Solenoid Valve Type 3963

General notes

The Type 3963 Solenoid Valves ensure a high level of operational reliability and fast response times for controlling pneumatic actuators in hazardous areas.

Intrinsically safe, low-power binary signals issued by automation or fieldbus systems can be used for controlling purposes.

The Type 3963 Solenoid Valves offer a variety of switching functions, flow rates and connections for all desired applications (Fig. 1).

Special features of the Type 3963 Solenoid Valves include:

General

- Safety Integrity Level SIL 4 according to IEC 61508 (optional)
- Safety function for use on control valves (optional)
- Corrosion-resistant enclosure with degree of protection IP 54 or IP 65 for applications in humid, aggressive environments
- Versions compatible with paint (on request)
- Service life more than 20 millions switching cycles
- Ambient temperature range −20 to +80 °C or −45 to +80 °C
- Rail mounting, wall mounting or mounting with pipe fittings
- Attachment to linear actuators with NAMUR rib according to IEC 60534-6-1 or to rotary actuators with NAMUR interface according to VDI/VDE 3845

Pilot valve

- E/P binary converter with flapper/nozzle assembly
- Nominal signal 6/12/24 V DC or 24/48/115/230 V AC
- Type of protection II 2 G EEx ia IIC T6 or II 3 G EEx nA II T6 according to ATEX, additional certifications according to CSA, FM, GOST and NEPSI
- Power consumption 6 to 27 mW or 0.04 to 0.46 VA, depending on the nominal signal
- Manual override as pushbutton or pushbutton switch (optional)
- Air supply 1.4 to 6 bar
- Electrical connection using a cable gland M 20 × 1.5 to terminals or using a plug-type connector
- Cable break protection device (accessory)

Booster valve

- Diaphragm with return spring or piston, single or double actuated
- 3/2, 5/2, 5/3 or 6/2-way function
- Exhaust air return (optional)
- K_{vs} 0.16 to 4.3
- Supply air/exhaust air restrictors for adjusting different closing and opening times in a ratio of 1:15 (optional)
- Threaded connection G (NPT) $^1/_4$ or $^1/_2$
- NAMUR interface $^1/_4$" or $^1/_2$"

5/2-way solenoid valve,
single actuated with spring return mechanism,
K_{vs} 0.16, connection G $^1/_4$

3/2-way solenoid valve,
single actuated with spring return mechanism,
K_{vs} 4.3, connection G $^1/_4$

5/2-way solenoid valve,
double actuated with two locking positions,
K_{vs} 1.4, connection G $^1/_4$/NAMUR

Fig. 1

Versions with threaded connection

Type 3963 Solenoid Valves for continuous and on-off actuators

Fig. 2

Fig. 3

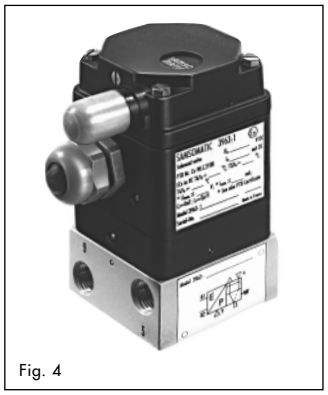
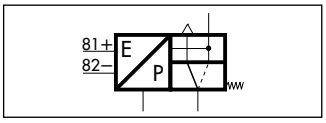
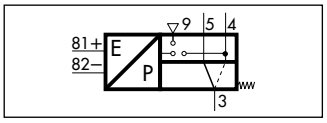


Fig. 4

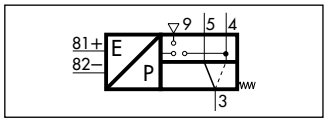
Fig. 5



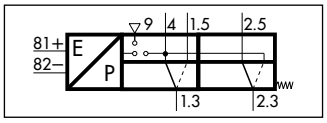
Type 3963-XXX003240XXXXX
Solenoid Valve
- 3/2-way function
- K_{vs} 0.32
- Safety function SIL 4/TÜV
- Attachment via a connection block to SAMSON's Type 3277 Linear Actuator with SAMSON's Type 3730, 3766, 3767 or 378X Positioner (see Fig. 2)



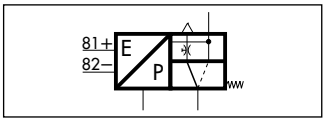
Type 3963-XXX0022XXXXXXX
Solenoid Valve
- 3/2-way function
- K_{vs} 0.32
- Connection G (NPT) $^1/_4$
- Safety function SIL 4/TÜV
- Attachment to linear actuators with NAMUR rib, e. g. SAMSON's Type 3271 (see Fig. 3)



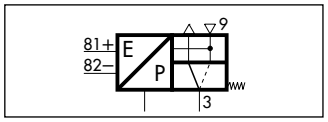
Type 3963-XXX0012XXXXXXX
Solenoid Valve
- 3/2-way function
- K_{vs} 0.32
- Connection G (NPT) $^1/_4$
- Safety function SIL 4/TÜV
- Rail mounting, wall mounting or mounting with pipe fittings to linear actuators, e. g. SAMSON's Type 3271 or 3277



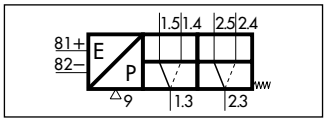
Type 3963-XXX1011XXXXXX0
Solenoid Valve
- 5/2-way function
- K_{vs} 0.16
- Connection G (NPT) $^1/_4$
- Rail mounting or wall mounting



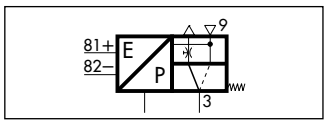
Type 3963-XXX013141XXXX0
Solenoid Valve
- 3/2-way function
- Adjustable exhaust air restrictor
- K_{vs} 0.16
- Attachment via a connection block to SAMSON's Type 3277 Linear Actuator with SAMSON's Type 3730, 3766, 3767 or 378X Positioner (see Fig. 2)



Type 3963-XXX0011X0XXXXX
Solenoid Valve
- 3/2-way function
- K_{vs} 0.16
- Connection G (NPT) $^1/_4$
- Rail mounting, wall mounting or mounting with pipe fittings to on-off linear actuators, e. g. SAMSON's Type 3271 or 3277



Type 3963-XXX8011XXXXXX0
Solenoid Valve
- 6/2-way function
- K_{vs} 0.16
- Connection G (NPT) $^1/_4$
- Rail mounting or wall mounting

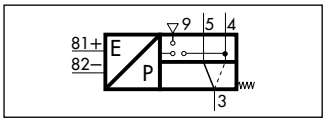


Type 3963-XXX0111X0XXXX0
Solenoid Valve
- 3/2-way function
- Adjustable exhaust air restrictor
- K_{vs} 0.16
- Connection G (NPT) $^1/_4$
- Rail mounting, wall mounting or mounting with pipe fittings to on-off linear actuators, e. g. SAMSON's Types 3271 or 3277

Versions with threaded connection (continued from page 2)

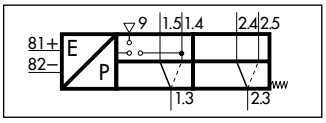
Type 3963 Solenoid Valves for continuous and on-off actuators

Fig. 6



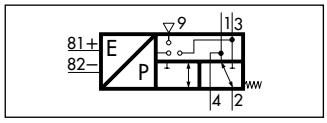
Type 3963-XXX0014XXXXXXX
Solenoid Valve
- 3/2-way function
- K_{vs} 4.3
- Connection G (NPT) $^1/_2$
- Safety function SIL 4/TÜV
- Wall mounting or mounting with pipe fittings to linear actuators, e. g. SAMSON's Type 3271 or 3277

Fig. 7



Type 3963-XXX1014XXXXXX0
Solenoid Valve
- 5/2-way function
- K_{vs} 4.3
- Connection G (NPT) $^1/_2$
- Wall mounting or mounting with pipe fittings

Fig. 8



Type 3963-XXX0013XXXXXXX
Solenoid Valve
- 3/2-way function
- Exhaust air return
- K_{vs} 1.4
- Connection G (NPT) $^1/_4$
- Safety function TÜV
- Wall mounting or mounting with pipe fittings to linear actuators, e. g. SAMSON's Type 3271 or 3277

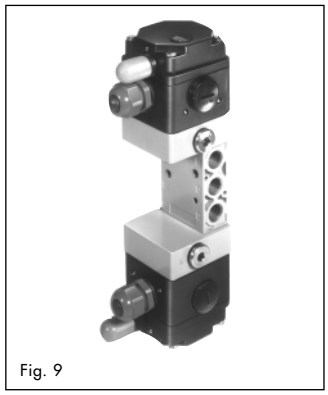
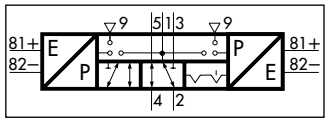
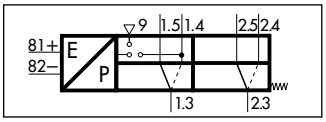


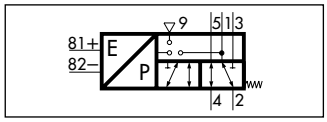
Fig. 9



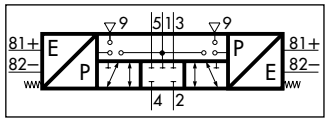
Type 3963-XXX2013XXXXXXX
Solenoid Valve
- 5/2-way function with two locking positions
- K_{vs} 1.4
- Connection G (NPT) $^1/_4$
- Safety function TÜV
- Wall mounting or mounting with pipe fittings



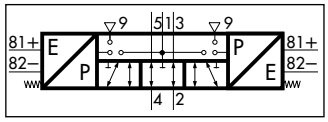
Type 3963-XXX8014XXXXXX0
Solenoid Valve
- 6/2-way function
- K_{vs} 4.3
- Connection G (NPT) $^1/_2$
- Wall mounting or mounting with pipe fittings



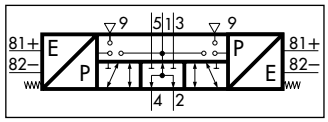
Type 3963-XXX1013XXXXXX0
Solenoid Valve
- 5/2-way function
- K_{vs} 1.4
- Connection G (NPT) $^1/_4$
- Wall mounting or mounting with pipe fittings to linear actuators, e. g. SAMSON's Type 3271 or 3277



Type 3963-XXX3013XXXXXX0
Solenoid Valve
- 5/3-way function with spring-centered mid-position (connections 2 and 4 closed)
- K_{vs} 1.4
- Connection G (NPT) $^1/_4$
- Wall mounting or mounting with pipe fittings



Solenoid Valve
Type 3963-XXX5013XXXXXXX
- 5/3-way function with spring-centered mid-position (connections 2 and 4 vented)
- K_{vs} 1.4
- Connection G (NPT) $^1/_4$
- Safety function TÜV
- Wall mounting or mounting with pipe fittings



Type 3963-XXX4013XXXXXX0
Solenoid Valves
- 5/3-way function with spring-centered mid-position (connections 2 and 4 to air supply)
- K_{vs} 1.4
- Connection G (NPT) $^1/_4$
- Wall mounting or mounting with pipe fittings

Versions with NAMUR interface

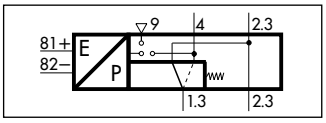
Type 3963 Solenoid Valves for continuous and on-off actuators

Fig. 10

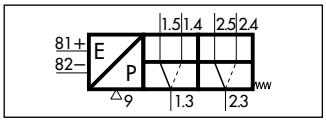
Fig. 11

Fig. 12

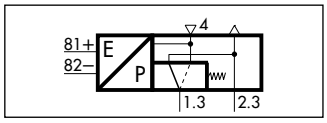
Fig. 13



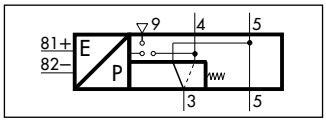
Type 3963-XXX0002XXXXXXX
Solenoid Valve
- 3/2-way function
- Exhaust air return
- K_{vs} 0.32
- Connection G (NPT) 1/4/NAMUR
- Safety function SIL 4/TÜV
- Mounting to rotary actuators with NAMUR interface, optionally with a positioner (see Fig. 10)



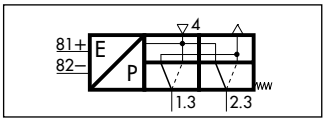
Type 3963-XXX8001XXXXXX0
Solenoid Valve
- 6/2-way function
- K_{vs} 0.16
- Connection G (NPT) 1/4/NAMUR
- Mounting to rotary actuators with NAMUR interface



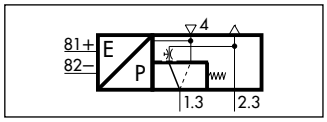
Type 3963-XXX0001X0XXXXX
Solenoid Valve
- 3/2-way function
- Exhaust air return
- K_{vs} 0.16
- Connection G (NPT) 1/4/NAMUR
- Safety function SIL 4/TÜV
- Mounting to on-off rotary actuators with NAMUR interface or with adapter plate (order no. 1400-6751) to linear actuators with NAMUR rib, e. g. SAMSON's Type 3241-1 (see Fig. 12)



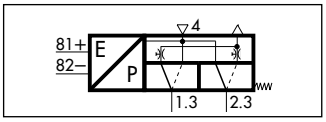
Type 3963-XXX0007XXXXXXX
Solenoid Valve
- 3/2-way function
- Exhaust air return
- K_{vs} 2.0
- Connection G (NPT) 1/4, 1/2/NAMUR 1/4"
- Safety function SIL 4/TÜV
- Mounting to on-off rotary actuators with NAMUR interface 1/8" or 1/4"or with adapter plate (order no. 1400-6751) to linear actuators with NAMUR rib



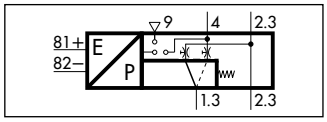
Type 3963-XXX1001XXXXXX0
Solenoid Valve
- 5/2-way function
- K_{vs} 0.16
- Connection G (NPT) 1/4/NAMUR
- Mounting to on-off rotary actuators with NAMUR interface (see Fig. 10)



Type 3963-XXX0101X0XXXX0
Solenoid Valve
- 3/2-way function
- Exhaust air return
- Adjustable exhaust air restrictor
- K_{vs} 0.16
- Connection G (NPT) 1/4/NAMUR
- Mounting to on-off rotary actuators with NAMUR interface or with adapter plate (order no. 1400-6751) to linear actuators with NAMUR rib, e. g. SAMSON's Type 3241-1 (see Fig. 12)



Type 3963-XXX1201X0XXXX0
Solenoid Valve
- 5/2-way function
- Two adjustable exhaust air restrictors
- K_{vs} 0.16
- Connection G (NPT) 1/4/NAMUR
- Mounting to on-off rotary actuators with NAMUR interface (see Fig. 10)

