

3/2, 5/2 and 5/3 directional valves
 Actuation: electromagnetic
 Indirectly controlled soft seal spool valves
 Port size: G 1/4, 1/4 NPT, G 1/2, 1/2 NPT

For single and double operated actuators
Valves for safety systems up to SIL 4 (IEC 61508)
Crossover-free switching, switch-over function guaranteed even with small cross section
Rest position in the event of power failure provided by mechanical return spring (monostable design)
Add-on manual override
Suitable for outdoor installation if equipped with corresponding solenoid
The solenoid valves are applicable in the protection classes Ex me, Ex md, Ex m, Ex ia for zones 1 & 2 (gases), 21 & 22 (dusts), ATEX cat. II 2GD
International certifications: IECEx, FM, CSA, others on request



**IEC 61508
 up to SIL4 *1)**

Technical data

Medium:
 Filtered, non-lubricate and dried compressed air, instrument air, nitrogen and other non-flammable neutral, dry fluids

Operation:
 Solenoid, indirectly controlled

Mounting position:
 Optional; Impulse valves preferably horizontally

Nominal diameter:
 ND 6 mm, ND 8 mm

Port size:
 G 1/4, 1/4 NPT, G 1/2, 1/2 NPT

Operating pressure:
 2,5 ... 8 bar with internal air supply
 0 ... 8 bar with external air supply, control pressure 2,5 ... 8 bar

Temperature:
 Valve: *1)
 -40 ... +65°C (NBR),
 -25 ... +80°C (HNBR)

Solenoid: see solenoid table
 (Please consult our technical service for use below +2°C, for outdoor installation please protect all connections against the penetration of moisture!)

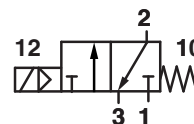
Material:

Body: aluminium 3.0615 with surface treatment for rough environmental conditions (condensate test with alternating temperatures in sulphuric environment, salt spray test with different sodium chloride solutions, tested in ammonia environment)
 Brass 2.0401/Ms 58, stainless steel 1.4404/316
 Seals: NBR (special perbunan) or HNBR

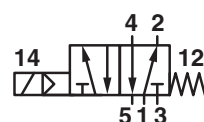
Ordering information and accessories

See page 7 and 8

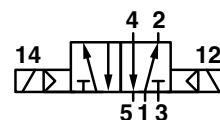
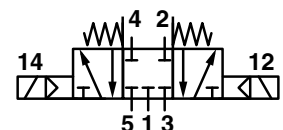
3/2



5/2

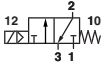
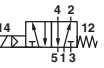
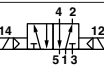
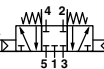


5/3

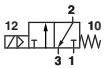
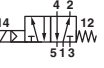
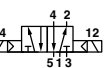


*1) Certificated valves and temperature ranges see valve table on page 2 and 3

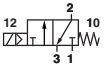
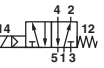
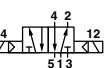
3/2, 5/2 and 5/3 directional valves, seals NBR -40 ... +65°C *3) Aluminium anodized body

Symbol	Type *1)	Port size	Function	Actuation	Operating pressure (bar)	Flow (l/min)	Test certificate IEC 61508 *2)	Weight (kg)	Dimensions No.
	9713535	G 1/4	3/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	0,5	1
	9713545	1/4 NPT	3/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	0,5	1
	9713555	G 1/2	3/2	Solenoid/Spring	2,5 ... 8 bar	2600		0,5	2
	9713565	1/2 NPT	3/2	Solenoid/Spring	2,5 ... 8 bar	2600		0,5	2
	9710535	G 1/4	5/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	0,7	3
	9710545	1/4 NPT	5/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	0,7	3
	9710555	G 1/2	5/2	Solenoid/Spring	2,5 ... 8 bar	2600		0,7	4
	9710565	1/2 NPT	5/2	Solenoid/Spring	2,5 ... 8 bar	2600		0,7	4
	9711535	G 1/4	5/2	Solenoid/Solenoid	2,5 ... 8 bar	1300		0,7	5
	9711545	1/4 NPT	5/2	Solenoid/Solenoid	2,5 ... 8 bar	1300		0,7	5
	9712535	G 1/4	5/3	Solenoid/Solenoid mid position APB	2,5 ... 8 bar	950		0,7	6
	9712545	1/4 NPT	5/3	Solenoid/Solenoid mid position APB	2,5 ... 8 bar	950		0,7	6

Brass body

Symbol	Type *1)	Port size	Function	Actuation	Operating pressure (bar)	Flow (l/min)	Test certificate IEC 61508 *2)	Weight (kg)	Dimensions No.
	9713635	G 1/4	3/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	1,0	1
	9713645	1/4 NPT	3/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	1,0	1
	9713655	G 1/2	3/2	Solenoid/Spring	2,5 ... 8 bar	2600		1,0	2
	9713665	1/2 NPT	3/2	Solenoid/Spring	2,5 ... 8 bar	2600		1,0	2
	9710635	G 1/4	5/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	1,7	3
	9710645	1/4 NPT	5/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	1,7	3
	9710655	G 1/2	5/2	Solenoid/Spring	2,5 ... 8 bar	2600		1,7	4
	9710665	1/2 NPT	5/2	Solenoid/Spring	2,5 ... 8 bar	2600		1,7	4
	9711635	G 1/4	5/2	Solenoid/Solenoid	2,5 ... 8 bar	1300		1,7	5
	9711645	1/4 NPT	5/2	Solenoid/Solenoid	2,5 ... 8 bar	1300		1,7	5

