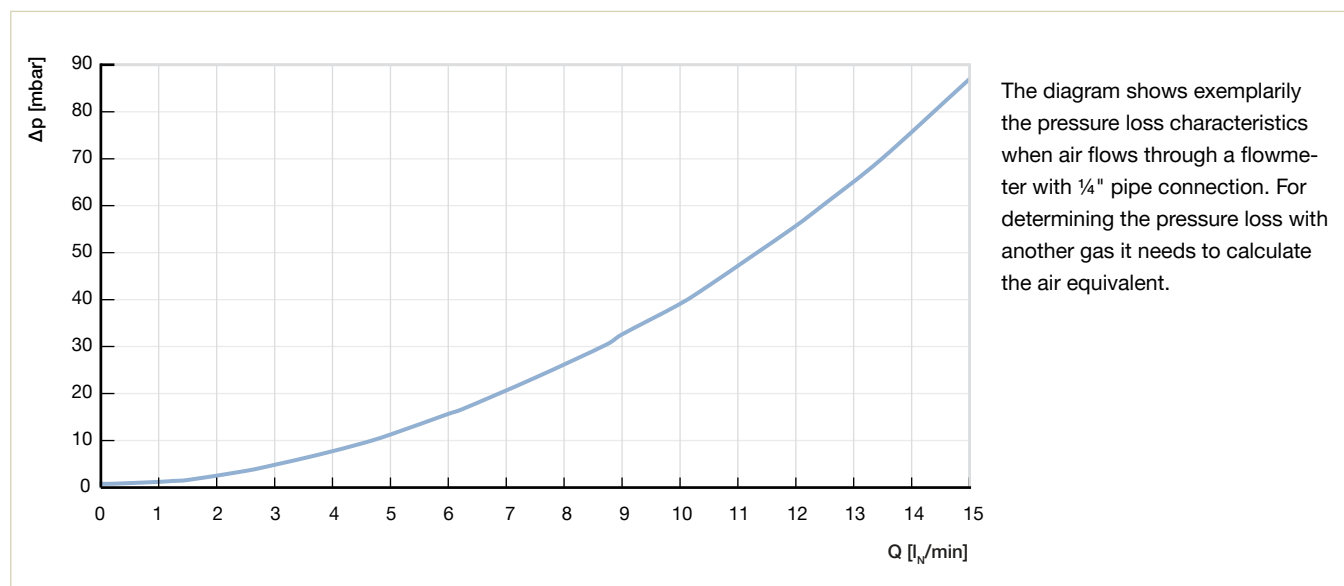
Dimensions [mm]



Protection class	IP40
Total weight	Approx. 850 g (stainless steel)
Mounting position	Horizontal or vertical
Light emitting diode display (default, other allocations possible)	Indication for Power, Limit (only with analog signals)/Communication (only with fieldbus) and Error
Binary input (default, other functions possible)	Two 1. Not assigned 2. Not assigned
Binary output (default, other functions possible)	One relay-output for 1. Limit (process value close to Q _{nom}) Max. load: 25 V, 1 A, 25 VA

- 1) The nominal flow value is the max. flow value calibrated which can be measured. The nominal flow range defines the range of nominal flow rates (full scale values) possible.
- 2) Index N: Flow rates referred to 1.013 bar(a) and 0 °C.
Alternatively there is an Index S available which refers to 1.013 bar(a) and 20 °C

Pressure loss diagram (ref. to air)



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Accessories

8700

Article	Article no.	
Connections/Cables		
Socket D-Sub 15 pin solder connection	918274	
Hood for D-Sub socket, with screw locking	918408	
Socket D-Sub 15 pin with 5 m cable	787737	
Socket D-Sub 15 pin with 10 m cable	787738	
Adapters¹⁾		
RS232 adapter	654748	
PC extension cable for RS232 9 pin socket/plug 2 m	917039	
RS422 adapter (RS485 compatible)	666371	
USB adapter (Version 1.1, USB socket type B)	670639	
USB connection cable 2 m	772299	
Communication software MassFlowCommunicator	Download from web page, see Type 8700 ▶	
Accessories for Fieldbus	PROFIBUS DP (B-coded)	CANopen (A-coded)
Plug M12 ²⁾	918198	917115
Socket M12 (coupling) ²⁾	918447	917116
Y-junction ²⁾	902098	788643
Termination resistor	902553	On request
GSD-File (PROFIBUS), EDS-File (CANopen)	Download from web page, see Type 8700 ▶	

1) The adapters serve mainly for initial operation or diagnosis. Those are not obligatory for continuous operation.

2) The two M12 connectors as listed above cannot be used together on the same side of the Y-junction. At least one of the two M12 connections needs to be a prefabricated cable which uses typically a thinner connector.

Mass Flow Meter for Gases (MFM)

8701

- Nominal flow ranges from 0.010 I_N/min to 80 I_N/min
- High accuracy
- Very fast response times
- Optional: Fieldbus interface



Mass flow meters are used in process technology for the direct measurement of the mass flow of gases. In case of volumetric flow meters, it is necessary to measure the temperature and the pressure either the density, because gases change their density or rather their volume depending on the pressure. The measurement of the mass flow, on the other hand, is independent on pressure and the temperature.

The digital mass flow meter, Type 8701, uses a sensor on silicon chip basis located directly in the bypass channel.

Due to the fact that the sensor is directly in the bypass channel a very short response time of the MFM is reached. The actual flow is given as an analog output signal or could be read out over RS communication. Type 8701 can optionally be calibrated for two different gases, the user is able to switch between these two gases. The materials of the parts that come into contact with the medium are selected according to customer specification so that the unit can be operated with the complete range of standard process gases. Typical application areas are gas flow measurement in

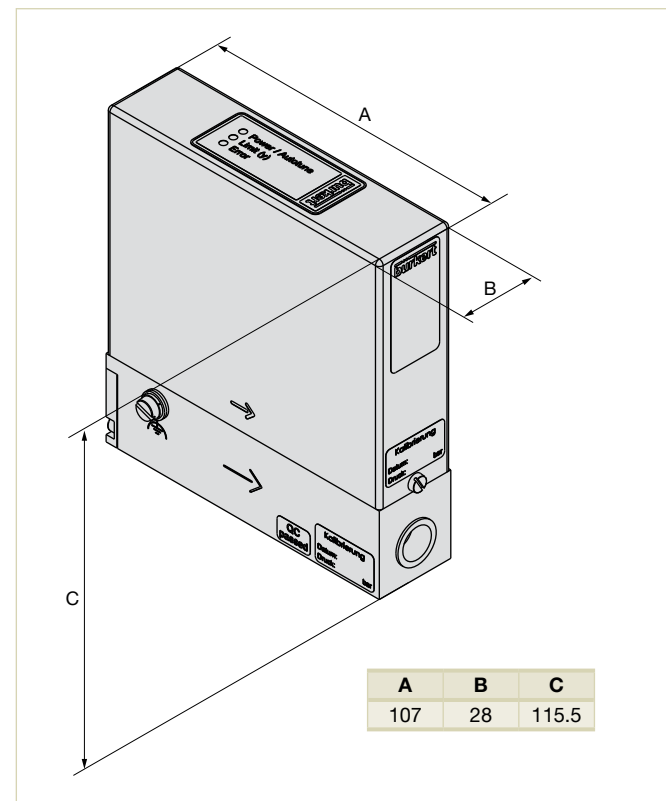
- Test benches
- Environmental technology
- Medical technology and
- Analytical instruments

Note: With the free downloadable communication software, numerous other functions can be programmed. To do this, the MFC / MFM should be connected via an adapter to a computer.

Technical data

Nominal flow range¹⁾ (Q_{nom})	10 ml _N /min ²⁾ ...80 I _N /min (N ₂)
Span	1:50 (2...100 %), (higher span on request)
Operating medium	Neutral, non-contaminated gases, (others on request)
Calibration medium	Operating gas or air with correction function
Max. operating pressure (inlet pressure)	10 bar (145 psi)
Medium temperature	-10...+70 °C (-10...+60 °C with oxygen)
Ambient temperature	-10...+50 °C
Measuring accuracy (after 1 min. warm up time)	±0.8 % of Reading ±0.3 % of Full Scale
Repeatability	±0.1 % of Full Scale
Response time (t_{90%})	<300 ms
Materials	
Body	Aluminium or stainless steel
Housing	PC (Polycarbonate) or metal
Seals	FKM, EPDM
Port connection	G ¼, others on request

Dimensions [mm]



Electr. connection	Plug D-Sub 15 pin Additionally with Fieldbus: With PROFIBUS DP: Socket M12 5 pin With CANopen: Socket M12 5 pin
Power supply	24 V DC
Voltage tolerance	±10 %
Residual ripple	<2 %
Power consumption	2.5 W
Output signal	0...5 V, 0...10 V, 0...20 mA or 4...20 mA
Max. current (voltage)	10 mA
Max. load (current)	600 Ω
Digital communication	RS232, Modbus RTU (via RS adapter) via adapter possible: RS485, RS422 or USB
Fieldbus option	PROFIBUS DP, CANopen
Protection class	IP40
Total weight	Approx. 500 g (aluminum)

Technical data continued

Installation	Horizontal or vertical
Light emitting diodes (default functions, other functions programmable)	Indication for power, Limit (with analog signals)/ Communication (with Fieldbus) and error
Binary inputs (default functions, other functions programmable)	Two 1. not assigned 2. not assigned
Binary output (default functions, other functions programmable)	A relay output for: 1. Limit (actual value close to Q_{nom}) Max. Load: 25 V, 1 A, 25 VA

- The nominal flow value is the max. flow value calibrated which can be measured. The nominal flow range defines the range of nominal flow rates (full scale values) possible.
- Index N: Flow rates referred to 1.013 bar(a) and 0 °C.
Alternatively there is an Index S available which refers to 1.013 bar(a) and 20 °C

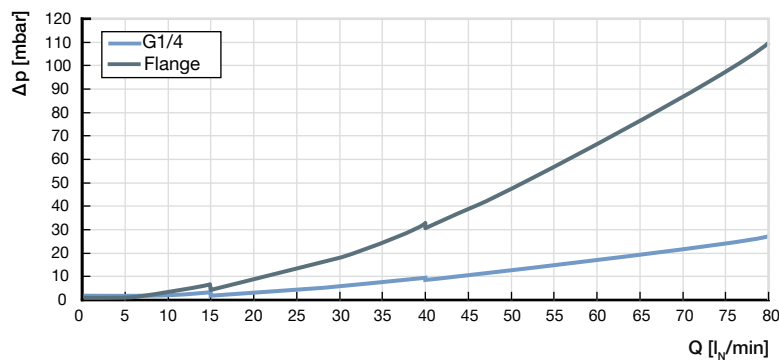
Nominal flow range of typical gases

(Other gases on request)

Gas	Min. Q_{nom} [l _N /min]	Max. Q_{nom} [l _N /min]
Argon	0.01	80
Helium	0.01	500
Carbon dioxide	0.02	40
Air	0.01	80
Methane	0.01	80
Propane	0.03	22
Oxygen	0.01	80
Nitrogen	0.01	80
Hydrogen	0.01	500

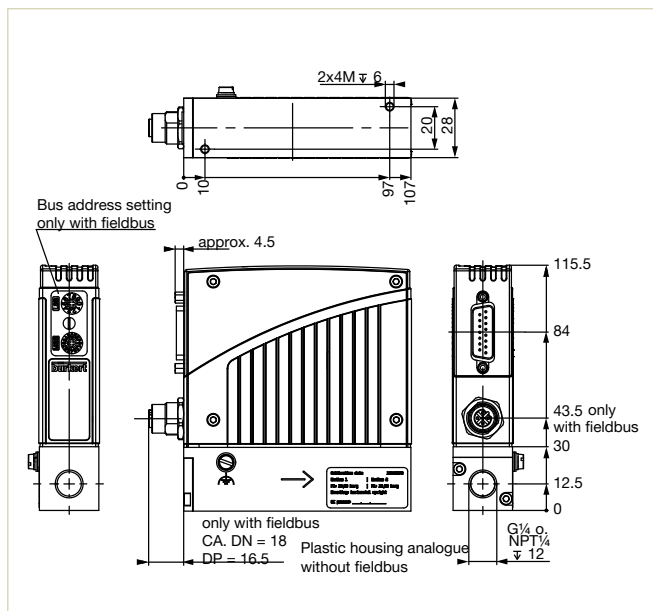
All values refer to 1.013 bar(a) und 0°C (Index N)

Pressure loss diagram (ref. to air, with 250 µm inlet filter)



















The diagram shows exemplarily the pressure loss characteristics when air flowing through. For determining the pressure loss with another gas it needs to calculate the air equivalent and respect the fluidics needed with the other gas.

Dimensions [mm]



Ordering chart

Operating gas	Flow rate - Full scale	Base block Aluminium	Seal material	Operating pressure [bar(g)]	Signal actual value output	Article no.
Type 8701						
Air	100 cm ³ N/min	x	FKM	1	4...20 mA	180866 
Air	500 cm ³ N/min	x	FKM	1	4...20 mA	219568 
Air	1 l _N /min	x	FKM	3	0...10 V	226222 
Air	5 l _N /min	x	FKM	1	0...10 V	202858 
Air	10 l _N /min	x	FKM	5	4...20 mA	252074 
Air	25 l _N /min	x	FKM	5	4...20 mA	171006 
Air	50 l _N /min	x	FKM	5	4...20 mA	174412 
Air	80 l _N /min	x	FKM	5	4...20 mA	241884 
Hydrogen	1 l _N /min	x	FKM	5	4...20 mA	251554 
Hydrogen	10 l _N /min	x	FKM	2	0...10 V	235503 
Hydrogen	100 l _N /min	x	FKM	4	4...20 mA	182567 
Hydrogen	200 l _N /min	x	FKM	4	4...20 mA	212355 
Dioxygen	20 l _N /min	x	FKM	4	4...20 mA	253550 
Dioxygen	3 m ³ N/h	x	FKM	4	4...20 mA	181207 
Argon	10 l _N /min	x	FKM	5	4...20 mA	235159 
Argon	30 l _N /min	x	FKM	4	4...20 mA	174419 

Notes regarding the selection of the unit

The decisive factors for the perfect functioning of an MFM within the application are the fluid compatibility, the normal inlet pressure and the correct choice of the flow meter range. The pressure drop over the MFM depends on the flow rate and the operating pressure.

Accessories

Article	Article no.	
Connections/Cables		
Socket D-Sub 15 pin solder connection	–	918274
Hood for D-Sub socket, with screw locking	–	918408
Socket D-Sub 15 pin with 5 m cable	–	787737
Socket D-Sub 15 pin with 10 m cable	–	787738
Adapters¹⁾		
RS232 adapter (for connection of a PC, in combination with the PC cable)	–	654748
PC extension cable for RS232 9 pin socket/plug 2 m	–	917039
RS422 adapter (RS485 compatible)	–	666371
USB adapter (Version 1.1, USB socket type B)	–	670639
Communication software MassFlowCommunicator	–	Download from web page, see Type 8701 ▶
Accessories for Fieldbus	PROFIBUS DP (B-coded)	CANopen (A-coded)
Plug M12 ²⁾	918198	917115
Socket M12 ²⁾	918447	917116
Y-junction ²⁾	902098	788643
Terminating resistor	902553	On request
GSD-File (PROFIBUS), EDS-File (CANopen)	Download from web page, see Type 8701 ▶	

1) The adapters serve mainly for initial operation or diagnosis. Those are not obligatory for continuous operation.

2) The two M12 connectors as listed above cannot be used together on the same side of the Y-junction. At least one of the two M12 connection needs to be an overmoulded cable which uses typically a thinner connector. A T-junction cannot be used together with this type of MFM.

Mass Flow Meter for Gases (MFM)

8702

- Nominal flow ranges from 0.010 I_N/min to 80 I_N/min
- High accuracy
- Very fast response times
- Protection class IP65
- Optional: Fieldbus interface



The mass flow meter (MFM) type 8702 is suited for measuring the mass flow of gases over a big flow range. The thermal MEMS sensor is located directly in the gas stream and therefore reaches very fast response times.

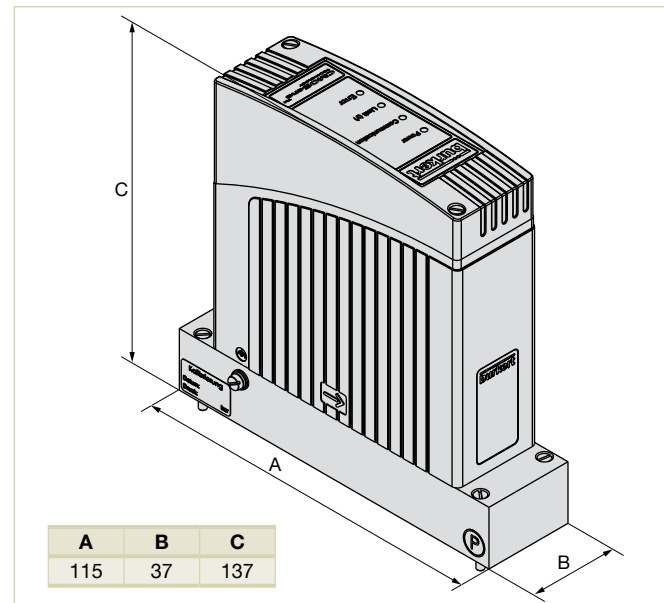
Type 8702 can optionally be calibrated for two different gases; the user can switch between these two gases. As electrical interfaces both, analog standard signals and fieldbuses are available.

Type 8712 is especially designed for use in harsh environments due to the high protection class.

Technical data

Nominal flow range¹⁾ (Q_{nom})	0.01...80 I _N /min ²⁾ (ref. to N ₂)
Turn-down ratio	1:50, wider span on request
Operating gas	Neutral, non-contaminated gases (others on request)
Calibration gas	Operating gas or air with correcting function
Max. operating pressure (inlet pressure)	Up to max. 10 bar (145 psi), depending on the orifice of the valve
Gas temperature	-10...+70 °C (-10...+60 °C with oxygen)
Ambient temperature	-10...+50 °C
Accuracy (after 1 min warm up time)	±0.8 % o.R. ±0.3 % F.S. (o.R.: of reading; F.S.: of full scale)
Repeatability	±0.1 % F.S.
Settling time (t_{95%})	<300 ms
Materials	
Body	Stainless steel
Housing	PC (Polycarbonate)
Seals	FKM, EPDM (others on request)
Port connection	G ¼, NPT ¼ or compression fitting
Electr. connection	Socket M16, round, 8 pin and socket D-Sub HD15, 15 pin
Additionally with fieldbus:	With PROFIBUS-DP: Socket M12 5 pin (for IP65) or D-Sub 9 pin With CANopen: Plug M12 5 pin (for IP65) or D-Sub 9 pin
Operating voltage	24 V DC
Voltage tolerance	±10 %
Residual ripple	<2 %
Power consumption	Max. 2.5 W (analog communicator) to 5 W (digital communicator)
Output signal (signal output)	0...5 V, 0...10 V, 0...20 mA or 4...20 mA
Max. current, volt. output	10 mA
Max. load, current output	600 Ω
Digital communication via adapter possible:	RS232, Modbus RTU (via RS interface) RS485, RS422 or USB (see accessories table)

Dimensions [mm]



Fieldbus option	Profibus-DP, CANopen (D-Sub HD15 covered with sealed plate with fieldbus MFC)
Protection class (with connected cables)	IP65
Total weight	1000 g
Mounting position	Horizontal or vertical
Light emitting diodes (Default, other functions programmable)	Indication for Power, Communication, Limit, Error
Binary inputs (Default, other functions programmable)	Three various functions programmable
Binary outputs (Default, other functions programmable)	Two relay outputs 1. Limit (Q _{nom} almost reached) 2. Error (i.e. sensor fault) Load capacity: max. 60 V, 1 A, 60 VA

- 1) The nominal flow value is the max. flow value calibrated which can be controlled.
The nominal flow range defines the range of nominal flow rate possible.
- 2) Index N: Flow rates referred to 1.013 bar(a) and 0 °C, alternatively also Index S: Flow rates referred to 1.013 bar(a) and +20 °C.