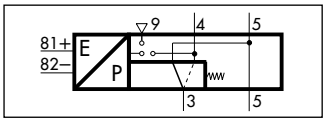


Type 3963-XXX0301XXXXXX0
Solenoid Valve
- 3/2-way function
- Adjustable supply air/exhaust air restrictors
- K_{vs} 0.16
- Connection G (NPT) 1/4/NAMUR
- Mounting to on-off rotary actuators with NAMUR interface or with adapter plate (order no. 1400-6751) to linear actuators with NAMUR rib, e. g. SAMSON's Type 3241-1 (see Fig. 12)

Versions with NAMUR interface (continued from page 4)

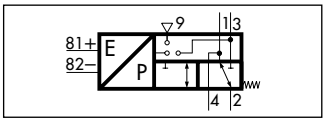
Type 3963 Solenoid Valves for continuous and on-off actuators

Fig. 14



Type 3963-XXX0004XXXXXXX
Solenoid Valve
- 3/2-way function
- Exhaust air return
- K_{vs} 4.3
- Connection G (NPT) $^1/_2$/NAMUR $^1/_2$"
- Safety function SIL 4/TÜV
- Mounting to on-off rotary actuators with NAMUR interface $^3/_8$" or $^1/_2$"

Fig. 15



Type 3963-XXX0003XXXXXXX
Solenoid Valve
- 3/2-way function
- Exhaust air return
- K_{vs} 1.4
- Connection G (NPT) $^1/_4$/NAMUR
- Safety function TÜV
- Mounting to rotary actuators with NAMUR interface or with adapter plate (order no. 1400-6751) to linear actuators with NAMUR rib

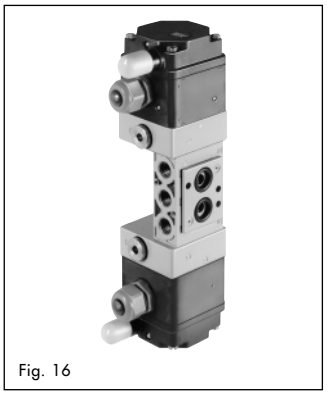
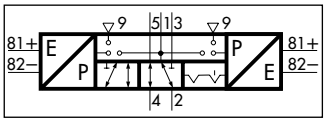
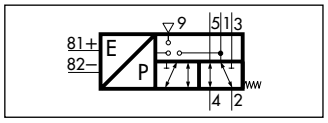


Fig. 16

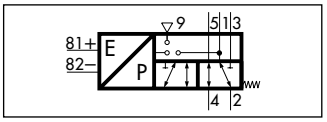


Type 3963-XXX2003XXXXXXX
Solenoid Valve
- 5/2-way function with two locking positions
- K_{vs} 1.4
- Connection G (NPT) $^1/_4$/NAMUR
- Safety function TÜV
- Mounting to rotary actuators with NAMUR interface

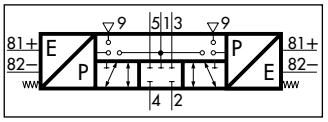
Fig. 17



Type 3963-XXX1006XXXXXX0
Solenoid Valve
- 5/2-way function
- K_{vs} 2.9
- Connection G (NPT) $^1/_2$/NAMUR $^1/_2$"
- Mounting to rotary actuators with NAMUR interface $^3/_8$" or $^1/_2$"



Type 3963-XXX1003XXXXXX0
Solenoid Valve
- 5/2-way function
- K_{vs} 1.4
- Connection G (NPT) $^1/_4$/NAMUR
- Mounting to rotary actuators with NAMUR interface or with adapter plate (order no. 1400-6751) to linear actuators with NAMUR rib



Type 3963-XXX3003XXXXXX0
Solenoid Valve
- 5/3-way function with spring-centered mid-position (connections 2 and 4 closed)
- K_{vs} 1.4
- Connection G (NPT) $^1/_4$/NAMUR
- Mounting to rotary actuators with NAMUR interface

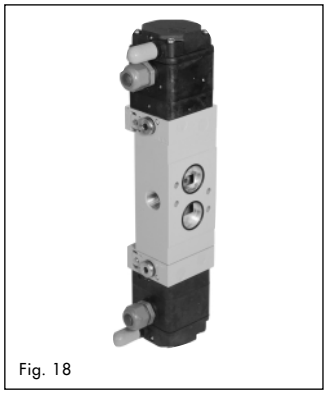
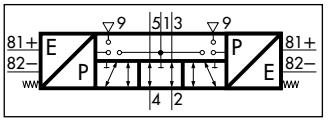
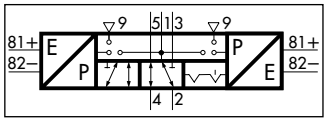


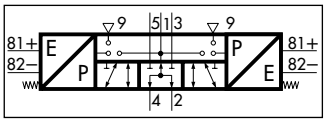
Fig. 18



Type 3963-XXX5003XXXXXXX
Solenoid Valve
- 5/3-way function with spring-centered mid-position (connections 2 and 4 vented)
- K_{vs} 1.4
- Connection G (NPT) $^1/_4$/NAMUR
- Safety function TÜV
- Mounting to rotary actuators with NAMUR interface



Type 3963-XXX2006XXXXXX0
Solenoid Valve
- 5/2-way function with two locking positions
- K_{vs} 2.9
- Connection G (NPT) $^1/_2$/NAMUR $^1/_2$"
- Mounting to rotary actuators with NAMUR interface $^3/_8$" or $^1/_2$"



Type 3963-XXX4003XXXXXX0
Solenoid Valve
- 5/3-way function with spring-centered mid-position (connections 2 and 4 to air supply)
- K_{vs} 1.4
- Connection G (NPT) $^1/_4$/NAMUR
- Mounting to rotary actuators with NAMUR interface

Function

Solenoid valves with single actuation

The solenoid valves consist of an E/P binary converter Ⓐ with manual override Ⓑ (optional) and a single actuated booster valve Ⓒ with return spring (Fig. 18).

The booster valve Ⓒ supplies the E/P binary converter Ⓐ internally with the supply air (delivery state). Rotating a flat gasket allows the E/P binary converter Ⓐ to be supplied with external air supply via connection 9.

The pressure reducer ⑤ reduces the air supply pressure to 1.4 bar.

In the normal position the flapper ② is lifted off the outlet nozzle ① by the spring ③. As a result, a pressure lower than the switch-off pressure of the booster valve Ⓒ builds up in the pressure divider that consists of the restriction ⑥ and the outlet nozzle ①.

When the solenoid ④ is energized by an electrical binary signal, the outlet nozzle ① is closed by the flapper ② against the force of the spring ③. As a result, the pressure in the pressure divider rises above the switch-on pressure of the booster valve Ⓒ, thus switching it to the operating position.

After de-energizing the electrical binary signal, the booster valve Ⓒ will be switched to the normal position by a return spring.

Solenoid valves with double actuation

The solenoid valves consist of two E/P binary converters Ⓐ with manual override Ⓑ (optional) and a double-actuated booster valve Ⓒ with two locking positions or spring-centered mid-position.

The booster valve Ⓒ supplies the E/P binary converters Ⓐ internally with the supply air (delivery state). Rotating two flat gaskets allows the E/P binary converters Ⓐ to be supplied with external air supply via connections 9.

The pressure reducer ⑤ reduces the air supply pressure to 1.4 bar.

In the normal position, the flapper ② is lifted off the outlet nozzle ① by the spring ③. As a result, a pressure lower than the switch-off pressure of the booster valve Ⓒ builds up in the pressure divider that consists of a restriction ⑥ and an outlet nozzle ①.

When the solenoid is energized by an electrical binary signal, the outlet nozzle ① is closed by the flapper ② against the force of the spring ③. As a result, the pressure in the pressure divider rises above the switch-on pressure of the booster valve Ⓒ, thus switching it to the operating position.

After de-energizing the electrical binary signal, the operating position of the detented booster valve Ⓒ will be retained until a reverse signal is received. After de-energizing the electrical binary signal the spring-centered booster valve Ⓒ will be switched to the mid-position by a return spring.

Energizing both E/P binary converters Ⓐ at the same time must be prevented by appropriate electrical control.

Functional diagram

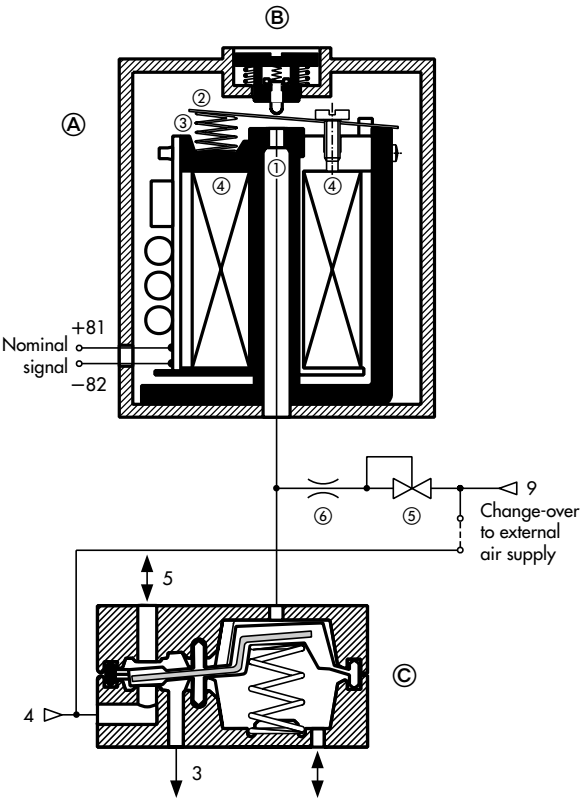


Fig. 19 · Solenoid valve with diaphragm element as booster valve (K_{vs} 0.16)

Technical data

General data of the solenoid valves		
Construction		Solenoid with flapper/nozzle assembly and booster valve
Degree of protection		IP 54 with filter, IP 65 with filter check valve
Material Enclosure		Polyamide PA 6-3-T-GF35, black
	Connection plate	Al Mg, powder-coated, grayish-beige RAL 1019, Stainless steel 1.4404 (special versions see "Versions and ordering data", page 23), Polyamide PA 6-3-T-GF35, black
	Screws	Stainless steel 1.4571
	Springs	Stainless steel 1.4310
	Gaskets	Silicone rubber, Perbunan
	Diaphragms	Chloroprene 57 Cr 868 (−20 to +80 °C), Silicone rubber (−45 to +80 °C)
Air supply	Medium	Instrument air, free of corrosive particles, or nitrogen
	Pressure	1.4 to 6 bar
Air consumption		≤ 80 l/h at 1.4 bar air supply in normal position, ≤ 10 l/h at 1.4 bar air supply in operating position
Switching time		≤ 65 ms
Switching cycles		≥ 2×10^7 (at −20 to +80 °C), ≥ 2×10^6 (at −45 to +80 °C)
Ambient temperature		see „Electrical data"
Mounting position		As desired (see Mounting and Operating Instructions EB 3963 EN)

Electrical data of the solenoid valves								
Type 3963		**-X1**	**-X2**	**-X3**	**-08**	**-07**	**-06**	**-05**
Nominal signal	U_N	6 V DC Max. 27 V [1])	12 V DC Max. 25 V [1])	24 V DC Max. 32 V [1])	24 V AC Max. 36 V [1])	48 V AC Max. 80 V [1])	115 V AC Max. 130 V [1])	230 V AC Max. 255 V [1])
	f_N				48 … 62 Hz			
Switching point "On"	$U_{+80\,°C}$	≥ 4.8 V	≥ 9.6 V	≥ 18 V	19 … 36 V	42 … 80 V	82 … 130 V	183 … 255 V
	$I_{+20\,°C}$	≥ 1.41 mA	≥ 1.52 mA	≥ 1.57 mA	≥ 1.9 mA	≥ 1.9 mA	≥ 2.2 mA	≥ 2.6 mA
	$P_{+20\,°C}$	≥ 5.47 mW	≥ 13.05 mW	≥ 26.71 mW	≥ 0.04 VA	≥ 0.07 VA	≥ 0.17 VA	≥ 0.46 VA
"Off"	$U_{-25\,°C}$	≤ 1.0 V	≤ 2.4 V	≤ 4.7 V	≤ 4.5 V	≤ 9 V	≤ 18 V	≤ 36 V
Impedance	$R_{+20\,°C}$	2.6 kΩ	5.5 kΩ	10.7 kΩ	Approx. 10 kΩ	Approx. 24 kΩ	Approx. 40 kΩ	Approx. 80 kΩ
Temperature effect		0.4 %/°C	0.2 %/°C	0.1 %/°C	0.1 %/°C	0.1 %/°C	0.05 %/°C	0.03 %/°C
Type of protection EEx ia IIC [2]) for use in hazardous areas (zone 1)								
Type 3963		**-11**	**-12**	**-13**				
Permissible maximum values for connection to a certified intrinsically safe circuit								
Output voltage [4])	U_i	25 V	27 V	28 V	30 V	32 V		
Output current [4])	I_i	150 mA	125 mA	115 mA	100 mA	85 mA		
Power dissipation	P_i	250 mW	No Limitation					
External capacitance	C_i	≈ 0						
External inductance	L_i	≈ 0						
Ambient temperature in temperature class								
	T6	−45 … +60 °C						
	T5	−45 … +70 °C						
	T4	−45 … +80 °C						
Type of protection EEx nA II [3]) for use in hazardous areas (zone 2 or 22)								
Type 3963		**-81**	**-82**	**-83**				
Ambient temperature in temperature class								
	T6	−45 … +60 °C						
	T5	−45 … +70 °C						
	T4	−45 … +80 °C						

[1]) Permissible maximum value at continuous duty. For Ex versions, the permissible maximum value U_i applies
[2]) II 2 G EEx ia IIC T6 according to EC Type Examination Certificate PTB 01 ATEX 2085
[3]) II 3 G EEx nA II T6 according to Statement of Conformity PTB 01 ATEX 2086 X
[4]) The U_i/I_i values apply to nominal signals 6/12/24 V DC

Technical data (continued from page 7)

Solenoid valves with single actuation, K_{vs} 0.16 or 0.32				
Switching function	3/2-way function	3/2-way function	5/2-way function	6/2-way function
K_{vs} [1])	0.16	0.32	0.16	0.16
Safety function	SIL 4 [3]), TÜV [4])	SIL 4 [3]), TÜV [4])	TÜV [4])	–
Construction	Diaphragm element, soft-seated type, with return spring			
Operating medium	Instrument air, free of corrosive particles [4]), oil-containing air or noncorrosive gases [5])			
Operating pressure max.	6 bar			
Output signal	Operating pressure			
Ambient temperature [2])	−45 to +80 °C			
Connection	G (NPT) 1/4			
Weight approx.	570 g (standard version)			

