

3/2 Directional Control Valves



DN 8 and 12

For aggressive fluids

Direct solenoid operated poppet valves

Internal thread G 1/2 and 1/2-14 NPT

Operating pressure 0 to 100 bar (see table)

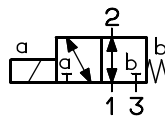
Catalog Register

A 14

Publication 7500933.06.07.98

Description

Fluids:	Dependent on chemical resistance of material
Flow direction:	Optional
Temperature min.:	FKM -10°C EPDM -25 °C (-40 °C)
Temperature max.:	Fluid +80 °C Ambience +60 °C
Switching cycles:	100/min
Mounting position:	Optional, preferably solenoid vertical
Materials used	
– Body:	St. steel 1.4571 (AISI 316 Ti)
– Seat seal:	FKM PTFE
– Inner parts:	St. steel 1.4112 (AISI 440 B) St. steel 1.4104 (AISI 430 F), 1.4571 (AISI 316 Ti)
– Sleeves	FKM (Viton) PTFE (Teflon)



Features

- | Working from 0 bar up
- | Easily interchangeable solenoid
- | Suited for fine vacuum:
 - with sleeves up to $1,33 \times 10^{-2}$ mbar
 - without sleeves $1,33 \times 10^{-3}$ mbar
- | DVGW approvals
- | Semi-automatic designs
- | Protection classes IP 65, EEx m, EEx d

Switching function:
Pressure connection at 1, 2, or 3
Multi-purpose valve

Parameters

Valves in Protection Classes IP 65 and EEx me II T4 / T5

DN	Line connection	Operating pressure [bar]			k _v -value (Cv (US) = k _v x 1.2)		Material Seat seal	Weight [kg]	Dimensional drawing No.	Cat. No. *)			Features
		min.	max. Gases	Liquids up to 40 mm ³ /s	Path 1-2	Path 2-3				Valve	Optional Solenoid DC	Solenoid AC	
8	G 1/2	0	-	3	0,78	1,10	PTFE ¹⁾	2,8	01	2413000.	1300	1301	
8	G 1/2	0	3	3	0,78	1,10	FKM ¹⁾	2,8	01	2413006.	1300	1301	
8	G 1/2	0	15	15	0,78	1,10	FKM ²⁾	2,8	01	2413106.	1300	1301	
8	1/2 NPT	0	15	15	0,78	1,10	FKM ²⁾	2,8	01	2413124.	1300	1301	
8	G 1/2	0	25	25	0,78	1,10	FKM ²⁾	2,9	03	2413116.	1300	1301	Semi-automatic
8	G 1/2	0	-	15	0,78	1,10	PTFE ³⁾	2,8	01	2413150.	1300	1301	
12	G 1/2	0	-	3	1,65	2,17	PTFE ¹⁾	4,2	02	2413200.	1500	1501	
12	G 1/2	0	3	3	1,65	2,17	FKM ¹⁾	4,2	02	2413206.	1500	1501	
12	G 1/2	0	12	12	1,25	1,69	FKM ²⁾	3,2	01	2413306.	1300	1301	
12	G 1/2	0	10	-	1,25	1,69	FKM ²⁾	3,2	01	2413341.	1300	1301	DVGW
12	1/2 NPT	0	10	-	1,25	1,69	FKM ²⁾	3,2	01	2413332.	1300	1301	DVGW
12	G 1/2	0	25	25	1,25	1,69	FKM ²⁾	3,2	03	2413321.	1300	1301	Semi-automatic
12	G 1/2	0	-	12	1,25	1,69	PTFE ³⁾	3,2	01	2413350.	1300	1301	
12	1/2 NPT	0	-	12	1,25	1,69	PTFE ³⁾	3,2	01	2413355.	1300	1301	
12	G 1/2	0	-	12	1,25	1,69	PTFE ⁴⁾	3,2	01	2413356.	1300	1301	
12	G 1/2	0	25	25	1,65	2,17	FKM ²⁾	4,2	02	2413404.	1500	1501	
12	G 1/2	0	-	25	1,65	2,17	PTFE ³⁾	4,2	02	2413450.	1500	1501	
12	G 1/2	0	-	25	1,65	2,17	PTFE ⁴⁾	4,2	02	2413454.	1500	1501	
12	G 1/2	0	40	40	1,25	1,69	FKM ²⁾	4,2	02	2413504.	1500	1501	
12	G 1/2	0	-	40	1,25	1,69	PTFE ³⁾	4,2	02	2413550.	1500	1501	
12	G 1/2	0	85	85	1,25	1,69	PTFE ³⁾	4,2	02	2413535.	1500	1501	
12	G 1/2	0	-	100	1,13	1,27	St ²⁾	4,2	02	2413600.	1500	1501	

