

5/2 Directional Control Valves



Nominal sizes 6 and 12
For double-acting cylinders
Solenoid pilot operated soft seal spool valve
NAMUR pattern flange mounting (size 6)
G 1/4 or G 1/2 internal thread connection

Catalog Register
P 11

Publication 7502223.06.01.98



Description

Solenoid valve for filtered, lubricated¹⁾ or oil-free compressed air, instrument air, nitrogen and other neutral fluids.

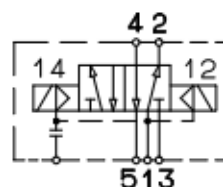
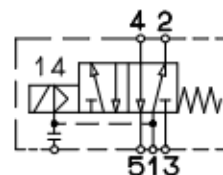
Temperature min.:	-25 °C
Temperature max.:	See specifications for solenoids (Page 3)
Operating pressure:	2.5 to 8 bar with internal control pressure supply 0 to 8 bar with external control pressure supply
Auxiliary power Valve:	Only with external control pressure supply Port 14: 2.5 to 8 bar
Solenoid:	DC, AC or intrinsically safe circuits
Mounting position:	Optional
Material:	
Valve body:	Hard anodized aluminium/ stainless steel
Seals:	AU/NBR



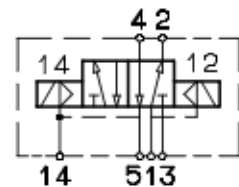
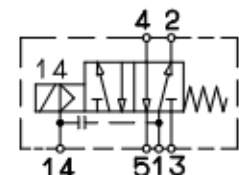
Features

- High flow rate
- Maintenance-free
- Crossover-free switching, switch-over function guaranteed even with small cross section air supply.
- Safety function in the event of power failure provided by mechanical return spring (version 1 with solenoid).
- Can be fitted with manual override with or without lock.
- Suitable for use in exposed locations with severe environmental conditions.
- Minimal electrical power consumption – therefore many safety ratings possible, e.g. EEx ia IIC T6.
- Valve interior protected from contamination.
- Pilot valve protected from contamination by fluid.

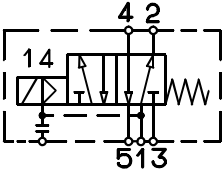
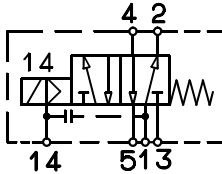
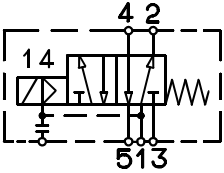
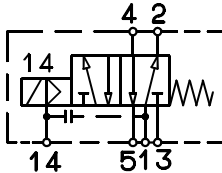
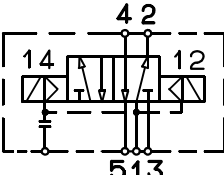
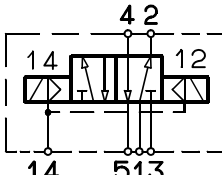
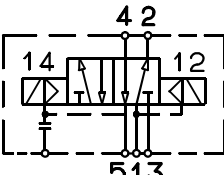
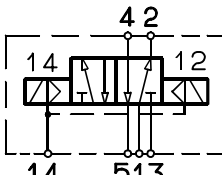
Internal control pressure supply



External control pressure supply



Valve parameters

Nom. size	Pipe connection		Operating pressure [bar]		Control pressure supply [bar]		k _v -value (C _v (US) = k _v x 1.2)	Weight without solenoid [kg]	Sectional drawing No.	Dimensional drawing No.	Cat. No.	
	1 3 5	2 4	min.	max.	internal	external					Valve	Solenoid
Internal control pressure supply												
												
6	G 1/4	G 1/4	2.5	8	●	—	1.5	0.7	01	02	2636040.	
6	G 1/4	G 1/4	0	8	—	2.5 to 8	1.5	0.7	01	02	2636097.	see
6	1/4-18NPT	1/4-18NPT	2.5	8	●	—	1.5	0.7	01	02	2636042.	solenoid
12	G 1/2	G 1/2	2.5	8	●	—	2.2	1.3	01	02	2637040.	speci-
12	G 1/2	G 1/2	0	8	—	2.5 to 8	2.2	1.3	01	02	2637097.	fications
External control pressure supply												
												
