



Type 5411 can be combine with...



**Type 2508**

Cable plug



**Type 2510/11**

Cable plug ASI



**Type 2012**

Globe valve



**Type 2030**

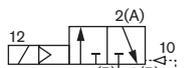
Diaphragm valve

## 3/2-Way Pneumatic Solenoid Valve

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

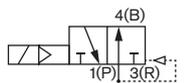
Type 5411 is a pilot operated 3/2-way solenoid valve with manual override as standard. The housing includes servo piston seals with the seat seal. Through pilot channels the servo piston is either loaded with input pressure or released. To switch a minimum pressure difference of 1 bar is required. The vent port is integrated as a sintered bronze silencer directly in the valve housing. The valves can be combined (up to 6 valves) on a single-channel manifold with common pressure supply.

### Circuit function C



3/2-way valve, servo-assisted, outlet 2 normally relieved

### Circuit function D



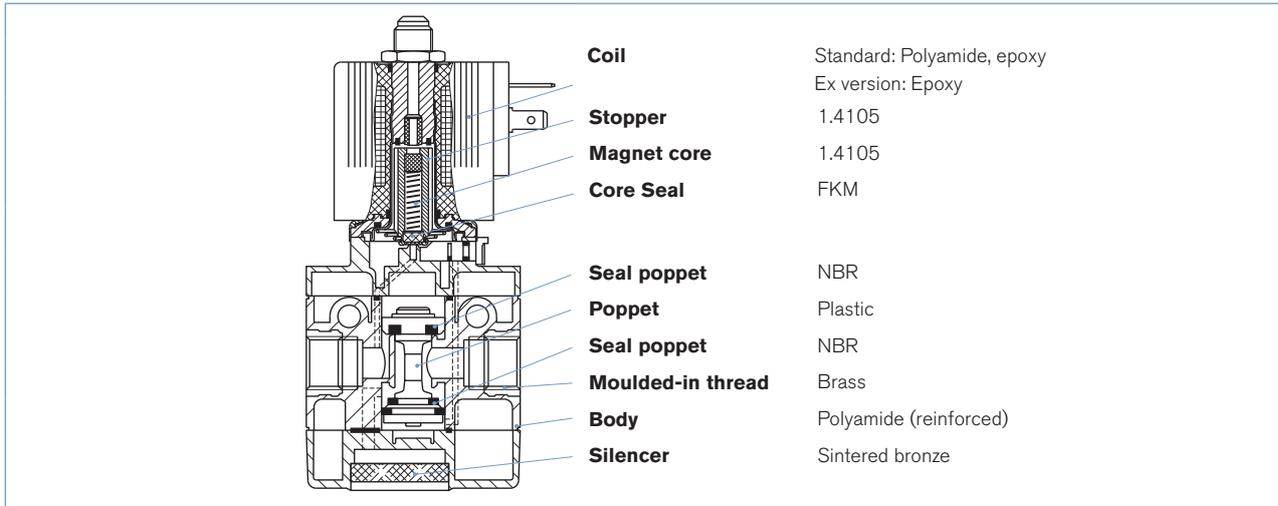
3/2-way valve, servo-assisted, outlet 2 normally pressurized

Technical data	
<b>Orifice</b>	DN 6.0 mm
<b>Port connection</b>	G 1/4
<b>Body material</b>	Polyamide (reinforced) with moulded-in brass threads
<b>Coil material</b>	Polyamide, Epoxy
<b>Seal material</b>	NBR
<b>Medium</b>	neutral medium, e.g. lubricated or unlubricated compressed air
<b>Air pressure quality</b>	ISO 8573-1:2010, class 7.4.4*
<b>Medium Temperature</b>	-10 to +60 °C
<b>Medium pressure</b>	1 to 10 bar
<b>Ambient Temperature</b>	max. 55 °C
<b>QnN-Value air</b>	900 l/min
<b>Operating voltage</b>	024 V DC 024/110/230 V/50-60Hz
<b>Voltage tolerance</b>	± 10%
<b>Power consumption</b>	version with V DC voltage: 2 W version with V AC voltage: 11 VA (inrush), 6 VA (hold)
<b>Response time</b>	opening: 50 ms (Pressure rise 0 to 90%) closing: 30 ms (Pressure drop 100 to 10%)
<b>Duty cycle</b>	100% continuously rated
<b>Electrical connection</b>	Tag connectors according to DIN 43650 (previously DIN 43650) Form A for cable plug Type 2508
<b>Schutzart</b>	IP65 with cable plug
<b>Installation</b>	As required, preferably with solenoid system upright; Air exhausted from the relief port with pressed sintered bronze silencer must not be impeded.

