

For single and double operated actuators

Closed - crossover design

Rectified solenoid coils

Add-on manual override

Suited for outdoor use under critical environment conditions (see solenoid list)

Ex e mb, Ex d mb, Ex mb, Ex ia for zones 1 & 2 (gas), 21 & 22 (dust), ATEX cat. II 2GD

International approvals: IEC Ex, FM, CSA others on request



Approval depends on magnetic system

Technical data

Medium:

Filtered, non-lubricated and dried compressed air, instrument air, nitrogen and other non-flammable neutral, dry fluids

Operating pressure:

2,5 ... 8 (36 ... 116 psi) with internal air supply
0 ... 8 bar (0 ... 116 psi) with external air supply (G1/2, 1/2 NPT or low power pilot system only)

Fluid/Ambient temperature:

Valve:
-40 ... +65°C (SNBR) (-40...+149°F)
-25 ... +80°C (HNBR) (-13...+176°F)
Depending on solenoid system.

Air supply must be dry enough to avoid ice formation at temperatures below +2°C (+35°F).

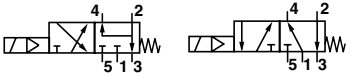
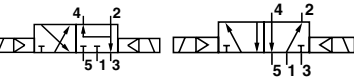
For outdoor installations all connections must be protected against the penetration of moisture and a solenoid with IP66 protection must be used!

Materials:

Body: Aluminum 3.0615 with surface treatment for rough environmental conditions. Approved according to DIN 50018: Condensate test with alternating temperatures in sulphuric atmosphere, DIN 50021/ ASTM B117-73: Salt spray test with different sodium chloride solutions, tested in ammonia atmosphere). Stainless steel 1.4404 (316 L)
Seals: SNBR (special NBR) or HNBR

The solenoid valves are used in ATEX zones, resulting from Protection Class ATEX-category of solenoids (see table of solenoids).

Housing: Aluminum anodized, Pilot flange: SNBR -40...+65C *3)

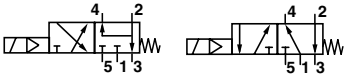
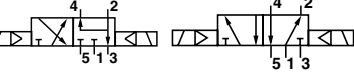
Symbol	Valve model *1)	Port size 1, 3, (5)	2, 4	Actuation/ Return	Operating pressure (bar)	Flow *4) (l/min)	Test certificate IEC 61508 *2)
	9710505*	G 1/4	Flange	Solenoid/Spring	2.5 ... 8	1300	x
	9710515*	1/4 NPT	Flange	Solenoid/Spring	2.5 ... 8	1300	x
	9710595*	G 1/2	Flange	Solenoid/Spring	2.5 ... 8	2600	
	9710596*	1/2 NPT	Flange	Solenoid/Spring	2.5 ... 8	2600	
	9711505*	G 1/4	Flange	Solenoid/Solenoid	2.5 ... 8	1300	
	9711515*	1/4 NPT	Flange	Solenoid/Solenoid	2.5 ... 8	1300	

Order example: To order a series 97105 NAMUR valve, aluminum, G 1/4" port with a 24 Vdc, IP65, DIN Form A coil, Model Number: 9710505076302400.

Valve model code 9710505 + Coil code 076302400 = Model Number: 9710505076302400.

To order the valve only, replace the * after the Valve model code from the table with 9 zero's, i.e. 9710505000000000.

Housing: Stainless steel, Pilot flange: SNBR -40...+65C *3)

Symbol	Valve model *1)	Port size 1, 3, (5)	2, 4	Actuation/ Return	Operating pressure (bar)	Flow *4) (l/min)	Test certificate IEC 61508 *2)
	9710705*	G 1/4	Flange	Solenoid/Spring	2.5 ... 8	1300	x
	9710715*	1/4 NPT	Flange	Solenoid/Spring	2.5 ... 8	1300	x
	9711705*	G 1/4	Flange	Solenoid/Solenoid	2.5 ... 8	1300	
	9711715*	1/4 NPT	Flange	Solenoid/Solenoid	2.5 ... 8	1300	

*1 Order example: To order a series 97105 NAMUR valve, stainless steel, G 1/4" port with a 24 Vdc, IP65, DIN Form A coil, Model Number: 9710705076302400.

