

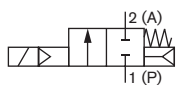
Servo-assisted 2/2 way piston valve



- Servo-assisted piston valve with diameter up to DN50
- Explosion proof versions Cat. 2
- Suitable for gas and steam applications up to 160 °C
- Relief valves for compressors

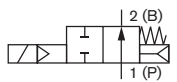
The 5404 valve is a servo-assisted piston valve available in NC and NO versions. A minimum differential pressure is required for the valve switching function. The solenoid coils are moulded with high-quality epoxy resin. In combination with a plug in accordance with DIN EN 175301 – 803 Form A, the valves satisfy protection class IP65. Please order the plug separately.

Circuit function A



2/2 way servo-controlled solenoid valve, normally closed

Circuit function B



2/2 way servo-controlled solenoid valve, normally open

Contentes:

Standard version	p. 2
Steam version (variable Code NA07)	p. 5
High pressure version (var. Code MX13)	p. 9
Compressor systems (var. Code CF05)	p. 10
ATEX version (var. Code PX23)	p. 11
Accessories	p. 13

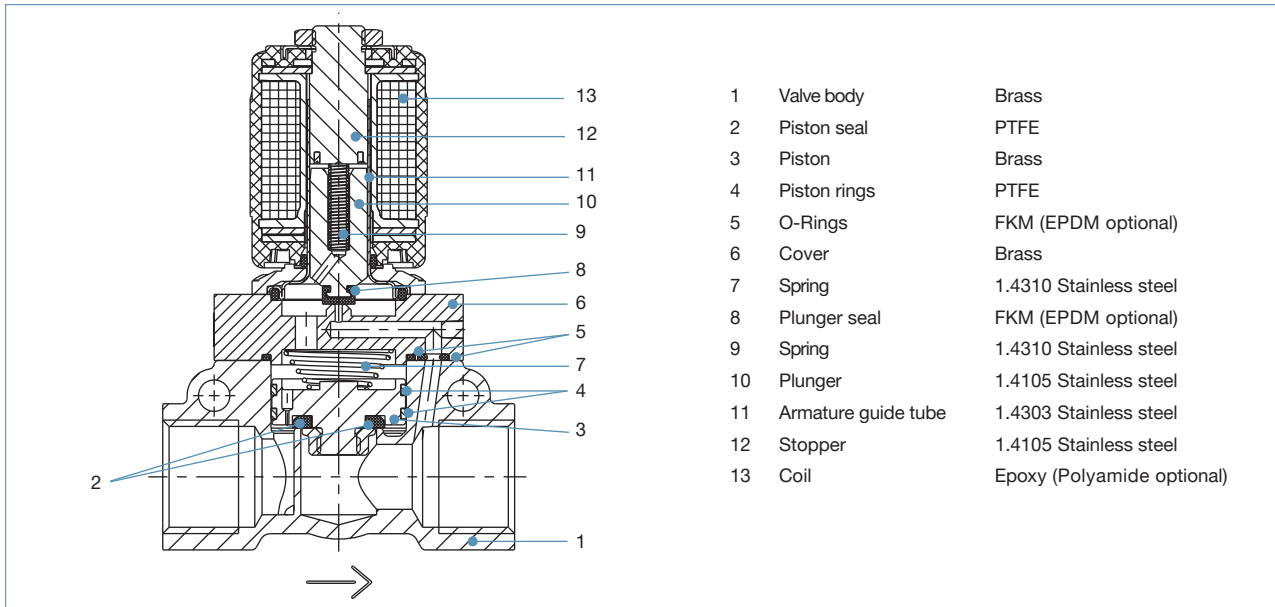
Technical data	
Orifice	DN12...50 mm
Body material	Brass
Coil material	Epoxy resin (Polyamide on request)
Coil insulation class	H (B on request)
Valve internals	Stainless steel, brass
Seal material	PTFE seat seal + FKM PTFE seat seal + Graphite steam version PTFE seat seal + EPDM on request
Medium	Neutral mediums, compressed air, water, hydraulic oil and steam
Medium temperature	Standard Steam version
	- 10 to + 110 °C up to 160 °C see Temperature Derating Diagram (from - 40 °C on request)
Ambient temperature	- 10 to + 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)
Installation	As required, preferably with actuator upright

Response times	Opening [ms]	Closing [ms]
DN12...25:	20...400	100...1500
DN32...50	200...1500	1000...3000

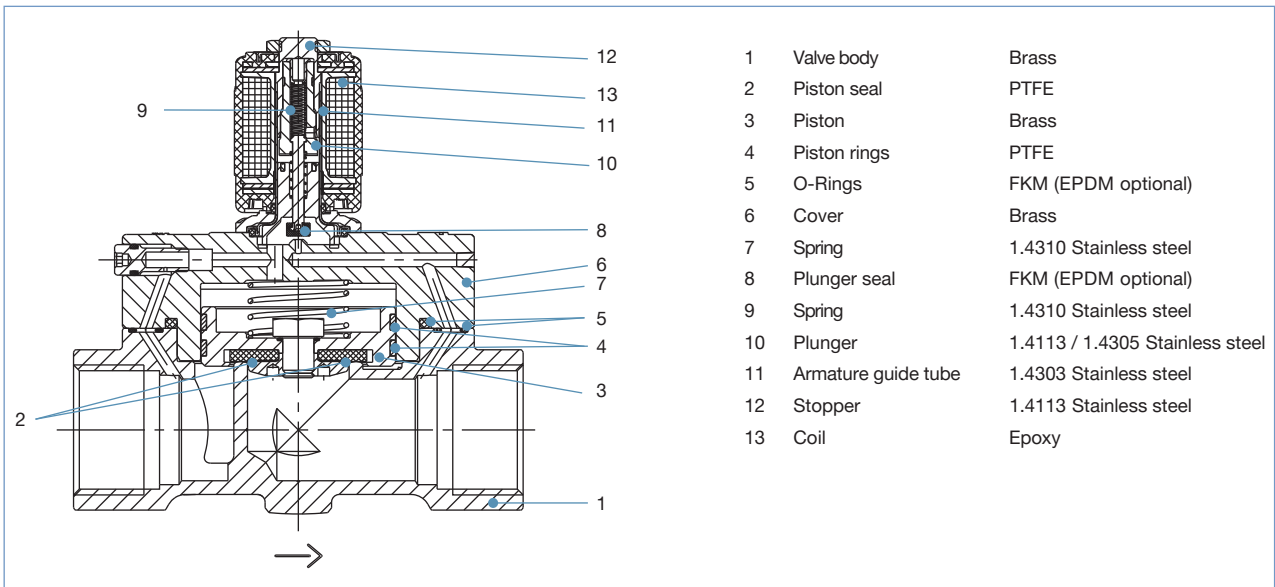
Electrical power consumption.			
Inrush AC	Hold AC (hot coil)		Hold DC (hot/cold coil)
[VA]	[VA]	[W]	[W]
Circuit function A DN12 zo 25 mm (not in combination with high pressure MX13)			
24	14	8	8/9.5
Circuit function B DN12...25 mm			
24	16	7	8/9.5
ATEX/IECEx version			
9	9		9
Circuit function A DN32...50 mm and DN12 as high pressure MX13			
24	16	10	12/13