Stainless steel body

Symbol	Type *1)	Port size	Function	Actuation	Operating pressure (bar)	Flow (l/min)	Test certificate IEC 61508 *2)	Weight (kg)	Dimensions No.
	9713735	G 1/4	3/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	1,1	1
	9713745	1/4 NPT	3/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	1,1	1
	9713755	G 1/2	3/2	Solenoid/Spring	2,5 ... 8 bar	2600		1,1	2
	9713765	1/2 NPT	3/2	Solenoid/Spring	2,5 ... 8 bar	2600		1,1	2
	9710735	G 1/4	5/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	1,8	3
	9710745	1/4 NPT	5/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	1,8	3
	9710755	G 1/2	5/2	Solenoid/Spring	2,5 ... 8 bar	2600		1,8	4
	9710765	1/2 NPT	5/2	Solenoid/Spring	2,5 ... 8 bar	2600		1,8	4
	9711735	G 1/4	5/2	Solenoid/Solenoid	2,5 ... 8 bar	1300		1,8	5
	9711745	1/4 NPT	5/2	Solenoid/Solenoid	2,5 ... 8 bar	1300		1,8	5

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

Valve function: APB = All Ports Blocked

**3/2, 5/2 and 5/3 directional valves, seals HNBR -25 ... +80°C *3)
Aluminium anodized body**

Symbol	Type *1)	Port size	Function	Actuation	Operating pressure (bar)	Flow (l/min)	Test certificate IEC 61508 *2)	Weight (kg)	Dimensions No.
	9713235	G 1/4	3/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	0,5	1
	9713245	1/4 NPT	3/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	0,5	1
	9713255	G 1/2	3/2	Solenoid/Spring	2,5 ... 8 bar	2600	x	0,5	2
	9713265	1/2 NPT	3/2	Solenoid/Spring	2,5 ... 8 bar	2600	x	0,5	2
	9710235	G 1/4	5/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	0,7	3
	9710245	1/4 NPT	5/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	0,7	3
	9710255	G 1/2	5/2	Solenoid/Spring	2,5 ... 8 bar	2600	x	0,7	4
	9710265	1/2 NPT	5/2	Solenoid/Spring	2,5 ... 8 bar	2600	x	0,7	4
	9711235	G 1/4	5/2	Solenoid/Solenoid	2,5 ... 8 bar	1300		0,7	5
	9711245	1/4 NPT	5/2	Solenoid/Solenoid	2,5 ... 8 bar	1300		0,7	5
	9712235	G 1/4	5/3	Solenoid/Solenoid mid position APB	2,5 ... 8 bar	950		0,7	6
	9712245	1/4 NPT	5/3	Solenoid/Solenoid mid position APB	2,5 ... 8 bar	950		0,7	6

Brass body

Symbol	Type *1)	Port size	Function	Actuation	Operating pressure (bar)	Flow (l/min)	Test certificate IEC 61508 *2)	Weight (kg)	Dimensions No.
	9713335	G 1/4	3/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	1,0	1
	9713345	1/4 NPT	3/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	1,0	1
	9713355	G 1/2	3/2	Solenoid/Spring	2,5 ... 8 bar	2600	x	1,0	2
	9713365	1/2 NPT	3/2	Solenoid/Spring	2,5 ... 8 bar	2600	x	1,0	2
	9710335	G 1/4	5/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	1,7	3
	9710345	1/4 NPT	5/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	1,7	3
	9710355	G 1/2	5/2	Solenoid/Spring	2,5 ... 8 bar	2600	x	1,7	4
	9710365	1/2 NPT	5/2	Solenoid/Spring	2,5 ... 8 bar	2600	x	1,7	4
	9711335	G 1/4	5/2	Solenoid/Solenoid	2,5 ... 8 bar	1300		1,7	5
	9711345	1/4 NPT	5/2	Solenoid/Solenoid	2,5 ... 8 bar	1300		1,7	5

Stainless steel body

Symbol	Type *1)	Port size	Function	Actuation	Operating pressure (bar)	Flow (l/min)	Test certificate IEC 61508 *2)	Weight (kg)	Dimensions No..
	9713435	G 1/4	3/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	1,1	1
	9713445	1/4 NPT	3/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	1,1	1
	9713455	G 1/2	3/2	Solenoid/Spring	2,5 ... 8 bar	2600	x	1,1	2
	9713465	1/2 NPT	3/2	Solenoid/Spring	2,5 ... 8 bar	2600	x	1,1	2
	9710435	G 1/4	5/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	1,8	3
	9710445	1/4 NPT	5/2	Solenoid/Spring	2,5 ... 8 bar	1300	x	1,8	3
	9710455	G 1/2	5/2	Solenoid/Spring	2,5 ... 8 bar	2600	x	1,8	4
	9710465	1/2 NPT	5/2	Solenoid/Spring	2,5 ... 8 bar	2600	x	1,8	4
	9711435	G 1/4	5/2	Solenoid/Solenoid	2,5 ... 8 bar	1300		1,8	5
	9711445	1/4 NPT	5/2	Solenoid/Solenoid	2,5 ... 8 bar	1300		1,8	5