Valve model code 9710705 + Coil code 076302400 = Model Number: 9710705076302400.

To order the valve only, replace the * after the Valve model code from the table with 9 zero's, i.e. 9710705000000000.

1/4 NPT Flange Solenoid/spring Aluminum 2.5... 8 1300 0.45 4 9710219 G 1/4 Flange Solenoid/solenoid Aluminum 2.5...





*2) Since May 2008, Date code A8192

*3) For operation in plants according to IEC 61511/61508 -40 ... +40°C see test certificate (on request)

*4) Flow characteristics conforms to ISO6358 [6 » 5 bar]

Note for *4): Connecting pipe / Fitting: In order to ensure and a pressure collapse avoid the flow, the supply air cross section shouldwith 1/4:
≥ 8 mm; with 1/2: ≥ 10 mm. With smaller cross section the inlet (A1) should more largely, however at least equally large line at the port (A2; A1).

Solenoid operators

	Power consumption		Rated current		Ex- Protection	Protection Class (ATEX-Category) Nominal resistance (according to EN60529)	Temperature Ambient/ Medium (°C)	Electrical connection	Order separate	Coil code
	24 VDC (W)	230 VAC (VA)	24 VDC (mA)	230 VAC (mA)						
	1.9			11	-	IP00 without Connector IP65 (with Connector)	-25 ... +60	DIN EN 175 301-803 Form A *5) *6)	000000076302400	076302400
		2.1 *5)	78						000000076323050	076323050
	0.8	-	38	-	II2G	Ex e mb IIC T5/T6 Gb	-40 ... +80 T5 -40 ... +70 T6	M20 X 1.5 *6)	0000000420002400	420002400
					II2D	Ex tb IIIC T130°C Db IP 66 (with cable gland)	-40 ... +80			
	-	1.3	-	6	II2G	Ex e mb IIC T5/T6 Gb	-40 ... +80 T5 -40 ... +70 T6	M20 X 1.5 *6)	0000000420123050	420123050
					II2D	Ex tb IIIC T130°C Db IP 66 (with cable gland)	-40 ... +80			
	0.8	-	33	-	II2G	Ex d mb IIC T5/T6 Gb	-40 ... +80 T5	1/2 NPT *6)	0000000460002400	460002400
					II2D	Ex e mb IIC T5/T6 Gb Ex tb IIIC T130°C Db IP 66 (with cable gland)	-40 ... +70 T6 -40 ... +80			
	0.8	-	33	-	II2G	Ex d mb IIC T5/T6 Gb	-40 ... +80 T5	M20 X 1.5 *6)	0000000460202400	460202400
					II2D	Ex e mb IIC T5/T6 Gb Ex tb IIIC T130°C Db IP 66 (with cable gland)	-40 ... +70 T6 -40 ... +80			
	-	1.3	-	6	II2G	Ex d mb IIC T5/T6 Gb	-40 ... +80 T5	1/2 NPT *6)	0000000460123050	460123050
					II2D	Ex e mb IIC T5/T6 Gb Ex tb IIIC T130°C Db IP 66 (with cable gland)	-40 ... +70 T6 -40 ... +80			
	-	1.3	-	6	II2G	Ex d mb IIC T5/T6 Gb	-40 ... +80 T5	M20 X 1.5 *6)	0000000460323050	460323050
					II2D	Ex e mb IIC T5/T6 Gb Ex tb IIIC T130°C Db IP 66 (with cable gland)	-40 ... +70 T6 -40 ... +80			
Stainless Steel 	0.8	-	33	-	II2G	Ex mb d IIC T4/T6 Gb	-40 ... +50 T4	M20 X 1.5 *6)	0000000480202400	480202400
							-40 ... +40 T6			
		1.3	-	6	II2G	Ex mb d IIC T4/T6 Gb	-40 ... +50 T4	M20 X 1.5 *6)	0000000480323050	480323050
							-40 ... +40 T6			

Standard voltages (±10%) 24 V d.c., 230 V a.c., other voltages on request. Design according to VDE 0580, EN 50014/50028. 100% duty cycle.