6	G 1/4	G 1/4	2.5	8	●	—	1.5	0.7	01	02	2636040.	
6	G 1/4	G 1/4	0	8	—	2.5 to 8	1.5	0.7	01	02	2636097.	see
6	1/4-18NPT	1/4-18NPT	2.5	8	●	—	1.5	0.7	01	02	2636042.	solenoid
12	G 1/2	G 1/2	2.5	8	●	—	2.2	1.3	01	02	2637040.	speci-
12	G 1/2	G 1/2	0	8	—	2.5 to 8	2.2	1.3	01	02	2637097.	fications
Internal control pressure supply NAMUR interface												
												
6	G 1/4	Flange	2.5	8	●	—	1.5	0.7	01	01	2636044.¹⁾	see
6	1/4-18NPT	Flange	2.5	8	●	—	1.5	0.7	01	01	2636094.¹⁾	solenoid
6	G 1/4	Flange	0	8	—	2.5 to 8	1.5	0.7	01	01	2636099.¹⁾	speci-
External control pressure supply NAMUR interface												
												
6	G 1/4	Flange	2.5	8	●	—	1.5	0.7	01	01	2636044.¹⁾	see
6	1/4-18NPT	Flange	2.5	8	●	—	1.5	0.7	01	01	2636094.¹⁾	solenoid
6	G 1/4	Flange	0	8	—	2.5 to 8	1.5	0.7	01	01	2636099.¹⁾	speci-
Internal control pressure supply												
												
6	G 1/4	G 1/4	2.5	8	●	—	1.5	0.85	02	04	2636240.	see
6	G 1/4	G 1/4	0	8	—	2.5 to 8	1.5	0.85	02	04	2636297.	solenoid
External control pressure supply												
												
6	G 1/4	G 1/4	2.5	8	●	—	1.5	0.85	02	04	2636240.	see
6	G 1/4	G 1/4	0	8	—	2.5 to 8	1.5	0.85	02	04	2636297.	solenoid
Internal control pressure supply NAMUR interface												
												
6	G 1/4	Flange	2.5	8	●	—	1.5	0.85	02	03	2636244.¹⁾	see
6	G 1/4	Flange	0	8	—	2.5 to 8	1.5	0.85	02	03	2636299.¹⁾	solenoid
External control pressure supply NAMUR interface												
												
6	G 1/4	Flange	2.5	8	●	—	1.5	0.85	02	03	2636244.¹⁾	see
6	G 1/4	Flange	0	8	—	2.5 to 8	1.5	0.85	02	03	2636299.¹⁾	solenoid

Cat. No. (example): Valve 2636044. Solenoid 2012

¹⁾ 2 fixing bolts M5 x 35 DIN 912 A2/A4 included in delivery.

Solenoid parameters

Standard voltages 24 VDC, 230 VAC. Other voltages and designs available on request.

Designed in accordance with Specifications VDE 0580/VDE 0171, EN 50014/EN 50028. 100 % duty cycle.

Illustration	Power consumption		Rated current		Rated voltage tolerance		Protection class	Ambient temperature	Fluid temperature max.	Weight	Dimensional drawing	Circuit diagram	Cat. No.			
	24 VDC [W]	230 VAC [VA]	24 VDC [mA]	230 VAC [mA]	[%] +	[%] –										
	1.6	–	67	–	10	15	IP 00, with connector IP 65	–25 to +60	+80	0.14	08	01	0253¹⁾			
	1.9	–	78	–	10	15	IP 00, with connector IP 65	–25 to +60	+80	0.3	07	01	0763¹⁾			
	3.2	–	135	–	10	15	IP 65 EEx m II T4 Cable, 3 m long	–20 to +70	+70	0.4	06	04	0278²⁾			
	–	3.5	–	15	10	15					06	07	0279²⁾			
	0.7	–	29	–	10	20	IP 65 EEx me II T5 or T6	–20 to +80 (T5) –40 to +70 (T6)		0.8	05	04	3900³⁾			
	3.9	–	161	–	10	15	IP 65 EEx me II T5 or T6	–20 to +80 (T5) –40 to +60 (T6)					0.8	05	04	3910³⁾
	–	4.9	–	21	10	15	IP 65 EEx me II T5 or T6	–20 to +80 (T5) –40 to +60 (T6)				0.8			05	07
	1.4	–	59	–	10	15	NEMA 4,4X,6,6P,7,9 Stranded wire, 460 mm long	–20 to +60		0.5	09	01	3720⁵⁾			

