

- > **Port size:** 1/4" or 1/2" ISO G/NPT
- > **Main application:** single and double operated actuators
- > **TÜV-approval based on type examination** DIN EN 161, DIN 3394 and IEC 61 508
- > **Valves for safety systems multi-channel** up to SIL 3
- > **Crossover-free switching**
- > **Add-on manual override**
- > **Suited for outdoor use under critical environment conditions** (see solenoid list)
- > **The solenoid valves are applicable in the protection classes** 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



Technical features

Medium:

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

Operation:

Indirect solenoid operated spool valves

Operating pressure:

2,5 ... 8 bar (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)

Orifice:

DN 6 or DN 8

Port size::

G 1/4, 1/4 NPT, G 1/2, 1/2 NPT or NAMUR Interface with integrated exhaust air

Mounting position:

Optional, impuls valves preferably horizontally

Ambient/Media temperature:

Valve:

-40° ... +65°C (-40° ... +149°F)

(special NBR)

-25° ... +80°C (-13° ... +176°F)

(HNBR)

Depending on solenoid system

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

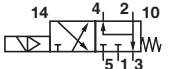
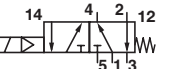
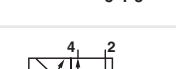
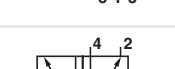
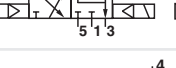
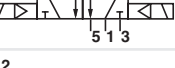
For outdoor installations must be protected all connections against the penetration of moisture and a solenoid with IP66 protection must be used!

Materials:

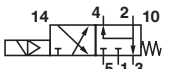
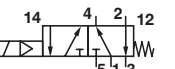
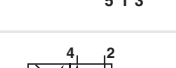
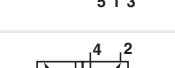
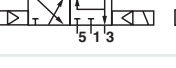
Body: aluminium 3.0615 with surface treatment for critical environmental conditions (approved according to DIN 50018: Condensate test with alternating temperatures in sulphuric atmosphere, DIN 50021/ASTM B117-73: Salt spray test with different sodium chloride solutions, tested in ammonia atmosphere), brass 2.0401 (Ms 58) stainless steel 1.4404 (316 L) Seals: special NBR or HNBR

3/2, 5/2 and 5/3 way valves with seals NBR -40 ... +65°C *3)

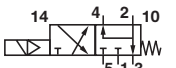
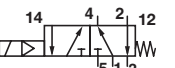
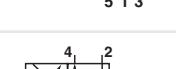
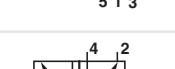
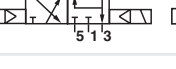
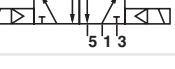
Housing: aluminium anodized

Symbol	Ports 1, 3, (5)	2, 4	Actuation	Operating pressure (bar)	Flow *6) (l/min)	Test certification IEC 61508 *2)	Weight (kg)	Dimension No.	Model *1)
	G 1/4	Flange	Solenoid/spring	2,5 ... 8	1300	x	0,45	1	9710505
	1/4 NPT	Flange	Solenoid/spring	2,5 ... 8	1300	x	0,45	1	9710515
	G 1/2	Flange	Solenoid/spring	2,5 ... 8	2600		0,80	7	9710595
	1/2 NPT	Flange	Solenoid/spring	2,5 ... 8	2600		0,80	7	9710596
	G 1/4	Flange	Solenoid/solenoid	2,5 ... 8	1300		0,65	2	9711505
	1/4 NPT	Flange	Solenoid/solenoid	2,5 ... 8	1300		0,65	2	9711515
	G 1/4	Flange	Solenoid/solenoid (APB)	2,5 ... 8	950		0,7	3	9712505
	1/4 NPT	Flange	Solenoid/solenoid (APB)	2,5 ... 8	950		0,7	3	9712515

Housing: brass

Symbol	Ports 1, 3, (5)	2, 4	Actuation	Operating pressure (bar)	Flow *6) (l/min)	Test certification IEC 61508 *2)	Weight (kg)	Dimension No.	Model *1)
	G 1/4	Flange	Solenoid/spring	2,5 ... 8	1300	x	1,00	1	9710605
	1/4 NPT	Flange	Solenoid/spring	2,5 ... 8	1300	x	1,00	1	9710615
	G 1/4	Flange	Solenoid/solenoid	2,5 ... 8	1300		1,40	2	9711605
	1/4 NPT	Flange	Solenoid/solenoid	2,5 ... 8	1300		1,40	2	9711615
	G 1/4	Flange	Solenoid/solenoid (APB)	2,5 ... 8	950		1,50	3	9712605
	1/4 NPT	Flange	Solenoid/solenoid (APB)	2,5 ... 8	950		1,50	3	9712615

Housing: stainless steel

Symbol	Ports 1, 3, (5)	2, 4	Actuation	Operating pressure (bar)	Flow *6) (l/min)	Test certification IEC 61508 *2)	Weight (kg)	Dimension No.	Model *1)
	G 1/4	Flange	Solenoid/spring	2,5 ... 8	1300	x	1,00	1	9710705
	1/4 NPT	Flange	Solenoid/spring	2,5 ... 8	1300	x	1,00	1	9710715
	G 1/4	Flange	Solenoid/solenoid	2,5 ... 8	1300		1,40	2	9711705
	1/4 NPT	Flange	Solenoid/solenoid	2,5 ... 8	1300		1,40	2	9711715
	G 1/4	Flange	Solenoid/solenoid (APB)	2,5 ... 8	950		1,50	3	9712705
	1/4 NPT	Flange	Solenoid/solenoid (APB)	2,5 ... 8	950		1,50	3	9712715

In order to ensure full flow and proper function make sure that sufficient pressure supply with feed pipe diameters according to the port size is available.

*1) When ordering please indicate solenoid, voltage and current (frequency)

*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)

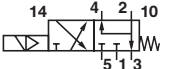
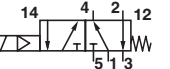
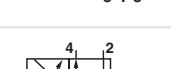
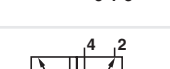
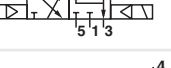
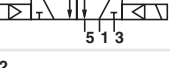
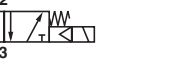
*6) Flow characteristics conforms to ISO6358 [6 » 5 bar]

Note for *6): Connecting pipe/fitting: In order to ensure and a pressure collapse avoid the flow, the supply air cross section should with 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).

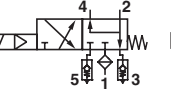
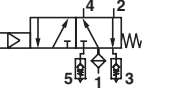
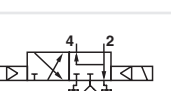
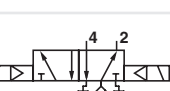
Valve function: APB = All Ports Blocked

3/2 or 5/2 way function (Conversion instructions see page 14)

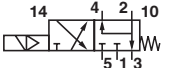
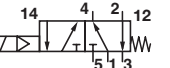
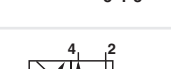
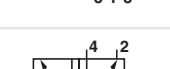
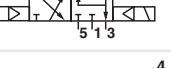
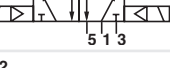
3/2, 5/2 and 5/3 way valves with seals HNBR -25 ... +80°C *3)
Housing: aluminium anodized

Symbol	Ports 1, 3, (5)	2, 4	Actuation	Operating pressure (bar)	Flow *6) (l/min)	Test certification IEC 61508 *2)	Weight (kg)	Dimension No.	Model *1)
	G 1/4	Flange	Solenoid/spring	2,5 ... 8	1300	x	0,45	1	9710205
	1/4 NPT	Flange	Solenoid/spring	2,5 ... 8	1300	x	0,45	1	9710215
	G 1/2	Flange	Solenoid/spring	2,5 ... 8	2600	x	0,80	7	9710295
	1/2 NPT	Flange	Solenoid/spring	2,5 ... 8	2600	x	0,80	7	9710296
	G 1/4	Flange	Solenoid/solenoid	2,5 ... 8	1300		0,65	2	9711205
	1/4 NPT	Flange	Solenoid/solenoid	2,5 ... 8	1300		0,65	2	9711215
	G 1/4	Flange	Solenoid/solenoid (APB)	2,5 ... 8	950		0,7	3	9712205
	1/4 NPT	Flange	Solenoid/solenoid (APB)	2,5 ... 8	950		0,7	3	9712215