Materials - Standard version

DN12, Circuit function A

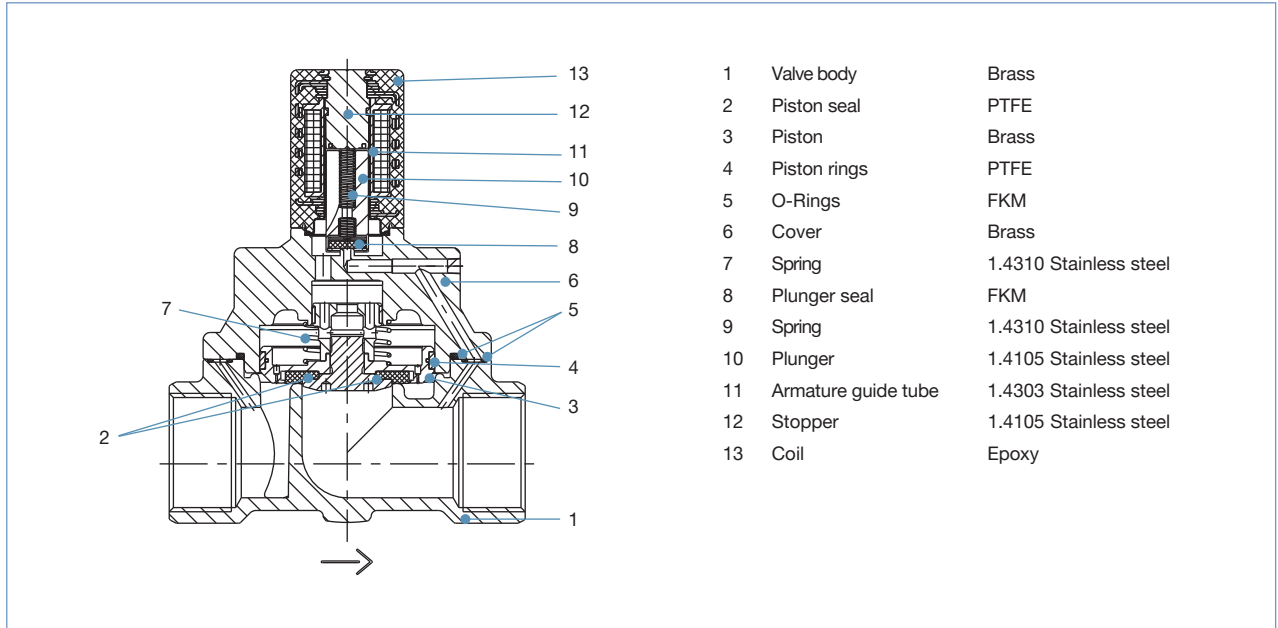


DN25, Circuit function B

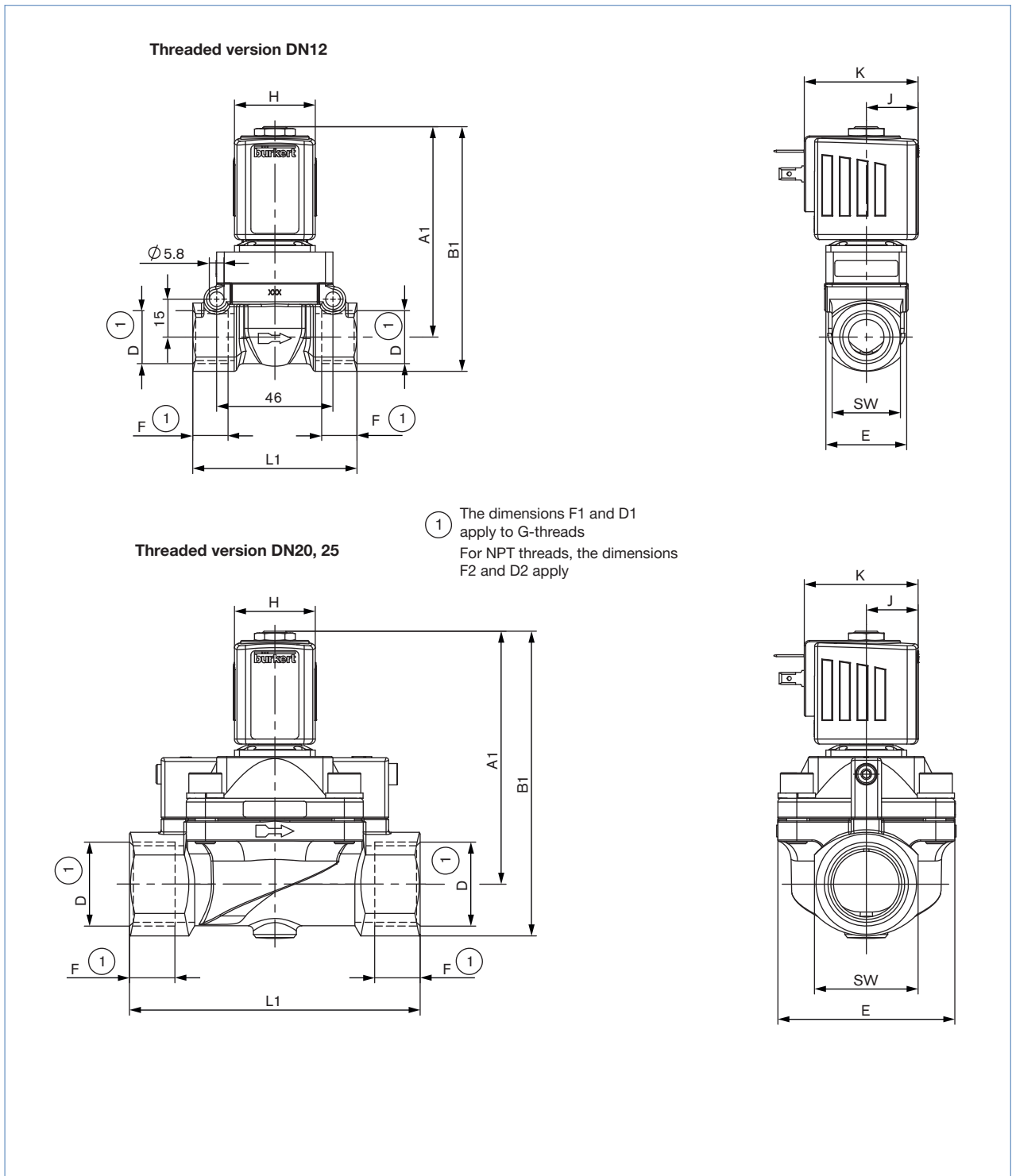


Materials - Standard version

DN32, Circuit function A

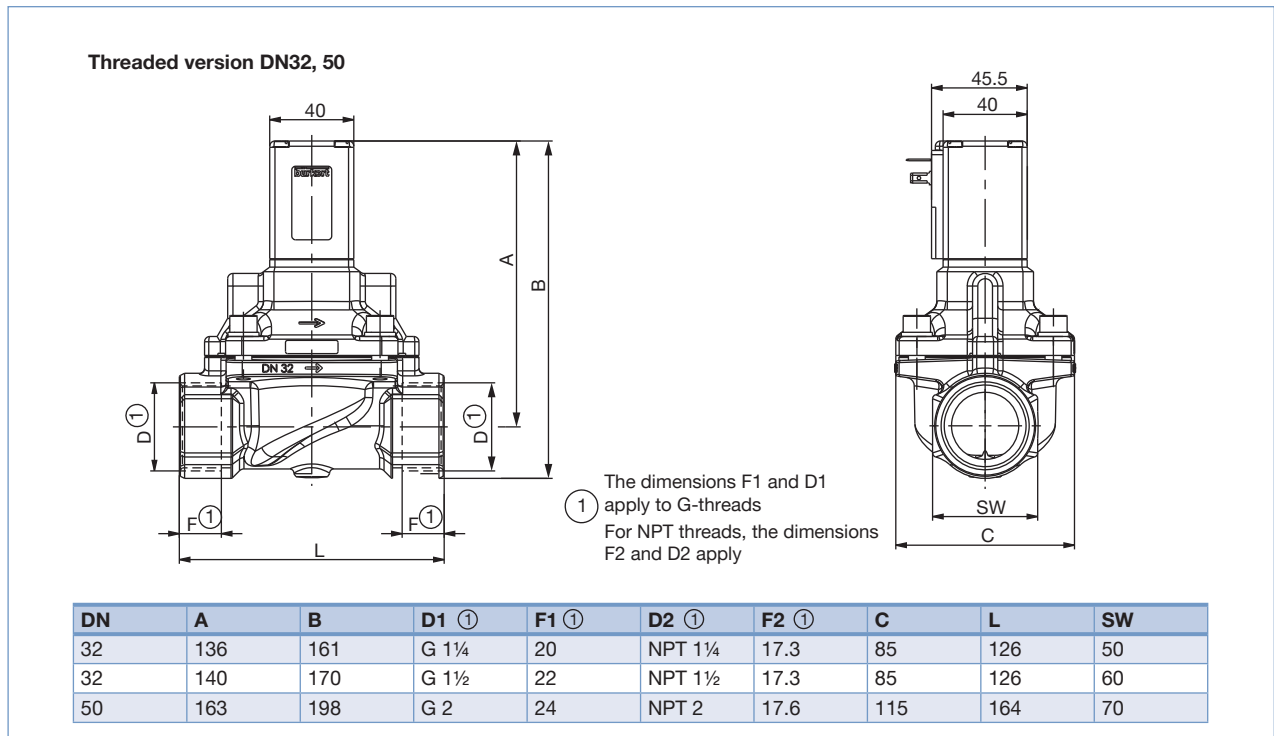


Dimensions [mm] - standard version



Threaded version																	
Coil size	DN [mm]	WWA		WWB		D1①	F1①	D2①	F2①	D3①	F3①	E	L1	SW	H	J	K
		A1	B1	A1	B1												
5	12.0	83	96.5	90.5	104	G 1/2	14	NPT 1/2	13.7	Rc 1/2	13.2	33	65	27	32	20.5	45
	20.0	93	109			G 3/4	16	NPT 3/4	14	Rc 3/4	14.5	60	100	32			
	25.0	99.5	119			G 1	18	NPT 1	16.8	Rc 1	16.8	70	115	41			
6	12.0	83	96.5	90.5	104	G 1/2	14	NPT 1/2	13.7	Rc 1/2	13.2	33	65	27	40	23.5	51
	20.0	93	109			G 3/4	16	NPT 3/4	14	Rc 3/4	14.5	60	100	32			