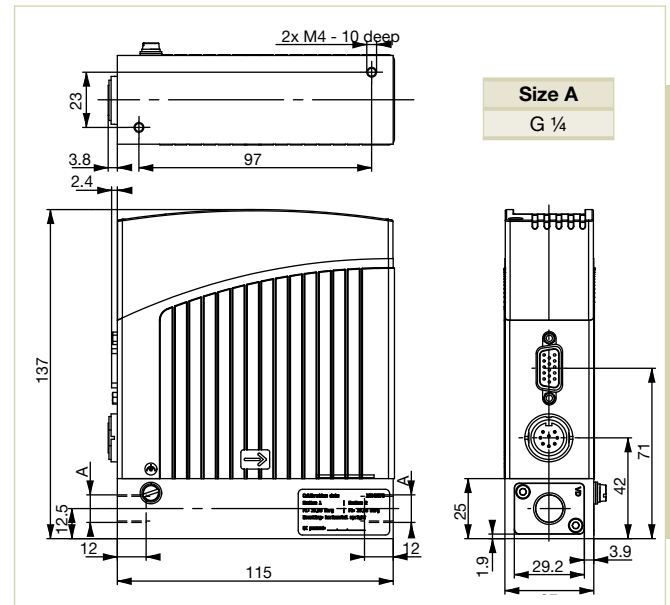
Nominal flow range of typical gases

(Other gases on request)

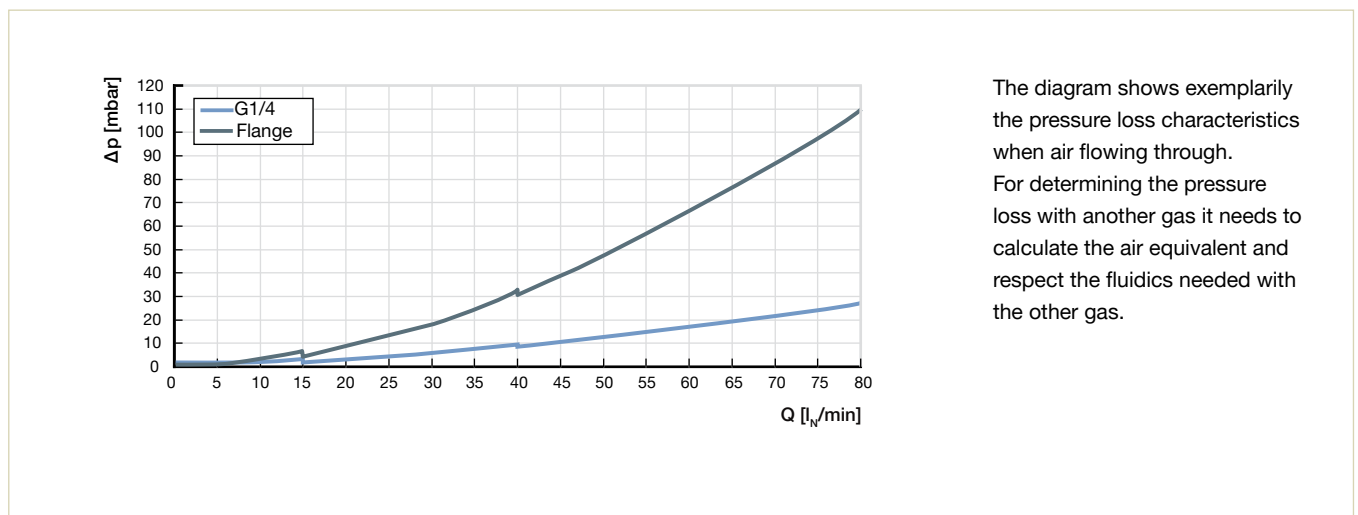
Gas	Min. Q_{nom} [l _N /min]	Max. Q_{nom} [l _N /min]
Argon	0.01	80
Helium	0.01	500
Carbon dioxide	0.02	40
Air	0.01	80
Methane	0.01	80
Propane	0.03	22
Oxygen	0.01	80
Nitrogen	0.01	80
Hydrogen	0.01	500

All values refer to 1.013 bar(a) und 0°C (Index N)

Dimensions [mm]



Pressure Loss Diagram (ref. to air, with 250 µm inlet filter)



Ordering chart

Operating gas	Flow rate - Full scale	Base block Stainless steel	Seal material	Operating pressure [bar(g)]	Signal actual value output	Article no.
Type 8702						
Air	10 lN/min	yes	FKM	6	4...20 mA	214514
Air	25 lN/min	yes	FKM	6	4...20 mA	168115
Air	50 lN/min	yes	FKM	6	4...20 mA	202678



Accessories

8702

Article	Article no.	
Connectors/Cables		
Round plug M16 8 pin (solder connection)	918299	
Round plug M16 8 pin with 5 m cable	787733	
Round plug M16 8 pin with 10 m cable	787734	
Plug D-Sub HD15 15 pin with 5 m cable	787735	
Plug D-Sub HD15 15 pin with 10 m cable	787736	
Adapters¹⁾		
RS232 adapter for connection to a computer, connection with an extension cable (item no. 917 039)	654757	
Extension cable for RS232 9 pin socket/plug 2 m	917039	
RS422-Adapter (RS485 compatible)	666370	
USB-Adapter (Version 1.1, USB socket type B)	670696	
USB cable 2 m, connection type A to connection type B	772299	
Adapter for manual setting of bus address	667525	
Software MassFlowCommunicator	Download from web page, see Type 8702	
Accessories for Fieldbus	PROFIBUS DP (B-codiert)	CANopen (A-codiert)
M12-Plug ²⁾	918198	917115
M12-socket (coupling) ²⁾	918447	917116
Y-junction ²⁾	902098	788643
T-junction	918531	On request
Shut-off resistor	902553	On request
GSD-Datei (PROFIBUS), EDS-Datei (CANopen)	Download from web page, see Type 8702	

1) The adapters serve mainly for initial operation or diagnosis. Those are not obligatory for continuous operation.

2) The two M12 connectors as listed above cannot be used together on the same side of the Y-junction. At least one of the two M12 connection needs to be a prefabricated cable which uses typically a thinner connector.

Mass Flow Meter (MFM) for Gases

8703

- Direct flow measurement by MEMS-Technology for nominal flow rates from 10 ml_N/min to 80 l_N/min (N₂)
- High accuracy
- Short response time
- Compact design and digital communication

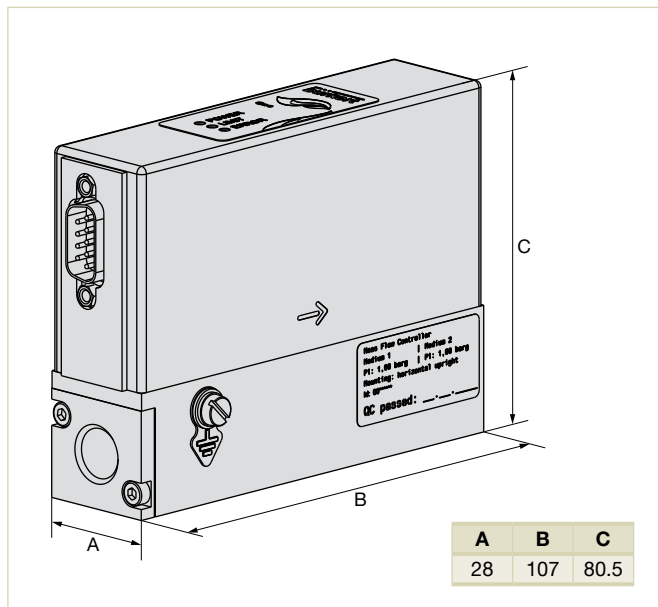


Mass flow meters are used in process technology for the direct measurement of the mass flow of gases. In case of volumetric flow meters, it is necessary to measure the temperature and the pressure or the density, because gases change their density or rather their volume depending on the pressure. The measurement of the mass flow, on the other hand, is independent of the pressure and temperature. The digital mass flow meter type 8703 uses a sensor on silicon chip basis located directly in contact with the gas. Due to the fact that the sensor is directly in the bypass channel a very fast response time of the MFM is reached. The actual flow is given over RS485-communication. Type 8703 can optionally be calibrated for two different gases, the user is able to switch between these two gases. This instrument communicates with master devices digitally, no further A/D conversions needed. The MassFlowCommunicator software can be used for parameterisation and diagnosis.

Technical data

Nominal flow range¹⁾ (Q _{nom})	10 ml _N /min ²⁾ ...80 l _N /min (N ₂)
Turn-down ratio	1:50 (2...100%), higher turn-down ratio on request
Operating gas	Neutral, non-contaminated gases, on request
Calibration gas	Operating gas or air with conversion factor
Max. operating pressure (inlet pressure)	10 bar (145 psi) depending on the orifice of the valve
Gas temperature	-10...+70 °C (-10...+60 °C with oxygen)
Ambient temperature	-10...+50 °C
Accuracy (after 1 min. warm up time)	±0.8 % o.R. ±0.3 % F.S. (o.R.: of reading; F.S.: of full scale)
Repeatability	±0.1 % F.S.
Response time (t₉₅ %)	<300 ms
Materials	
Body	Aluminium or stainless steel
Housing	Metal
Seals	FKM, EPDM
Port connection	NPT ¼, G ¼, screw-in fitting or sub-base, others on request
Electr. connection	Plug D-Sub 9 pin
Power supply	24 V DC
Voltage tolerance	±10 %
Residual ripple	<2 %
Power consumption	5 W
Communication	Digital via RS485 (half-duplex or full-duplex), RS422

Dimensions [mm]



Protection class	IP40
Total weight	Approx. 500 g (aluminium body)
Installation	Horizontal or vertical
Light emitting diodes (default, other functions programmable)	Indication for power, limit and error
Binary Input (default, other functions programmable)	Not assigned
Binary Output (default, other functions programmable)	One relay-output for limit (process value close to full scale value) Max. load: 25 V, 1 A, 25 VA

- 1) The nominal flow value is the max. flow value calibrated which can be controlled. The nominal flow range defines the range of nominal flow rates (full scale values) possible.
- 2) Index N: Flow rates referred to 1.013 bar(a) and 0 °C.
Alternatively Index S which refers to 1.013 bar(a) and 20 °C.

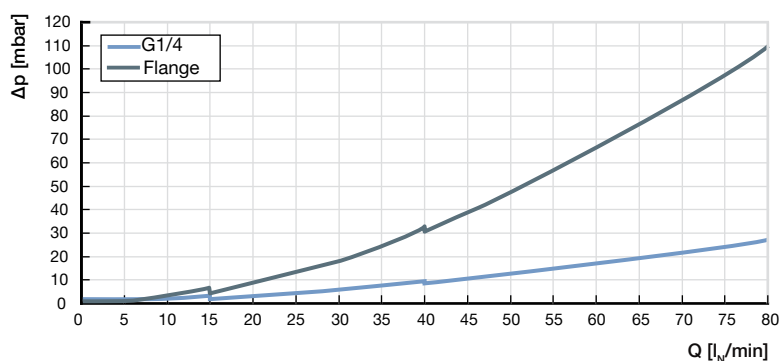
Nominal flow range of typical gases

(Other gases on request)

Gas	Min. Q_{nom} [l _N /min]	Max. Q_{nom} [l _N /min]
Argon	0.01	80
Helium	0.01	500
Carbon dioxide	0.02	40
Air	0.01	80
Methane	0.01	80
Propane	0.03	22
Oxygen	0.01	80
Nitrogen	0.01	80
Hydrogen	0.01	500

All values refer to 1.013 bar(a) und 0°C (Index N)

Pressure Loss Diagram (ref. to air, with 250µm inlet filter)



The diagram shows exemplarily the pressure loss characteristics when air flowing through. For determining the pressure loss with another gas it needs to calculate the air equivalent and respect the fluidics needed with the other gas.

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Accessories

Article	Article no.
9 pin electrical connection	
D-Sub socket 9 pin solder connection with housing	917623
Adapters¹⁾	
USB adapter (version 1.1, USB-socket type B)	670693
USB connection cable 2 m	772299
Communication software “MassFlowCommunicator”	Download from web page, see Type 8703

¹⁾ The adapters serve mainly for initial operation or diagnosis. Those are not obligatory for continuous operation.

Mass Flow Controller for Gases (MFC)

8710

- Nominal flow ranges from 0.005 I_N/min to 15 I_N/min
- High accuracy and repeatability
- Applicable for aggressive gases
- Optional: Fieldbus interface

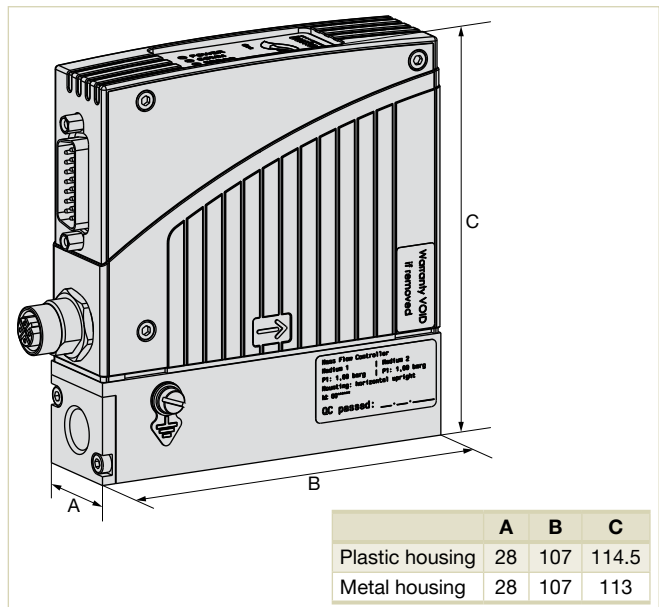


The mass flow controller (MFC) Type 8710 is especially suited for regulating the mass flow of aggressive gases, which need a sensor which is not in direct contact with the gas. The thermal capillary sensor reaches fast response times. A direct-acting proportional valve from Bürkert guarantees a high sensitivity. The integrated PI controller ensures outstanding control characteristics of the MFC. Type 8710 can optionally be calibrated for two different gases; the user can switch between these two gases. As electrical interfaces both, analog standard signals and fieldbuses are available.

Technical data

Full scale ranges¹⁾ (Q_{nom})	5...15000 ml _N /min ²⁾ N ₂ equivalent
Control range	1:50
Operating gases	Neutral, or aggressive gases
Calibration gas	Operating gas or air with conversion factor
Max. operating pressure (inlet pressure)	10 bar (145 psi), depending on the orifice of the valve
Medium temperature	-10...+70 °C (-10...+60 °C for oxygen)
Ambient temperature	-10...+50 °C, others on request
Accuracy (after 30 min. warm-up time)	±1.5 % o.R. ±0.3 % F.S. (o.R.: of reading; F.S.: of full scale)
Repeatability	±0.1 % F.S.
Settling time (t_{95%})	<3 sec.
Materials	
Body	Stainless steel
Housing	PC (Polycarbonate) or metal
Seals	FKM, EPDM, FFKM
Port connections	NPT 1/4, G 1/4, Screw-in fitting or sub-base, others on request
Control valve (proportional valve)	Normally closed
Valve orifice	0.05...2.0 mm
K _{vs} value	0.00006...0.09 m ³ /h
Electr. connection	D-Sub plug 15 pin With PROFIBUS-DP: Socket M12 5 pin With CANopen: Socket M12 5 pin
Power supply	2 V DC
Voltage tolerance	±10 %
Residual ripple	<2 %
Power consumption	Max. 3.5...10 W (depends on proportional valve)
Input signal	0...5 V, 0...10 V, 0...20 mA or 4...20 mA
Input impedance	>20 kΩ (voltage), <300 Ω (current)

Dimensions [mm]



Output signal	0...5 V, 0...10 V, 0...20 mA or 4...20 mA
Max. current (voltage output)	10 mA
Max. load (current output)	600 Ω
Digital communication	RS232, Modbus RTU (via RS adapter)
via adapter possible:	RS485, RS422 or USB (see accessories table)
Fieldbus option	PROFIBUS-DP, CANopen
Protection class	IP40
Total weight	Approx. 850 g (stainless steel)
Mounting position	Horizontal or vertical
Light emitting diode display (default, other allocations possible)	Indication for Power, Limit (with analog signals)/ Communication (with fieldbus) and Error
Binary input (default, other functions possible)	Two 1. Start autotune 2. Not assigned
Binary output (default, other functions possible)	One relay-output for 1 setpoint not reached, Max. load: 25 V, 1 A, 25 VA

- 1) The nominal flow value is the max. flow value calibrated which can be controlled. The nominal flow range defines the range of nominal flow rates (full scale values) possible.
- 2) Index N: Flow rates referred to 1.013 bar(a) and 0 °C.
Alternatively there is an Index S available which refers to 1.013 bar(a) and 20 °C

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Accessories

Article	Article no.	
Connections/Cables		
Socket D-Sub 15 pin solder connection	918274	
Hood for D-Sub socket, with screw locking	918408	
Socket D-Sub 15 pin with 5 m cable	787737	
Socket D-Sub 15 pin with 10 m cable	787738	
Adapters¹⁾		
RS232 adapter	654748	
PC extension cable for RS232 9 pin socket/plug 2 m	917039	
RS422 adapter (RS485 compatible)	666371	
USB adapter (Version 1.1, USB socket type B)	670639	
USB connection cable 2 m	772299	
Communication software MassFlowCommunicator	Download from web page, see Type 8710	
Accessories for Fieldbus	PROFIBUS DP (B-coded)	CANopen (A-coded)
Plug M12 ²⁾	918198	917115
Socket M12 (coupling) ²⁾	918447	917116
Y-junction ²⁾	902098	788643
Shut-off resistor	902553	On request
GSD-File (PROFIBUS), EDS-File (CANopen)	Download from web page, see Type 8710	

1) The adapters serve mainly for initial operation or diagnosis. Those are not obligatory for continuous operation.

2) The two M12 connectors as listed above cannot be used together on the same side of the Y-junction. At least one of the two M12 connections needs to be a prefabricated cable which uses typically a thinner connector.

Mass Flow Controller for Gases (MFC)

8711

- Nominal flow ranges from 0.010 I_N/min to 80 I_N/min
- High accuracy and repeatability
- Very fast settling times
- Optional: Fieldbus interface

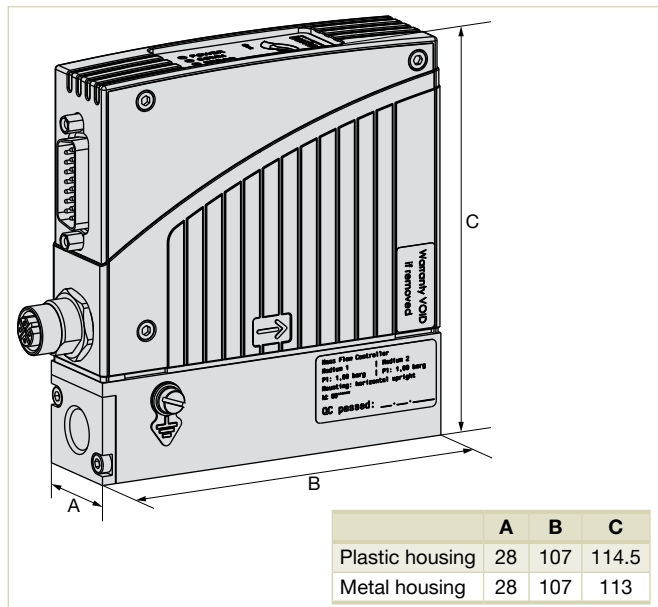


The mass flow controller (MFC) Type 8711 is suited for regulating the mass flow of gases over a big flow range. The thermal MEMS sensor is located directly in the gas stream and therefore reaches very fast response times. A direct-acting proportional valve from Bürkert guarantees a high sensitivity. The integrated PI controller ensures outstanding control characteristics of the MFC. Type 8711 can optionally be calibrated for two different gases; the user can switch between these two gases. As electrical interfaces both, analog standard signals and fieldbuses are available. The mass flow controller type 8711 fits for various applications, like e.g. burner controls, heat treatment, material coatings, bio reactors, fuel cell technology or test benches.