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

*2) Since May 2008, Date code A8192

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

Valve function: APB = All Ports Blocked

Actuation solenoids

	Type	Power consumption		Rated current at		Protection class	Temp. range ambient/fluid (°C)	Electroport size	Weight (kg)	Dimensions No.	Circuit diagram No.
		24 V DC (W)	230 V AC (VA) *5)	24 V DC (mA)	230 V AC (mA)						
	0763	1,9	2,1 *5)	78	-	IP00 w/o connector IP65 with connector *7)	-25 ... +60	Connector DIN EN 175 301-803 Form A *5)	0,3	14	1
	0298 *8)	3,6	-	150	-	EEx m II T4 *1) IP66 T110°C	-20 ... +70	3 m cable	0,4	15	17
	0299 *8)	-	4,6	-	18	EEx m II T4 *1) IP66 T110°C	-20 ... +70	3 m cable	0,4	15	18
	4200 *8)	0,8	-	33	-	EEx me II T5/T6 *2) IP66 T130°C	-40 ... +80 (T5) -40 ... +70 (T6)	Screw thread M20 X 1,5 *6)	0,85	16	4
	4201 *8)	-	1,3	-	6	EEx me II T5/T6 *2) IP66 T130°C	-40 ... +80 (T5) -40 ... +70 (T6)	Screw thread M20 X 1,5 *6)	0,85	16	7
	4600 *8)	0,8	-	33	-	EEx me II T5/T6 *3) IP66 T130°C	-40 ... +80 (T5) -40 ... +70 (T6)	Screw thread 1/2 NPT *6)	0,85	17	4
	4601 *8)	-	1,3	-	6	EEx md IIC T5/T6 *3) IP66 T130°C	-40 ... +80 (T5) -40 ... +70 (T6)	Screw thread M20 X 1,5 *6)	0,85	17	7
	4602 *8)	0,8	-	33	-	EEx me II T5/T6 *3) IP66 T130°C	-40 ... +80 (T5) -40 ... +70 (T6)	Screw thread M20 X 1,5 *6)	0,85	17	7
	4603 *8)	-	1,3	-	6	EEx md IIC T5/T6 *3) IP66 T130°C	-40 ... +80 (T5) -40 ... +70 (T6)	Screw thread M20 X 1,5 *6)	0,85	17	7
Stainless steel	4802 *8)	0,8	-	33	-	Ex mb d IIC T4/T6 Ex mb e II T4/T6 Ex mbD 21 tDA21 IP66 T100°C *9)*10)	Cat. II 2G (gas) -40 ... +80 (T4) -40 ... +70 (T6)	Screw thread M20 X 1,5 *6)	1,2	19	4
	4803 *8)	-	1,3	-	6	IP66 T100°C *9)*10)	-40 ... +80 (T5) -40 ... +70 (T6)	Screw thread M20 X 1,5 *6)	1,2	19	7
	3720	1,4	-	59	-	XP *4) NEMA 4, 4X, 7, 9	-20 ... +60	Flying leads 460 mm long	0,4	18	1


Standard voltages 24V DC, 230V AC. Other voltages on request.
100% duty cycle.

- *1) Category II 2 GD, EC-Type-Examination-Certificate KEMA 02 ATEX 1347X
 *2) Category II 2 GD, EC-Type-Examination-Certificate KEMA 98 ATEX 4452 X
 *3) Category II 2 GD, EC-Type-Examination-Certificate PTB 02 ATEX 2085 X
 *4) Ex-certification FM and CSA for Div. 1 and 2, Class I, II, III Grp. A - G
 *5) Connector is not included in delivery. Required connector for DC: Type 0570275
 Connector with rectifier plug for AC or UC: Type 066330

- *6) Cable gland is not included in delivery, see page 7
 *7) IP65 according to DIN 40050/IEC 529 and DIN EN 60068-2-38
 *8) This solenoid has a fuse with an appropriate rating
 *9) EC-Type-Examination PTB 06 ATEX 2054 X
 *10) IECEx Certificate of Conformity according to IECEx PTB 07.0039X

Solenoid actuators for intrinsically-safe circuits

EC-Type-Examination PTB 07 ATEX 2019 (Cat. II 2 GD)
 IECEx Certificate of Conformity IECEx PTB 07.0017

	Type	Nominal resist. RN coil (Ω)	Min. required switching current (mA)	Resistance R _{w 60 coil} * (Ω)	Required voltage at terminal (R _{w 60})	Protection class	Temp. range ambient/fluid (°C)	Weight (kg)	Dimensions No.	Circuit diagram No.
	2050	200	33	240	8	Ex ia IIC T6	-40 ... +60°C	0,85	16	10
	2051	391	24	460	11	Ex ia IIC T4	-40 ... +80°C			
	2052	736	17	880	15	Ex iaD 21 T80°C	-40 ... +60°C			
	2053	1220	13	1460	19	Ex iaD 21 T100°C	-40 ... +80°C			

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

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

P_i = 2,0 W, L_i und C_i can be ignored.

Cable gland is included in delivery

3/2, 5/2 and 5/3 directional valves with low power pilot in protection class Ex ia IIC T4/T6, seals NBR -40 ... +65°C

Aluminium anodized body

Symbol	Type *1)	Port size	Function	Actuation	Operating pressure (bar)	Flow (l/min)	Weight (kg)	Dimensions No.
	9713539	G 1/4	3/2	Solenoid/Spring	2,5 ... 8	1300	0,5	7
	9713549	1/4 NPT	3/2	Solenoid/Spring	2,5 ... 8	1300	0,5	7
	9713559	G 1/2	3/2	Solenoid/Spring	2,5 ... 8	2600	0,5	8
	9713569	1/2 NPT	3/2	Solenoid/Spring	2,5 ... 8	2600	0,5	8
	9710539	G 1/4	5/2	Solenoid/Spring	2,5 ... 8	1300	0,7	9
	9710549	1/4 NPT	5/2	Solenoid/Spring	2,5 ... 8	1300	0,7	9
	9710559	G 1/2	5/2	Solenoid/Spring	2,5 ... 8	2600	0,7	10
	9710569	1/2 NPT	5/2	Solenoid/Spring	2,5 ... 8	2600	0,7	10
	9711539	G 1/4	5/2	Solenoid/Spring	2,5 ... 8	1300	0,7	11
	9711549	1/4 NPT	5/2	Solenoid/Solenoid	2,5 ... 8	1300	0,7	11
	9712539	G 1/4	5/3	Solenoid/Solenoid mid position APB	2,5 ... 8	950	0,7	12
	9712549	1/4 NPT	5/3	Solenoid/Solenoid mid position APB	2,5 ... 8	950	0,7	12

Brass body

Symbol	Type *1)	Port size	Function	Actuation	Operating pressure (bar)	Flow (l/min)	Weight (kg)	Dimensions No.
	9713639	G 1/4	3/2	Solenoid/Spring	2,5 ... 8 bar	1300	1,0	7
	9713649	1/4 NPT	3/2	Solenoid/Spring	2,5 ... 8 bar	1300	1,0	7
	9713659	G 1/2	3/2	Solenoid/Spring	2,5 ... 8 bar	2600	1,0	8
	9713669	1/2 NPT	3/2	Solenoid/Spring	2,5 ... 8 bar	2600	1,0	8
	9710639	G 1/4	5/2	Solenoid/Spring	2,5 ... 8 bar	1300	1,7	9
	9710649	1/4 NPT	5/2	Solenoid/Spring	2,5 ... 8 bar	1300	1,7	9
	9710659	G 1/2	5/2	Solenoid/Spring	2,5 ... 8 bar	2600	1,7	10
	9710669	1/2 NPT	5/2	Solenoid/Spring	2,5 ... 8 bar	2600	1,7	10
	9711639	G 1/4	5/2	Solenoid/Solenoid	2,5 ... 8 bar	1300	1,7	11
	9711649	1/4 NPT	5/2	Solenoid/Solenoid	2,5 ... 8 bar	1300	1,7	11