	25.0	99.5	119			G 1	18	NPT 1	16.8	Rc 1	16.8	70	115	41			

Dimensions [mm] - Standard version



Ordering chart for valves - Standard version DN12...25 (other versions on request)

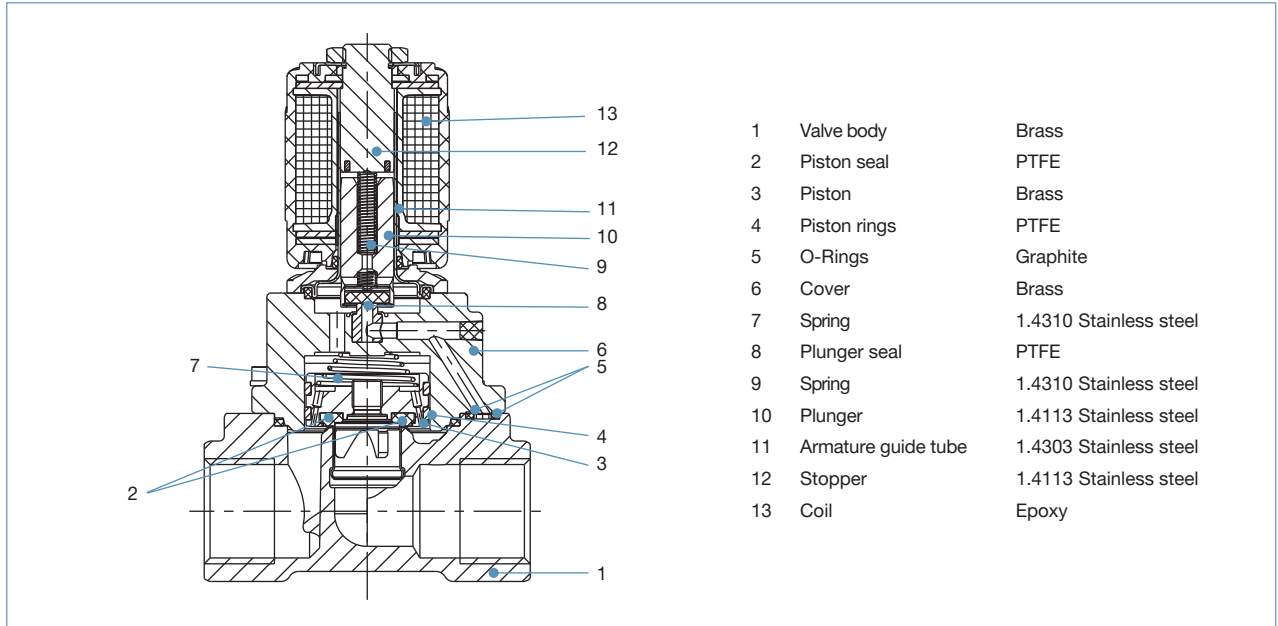
Circuit function	Port connection	Orifice [mm]	K _v value water [m³/h]	Pressure range for liquids [bar]	pressure range for gases [bar]	Item no. per voltage/frequency [V/Hz]		
						024/DC	024/50	230/50
Seals PTFE+FKM								
A NC, normally closed 	G ½	12	2.0	1–50	1–50	308 501	177 853	308 502
	G ¾	20	7.0	1–25	1–32	308 503	-	-
				1–25	1–40	-	308 504	308 505
	G 1	25	10.0	1–25	1–32	308 506	-	-
1–25				1–40	-	308 507	308 508	
B NO, normally open 	G ½	12	2.0	1–32	1–32	301 738	301 170	295 636
	G ¾	20	7.0	1–25	1–25	303 209	295 276	295 651
	G 1	25	10.0	1–25	1–25	295 660	308 120	301 740