Technical data

Nominal flow range¹⁾ (Q _{nom})	10 ml _N /min ²⁾ ...80 I _N /min (N ₂)
Turn-down ratio	1:50, higher turn-down ratio on request
Operating gas	Neutral, non-contaminated gases, on request
Calibration gas	Operating gas or air with conversion factor
Max. operating pressure (inlet pressure)	10 bar (145 psi) depending on the orifice of the valve
Gas temperature	-10...+70 °C (-10...+60 °C with oxygen)
Ambient temperature	-10...+50 °C
Accuracy (after 1 min. warm up time)	±0.8 % o.R. ±0.3 % F.S. (o.R.: of reading; F.S.: of full scale)
Repeatability	±0.1 % F.S.
Settling time (t_{95%})	<300 ms
Materials	
Body	Aluminium or stainless steel
Housing	PC (Polycarbonate) or metal
Seals	FKM, EPDM
Port connection	NPT ¼, G ¼, screw-in fitting or flange, others on request
Regulating unit (Proportional Valve)	
Valve orifice	Normally closed 0.05...4.0 mm
K _{vs} value	0.00006...0.32 m ³ /h
Electr. connection	Plug D-Sub 15 pin Additionally with fieldbus: With PROFIBUS-DP: Socket M12 5 pin With CANopen: Socket M12 5 pin
Power supply	24 V DC

Dimensions [mm]



Voltage tolerance	± 10 %
Residual ripple	< 2 %
Power consumption	Max. 3.5...14 W (depending on proportional valve used)
Input signal	0...5 V, 0...10 V, 0...20 mA or 4...20 mA
Input impedance	> 20 kΩ (voltage), < 300 Ω (current)
Output signal	0...5 V, 0...10 V, 0...20 mA or 4...20 mA
Max. current (voltage)	10 mA
Max. load (current)	600 Ω
Digital communication	RS232, Modbus RTU (via RS adapter) via adapter possible: RS485, RS422 or USB (see accessories table)
Fieldbus option	PROFIBUS-DP, CANopen
Protection class	IP40
Total weight	Approx. 500 g (aluminium body)
Installation	Horizontal or vertical
Light emitting diodes (default functions, other functions programmable)	Indication for power, Limit (with analog signals)/ Communication (with fieldbus) and error

Technical data continued

Binary inputs (default functions, other functions programmable)	Two 1. Start Autotune 2. Not assigned
Binary output (default functions, other functions programmable)	A relay output for: 1. Limit (setpoint not reached) Max. Load: 25 V, 1 A, 25 VA

¹⁾ The nominal flow value is the max. flow value calibrated which can be controlled. The nominal flow range defines the range of nominal flow rates (full scale values) possible.

²⁾ Index N: Flow rates referred to 1.013 bar(a) and 0 °C.

Alternatively there is an Index S available which refers to 1.013 bar(a) and 20 °C

Nominal flow range of typical gases

(Other gases on request)

Gas	Min. Q_{nom} [l _N /min]	Max. Q_{nom} [l _N /min]
Argon	0.01	80
Helium	0.01	500
Carbon dioxide	0.02	40
Air	0.01	80
Methane	0.01	80
Propane	0.03	22
Oxygen	0.01	80
Nitrogen	0.01	80
Hydrogen	0.01	500

All values refer to 1.013 bar(a) und 0°C (Index N)

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Accessories

8711

Article	Article no.	
Connections/Cables		
Socket D-Sub 15 pin solder connection	918274	
Hood for D-Sub socket, with screw locking	918408	
Socket D-Sub 15 pin with 5 m cable	787737	
Socket D-Sub 15 pin with 10 m cable	787738	
Adapters¹⁾		
RS232 adapter	654748	
PC extension cable for RS232 9 pin socket/plug 2 m	917039	
RS422 adapter (RS485 compatible)	666371	
USB adapter (Version 1.1, USB socket type B)	670639	
USB connection cable 2 m	772299	
Communication software MassFlowCommunicator	Download from web page, see Type 8711	
Accessories for Fieldbus	PROFIBUS DP (B-coded)	CANopen (A-coded)
Plug M12 ²⁾	918198	917115
Socket M12 (coupling) ²⁾	918447	917116
Y-junction ²⁾	902098	788643
Shut-off resistor	902553	On request
GSD-File (PROFIBUS), EDS-File (CANopen)	Download from web page, see Type 8711	

1) The adapters serve mainly for initial operation or diagnosis. Those are not obligatory for continuous operation.

2) The two M12 connectors as listed above cannot be used together on the same side of the Y-junction. At least one of the two M12 connection needs to be a prefabricated cable which uses typically a thinner connector.

Mass Flow Controller for Gases (MFC)

8712

- Nominal flow ranges from 0.010 I_N/min to 80 I_N/min
- High accuracy and repeatability
- Very fast settling times
- Protection class IP65
- Optional: Fieldbus interface



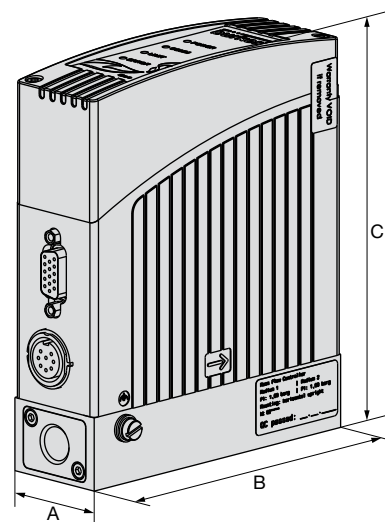
The mass flow controller (MFC) Type 8712 is suited for regulating the mass flow of gases over a big flow range. The thermal MEMS sensor is located directly in the gas stream and therefore reaches very fast response times. A direct-acting proportional valve from Bürkert guarantees a high sensitivity. The integrated PI controller ensures outstanding control characteristics of the MFC. Type 8712 can optionally be calibrated for two different gases; the user can switch between these two gases. As electrical interfaces both, analog standard signals and fieldbuses are available. The mass flow controller type 8712 fits for various applications, like e.g. burner controls, heat treatment, material coatings, bio reactors, fuel cell technology or test benches. This MFC is especially designed for use in harsh environments due to the high protection class.

Technical data

Nominal flow range¹⁾ (Q _{nom})	0.01 ml _N /min ²⁾ ...80 I _N /min (N ₂)
Turn-down ratio	1:50, wider span on request
Operating gas	Neutral, non-contaminated gases, others available on request
Calibration gas	Operating gas or air with correcting function
Max. operating pressure (inlet pressure)	Up to max. 10 bar (145 psi), depending on the orifice of the valve
Gas temperature	-10...+70 °C (-10...+60 °C with oxygen)
Ambient temperature	-10...+50 °C
Accuracy (after 1 min warm up time)	±0.8% o.R. ±0.3% F.S. (o.R.: of reading; F.S.: of full scale)
Repeatability	±0.1% F.S.
Settling time (t_{95%})	<300 ms
Materials	
Body	Stainless steel
Housing	PC (Polycarbonate)
Seals	FKM, EPDM (others on request)
Port connection	G ¼, NPT ¼ or compression fitting
Control valve	Normally closed
Valve orifice	0.05...4 mm
KVS value	0.00006...0.32 m ³ /h
Electr. connection	Socket M16, round, 8 pin and socket D-Sub HD15, 15 pin
Additionally with fieldbus:	With PROFIBUS-DP: Socket M12 5 pin (for IP65) or D-Sub 9 pin With CANopen: Plug M12 5 pin (for IP65) or D-Sub 9 pin
Operating voltage	24 V DC
Voltage tolerance	±10%

Dimensions [mm]

Standard version



A	B	C
37	115	137

Residual ripple	<2%
Power consumption	3.5...14 W (depending on version)
Set point (signal setting)	0...5 V, 0...10 V, 0...20 mA or 4...20 mA
Feed impedance	>20 k Ω (voltage), <300 Ω (current)
Output signal (signal output)	0...5 V, 0...10 V, 0...20 mA or 4...20 mA
Max. current (volt. output)	10 mA
Max. load (current output)	600 Ω
Digital communication via adapter possible:	RS232, Modbus RTU (via RS interface) RS485, RS422 or USB (see accessories table)
Fieldbus option	Profibus-DP, CANopen (D-Sub HD15 covered with sealed plate with fieldbus MFC)
Protection class (with connected cables)	IP65
Total weight	1200 g (Valve internally)
Mounting position	Horizontal or vertical
Light emitting diodes (Default, other functions programmable)	Indication for 1. Power, 2. Communication, 3. Limit, 4. Error

Technical data continued

Binary inputs (Default, other functions programmable)	Three 1. Start Autotune 2. Not assigned, Switch between gases when cal. for two gases 3. Not assigned
Binary outputs (Default, other functions programmable)	Two relay outputs 1. Limit (desired value can not be achieved) 2. Error (e.g. sensor fault) Load capacity: max. 60 V, 1 A, 60 VA

- 1) The nominal flow value is the max. flow value calibrated which can be controlled. The nominal flow range defines the range of nominal flow rates (full scale values) possible.
2) Index N: Flow rates referred to 1.013 bar(a) and 0 °C.
Alternatively there is an Index S available which refers to 1.013 bar(a) and 20 °C.

Nominal flow range of typical gases

(Other gases on request)

Gas	Min. Q _{nom} [l _N /min]	Max. Q _{nom} [l _N /min]
Argon	0.01	80
Helium	0.01	500
Carbon dioxide	0.02	40
Air	0.01	80
Methane	0.01	80
Propane	0.03	22
Oxygen	0.01	80
Nitrogen	0.01	80
Hydrogen	0.01	500

All values refer to 1.013 bar(a) und 0°C (Index N)

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8712

Accessories

Article	Article no.	
Connectors/Cables		
Round plug M16 8 pin (solder connection)	918299	
Round plug M16 8 pin with 5 m cable	787733	
Round plug M16 8 pin with 10 m cable	787734	
Plug D-Sub HD15 15 pin with 5 m cable	787735	
Plug D-Sub HD15 15 pin with 10 m cable	787736	
Adapters¹⁾		
RS232 adapter for connection to a computer, connection with an extension cable (iArticle no. 917039)	654757	
Extension cable for RS232 9 pin socket/plug 2 m	917039	
RS422-Adapter (RS485 compatible)	666370	
USB-Adapter (Version 1.1, USB socket type B)	670696	
USB connection cable 2 m	772299	
Adapter for manual setting of bus address	667525	
Software MassFlowCommunicator	Download from web page, see Type 8712	
Accessories for Fieldbus	PROFIBUS DP (B-codiert)	CANopen (A-codiert)
M12-Plug ²⁾	918198	917115
M12-socket (coupling) ²⁾	918447	917116
Y-junction ²⁾	902098	788643
T-junction	918531	On request
Shut-off resistor	902553	On request
GSD-Datei (PROFIBUS), EDS-Datei (CANopen)	Download from web page, see Type 8712	

1) The adapters serve mainly for initial operation or diagnosis. Those are not obligatory for continuous operation.

2) The two M12 connectors as listed above cannot be used together on the same side of the Y-junction. At least one of the two M12 connection needs to be a prefabricated cable which uses typically a thinner connector.

Mass Flow Controller (MFC) for Gases

8713

- Direct flow measurement by MEMS-Technology for nominal flow rates from 10 ml_N/min to 80 l_N/min (N₂)
- High accuracy and repeatability
- Short settling time
- Compact design and digitally communication

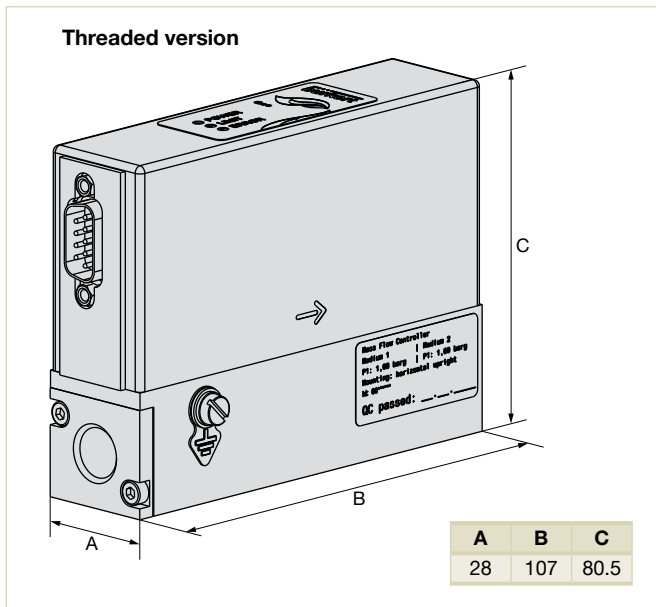


Type 8713 controls the mass flow of gases that is relevant for most applications in process technologies. The measured value will be compared in the digital control electronics with the predefined set point according to the signal; if a control difference is present, the control value output to the proportional valve will be modified using a PI-control algorithm. Due to the fact that the sensor is directly in contact with the gas a very fast response time of the MFC is reached. In this way, the mass flow can be maintained at a fixed value or a predefined profile can be followed, regardless of pressure variations or other changes in the system. Type 8713 can optionally be calibrated for two different gases, the user is able to switch between these two gases. As control element a direct-acting proportional valve guarantees a high sensitivity and a good control characteristics of the MFC. This instrument communicates digitally with master devices, no further A/D conversions needed. The MassFlowCommunicator software can be used for parameterisation and diagnosis.

Technical data

Nominal flow range¹⁾ (Q _{nom})	10 ml _N /min ²⁾ ...80 l _N /min (N ₂)
Turn-down ratio	1:50, higher turn-down ratio on request
Operating gas	Neutral, non-contaminated gases, on request
Calibration gas	Operating gas or air with conversion factor
Max. operating pressure (inlet pressure)	10 bar (145 psi), depending on the orifice of the valve
Gas temperature	-10...+70 °C (-10...+60 °C with oxygen)
Ambient temperature	-10...+50 °C ³⁾
Accuracy (after 1 min. warm up time)	±0.8 % o.R. ±0.3 % F.S. (o.R.: of reading; F.S.: of full scale)
Repeatability	±0.1 % F.S.
Settling time (t_{95%})	<300 ms
Materials	
Body	Aluminium or stainless steel
Housing	Metal
Seals	FKM, EPDM
Port connection	NPT ¼, G ¼, screw-in fitting or sub-base, others on request
Control valve	Normally closed
Valve orifice	0.05...4.0 mm
KVS value	0.00006...0.32 m ³ /h
Electr. connection	Plug D-Sub 9 pin
Power supply	24 V DC
Voltage tolerance	±10 %
Residual ripple	<2 %

Dimensions [mm]



Power consumption	3.5...11.5 W (depending on control valve used)
Communication	Digital via RS485 (half-duplex or full-duplex), RS422
Protection class	IP40
Total weight	Approx. 500 g (aluminium body)
Installation	Horizontal or vertical
Light emitting diodes (default functions, other functions programmable)	Indication for power, limit and error
Binary inputs (default functions, other functions programmable)	Start Autotune
Binary output (default functions, other functions programmable)	One relay output for: 1. Limit (setpoint not reached) Max. Load: 25 V, 1 A, 25 VA

- 1) The nominal flow value is the max. flow value calibrated which can be controlled. The nominal flow range defines the range of nominal flow rates (full scale values) possible.
- 2) Index N: Flow rates referred to 1.013 bar(a) and 0 °C.
Alternatively Index S which refers to 1.013 bar(a) and 20 °C
- 3) When an internal 5 W valve is used: Max. 40 °C

Nominal flow range of typical gases

(Other gases on request)

Gas	Min. Q _{nom} [l _N /min]	Max. Q _{nom} [l _N /min]
Argon	0.01	80
Helium	0.01	500
Carbon dioxide	0.02	40
Air	0.01	80
Methane	0.01	80
Propane	0.03	22
Oxygen	0.01	80
Nitrogen	0.01	80
Hydrogen	0.01	500

All values refer to 1.013 bar(a) und 0°C (Index N)

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Accessories

Article	Article no.
9 pin electrical connection	
D-Sub socket 9 pin solder connection with housing	917623
Adapters¹⁾	
USB adapter (version 1.1, USB-socket type B)	670693
USB connection cable 2 m	772299
Communication software “MassFlowCommunicator”	Download from web page, see Type 8713 ▶

1) The adapters serve mainly for initial operation or diagnosis. Those are not obligatory for continuous operation.

Mass Flow Controller (MFC)/ Mass Flow Meter (MFM) for Gases

8741

- Nominal flow ranges from 0.010 IN³/min to 160 IN³/min
- High accuracy and repeatability
- Very fast response times
- Easy device exchange through configuration memory
- Optional: USP Class VI, FDA, EG 1935 conformity



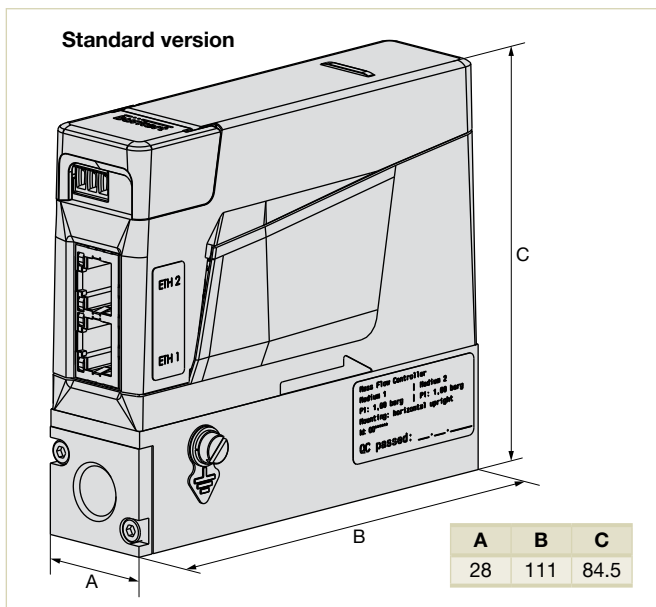
The mass flow controller (MFC)/meter (MFM) Type 8741 for gases is suitable for a wide range of applications and available with Industrial Ethernet, analogue or fieldbus interfaces. The version with CANopen based Bürkert system bus (b \ddot{u} S) is suitable for the integration into existing CANopen networks, as well as Industrial Ethernet or fieldbus networks in combination with the fieldbus gateway of Type ME43. The second option is tailor-made for applications with many control loops. Up to 32 MFC/MFM can be connected to one fieldbus gateway. Type ME43 translates the internal CANopen based communication to industry standards for both Industrial Ethernet and fieldbuses. The mass flow controller/meter can always be switched between b \ddot{u} S and CANopen communication.