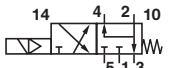
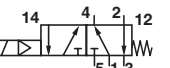
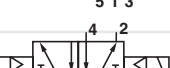
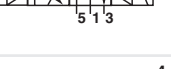
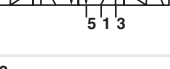
Housing: aluminium anodized, Inlet filter and exhaust guard

Symbol	Ports 1, 3, (5)	2, 4	Actuation	Operating pressure (bar)	Flow *6) (l/min)	Test certification IEC 61508 *2)	Weight (kg)	Dimension No.	Model *1)
	G 1/4	Flange	Solenoid/spring	2,5 ... 8	1300	x *4)	0,45	8	9710901
									
	G 1/4	Flange	Solenoid/solenoid	2,5 ... 8	1300	—	0,65	9	9711901
									

Housing: brass

Symbol	Ports 1, 3, (5)	2, 4	Actuation	Operating pressure (bar)	Flow *6) (l/min)	Test certification IEC 61508 *2)	Weight (kg)	Dimension No.	Model *1)
	G 1/4	Flange	Solenoid/spring	2,5 ... 8	1300	x	1,00	1	9710305
	1/4 NPT	Flange	Solenoid/spring	2,5 ... 8	1300	x	1,00	1	9710315
	G 1/4	Flange	Solenoid/solenoid	2,5 ... 8	1300		1,40	2	9711305
	1/4 NPT	Flange	Solenoid/solenoid	2,5 ... 8	1300		1,40	2	9711315
	G 1/4	Flange	Solenoid/solenoid (APB)	2,5 ... 8	950		1,50	3	9712305
	1/4 NPT	Flange	Solenoid/solenoid (APB)	2,5 ... 8	950		1,50	3	9712315

Housing: Stainless steel

Symbol	Ports 1, 3, (5)	2, 4	Actuation	Operating pressure (bar)	Flow *6) (l/min)	Test certification IEC 61508 *2)	Weight (kg)	Dimension No.	Model *1)
	G 1/4	Flange	Solenoid/spring	2,5 ... 8	1300	x	1,00	1	9710405
	1/4 NPT	Flange	Solenoid/spring	2,5 ... 8	1300	x	1,00	1	9710415
	G 1/4	Flange	Solenoid/solenoid	2,5 ... 8	1300		1,40	2	9711405
	1/4 NPT	Flange	Solenoid/solenoid	2,5 ... 8	1300		1,40	2	9711415
	G 1/4	Flange	Solenoid/solenoid (APB)	2,5 ... 8	950		1,50	3	9712405
	1/4 NPT	Flange	Solenoid/solenoid (APB)	2,5 ... 8	950		1,50	3	9712415

In order to ensure full flow and proper function make sure that sufficient pressure supply with feed pipe diameters according to the port size is available.

*1) When ordering please indicate solenoid, voltage and current (frequency)

*2) Since May 2008, Date code A8192

*3) For operation in plants according to IEC 61511/61508 -25°C...+65°C or 0...+80°C see test certificate (on request)

*4) Test certificate without inlet filter and exhaust guard

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

Note for *6): Connecting pipe/fitting: In order to ensure and a pressure collapse avoid the flow, the supply air cross section should with 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).

Valve function: APB = All Ports Blocked

3/2 or 5/2 way function (Conversion instructions see page 14)

Option selector

971*****.*****.***

Function	Substitute	Air supply	Substitute
5/2 way with spring return (3/2 way with adapter plate for NAMUR flange)	0	Internal	0
5/2 way impuls (3/2 way with adapter plate for NAMUR flange)	1	Externa	Z
5/3 way with spring return (ABP)	2	Voltage	Substitute
Material: Housing/seals	Substitute	24 V d.c.	024.0
Aluminium/HNBR (-25 ... + 80°C)	2	230 V a.c.	230.5
Brass/HNBR (-25 ... + 80°C)	3	Solenoid	Substitute
Stainless steel/HNBR (-25 ... + 80°C)	4	see solenoid table	
Aluminium/NBR (-40 ... + 65°C)	5		
Brass/NBR (-40 ... + 65°C)	6		
Stainless steel/NBR (-40 ... + 65°C)	7		
Special version *1)	9		
Ports size	Substitute		
G 1/4	0		
1/4 NPT	1		
G 1/2	9		
1/2 NPT (in connection with 'version code 6' below described)	9		
Version	Substitute		
Without manual override (retrofit)	5		
Semi automatic (on request)	7		
Low power pilot (see page 5)	9		
For 1/2 NPT only + NAMUR (manual override retrofit)	6		

Valve function:

APB = All Ports Blocked

*1) Norgren internal use.

Port size and other features shown under version are different.

E.g. 971x901: Valve with inlet filter and exhaust guards according to customer requirement.

Solenoids, standard voltages

	Power consumption		Rated current		Protection class IP/NEMA	Ex-Protection (ATEX-Category)	Temperature Ambient/ Media (°C)	Electrical connection	Weight	Drawing	Circuit diagram	Model
	24 V d.c. (W)	230 V a.c. (VA)	24 V d.c. (m A)	230 V a.c. (m A)					(kg)	No.	No.	
	1,9	2,1 *2)	78	11	IP65 (with connector)	—	-25 ... +60	Connector DIN EN 175301-803, form A *1)	0,3	3	1/5	0763
	3,6	—	150	—	IP66	II 2 G Ex mb IIC T4 Gb II 2 D Ex mb IIIC T110°C Db	-20 ... +70	Cable length 3 m	0,4	5	4	0298
	—	4,6	—	18	IP66	II 2 G Ex mb IIC T4 Gb II 2 D Ex mb IIIC T110°C Db	-20 ... +70	Cable length 3 m	0,4	5	4	0299
	0,8	—	38	—	IP66 (with cable gland)	II 2 G Ex mb IIC T5/T6 Gb II 2 D Ex tb IIIC T130°C Db IP66	T5: -40 ... +80 T6: -40 ... +70 -40 ... +80	M20 x 1,5 *1)	0,6	6	4	4200
	—	1,3	—	6	IP66 (with cable gland)	II 2 G Ex mb IIC T5/T6 Gb II 2 D Ex tb IIIC T130°C Db IP66	T5: -40 ... +80 T6: -40 ... +70 -40 ... +80	M20 x 1,5 *1)	0,6	6	7	4201

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.

*1) Connector/cable gland is not scope of delivery, see table »Accessories«

*2) Required connector: type 0570275 for d.c.; type 0663303 for a.c., 200 V d.c. solenoid voltage must be ordered!

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	FM	Datasheet
029x	KEMA 02 ATEX 1347 X	—	—	N/en 7.1.505
42xx	KEMA 98 ATEX 4452 X	IECEX KEM 09.0068X	—	N/en 7.1.580

Solenoids, standard voltages

	Power consumption		Rated current		Protection class IP/NEMA	Ex-Protection (ATEX-Category)	Temperature Ambient/ Media (°C)	Electrical connection	Weight (kg)	Drawing No.	Circuit diagram No.	Model
	24 V d.c. (W)	230 V a.c. (VA)	24 V d.c. (mA)	230 V a.c. (mA)								
	0,8	—	33	—	IP66 (with cable gland)	II 2 G Ex d mb IIC T5/T6 Gb II 2 G Ex e mb IIC T5/T6 Gb II 2 D Ex tb IIIC T130°C Db	T5: -40 ... +80 T6: -40 ... +70 -40 ... +80	1/2 NPT *1)	0,8	7	20	4600
	—	1,3	—	6	IP66 (with cable gland)	II 2 G Ex d mb IIC T5/T6 Gb II 2 G Ex e mb IIC T5/T6 Gb II 2 D Ex tb IIIC T130°C Db	T5: -40 ... +80 T6: -40 ... +70 -40 ... +80	1/2 NPT *1)	0,8	7	21	4601
	0,8	—	33	—	IP66 (with cable gland)	II 2 G Ex d mb IIC T5/T6 Gb II 2 G Ex e mb IIC T5/T6 Gb II 2 D Ex tb IIIC T130°C Db	T5: -40 ... +80 T6: -40 ... +70 -40 ... +80	M20 x 1,5 *1)	0,8	7	20	4602
	—	1,3	—	6	IP66 (with cable gland)	III 2 G Ex d mb IIC T5/T6 Gb II 2 G Ex e mb IIC T5/T6 Gb II 2 D Ex tb IIIC T130°C Db	T5: -40 ... +80 T6: -40 ... +70 -40 ... +80	M20 x 1,5 *1)	0,8	7	21	4603
	0,8	—	33	—	IP66 (with cable gland)	II 2 G Ex mb d IIC T4/T6 Gb II 2 G Ex mb e II T4/T6 Gb	T4: -40 ... +80 T6: -40 ... +70	M20 x 1,5 *1)	1,2	10	4	4802
	—	1,3	—	6	IP66 (with cable gland)	II 2 G Ex mb d IIC T4/T6 Gb II 2 G Ex mb e II T4/T6 Gb	T4: -40 ... +50 T6: -40 ... +40	M20 x 1,5 *1)	1,2	10	7	4803
	1,4	—	228	—	NEMA 4, 4X, 6, 6P, 7, 9	XP/DIP, Div. 1 & 2 Cl. I, Gr. A-D Cl. II/III, Gr. E-G T3 (160°C)	-20 ... +60	Flying leads 450 mm long	0,4	8	1	3720

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.