*) Solenoids in Protection Class EEx me (Group 13xx) 1440 DC / 1441 AC
(Group 15xx) 1570 DC / 1571 AC.

State voltage [V] and frequency [Hz]

Using additional unions, these valves can also be supplied with port sizes G 1/4 or G 3/8.
For technical data, please see page 5.

Valves in Protection Classes EEx d IIC T4 / T5 / T6

DN	Line connection	Operating pressure [bar]			k _v -value (Cv (US) = k _v x 1.2)		Material Seat seal	Weight [kg]	Dimensional drawing No.	Cat. No. *)			Features
		min.	max. Gases	Liquids up to 40 mm ³ /s	Path 1-2	Path 2-3				Valve	Optional Solenoid DC	Solenoid AC	
8	G 1/2	0	15	15	0,78	1,10	FKM ²⁾	5,8	04	2413109.	1386	1387	
8	1/2 NPT	0	15	15	0,78	1,10	FKM ²⁾	5,8	04	2413128.	1386	1387	
8	1/2 NPT	0	25	25	0,78	1,10	FKM ²⁾	5,9	05	2413127.	1386	1387	Semi-automatic
8	G 1/2	0	-	15	0,78	1,10	PTFE ³⁾	5,8	04	2413151.	1386	1387	
8	1/4 NPT	0	30	30	0,78	1,10	FKM ²⁾	5,8	04	2413147.	1386	1387	
12	G 1/2	0	12	12	1,25	1,69	FKM ²⁾	6,2	04	2413309.	1386	1387	
12	1/2 NPT	0	12	12	1,25	1,69	FKM ²⁾	6,2	04	2413331.	1386	1387	
12	G 1/2	0	25	25	1,25	1,69	FKM ²⁾	6,2	05	2413320.	1386	1387	Semi-automatic
12	G 1/2	0	-	12	1,25	1,69	PTFE ³⁾	6,2	04	2413351.	1386	1387	
12	G 1/2	0	25	25	1,65	2,17	FKM ²⁾	6,4	04	2413406.	1586	1587	
12	G 1/2	0	-	25	1,65	2,17	PTFE ³⁾	6,4	04	2413451.	1586	1587	
12	G 1/2	0	-	25	1,65	2,17	PTFE ⁴⁾	6,4	04	2413455.	1586	1587	
12	G 1/2	0	40	40	1,25	1,69	FKM ²⁾	6,4	04	2413506.	1586	1587	
12	G 1/2	0	-	40	1,25	1,69	PTFE ³⁾	6,4	04	2413551.	1586	1587	
12	G 1/2	0	85	85	1,25	1,69	PTFE ³⁾	6,4	04	2413536.	1586	1587	
12	G 1/2	0	-	100	1,13	1,27	Stahl ²⁾	6,4	04	2413602.	1586	1587	
12	G 1/2	0	-	100	1,13	1,27	Stahl ³⁾	6,4	04	2413609.	1586	1587	

- 1) Without sleeves, O-rings FKM
 2) Sleeves and O-rings FKM
 3) PTFE sleeves O-rings FKM
 4) PTFE sleeves O-rings FEP-encased

State voltage [V] and frequency [Hz]

Solenoids

Standard voltages	DC	AC 40 to 60 Hz	Other voltages on request
	24 V	24 V 110 V 220 V 230 V	

Design to VDE 0580
100 % duty cycle

Current draw:

Solenoid	DC	Solenoid AC		
		Inrush	Holding	
1300	20 W	1301	24 VA	24 VA
1386	20 W	1387	24 VA	24 VA
1500	39 W	1501	42 VA	42 VA
1586	39 W	1587	42 VA	42 VA