For intrinsically safe circuits with safety ratings EEx ia IIC T6 and IP 65

Illustration	Nominal resistance R _v Coil	Min. required switching current	Resistance R _{w65} Coil ⁴⁾	Required voltage at terminal R _{w65}	Ambient temperature	Fluid-temperature max.	Weight	Dimensional drawing	Circuit diagram	Cat. No.
	[Ω]	[mA]	[Ω]	[V]	[°C]	[°C]				
	124	52	150	7.8	-40 to +65	+65	0.8	05	10	2030⁶⁾
	159	45	193	8.7						2031⁶⁾
	198	40	240	9.6						2032⁶⁾
	248	36	301	10.9						2033⁶⁾
	306	33	371	12.3						2034⁶⁾
	378	30	458	13.8						2035⁶⁾
	467	27	566	15.3						2036⁶⁾
	566	25	686	17.2						2037⁶⁾
	692	23	839	19.3						2038⁶⁾

When selecting an intrinsically safe power supply, the permissible maximum values according to the Certificate of Conformity should be taken into account. On the other hand, the low effective inductivity and capacity can be ignored.

¹⁾ Required connector for DC: Cat. No. **0570275**. Connector with rectifier for AC or universal current: Cat. No. **0663303**. Connector with LED and transparent housing: Cat. No. **0663035**.

²⁾ Certificate of Conformity KEMA No. Ex-93.C.8283 X

³⁾ Certificate of Conformity PTB No. Ex-92.C.2175 X

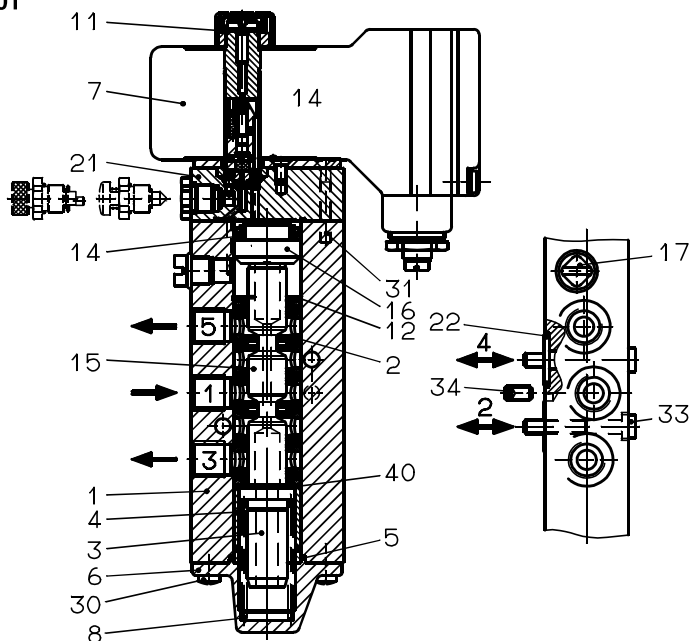
⁴⁾ R_{w65} is the solenoid coil resistance at +65 °C ambient temperature and an applied voltage which produces an output of 2.8 W at +20 °C ambient temperature (max. permissible output from intrinsically safe circuits for above solenoids).

⁵⁾ CSA Certification No. LR 57643-6, FM approved, for hazardous locations: Div. 1 and 2, class I, II, III