Solenoid valves with single actuation, K_{vs} 4.3, threaded connection					
Switching function		3/2-way function	3/2-way function	5/2-way function	6/2-way function
K_{vs} [1]) (in direction of flow)		1.9 (4→3), 1.5 (3→4) 4.3 (3→5), 4.7 (5→3)	1.9 (4→3), 1.5 (3→4) 4.3 (3→5), 4.7 (5→3)	1.9 (4→3), 1.5 (3→4) 4.3 (3→5), 4.7 (5→3)	1.9 (4→3), 1.5 (3→4) 4.3 (3→5), 4.7 (5→3)
Ambient temperature [2])		−20 to +80 °C	−45 to +80 °C	−20 to +80 °C	−20 to +80 °C
Safety function		SIL 4 [3]), TÜV [4])	TÜV [4])	–	–
Construction		Seat valve, soft-seated type, with return spring			
Material	Enclosure	GD AlSi 12, powder-coated, grayish-beige RAL 1019, stainless steel 1.4404 (special versions see "Versions and ordering data", page 23)			
	Diaphragm	Chloroprene	Silicone rubber	Chloroprene	Chloroprene
	Gaskets	Chloroprene	Silicone rubber	Chloroprene	Chloroprene
	Screws	Stainless steel 1.4571			
Actuation		Single actuated by one pilot valve, K_{vs} 0.16			
Operating medium		Instrument air, free of corrosive particles, or nitrogen [5]), instrument air, free of corrosive particles, oil-containing air or noncorrosive gases [6])			
Operating pressure max. (in direction of flow)		10 bar (4→3, 3→5) 2 bar (as desired)	10 bar (4→3, 3→5) 2 bar (as desired)	10 bar (as desired) 2 bar (as desired)	10 bar (as desired) 2 bar (as desired)
Switching cycles (operating pressure)		≥ 10^7 (6 bar) ≥ 10^6 (10 bar)	≥ 10^6 (6 bar) ≥ 10^5 (10 bar)	≥ 10^7 (6 bar) ≥ 10^6 (10 bar)	≥ 10^7 (6 bar) ≥ 10^6 (10 bar)
Connection		G (NPT) 1/2			
Weight approx.		585 g (standard version)		1 100 g (standard version)	

Solenoid valves with single actuation, K_{vs} 2.0 or 4.3, with NAMUR interface					
Switching function		3/2 way function with exhaust air return			
K_{vs} [1]) (in direction of flow)		1.1 (4→3) 2.0 (3→5)	1.1 (4→3) 2.0 (3→5)	1.9 (4→3) 4.3 (3→5)	1.9 (4→3) 4.3 (3→5)
Ambient temperature [2])		−20 to +80 °C	−45 to +80 °C	−20 to +80 °C	−45 to +80 °C
Safety function		SIL 4 [3]), TÜV [4])	TÜV [4])	SIL 4 [3]), TÜV [4])	TÜV [4])
Construction		Seat valve, soft-seated type, with return spring			
Material	Enclosure	GD AlSi 12, powder-coated, grayish-beige RAL 1019, stainless steel 1.4404 (special versions see "Versions and ordering data", page 23)			
	Diaphragm	Chloroprene	Silicone rubber	Chloroprene	Silicone rubber
	Gaskets	Chloroprene	Silicone rubber	Chloroprene	Silicone rubber
	Screws	Stainless steel 1.4571			
Actuation		Single actuated by one pilot valve, K_{vs} 0.16			
Operating medium		Instrument air, free of corrosive particles, or nitrogen [5]), Instrument air, free of corrosive particles, oil containing air or noncorrosive gases [6])			
Operating pressure max.		10 bar	10 bar	10 bar	10 bar
Switching cycles (operating pressure)		≥ 10^7 (6 bar) ≥ 10^6 (10 bar)	≥ 10^6 (6 bar) ≥ 10^5 (10 bar)	≥ 10^7 (6 bar) ≥ 10^6 (10 bar)	≥ 10^6 (6 bar) ≥ 10^5 (10 bar)
Connection	air supply	G (NPT) 1/4/NAMUR interface 1/4" [7])		G (NPT) 1/2/NAMUR interface 1/2" [7])	
	exhaust air	G (NPT) 1/2/NAMUR interface 1/4" [7])		G (NPT) 1/2/NAMUR interface 1/2" [7])	
Weight approx.		1 380 g (standard version)		1 500 g (standard version)	

[1]) Air flow at $p_1 = 2.4$ bar and $p_2 = 1.0$ bar can be calculated according to the following equation: $Q = K_{vs} \times 36.22$, expressed in m^3/h
[2]) The permissible maximum temperature of the solenoid valve depends on the permissible ambient temperature of the components, the type of protection and the temperature class
[3]) Safety Integrity Level SIL 4 according to IEC 61508 (Report No. V 60 2004 T1)
[4]) Safety function for use on control valves according to DIN 3394 Part 1, DIN EN 161, DIN 32725, DIN EN 264 and DIN 32730 (Report No. S 284 2007 E1)
[5]) With internal air supply
[6]) With external air supply
[7]) NAMUR interface according to VDI/VDE 3845

Technical data (continued from page 8)

Solenoid valves with single actuation, K_{vs} 1.4 or 2.9			
Switching function		3/2-way function with exhaust air return	5/2-way function
K_{vs} [1])		1.4 or 2.9	
Safety function		TÜV [2]) (for K_{vs} 1.4)	–
Construction		Piston valve, metal-to-metal seating, without overlap, with return spring	
Material	Enclosure	GD AlSi 12, powder-coated, grayish-beige RAL 1019, stainless steel 1.4404 (special versions see "Versions and ordering data", page 23)	
	Gaskets	Silicone	
	Filter	Polyethylene	
	Screws	Stainless steel 1.4571	
Actuation		Single actuated by one pilot valve, K_{vs} 0.01 (at 1.4) or K_{vs} 0.16 (at 2.9)	
Operating medium		Instrument air, free of corrosive particles, or nitrogen [3]), instrument air, free of corrosive particles, oil-containing air or noncorrosive gases [4])	
Operating pressure max.		6 bar [3]) or 10 bar [4])	
Ambient temperature [5])		−45 to +80 °C	
Switching cycles		≥ 2×10^7	
Connection	K_{vs} 1.4	G (NPT) 1/4 or NAMUR interface [6])	
	K_{vs} 2.9	G (NPT) 1/2 or NAMUR interface [6])	
Weight approx.	K_{vs} 1.4	485 g (standard version)	
	K_{vs} 2.9	1760 g (standard version)	

Solenoid valves with double actuation, K_{vs} 1.4 or 2.9					
Switching function		5/2-way function with two locking positions	5/3-way function with spring-centered mid-position, connections 2 and 4 closed	5/3-way function with spring-centered mid-position, connections 2 and 4 vented	5/3-way function with spring-centered mid-position, connections 2 and 4 to air supply
K_{vs} [1])		1.4 or 2.9	1.4 (2.9 on request)	1.4 (2.9 on request)	1.4 (2.9 on request)
Safety function		TÜV [2]) (for K_{vs} 1.4)	–	TÜV [2]) (for K_{vs} 1.4)	–
Construction		Piston valve, metal-to-metal seating, without overlap			
Material	Enclosure	GD AlSi 12, powder-coated, grayish-beige RAL 1019, stainless steel 1.4404 (special versions see "Versions and ordering data", page 23)			
	Gaskets	Silicone			
	Filter	Polyethylene			
	Screws	Stainless steel 1.4571			
Actuation		Double actuated by two pilot valves, K_{vs} 0.01 (at 1.4) or K_{vs} 0.16 (at 2.9)			
Operating medium		Instrument air, free of corrosive particles, or nitrogen [3]), instrument air, free of corrosive particles, oil-containing air or noncorrosive gases [4])			
Operating pressure max.		6 bar [3]) or 10 bar [4])			
Ambient temperature [5])		−45 to +80 °C			
Switching cycles		≥ 2×10^7			
Connection	K_{vs} 1.4	G (NPT) 1/4 or NAMUR interface [6])			
	K_{vs} 2.9	G (NPT) 1/2 or NAMUR interface [6])			
Weight approx.	K_{vs} 1.4	685 g (standard version)			
	K_{vs} 2.9	2180 g (standard version)			

[1]) Air flow at $p_1 = 2.4$ bar and $p_2 = 1.0$ bar can be calculated according to the following equation: $Q = K_{vs} \times 36.22$, expressed in m^3/h
[2]) Safety function for use on control valves according to DIN 3394 Part 1, DIN EN 161, DIN 32725, DIN EN 264 and DIN 32730 (Report No. S 284 2007 E1)
[3]) With internal air supply
[4]) With external air supply
[5]) The permissible maximum temperature of the solenoid valve depends on the permissible ambient temperature of the components, the type of protection and the temperature class
[6]) NAMUR interface according to VDI/VDE 3845