Stainless steel body

Symbol	Type *1)	Port size	Function	Actuation	Operating pressure (bar)	Flow (l/min)	Weight (kg)	Dimensions No.
	9713739	G 1/4	3/2	Solenoid/Spring	2,5 ... 8 bar	1300	1,1	7
	9713749	1/4 NPT	3/2	Solenoid/Spring	2,5 ... 8 bar	1300	1,1	7
	9713759	G 1/2	3/2	Solenoid/Spring	2,5 ... 8 bar	2600	1,1	8
	9713769	1/2 NPT	3/2	Solenoid/Spring	2,5 ... 8 bar	2600	1,1	8
	9710739	G 1/4	5/2	Solenoid/Spring	2,5 ... 8 bar	1300	1,8	9
	9710749	1/4 NPT	5/2	Solenoid/Spring	2,5 ... 8 bar	1300	1,8	9
	9710759	G 1/2	5/2	Solenoid/Spring	2,5 ... 8 bar	2600	1,8	10
	9710769	1/2 NPT	5/2	Solenoid/Spring	2,5 ... 8 bar	2600	1,8	10
	9711739	G 1/4	5/2	Solenoid/Solenoid	2,5 ... 8 bar	1300	1,8	11
	9711749	1/4 NPT	5/2	Solenoid/Solenoid	2,5 ... 8 bar	1300	1,8	11

*1) When ordering please indicate pilot. Code for electrical connection: 005 = M 16 x 1,5, see below
Valve function: APB = All Ports Blocked

Ordering examples

9710539.	2085.	005.	00
Valve	Pilot 6,3 mW	electr. connection	00 internal air supply
		005 M16 x 1,5 cable gland	0Z external air supply

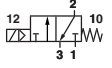
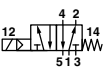
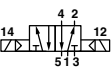
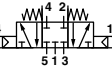
Pilot in protection class Ex ia II C T4/T6

Type	Resist. coil R (+20°C)	Rated current I on	Power P (+20°C)	Switch-on voltage U on (+20°C)	Switch-off voltage U off (+20°C)	Switch-on voltage U on (+80°C)	Switch-off voltage U off (-25°C)	Max. values U _i U _l	EEx i Pi (only 2085) *4)	Protection class	Ambient temperature	Circuit diagram No.
	2085	2800 Ω	≥1,45 mA 6,3 mW	≥4,3 V	≤1,44 V	≥5,2 V	≤1,2 V	25 V 150 mA 250 mW				
	2086	10900 Ω	≥1,45 mA 23,2 mW	≥16 V	≤5,4 V	≤16,8 V	≤4,7 V	27 V 125 mA 250 mW				
									28 V 115 mA 250 mW	EEx ia IIC T4	-40 ... +80°C	10
									30 V 100 mA 250 mW	EEx ia IIC T6	-40 ... +60°C	10
								32 V 85 mA 250 mW				

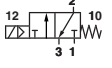
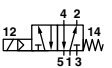
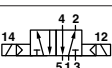
*4) Category II2G, EC-Examination certificate no. PTB 06 ATEX 2001U
Air consumption: home position ≤ 60 l/h, operating position ≤ 15 l/h

3/2, 5/2 and 5/3 directional valves with low power pilot in protection class Ex ia IIC T4/T6, seals HNBR -25 ... +80°C

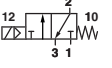
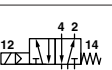
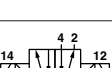
Aluminium anodized body

Symbol	Type *1)	Port size	Function	Actuation	Operating pressure (bar)	Flow (l/min)	Weight (kg)	Dimensions No.
	9713239	G 1/4	3/2	Solenoid/Spring	2,5 ... 8	1300	0,5	7
	9713249	1/4 NPT	3/2	Solenoid/Spring	2,5 ... 8	1300	0,5	7
	9713259	G 1/2	3/2	Solenoid/Spring	2,5 ... 8	2600	0,5	8
	9713269	1/2 NPT	3/2	Solenoid/Spring	2,5 ... 8	2600	0,5	8
	9710239	G 1/4	5/2	Solenoid/Spring	2,5 ... 8	1300	0,7	9
	9710249	1/4 NPT	5/2	Solenoid/Spring	2,5 ... 8	1300	0,7	9
	9710259	G 1/2	5/2	Solenoid/Spring	2,5 ... 8	2600	0,7	10
	9710269	1/2 NPT	5/2	Solenoid/Spring	2,5 ... 8	2600	0,7	10
	9711239	G 1/4	5/2	Solenoid/Spring	2,5 ... 8	1300	0,7	11
	9711249	1/4 NPT	5/2	Solenoid/Solenoid	2,5 ... 8	1300	0,7	11
	9712239	G 1/4	5/3	Solenoid/Solenoid mid position APB	2,5 ... 8	950	0,7	12
	9712249	1/4 NPT	5/3	Solenoid/Solenoid mid position APB	2,5 ... 8	950	0,7	12