Ordering chart for valves - Standard version DN32...50 (other versions on request)

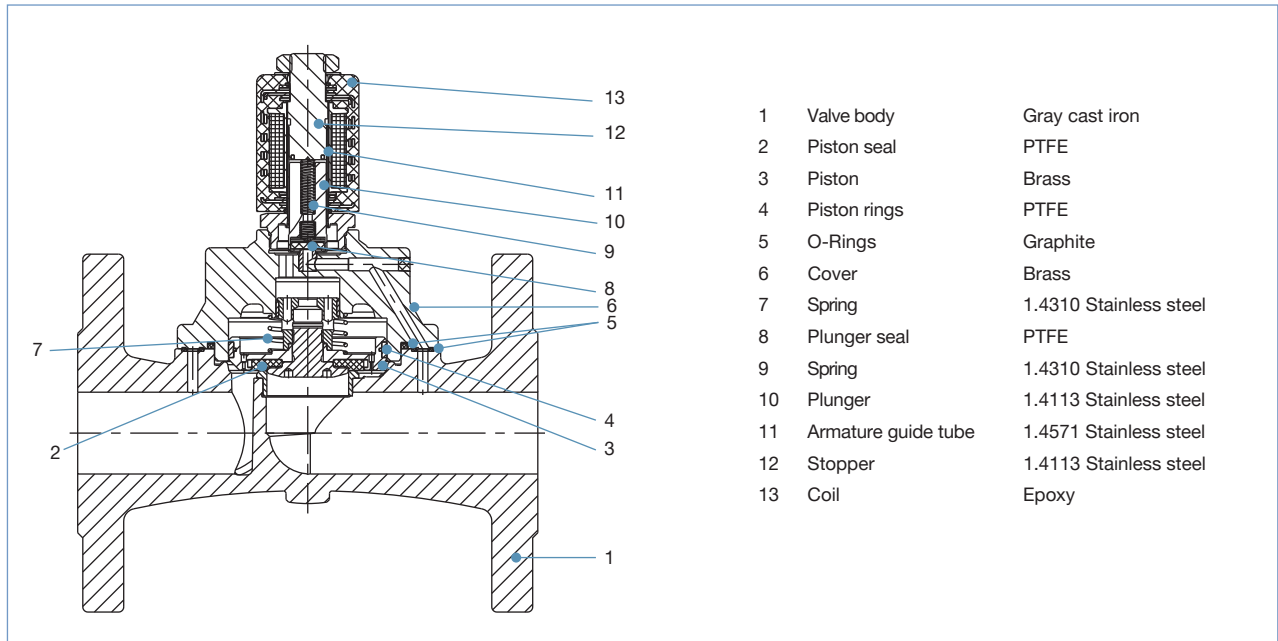
Circuit function	Port connection	Orifice [mm]	K _v value water [m³/h]	Pressure range for liquids [bar]	pressure range for gases [bar]	Item no. per voltage/frequency [V/Hz]		
						024/DC	024/50	230/50
Seals PTFE+FKM								
A NC, normally closed 	G 1¼	32	18.0	1–16	1–16	122 579	-	-
				1–25	1–25	-	853 37	853 40
	G 1½	40	18.0	1–16	1–16	853 43	-	-
				1–25	1–25	-	853 42	853 45
				1–8	1–8	307 475	-	-
G 2	50	36.0	1–20	1–20	-	307 476	853 50	