**Flow rate:** QnN-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

\* 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.

## Materials



## Circuit function C and D

**Circuit function C**

**Position power-off:**  
The space below the piston is normally relieved to the outside via the pilot valve. The compressed air from the connection (P) pushes the piston downward and closes the upper seat, the connection (A) is relieved via the lower seat.

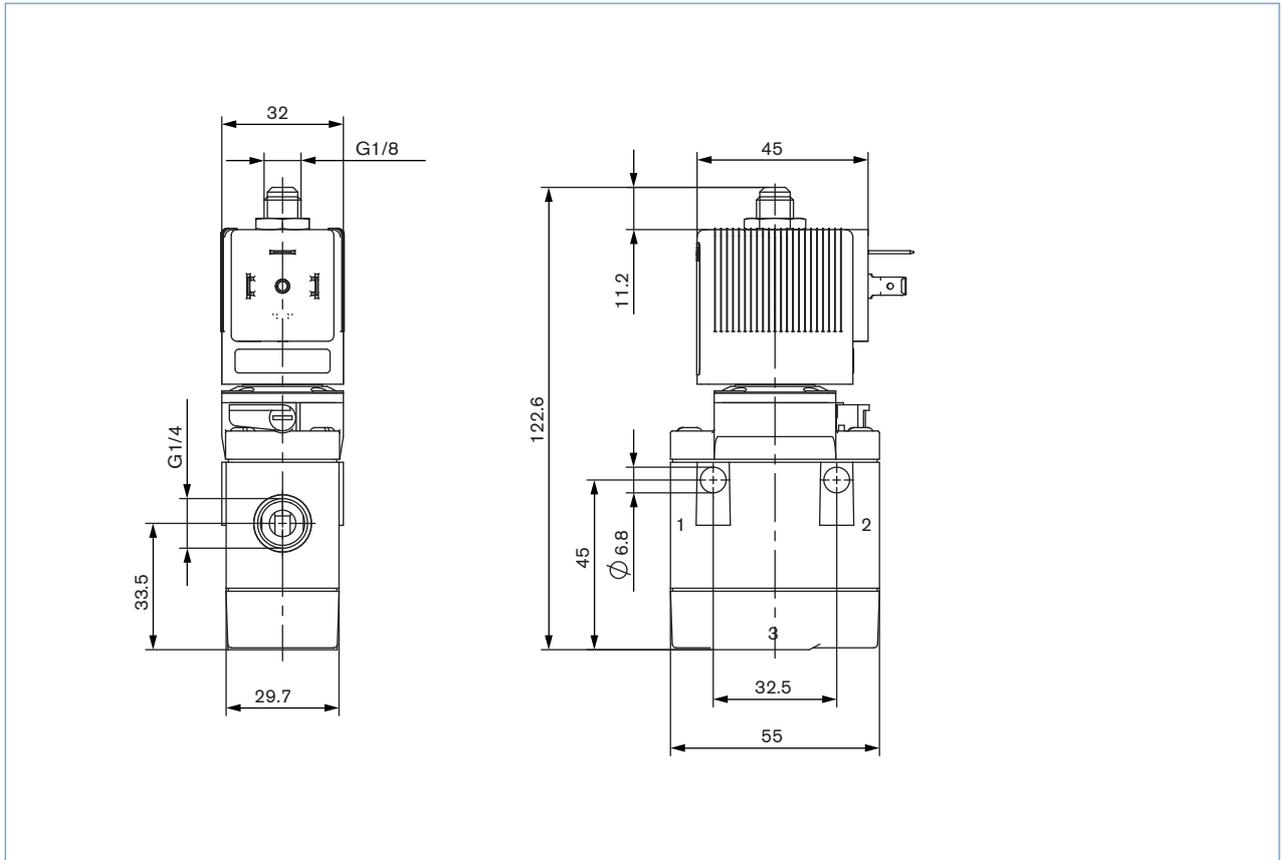
**Position after switching on the current:**  
The pilot valve opens the pilot bore and exposes the piston from below to pressure. Through the large surfaces on the actuation side, the piston is pushed up, closes the lower seat, and opens the connection from (P) to (A) through the upper seat.