*5) Required connector: model 0570275 for V DC; model 0663303 for V AC, to be ordered

Solenoid Voltage 200V DC!

*6) Connector cable gland not supplied, see table »Accessories«


Attention: The protection class for coil series 46xx and 48xx is determined by the choice of cable gland.

Example: if an ATEX-certified cable gland is used that has Ex d type of protection, the solenoid will have the protection class Ex d mb; if a cable gland with Ex e type of protection is used, the solenoid will have protection class Ex e mb.

Approvals

Model	Approvals ATEX	IECEX
42xx	KEMA 98 ATEX 4452 X	IECEX KEM 09.0068X
46xx	PTB 02 ATEX 2085 X	IECEX PTB 11.0094X
48xx	PTB 06 ATEX 2054 X	IECEX PTB 07.0039X

Solenoid actuators for intrinsically-safe circuits

	Nominal-resistance RN coil (Ω)	Min. required switching current (mA)	Resistance RW 60 Coil (Ω)	Required voltage-at terminal Rw 60 (V)	Protection Class *1) (ATEX-Categorie) IP-Protection*1) (class according to EN60529)	Temperature Ambient/Medium (°C)	Order separate	Coil code
	200	33	240	8	II2G Ex ia IIC T6 Gb II2G Ex ia IIC T4 Gb II2D Ex iaD 21 T80°C Db II2D Ex iaD 21 T100°C Db IP 66 (with cable gland)	-40 ... +60 -40 ... +80 -40 ... +60 -40 ... +80	0000000205000000	205000000
	391	24	460	11	II2G Ex ia IIC T6 Gb II2G Ex ia IIC T4 Gb II2D Ex iaD 21 T80°C Db II2D Ex iaD 21 T100°C Db IP 66 (with cable gland)	-40 ... +60 -40 ... +80 -40 ... +60 -40 ... +80	0000000205100000	205100000
	736	17	880	15	II2G Ex ia IIC T6 Gb II2G Ex ia IIC T4 Gb II2D Ex iaD 21 T80°C Db II2D Ex iaD 21 T100°C Db IP 66 (with cable gland)	-40 ... +60 -40 ... +80 -40 ... +60 -40 ... +80	0000000205200000	205200000
	1220	13	1460	19	II2G Ex ia IIC T6 Gb II2G Ex ia IIC T4 Gb II2D Ex iaD 21 T80°C Db II2D Ex iaD 21 T100°C Db IP 66 (with cable gland)	-40 ... +60 -40 ... +80 -40 ... +60 -40 ... +80	0000000205300000	205300000


IP-Protection class *1) (to EN 60529) T

*1) Ex protection classes and temperature values are valid for all solenoid.

When selecting an intrinsically safe power supply, the permissible maximum values according to the Certificate of Conformity should be taken into account.

Ui = 45 V li = 500 mA according to Tab. A. 208x PTB 06 ATEX 2001U — N/en 7.1.540

Accessories

Cable gland Protection Ex e, Ex d (ATEX), Nickel plated brass/ stainless steel	Model	Thread	Cable Ø	Material	Protection class (ATEX)
	0588819000000000	M 20x1.5	5.0...8.0 mm	Nickel plated brass	II2GD Ex e
	0588851000000000	M 20x1.5	10...14 mm	Nickel plated brass	II2GD Ex d
	0588925000000000	1/2-14-NPT	7.5...11.9 mm	Nickel plated brass	II2GD Ex d
	0589385000000000	M 20x1.5	9.0...13 mm	Model Approvals 1.4571 (316 Ti)	II2GD Ex e
	0589395000000000	M 20x1.5	7.0...12 mm	Model Approvals 1.4571 (316 Ti)	II2GD Ex d
	0589387000000000	M 20x1.5	10...14 mm	Model Approvals 1.4571 (316 Ti)	II2GD Ex d