Degree of protection to DIN 40050: IP 65
Cable gland Pg 13,5

For more technical details on solenoids, see:

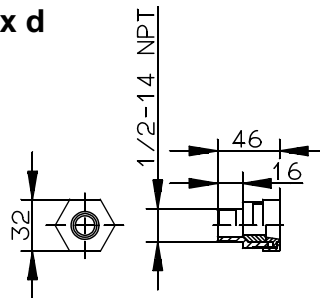
For solenoids 1300/1301 + 1440/1441 + 1386/1387 Publication 7500779
For solenoids 1500/1501 + 1570/1571 + 1586/1587 Publication 7500778

Accessories for solenoids in Protection Class EEx d

1/2 to 14 NPT cable gland in Protection Class EEx d IIC

For cable dia. 6 to 9 mm
Cat. No. **0681289**

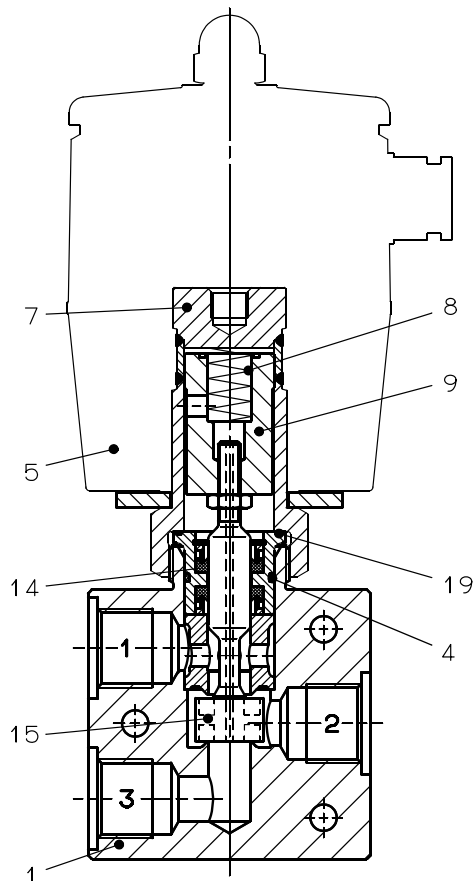
For cable dia. 9 to 12 mm
Cat. No. **0681287**



Other versions available on request

- | With manual override
- | With switching position monitoring (path-dependent):
Mechanical/electrically - Inductive
- | Solenoid for higher temperatures

Sectional drawing



- 1 Body
- 4 O-ring *
- 5 Core tube
- 7 Solenoid
- 8 Spring *
- 9 Plunger
- 14 Grooved ring *
- 15 Spindle assly. *
- 19 O-ring *

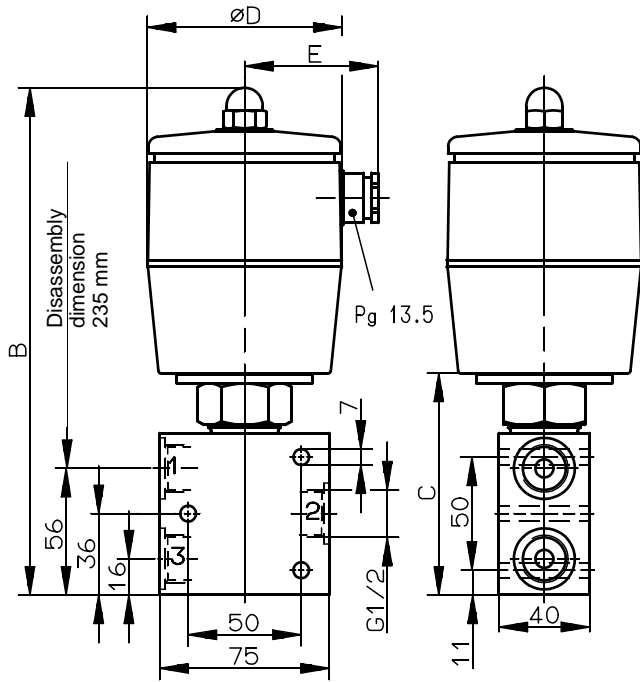
All parts marked with an asterisk are enclosed in spare part kits.
When ordering spares, please also state valve Cat. No.