*1) Connector/cable gland is not scope of delivery, see table »Accessories«

*2) Required connector: type 0570275 for d.c.; type 0663303 for a.c., 200 V d.c. solenoid voltage must be ordered!

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	FM	Datasheet
372x, 382x	—	—	CSA-LR 57643-6	N/en 7.1.575
46xx	PTB 02 ATEX 2085 X	IECEX PTB 11.0094X	—	N/en 7.1.585
48xx	PTB 06 ATEX 2054 X	IECEX PTB 07.0039X	—	N/en 7.1.590

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)	IP Protection class	Ex-Protection (ATEX-Category)	Temperature Ambient/ Media (°C)	Weight (kg)	Drawing No.	Circuit diagram No.	Model
	200	33	240	8	IP66 (with cable gland)	II 2 G Ex ia IIC T4/ T6 Gb II 2 D Ex ia IIIC T80°C Db II 2 D Ex ia IIIC T100°C Db	T4: -40 ... +80 T6: -40 ... +60 -40 ... +60 -40 ... +80	0,85	17	10	2050
	391	24	460	11	IP66 (with cable gland)	II 2 G Ex ia IIC T4/ T6 Gb II 2 D Ex ia IIIC T80°C Db II 2 D Ex ia IIIC T100°C Db	T4: -40 ... +80 T6: -40 ... +60 -40 ... +60 -40 ... +80	0,85	17	10	2051
	736	17	880	15	IP66 (with cable gland)	II 2 G Ex ia IIC T4/ T6 Gb II 2 D Ex ia IIIC T80°C Db II 2 D Ex ia IIIC T100°C Db	T4: -40 ... +80 T6: -40 ... +60 -40 ... +60 -40 ... +80	0,85	17	10	2052
	1220	13	1460	19	IP66 (with cable gland)	II 2 G Ex ia IIC T4/ T6 Gb II 2 D Ex ia IIIC T80°C Db II 2 D Ex ia IIIC T100°C Db	T4: -40 ... +80 T6: -40 ... +60 -40 ... +60 -40 ... +80	0,85	17	10	2053

Cable gland (cable Ø 5 ... 10 mm) is in scope of delivery

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

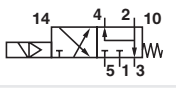
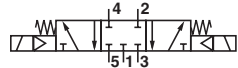
Ui = 45 V, Ii = 500 mA according to Tab. A. 1, EN 60079-11

Pi = 2,0 W, Li and Ci can be ignored.

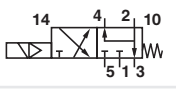
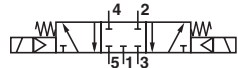
Approvals

Model	Approvals ATEX	IECEX	Datasheet
205x	PTB 07 ATEX 2019	IECEX PTB 07.0017	N/en 7.1.535

3/2, 5/2 and 5/3 way valves, indirect solenoid actuated using low-power pilot system in protection class Ex ia IIC T4/T6, seals NBR -40 ... +65° C

Symbol	Ports 1, 3, (5)	2, 4	Actuation	Material	Operating pressure (bar)	Flow *6) (l/min)	Weight (kg)	Dimension No.	Model *1)
	G 1/4	Flange	Solenoid/spring	Aluminium	2,5 ... 8	1300	0,45	4	9710509
	1/4 NPT	Flange	Solenoid/spring	Aluminium	2,5 ... 8	1300	0,45	4	9710519
	G 1/4	Flange	Solenoid/solenoid	Aluminium	2,5 ... 8	1300	0,65	5	9711509
	1/4 NPT	Flange	Solenoid/solenoid	Aluminium	2,5 ... 8	1300	0,65	5	9711519
	G 1/4	Flange	Solenoid/solenoid (APB)	Aluminium	2,5 ... 8	950	0,7	6	9712509
	1/4 NPT	Flange	Solenoid/solenoid (APB)	Aluminium	2,5 ... 8	950	0,7	6	9712519

3/2, 5/2 and 5/3 way valves, indirect solenoid actuated using low-power pilot system in protection class Ex ia IIC T4/T6, seals HNBR -25° ... +80°C

Symbol	Ports 1, 3 (5)	2, 4	Actuation	Material	Operating pressure (bar)	Flow *6) (l/min)	Weight (kg)	Dimension No.	Model *1)
	G 1/4	Flange	Solenoid/spring	Aluminium	2,5...8	1300	0,45	4	9710209
	1/4 NPT	Flange	Solenoid/spring	Aluminium	2,5...8	1300	0,45	4	9710219
	G 1/4	Flange	Solenoid/solenoid	Aluminium	2,5...8	1300	0,65	5	9711209
	1/4 NPT	Flange	Solenoid/solenoid	Aluminium	2,5...8	1300	0,65	5	9711219
	G 1/4	Flange	Solenoid/solenoid (APB)	Aluminium	2,5...8	950	0,7	6	9712209
	1/4 NPT	Flange	Solenoid/solenoid (APB)	Aluminium	2,5...8	950	0,7	6	9712219

In order to ensure full flow and proper function make sure that sufficient pressure supply with feed pipe diameters according to the port size is available.

*1) When ordering please indicate solenoid, voltage and electrical connection, see below

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

Note for *6): Connecting pipe/fitting: In order to ensure and a pressure collapse avoid the flow, the supply air cross section should with 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).

Valve function: APB = All Ports Blocked

3/2 or 5/2 way function (Conversion instructions see page 14)

Low-power pilot system in protection class II 2 G Ex ia IIC T4/T6
Suitable for valves see page 6 and 7

	Power P (mW)	Switch-on voltage U on (V)	Switch-off voltage U off (V)	Rated current I on (mA)	Resistance coil R (Ω)	IP Protection class	Ex-Protection (ATEX-Category)	Temperature Ambient/Media (°C)	Circuit diagram No.	Model
	6,3 (+20°C)	$\geq 4,3$ (+20°C) $\geq 5,2$ (+80°C)	$\leq 1,44$ (+20°C) $\leq 1,2$ (-25°C)	$\geq 1,45$	2800	IP65 (with cable gland)	II 2 G Ex ia IIC T4/T6	T4: -40 ... +80°C T6: -40 ... +60°C	11	2085
	23,2 (+20°C)	≥ 16 (+20°C) $\geq 16,8$ (+80°C)	$\leq 5,4$ (+20°C) $\leq 4,7$ (-25°C)	$\geq 1,45$	10900	IP65 (with cable gland)	II 2 G Ex ia IIC T4/T6	T4: -40 ... +80°C T6: -40 ... +60°C	11	2086

Cable gland (cable Ø 5 ... 10 mm) is in scope of delivery

Approvals

Typ	Approvals ATEX	Datasheet
208x	PTB 06 ATEX 2001U	N/en 7.1.540

Ordering example

9710509	2085	005	00
Valve	Pilot 6,3 mW	Electrical connection	00 internal air supply
Valve	Pilot 6,3 mW	005 M16 x 1,5 cable gland	0Z external air supply

Max. values Ex i

Ui (V)	Ii (mA)	Pi *1) (mW)
25	150	250
27	125	250
28	115	250
30	100	250
32	85	250

Air consumption: home position ≤ 60 l/h, operating position ≤ 15 l/h

*1) Model 2086 without Pi limiting. Ci and Li can be ignored.