⁶⁾ Certificate of Conformity PTB No. Ex-95.D.2178

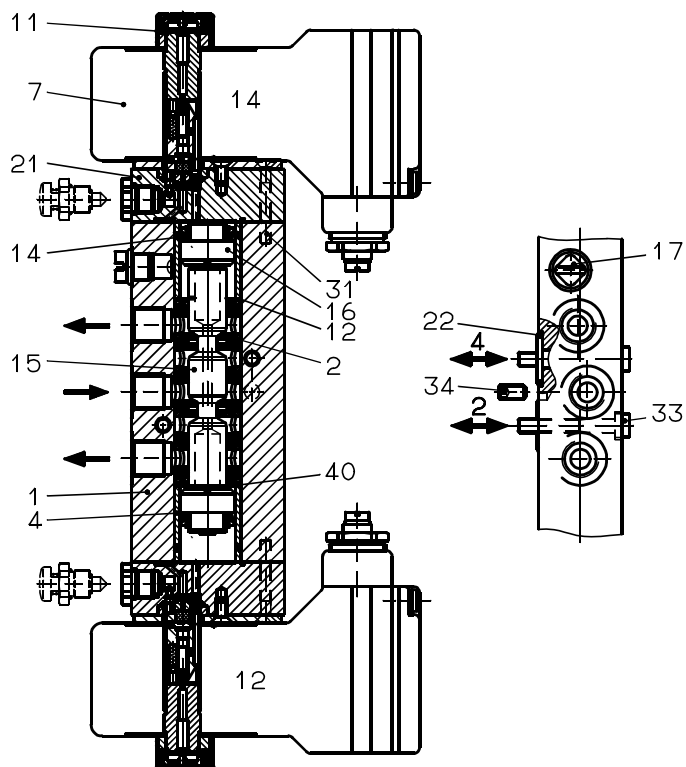
Sectional drawings

01



- 1 Body assly.
- 2 Seal retainer
- 3 Stud
- 4 Tube
- 5 O-ring
- 6 Flange
- 7 Solenoid
- 8 Spring
- 11 Solenoid attachment
- 12 Retaining ring
- 14 Lip ring
- 15 Spool
- 16 Piston
- 17 Screw plug (internal pressure supply)
- 21 Pilot control valve
- 22 O-ring
- 30 Screw
- 31 Screw
- 33 Screw
- 34 Coding stud
- 40 Shim

02

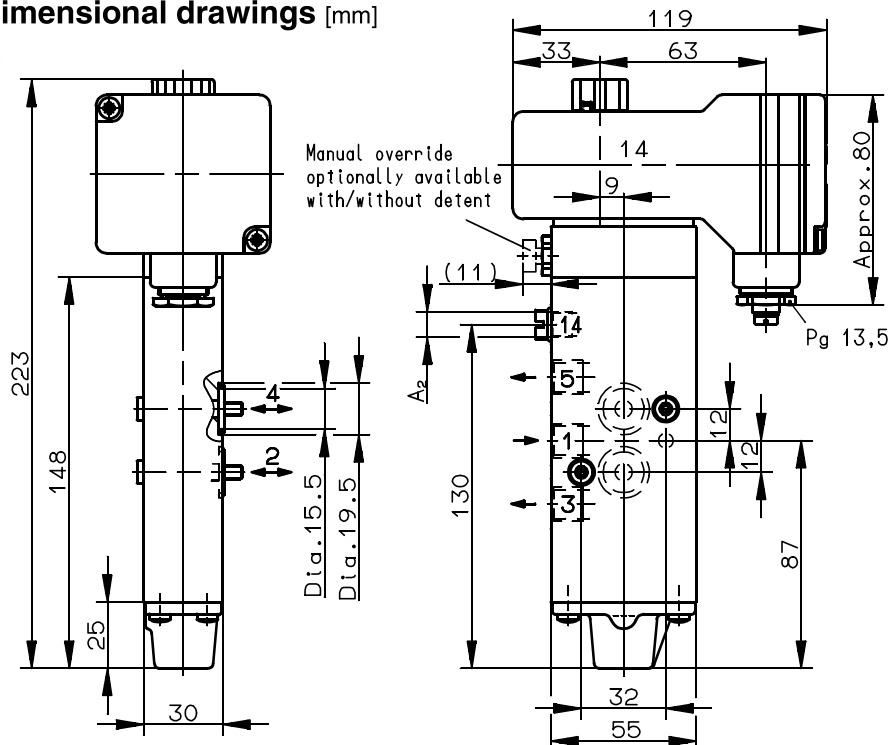


- 1 Body assly.
- 2 Seal retainer
- 4 Tube
- 7 Solenoid
- 11 Screw cap assy.
- 14 Lip ring
- 15 Spool
- 16 Piston
- 17 Screw plug (internal pressure supply)
- 21 Pilot control valve
- 22 O-ring
- 24 O-ring
- 31 Screw
- 33 Screw
- 34 Coding stud
- 40 Shim