Type 8741 can be configured as MFM or MFC. Optional, up to four different gas calibrations can be stored in the device. The thermal MEMS sensor is located directly in the gas stream and therefore reaches very fast response times. A direct-acting proportional valve as regulating unit guarantees high sensitivity. The integrated PI controller ensures outstanding control characteristics of the MFC/MFM

Technical data

General data	
Nominal flow range (Q_{nom})	10 ml _N /min...160 l _N /min (N ₂)
Turn-down ratio	1:50, optional 1:100
Operating medium	Neutral, non-contaminated gases, others on request
Calibration medium	Operating gas or air
Max. operating pressure (overpressure to the atmospheric pressure)	10 bar (145 psi), for MFCs the max. operating pressure depends on the medium and the nominal valve size
Medium temperature	-10 °C...+70 °C (-10 °C...+60 °C with oxygen)
Ambient temperature	-10 °C...+50 °C (higher temperatures on request)
Measuring accuracy (after 1 min. warm up time)	±0.8 % o.R. ±0.3 % F.S. (o.R.: of reading; F.S.: of full scale)
Repeatability	±0.1 % F.S.
Settling (MFC) / response (MFM) time (t_{95%})	<300 ms
Materials	
Body	Aluminium or stainless steel
Housing	PC (Polycarbonate)
Seals	FKM or EPDM (dep. on gas)
Port connection	NPT 1/4, G 1/4, flange, clamp ring or vacuum fitting, others on request

Dimensions [mm]



Control valve (prop. valve)	Normally closed
Valve orifice range	0.05...8 mm
KVS value range	0.00006...1.1 m ³ /h
Power Supply	24 V DC
Voltage tolerance	±10 %
Residual ripple	±2 %
Power consumption¹⁾	1...3 W (as MFM), Max. 3...19.5 W (as MFC, depending on type of solenoid control valve)
Configuration memory (included in delivery)	Industrial μ SIM card for ease of replacement
Protection class	IP20
Dimensions	Data sheet; see Type 8741 ▶
Total weight	Approx. 500 g (aluminium body)
Installation	Horizontal or vertical
Device status	RGB-LED based on NAMUR NE107

Technical data continued

Electrical connection	
Industrial Ethernet	PROFINET, Ethernet/IP, EtherCAT, Modbus-TCP via 2 x RJ45 (Switch) ²⁾
Fieldbus	büS (CAN-based Bus) / CANopen via terminal block, 4 pin
Analog	4...20 mA, 0...20 mA, 0...10 V or 0...5 V via D-Sub 9 ³⁾ or terminal block 6 pin Input impedance >20 kΩ (voltage) or <300 Ω (current) Max. Current: 10 mA (voltage output); Max. Load: 600 Ω (current output)

1) Data refers to the typical power consumption (at 23 °C ambient temperature, nominal flow rate and 30 min control mode). The specifications according to UL 61010-1 can differ (see instruction manual).

2) Supply voltage via separate terminal block

3) The analog version with D-Sub9 features an additional digital input and a relay output

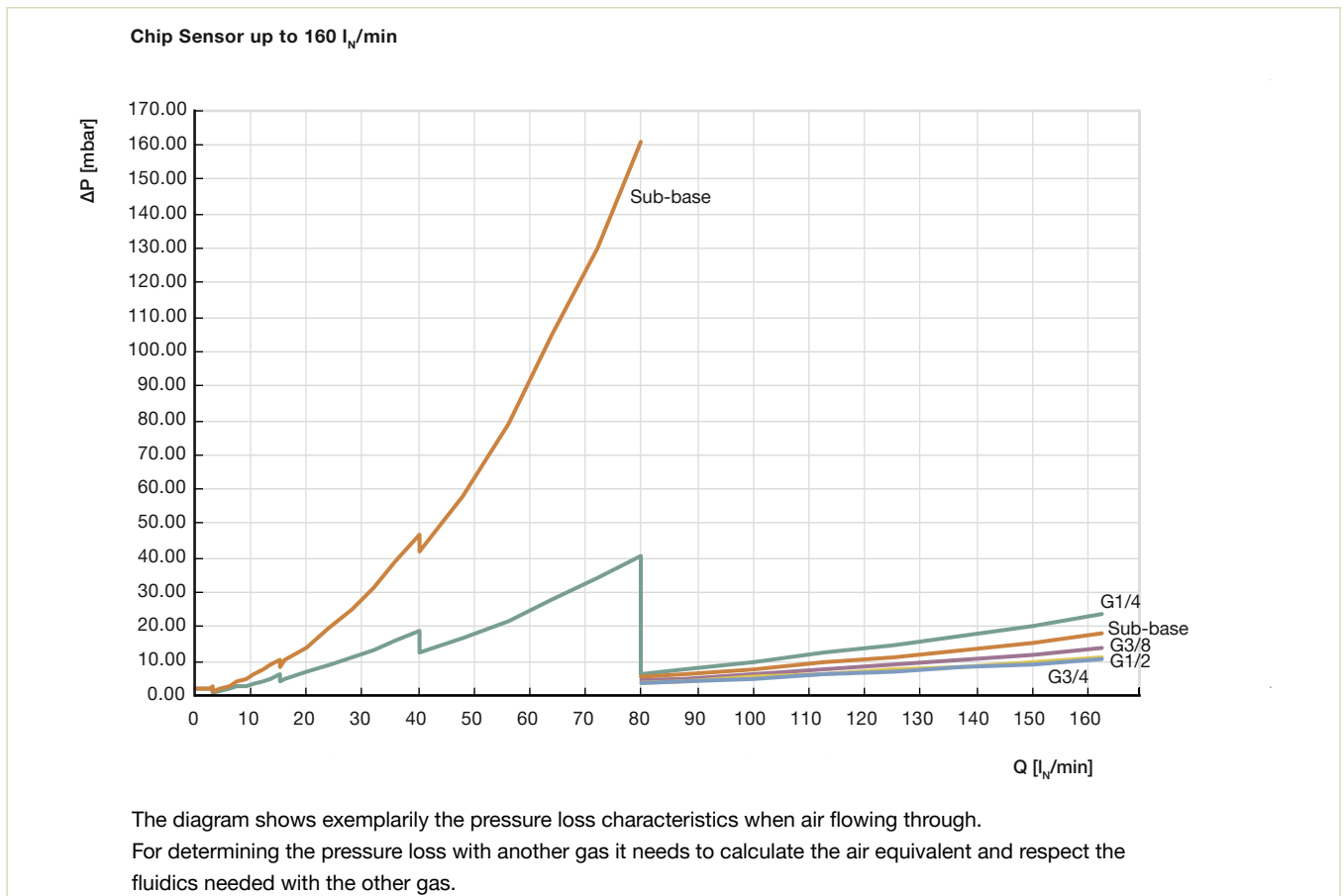
Nominal flow range of typical gases

(Other gases on request)

Gas	Min. Q_{nom} [l _N /min]	Max. Q_{nom} [l _N /min]
Acetylene	0.01	65
Argon	0.01	160
Helium	0.01	1000
Carbon dioxide	0.02	80
Air	0.01	160
Methane	0.01	160
Propane	0.03	44
Oxygen	0.01	160
Nitrogen	0.01	160
Hydrogen	0.01	1000

All values refer to 1.013 bar(a) und 0°C (Index N)

Pressure Loss Diagram of a MFM (ref. to air)



Ordering information

8741



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Accessories

Article	Article no.
büS-Stick Set 1 (incl. cable (M12 and Micro-USB), büS-Stick with integrated terminating resistor, power supply and other accessories)	772426
büS-Stick Set 2 (incl. cable (M12 and Micro-USB) and büS-Stick with integrated terminating resistor)	772551
Power supply Type 1573 for rail mounting, 100...240 V AC/ 24 V DC, 1.25 A, NEC Class 2 (UL 1310)	772438
Power supply Type 1573 for rail mounting, 100...240 V AC/ 24 V DC, 1 A, NEC Class 2 (UL 1310)	772361
Power supply Type 1573 for rail mounting, 100...240 V AC/ 24 V DC, 2 A, NEC Class 2 (UL 1310)	772362
Power supply Type 1573 for rail mounting, 100...240 V AC/ 24 V DC, 4 A	772363
µSIM-Karte (included in delivery of MFC)	on request
LabVIEW device driver	on request
Device description files for CANopen (EDS), PROFINET (GSDML), Ethernet/IP (EDS), EtherCAT (ESI)	Download from web page, see Type 8741 ▶
Software Bürkert Communicator	Download from web page, see Type 8741 ▶
For 8741 büS / CANopen	
Terminal block 4 pin (included in delivery)	565876
Terminal block 4 pin with integrated 120 Ohm resistance for büS-ending	566066
büS cable, 50 m	772413
büS cable, 100 m	772414
Feldbus Gateway Type ME43 for Industrial Ethernet (PROFINET, Ethernet/IP, Modbus/TCP, EtherCAT)	307390
Feldbus Gateway Type ME43 for PROFIBUS DPV1	307393
For 8741 Analogue	
Terminal block 6 pin (for 8741 Standard; included in delivery of the corresponding analog version)	on request
Connector cable D-Sub 9 to leads, 5 m	580882
Connector cable D-Sub 9 to leads, 10 m	580883

To connect the MFC / MFM with the „Bürkert Communicator“ software tool, you need a büS-stick.

The büS-Stick sets contain the necessary accessories.

For type 8741 büS/CANopen, the connection is made directly via the 4 pin terminal block (büS-Stick Set 1 contains the necessary accessories).

For type 8741 Standard the connection is made via the micro-USB socket on the device (büS-Stick Set 2 contains the necessary accessories).

Attention: The interface to the „Bürkert Communicator“ software tool is based on CANopen (also for type 8741 Standard). The appropriate bus termination is mandatory. Hence, please activate the connectible termination resistor on the büS-Stick for type 8741 Standard.

For type 8741 büS / CANopen, this termination resistor should not be activated, in case the device is already integrated in a properly terminated bus network

Mass Flow Controller (MFC)/ Mass Flow Meter (MFM) for Gases

8742

- Nominal flow ranges from 0.010 I_N/min to 160 I_N/min
- High accuracy and repeatability with very fast response times
- Easy device exchange through configuration memory-
- Communication via fieldbus based on CANopen
- Optional: ATEX II Kat. 3G/D or USP Class VI, FDA, EG 1935 conformity



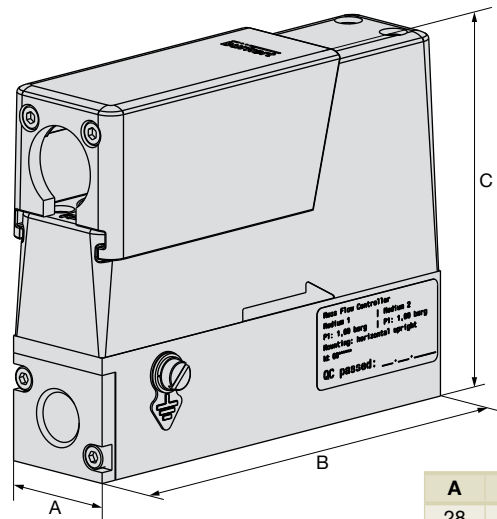
The mass flow controller (MFC) / meter (MFM) Type 8742 for gases is suitable for a wide range of applications. Type 8742 communicates via the Bürkert system bus (bÜS). This CANopen based interface is suitable for the integration into existing CANopen networks, as well as Industrial Ethernet or fieldbus networks in combination with the fieldbus gateway of Type ME43. The second option is tailor-made for applications with many control loops. Up to 32 MFC / MFM can be connected to one fieldbus gateway. Type ME43 translates the internal CANopen based communication to industry standards for both Industrial Ethernet and fieldbuses. The mass flow controller / meter can always be switched between bÜS and CANopen communication. Type 8742 can be configured as MFM or MFC. Optional, up to four different gases calibrations can be stored in the device. The thermal MEMS sensor is located directly in the gas stream and therefore reaches very fast response times. A direct-acting proportional valve as regulating unit guarantees high sensitivity. The integrated PI controller ensures outstanding control characteristics of the MFC / MFM. Type 8742 is especially designed for use in harsh environments due to high protection class and explosion-proof.

Technical data

Nominal flow range (Q_{nom})	10 ml _N /min...160 I _N /min (N ₂)
Turn-down ratio	1:50, optional 1:100
Operating medium	Neutral, non-contaminated gases (others on request)
Calibration medium	Operating gas or air
Max. operating pressure	10 bar (145 psi), with MFCs the max. pressure depends on the orifice of the valve
Medium temperature	-10...+70 °C (-10...+60 °C with oxygen)
Ambient temperature	-10...+50 °C (higher temperatures on request)
Accuracy (after 1 min. warm up time)	±0.8 % o.R. ±0.3 % F.S. (o.R.: of reading; F.S.: of full scale)
Repeatability	±0.1 % F.S.
Settling (MFC) / response (MFM) time (t_{95%})	<300 ms
Materials	
Body	Stainless steel or aluminium
Housing	Aluminium die casting (coated)
Seals	FKM or EPDM (depending on gas)

Dimensions [mm]

Standard version



A	B	C
28	107	86.5

Port connection	NPT ¼, G ¼, flange, clamp ring or vacuum fitting, others on request
Control valve (prop. valve)	Normally closed
Valve orifice range	0.05...8 mm
K _{VS} value range	0.00006...1.1 m ³ /h
Electr. connection	M12 plug, 5 pin
Operating voltage	24 V DC
Voltage tolerance	±10 %
Power consumption¹⁾	Max. 1 W (as MFM), Max. 3...17.5 W (as MFC, independent from Proportional valve Type)
Residual ripple	±2 %
Digital Comm.	CANopen or CAN based bÜS
Removable memory	EEPROM (SIM card: bÜS relevant data and information about spec. control loop in order to ease replacement)
Input-/Output signals	None, communication via bus
Protection class	IP65 and IP67
ATEX compliance	II 3G Ex nA IIC T* Gc X and II 3D Ex tc IIIC T***C Dc X ²⁾

Technical data continued

Dimensions	Data sheet; see Type 8742 ▶
Total weight	Approx. 950 g (stainless steel body)
Installation	Horizontal or vertical
Device status	RGB-LED based on NAMUR NE107

1) Data refers to the typical power consumption (at 23 °C ambient temperature, nominal flow rate and 30 min. control mode). The specifications according to UL 61010-1 can differ (see instruction manual).

2) Acc. to DIN EN 60079-0 and DIN EN 60079-15, T3/4 and T160 °C/135 °C depending on the device version

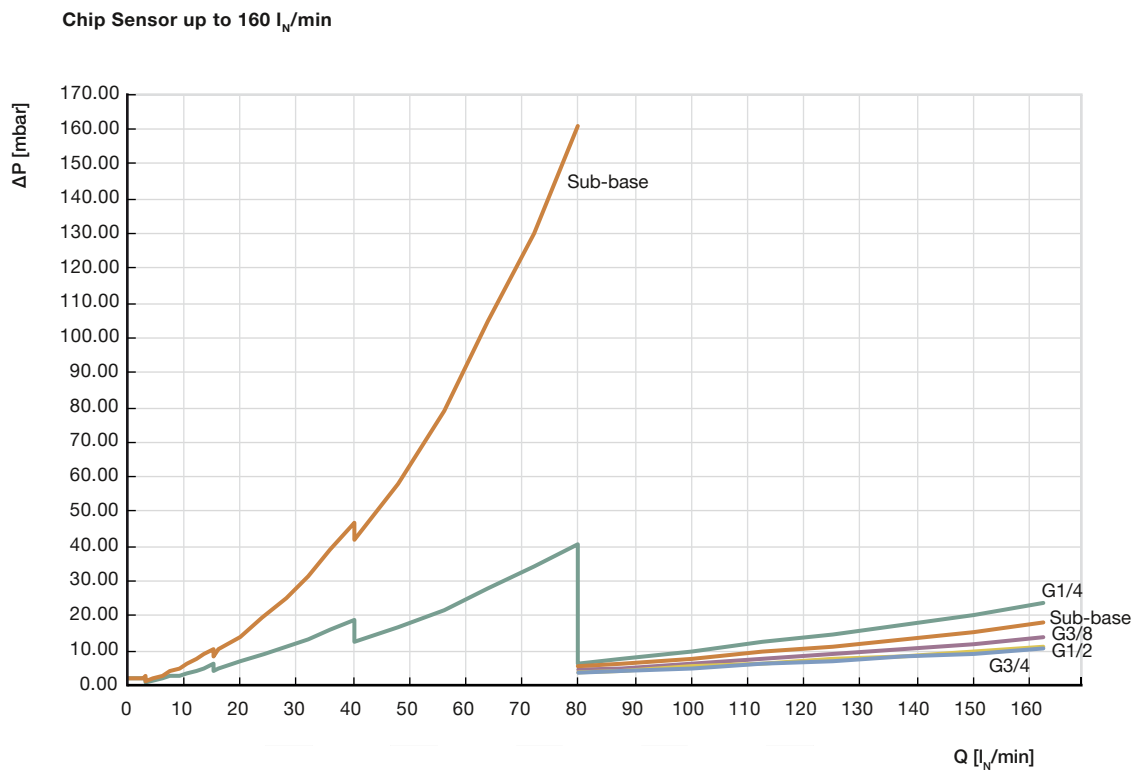
Nominal flow range of typical gases

(Other gases on request)

Gas	Min. Q_{nom} [l _N /min]	Max. Q_{nom} [l _N /min]
Acetylene	0.01	65
Argon	0.01	160
Helium	0.01	1000
Carbon dioxide	0.02	80
Air	0.01	160
Methane	0.01	160
Propane	0.03	44
Oxygen	0.01	160
Nitrogen	0.01	160
Hydrogen	0.01	1000

All values refer to 1.013 bar(a) und 0°C (Index N)

Pressure Loss Diagram of a MFM (ref. to air)



The diagram shows exemplarily the pressure loss characteristics when air flowing through.

For determining the pressure loss with another gas it needs to calculate the air equivalent and respect the fluidics needed with the other gas.



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Accessories

Article	Article no.
büS cable extension M12 0.1 m	772492
büS cable extension M12 0.2 m	772402
büS cable extension M12 0.5 m	772403
büS cable extension M12 1 m	772404
büS cable extension M12 3 m	772405
Power supply Type 1573 for rail mounting, 100...240 V AC / 24 V DC, 1.25 A, NEC Class 2 (UL 1310)	772438
Power supply Type 1573 for rail mounting, 100...240 V AC / 24 V DC, 1 A, NEC Class 2 (UL 1310)	772361
Power supply Type 1573 for rail mounting, 100...240 V AC / 24 V DC, 2 A, NEC Class 2 (UL 1310)	772362
Power supply Type 1573 for rail mounting, 100...240 V AC / 24 V DC, 4 A	772363
Connector M12, female, straight (A-coded) ¹⁾	772416
Connector M12, male, straight (A-coded) ¹⁾	772417
Connector M12, female, angled (A-coded) ¹⁾	772418
Connector M12, male, angled (A-coded) ¹⁾	772419
Y-junction	772420
Y-junction for connecting two separately powered segments of a büS network	772421
Termination resistor 120 Ohm M12 male	772424
Termination resistor 120 Ohm M12 female	772425
büS-Stick Set 1 (incl. cable (M12 and Micro-USB) Stick with integrated terminating resistor, power supply and software)	772426
büS-Stick Set 2 (incl. cable (M12 and Micro-USB) Stick with integrated terminating resistor)	772551
SIM card	On request
LabVIEW device driver	On request
EDS-File (CANopen)	Download from web page, see Type 8742 ▶
Software Bürkert Communicator	Download from web page, see Type 8742 ▶

1) It is possible that the M12 connectors cannot be used together on the same side of a Y-junction. If that is the case, please use a prefabricated cable which uses typically a thinner connector.

Mass Flow Controller (MFC)/ Mass Flow Meter (MFM) for gases

8745

- Nominal flow ranges from 20 I_N /min up to 2500 I_N /min
- High accuracy and repeatability
- Communication via standard signals or Industrial Ethernet
- Electromagnetic and motor-driven valve actuation available
- Easy device exchange through configuration memory

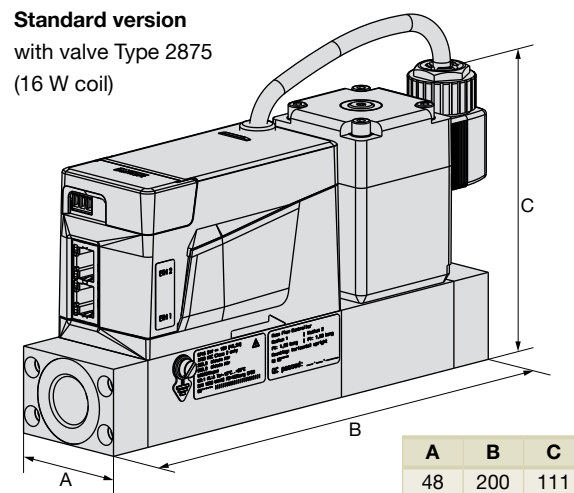


The MFC / MFM type 8745 is suitable for the mass flow control of high flow rates. Type 8745 can be configured as MFM or MFC. Optional, four different gases can be calibrated. The thermal inline sensor is located directly in the main gas stream and therefore reaches very fast response times. A direct-acting proportional valve as regulating unit guarantees high sensitivity. The integrated PI controller ensures outstanding control characteristics of the MFC / MFM. MFC Type 8745 is available in two versions: with electromagnetic proportional valve and with motor-driven proportional valve.