Accessories

Cable gland
Protection class Ex e, Ex d (ATEX),
Nickel plated brass/
stainless steel



Page 19 Thread	Cable Ø	Material	Protection class (ATEX)	Model
M 20x1,5	5,0...8,0 mm	Nickel plated brass	II2GD Ex e	0588819
M 20x1,5	10...14 mm	Nickel plated brass	II2GD Ex d	0588851
1/2-14-NPT	7,5...11,9 mm	Nickel plated brass	II2GD Ex d	0588925
M 20x1,5	9,0...13 mm	Stainless steel 1.4571 (316 Ti)	II2GD Ex e	0589385
M 20x1,5	7,0...12 mm	Stainless steel 1.4404 (316 L)	II2GD Ex d	0589395
M 20x1,5	10...14 mm	Stainless steel 1.4404 (316 L)	II2GD Ex d	0589387

Connector



0570275
 0663303 (with rectifier)

Adaptor complete (Adaptor, inlet filter and seal ring)	Inlet filter	Silencer (plastic) *1)	Exhaust guard *2)	Silencer (stainless steel) *1)	Manual override	Manual override (for start-up only)
						
Page 18	Page 18	Page 18	Page 18	Page 18	Page 17	Page 17
0613487	0681173 (G1/4, 1/4 NPT)	M/S2 (G1/4)	0613422 (G1/4, 1/4 NPT)	0014613 (G 1/4)	0553886 (without detent)	0613379 (without detent)
		C/S2 (1/4 NPT)	0613423 (G1/2, 1/2 NPT)	0613678 (1/4 NPT)	0553887 (with detent)	
		M/S4 (G1/2)		0014813 (G 1/2)		
		C/S4 (1/2 NPT)		0613679 (1/2 NPT)		

*1) For indoors use only

*2) For outdoors use, opening pressure ~ 0,2 bar

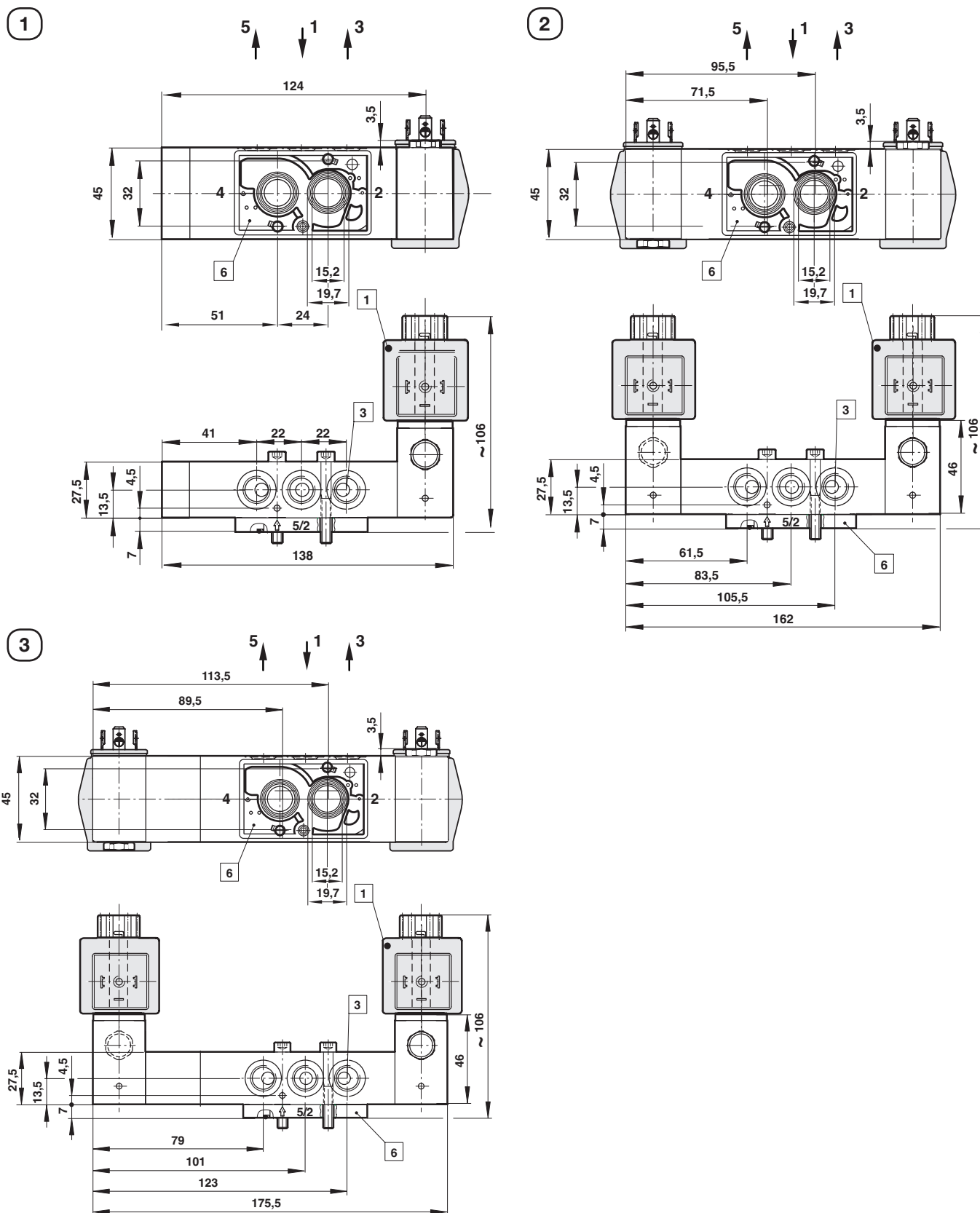
Throttle control plate	Flange plate, for G1/4 only	Yoke	Distance plate for pressure switches	Mounting plate 90°, 180° and 270°
				
Page 16	Page 16	Page 16	Page 17	Page 17
4040239 (only for G1/4)	0612790 (NAMUR single connection plate)	0540593	0540109	0613453 (90°)
	0612791 (NAMUR-rip use in combination with 0612790)			0612631 (180°)
				0613556 (270°)

Dimensions

Dimensions in mm
 Projection/First angle



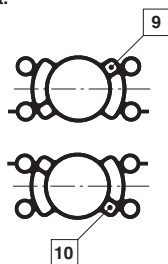
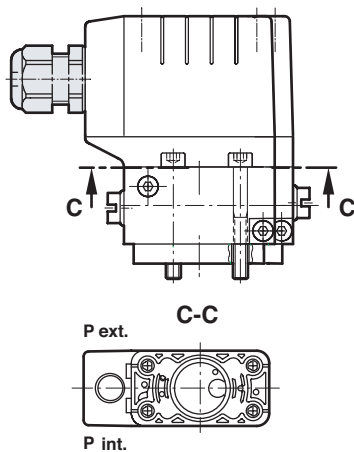
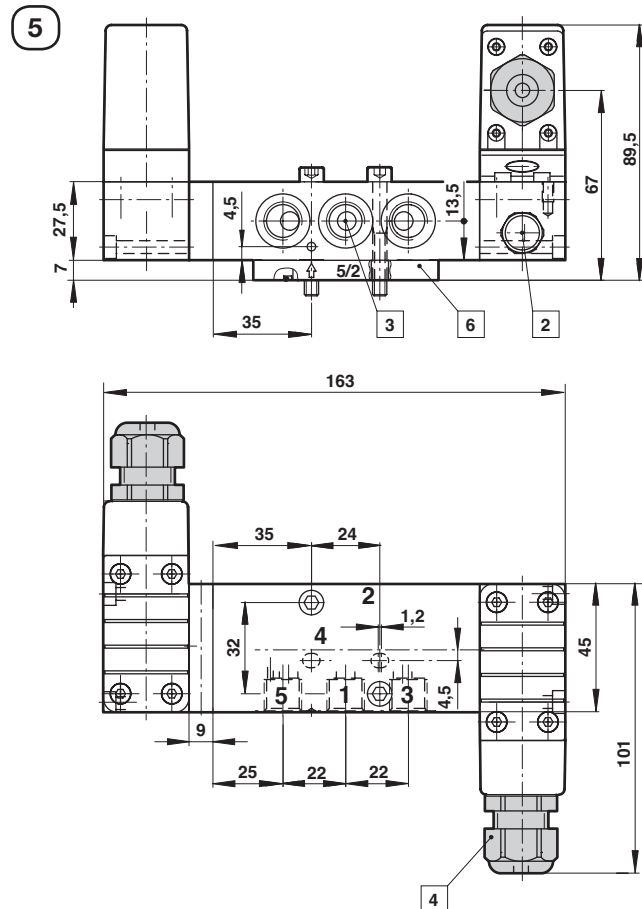
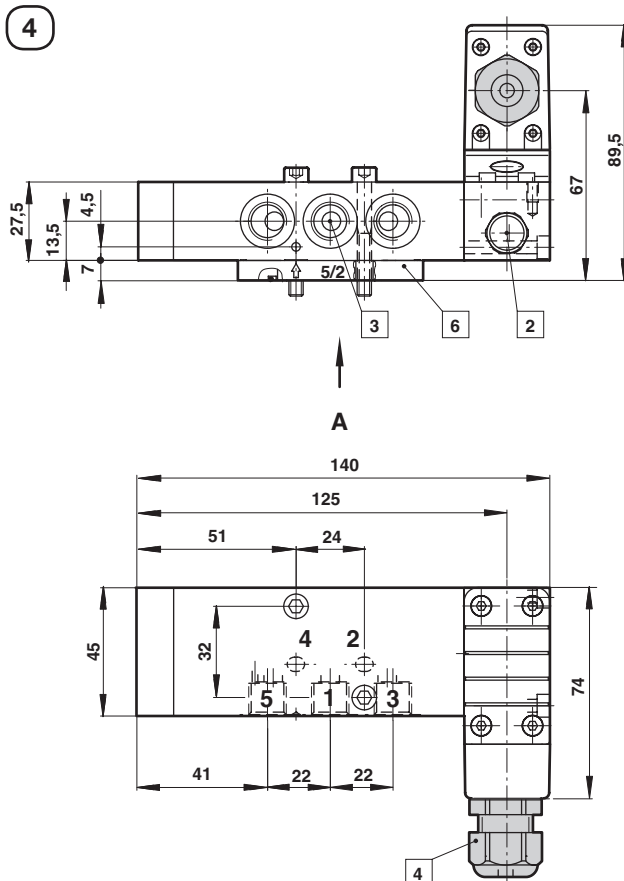
Valves