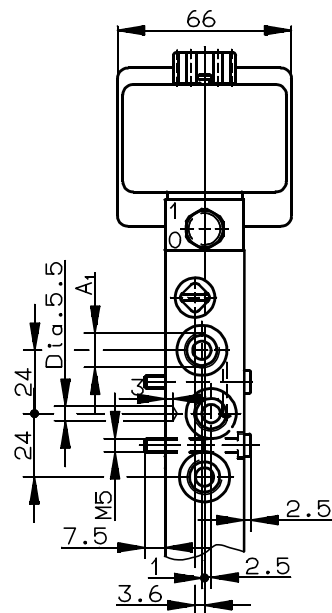
O-rings, fixing bolts and coding stud are included with the flange fitting version.

Dimensional drawings [mm]

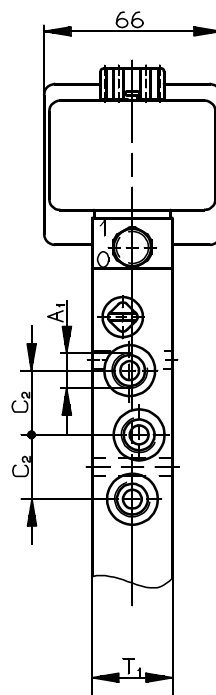
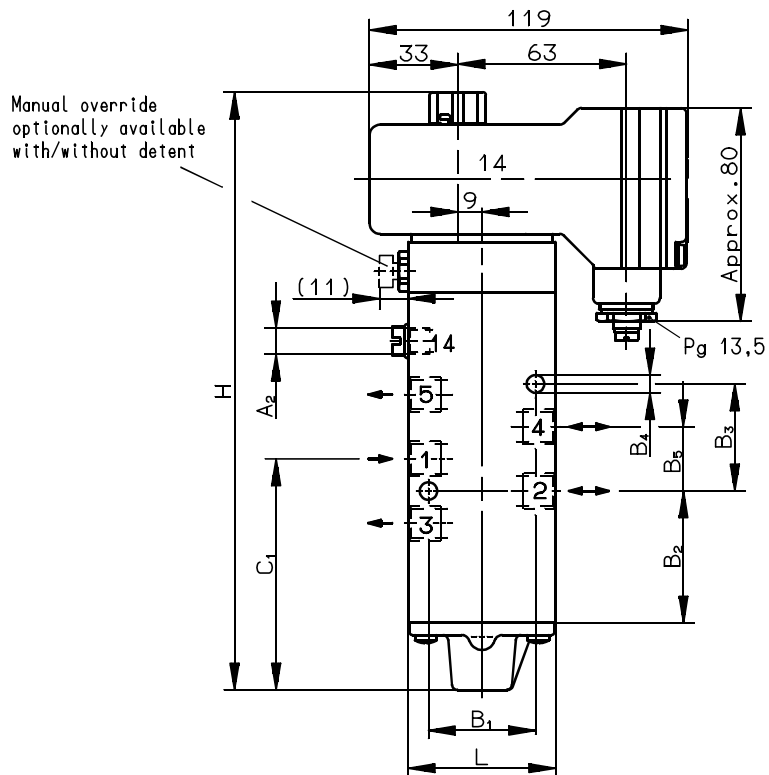
01



Cat. No.	A ₁	A ₂
2636044.	G 1/4	G 1/8
2636094.	1/4-18 NPT	1/8-27 NPT
2636099.	G 1/4	G 1/8



02

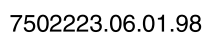


Cat. No.	A ₁	A ₂	B ₁	B ₂	B ₃	B ₄	B ₅	C ₁	C ₂	C ₃	H	L	T ₁
2636040.	G 1/4	G 1/8	40	75	40	6.6	24	87	24	132.5	224	55	30
2636042.	1/4-18NPT	1/8-27NPT	40	75	40	6.6	24	87	24	132.5	224	55	30
2637040.	G 1/2	G 1/8	50	70.5	50	7	33	87	33	150	251	70	40