Dimensions of devices without threaded connection

Pilot valve, K_{vs} 0.01

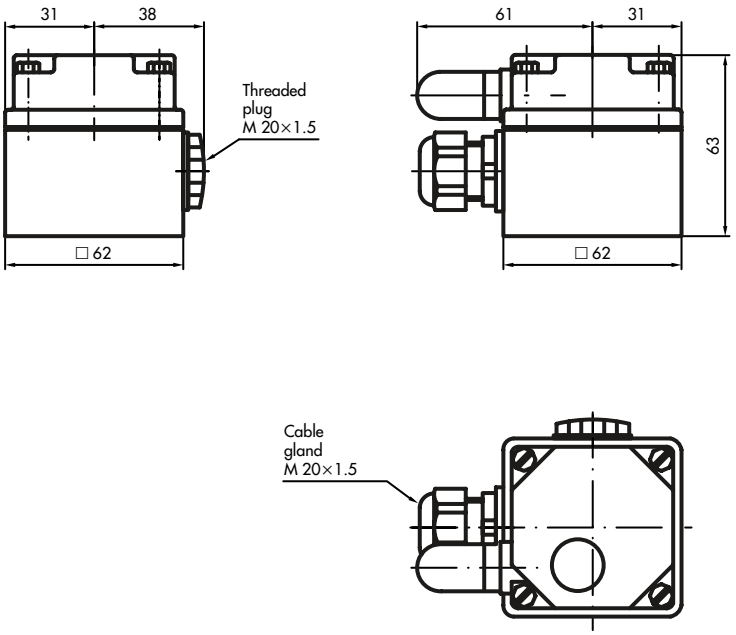


Fig. 20 · Dimensions in mm

Pilot valve, K_{vs} 0.16

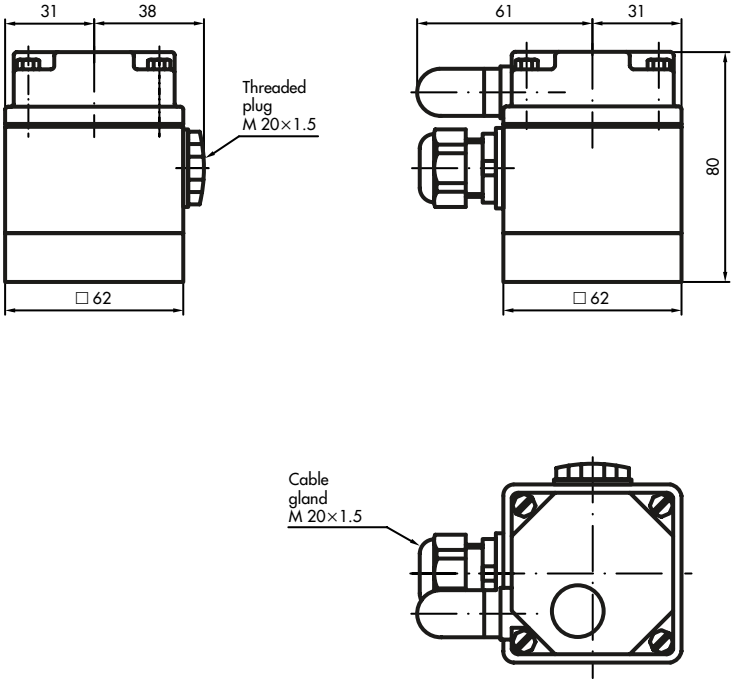


Fig. 21 · Dimensions in mm

Dimensions of devices with threaded connection

5/2-way solenoid valve, single actuated, K_{vs} 0.16

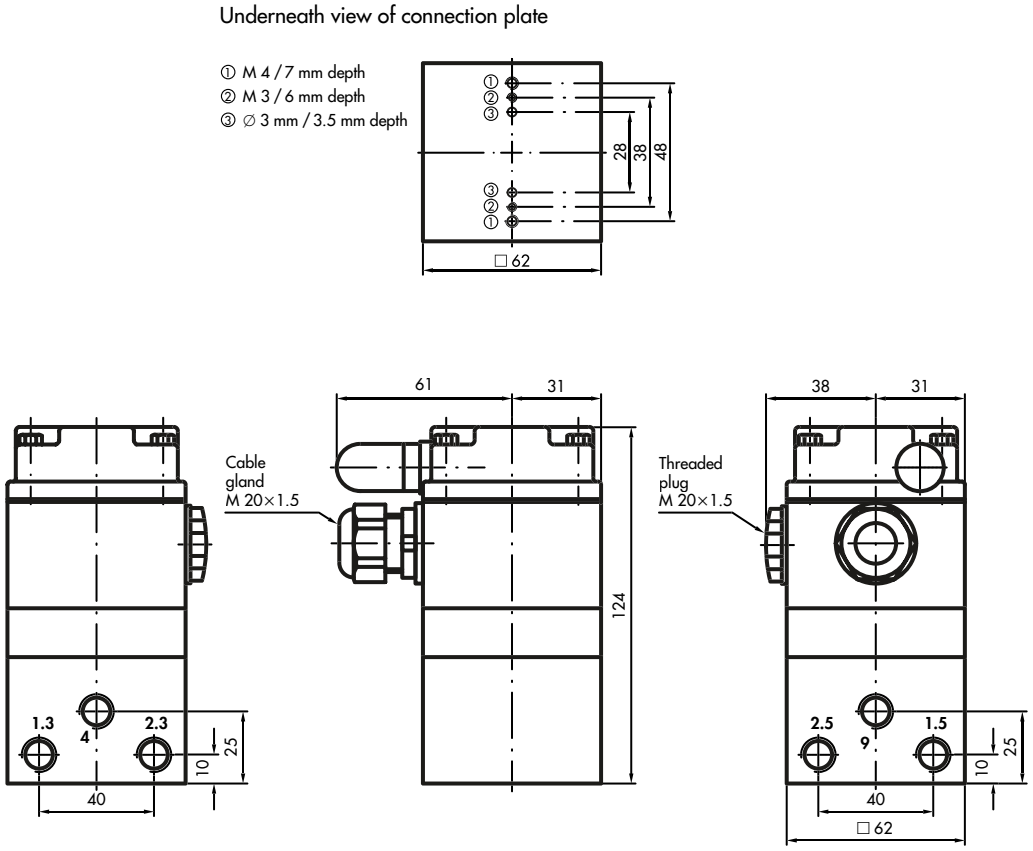
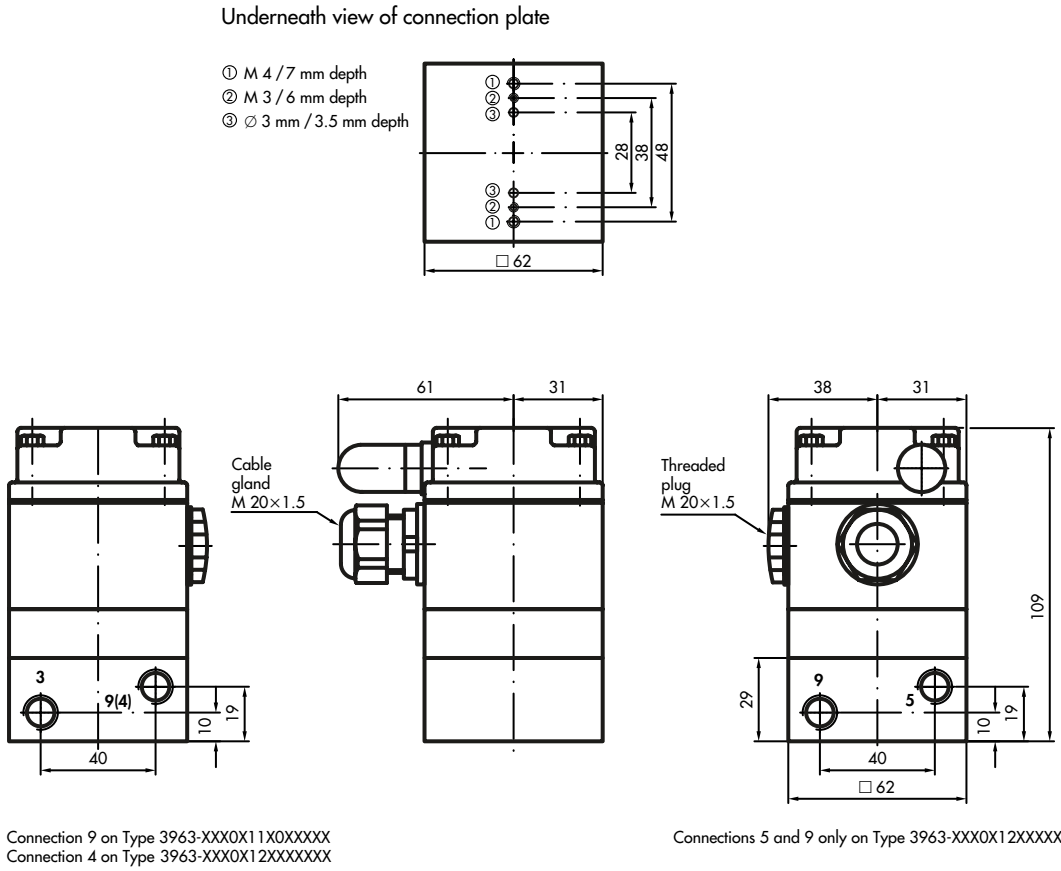


Fig. 22 · Dimensions in mm

3/2-way solenoid valve, single actuated, K_{vs} 0.16 or 0.32



Connection 9 on Type 3963-XXX0X11X0XXXXX
Connection 4 on Type 3963-XXX0X12XXXXXXX

Connections 5 and 9 only on Type 3963-XXX0X12XXXXXXX

Fig. 23 · Dimensions in mm

Dimensions of devices with threaded connection (continued from page 11)

6/2-way solenoid valve, single actuated, K_{vs} 0.16

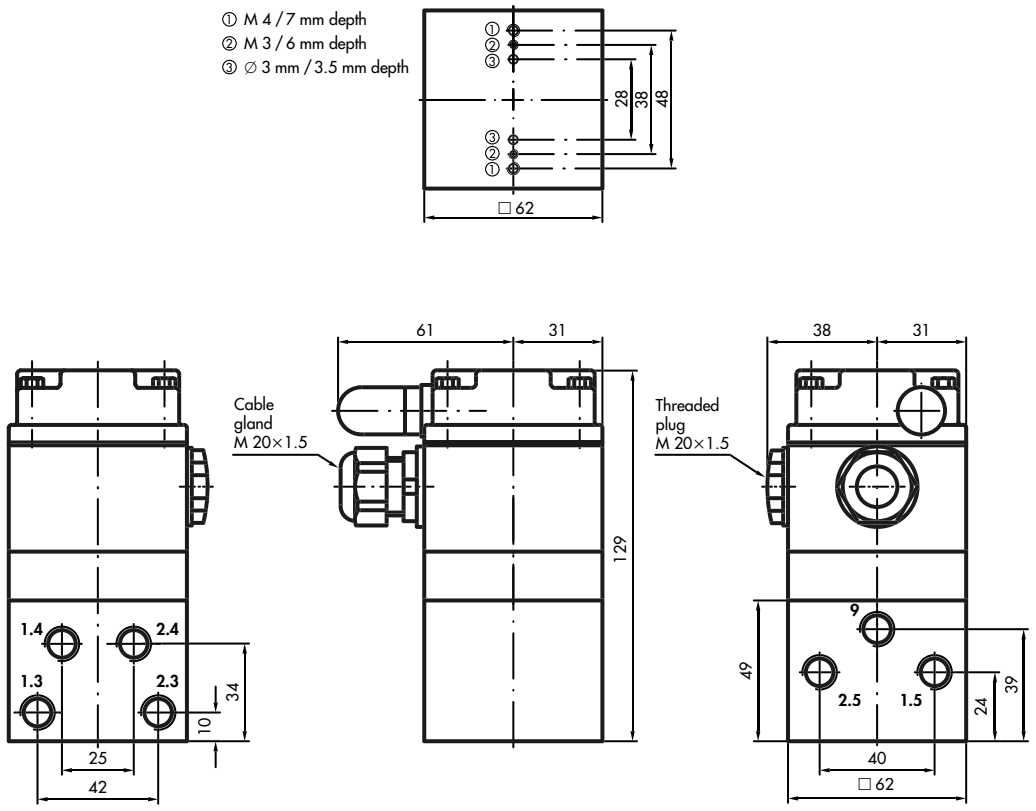
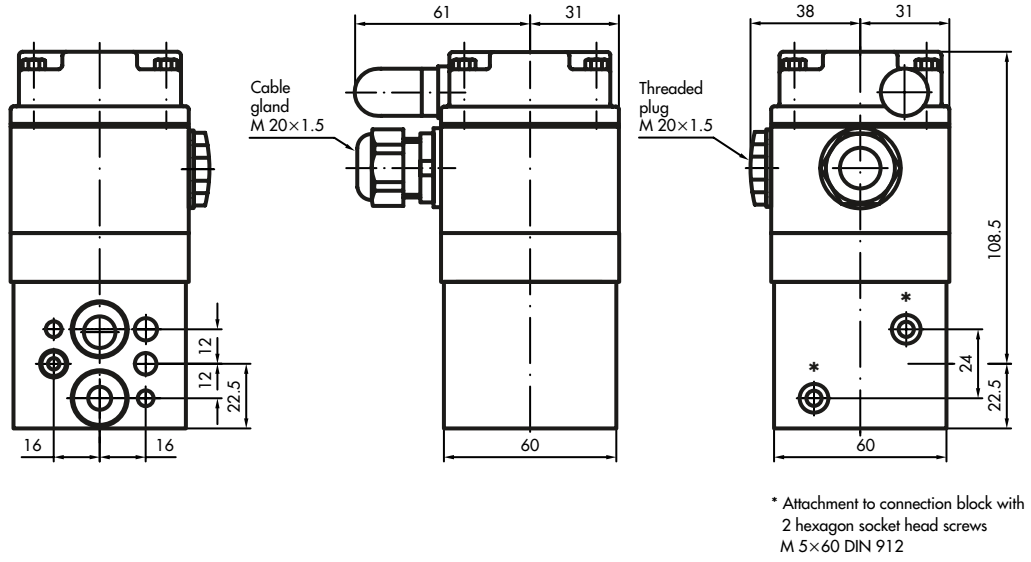


Fig. 24 · Dimensions in mm

3/2-way solenoid valve, single actuated, K_{vs} 0.16 or 0.32, for attachment with connection block to linear actuators



* Attachment to connection block with 2 hexagon socket head screws M 5×60 DIN 912

Fig. 25 · Dimensions in mm

Dimensions of devices with threaded connection (continued from page 12)

3/2-way solenoid valve, single actuated, K_{vs} 4.3

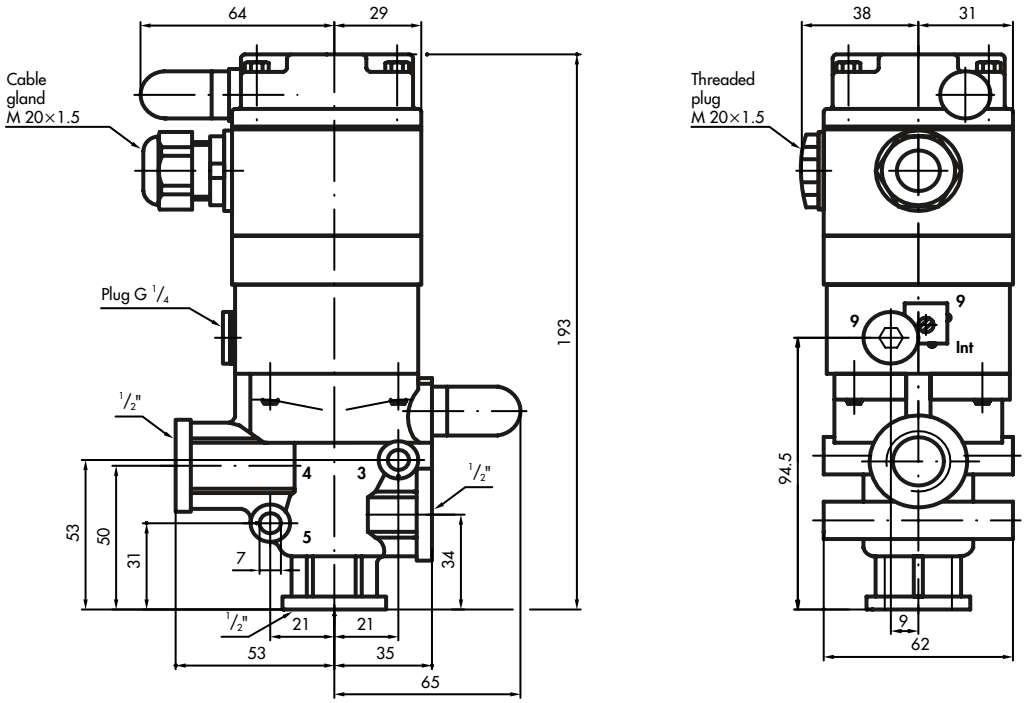


Fig. 26 · Dimensions in mm

Dimensions of devices with threaded connection (continued from page 13)