1 Solenoid dimensions on page 13

3 Port G 1/4 or 1/4 NPT

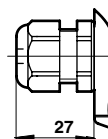
6 NAMUR connection plate 3/2 or 5/2 way function

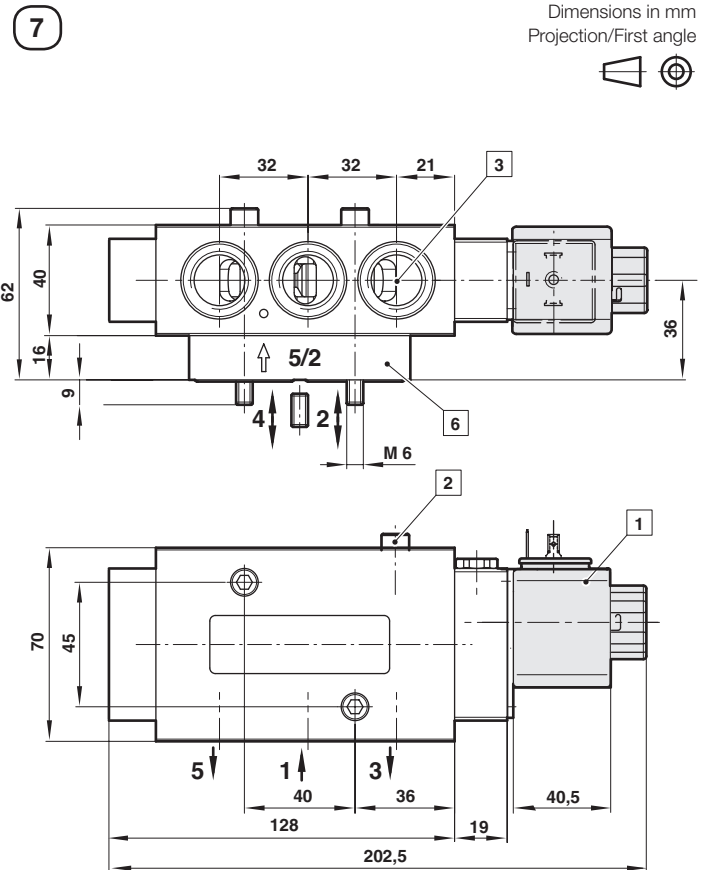
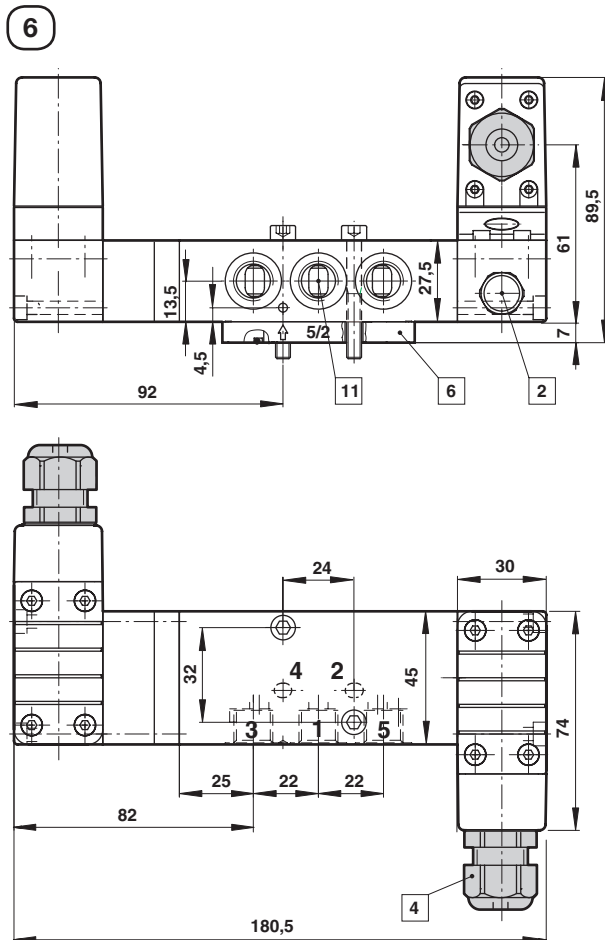


- 2 External control pressure connection G1/8 or 1/8 NPT
- 3 Port G1/4 or 1/4 NPT
- 4 Electrical connection 005
- 6 NAMUR connection plate 3/2 or 5/2 way function
- 9 Position of gasket internal pilot air
- 10 Position of gasket external pilot air

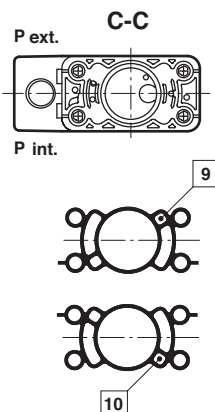
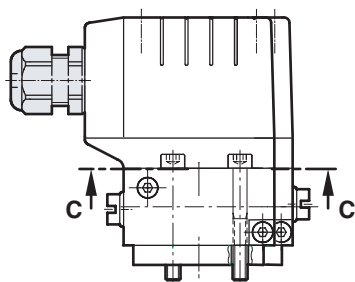
Electrical connection

005



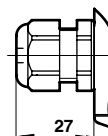


- 1** Solenoid optional turnable
- 2** External control pressure connection G1/8 or 1/8 NPT
- 3** Port G1/2 or 1/2 NPT
- 4** Electrical connection 005
- 6** NAMUR connection plate 3/2 or 5/2 way function
- 9** Position of gasket internal pilot air
- 10** Position of gasket external pilot air
- 11** Port G1/4 or 1/4 NPT