03

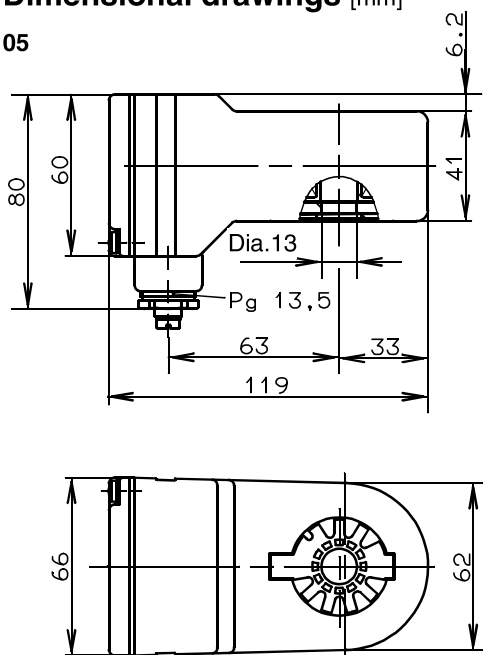


04

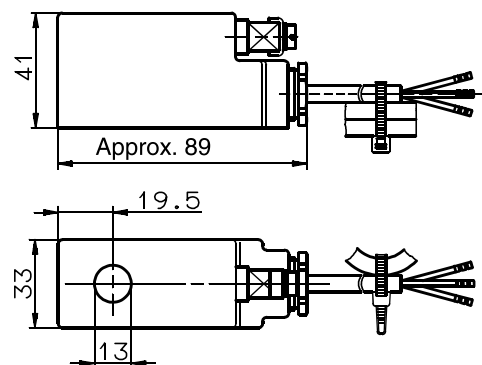


Dimensional drawings [mm]

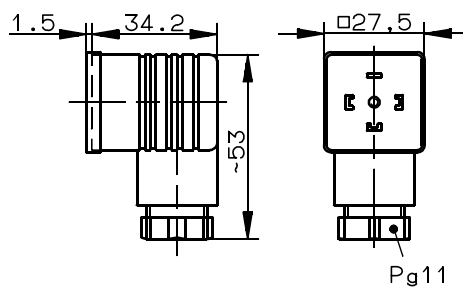
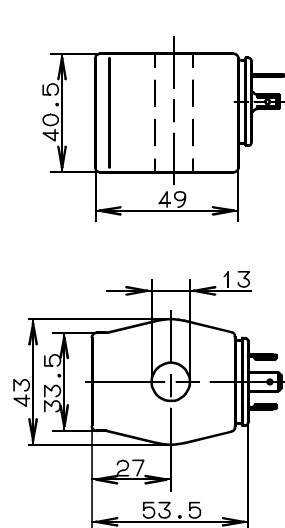
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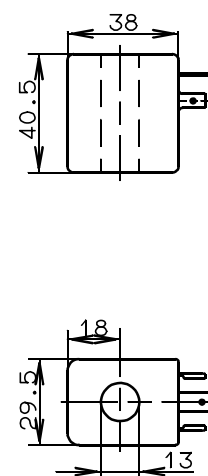
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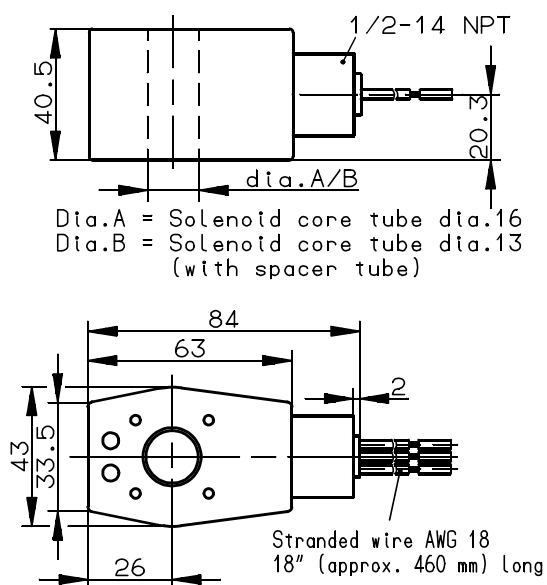
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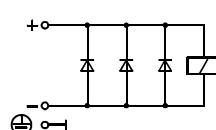
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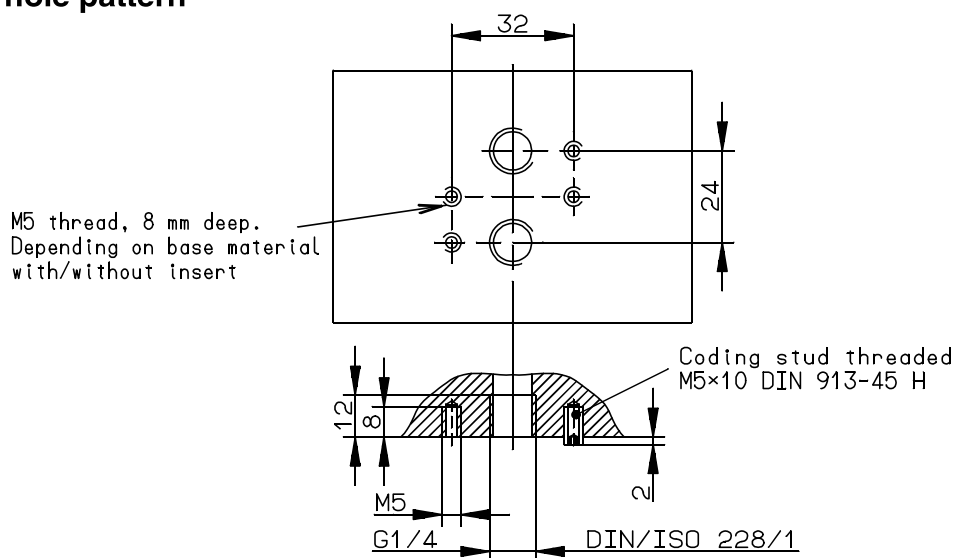
09