**Circuit function D**

**Position power-off:**  
The space above the piston is normally relieved to the outside via the pilot valve. The compressed air from the connection (P) pushes the piston upward and closes the lower seat, the connection from (P) to (B) is open.

**Position after switching on the current:**  
The pilot valve opens the pilot bore and exposes the piston from above to pressure. Through the large surfaces on the actuation side, the piston is pushed down, closes the upper seat, the connection (B) is relieved via the lower seat.

## Dimensions - standard version [mm]



## Ordering chart - standard versions

## Version with manual override, NBR seal

	Circuit function	Orifice [mm]	Port connection	Q <sub>N</sub> value air l/m	Pressure range [bar]	Power consumption [W]	Voltage/Frequency [V/Hz]	Item no.
<b>C</b> 	3/2-way valve, servo-assisted, outlet 2 normally relieved	6	G 1/4	900	1-10	2	024/DC	134 607
							024/50-60	134 608
							110/50-60	134 609
							230/50-60	134 610
<b>D</b> 	3/2-way valve, servo-assisted, outlet 2 normally pressurized	6	G 1/4	900	1-10	2	024/DC	134 611
							024/50-60	134 612
							110/50-60	134 613
							230/50-60	134 614

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

## Type 5411 – ATEX/IECEX version



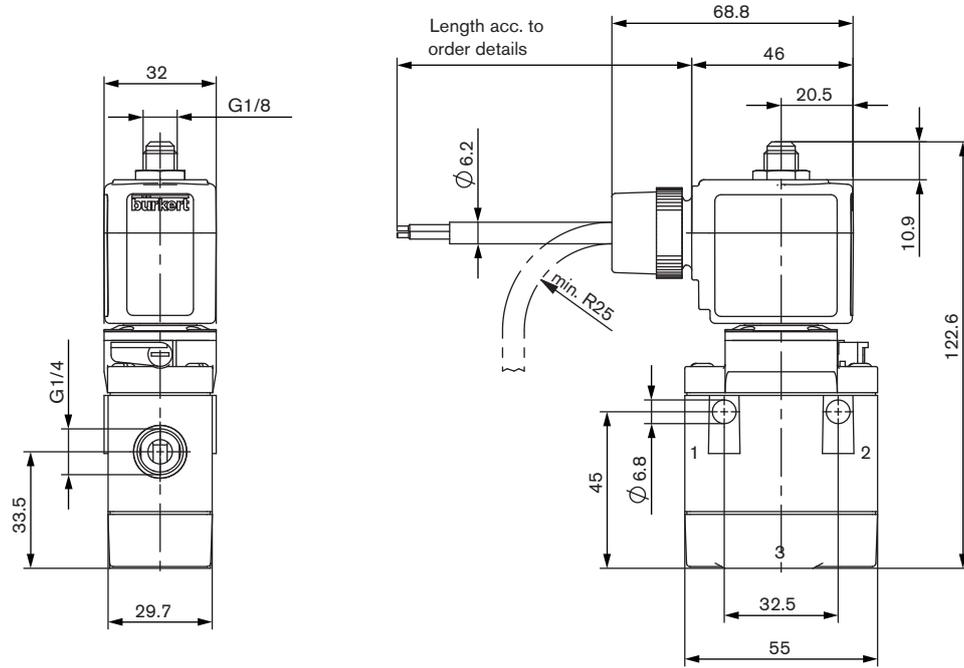
The approval Ex m is achieved by the mounting of an approved push-over coil. The cable connection and the cable are non-detachable and sealed together with the valve. The valves can be used individually or in blocks.