Brass body

Symbol	Type *1)	Port size	Function	Actuation	Operating pressure (bar)	Flow (l/min)	Weight (kg)	Dimensions No.
	9713339	G 1/4	3/2	Solenoid/Spring	2,5 ... 8 bar	1300	1,0	7
	9713349	1/4 NPT	3/2	Solenoid/Spring	2,5 ... 8 bar	1300	1,0	7
	9713359	G 1/2	3/2	Solenoid/Spring	2,5 ... 8 bar	2600	1,0	8
	9713369	1/2 NPT	3/2	Solenoid/Spring	2,5 ... 8 bar	2600	1,0	8
	9710339	G 1/4	5/2	Solenoid/Spring	2,5 ... 8 bar	1300	1,7	9
	9710349	1/4 NPT	5/2	Solenoid/Spring	2,5 ... 8 bar	1300	1,7	9
	9710359	G 1/2	5/2	Solenoid/Spring	2,5 ... 8 bar	2600	1,7	10
	9710369	1/2 NPT	5/2	Solenoid/Spring	2,5 ... 8 bar	2600	1,7	10
	9711339	G 1/4	5/2	Solenoid/Solenoid	2,5 ... 8 bar	1300	1,7	11
	9711349	1/4 NPT	5/2	Solenoid/Solenoid	2,5 ... 8 bar	1300	1,7	11

Stainless steel body


Symbol	Type *1)	Port size	Function	Actuation	Operating pressure (bar)	Flow (l/min)	Weight (kg)	Dimensions No.
	9713439	G 1/4	3/2	Solenoid/Spring	2,5 ... 8 bar	1300	1,1	7
	9713449	1/4 NPT	3/2	Solenoid/Spring	2,5 ... 8 bar	1300	1,1	7
	9713459	G 1/2	3/2	Solenoid/Spring	2,5 ... 8 bar	2600	1,1	8
	9713469	1/2 NPT	3/2	Solenoid/Spring	2,5 ... 8 bar	2600	1,1	8
	9710439	G 1/4	5/2	Solenoid/Spring	2,5 ... 8 bar	1300	1,8	9
	9710449	1/4 NPT	5/2	Solenoid/Spring	2,5 ... 8 bar	1300	1,8	9
	9710459	G 1/2	5/2	Solenoid/Spring	2,5 ... 8 bar	2600	1,8	10
	9710469	1/2 NPT	5/2	Solenoid/Spring	2,5 ... 8 bar	2600	1,8	10
	9711439	G 1/4	5/2	Solenoid/Solenoid	2,5 ... 8 bar	1300	1,8	11
	9711449	1/4 NPT	5/2	Solenoid/Solenoid	2,5 ... 8 bar	1300	1,8	11

*1) When ordering please indicate pilot. Code for electrical connection: 005 = M 16 x 1,5, see below
Valve function: APB = All Ports Blocked

Ordering examples

9710239.	2085.	005.	00
Valve	Pilot 6,3 mW	electr. connection	00 internal air supply
		005 M16 x 1,5 cable gland	0Z external air supply

Pilot in protection class Ex ia II C T4/T6

Type	Resistance coil R (+20°C)	Rated current I on	Power P (+20°C)	Switch-on voltage U on (+20°C)	Switch-off voltage U off (+20°C)	Switch-on voltage U on (+80°C)	Switch-off voltage U off (-25°C)	max. values EEx i Pi (only 2085) *4)	Protection class	Ambient temperature	Circuit diagram No.
	2085	2800 Ω	≥1,45 mA	6,3 mW	≥4,3 V	≤1,44 V	≥5,2 V	≤1,2 V	EEx ia IIC T4	-40 ... +80°C	10
	2086	10900 Ω	≥1,45 mA	23,2 mW	≥16 V	≤5,4 V	≤16,8 V	≤4,7 V	EEx ia IIC T6	-40 ... +60°C	10
									25 V 150 mA 250 mW		
									27 V 125 mA 250 mW		

*4) Category II2G, EC-Examination certificate no. PTB 06 ATEX 2001U
Air consumption: home position ≤ 60 l/h, operating position ≤ 15 l/h

Option selector

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

Function	Number code
5/2 way valve with spring return	0
5/2 way impuls	1
5/3 way valve with spring return (APB)	2
3/2 way valve with spring return	3

Materials: body/seals	Number code
aluminium/HNBR (-25° + 80°C)*	2
brass/HNBR (-25° + 80°C)*	3
stainless steel/HNBR (-25° + 80°C)*	4
aluminium/NBR (-40° + 65°C)*	5
brass/NBR (-40° + 65°C)*	6
stainless steel/NBR (-40° + 65°C)*	7

Port size	Number code
G 1/4	3
1/4 NPT	4
G 1/2	5
1/2 NPT	6

Air supply	Number code
internal	0
external	Z

Voltage	Number code
24 V DC	024.0
230 V AC	230.5

Solenoid	Number code
see solenoid table	

Version	Number code
without manual override (retrofit)	5
semi automatic (on request)	7
low power pilot (see page 5 and 6)	9

* Certificated valves and temperature ranges see valve table on page 2 and 3

Ordering examples

5/2 directional control valve with spring return,
 Port size G 1/4, solenoid in protection class
 EEx me, 24 V DC
 Type: 9710535.4200.024.00 internal air supply
 Type: 9710535.4200.024.0Z external air supply
 EEx e cable gland M20x1,5
 Type: 0588819

Accessories

Manual override	Silencer	Connectors
0553886 (without detent) *2)	0014600 (G1/4) *1)	0570275
0553887 (with detent)*2)	0014800 (G1/2) *1)	0663303 (with rectifier)