Materials - Steam version NA07

DN13, Circuit function A

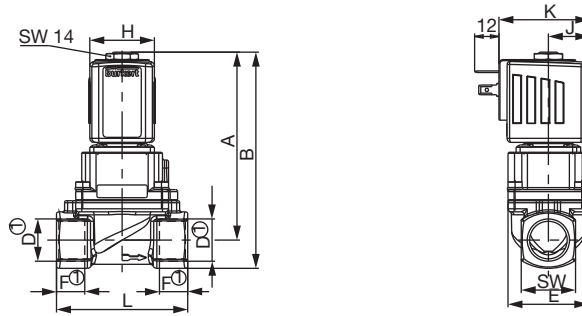


DN32, Circuit function A, NA07, flange body

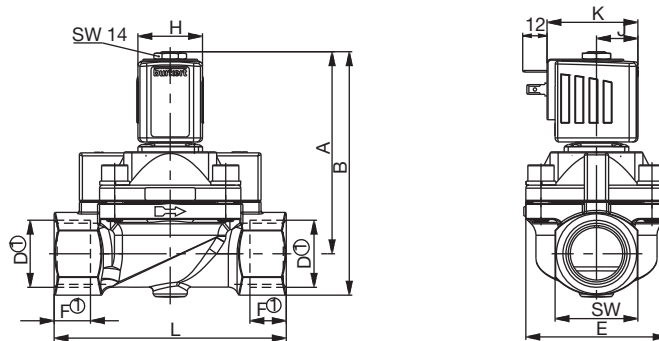


Dimensions [mm] - Steam version NA07

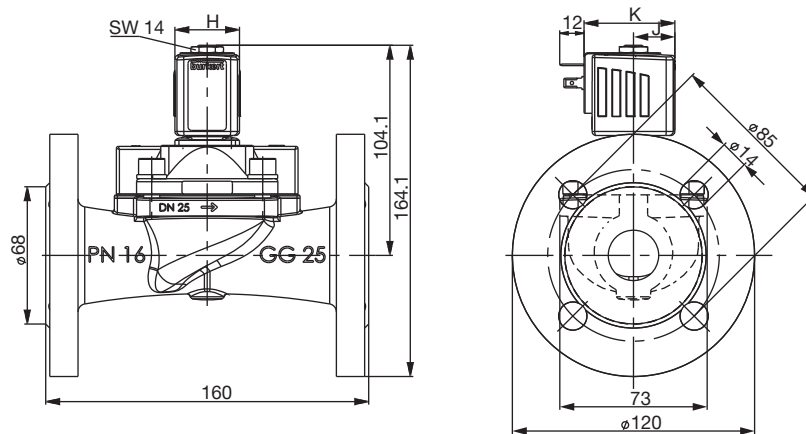
Threaded version DN13



Threaded version DN20, 25



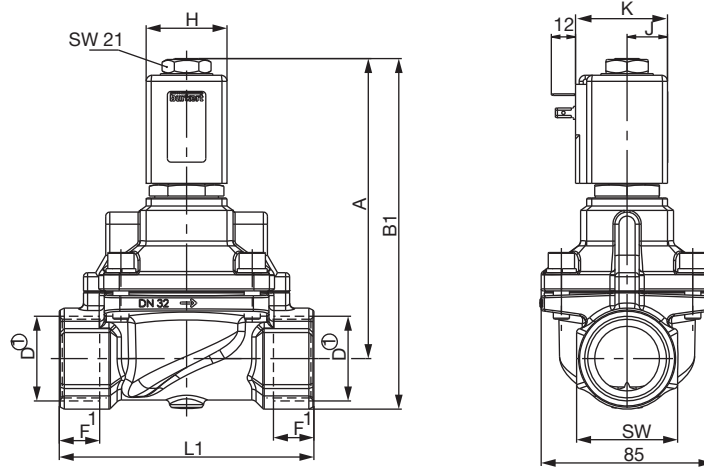
Threaded version DN25



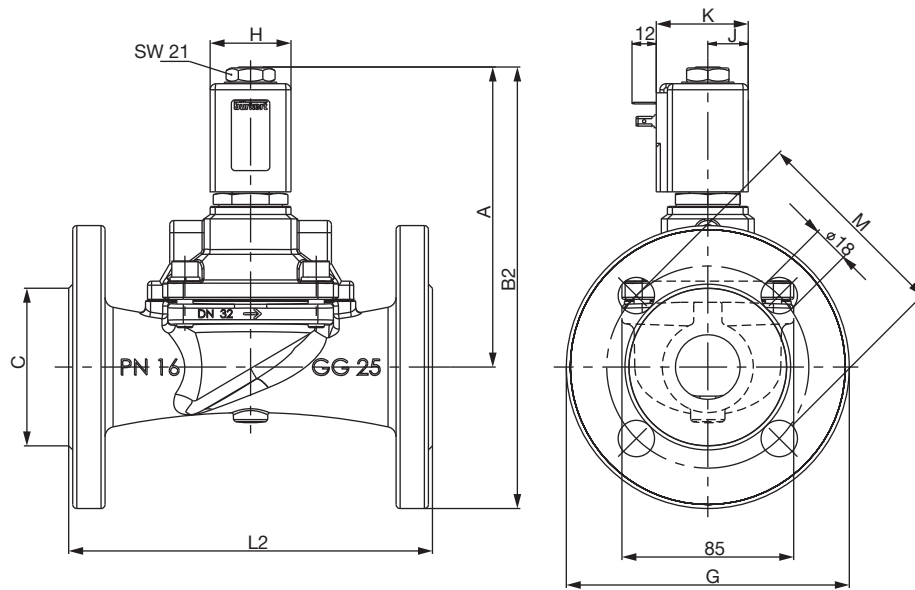
Coil size	DN	A	B	D1 ①	F1 ①	D2 ①	F2 ①	D3 ①	F3 ①	E	L	SW	H	J	K
5	13	93.1	107.1	G ½	14	NPT ½	13.7	Rc ½	13.2	40	65	27	32	20.5	45
	20	96.1	112.1	G ¾	16	NPT ¾	14	Rc ¾	14.5	60	100	32			
	25	100.1	120.6	G 1	18	NPT 1	16.8	Rc 1	16.8	70	115	41			
6	13	93.1	107.1	G ½	14	NPT ½	13.7	Rc ½	13.2	40	65	27	40	23.5	51
	20	96.1	112.1	G ¾	16	NPT ¾	14	Rc ¾	14.5	60	100	32			
	25	100.1	120.6	G 1	18	NPT 1	16.8	Rc 1	16.8	70	115	41			

Dimensions [mm] - Steam version NA07

Threaded version DN32, 40



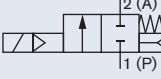
Flange version DN32, 40



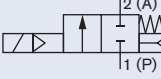
1 The dimensions F1 and D1 apply to G-threads
For NPT threads, the dimensions F2 and D2 apply

DN	A	B1	D1 ①	F1 ①	D2 ①	F2 ①	L	B2	C	G	L2	M	SW	H	J	K	Coil size
32	148	173	G 1¼	20	NPT 1¼	17.3	126	218	78	140	180	100	50	40	20	45	C
40	153	181	G 1½	22	NPT 1½	17.3	126	227	88	150	200	110	60				

Ordering chart for valves - Steam version NA07, DN13...25 (other versions on request)

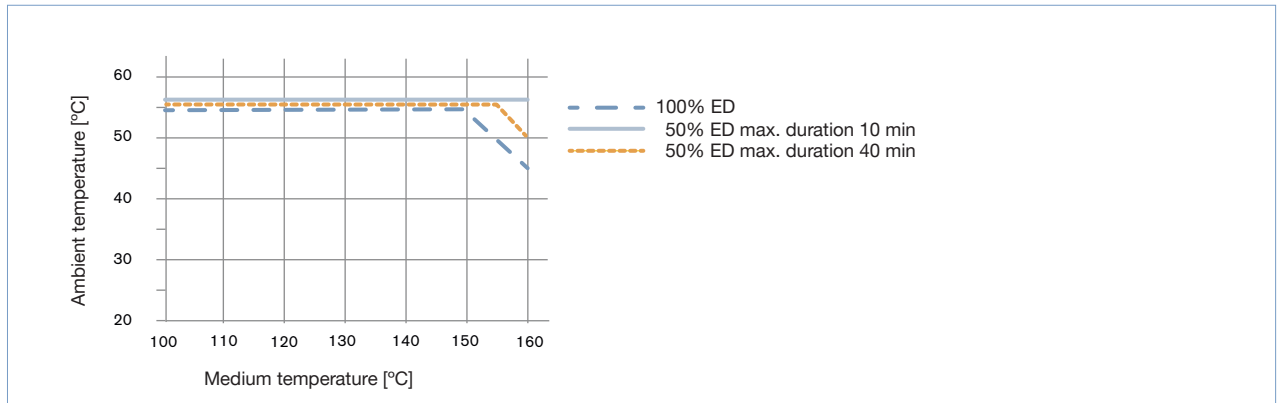
Circuit function	Port connections	Orifice [mm]	K _v value water [m ³ /h]	Pressure range [bar]	Body material	Item no. per voltage/frequency [V/Hz]		
						024/DC	024/50	230/50
Seals PTFE+Graphite								
A NC, normally closed 	G ½	13	3.7	1-5	Brass	307 267	-	-
				1-12	Brass	-	307 269	307 276
	G ¾	20	7.0	1-5	Brass	307 286	-	-
				1-12	Brass	-	307 284	307 326
	G 1	25	10.0	1-5	Brass	307 342	-	-
				1-12	Brass	-	307 343	307 351
Flange acc. to DIN EN 1902-1	25	10.0	1-5	GG25	307 354	-	-	
			1-12	GG25	-	X	307 344	