Technical data	
<b>Body material</b>	Polyamide
<b>Seal material</b>	NBR
<b>Medium</b>	neutral medium, e.g. lubricated or unlubricated compressed air
<b>Air pressure quality</b>	ISO 8573-1:2010, class 7.4.4*
<b>Medium temperature</b>	-10 °C to +60 °C
<b>Ambient temperature</b>	
Single mounting	-30 °C to +60 °C
Block mounting	-30 °C to +50 °C
<b>Port connection</b>	G1/4
<b>Operating voltage</b>	24/ 110/ 230 V UC
<b>Voltage tolerance</b>	+10%
<b>Duty cycle</b>	100% continuously rated
<b>Electrical connection</b>	3m cable, moulded Junction box (without fuse), moulded
<b>Protection class</b>	IP65
<b>Type of protection</b>	
with moulded cable	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
with junction box	EPS 16 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
<b>Installation</b>	As required, preferably with actuator upright

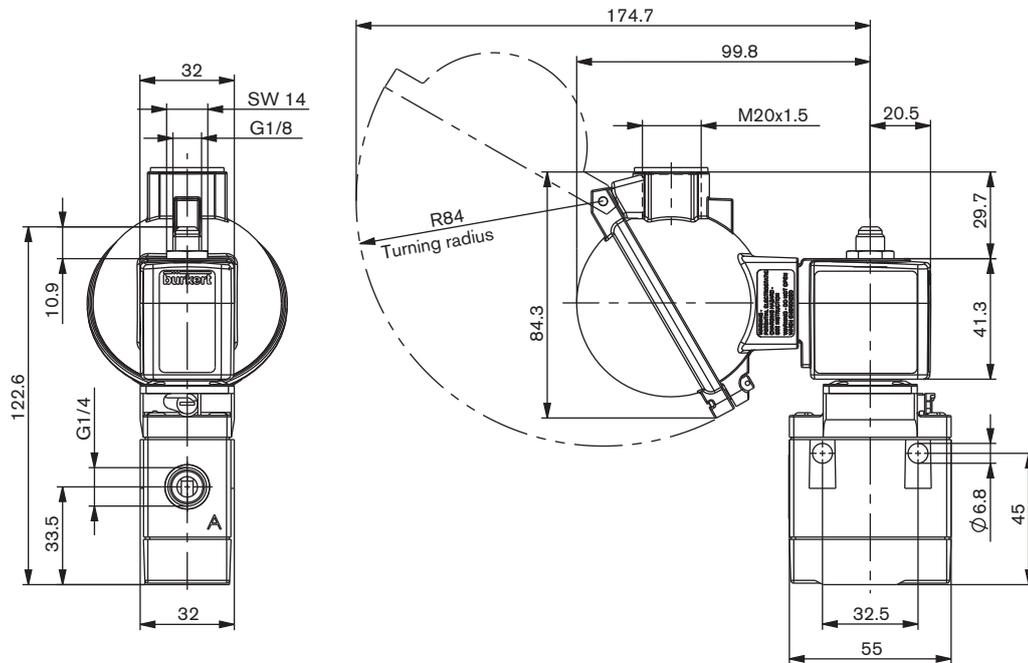
\* To prevent freezing of the expanded compressed air, the pressure dew point must be at least 10 K lower than the temperature of the medium.

Dimensions ATEX/IECEx versions [mm]

Version with moulded cable (3 m)



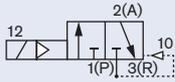
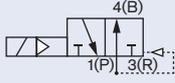
Version with junction box



## Ordering charts - ATEX/IECEX versions

## 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 5 K.

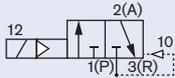
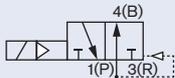
	Circuit function	Orifice [mm]	Port connection	Q <sub>Nn</sub> value air l/m	Pressure range [bar]	Power consumption [W]	Voltage/Frequency [V/Hz]	Item no.
<b>C</b> 	3/2-way valve, servo-assisted, outlet 2 normally relieved	6	G 1/4	900	1-10	3	024/UC	566 767
							110/UC	x
							230/UC	x
<b>D</b> 	3/2-way valve, servo-assisted, outlet 2 normally pressurized	6	G 1/4	900	1-10	3	024/UC	x
							110/UC	x
							230/UC	x