5/2-way solenoid valve, single actuated, K_{vs} 4.3

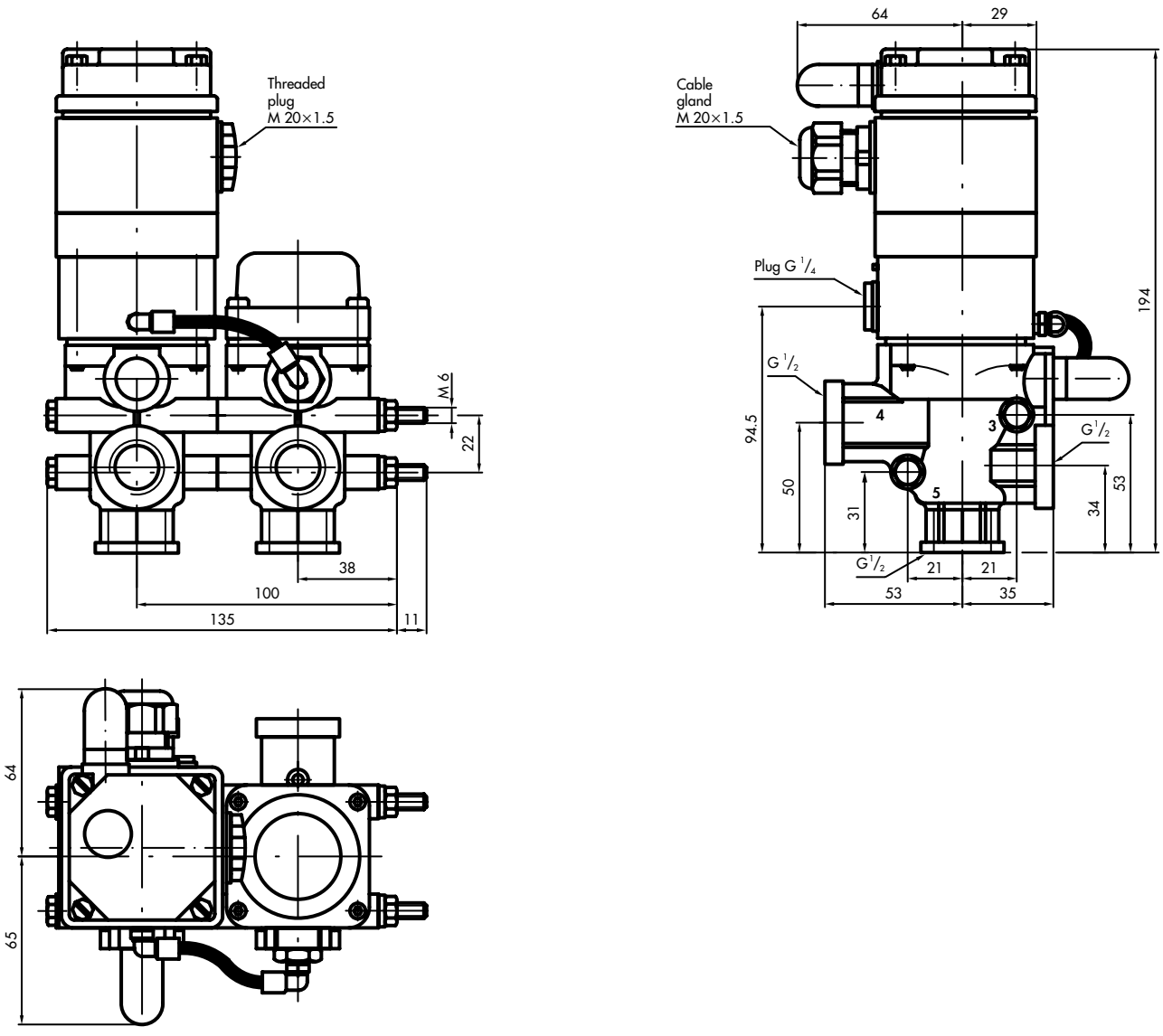


Fig. 27 · Dimensions in mm

6/2-way solenoid valve, single actuated, K_{vs} 4.3

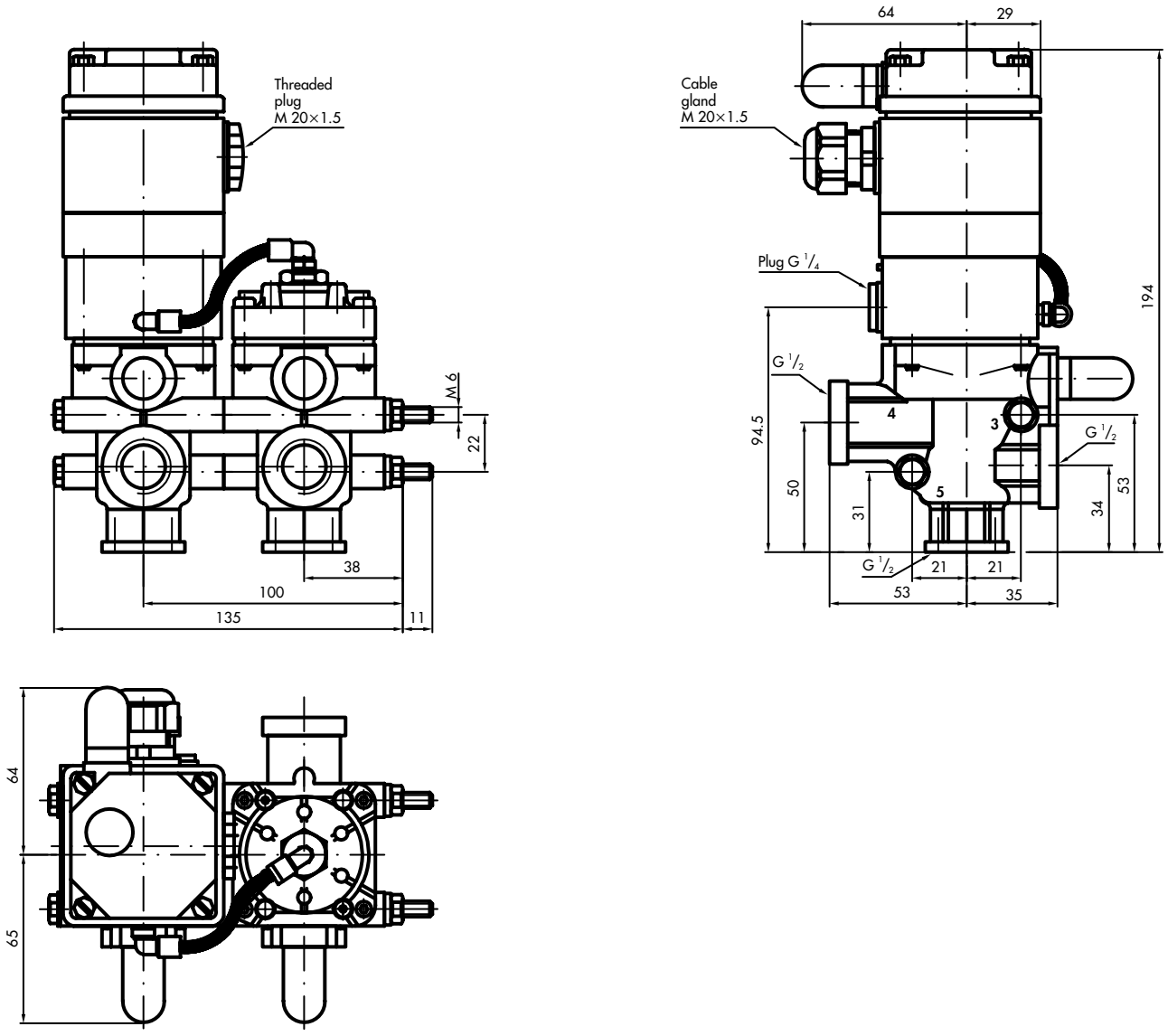
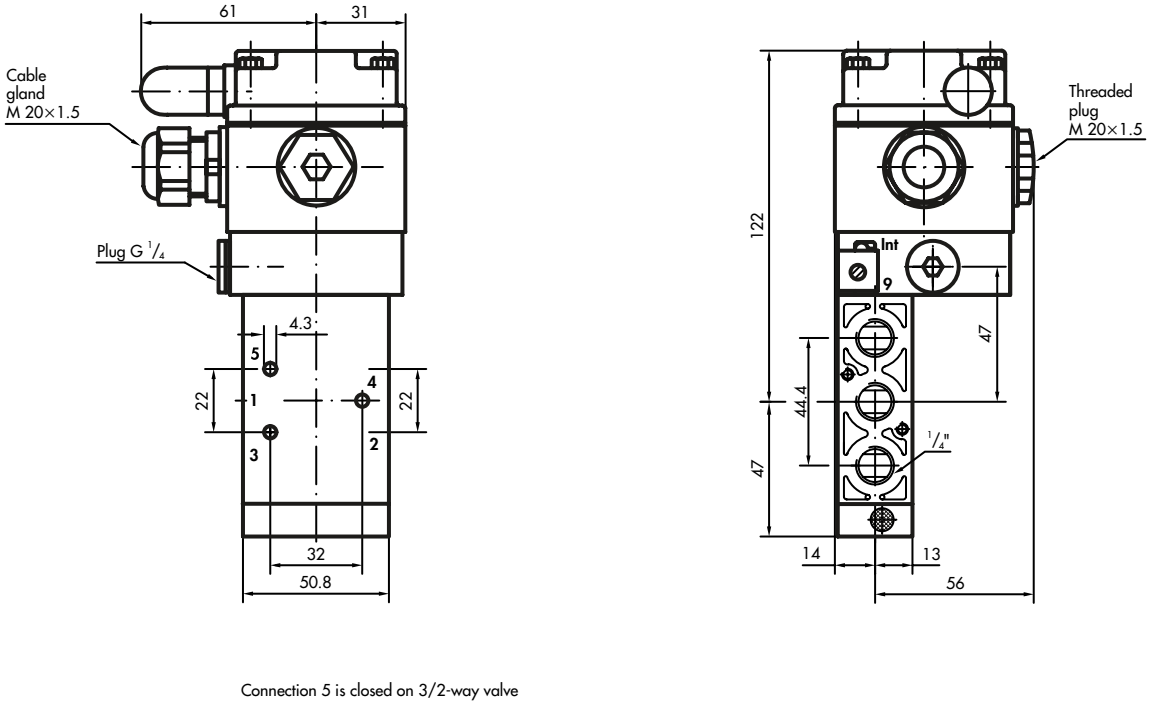


Fig. 28 · Dimensions in mm

Dimensions of devices with threaded connection (continued from page 15)

3/2 or 5/2-way solenoid valve, single actuated, K_{vs} 1.4



Connection 5 is closed on 3/2-way valve

Fig. 29 · Dimensions in mm

5/2 or 5/3-way solenoid valve, double actuated, K_{vs} 1.4

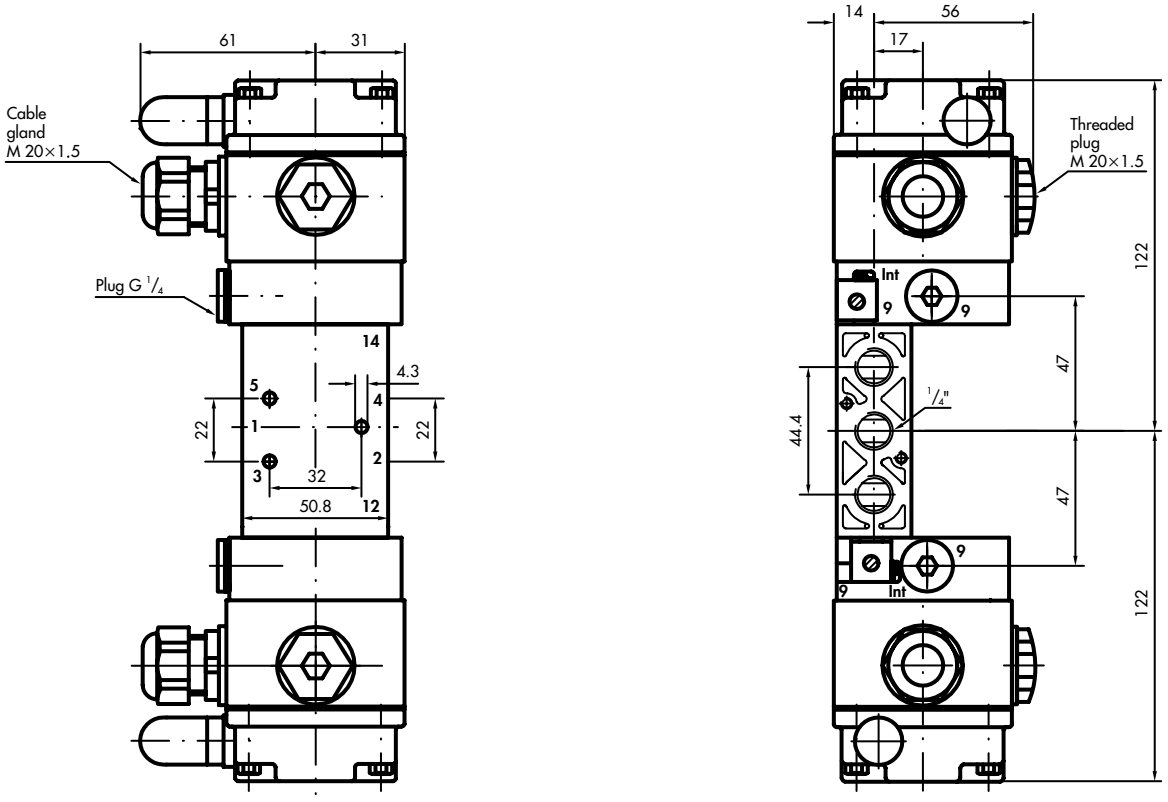


Fig. 30 · Dimensions in mm

Dimensions of devices with threaded connection for linear actuators with NAMUR rib

3/2-way solenoid valve, single actuated, K_{vs} 0.32

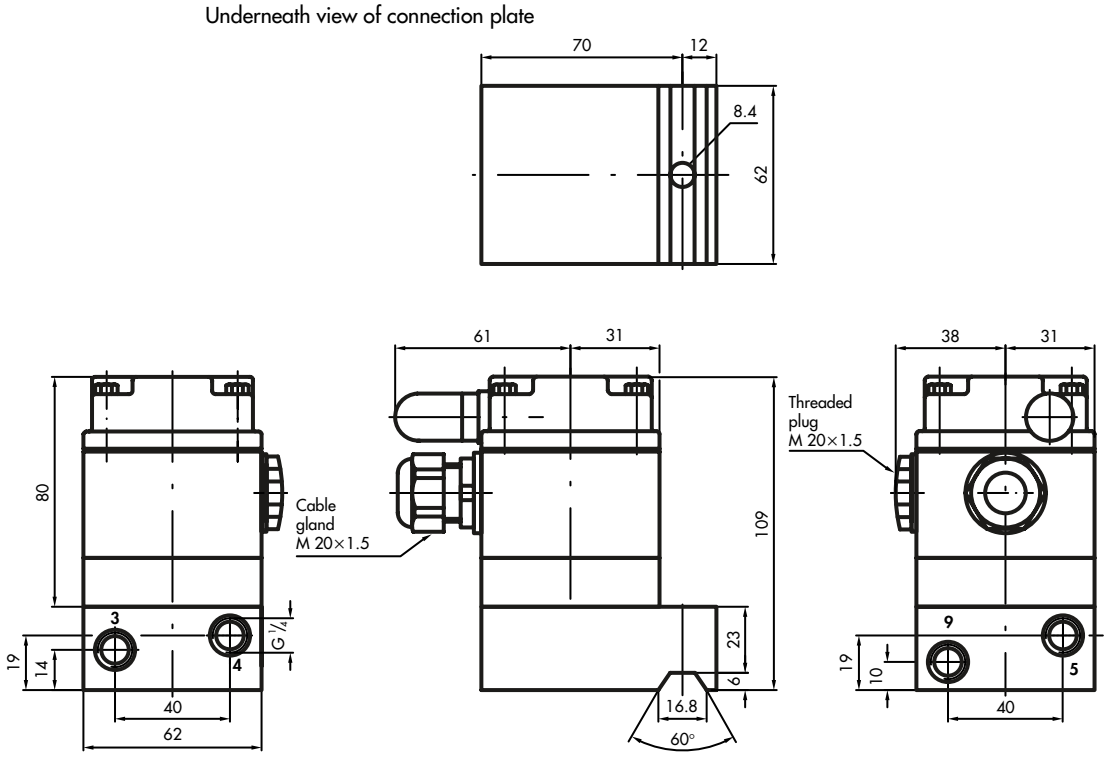


Fig. 31 · Dimensions in mm

Adapter plate NAMUR rib/NAMUR interface (order no. 1400-6751)