For detailed information about connectors see page : N/UK 7.7.002

*1) For indoors use

*2) Useable only with the valves on page 2

Cable gland

Protection class Ex e, Ex d (ATEX),
Ms nickel plated brass/stainless steel



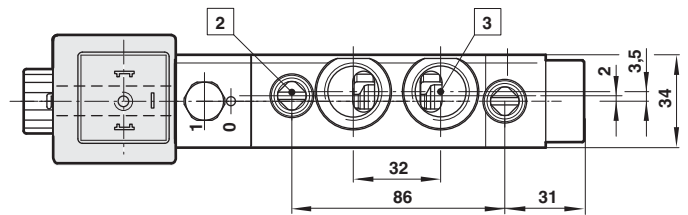
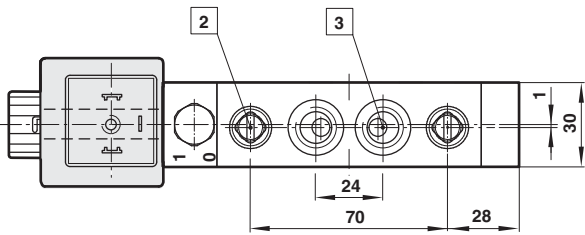
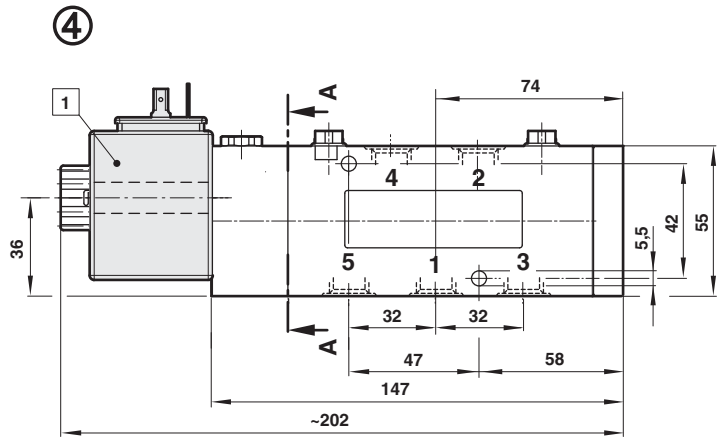
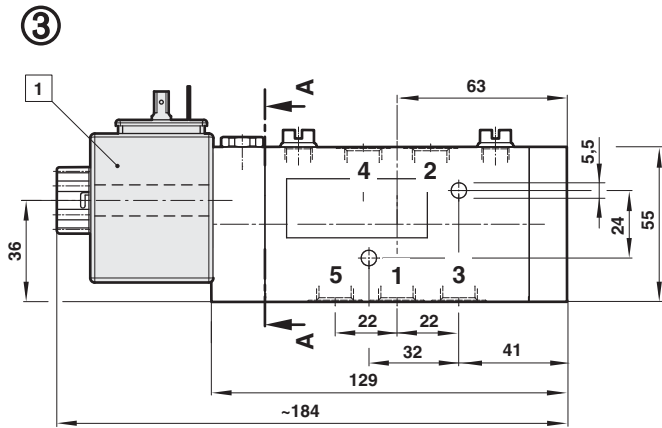
Type	For Solenoid	Ex-Category	Protection class	Material	Electrical connection	For cable Ø (mm)
0588819	42xx, 46xx	II 2 GD	EEx e II	Ms nickel plated brass	M20x1,5	5...8
0588851	46xx	II 2 GD	EEx d IIC	Ms nickel plated brass	M20x1,5	10...14
0588925	46xx	II 2 GD	EEx e II, EEx d IIC	Ms nickel plated brass	1/2-14 NPT	7,5...11,9
0589385	48xx	II 2 GD	EEx e II	Stainless steel 1.4571	M20x1,5	9...13
0589387	48xx	II 2 GD	EEx d IIC	Stainless steel 1.4404	M20x1,5	10...14
0589395	48xx	II 2 GD	EEx d IIC	Stainless steel 1.4404	M20x1,5	7...12

Basic dimensions valves

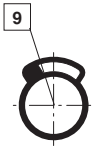
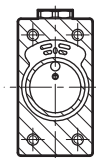
①

②

1	Solenoid dimensions see page 12
2	External control pressure connection G1/8
3	Working port G1/4, G1/2 or 1/4 NPT, 1/2 NPT
9	Position of gasket internal pilot air
10	Position of gasket external pilot air

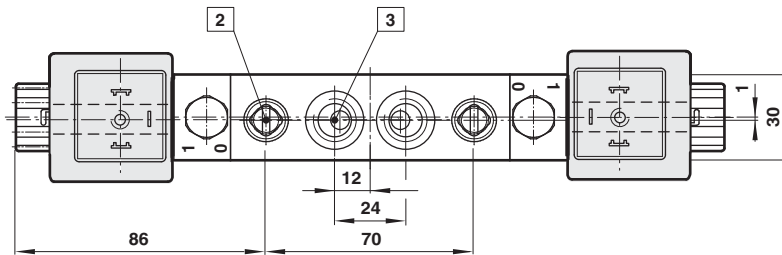
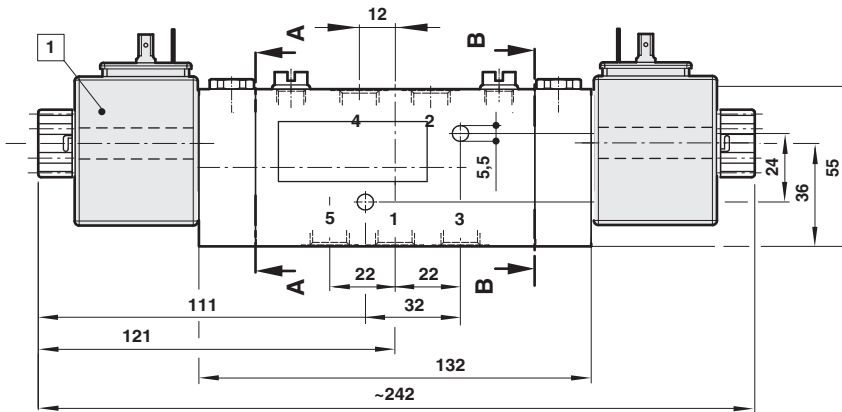


A - A

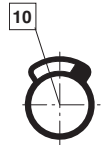
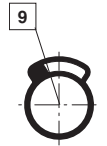
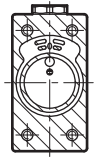


1	Solenoid dimensions see page 12
2	External control pressure connection G1/8
3	Working port G1/4, G1/2 or 1/4 NPT, 1/2 NPT
9	Position of gasket internal pilot air
10	Position of gasket external pilot air