Technical data

General data	
Operating medium	Neutral, non-contaminated gases, others on request
Calibration medium	Operating gas or air with correction function
Medium temperature	-10 °C ¹⁾ ...+70 °C (-10 °C ¹⁾ ...+60 °C with oxygen)
Ambient temperature	-10...+50 °C (higher temperatures on request)
Materials	
Body / Housing	Stainless steel or aluminium / PC (Polycarbonat)
Seals	FKM or EPDM (depending on gas) ²⁾
Port connection	G or NPT 1/4, 3/8, 1/2, 3/4, 1, Sub-base
Operating voltage	24 V DC
Voltage tolerance	±10 %
Residual ripple	±2 %
Configuration memory (included in delivery)	EEPROM (µSIM card: bus relevant data and information about spec. control loop in order to ease replacement)
Installation	Horizontal or vertical
Software-Tool	Bürkert Communicator
Electrical connection	
Industrial Ethernet	PROFINET, Ethernet/IP, EtherCAT, Modbus-TCP via 2 x RJ45 (Switch) ³⁾
Analog	4...20 mA, 0...20 mA, 0...10 V or 0...5 V via D-Sub9 ⁴⁾
Input impedance	>20 kΩ (voltage), <300 Ω (current)
Max. current	10 mA (voltage output)
Max. load	600 Ω (current output)
Type 8745 with solenoid proportional valve	
Nominal flow range (Q_{nom})	20...1500 I_N /min (N_2), MFM up to 2500 I_N /min (N_2)
Turn-down ratio	50:1 ⁵⁾
Max. operating pressure (Data in overpressure to atmospheric pressure)	10 bar (with MFCs the max. pressure depends on the orifice of the valve) Optional up to 25 bar for MFM

Dimensions [mm]



Accuracy (after 15 min. warm up time)	±1.5% o.R. ±0.3% F.S. (o.R.: of reading; F.S.: of full scale)
Repeatability	±0.1% F.S.
Settling/Response time ($t_{95\%}$)	<500 ms
Proportional valve (solenoid)	Normally closed
Valve orifice range	0.8...12 mm
K_{VS} value range	0.02...2.5 m ³ /h
Power consumption⁶⁾	Max. 4 W (as MFM), max. 12.5...31.5 W (as MFC, depending on proportional valve type)
Protection class	IP20
Total weight	Approx. 1.8 kg (Al, 16 W-valve), Approx. 3.1 kg (VA, 16 W-valve)
Device status	RGB-LED based on NAMUR NE107
Type 8745 with motor-driven proportional valve	
Nominal flow range (Q_{nom})	20...2500 I_N /min (N_2)
Turn-down ratio	50:1 ⁷⁾
Max. operating pressure (Data in overpressure to atmospheric pressure)	22 bar (with MFCs the max. pressure depends on the orifice of the valve)
Accuracy (after 15 min. warm up time)	±2% o.R. ±0.5% F.S. (o.R.: of reading; F.S.: of full scale)
Repeatability	±0.5% F.S.
Settling times ($t_{95\%}$)	<5 sec.

Technical data continued

Proportional valve (motor-driven)	Normally persisting
Valve orifice range	2...20 mm
K_{VS} value range	0.5...7.8 m ³ /h
Power consumption⁹⁾	Max. 4 W (as MFM) Max. 12 W (as MFC ⁸⁾)
Protection class	IP20
Total weight	Approx. 1.67 kg (Al, standard, valve 3280), Approx. 2.94 kg (VA, standard, valve 3280)
Device status⁹⁾	For MFM: RGB-LED acc. to NAMUR NE107 For valve: RGB-LED to indicate the valve opening

- 1) When using a motor valve the minimum medium temperature is 0 °C.
- 2) When using a motor valve additionally: - Type 3280 DN4: Seat seal in PEEK
- Type 3285: Seat seal in Al2O3
- 3) Supply voltage via separate terminal block.
- 4) The analog version with D-Sub9 features an additional digital input and a relay output.
- 5) With vertical installation and flow downwards the turn-down ratio is 10:1
- 6) Referring to the typical power consumption (at 23 °C ambient temperature, nominal flow and 30 min. regular operation) The data according to UL 61010-1 may differ (see manual)

Nominal flow range of typical gases

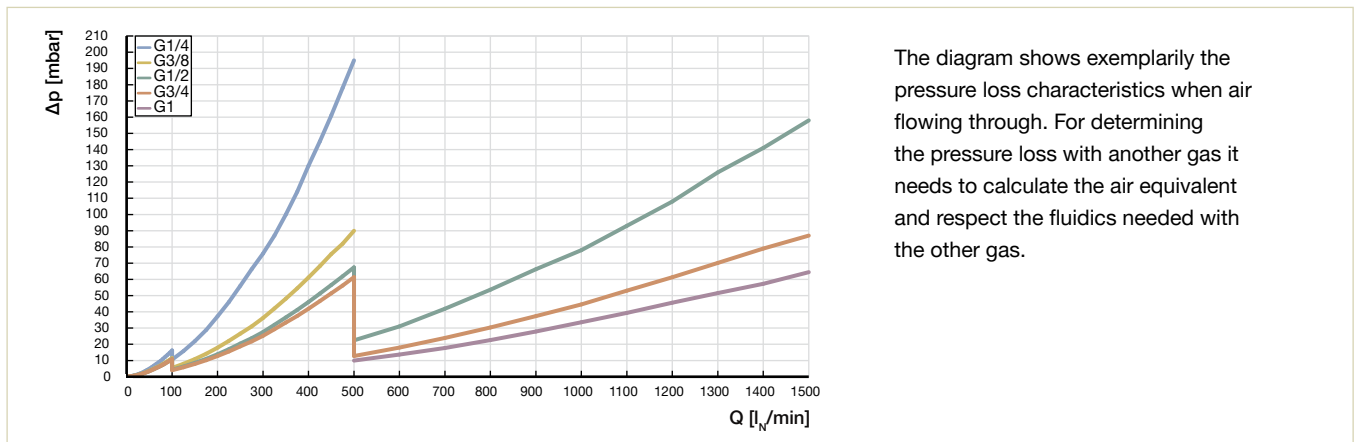
(Other gases on request)

Gas	Min. Q_{nom} [l _N /min]	Max. Q_{nom} [l _N /min]
Acetylene	20	320
Ammonia	8	1000
Argon	20	1600
Carbon dioxide	20	1000
Air	20	2500
Methane	20	500
Propane	20	400
Oxygen	20	2500
Nitrogen	20	2500
Hydrogen	0,01	500

All values refer to 1.013 bar(a) und 0°C (Index N)

- 7) With vertical installation and flow downwards the turn-down ratio is 10:1
- 8) Data during moving of the valve. The power to hold a specific valve opening < 1 W
- 9) Detailed description of the LED colors: see manual
- 10) Other gases on request

Pressure Loss Diagram of a MFM (ref. to air)



Ordering information



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Accessories

8745

Article	Article no.
büS-Stick Set 2 (incl. cable (M12 and Micro-USB) Stick with integrated terminating resistor)	772551
Power supply Type 1573 for rail mounting, 100–240 V AC/ 24 V DC, 1.25 A, NEC Class 2 (UL 1310)	772438
Power supply Type 1573 for rail mounting, 100–240 V AC/ 24 V DC, 1 A, NEC Class 2 (UL 1310)	772361
Power supply Type 1573 for rail mounting, 100–240 V AC/ 24 V DC, 2 A, NEC Class 2 (UL 1310)	772362
Power supply Type 1573 for rail mounting, 100–240 V AC/ 24 V DC, 4 A	772363
µSIM-Card (included in delivery of MFC)	On request
LabVIEW device driver	On request
Device description files for PROFINET (GSDML), Ethernet/IP (EDS), EtherCAT (ESI)	Download from web page, see Type 8745 ▶
Software Bürkert Communicator	Download from web page, see Type 8745 ▶
For 8745 Analogue	
Terminal block 6 pin (for 8745 Standard; included in delivery of the corresponding analog version)	On request
Connector cable D-Sub 9 to leads, 5 m	580882
Connector cable D-Sub 9 to leads, 10 m	580883

To connect the MFC / MFM with the „Bürkert Communicator“ software tool, you need a büS-stick. The connection is made via the micro-USB socket on the device (büS-Stick Set 2 contains the necessary accessories).

Attention: The interface to the „Bürkert Communicator“ software tool is based on CANopen. The appropriate bus termination is mandatory. Hence, please activate the connectible termination resistor on the büS-Stick.

Mass Flow Controller (MFC)/ Mass Flow Meter (MFM) for Gases

8746

- Nominal flow ranges from 20 I_N /min up to 2500 I_N /min
- High accuracy and repeatability
- Communication via fieldbus based on CANopen
- Optional: ATEX II Cat. 3G/D
- Electromagnetic and motor-driven valve actuation available



The mass flow controller/meter Type 8746 for gases is intended for the use in a bÜS or CANopen network. The bÜS network technology is based on CAN physics and was developed by Bürkert especially for Industrial Ethernet or fieldbus communication in applications with multiple control loops. In combination with the system control unit (SCU) Type ME2X, the CANopen based communication can be translated to the customer's fieldbus. The mass flow controller (MFC)/meter (MFM) can always be switched between bÜS and CANopen communication. Given that, Type 8746 can also be directly integrated into existing CANopen networks.

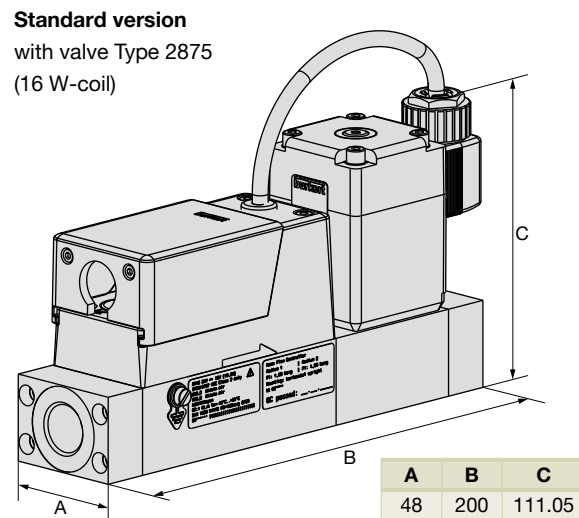
Type 8746 can be configured as MFM or MFC. Optional, four different gases can be calibrated. The thermal inline sensor is located directly in the main gas stream and therefore reaches very fast response times. A direct-acting proportional valve as regulating unit guarantees high sensitivity. The integrated PI controller ensures outstanding control characteristics of the MFC/MFM.

Type 8746 is especially designed for use in harsh environments due to a low sensitivity to contamination, high protection class and explosion-proof.

Technical data

General data	
Operating medium	Neutral, non-contaminated gases (others on request)
Calibration medium	Operating gas or air with correction function
Medium temperature	-10 °C ¹⁾ ...+70 °C (-10 °C ¹⁾ ...+60 °C with oxygen)
Ambient temperature	-10...+50 °C (higher temperatures on request)
Materials	
Body	Stainless steel or aluminium
Housing	Aluminium diecasting (coated)
Seals	FKM or EPDM (depending on gas) ²⁾
Port connection	G ¼, ⅜, ½, ¾, 1, NPT ¼, ⅜, ½, ¾, 1, Sub-base
Electr. connection	M12 plug, 5 pin
Operating voltage	24 V DC
Voltage tolerance	±10 %
Residual ripple	±2 %
Digital Comm.	CANopen or CAN based bÜS
Configuration memory (included in delivery)	EEPROM (µSIM card: bÜS relevant data and information about spec. control loop in order to ease replacement)

Dimensions [mm]



Input/Output signals	None, communication via bus
Installation	Horizontal or vertical

1) When using a motor valve the minimum medium temperature is 0 °C.

2) When using a motor valve additionally:

- Type 3280 DN4: Seat seal in PEEK

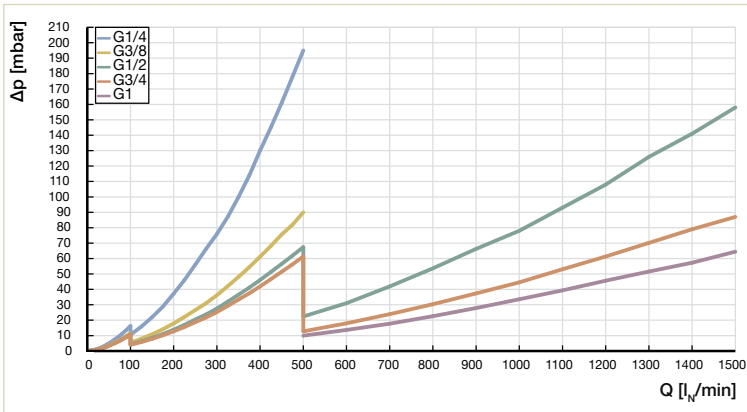
- Type 3285: Seat seal in Al₂O₃

Nominal flow range of typical gases (Other gases on request)

Gas	Min. Q_{nom} [I_N /min]	Max. Q_{nom} [I_N /min]
Acetylene	20	320
Ammonia	8	1000
Argon	20	1600
Carbon dioxide	20	1000
Air	20	2500
Methane	20	500
Propane	20	400
Oxygen	20	2500
Nitrogen	20	2500
Hydrogen	0,01	500

All values refer to 1.013 bar(a) und 0°C (Index N)

Pressure Loss Diagram of a MFM (ref. to air)



The diagram shows exemplarily the pressure loss characteristics when air flowing through. For determining the pressure loss with another gas it needs to calculate the air equivalent and respect the fluidics needed with the other gas.

Ordering information



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Accessories

8746

Article	Article no.
büS cable extension M12 0.1 m	772492
büS cable extension M12 0.2 m	772402
büS cable extension M12 0.5 m	772403
büS cable extension M12 1 m	772404
büS cable extension M12 3 m	772405
Connector M12, female, straight (A-coded) ¹⁾	772416
Connector M12, male, straight (A-coded) ¹⁾	772417
Connector M12, female, angled (A-coded) ¹⁾	772418
Connector M12, male, angled (A-coded) ¹⁾	772419
Power supply Type 1573 for rail mounting, 100...240 V AC/ 24 V DC, 1.25 A, NEC Class 2 (UL 1310)	772438
Power supply Type 1573 for rail mounting, 100...240 V AC/ 24 V DC, 1 A, NEC Class 2 (UL 1310)	772361
Power supply Type 1573 for rail mounting, 100...240 V AC/ 24 V DC, 2 A, NEC Class 2 (UL 1310)	772362
Power supply Type 1573 for rail mounting, 100...240 V AC/ 24 V DC, 4 A	772363
Y junction	772420
Y junction for connecting two separately powered segments of a büS network	772421
Termination resistor 120 Ohm M12 male	772424
Termination resistor 120 Ohm M12 female	772425
büS-Stick Set 1 (incl. cable (M12), büS termination, power supply, and software)	772426
büS-Stick Set 2 (incl. cable (M12))	772551
SIM card	On request
LabVIEW device driver	On request
EDS-File (CANopen)	Download from web page, see Type 8746 ▶
Software Bürkert Communicator	Download from web page, see Type 8746 ▶

1) It is possible that the M12 connectors cannot be used together on the same side of a Y-junction. If that is the case, please use a prefabricated cable which uses typically a thinner connector.

Fieldbus Gateway

ME43

- Gateway for industrial Ethernet and fieldbus standards
- Up to 128 input and 128 output variables can be assigned
- Easy integration in the process control level through system-specific device description files
- Graphical programming for automation of sub-systems



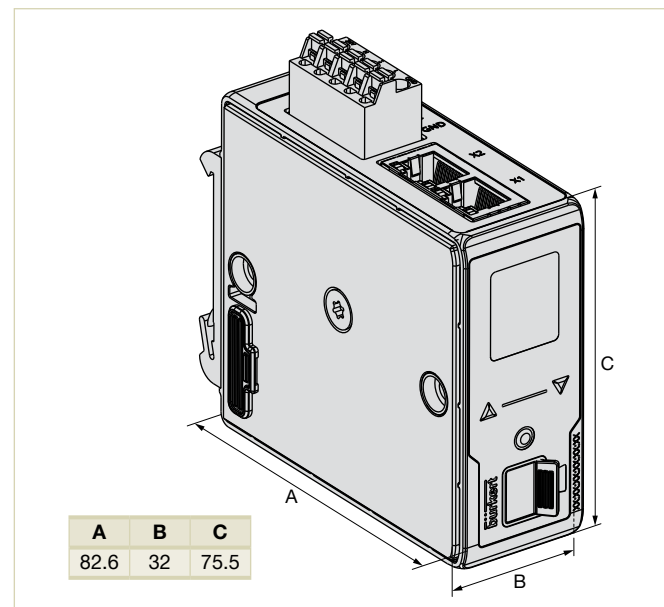
The fieldbus gateway Type ME43 is the central control unit for Bürkert products (valves, sensors, mass flow controllers or displays), which are based on EDIP ("Efficient Device Integration Platform"). The basic version of Type ME43 consists of a fieldbus coupler which transmits the internal CANopen- based communication of the Bürkert field devices to industry standards for industrial Ethernet and fieldbus.

With the help of graphical programming, which the module supports, sub-systems can be automated specifically to the customer's needs (e.g. controlled mixing of gases, error monitoring through limit value switches, time switches).

Technical data

Housing material	PC (Polycarbonate)
Gateway functionality (Integrated switch for Industrial Ethernet)	PROFINET EtherNet/IP Modbus/TCP PROFIBUS DPV1 EtherCAT
Configuration storage	Micro SD Card (not included in delivery) - (for storing device parameters, configuration and easy replacement of a module)
Operating voltage	24 V DC \pm 10 % - residual ripple 10 %
Current limitation at 24 V	3.2 A
Output current at 3.3 V and 5 V (max.)	400 mA
Light diodes	
Housing (external)	RGB-LED based on NAMUR NE107
Power consumption	2 W
Ambient temperature	-20...+60 °C
Protection class	
ME43 (Fieldbus Gateway)	IP20
Installation	Horizontal or vertical on DIN rail EN 50022
Certificates	
PROFINET (PNO)	Certificate Z11908
EtherNet/IP (ODVA)	DOC 11648
Approvals	
UL	cULus Listed
ATEX	Certificate: E238179
IECEX	II 3G Ex ec IIC T4 Gc Certificate: BVS 18 ATEX E 051 X Ex ec IIC T4 Gc Certificate: IECEX BVS 18.0041X

Dimensions [mm]



Note: Pin assignment and further information in data sheet, see **Type ME43** ▶.

Ordering chart

Article	Article no. Standard	Article no. AirLINE Typ 8652
Gateway Industrial Ethernet (PROFINET, EtherNet/IP, Modbus TCP, EtherCAT)	307390	301799
Gateway PROFIBUS DPV1	307393	301803
Gateway CANopen (bùS)	307391	301802

Important note: Please note that the ME43 Gateway modules are not factory configured. However, these must be configured in order to be used in a system. The device description files for the required protocols must be generated with the Communicator software before commissioning a system. For further details, please refer to the operating instructions for ME43.