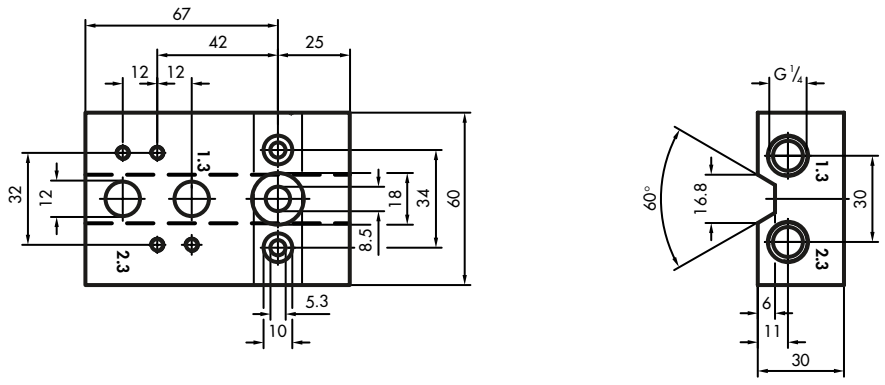


Fig. 32 · Dimensions in mm

Dimensions for devices with NAMUR interface for rotary actuators

3/2 or 5/2-way solenoid valve, single actuated, K_{vs} 0.16

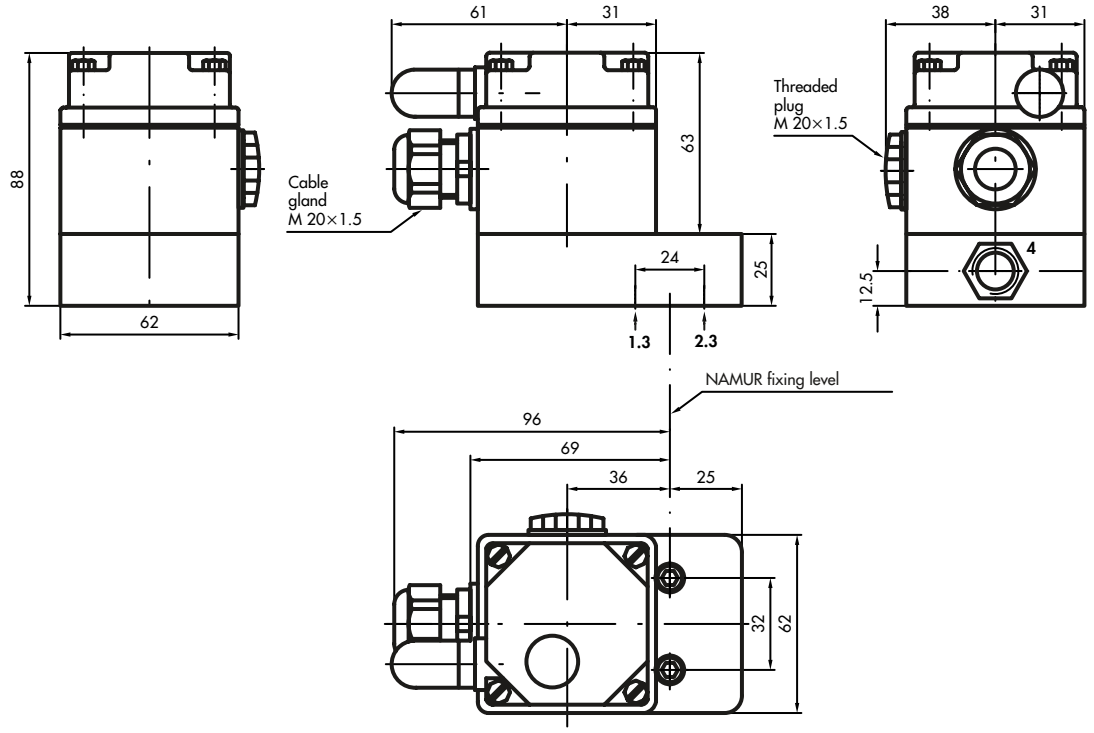


Fig. 33 · Dimensions in mm

3/2-way solenoid valve, single actuated, K_{vs} 0.32

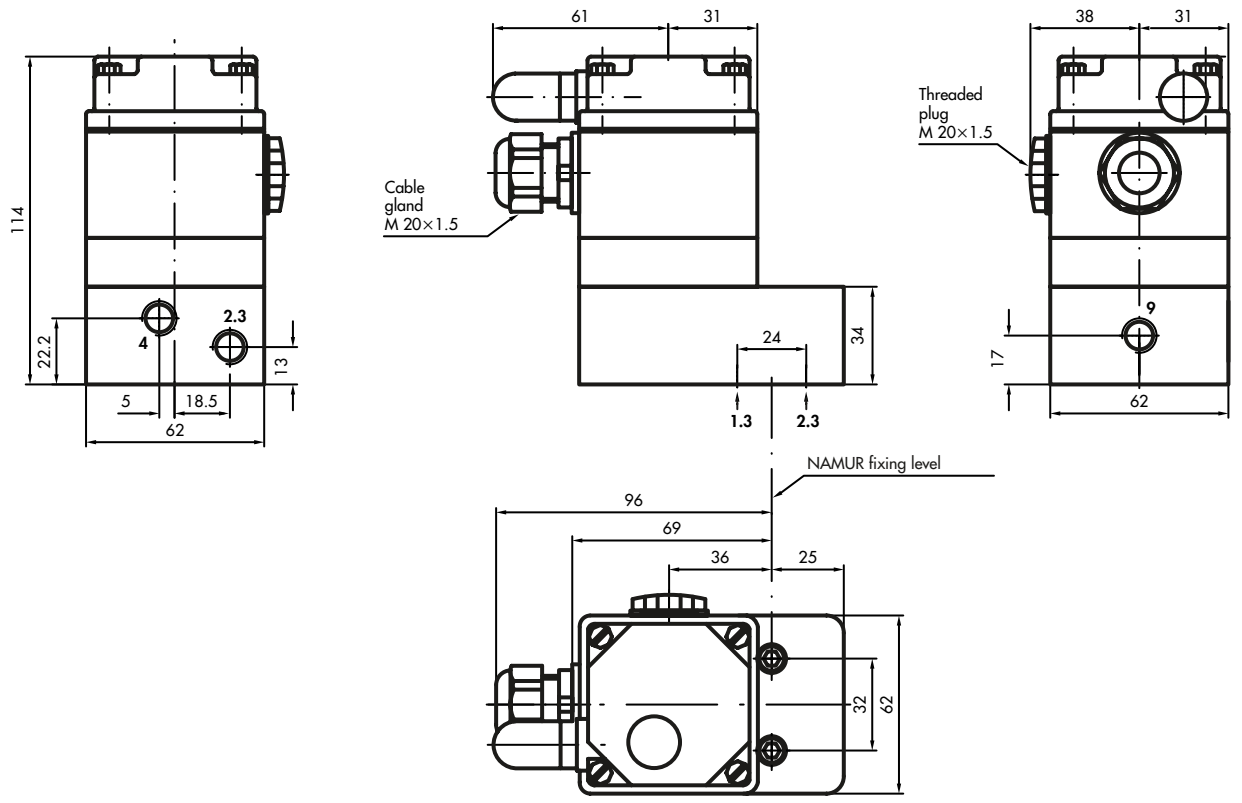


Fig. 34 · Dimensions in mm

Dimensions of devices with NAMUR interface for rotary actuators (continued from page 18)

6/2-way solenoid valve, single actuated, K_{vs} 0.16

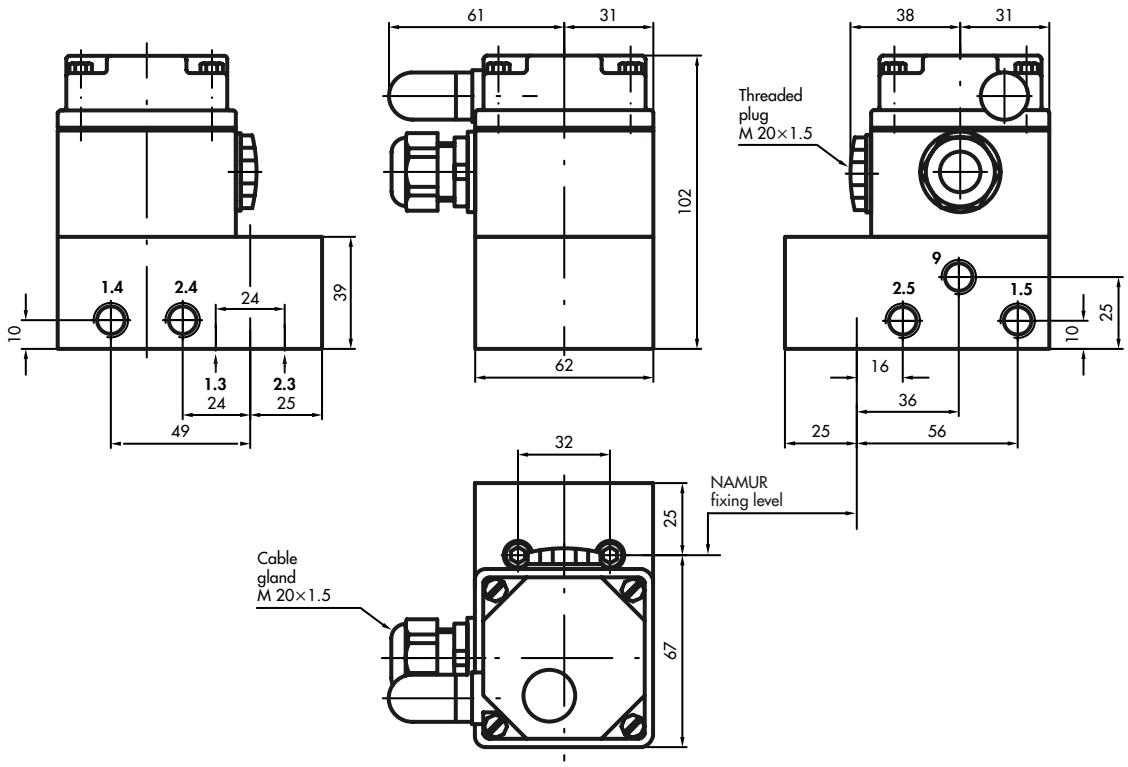
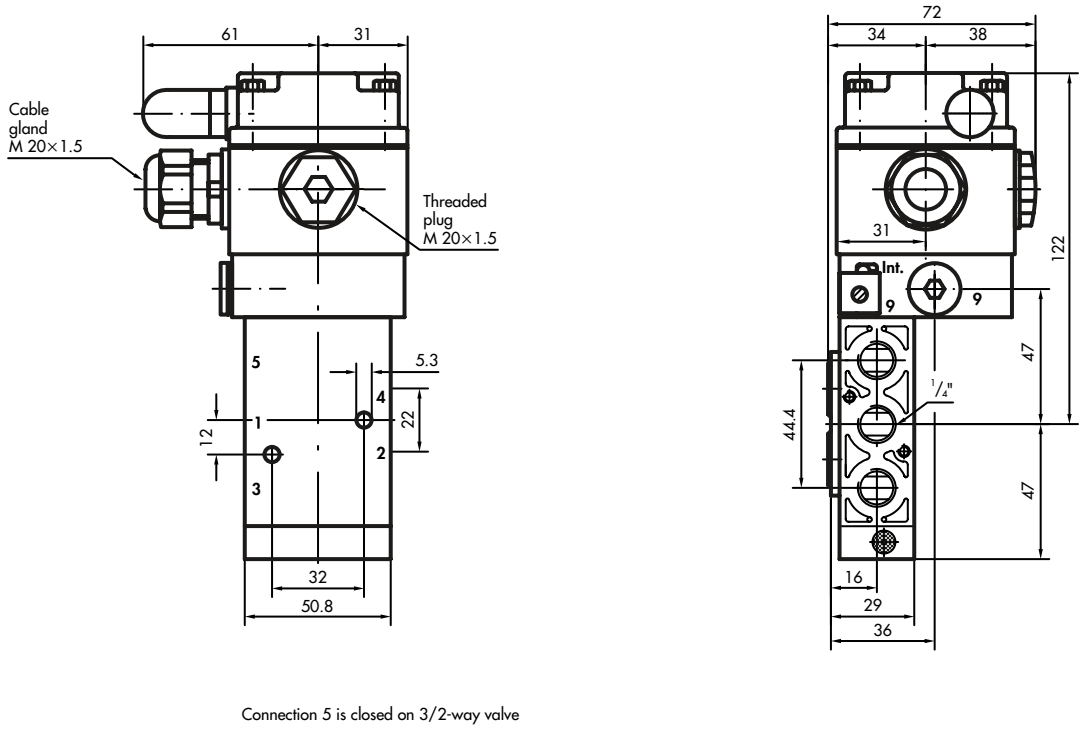


Fig. 35 · Dimensions in mm

3/2 or 5/2-way solenoid valve, single actuated, K_{vs} 1.4



Connection 5 is closed on 3/2-way valve

Fig. 36 · Dimensions in mm

Dimensions of devices with NAMUR interface for rotary actuators (continued from page 19)