Ordering chart for valves - Steam version NA07, DN32...40 (other versions on request)

Circuit function	Port connections	Orifice [mm]	K _v value water [m ³ /h]	Pressure range [bar]	Body material	Item no. per voltage/frequency [V/Hz]		
						024/DC	024/50	230/50
Seals PTFE+Graphite								
A NC, normally closed 	G 1¼	32	18.0	1-4	Brass	316 584	-	-
				1-12	Brass	-	316 580	316 579
	Flange acc. to DIN EN 1902-1	32	18.0	1-4	GG25	X	-	-
				1-12	GG25	-	X	316 583
	G 1½	40	18.0	1-4	Brass	316 592	-	-
				1-12	Brass	-	316 586	316 588
Flange acc. to DIN EN 1902-1	40	18.0	1-4	GG25	X	-	-	
			1-12	GG25	-	X	316 591	

X on request

Temperature derating for steam version



Characteristic values of intermittent operation

$$t_{SD}[s] = \frac{60}{SH \left[\frac{1}{min} \right]}$$

$$t_{ED}[s] = \frac{ED[\%]}{100} \times t_{SD}[s]$$

$$t_{SP}[s] = t_{SD}[s] - t_{ED}[s]$$

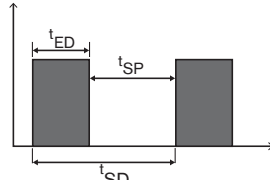
t_{SD} - Cycle time

t_{ED} - Duty cycle

t_{SP} - De-energized pause

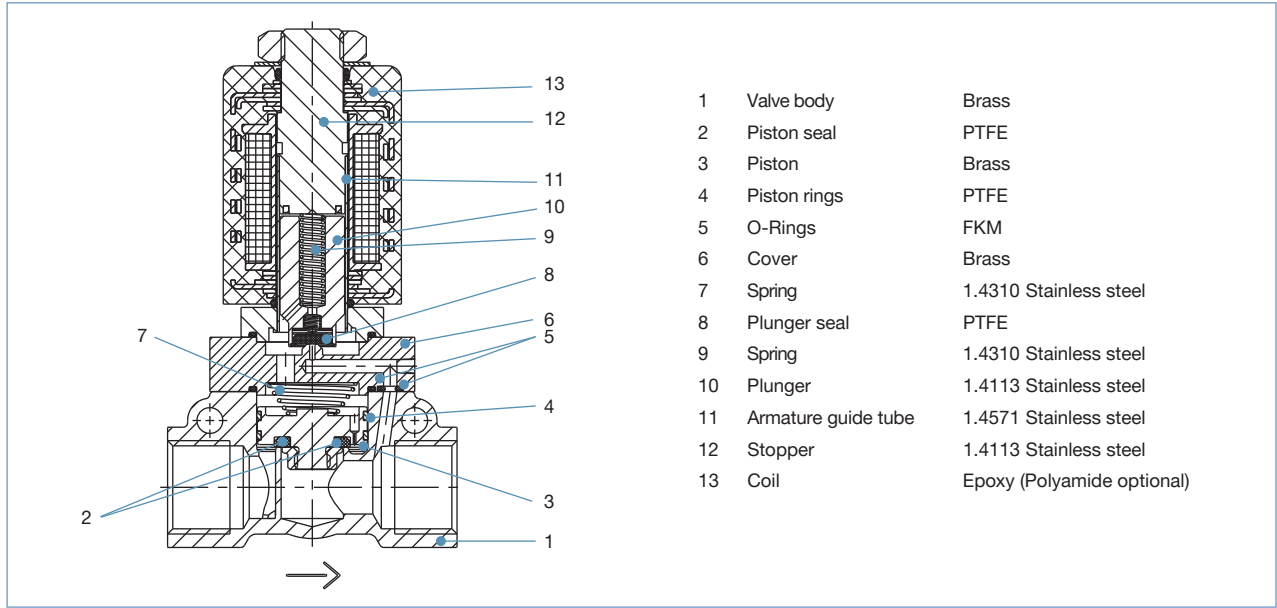
ED - Relative duty cycle relative