Accessories

Article	Article no.
bùS cable extension M12 0.1 m	772492
bùS cable extension M12 0.2 m	772402
bùS cable extension M12 0.5 m	772403
bùS cable extension M12 1 m	772404
bùS cable extension M12 3 m	772405
Connector M12, female, straight (A-coded) ¹⁾	772416
Connector M12, male, straight (A-coded) ¹⁾	772417
Connector M12, female, angled (A-coded) ¹⁾	772418
Connector M12, male, angled (A-coded) ¹⁾	772419
Y connector	772420
Y connector for connecting two separately powered segments of a bùS network	772421
Termination resistor (directly pluggable)	303833
Termination resistor 120 Ohm M12 male	772424
Termination resistor 120 Ohm M12 female	772425
Power supply Type 1573 for rail mounting, 100 – 240 V AC/ 24 V DC, 1.25 A, NEC Class 2 (UL 1310)	772438
Power supply Type 1573 for rail mounting, 100 – 240 V AC/ 24 V DC, 1 A, NEC Class 2 (UL 1310)	772361
Power supply Type 1573 for rail mounting, 100 – 240 V AC/ 24 V DC, 2 A, NEC Class 2 (UL 1310)	772362
Power supply Type 1573 for rail mounting, 100 – 240 V AC/ 24 V DC, 3,8 A, NEC Class 2 (UL 1310)	772898
Power supply Type 1573 for rail mounting, 100 – 240 V AC/ 24 V DC, 10 A	772698
Micro SD Card	774087
bùS-Stick Set 1 (incl. cable (M12)), stick with integrated termination resistor, power supply and software	772426
bùS-Stick Set 2 (incl. cable (M12)), stick with integrated termination resistor	772551
License for graphical programming (only required for a running time > 60 minutes)	567713
Software Bürkert Communicator	Download from web page, see Type ME43

¹⁾ Due to lack of space, the M12 single connectors may not be suitable for their simultaneous use on the same side of the Y connector. Please use the available ready-made assembled cable in this case.

I/O Modules, IP20

ME44

- I/O modules with configuration possibilities for a diverse range of applications
- Integrated diagnosis possibilities like wire break, short circuit
- Assembly and disassembly possible completely without tools
- Color coded connectors reduce the risk of error during wiring
- Removable terminal block with PUSH-I_N spring connection

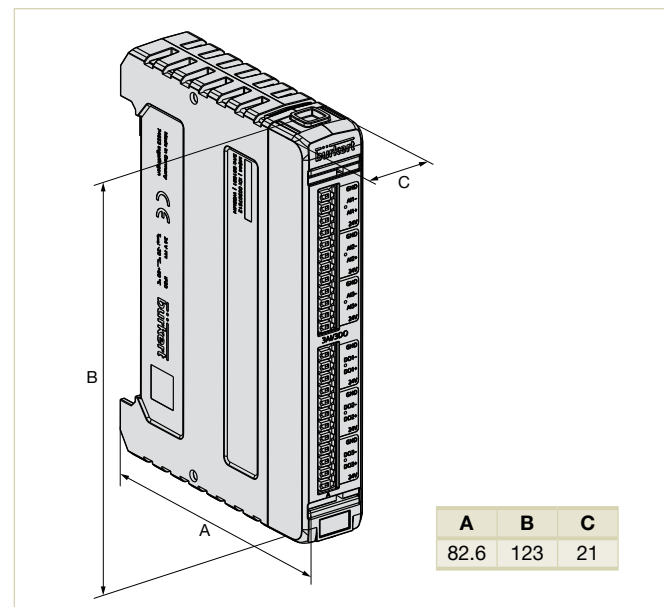


The fieldbus gateway (ME43) is the central control unit and can be expanded with Bürkert I/O modules of Type ME44 to integrate sensors, actuators or valves via standard signals like 4...20 mA, 0...10 V etc. The 8-channel digital input (8DI) module can be used for 2-wire sensors as well as mechanical switches. The module also has 4 channels which can be configured as frequency inputs. The innovative 6-channel module combines 3 analog inputs and 3 digital outputs in one module (3AI-3DO). With the programmable fieldbus gateway and the 3AI-3DO module control functions can be implemented with utmost ease.

Technical data-

General data	
Housing material	Polycarbonate
Ambient temperature	-20...+60 °C
Status indicator	RGB LED based on NAMUR NE107, status LEDs per channel
Wire connection cross-section	0.20...1.5 mm ²
Ambient conditions	
Altitude above sea level (environment)	Max. 2000 m
Storage temperature	-30...+80 °C
Ambient temperature	-20...+60 °C
Electrical specifications	
Operating voltage	24 V DC ± 10 % via the backplane BPX3
Power input (max.)	
3AI – 3DO	<3 W, if the I/Os are supplied via bus, the total current is internally limited to 2 A
(in progress)	
8DI Module	<2 W
Protection class	IP20 according to EN 60529 / IEC 60529
3AI-3DO Module: Analog input (AI)	
Electrical version	Current input or voltage input
Operating mode	0...20 mA 4...20 mA 0...10 V 0...5 V 0...2 V
Accuracy	0.1 % at 25 °C Temperature coefficient: Current input: ± 15 ppm/K Voltage input: ± 20 ppm/K
Input impedance	Current measurement at 25 °C ≤ 100 Ohm Voltage measurement at 25 °C ≥ 120 kOhm
Galvanic separation	Yes, to the system bus and system voltage

Dimensions [mm]



Configurable input (AI as DI)	AI can also be used as DI (configuration via Software Tool - Communicator)
Diagnosis	Detection of error states (at 3.5 mA and 22 mA according to NAMUR NE43) Open loop detection (only for voltage input)
3AI-3DO Module: Digital output (DO: NPN output/N-switching)	
Electrical version	Transistor output
Operating mode	On-Off Threshold PWM (Pulse Width Modulation) PFM (Pulse Frequency Modulation)
Output current	Max. 750 mA per channel Max. 2 A per module (supplied via the backplane)
Diagnosis	Short circuit detection (channel wise only with external power supply)
8-DI Module (Sinking digital input) – suitable for 2-wire sensors and mechanical limit switches	
Electrical version	24 V DC ± 10 %
Switching threshold	V _{OFF} = 0...5 V V _{ON} = 10...26.4 V
Input current for V_{ON} type, 24 V DC	max. 6.8 mA

Technical data continued

Number of frequency inputs	4 (channel 1, 2, 5, 6)
Frequency input	Max. to 2.5 kHz
Diagnosis	Open-loop detection for 2-wire sensors

Note: Electrical layout and wiring diagram 3AI-3DO module in data sheet, see **Type ME44** ▶.

Ordering chart

Description	Article no.
3x Analog inputs – 3x Digital outputs 3AI-3DO Module (ME44)	307512
8x Digital inputs 8DI Module (ME44)	307511
Backplane 3-fold (BPX3)	307510

Accessories

Description	Article no.
büS cable extension M12 0.1 m	772492
büS cable extension M12 0.2 m	772402
büS cable extension M12 0.5 m	772403
büS cable extension M12 1 m	772404
büS cable extension M12 3 m	772405
Socket M12 straight (A-coded) ¹⁾	772416
Connector M12 straight (A-coded) ¹⁾	772417
Socket M12 angled (A-coded) ¹⁾	772418
Connector M12 angled (A-coded) ¹⁾	772419
Y distributor	772420
Y distributor for networking two separately supplied segments of a büS network	772421
Terminating resistor (direct pluggable)	303833
Terminating resistor 120 Ohm plug M12	772424
Terminating resistor 120 Ohm socket M12	772425
Power supply unit Type 1573 for top-hat rail, 100...240 V AC / 24 V DC, 1.25 A, NEC Class 2 (UL 1310)	772438
Power supply unit Type 1573 for top-hat rail, 100...240 V AC / 24 V DC, 1 A, NEC Class 2 (UL 1310)	772361
Power supply unit Type 1573 for top-hat rail, 100...240 V AC / 24 V DC, 2 A, NEC Class 2 (UL 1310)	772362
Power supply unit Type 1573 for top-hat rail, 100...240 V AC / 24 V DC, 4 A	772363
Micro SD card	On request
büS-Stick Set 1 (incl. cable (M12), stick with integrated terminating resistor, power supply and software)	772426
büS-Stick Set 2 (incl. cable (M12)), stick with integrated terminating resistor	772551
Software Bürkert Communicator	Download from web page see Type ME44 ▶

¹⁾ For space reasons, M12 single connectors may not be suitable for simultaneous use on the same side of a Y-distributor. In this case, please use a commercially available overmolded cable.



Overview for Controller/Transmitter

Note: The following product overview does not show the complete product range of this catalogue. A complete overview can be found [here](#) ▶

Overview Controller Fieldbus Gateway	Species	Type	Function	Actual value
	Universal controller eCONTROL	8611 ▶	PI control, 2 points and 3 points, cascaded up to 2 binary outputs with window or hysteresis mode	Standard signals (4...20 mA/0...10 V) Frequency or PT100 signal
	Multi-channel and multi-function transmitter/ controller multiCELL	8619 ▶	Modular in hardware and software up to 12 autonomous functions + with option PID: 6 functions	0...20 mA, 4...20 mA, 0...2 V, 0...5 V, 0...10 V
	Multifunction Controller mxControl	8620 ▶	Maximum 8 active control loops	4...20 mA, Pt100, binary or frequency, depending on version

Controller outputs	Type of mounting
1 x PWM, 2 x PTM, 1 x analogue, depending on version	Direct attachment to proportional valve or flow sensor, wall, DIN-rail or switch cabinet mounting
On/Off, hysteresis, window, PWM, PFM, Pulse (main module), analogue, memory card, industrial Ethernet	Panel or wall mounting
Binary, PFM, PWM, analogue	Wall mounting

Overview Controller
Fieldbus Gateway

Universal Process Controller eCONTROL

8611

54x54x50 mm 1/16 DIN Cut out Compact Universal controller

- For flow, pressure, pH, conductivity, level and temperature
- Continuous control: 2-point, 3-point, On/Off, ratio control
- Easy connectable to pneumatically or electrically driven systems



Thanks to its compact design, the universal 8611 controller is specially designed for compact control system applications. It is compatible with a wide range of proportional control valves and connects with an electro-pneumatic servo-system for pneumatically actuated process control valves. The PI process controller is equipped with many additional functions. The actual process value can be supplied as one of three inputs; analogue 4...20 mA/0...10 V, frequency or Pt100 signal directly to the universal controller. The process switching points can be set via a 4...20 mA/0...10 V signal or with the keypad.

Technical data

General data	
Materials	
Housing, cover	PC, +20 % glass fibre
Front panel folio	Polyester
Screws	Stainless steel
Multipin	CuZn, nickel-plated
Wall-mounting holder	PVC
Display	
	Dual-line 8-digit LCD with backlight
Electrical connections	
	Multipin: M12...8 pin, M8...3 pin, Terminals Insert for direct connecting to electrical components acc. to EN 175301-803
Voltage supply cable	
	0.5 mm ² max. cross section, max. 100 m, shielded
Environment	
Ambient temperature	0...+70 °C (operating and storage)
Relative humidity	≤ 80 %, without condensation
Height above sea level	Max. 2000 m
Standards and approvals	
Protection class	IP65
Standard	
EMC, CE	EN 61326

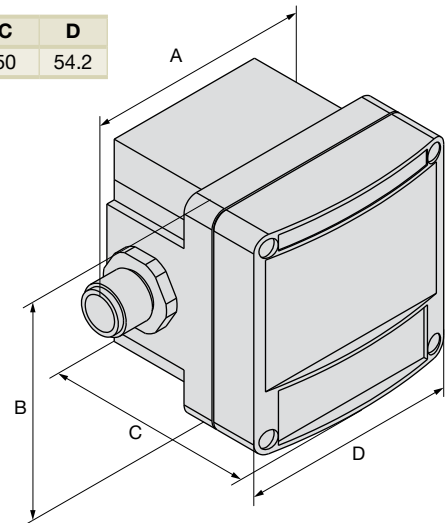
Options

- Mounted on flow sensor fitting
- Mounted on rail or valve

Dimensions [mm]

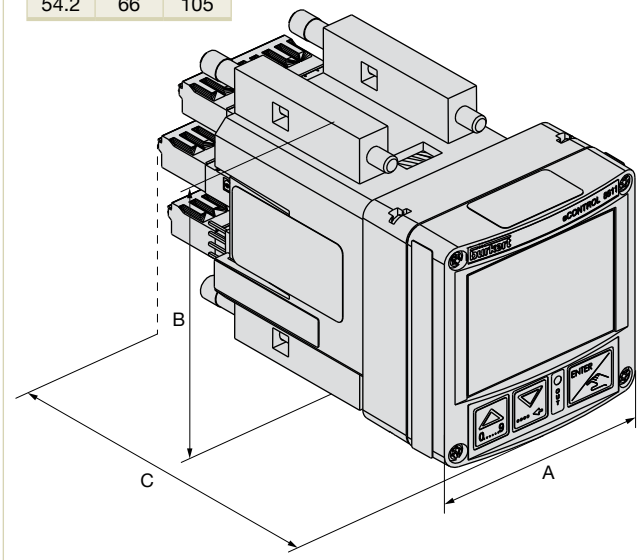
Ventilmontage

A	B	C	D
67.2	54.2	50	54.2



Schaltschrankmontage

A	B	C
54.2	66	105



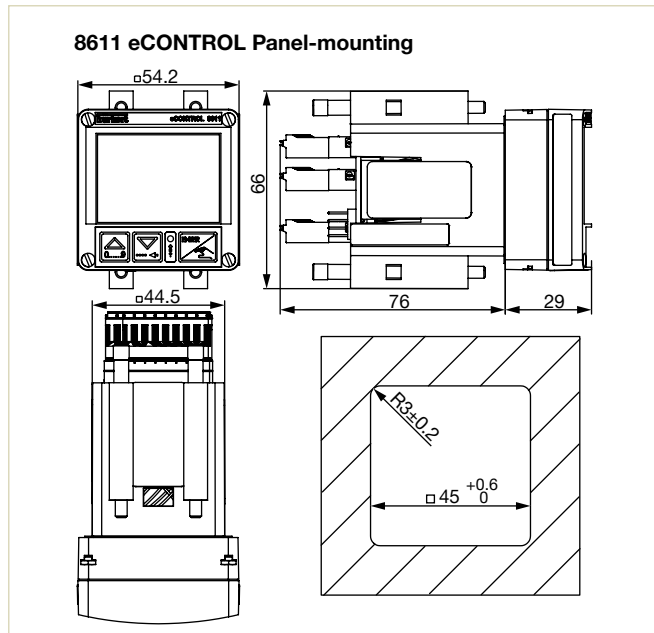
Technical data continued

Electrical data	
Operating voltage	24 V DC \pm 10 %, filtered and regulated
Power consumption	Approx. 2 W (without valve-without sensor input)
Input	
Setpoint	
Standard 4...20 mA	Sourcing mode Max. input impedance: 70 Ω Resolution: 5.5 μ A
Standard 0...10 V	Max. input impedance: 11.5 k Ω Resolution: 2.5 mV
Sensors	
Standard 4...20 mA	Sourcing mode Max. input impedance: 70 Ω Resolution: 5.5 μ A
Standard 0...10 V	Max. input impedance: 11.5 k Ω Resolution: 2.5 mV
Frequency	
Input 1	
	External sensor Min. 0.25 Hz/max. 1 kHz Input impedance: >1 k Ω Signal type: Sinus, square, triangle pulse (>3000 mVpp, max. 30 Vpp)
Input 2	
	Internal Hall sensor Min. 0.25 Hz/max. 1 kHz (only with Bürkert Type S030 flow sensor-fitting)
Pt100 (2 wires)	
	Measuring range: 0...+200 $^{\circ}$ C Measuring current: 1 mA Measuring error: <0.5 $^{\circ}$ C
Binary input	
	Input impedance: 10 k Ω Operating threshold: 3...30 V Max. frequency: 1 kHz

Outputs	
Continuous signal	Standard signal 4...20 mA Max. loop resistance: 680 Ω Accuracy: 0.5 % Standard signal 0...10 V Max. current: 20 mA Accuracy: 0.5 %
Discontinuous signal	2 transistor outputs for PWM¹⁾ or PTM¹⁾ signal Control frequency 20 Hz - 9999 Hz Resolution max.: 16 Bit (depend from frequency) Max. current load: 1.5 A Switching voltage: 24 V DC
Binary output	Transistor output (PNP) (configurable) Max. current load: 1.5 A Switching voltage: 24 V DC
Power supply sensor/actuator	24 V DC, max. 1 A
Total load of all outputs	Max. 1.5 A
Controller modes	PI-Control, 2 point and 3 point, cascaded Up to 2 Binary out with windows and hysteresis mode

1) PWM = pulse width modulation
PTM = pulse time modulation

Dimensions [mm]





Ordering chart

Mounting position	Sensor Input (external)	Controller outputs	Setpoint setting	Process value output	Binary In/Out	Article no.
Proportional valve	Temperature (Pt100)	1 x PWM	4...20 mA 0...10 V	4...20 mA 0...10 V	1 x Bin In 1 x Bin Out	204642
	Flow rate (Frequency - NPN)	1 x PWM	4...20 mA 0...10 V	4...20 mA 0...10 V	1 x Bin In 1 x Bin Out	204639
	All sensors with standard signal (4...20 mA/0...10 V)	1 x PWM	4...20 mA 0...10 V	4...20 mA ¹⁾ 0...10 V	1 x Bin In 1 x Bin Out	186289
Panel	2 x Frequency (NPN/PNP) 1 x 4...20 mA/0...10 V 1 x RTD	1 x PWM 2 x PTM 1 x 4...20 mA/0...10 V	4...20 mA 0...10 V	4...20 mA 0...10 V	1 x Bin In 2 x Bin Out	210206

1) Either PWM/PTM or 4...20 mA/0...10 V selectable as PI-control output. If 4...20 mA/0...10 V selected as PI-output, the process value isn't available.

Accessories (must be ordered separately)

Description	Article no.
Positioning system 8810 for pneumatic actuators with rail-mount adaptor	204458
4 pin M8 female right angle connector with self-locking threaded joint and 2 m molded cable (valve output)	918718
4 pin M8 female right angle connector with self-locking threaded joint and 5 m molded cable (valve output)	919412
3 pin M8 female right angle connector with self-locking threaded joint and 2 m molded cable (sensor input)	918717
3 pin M8 female right angle connector with self-locking threaded joint and 5 m molded cable (sensor input)	919410
4 pin M8 female connector, straight with snap-on connection and 2 m molded cable (valve output)	919060
3 pin M8 female connector, straight with snap-on connection and 2 m molded cable (sensor input)	918039
8 pin M12 female connector, straight with screw connection and 2 m molded cable (PUR) (Power supply)	919061
8 pin M12 female connector, straight with screw connection, to assemble (Power supply)	918998
2 pin female connector, straight with 3 m cable (for connection to Positioning system 8810)	133486
2 pin female connector, straight with 5 m cable (for connection to Positioning system 8810)	167494
2 pin female connector, straight with 0.3 m wire (for connection to Positioning system 8810)	644068
2 pin female connector, straight with 0.6 m wire (for connection to Positioning system 8810)	162144

8611

multiCELL – Multi-channel, multi-function transmitter/controller

8619

- Compatible with most common flow, pH/ORP, chlorine and conductivity sensors
- Simple, intuitive user interface supported by a large adjustable backlit display
(4 user defined views)
- Hardware extension possibilities
(up to 6 free slots)
- Industrial Ethernet (Modbus TCP, PROFINET or EtherNet/IP) option available
- Functionality extendable by software options



The 8619 multichannel and multifunction transmitter/controller, available in two housing variants for panel or wall mounting, is a microprocessor transmitter/controller for connection of sensors which deliver raw signals for pH, ORP, conductivity and flow via pulses or sensors (like pressure, level, chlorine...) which delivers analogue signals (0...20 mA, 4...20 mA, 0...2 V, 0...5 V, 0...10 V). Type 8619 is the ideal device for measurement and control and as well dosing processes e.g. in applications of water treatment plants (like boiler, cooling tower or reverse osmosis systems) and food and pharma plants.