Electrical circuit diagrams



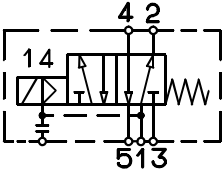
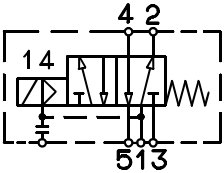
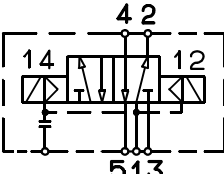
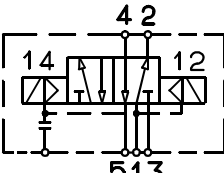
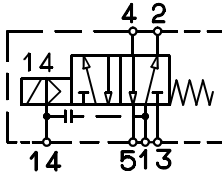
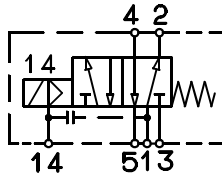
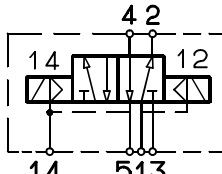
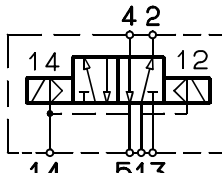
NAMUR hole pattern



Fitting accessories

Description	Use	For additional information see Publication	Weight [kg]	Cat. No.
Flange plate	Direct attachment to pneumatic lifting drives with NAMUR ridge; in the case of wall mounting, dependent on position of piping	HERION 7502242	0.49	0559857
Clamp	Used in conjunction with flange plate for attachment to pneumatic lifting drives with NAMUR post		0.10	0540593
Spacer plate	Direct attachment to pneumatic swivel drives, e. g. when using solenoid with terminal box: Cat. Nos. 3769/2030 - 2038 , dependent on mounting position		0.25	0540109
Adaptor plate	Direct attachment to pneumatic swivel drives with hole pattern corresponding to older type valves: Cat. No. 2636055, 2636056, 2636064, 2636255, 2636256, 2636264		0.18	0559853
Silencer	Pressure connection G 1/4. Max. back pressure 6 bar	HERION 7501080	0.01	0014600
Exhaust throttle	Without silencer Operating pressure 0 to 10 bar	Port size G 1/4 G 1/2 HERION 7501069	0.06 0.20	4048104 4048204