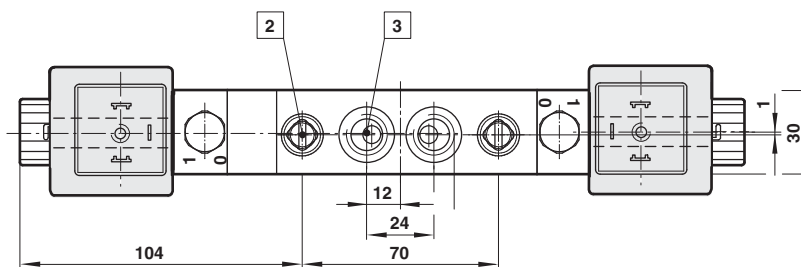
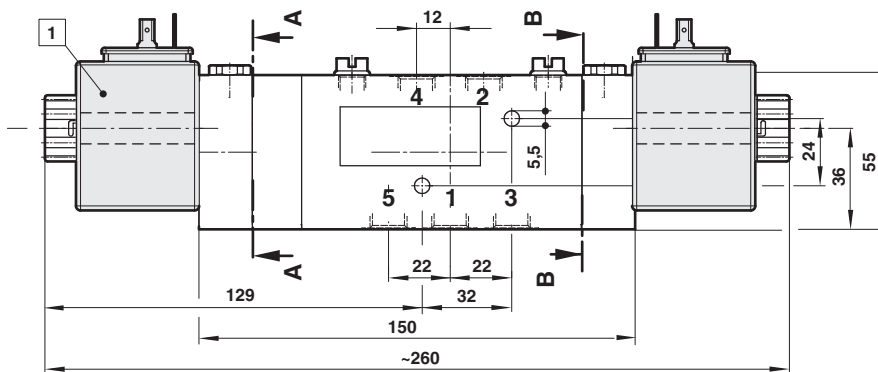
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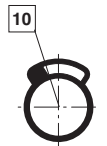
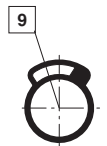
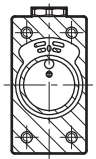
A - A



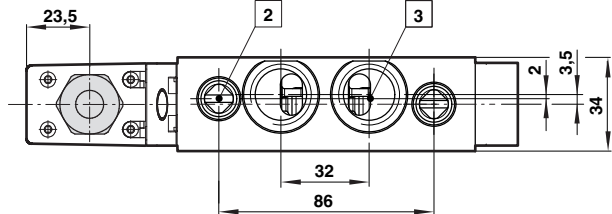
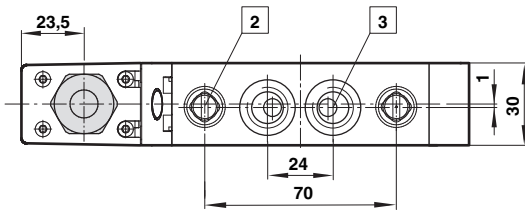
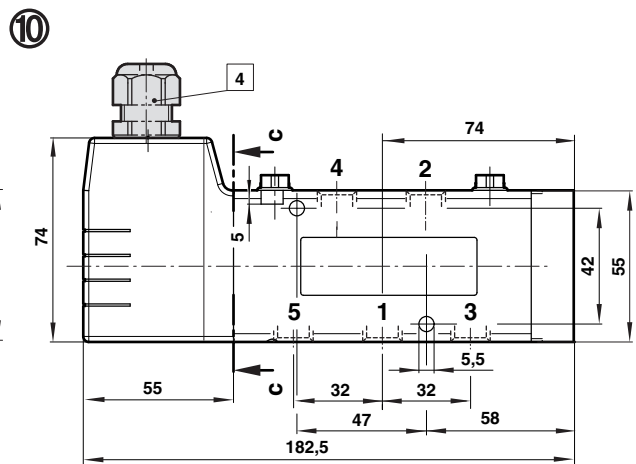
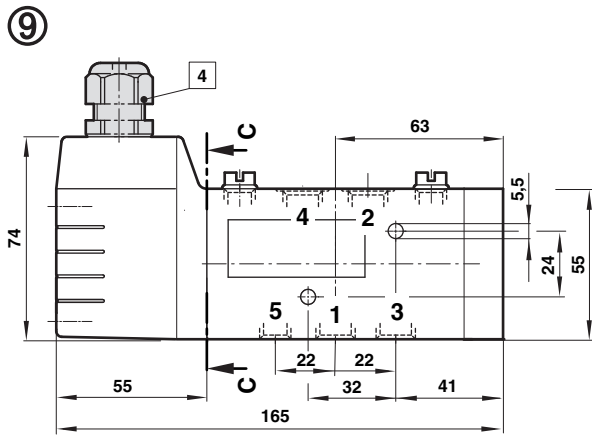
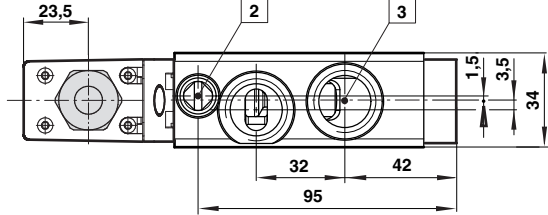
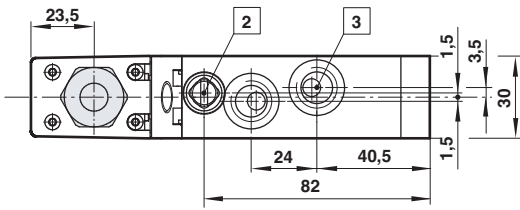
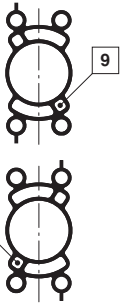
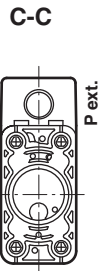
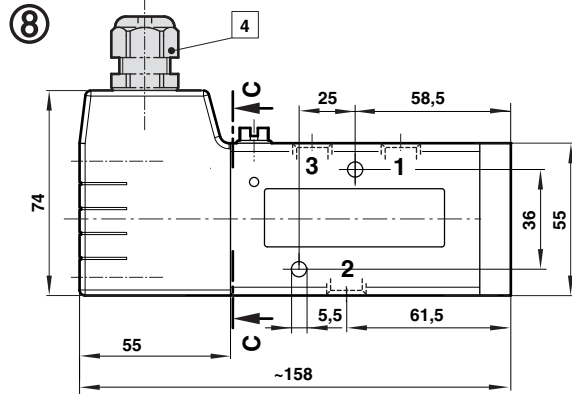
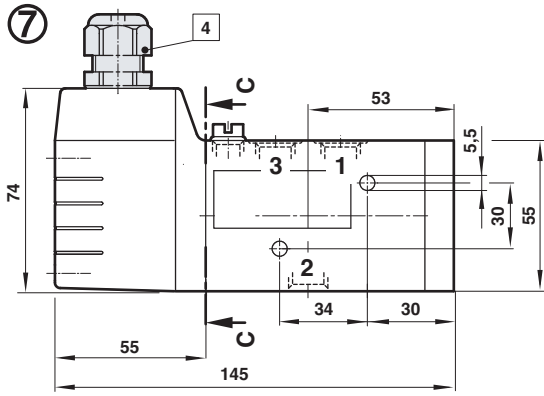
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B - B