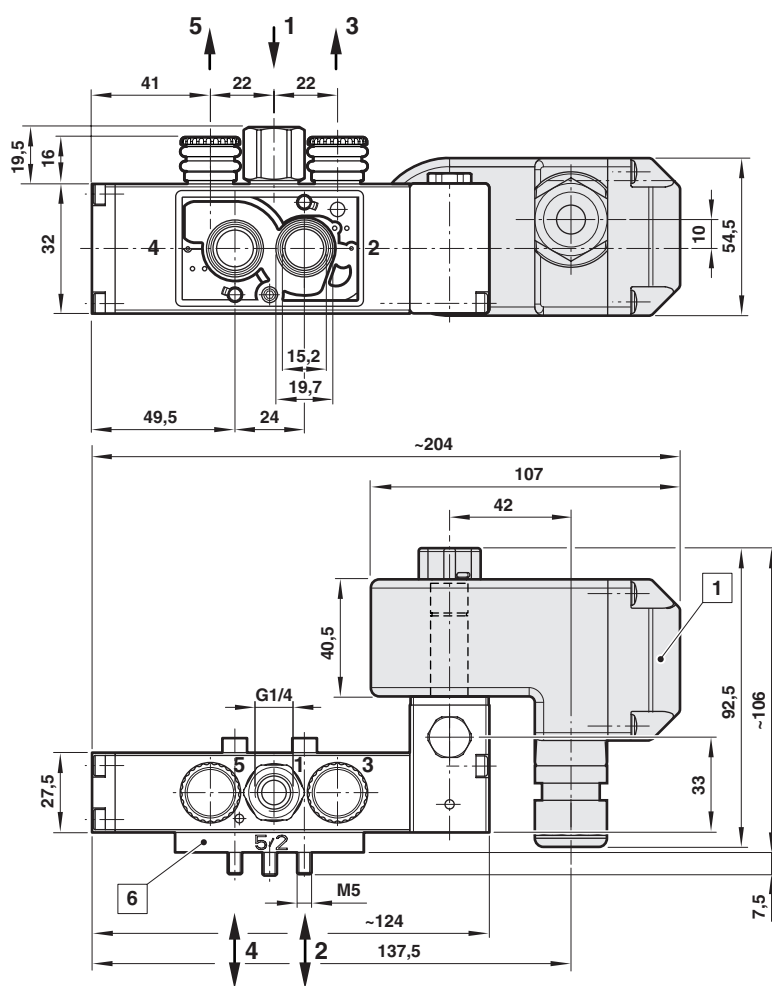
Electrical connection

005



8

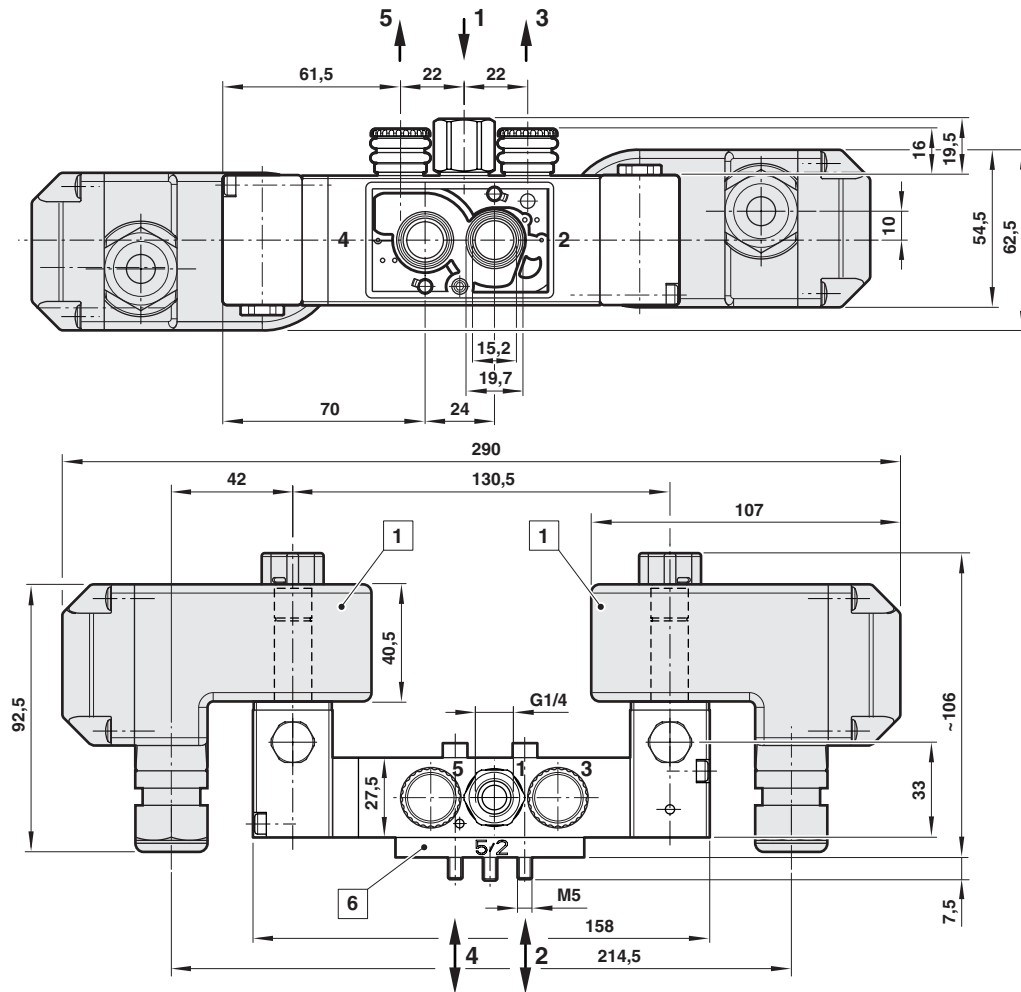
Dimensions in mm
Projection/First angle



1 Solenoid turnable

6 NAMUR connection plate 3/2 or 5/2 way function

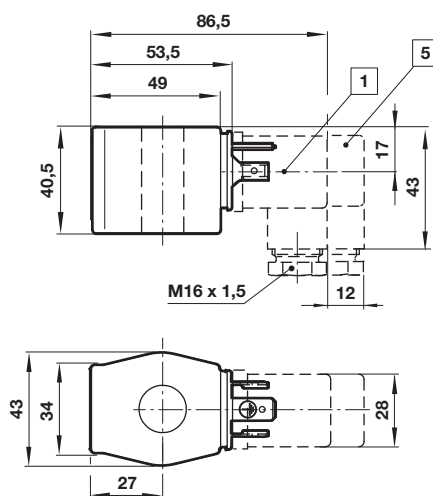
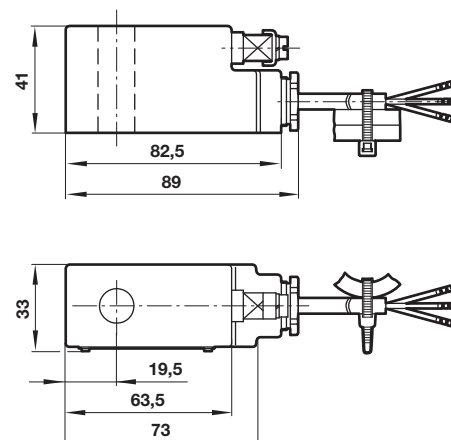
9