Connector

0570275000000000
0663303000000000 (with rectifier)

Adaptor complete (Adaptor, inlet filter and seal ring)	Silencer (plastic) *1)	Silencer (stainless steel) *1)	Exhaust guard *2)	Filter cartridge	Add-on manual override	Add-on manual override (for start-up only)
						
0613487000000000	M/S2 (G1/4)	0014613000000000 (G 1/4)	0613422000000000 (1/4")	0681173000000000 (1/4")	0553886000000000 (without detent)	0613379000000000 (without detent)
	C/S2 (1/4 NPT)	0613678000000000 (1/4 NPT)	0613423000000000 (1/2")		0553887000000000 (with detent)	
	M/S4 (G1/2)	0014813000000000 (G 1/2)				
	C/S4 (1/2 NPT)	0613679000000000 (1/2 NPT)				

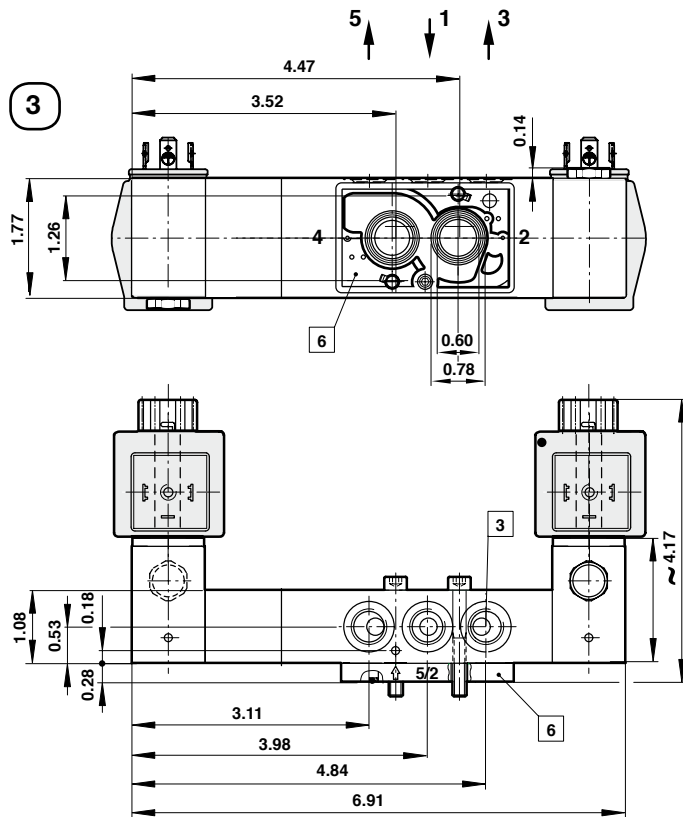
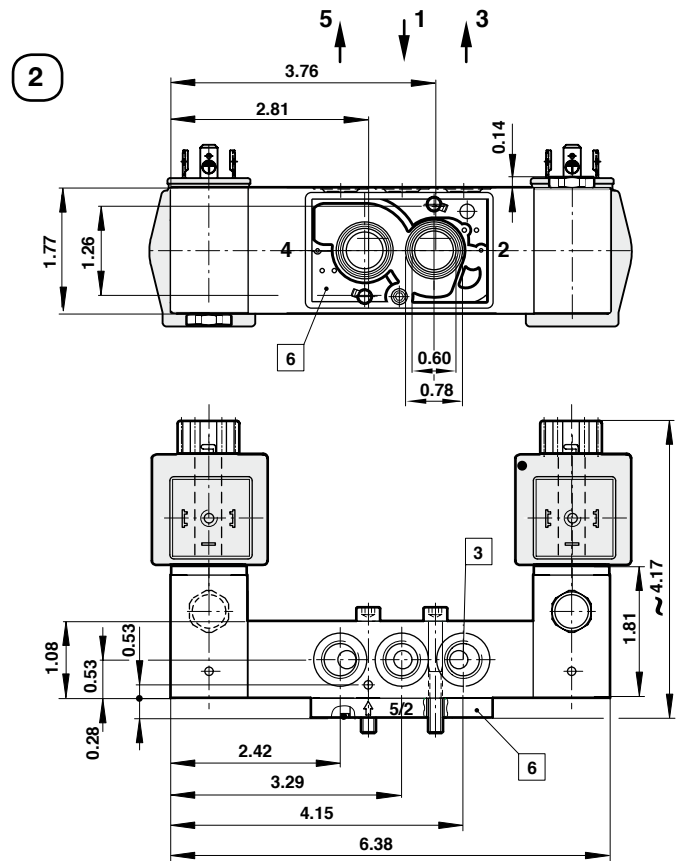
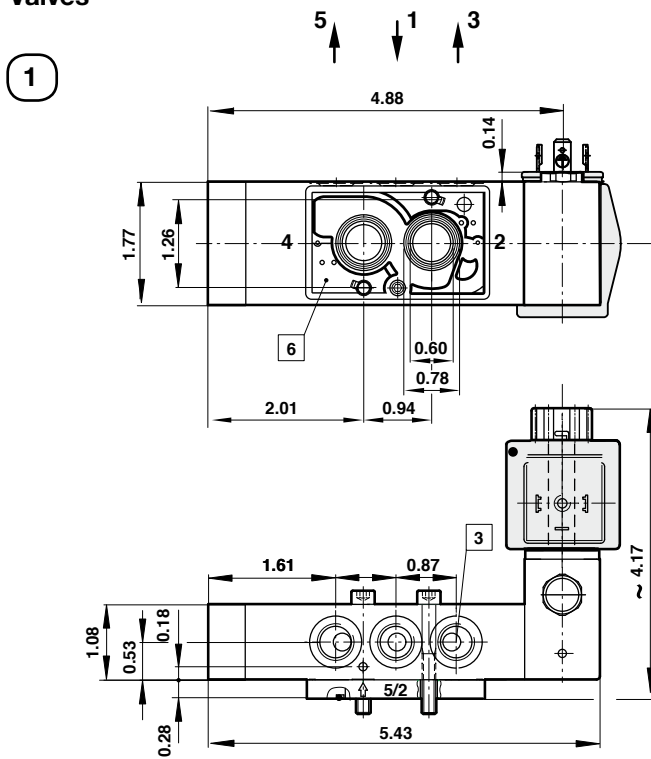
*1) For indoors use only