SH - Switching frequency

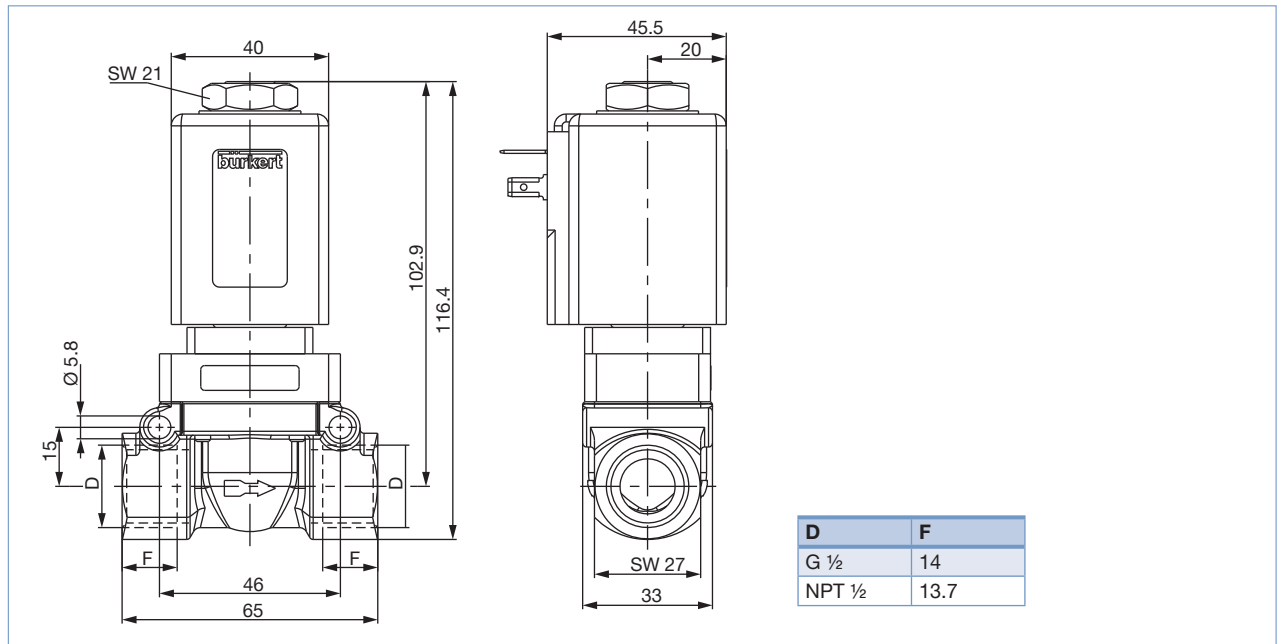


Materials - High pressure version MX13

DN12, Circuit function A, MX13



Dimensions [mm] - High pressure version MX13



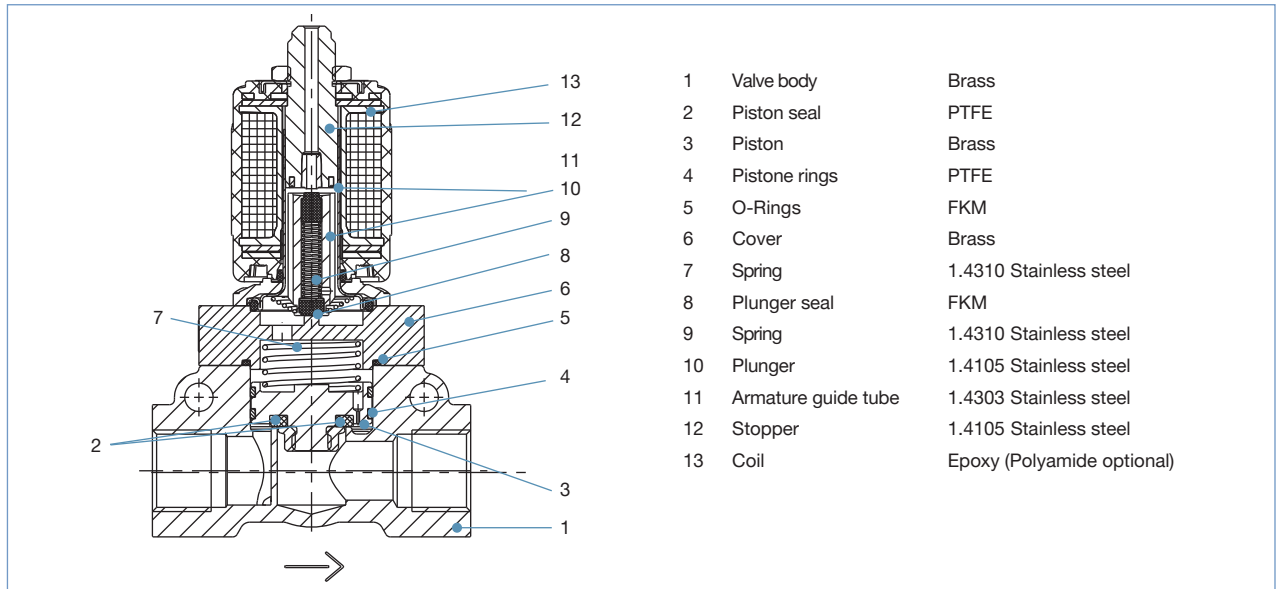
Ordering chart for valves - High pressure version MX13 (other versions on request)

Circuit functions	Port connection	Orifice [mm]	K _v valve water [m ³ /h]	Pressure range for liquids [bar]	Pressure range for gases [bar]	Item no. per voltage/frequency [V/Hz]		
						024/DC	024/50	230/50
Seals PTFE+FKM								
A NC, normally closed	G 1/2	12	2.0	1-80	1-80	304 191	304 193	304 194

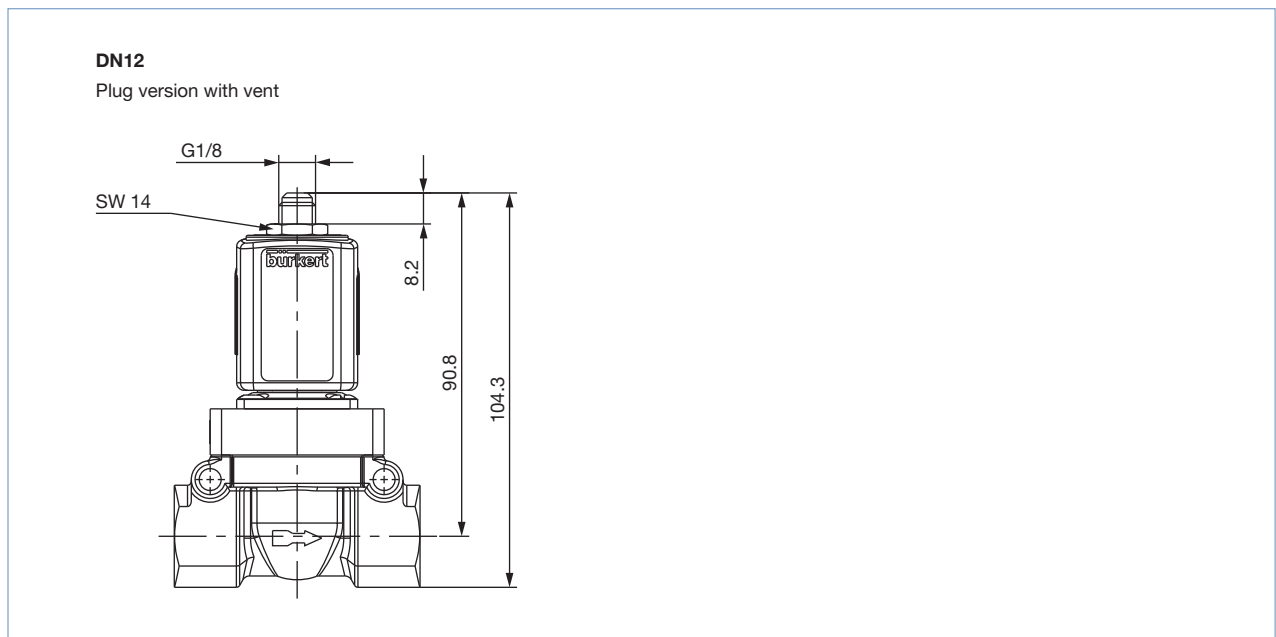
Note: High shut off levels may occur with liquids and high differential pressure!

Materials - Discharge valve for compressor systems CF05

DN12, Circuit function B, CF05



Dimensions [mm] - Discharge valve for compressor systems CF05

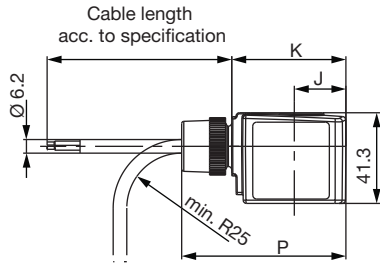


Bestell-Tabelle - Discharge valve for compressor systems CF05 (other version on request)