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

x on request

## 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 5 K.

	Circuit function	Orifice [mm]	Port connection	Q <sub>Nn</sub> value air l/m	Pressure range [bar]	Power consumption [W]	Voltage/Frequency [V/Hz]	Item no.
<b>C</b> 	3/2-way valve, servo-assisted, outlet 2 normally relieved	6	G 1/4	900	1-10	5	024/UC	288 806
							048/UC	x
							110/UC	x
							230/UC	295 864
<b>D</b> 	3/2-way valve, servo-assisted, outlet 2 normally pressurized	6	G 1/4	900	1-10	5	024/UC	x
							048/UC	x
							110/UC	x
							230/UC	x

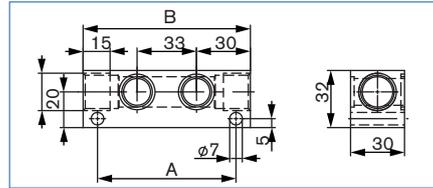
**Note:** To switch a pressure difference of 1 bar is required.

x on request

## Ordering chart for accessories

### Manifold in Aluminium with banjo bolts and seals

Manifold	Hole spacing A	Total length B	Item no.
2 valves	77	93	005 811
3 valves	110	126	005 717
4 valves	143	159	005 843
5 valves	176	192	005 776
6 valves	209	225	005 718



### Cable plug Type 2508 acc. to DIN 43650 Form A

Description	Voltage	Item no.
Standard cable plug	0-250 V AC/DC	008 376
with LED	12-24 V AC/DC	008 360
with LED	100-120V AC/DC	008 361
with LED and varistor	12-24 V AC/DC	008 367
with LED and varistor	100-120V AC/DC	008 368
with LED and varistor	200-240 V AC/DC	008 369

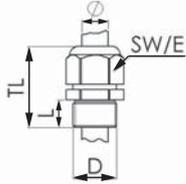
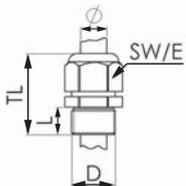
**Note:** The delivery of a cable plug includes the flat seal and fixing screw.

A wide selection of further cable plugs is available. Please refer to datasheet Type 2508.

**Accessories (continued)**

**Ex-Cable gland**

(polyamide version included in delivery / surcharge applied for brass nickel plated version)

Photo	Description	Ex Approvals		Item no	Drawing										
		Certification	Identifica-tion												
	Brass, nickel-plated, 6-13 mm	PTB 04 ATEX 1112 X, IECEx PTB 13.0027X	II 2 G Ex e IIC Gb, II 2 D Ex tb IIIC Db IP68,	773 278	 <table border="1"> <tr><td>TL</td><td>29-37 mm</td></tr> <tr><td>L</td><td>6 mm</td></tr> <tr><td>D</td><td>20</td></tr> <tr><td>SW</td><td>24 mm</td></tr> <tr><td>E</td><td>27 mm</td></tr> </table>	TL	29-37 mm	L	6 mm	D	20	SW	24 mm	E	27 mm
TL	29-37 mm														
L	6 mm														
D	20														
SW	24 mm														
E	27 mm														
	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	773 277	 <table border="1"> <tr><td>TL</td><td>36-45 mm</td></tr> <tr><td>L</td><td>10 mm</td></tr> <tr><td>D</td><td>20</td></tr> <tr><td>SW</td><td>24 mm</td></tr> <tr><td>E</td><td>28 mm</td></tr> </table>	TL	36-45 mm	L	10 mm	D	20	SW	24 mm	E	28 mm
TL	36-45 mm														
L	10 mm														
D	20														
SW	24 mm														
E	28 mm														

**Special tool to turn the junction box (not included in delivery)**

Photo	Description	Item no.
	Set SC02-AC10 Special wrench Service Manual	293 488

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In case of special application conditions, please consult for advice.

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