3/2-way solenoid valve, single actuated, K_{vs} 2.0

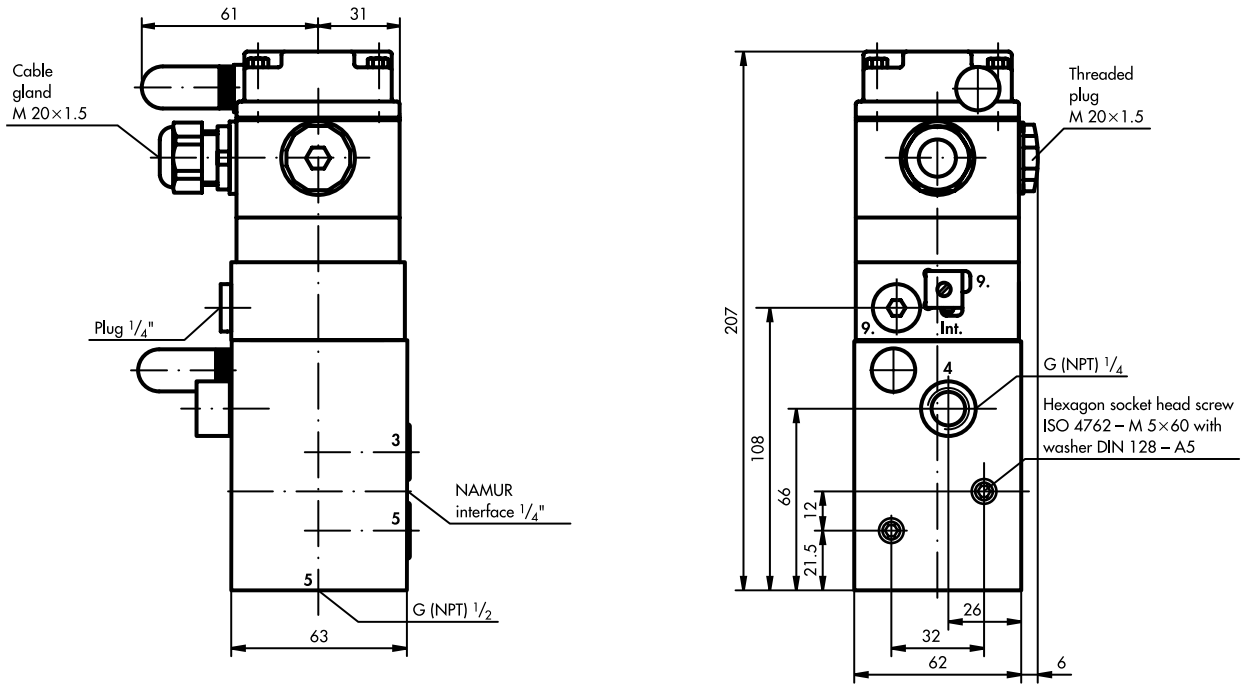


Fig. 37 · Dimensions in mm

3/2-way solenoid valve, single actuated, K_{vs} 4,3

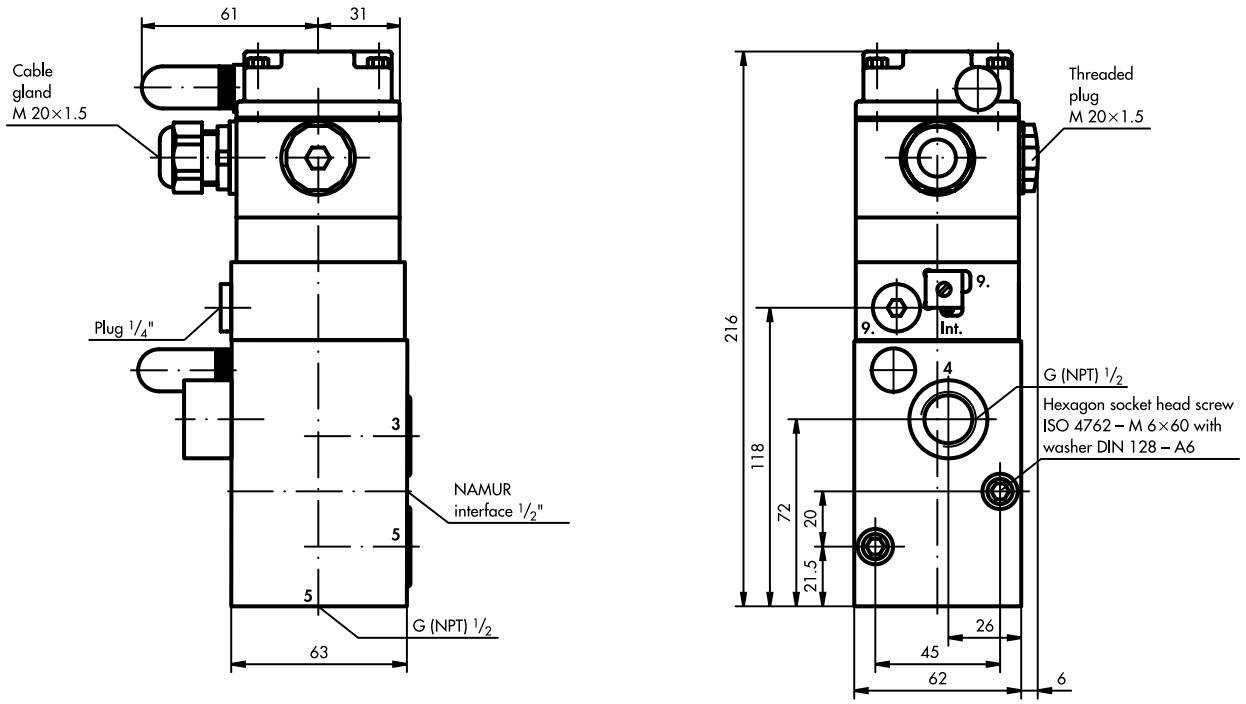


Fig. 38 · Dimensions in mm

Dimensions of devices with NAMUR interface for rotary actuators (continued from page 20)

3/2-way solenoid valve, single actuated, K_{vs} 2.9

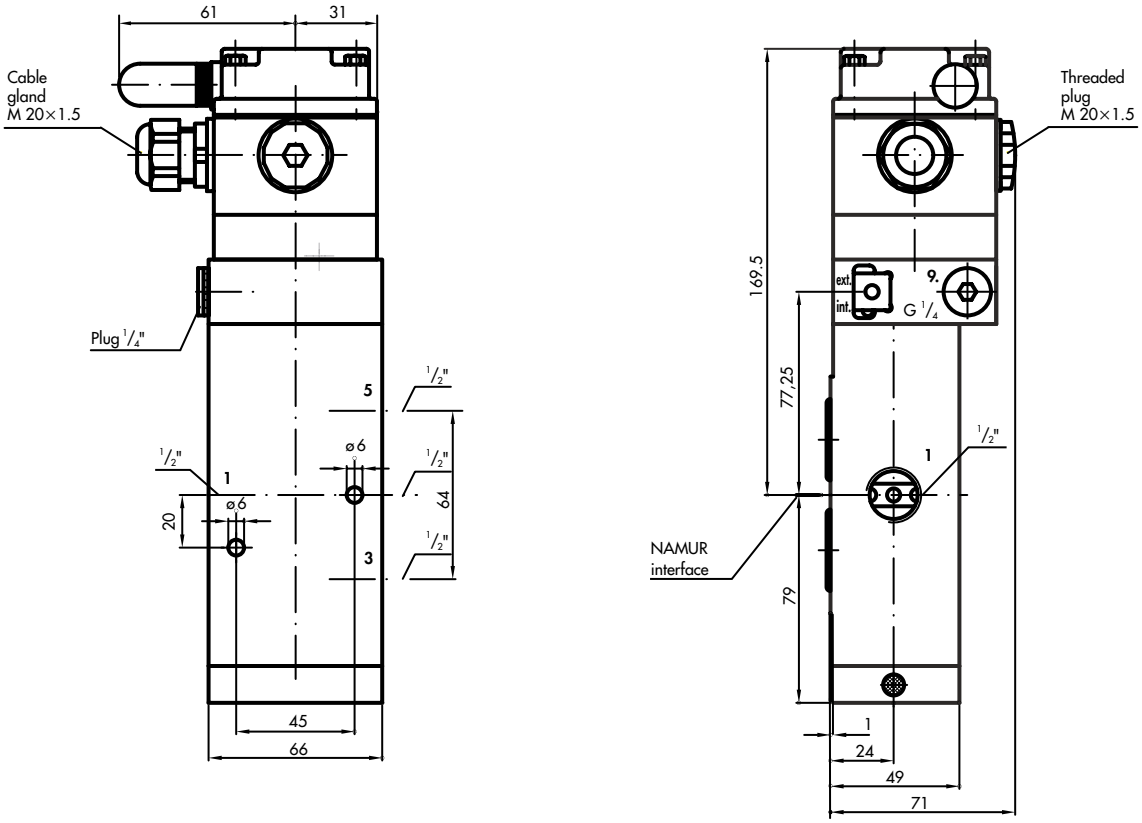


Fig. 39 · Dimensions in mm

5/2 or 5/3-way solenoid valve, double-actuated, K_{vs} 1.4

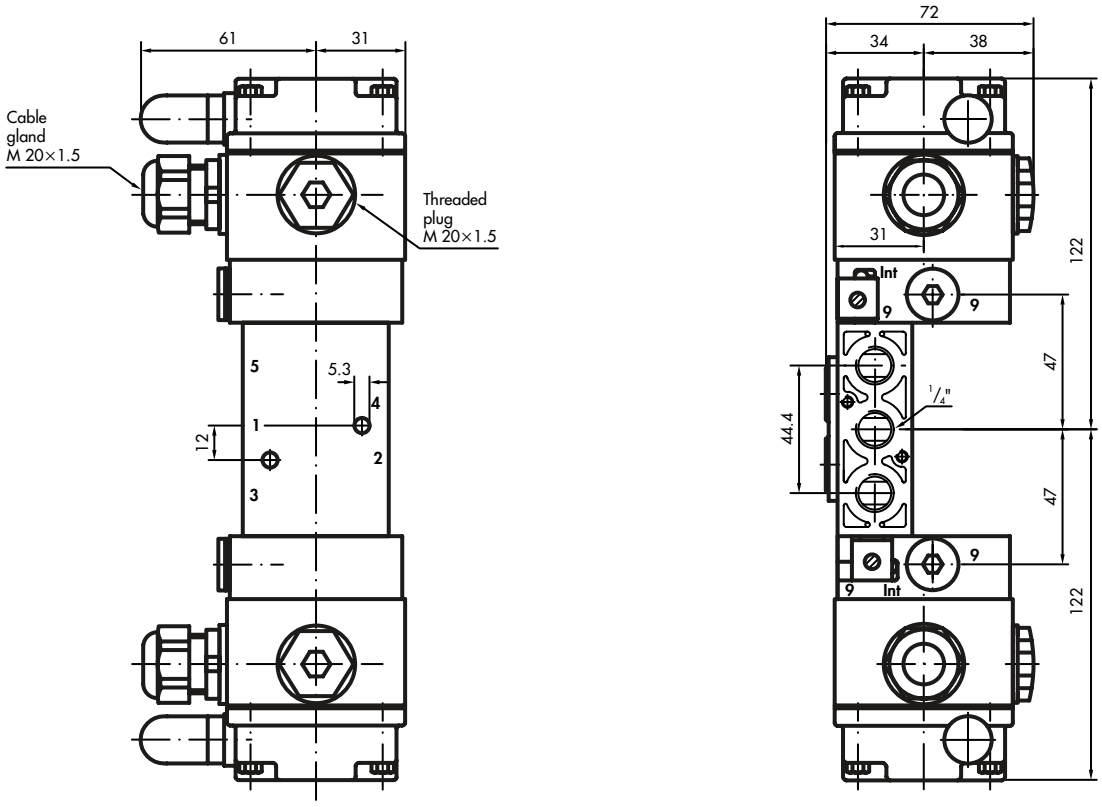


Fig. 40 · Dimensions in mm

Dimensions of devices with NAMUR interface for rotary actuators (continued from page 21)