 Dimensions in mm
 Projection/First angle

1 Solenoid turnable

6 NAMUR connection plate 3/2 or 5/2 way function

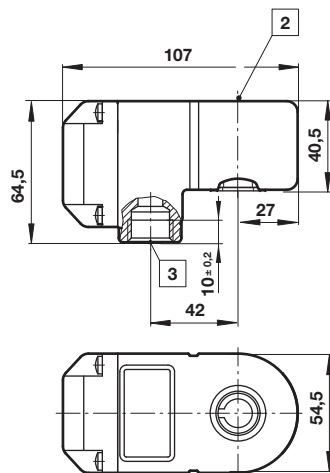
Dimensions

Solenoid operators

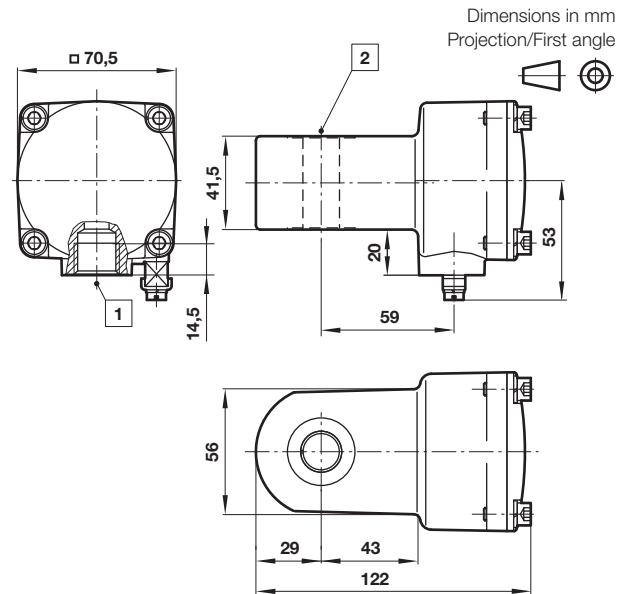
3

5

1 Connector 4 x 90° turnable

5 Connector with rectifier(0663303)

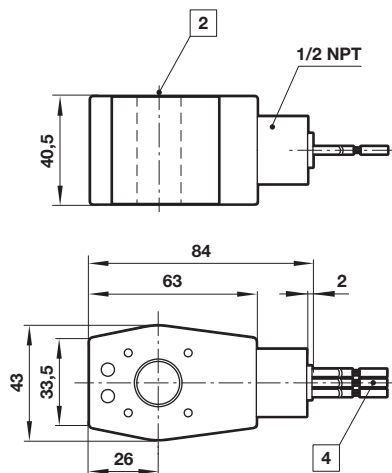
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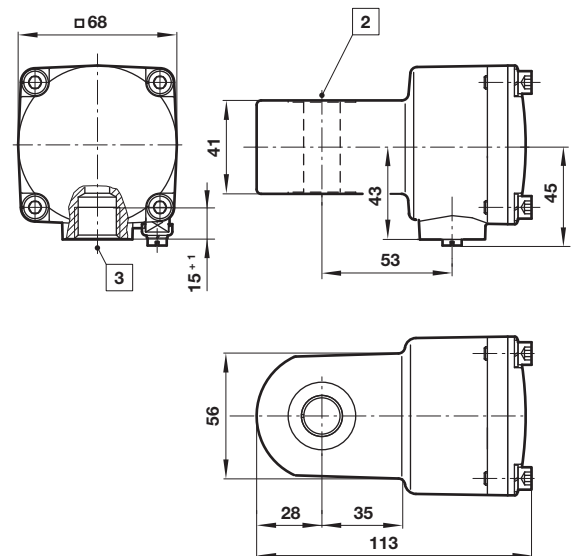
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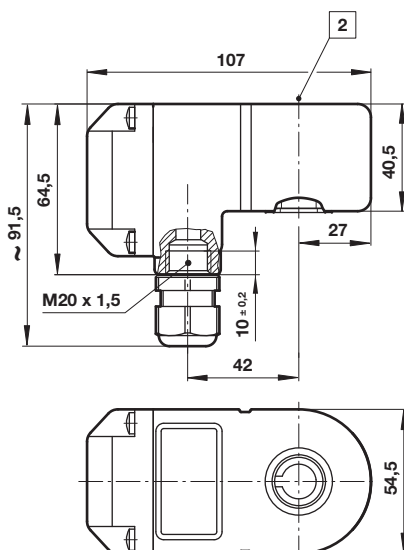
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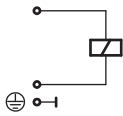
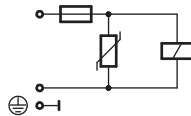
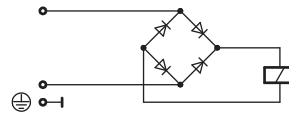
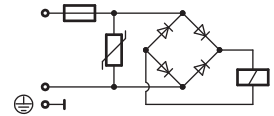
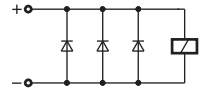
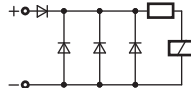
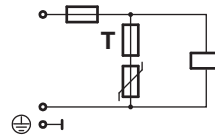
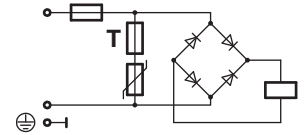
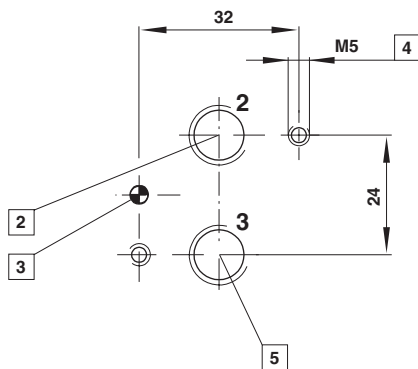
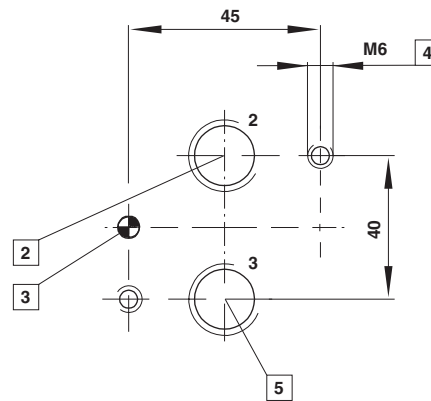
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17

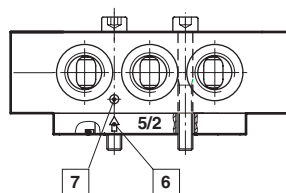
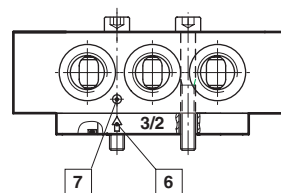


- 1 Connector 4 x 90° turnable
- 2 Ø 13 (with spacer tube)
- 3 M20 x 1,5 or 1/2 NPT
- 4 Flying leads 450 mm long

Circuit diagrams
1

4

5

7

10

11

20

21

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

Port size G1/2


- 2** Port 2 (A)
- 3** Hole for coding stud
- 4** M5 & M6 (10 deep)
- 5** Port 3 (R)

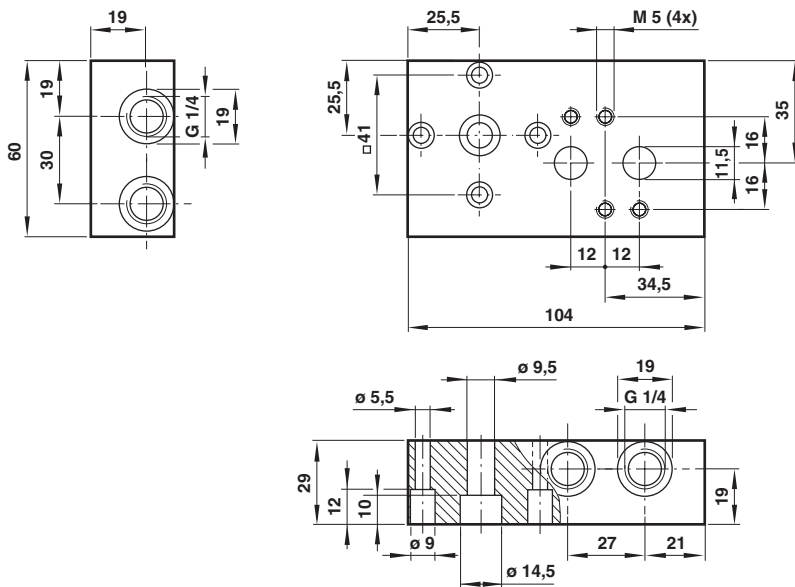
NAMUR quick exhaust module for a better kv-value by exhaust see data sheet 5.4.820

Conversion instructions of
5/2 into 3/2 way function
5/2 way function
(original mode of supply)

3/2 way function


3/2 resp. 5/2 way function according to version by swapping or turning enclosed adaptor plates. Make sure Marker and Arrow do match as shown on above drawing.

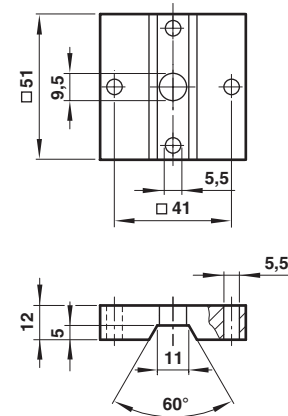
- 6** Arrow
- 7** Marker

Single connection plate
Model: 0612790

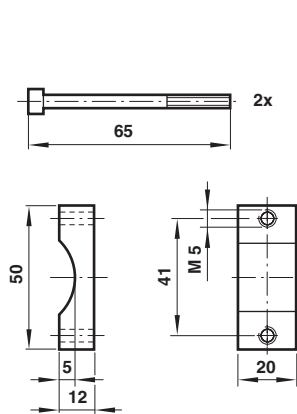


NAMUR slot
(in connection with
0612790 only)
Model: 0612791

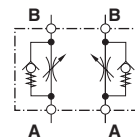
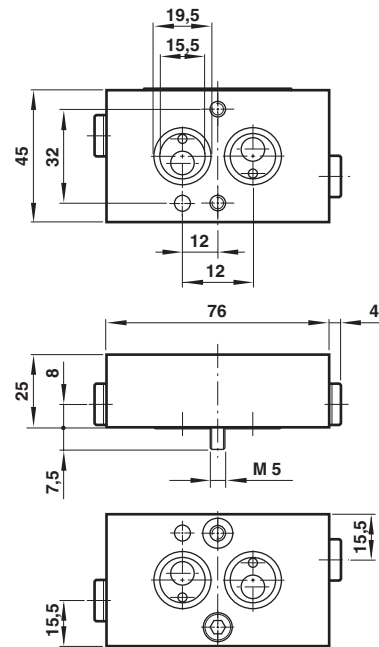
Dimensions in mm
Projection/First angle