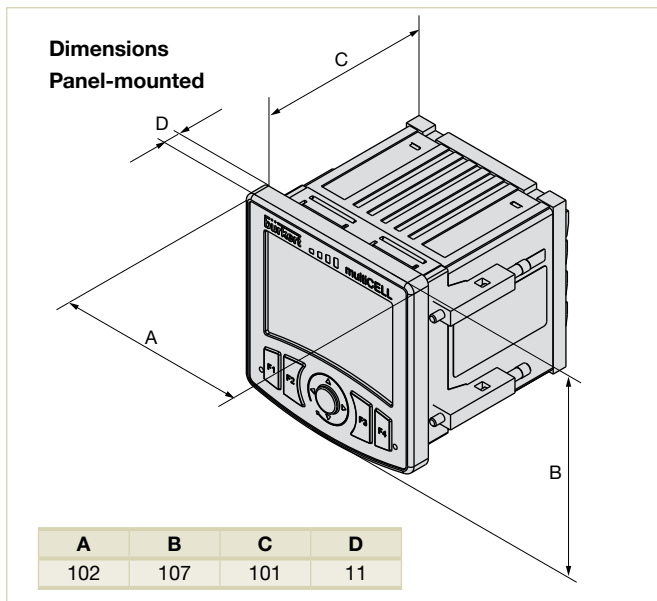
Modularity in hardware and software offers high flexibility for adjusting it to the applications resulting in having a very good price to functionality relation.

Sophisticated electronics and state of the art control algorithms ensure that optimum process control is maintained at all times with minimal operator intervention and achieving highest quality. Thanks to full support of the Modbus TCP, PROFINET (Conformance Class B) or EtherNet/IP, the 8619 can be integrated into most Industrial Ethernet environments. Therefore all important process values like measurement data, process diagnostics or device status can be easily integrated into the automation system.

Technical data

General data	
Mounting	Panel-mounted (stand. ¼ DIN housing for 92x92 mm cutout) Wall-mounted (- mounting plate)
Display	LC graphic display, light blue backlitged; 128x168 pixels resolution; German, English, French languages
Keypad	4 soft keys [F1] [F2] [F3] [F4] for dynamic functions 1 central navigation key with [↑] [↓] [→] [←] assignments
Data logger	Up to 16 values
Sensor monitor	Direct display and verification of measured sensor values
Clock	Real-time clock with date
Board slots	6

Dimensions [mm]



Materials	
Seal / Screws	Silicone / Stainless steel 316 (A4)
Support plate for terminals	Stainless steel 304
Terminal blocks	PBT, contact in gold-plated copper alloy
Port for an RJ45 connector	Contact in gold-plated copper alloy, thermoplastic
Display	PC
Front panel and keys	Silicone
Housing	
Panel-mounted	PPO (incl. fastening element)
Wall-mounted	PA66 (incl. fastening plate, cable gland, protecting cover (display), protecting cap (free terminal place), stiffener hinge)
Cover screws (wall-mounted version)	PVC
Protective cap (110...240 V AC supplied wall-mounted version)	Stainless steel 304

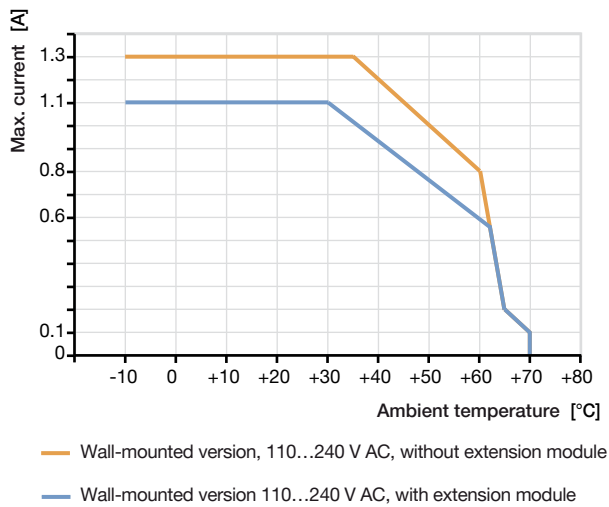
Technical data continued

Electrical data		
Device version	Panel-mounted – Mainboard	Wall-mounted – Power supply board
Operating voltage ("SUPPLY")	12...36 V DC, $\pm 10\%$, max. 2 A, filtered and regulated, SELV (safety extra low voltage) circuit with a non dangerous energy level	<ul style="list-style-type: none"> 12...36 V DC $\pm 10\%$, max. 2 A, filtered and regulated, SELV (safety extra low voltage) circuit with a non dangerous energy level 110...240 V AC, 50...60 Hz, max. 500 mA, integrated protection: 3.15 A time delay fuse ground cable cross-section: 1.5 mm²
Power consumption (of multiCELL device - without additional boards and outputs not connected)	Max. 1.5 VA	Max. 2 VA
Power charges ("PWR OUT" or "POWER OUT" acc. to version)	12...36 V DC, max. 1.8 A protected against polarity reversals	<ul style="list-style-type: none"> 12...36 V DC version: 12...36 V DC, max. 1.8 A; protected against polarity reversals 110...240 V AC version: 24 V DC $\pm 2\%$, filtered and regulated, SELV (safety extra low voltage) circuit with a non dangerous energy level, max 1.2 A, protected against polarity reversals The allowed max. current depends on the ambient temperature: see diagram on next page
Device version	Panel-mounted – Main module, pH/ORP, conductivity, input and output modules	Wall-mounted – Main module, pH/ORP, conductivity, input and output modules
Electrical connection	Terminal blocks or hybrid RJ45 connector	Terminal blocks or RJ45 connector
Recommended cable	Cable with maximum operating temperature greater than +90 °C	Cable with maximum operating temperature greater than +90 °C
External diameter	–	6...12 mm (4 mm if using a multiple entry seal)
Cross section of		
• Earth connection conductor	0.75...1.5 mm ²	Min. 1.5 mm ²
• Rigid H05(07) V-U	0.2...1.5 mm ² , stripped over 7 mm, shielded cable	0.2...1.5 mm ² , stripped over 7 mm, shielded cable
• Flexible H05(07) V-K	0.2...1.5 mm ² , stripped over 7 mm, shielded cable	0.2...1.5 mm ² , stripped over 7 mm, shielded cable
• Conductor with non-insulated lug	0.2...1.5 mm ² , stripped over 7 mm, shielded cable	0.2...1.5 mm ² , stripped over 7 mm, shielded cable
• Conductor with an insulated lug	0.2...0.75 mm ² , stripped over 7 mm, shielded cable	0.2...0.75 mm ² , stripped over 7 mm, shielded cable
Device version	Panel-mounted – Mainboard	Wall-mounted – Mainboard
Digital inputs DI1, DI2	Voltage: 0...36 V DC, input impedance 3 k Ω Switching threshold: $V_{on} = 5...36$ V DC, $V_{off} < 2$ V DC; Frequency: 0.5...2500 Hz Galvanic insulation, protected against reversed polarity of DC and voltage spikes	Voltage: 0...36 V DC, input impedance 3 k Ω Switching threshold: $V_{on} = 5...36$ V DC, $V_{off} < 2$ V DC; Frequency: 0.5...2500 Hz Galvanic insulation, protected against reversed polarity of DC and voltage spikes
Digital outputs DO1, DO2	Transistor: can be wired as PNP or NPN, galvanic insulation, protected against short circuit, max. 36 V DC, max. 700 mA if 1 DO per module is activated, max. 1 A if the 2 DO's per module are activated, max. 4 A for an Ethernet version if the device has 4 output modules; Operating modes: On/Off, Hysteresis, Window, PWM, PFM, Pulse; Frequency: max. 2000 Hz	Transistor: can be wired as PNP or NPN, galvanic insulation, protected against short circuit, max. 36 V DC, max. 700 mA if 1 DO per module is activated, max. 1 A if the 2 DO's per module are activated, max. 4 A for an Ethernet version if the device has 4 output modules; Operating modes: On/Off, Hysteresis, Window, PWM, PFM, Pulse; Frequency: max. 2000 Hz
Analogue output AO1, AO2	4...20 mA, can be wired as sourcing or sinking, galvanic insulation, protected against reversed polarity of DC, Max. loop impedance: 860 Ω at 30 V DC, 610 Ω at 24 V DC, 100 Ω at 12 V DC Resolution: 6 μ A	4...20 mA, can be wired as sourcing or sinking, galvanic insulation, protected against reversed polarity of DC, Max. loop impedance: 1100 Ω at 36 V DC, 610 Ω at 24 V DC, 100 Ω at 12 V DC Resolution: 6 μ A
Memory card Type/Capacity	SD (Secure Digital) or SDHC (Secure Digital High Capacity) / max. 8 GB Note: We recommend to use the 8 GB SDHC memory card available at Bürkert (see accessories) because it has been tested with and validated for the 8619 Transmitter/Controller. Another memory card may not operate correctly. With 8 values recorded every 10 sec., the 8 GB card allows continuous recording over 500 days	

Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Diagram

Max. allowed current in dependence of the ambient temperature (for wall-mounted version, 110...240 V AC)



Technical data additional modules

Input module	
Power consumption	0.1 VA
Analogue inputs AI1, AI2	Can be wired as sourcing or sinking, galvanic insulation
Current	Range: 0 or 3.5...22 mA Max. voltage: 36 V DC Impedance: 50 Ω Resolution: 1.5 μA
Voltage	Range: 0...2 or 5 or 10 V DC Max. voltage: 36 V DC Impedance: 110 kΩ Resolution: 1 mV
Error	±0.25 % of Reading
Digital inputs DI1, DI2	Voltage: 0...36 V DC, input impedance 3 kΩ Switching threshold : $V_{on} = 5...36$ V DC, $V_{off} < 2$ V DC; Frequency: 0.5...2500 Hz Galvanic insulation, protected against reversed polarity of DC and voltage spikes
Output module	
Power consumption	Max. 0.1 VA
Digital outputs DO1, DO2	Transistor: can be wired as PNP or NPN, galvanic insulation, protected against short circuit, max. 36 V DC, max. 700 mA if 1 DO per module is activated, max. 1 A if the 2 DO's per module are activated, max. 4 A for an Ethernet version if the device has 4 output modules; Operating modes: On/Off, Hysteresis, Window, PWM, PFM; Frequency: max. 2000 Hz
Analogue output AO1, AO2	4...20 mA, can be wired as sourcing or sinking, galvanic insulation, protected against reversed polarity of DC, Max. loop impedance: 1100 Ω at 36 V DC, 610 Ω at 24 V DC, 100 Ω at 12 V DC Resolution: 6 μA
4...20 mA output uncertainty	±0.5 % of the transmitted value

Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

pH/ORP module	
Power consumption	0.1 VA
pH/ORP input	Simultaneous pH and ORP measurement with input for electrochemical pH/ORP
Temperature input	Pt100/Pt1000, 2 or 3 wires
pH measurement	
Measuring range	-2.0...+16 pH or -600...+600 mV
Resolution	0.01 pH or 0.1 mV
Measurement deviation	±0.02 pH or 1 mV + error of the pH probe ¹⁾
Probe type	Electrochemical
ORP measurement	
Measuring range	-2000...+2000 mV
Resolution	0.1 mV
Measurement deviation	±1 mV + error of the ORP probe ¹⁾
Probe type	Electrochemical
Temperature measurement	
Measuring range	-25...+130 °C
Resolution	0.1 °C
Measurement deviation	±1 °C + error of the temperature probe ¹⁾
Probe type	Pt100/Pt1000, 2 or 3 wires
Conductivity module	
Resistance measurement	5.0 Ω...1 MΩ (without conductivity probe connected)
Power consumption	0.25 VA
Conductivity input	Operation with 2 or 4 pin technology sensors
Temperature input	Pt100/Pt1000, 2 or 3 wires
Conductivity measurement	
Measuring range	0 μS/cm...2 S/cm (depending on the conductivity cell)
Resolution	1 nS/cm
Measurement deviation	±0.5 % of Reading + error of the conductivity probe ¹⁾
Resistivity measurement	
Measuring range	0.5 Ω.cm...100 MΩ.cm (depending on the conductivity cell)
Resolution	0.1 Ω.cm
Measurement deviation	±0.5 % of Reading + error of the conductivity probe ¹⁾
Temperature measurement	
Measuring range	-40...+200 °C
Resolution	0.1 °C
Measurement deviation	±1 °C + error of the temperature probe ¹⁾
Probe type	Pt100/Pt1000, 2 or 3 wires
Ethernet module	
Power consumption	2.2 VA
Supported network protocols	Modbus TCP, PROFINET or EtherNet/IP
LEDs	2 Link/Act LEDs (yellow) 2 Link LEDs (green)
Electrical connection	2 ports for an RJ45 connector (Not provided – Note: to make sure the door of a wall-mounted Ethernet version can be fully closed, use RJ45 male connectors with maximum dimensions of 45 mm, including the bend radius of the Ethernet cable.)
Recommended cable	
Shielded cable	Minimum required: FTP
Minimum category	5e / CAT-5
Length	Maximum 100 m
Modbus TCP protocol	
Protocol	Internet protocol, version 4 (IPv4)
Network topology	Tree Star Line (open daisy chain)
IP configuration	Fixed IP BOOTP (Bootstrap Protocol) DHCP (Dynamic Host Configuration)
Transmission speed	10 or 100 MBit/s

¹⁾ see related probe data sheet

Technical data additional modules continued

PROFINET protocol	
PROFINET IO specification	V2.3
Network topology	Tree Star Ring (closed daisy chain) Line (open daisy chain)
Network management	LLDP (Link Layer Discovery Protocol) SNMP V1 (Simple Network Management Protocol) MIB (Management Information Base)
IP configuration	DCP (Discovery and Configuration Protocol) Manual (Device naming and IP setting)
Transmission speed	100 MBit/s full duplex
Maximum supported conformance class	CC-B
Media Redundancy (for ring topology)	MRP client is supported
GSDml file	Available at / Download from: www.burkert.com
EtherNet/IP	
Protocol	Internet protocol, version 4 (IPv4)
Network topology	Tree Star Ring (closed daisy chain) Line (open daisy chain)
IP configuration	Fixed IP BOOTP (Bootstrap Protocol) DHCP (Dynamic Host Configuration Protocol)
Transmission speed	10 or 100 MBit/s
Duplex modes	Half duplex, full duplex, auto-negotiation
MDI modes (Medium Dependant Interface)	Auto-MDIX
Predefined standard objects	Identity, Message Router, Assembly, Connection Manager, DLR, QoS, TCP/IP Interface, Ethernet Link object
Device specified objects	I/O main board M0, Functions, Extension modules, Ethernet module
EDS file	Available at / Download from: www.burkert.com
Environment conditions – Main module, pH/ORP, conductivity, input, output and Ethernet modules	
Ambient temperature	
Operation (with/without memory card¹⁾)	
Only Main module	Panel-mounted and 110...240 V AC wall-mounted version: -10...+70 °C 12...36 V DC wall-mounted version: -10...+75 °C
Min. 1 additional module	All versions: -10...+60 °C
Storage	All versions: -20...+70 °C, limited to -10...+70 °C if memory card is inserted
Relative humidity	
	< 85 %, without condensation
Height above sea level	
	Max. 2000 m

Standards, directives and certifications – Main module, pH/ORP, conductivity, input, output and Ethernet modules

Protection class	
Panel-mounted version	According to EN 60529 IP65 (panel-mounted, cabinet closed) IP20 (panel-mounted, inside the cabinet) NEMA250 4X (panel-mounted, in front of the closed cabinet)
Wall-mounted version	IP65, IP67, if the following conditions are met: - glands body tightened with a tightening torque of 5.5 Nm ± 20 %, made at factory - glands blanked off or wired - gland nuts tightened with a tightening torque of 4.5 Nm ± 20 % - housing closed - 4 screws of cover cross tightened with a tightening torque of 1.4 Nm ± 20 %

Standard and directives CE
The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)

Certifications

UL-Listed for
USA and Canada



61010-1 + CAN/CSA-C22.2 No. 61010-1

PROFINET



PROFINET Z11949

EtherNet/IP



Specific technical data of UL-Listed products for US and Canada

Intended for an inner

pollution input

V DC version	Pollution degree 2 acc. to EN 61010-1
V AC version	Pollution degree 3 acc. to EN 61010-1 if the following conditions are met: - housing tightly closed. - the 4 screws of the cover are tightened cross-wise at a torque of 1.4 Nm ± 20 %

Installation category

V DC version	Category I according to UL 61010-1
V AC version	Category II according to UL 61010-1

1) If a different memory card is used, observe the operating temperatures specified by its manufacturer

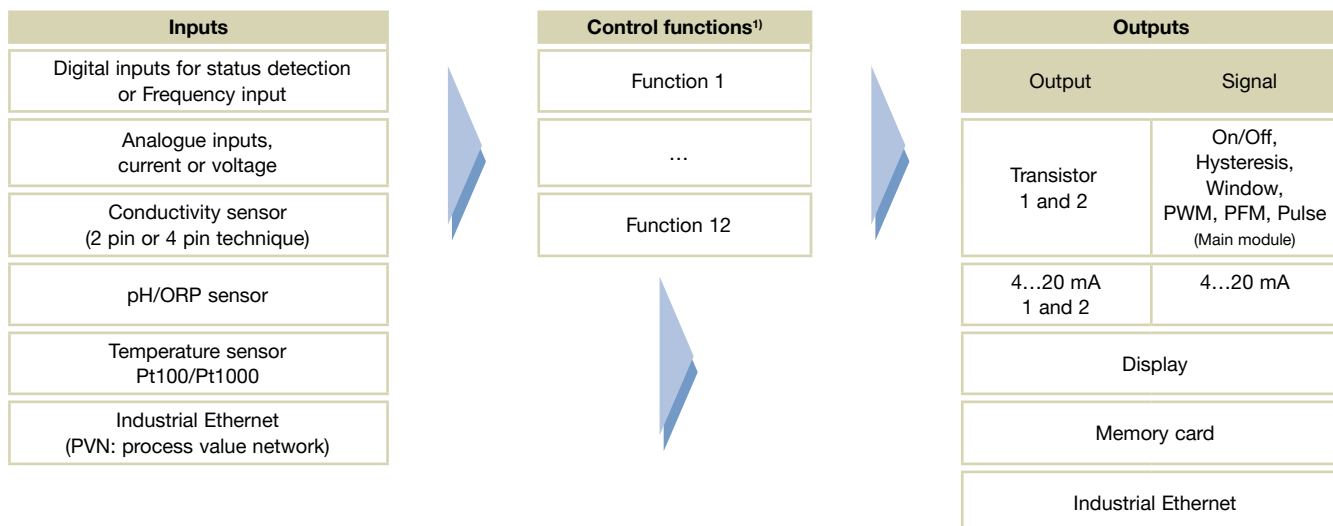
Functions

The transmitter/controller allows to allocate each sensor signal to a function fully configurable by the user (such as dosage, for example). According to the model the following functions are available as standard or as option.

8619

Functions	Availability	Formula	Example for usage
Arithmetic	Basic for all models	A + B, A - B, A * B, A / B	Arithmetic operation (addition, subtraction, multiplication and division) between 2 values. For addition and subtraction, the 2 values must have the same units, but for multiplication and division not necessarily. A and B can be constants, measured physical parameters, results of other active configured functions, the previous result of the same function, values sent by a PLC (PVN). The multiplication function is available from Software version B.00.01
PASS	Basic for all models	A / B [%]	A and B must have the same units and can be constants, measured physical parameters, results of other active configured functions, the previous result of the same function, values sent by a PLC (PVN) Calculates a flow ratio between 2 values. e.g: reverse osmosis
REJECT	Basic for all models	(1 - A / B) [%]	A and B must have the same units and can be constants, measured physical parameters, results of other active configured functions, the previous result of the same function, values sent by a PLC (PVN) Calculates a reject ratio between 2 values. e.g: reverse osmosis
DEVIAT	Basic for all models	(A / B - 1) [%]	Calculates a deviation ratio between 2 values.
MATH	As option	Permits to enter an equation which respects the following rules: <ul style="list-style-type: none"> • up to 125 characters; • up to 5 process values (A, B, C, D & E) • with possible operators: () ! ± ^ × ÷ % + - < > ≤ ≥ 	A, B, C, D, E can be constants, measured physical parameters, results of other active configured functions, the previous result of the same function, values sent by a PLC (PVN) e.g: (A*B)+(C*D)-E
PROP	Basic for all models		Calculates an output in proportion to a scaled input
ON/OFF	Basic for all models	On/Off control loop	For any type of input
Flow rate measurement	As base for model item no. 560 205, 560 213, 565 984, 565 985, 565 986, 565 987 for others as option		Allows both digital inputs to be used as frequency inputs for flow measurement (in standard for base unit) or coexistent with analytical modules (in option for others devices)
PID	As option	Continuous control loop	For any type of input and with internal or external setpoint
Time dosing	As option		e.g. for cooling tower application. Dosing of 1 or 2 biocides in the circuits, at fixed time intervals or by defining dosing during one week, with 2 dosings per day. Can be connected to an ON/OFF conductivity function for prebleed.
Special Chemical batch (Volume dosing)	As option		Specifically for cooling tower application. A defined volume of water is counted, then an actuator is energized during a defined time to add a chemical and the water volume being counted is resetted.
Concentration	As option		The concentration curves of NaCl, H ₂ SO ₄ , HNO ₃ , NaOH, HCl are implemented for use in complete concentration range and not only in low concentration.
Data logging on memory card	As option		Up to 16 values can be stored at a defined time interval.