*2) For outdoors use ~ 0,2 (bar)

Approvals

Model	Approvals ATEX	IECEX	FM
205x	PTB 07 ATEX 2019 X	IECEX PTB 07.0017	—

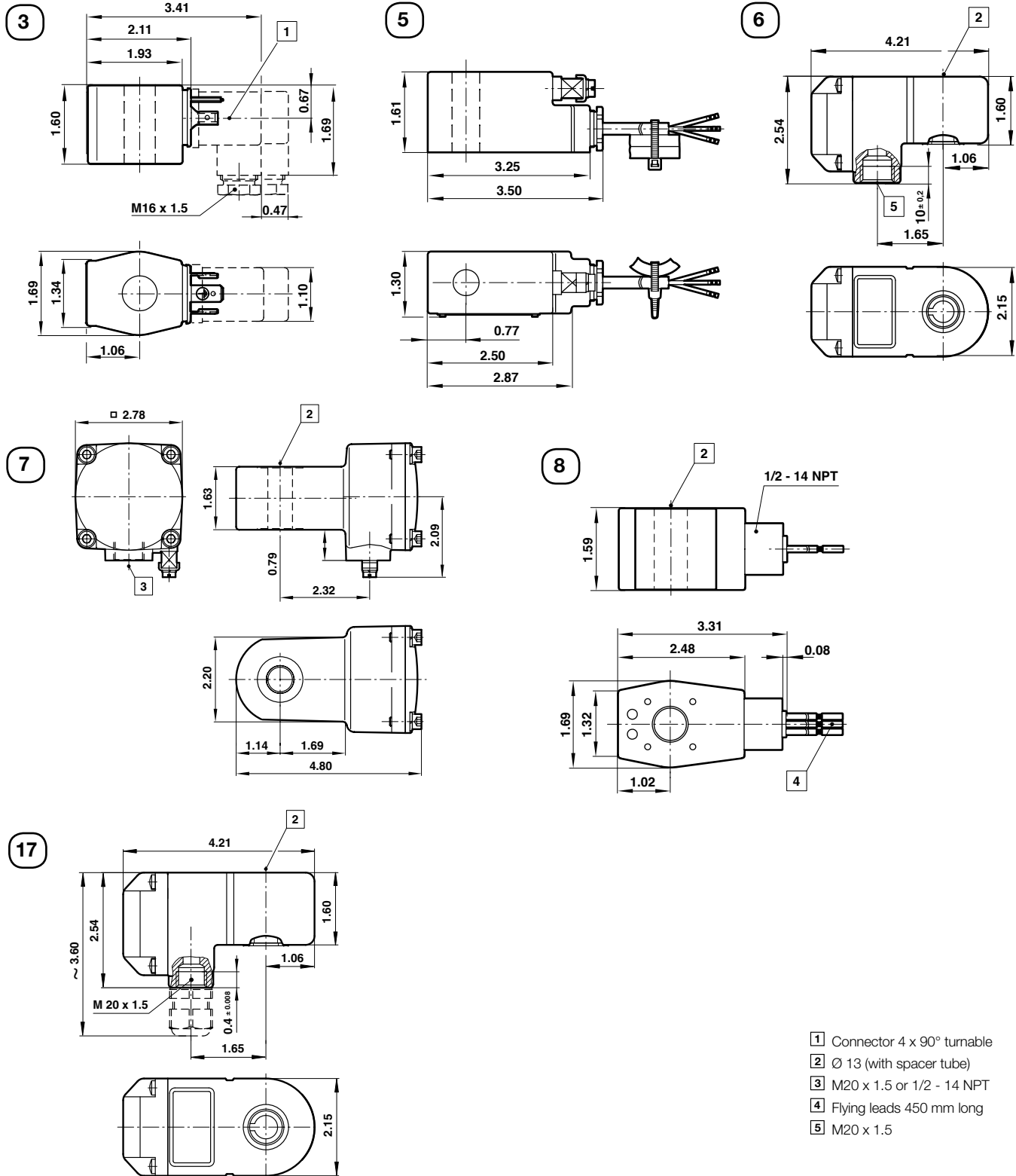
Valves



- 3 Port G 1/4 or 1/4 NPT
- 6 NAMUR connection plate 3/2 or 5/2 way function

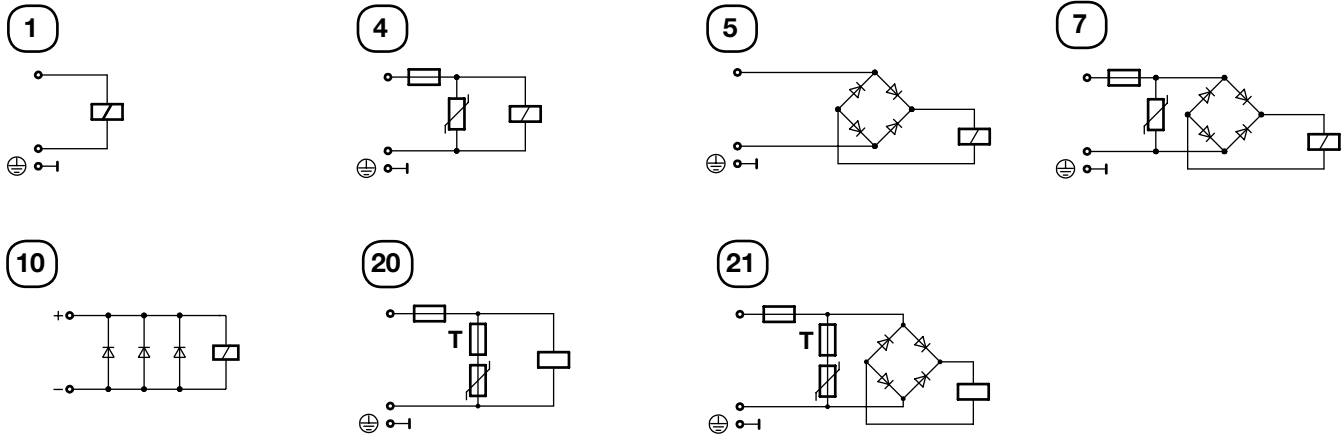
Dimensions in inches

Solenoid operators

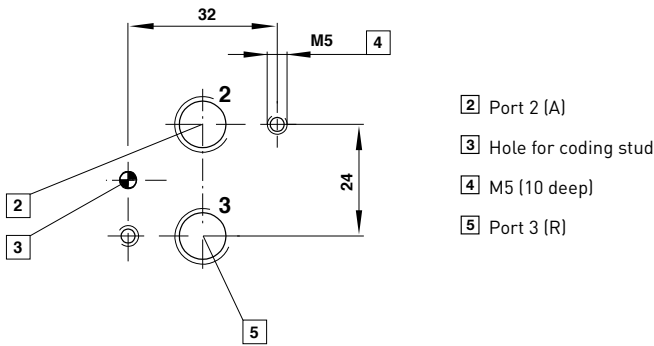


Dimensions in inches

Circuit diagrams

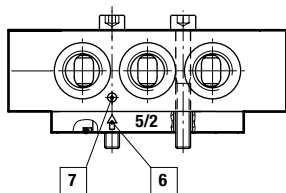


NAMUR hole pattern (driving side)
Port size G1/4

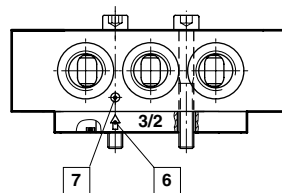


Conversion instructions of 5/2 into
3/2 way function

5/2 way function (original mode of supply)



3/2 way function



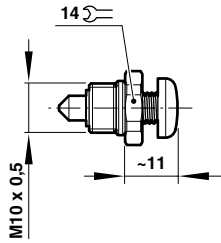