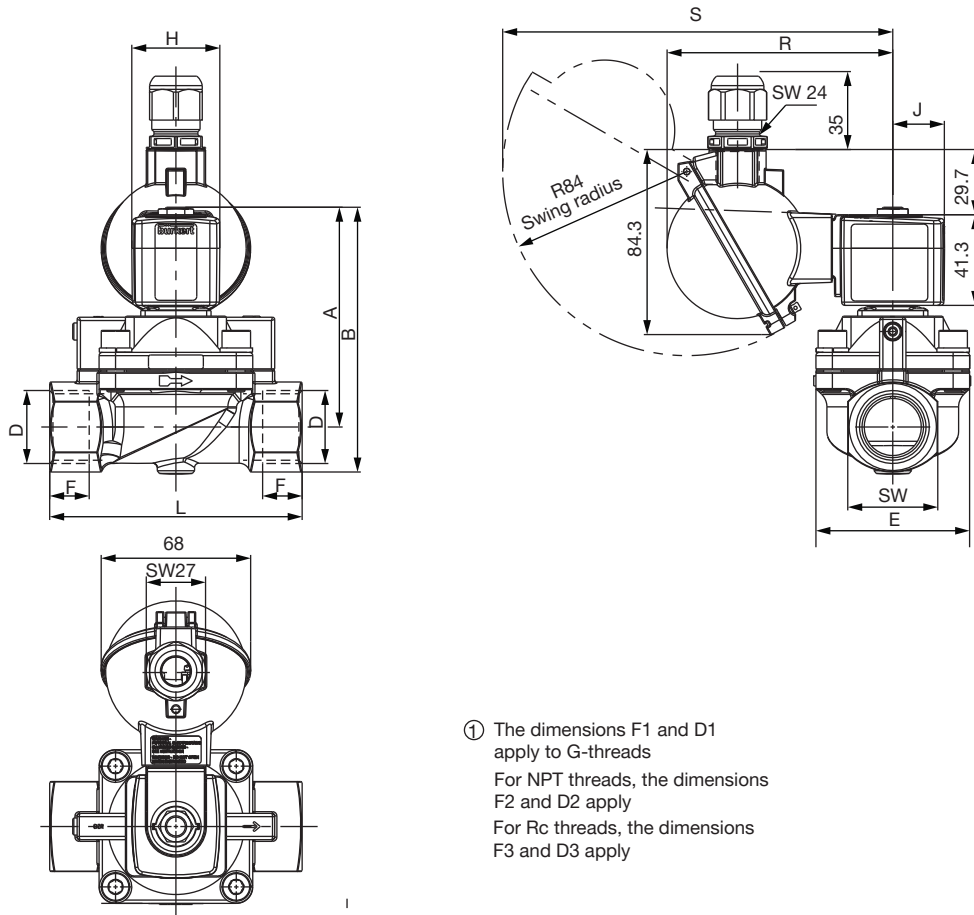
Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h]	Pressure range for liquids [bar]	Pressure range for gases [bar]	Item no. per voltage/frequency [V/Hz]		
						024/DC	024/50	230/50
Seals PTFE+FKM								
B NO, normally open	G ½	12	2.0	1-40	1-40	301 723	308 781	308 783

Dimensions [mm] - ATEX/IECEx version

Cable



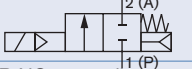
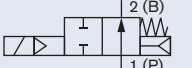
Terminal box



① The dimensions F1 and D1 apply to G-threads
 For NPT threads, the dimensions F2 and D2 apply
 For Rc threads, the dimensions F3 and D3 apply

Coil size	DN [mm]	WWA		WWB		D1 ①	F1 ①	D2 ①	F2 ①	D3 ①	F3 ①	E	L	SW	H	J	K	P	R	S
		A	B	A	B															
5	12.0	83	96.5	90.8	104.3	G ½	14	NPT ½	13.7	Rc ½	13.2	33	65	27	32	20.5	46	68.8	99.8	174.7
	20.0	93	109			G ¾	16	NPT ¾	14	Rc ¾	14.5	60	100	32						
	25.0	99.5	119			G 1	18	NPT 1	16.8	Rc 1	16.8	70	115	41						
6	12.0	83	96.5	90.8	104.3	G ½	14	NPT ½	13.7	Rc ½	13.2	33	65	27	40	23.5	52	74.8	102.8	177.7
	20.0	93	109			G ¾	16	NPT ¾	14	Rc ¾	14.5	60	100	32						
	25.0	99.5	119			G 1	18	NPT 1	16.8	Rc 1	16.8	70	115	41						

Ordering chart for valves - ATEX/IECEX cable (other versions on request)

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h]	Pressure range for liquids [bar]	Pressure range for gases [bar]	Item no. per voltage/frequency [V/Hz]	
						024/DC	024/50
Seals PTFE+FKM							
A NC, normally closed 	G 1/2	12	2.0	1–50	1–50	278 117	278 118
	G 3/4	20	7.0	1–25	1–32	285 858	278 121
	G 1	25	10.0	1–25	1–32	290 175	300 215
B NO, normally open 	G 1/2	12	2.0	1–32	1–32	278 123	278 124
	G 3/4	20	7.0	1–25	1–25	307 455	307 456
	G 1	25	10.0	1–25	1–25	305 468	307 458

Explosions protected approvals

ATEX: PTB 14 ATEX 2023 X

IECEX: IECEX PTB 14.0049 X


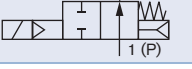
II 2G Ex mb IIC T4 Gb

Ex mb IIC T4 Gb

II 2D Ex mb IIC T130 °C Db

Ex mb IIC T130 °C Db

Ordering chart for valves - ATEX/IECEX terminal box (other versions on request)

Circuit function	Port connection	Orifice [mm]	K _v value water [m ³ /h]	Pressure range for liquids [bar]	Pressure range for gases [bar]	Item no. per voltage/frequency [V/Hz]	
						024/DC	024/50
Seals PTFE+FKM							
A NC, normally closed 	G 1/2	12	2.0	1–50	1–50	289 362	289 371
	G 3/4	20	7.0	1–25	1–32	307 460	307 461
	G 1	25	10.0	1–25	1–32	307 463	307 465
B No, normally open 	G 1/2	12	2.0	1–32	1–32	307 466	307 467
	G 3/4	20	7.0	1–25	1–25	307 468	307 469
	G 1	25	10.0	1–25	1–25	307 471	307 473

Explosions protected approvals

ATEX: PTB 15 ATEX 1011U

IECEX: PTB 15.0037U

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

Please note that the cable plug has to be ordered separately.

i Further versions on request



Approvals

UL, cURus for coil system, Hazardous Locations Expl. proof, EEx m/ed, versions for oxygen applications


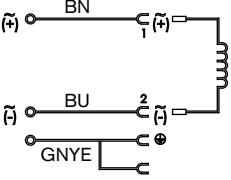


Voltage

110/50, non-standard voltages


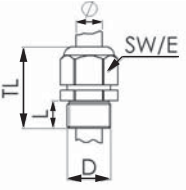

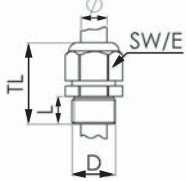
Cable plug Type 2513 acc. to DIN EN 175301 – 803, Form A

Meets the requirements of ATEX category 3 GD

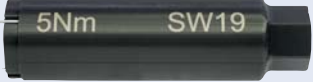
		Cable length [mm]	Item no. [in mm]
		12000	260 893
		5000	260 892
		3000	260 891
		300	260 890

Cable glands for ATEX/IECEX terminal box

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

	Ex Approvals		Item no												
	Certification	Identification													
	Brass, nickelplated, 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)

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

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

We reserve the right to make technical changes without notice.

1709/9_EU-en_00891714