Process diagram



1) The 12 functions can be activated simultaneously and independently, and up to 6 PID functions can be set; if this option is selected.

Ordering chart

Description	Inputs				Outputs			UL ²⁾ approvals	Article no.
	Digital (DI) (On/Off or frequency)	Analogue (AI) 0/4...20 mA current and/or 0...2, 0...5, 0...10 V DC voltage	Number and type of sensor raw signals	Pt100/Pt1000	Transistor (DO) (PWM or PFM or On/Off or pulse)	Analogue (AO) 4...20 mA	Network protocol		
Panel-mounted version, 12...36 V DC									
Base unit with flow measurement (Main module)	2	-	-	-	2	2	-	No	560205 🛒
								Yes	560213 🛒
Main module + 1 pH/ORP module	2	-	1 (pH/ORP)	1	2	2	-	No	560200 🛒
								Yes	560208 🛒
Main module + 2 pH/ORP modules + 1 output module	2	-	2 (pH/ORP)	2	4	4	-	No	560202 🛒
								Yes	560210 🛒
Main module + 1 conductivity module	2	-	1 (cond.)	1	2	2	-	No	560201 🛒
								Yes	560209 🛒
Main module + 2 conductivity modules + 1 output module	2	-	2 (cond.)	2	4	4	-	No	560203 🛒
								Yes	560211 🛒
Main module + 1 pH/ORP module + 1 conductivity module + 1 output module	2	-	1 (pH/ORP) + 1 (cond.)	2	4	4	-	No	560204 🛒
								Yes	560212 🛒
Main module + 1 input module	4	2	-	-	2	2	-	No	563960 🛒
								Yes	563961 🛒
Main module + 1 pH/ORP module + 1 input module + 1 output module	4	2	1 (pH/ORP)	1	4	4	-	No	563962 🛒
								Yes	563963 🛒



Ordering chart continued

8619

Description	Inputs				Outputs			UL ²⁾ approvals	Article no.	
	Digital (DI) (On/Off or frequency)	Analogue (AI) 0/4...20 mA current and/ or 0...2, 0...5, 0...10 V DC voltage	Number and type of sensor raw signals	Pt100/ Pt1000	Transistor (DO) (PWM or PFM or On/Off or pulse)	Analogue (AO) 4...20 mA	Network protocol			
Main module + 1 conductivity module + 1 input module + 1 output module	4	2	1 (cond.)	1	4	4	-	No	563964	
								Yes	563912	
Main module + 1 Ethernet module	2	-	-	-	2	2	-	Modbus TCP ³⁾	No	569259
								PROFINET ⁴⁾	No	569260
								EtherNet/IP ⁴⁾	Yes	569261
Main module + 1 pH/ORP module + 1 Ethernet module	2	-	1 (pH/ORP)	1	2	2	-	Modbus TCP ³⁾	No	569265
								PROFINET ⁴⁾	No	569266
								EtherNet/IP ⁴⁾	Yes	569267
Main module + 1 conductivity module + 1 Ethernet module	2	-	1 (cond.)	1	2	2	-	Modbus TCP ³⁾	No	569262
								PROFINET ⁴⁾	No	569263
								EtherNet/IP ⁴⁾	Yes	569264
Wall-mounted version, 12...36 V DC										
Base unit with flow measurement <small>(Main module)</small>	2	-	-	-	2	2	-	No	565984	
								Yes	565986	
Main module + 1 pH/ORP module	2	-	1 (pH/ORP)	1	2	2	-	No	565988	
								Yes	565990	
Main module + 2 pH/ORP modules + 1 output module	2	-	2 (pH/ORP)	2	4	4	-	No	565992	
								Yes	565994	
Main module + 1 conductivity module	2	-	1 (cond.)	1	2	2	-	No	565996	
								Yes	565998	
Main module + 2 conductivity modules + 1 output module	2	-	2 (cond.)	2	4	4	-	No	566000	
								Yes	566002	
Main module + 1 pH/ORP module + 1 conductivity module + 1 output module	2	-	1 (pH/ORP) + 1 (cond.)	2	4	4	-	No	566004	
								Yes	566006	
Main module + 1 input module	4	2	-	-	2	2	-	No	566008	
								Yes	566010	
Main module + 1 pH/ORP module + 1 input module + 1 output module	4	2	1 (pH/ORP)	1	4	4	-	No	566012	
								Yes	566014	
Main module + 1 conductivity module + 1 input module + 1 output module	4	2	1 (cond.)	1	4	4	-	No	566016	
								Yes	566018	


Ordering chart continued

Description	Inputs				Outputs			UL ²⁾ approvals	Article no.
	Digital (DI) (On/Off or frequency)	Analogue (AI) 0/4...20 mA current and/ or 0...2, 0...5, 0...10 V DC voltage	Number and type of sensor raw signals	Pt100/Pt1000	Transistor (DO) (PWM or PFM or On/Off or pulse)	Analogue (AO) 4...20 mA	Network protocol		
Main module + 1 Ethernet module	2	-	-	-	2	2	Modbus TCP ³⁾	No	569268
							PROFINET ⁴⁾	No	569269
							EtherNet/IP ⁴⁾	Yes	569270
Main module + 1 pH/ORP module + 1 Ethernet module	2	-	1 (pH/ORP)	1	2	2	Modbus TCP ³⁾	No	569274
							PROFINET ⁴⁾	No	569275
							EtherNet/IP ⁴⁾	Yes	569276
Main module + 1 conductivity module + 1 Ethernet module	2	-	1 (cond.)	1	2	2	Modbus TCP ³⁾	No	569271
							PROFINET ⁴⁾	No	569272
							EtherNet/IP ⁴⁾	Yes	569273
Wall-mounted version, 110...240 V AC									
Base unit with flow measurement (Main module)	2	-	-	-	2	2	-	No	565985
								Yes	565987
pH/ORP (Main module + 1 pH/ORP module)	2	-	1 (pH/ORP)	1	2	2	-	No	565989
								Yes	565991
pH/ORP (Main module + 2 pH/ORP modules + 1 output module)	2	-	2 (pH/ORP)	2	4	4	-	No	565993
								Yes	565995
Conductivity (Main module + 1 conductivity module)	2	-	1 (cond.)	1	2	2	-	No	565997
								Yes	565999
Conductivity (Main module + 2 conductivity modules + 1 output module)	2	-	2 (cond.)	2	4	4	-	No	566001
								Yes	566003
pH/ORP and conductivity (Main module + 1 pH/ORP module + 1 conductivity module + 1 output module)	2	-	1 (pH/ORP) + 1 (cond.)	2	4	4	-	No	566005
								Yes	566007
Input (Main module + 1 input module)	4	2	-	-	2	2	-	No	566009
								Yes	566011
pH/ORP and input (Main module + 1 pH/ORP module + 1 input module + 1 output module)	4	2	1 (pH/ORP)	1	4	4	-	No	566013
								Yes	566015
Conductivity + Input (Main module + 1 conductivity module + 1 input module + 1 output module)	4	2	1 (cond.)	1	4	4	-	No	566017
								Yes	566019

Ordering chart continued

8619

Description	Inputs				Outputs		Network protocol	UL ²⁾ approvals	Article no.
	Digital (DI) (On/Off or frequency)	Analogue (AI) 0/4...20 mA current and/ or 0...2, 0...5, 0...10 V DC voltage	Number and type of sensor raw signals	Pt100/ Pt1000	Transistor (DO) (PWM or PFM or On/Off or pulse)	Analogue (AO) 4...20 mA			
Ethernet (Main module + 1 Ethernet module)	2	-	-	-	2	2	Modbus TCP ²⁾	No	569277
							PROFINET ³⁾	No	569278
							EtherNet/IP ⁴⁾	Yes	569279
pH/ORP and Ethernet (Main module + 1 pH/ORP module + 1 Ethernet module)	2	-	1 (pH/ORP)	1	2	2	Modbus TCP ²⁾	No	569283
							PROFINET ³⁾	No	569284
							EtherNet/IP ⁴⁾	Yes	569285
Conductivity and Ethernet (Main module + 1 conductivity module + 1 Ethernet module)	2	-	1 (cond.)	1	2	2	Modbus TCP ²⁾	No	569280
							PROFINET ³⁾	No	569281
							EtherNet/IP ⁴⁾	Yes	569282

2)  UL-Listed (Measuring Equipment E237737). Pending for device with Ethernet module.

3) If you order a device with a Modbus TCP network protocol, it does not include the other 2. If you would then like to change it with a PROFINET or Ethernet/IP network, the Ethernet protocol must be ordered (see ordering chart for additional software functions).

4) If you order a device with a PROFINET or EtherNet/IP network protocol, it also contains the other two..

Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Accessories

Use the following order codes only in case you already own a 8619 and you like to add one or more functions to your device.

Note: Please don't forget to note down the Article no. and serial number (see the device label) of your multiCELL on your order.

Software option	Remark	Article no.
PID control	-	561836
Data Logger	SD card is not included.	561837
Chemical dosing (e.g. cooling tower)	The "Dosing" option also activates the "Flow" option if it does not exist by default in the device.	561838
Flow measurement	Is already included in the base unit device (560205 and 560213)	561839
Concentration measurement of selected fluids	Requires at least one conductivity hardware module	561840
Protocols Ethernet: Modbus TCP, PROFINET, EtherNet/IP	Ethernet-Module takes 2 slots. (Available only from Software version B.00.01; Already included in the device with a PROFINET or Ethernet/IP network protocol)	569286
MATH function	-	569848

Note: The function upload and download of the complete data set of the 8619 is available as standard and does not need the data logger option

Description	Article no.
SDHC Memory Card - Class 10 - 8 GB	564072
Mounting set for pipe mounting	564596
Adapter for cable glands M20 x 1.5 with interface connector RJ45-M12 code D	569242

mxCONTROL Multifunction Controller

8620

- Data and event logging
- One controller hardware with dozens of configuration possibilities quickly downloaded via SD card (supplied) or via USB interface
- Ethernet or modem communication with email or call event notification & numerous input/output control signals



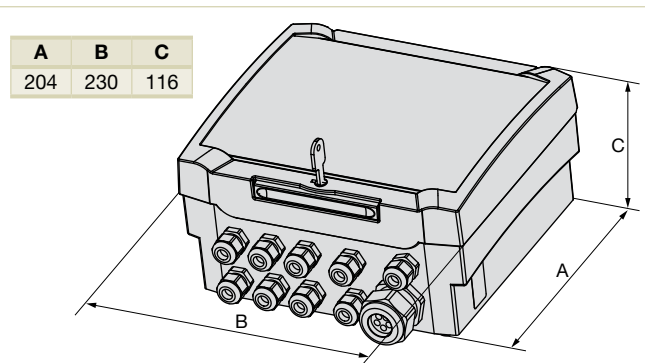
The mxCONTROL multifunction controller, is a microprocessor controller designed to automate the control of process variables within a water treatment system (e.g. boiler, cooling tower or Reverse Osmosis system). wSophisticated electronics and state of the art control algorithms ensure that optimum process control is maintained at all times, with minimal operator intervention.

Note: To ease configuration and parameterization a free PC-Tool is available at www.burkert.com

Technical data

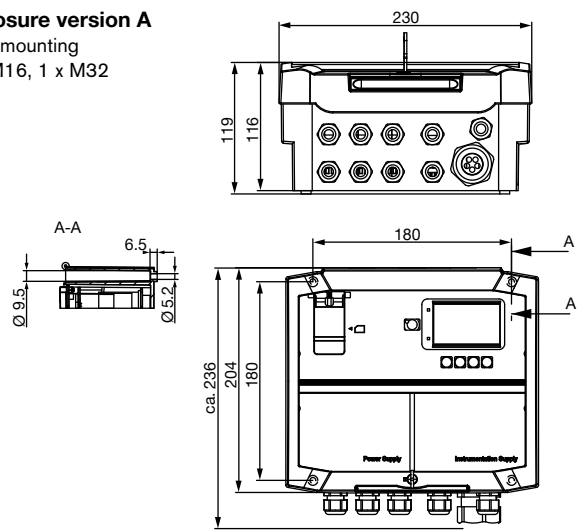
General data	
Enclosure	With sealed keypad and display
Enclosure outer dimensions L x W x H	230 x 204 x 119 mm (without cable glands)
Enclosure material	PC (UL94) with transparent door and key
Weight	1.8 kg
Protection class	IP65 with door closed and properly sealed cable glands, waterproof according to NEMA 4X, additional cover of USB port and SD card slot
Graphic display, large and backlit	128 x 64 dots, two coloured (blue and white)
Keypads for manual operation	5 keys for user inputs
Operating temperature	0...+50 °C
Storage temperature	-20...+60 °C
Electrical details	
Mains voltage (power supply)	100...240 V AC, 50/60 Hz, no adjustment necessary
Power consumption (of mxCONTROL device)	Max. 35 W (incl. sensor supply at Instrumentation Supply part)
Total power consumption (using the internal power distribution)	Max. 2400 W (at 240 V AC) or max. 1100 W (at 110 V AC) incl. connected actuators at Power Supply part
Total input current I_{in} (using internal power distribution)	Max. 10 A
Total output current I_{out} (using internal power distribution)	< 10 A (incl. device power consumption of 35 W)
Instrumentation supply for sensors/transistor outputs	24 V DC (±5 %), max. 1.04 A (25 W), short circuit and overload protected
Fuse for device protection (Instrumentation)	Internal: electronic fuse, recovers automatically after fault condition is removed
Fuse for relays outputs	Relay outputs to be fused in external installation according to actuators
Inrush current (typ.)	Cold start: 30 A/230 V AC

Dimensions [mm]



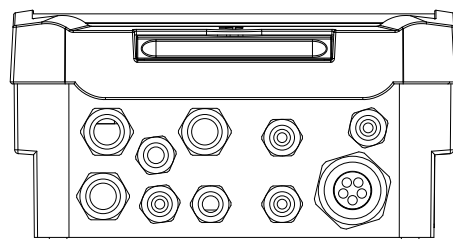
Enclosure version A

Wall mounting
9 x M16, 1 x M32

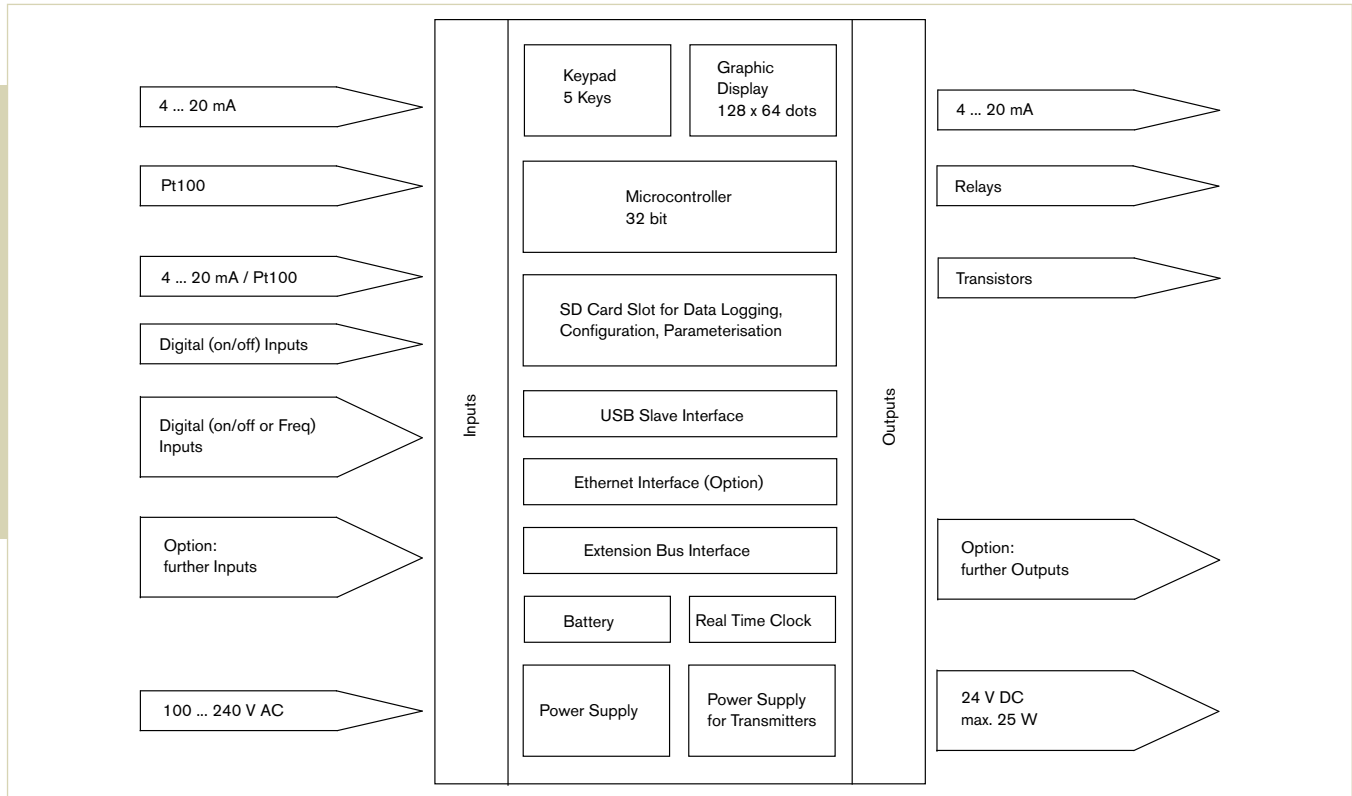


Enclosure version B

Wall mounting, 6 x M16, 3 x M20, 1 x M32



Hardware structure



Control functions

General PID control

PID process controller for fixed value, subsequent value or cascade control

Conductivity control

On/off or PI control – continuous dosing through pulse frequency modulation (PFM), PWM or 4...20 mA analog output, automatic or manual drain

Corrosion display

No controller function, only display of measuring values; impact on general alarm output

pH control

PI control – continuous dosing through pulse frequency modulation (PFM), PWM or 4...20 mA analog output

Module for dosing of oxygen scavenger media

Proportional dosing for flow and oxygen content depending on flow with or without temperature input

Chlorine/Redox Control

PI control – continuous dosing through pulse frequency modulation (PFM), PWM or 4...20 mA analog output

Batch dosing

Allows batching of a chemical based on volume of water added

Biocide dosing

14-day program, 8 dosing events per channel/per day; Pre-bleed function to optimize biocide kill time





Monitor module

Display of process value

Totalizer function

Single or dual channel flow totalizer (each having two manually resettable totalizers)

Ordering chart

Electrical connection	Hardware version	Input					Output			Communication Ethernet	Body version	Article no.
		Analogue input 4...20 mA	Pt100 - Input	Analogue input 4...20 mA or Pt100	Digital (on/off) input	Digital (on/off or Freq) input	Analogue output 4...20 mA	Relay output	Transistor output			
Screw terminals	1	-	-	4	-	4	-	5	-	-	A	188133 
		-	-	4	-	4	4	5	4	X	A	188136 
Spring type terminals	2	4	2	-	4	4	2	5	2	-	B	188137 
		4	2	-	4	4	2	5	2	X	B	188138 



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