Conversion from 5/2 to 3/2 function may be achieved by swapping or turning enclosed adaptor plates. Make sure Marker and Arrow match as shown on above drawing.

- 6 Arrow
- 7 Marker

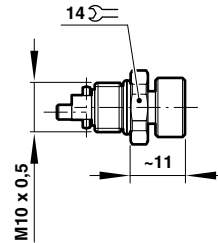
Dimensions in mm

Manual override

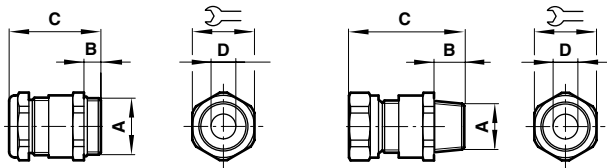
Model: 0553886 (without detent)



Model: 0553887 (with detent)



Cable gland



0588925 only

A	B	C	ø D	⌀	Model
M20 x 1.5	9	36	5 to 8	22	0588819000000000
M20 x 1.5	6.5	27.5	9 to 13	22	0589385000000000
M20 x 1.5	14	39	10 to 14	24	0588851000000000
1/2-14 NPT	15	58	7.5 to 11.9	24	0588925000000000
M20 x 1.5	14	39	7 to 12	24	0589395000000000
M20 x 1.5	10	34	10 to 14	24	0589387000000000

Dimensions in mm