5/2-way solenoid valve, double-actuated, K_{vs} 2.9

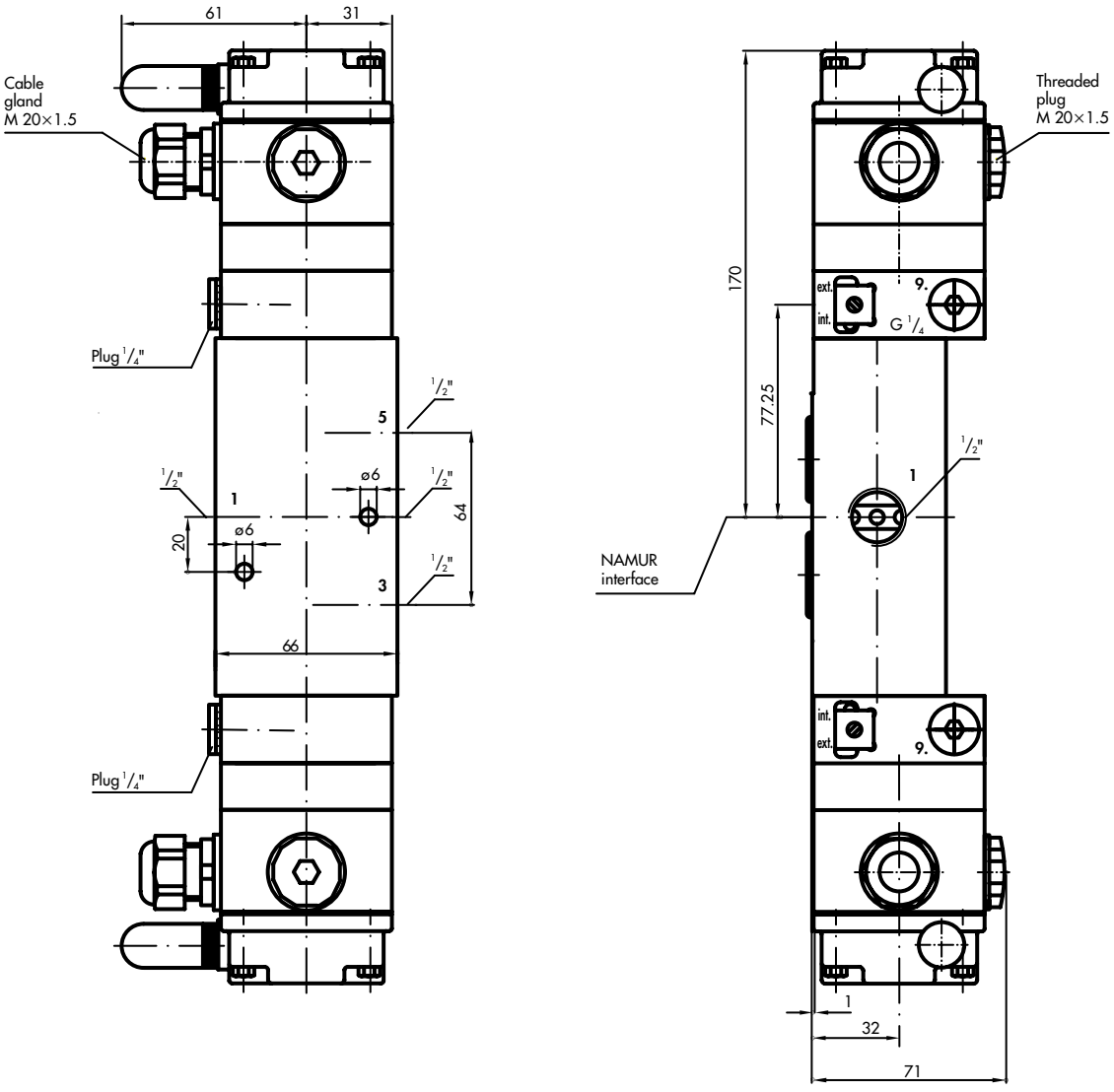


Fig. 41 · Dimensions in mm

Versions and ordering data

Type 3963 Solenoid Valve		Order no. 3963-	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Type of protection	Without explosion protection		**0**	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
	II 2 G EEx ia IIC T6 (ATEX/GOST)[1]	(max. +60/70/80 °C in T6/T5/T4)	**1**																
	Ex ia IIC (CSA) and AEx ia IIC (FM)	(max. +60/70/80 °C in T6/T5/T4)	**3**																
	II 3 G EEx nA II T6 (ATEX)[2]	(max. +60/70/80 °C in T6/T5/T4)	**8**																
Nominal signal	6 V DC, power consumption 5.47 mW			**1**															
	12 V DC, power consumption 13.05 mW			**2**															
	24 V DC, power consumption 26.71 mW			**3**															
	230 V AC, power consumption 0.46 VA	(without explosion protection)		**5**															
	115 V AC, power consumption 0.17 VA	(without explosion protection)		**6**															
	48 V AC, power consumption 0.07 VA	(without explosion protection)		**7**															
	24 V AC, power consumption 0.04 VA	(without explosion protection)		**8**															
Manual override	Without manual override **SIL 4/TÜV**				**0**														
	Pushbutton underneath enclosure cover **SIL 4/TÜV**				**1**														
	Pushbutton, pin-actuated, accessible from outside				**2**														
	Pushbutton switch, screwdriver-actuated, accessible from outside				**3**														
Switching function	3/2-way function with spring return mechanism **SIL 4/TÜV**	(for all K_{vs})				**0**													
	5/2-way function with spring return mechanism	(K_{vs} 0.16/1.4/2.9/4.3)				**1**													
	5/2-way function with two locking positions **TÜV**	(K_{vs} 1.4/2.9)				**2**													
	5/3-way function with spring-centered mid-position (connections 2 and 4 closed)	(K_{vs} 1.4/2.9)				**3**													
	5/3-way function with spring-centered mid-position (connections 2 and 4 to air supply)	(K_{vs} 1.4/2.9)				**4**													
	5/3-way function with spring-centered mid-position (connections 2 and 4 vented) **TÜV**	(K_{vs} 1.4/2.9)				**5**													
	6/2-way function with spring return mechanism	(K_{vs} 0.16/4.3)				**8**													
Restrictors	Without restrictors **SIL 4/TÜV**	(for all K_{vs})					**0**												
	1 exhaust air restrictor	(3/2-way function/NAMUR interface or connection block/K_{vs} 0.16)					**1**												
	2 exhaust air restrictors	(5/2-way function/NAMUR interface/K_{vs} 0.16)					**2**												
	1 supply air/1 exhaust air restrictor	(3/2-way function/NAMUR interface/K_{vs} 0.16)					**3**												
Attachment	NAMUR interface according to VDI/VDE 3845 **SIL 4/TÜV**	(for all K_{vs})						**0**											
	Threaded connection **SIL 4/TÜV**	(K_{vs} 0.16/0.32/1.4/2.9/4.3)						**1**											
	NAMUR rib according to IEC 60534-6-1 **SIL 4/TÜV**	(K_{vs} 0.32)						**2**											
	Connection block for SAMSON Type 3277 Linear Actuator **SIL 4/TÜV**	(K_{vs} 0.16/0.32)						**3**											
	Flange Type 3963, only as spare part	(K_{vs} 0.01/0.16)						**4**											
K_{vs} value[3]	0.16 **SIL 4/TÜV**								**1**										
	0.32 **SIL 4/TÜV**								**2**										
	1.4 **TÜV**								**3**										
	4.3 **SIL 4/TÜV**								**4**										
	0.01, only as spare part								**5**										
	2.9	(NAMUR interface)							**6**										
	2.0 **SIL 4/TÜV**	(NAMUR interface)							**7**										
Air connection	G $^1/_4$	(K_{vs} 0.16/0.32/1.4)								**0**									
	$^1/_4$ NPT	(K_{vs} 0.16/0.32/1.4)								**1**									
	G $^1/_2$	(K_{vs} 2.9/4.3)								**2**									
	$^1/_2$ NPT	(K_{vs} 2.9/4.3)								**3**									
	None	(Pilot valve as spare part/connection block for SAMSON Type 3277 Linear Actuator)								**4**									
Connection of air supply	Internal connection for on-off actuators										**0**								
	External connection for continuous actuators										**1**								
Electrical connection Terminal, 2 poles, threaded connection M 20 × 1.5	Cable gland	made of polyamide, black (min. −20 °C)										**0**	**1**						
	Cable gland	made of polyamide, blue (min. −20 °C)										**1**	**1**						
	Adapter $^1/_2$ NPT	made of aluminum, powder-coated, grayish-beige RAL 1019 (min. −45 °C)										**1**	**2**						
	EExe cable gland (manufactured by CEAG)	made of polyamide, black (min. −20 °C)										**1**	**3**						
	Cable gland	made of brass, nickel-plated (min. −45 °C)										**1**	**4**						
	Cable gland	made of brass, nickel-plated, blue (min. −45 °C)										**1**	**5**						
Plug-type connection	Male connector (manufactured by Harting),	8 poles, made of aluminum, silvery gray[4] (min. −20 °C)										**2**	**1**						
	Round plug connector M 12 × 1,	4 poles, made of brass, nickel-plated[4] (min. −45 °C)										**2**	**2**						
	Male connector according to EN 175301-803, 4 poles, made of polyamide, black[4]	(min. −20 °C)										**2**	**3**						
Degree of protection	IP 54 with filter made of polyethylene	(min. −20 °C)												**0**					
	IP 65 with filter check valve made of polyamide	(min. −20 °C)												**1**					
	IP 65 with filter check valve made of stainless steel 1.4305	(min. −45 °C)												**2**					
Ambient temperature[5]	−20 to +80 °C														**0**				
	−45 to +80 °C														**2**				
Safety function	Without safety function															**0**			
	SIL 4[6]															**1**			
	TÜV[7]															**2**			
Special version	Without special version																**0**	**0**	**0**
Material	Connection plate/booster valve enclosure made of stainless steel 1.4404 for the following versions:																		
	3/2-way function with spring return mechanism, K_{vs} value 0.32,	with NAMUR interface or for NAMUR rib																	
	3/2-way function with spring return mechanism, K_{vs} value 1.4,	with NAMUR interface or threaded connection															**0**	**0**	**1**
	5/2-way function with spring return mechanism, K_{vs} value 1.4,	with NAMUR interface or threaded connection																	
	5/2-way function with two locking positions, K_{vs} value 1.4,	with NAMUR interface or threaded connection																	
Explosion protection	NEPSI Ex ia																**0**	**0**	**9**
	NEPSI Ex nL																**0**	**1**	**0**

[1] According to EC Type Examination Certificate PTB 01 ATEX 2085
[2] According to Statement of Conformity PTB 01 ATEX 2086 X
[3] Air flow at $p_1 = 2.4$ bar and $p_2 = 1.0$ bar can be calculated according to the following equation: $Q = K_{vs} \times 36.22$, expressed in m^3/h
[4] The female connector is not included in the delivery (see "Spare parts and accessories")
[5] The maximum permissible ambient temperature of the solenoid valve depends on the permissible ambient temperature of the components, the type of protection and the temperature class
[6] Safety Integrity Level SIL 4 according to IEC 61508 (Report No. V 60 2004 T1)
[7] Safety function for use on control valves according to DIN 3394 Part 1, DIN EN 161, DIN 32725, DIN EN 264 and DIN 32730 (Report No. S 284 2007 E1)

Spare parts and accessories

Spare parts for Type 3963 Solenoid Valves	
Order no.	**Designation**
0430-2287	Flat gasket made of silicone rubber, −45 to +80 °C (for connection plate)
8502-1091	Molded gasket (for air supply on booster valve with K_{vs} 1.4)
0520-0620	Diaphragm made of chloroprene, −20 to +80 °C (for booster valve with K_{vs} 2.0 or 4.3)
0520-0622	Diaphragm made of chloroprene, −20 to +80 °C (for all booster valves, except with K_{vs} 2.0 or 4.3)
0520-1097	Diaphragm made of silicone rubber, −45 to +80 °C (for booster valve with K_{vs} 2.0 or 4.3)
0520-1128	Diaphragm made of silicone rubber, −45 to +80 °C (for all booster valves, except with K_{vs} 2.0 or 4.3)
1180-8311	Actuating element insert, −20 to +80 °C (for booster valve with K_{vs} 2.0 or 4.3)
1180-8553	Actuating element insert, −45 to +80 °C (for booster valve with K_{vs} 2.0 or 4.3)
8421-0021	O-ring 2 × 1 (for connection plate)
8421-0308	O-ring 11 × 4.5 (for booster valves with NAMUR interface)
8421-9002	O-ring 16 × 2 (for booster valves with NAMUR interface)
8421-0085	O-ring 26 × 2, −20 ... +80 °C (for booster valve with K_{vs} 2.0 or 4.3)
8421-0418	O-ring 26 × 2, −45 ... +80 °C (for booster valve with K_{vs} 2.0 or 4.3)
8421-0102	O-ring 36 × 2, −20 ... +80 °C (for booster valve with K_{vs} 2.0 or 4.3)
8421-0101	O-ring 36 × 2, −45 ... +80 °C (for booster valve with K_{vs} 2.0 or 4.3)
	Enclosure cover without filter (for pilot valve)
1099-0673	without manual override
1099-0674	with pushbutton switch, screwdriver-actuated, accessible from outside
1099-0675	with pushbutton, pin-actuated, accessible from outside
1099-1194	with lever switch, accessible from outside
0070-0799	Plug G $^1/_4$ made of stainless steel 1.4571 (for connection 9 on the pilot valve)
8421-0070	O-ring 14 × 1.5 made of NBR (for plug G $^1/_4$)

Accessories for Type 3963 Solenoid Valves	
Order no.	**Designation**
0790-6658	Female connector according to EN 175301-803, type A, made of polyamide, black, IP 65
1400-8298	Female connector (manufactured by Harting), 7 poles, made of aluminum, silvery gray, IP 65
8801-2810	Sensor connecting cable, 2 wires, length 3 m, blue, with angle connector M 12 × 1, 4 poles, IP 68
8831-0716	Female connector (manufactured by Binder), 7 poles, made of PBT GV, black, IP 67
8831-0865	Female connector M 12 × 1, 4 poles, angle type, made of polyamide, black, IP 67
3994-0158	Cable break protection device with enclosure for top hat rail 35, IP 20 (for Type 3963-X1 with 6 V DC solenoid)
1400-5268	Filter made of polyethylene, connection G 1/G $^1/_2$, IP 54 (required for actuator size > 1 400 cm^2!)
8504-0066	Filter made of polyethylene, connection G $^1/_4$, IP 54
8504-0068	Filter made of polyethylene, connection G $^1/_2$, IP 54
1790-7408	Filter check valve with screw-in case G $^1/_4$, made of polyamide, IP 65
1790-7253	Filter check valve with screw-in case G $^1/_4$, made of stainless steel 1.4571, IP 65
1790-9645	Filter check valve with screw-in case G $^1/_4$, made of polyamide, NEMA 4
1790-9646	Filter check valve with screw-in case G $^1/_4$, made of stainless steel 1.4571, NEMA 4
1400-5930	Mounting base for G profile 32 according to EN 50035 (2 pieces are required!)
1400-5931	Mounting base for top hat rail 35 according to EN 50022 (2 pieces are required!)
1400-6726	Mounting plate for wall mounting

Connection blocks and accessories for attaching solenoid valves to Type 3277 Linear Actuators	
Order no.	**Designation**
	Connection block for Type 3277 Linear Actuators with integral Type 3766/3767/3780/3730 Positioner attachment
1400-8813	Connection G $^1/_4$
1400-8814	Connection $^1/_4$ NPT
1400-6950	Pressure gauge build-on block, 1 × "Output" and 1 × "Supply", made of stainless steel/brass (for connection block)
	Piping kit for "Stem retracts"
1400-6444	Actuator size 240 cm^2, made of steel, galvanised
1400-6445	Actuator size 240 cm^2, made of stainless steel
1400-6446	Actuator size 350 cm^2, made of steel, galvanised
1400-6447	Actuator size 350 cm^2, made of stainless steel
1400-6448	Actuator size 700 cm^2, made of steel, galvanised
1400-6449	Actuator size 700 cm^2, made of stainless steel

Spare parts and accessories (continued from page 24)

Mounting kits for Type 3963 Solenoid Valves with threaded connection	
Order no.	**Designation**
1400-6759	Mounting kit for linear actuators (actuator size 80/240 cm², connection G 1/4) with screwed pipe connection, connection G 1/4/G 1/4, made of stainless steel
	Mounting kit for linear actuators (actuator size 350/700 cm², connection G 3/8)
1400-6735	with screwed pipe connection, connection G 1/2/G 3/8, made of stainless steel
1400-6761	with screwed pipe connection, connection G 1/4/G 3/8, made of stainless steel
1400-6736	Mounting kit for linear actuators (actuator size 1400 cm², connection G 3/4) with screwed pipe connection, connection G 1/2/G 3/4, made of stainless steel
1400-6737	Mounting kit for linear actuators (actuator size 2800 cm², connection G 1) with screwed pipe connection, connection G 1/2/G 1, made of stainless steel
	Mounting kit for linear actuators (actuator size 80/240 cm², connection G 1/4) with angle bracket made of stainless steel
1400-6749	and screwed joints for pipe 8 × 1, connection G 1/4/G 1/4, made of steel, galvanised
1400-6750	and screwed joints for pipe 8 × 1, connection G 1/4/G 1/4, made of stainless steel
	Mounting kit for linear actuators (actuator size 350/700 cm², connection G 3/8) with angle bracket made of stainless steel
1400-6738	and screwed joints for pipe 8 × 1, connection G 1/4/G 3/8, made of steel, galvanised
1400-6739	and screwed joints for pipe 8 × 1, connection G 1/4/G 3/8, made of stainless steel
1400-6743	and screwed joints for pipe 12 × 1, connection G 1/4/G 3/8, made of stainless steel
1400-6744	and screwed joints for pipe 10 × 1, connection G 1/2/G 3/8, made of polyamide
1400-6745	and screwed joints for pipe 10 × 1, connection G 1/4/G 3/8, made of polyamide
	Mounting kit for linear actuators (actuator size 700 cm², connection G 3/8) with angle bracket made of stainless steel
1400-6740	and screwed joints for pipe 12 × 1, connection G 1/2/G 3/8, made of steel, galvanised
1400-6741	and screwed joints for pipe 12 × 1, connection G 1/4/G 3/8, made of steel, galvanised
1400-6742	and screwed joints for pipe 12 × 1, connection G 1/2/G 3/8, made of stainless steel

Mounting kits for Type 3963 Solenoid Valves with NAMUR interface	
Order no.	**Designation**
	Mounting kit for linear actuators (actuator size 350/700 cm², connection G 3/8) with NAMUR rib via adapter plate NAMUR rib/NAMUR interface (order no. 1400-6751)
1400-6746	with screwed joints for pipe 12 × 1, connection G 1/4/G 3/8, made of steel, galvanised
1400-6747	with screwed joints for pipe 12 × 1, connection G 1/4/G 3/8, made of stainless steel
1400-6748	with screwed joints for pipe 10 × 1, connection G 1/4/G 3/8, made of polyamide
	Mounting kit for linear actuators (actuator size 80/240 cm², connection G 1/4) with NAMUR rib via adapter plate NAMUR rib/NAMUR interface (order no. 1400-6751)
1400-6752	with screwed joints for pipe 6 × 1, connection G 1/4/G 1/4, made of steel, galvanised
1400-6753	with screwed joints for pipe 6 × 1, connection G 1/4/G 1/4, made of stainless steel
1400-6756	with screwed joints for hose 10 × 1, connection G 1/4/G 1/4, made of polyamide
	Mounting kit for linear actuators (actuator size 350/700 cm², connection G 3/8) with NAMUR rib via adapter plate NAMUR rib/NAMUR interface (order no. 1400-6751)
1400-6754	with screwed joints for pipe 8 × 1, connection G 1/4/G 3/8, made of steel, galvanised
1400-6755	with screwed joints for pipe 8 × 1, connection G 1/4/G 3/8, made of stainless steel
1400-6757	with screwed joints for pipe 10 × 1, connection G 1/4/G 3/8, made of polyamide
1400-6759	Mounting kit for linear actuators (actuator size 80/240 cm², connection G 1/4) with screwed pipe connection G 1/4/G 1/4, made of stainless steel
1400-3001	Mounting kit for Type 3353 Angle Seat Valve with adapter plate for NAMUR interface made of stainless steel 1.4301

Accessories for mounting kits	
Order no.	**Designation**
0320-1416	Bracket for NAMUR rib (required when a positioner or a limit switch is to be mounted to linear actuators with nominal size < DN 50 at the same time)
8320-0131	Hexagon socket head screw M 8 × 60 – A 4 DIN 931
1400-6751	Adapter plate NAMUR rib/NAMUR interface

(Specifications subject to change without notice.)

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