Valve parameters

Nom. size	Pipe connection		Operating pressure [bar]		Control pressure supply [bar]		k _v -value (C _v (US) ≈ k _v x 1.2)	Weight without solenoid [kg]	Sectional drawing No.	Dimensional drawing No.	Cat. No.		
	1 3 5	2 4	min.	max.	internal	external					Valve	Solenoid	
Internal control pressure supply													
													
6	G 1/4	G 1/4	2.5	8	●	—	1.5	0.7	01	02	2636040.	see solenoid specifications	
6	G 1/4	G 1/4	0	8	—	2.5 to 8	1.5	0.7	01	02	2636097.		
6	1/4-18NPT	1/4-18NPT	2.5	8	●	—	1.5	0.7	01	02	2636042.		
12	G 1/2	G 1/2	2.5	8	●	—	2.2	1.3	01	02	2637040.		
12	G 1/2	G 1/2	0	8	—	2.5 to 8	2.2	1.3	01	02	2637097.		
12	1/2-14NPT	1/2-14NPT	2.5	8	●	—	2.2	1.3	01	02	2637049.		
Internal control pressure supply NAMUR interface													
													
6	G 1/4	Flange	2.5	8	●	—	1.5	0.7	01	01	2636044.¹⁾	see solenoid specifications	
6	1/4-18NPT	Flange	2.5	8	●	—	1.5	0.7	01	01	2636094.¹⁾		
6	G 1/4	Flange	0	8	—	2.5 to 8	1.5	0.7	01	01	2636099.¹⁾		
Internal control pressure supply													
													
6	G 1/4	G 1/4	2.5	8	●	—	1.5	0.85	02	04	2636240.	see solenoid specifications	
6	G 1/4	G 1/4	0	8	—	2.5 to 8	1.5	0.85	02	04	2636297.		
Internal control pressure supply NAMUR interface													
													
6	G 1/4	Flange	2.5	8	●	—	1.5	0.85	02	03	2636244.¹⁾	see solenoid specifications	
6	G 1/4	Flange	0	8	—	2.5 to 8	1.5	0.85	02	03	2636299.¹⁾		
External control pressure supply													
													
6	G 1/4	G 1/4	2.5	8	●	—	1.5	0.7	01	02	2636040.	see solenoid specifications	
6	G 1/4	G 1/4	0	8	—	2.5 to 8	1.5	0.7	01	02	2636097.		
6	1/4-18NPT	1/4-18NPT	2.5	8	●	—	1.5	0.7	01	02	2636042.		
12	G 1/2	G 1/2	2.5	8	●	—	2.2	1.3	01	02	2637040.		
12	G 1/2	G 1/2	0	8	—	2.5 to 8	2.2	1.3	01	02	2637097.		
12	1/2-14NPT	1/2-14NPT	2.5	8	●	—	2.2	1.3	01	02	2637049.		
External control pressure supply NAMUR interface													
													
6	G 1/4	G 1/4	2.5	8	●	—	1.5	0.7	01	01	2636044.¹⁾	see solenoid specifications	
6	1/4-18NPT	G 1/4	2.5	8	●	—	1.5	0.7	01	01	2636094.¹⁾		
6	G 1/4	G 1/4	0	8	—	2.5 to 8	1.5	0.7	01	01	2636099.¹⁾		
External control pressure supply													
													
6	G 1/4	G 1/4	2.5	8	●	—	1.5	0.85	02	04	2636240.	see solenoid specifications	
6	G 1/4	G 1/4	0	8	—	2.5 to 8	1.5	0.85	02	04	2636297.		
External control pressure supply NAMUR interface													
													
6	G 1/4	G 1/4	2.5	8	●	—	1.5	0.85	02	03	2636244.¹⁾	see solenoid specifications	
6	G 1/4	G 1/4	0	8	—	2.5 to 8	1.5	0.85	02	03	2636299.¹⁾		

Cat. No. (example): Valve 2636044. Solenoid 2012

¹⁾ 2 fixing bolts M5 x 35 DIN 912 A2/A4 included in delivery.