2413100

Spare part kits

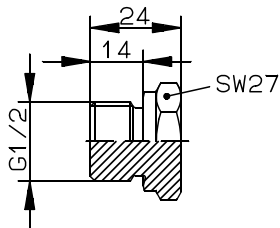
Cat. No. Valve	Cat. No. Spare parts kit
2413000	0605479
2413006	0605480
2413106, -09, -24, -28, -47	0592445
2413150, -51	0607559
2413200	0605481
2413206	0605478
2413306, -09, -31	0595107
2413332, -41	0604194
2413350, -51, -55	0607558
2413404, -06	0593290
2413450, -51	0607557
2413504, -06	0598573
2413550, -51	0607575
2413535, -36	0605498
2413600, -02	0593288
2413609	0607397

Dimensional drawings 01/02 [mm]

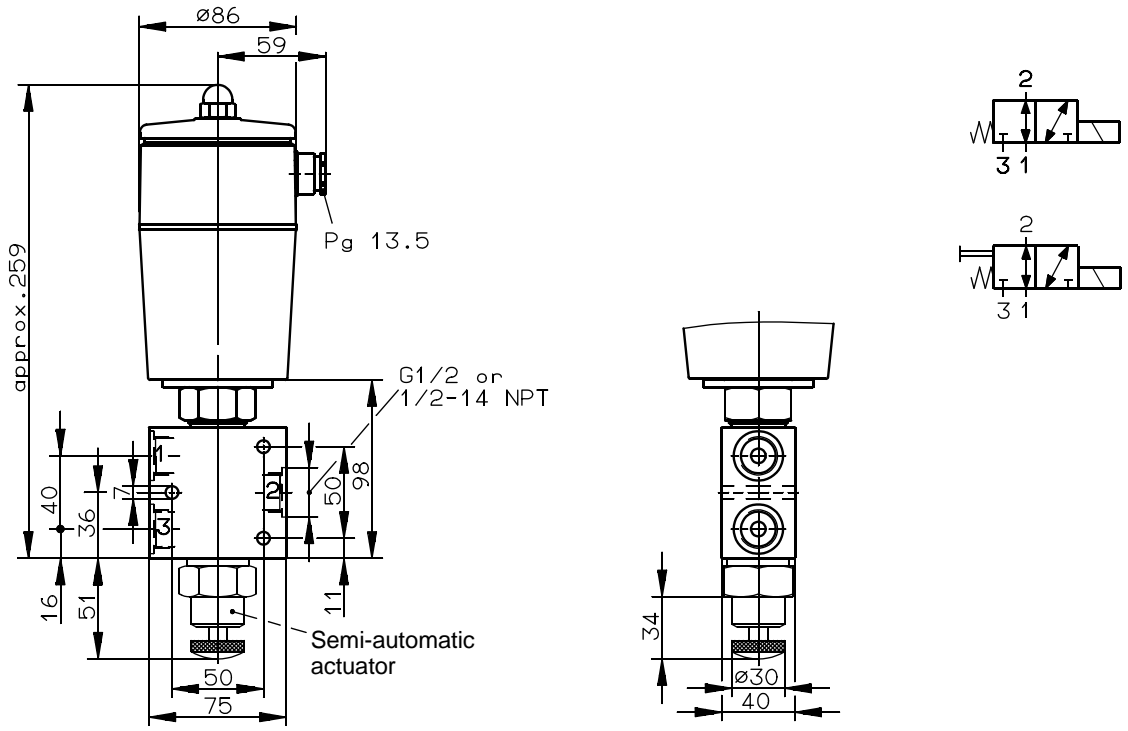


Dimensional drawing No.	Height			
	B	C	$\varnothing D$	E
01	224	98	86	59
02	245	107	92	62

Plug 0655013
 Internal thread G 1/2
 (material st. st. 1.4571
 (AISI 316 Ti))
 with sealing edge)



Dimensional drawing 03 [mm] (with solenoids 1440/1441 in Protection Class EEx m)



Dimensional drawing 04/05 [mm]