Yoke
Model: 0540593



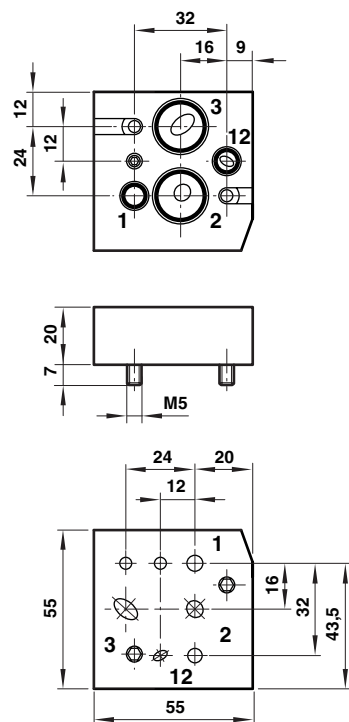
Throttle control plate
Model: 4040239



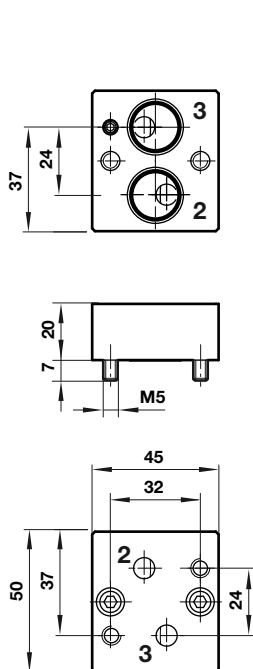
Dimensions in mm
 Projection/First angle



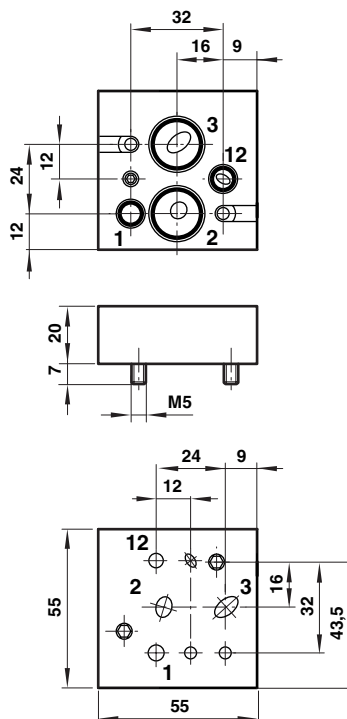
90° Mounting plate
Model: 0613453



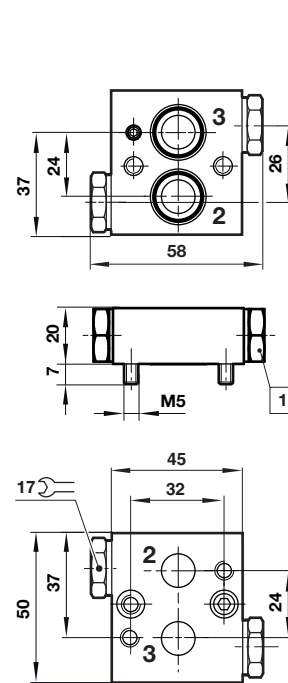
180° Mounting plate
Model: 0612631



270° Mounting plate
Model: 0613556



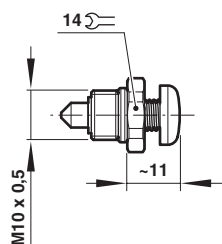
Distance plate
Model: 0540109



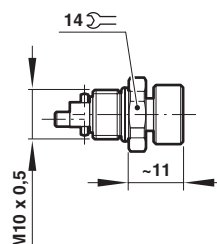
1 G1/4 ports for pressure switches

Manual override

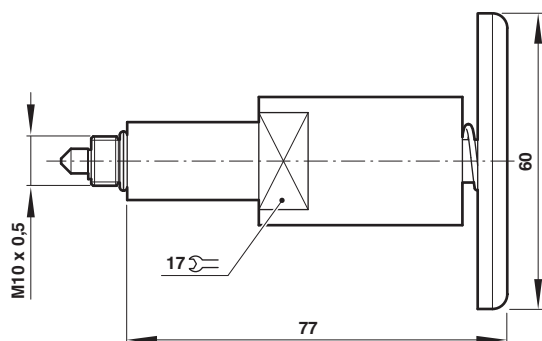
Model: 0553886



Model: 0553887

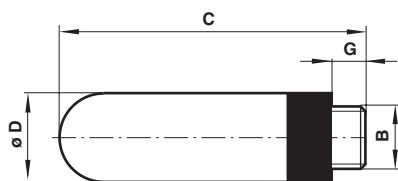


Model: 0613379



Silencer (plastic)

Model: M/S2, M/S4, C/S2 & C/S4

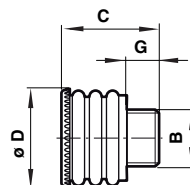


B	G	C	Ø D	Weight (g)	Model
G1/4	7	35,5	15,5	2,9	M/S2
1/4 NPT	7	35,5	15,5	2,9	C/S2
G1/2	12	67	23	11,5	M/S4
1/2 NPT	12	67	23	11,5	C/S4

Exhaust guard

Model: 0613422 & 0613423

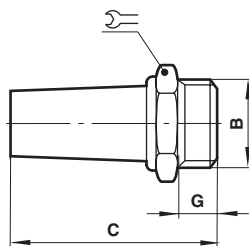
Dimensions in mm
Projection/First angle



B	Suitable for	G	C	Ø D	Weight (g)	Model
1/4"	G1/4, 1/4 NPT	10	26,5	21	5	0613422
1/2"	G1/2, 1/2 NPT	12	33,5	29	11	0613423

Silencer (stainless steel)

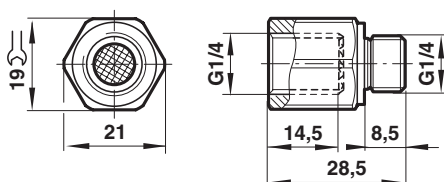
Model: 0014613, 0014813, 0613678 & 0613679



B	C	G		Weight (g)	Model
G 1/4	36	8	16	23	0014613
1/4 NPT	36	8	16	67	0613678
G 1/2	49	12	24	81	0014813
1/2 NPT	49	12	24	235	0613679

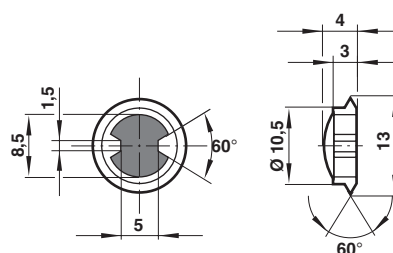
Adaptor complete

Model: 0613487



Inlet filter

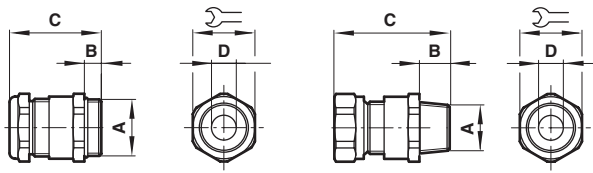
Model: 0681173



Thread pitch diameter max. 11,85 mm

Cable gland

Dimensions in mm
 Projection/First angle



0588925 only

A	B	C	ø D		Model
M20 x 1,5	9	36	5 ... 8	22	0588819
M20 x 1,5	6,5	27,5	9 ... 13	22	0589385
M20 x 1,5	14	39	10 ... 14	24	0588851
1/2-14 NPT	15	58	7,5 ... 11,9	24	0588925
M20 x 1,5	14	39	7 ... 12	24	0589395
M20 x 1,5	10	34	10 ... 14	24	0589387

Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under »**Technical features/data**«.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems or other applications not within published specifications, consult IMI Precision Engineering, Norgren GmbH.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes. The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.