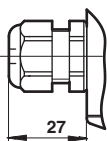


- 1 Solenoid dimensions see page 12
- 2 External control pressure connection G1/8
- 3 Working port G1/4, G1/2 or 1/4 NPT, 1/2 NPT
- 9 Position of gasket internal pilot air
- 10 Position of gasket external pilot air



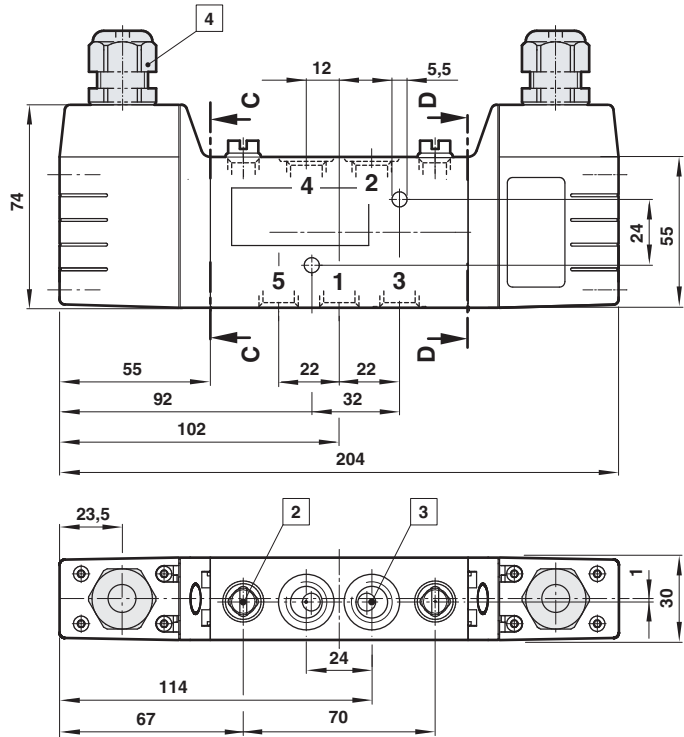
Electrical connection

005

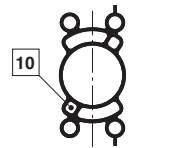
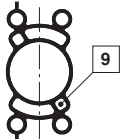
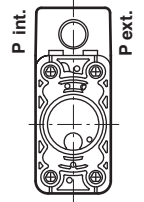


2	External control pressure connection G1/8
3	Working port G1/4, G1/2 or 1/4 NPT, 1/2 NPT
4	Electrical connection, M16x1,5
9	Position of gasket internal pilot air
10	Position of gasket external pilot air

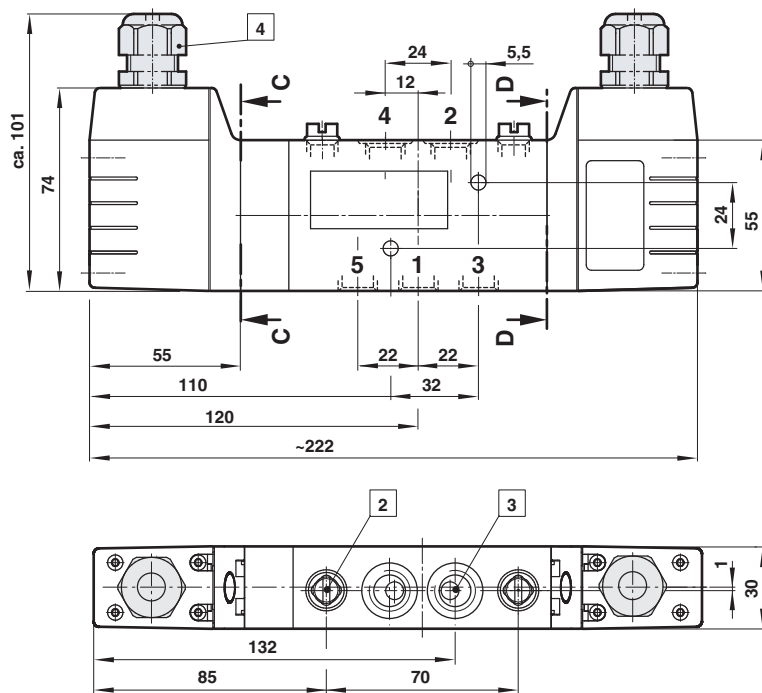
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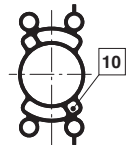
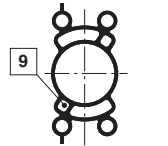
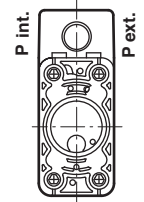
C-C



12

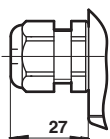


D-D



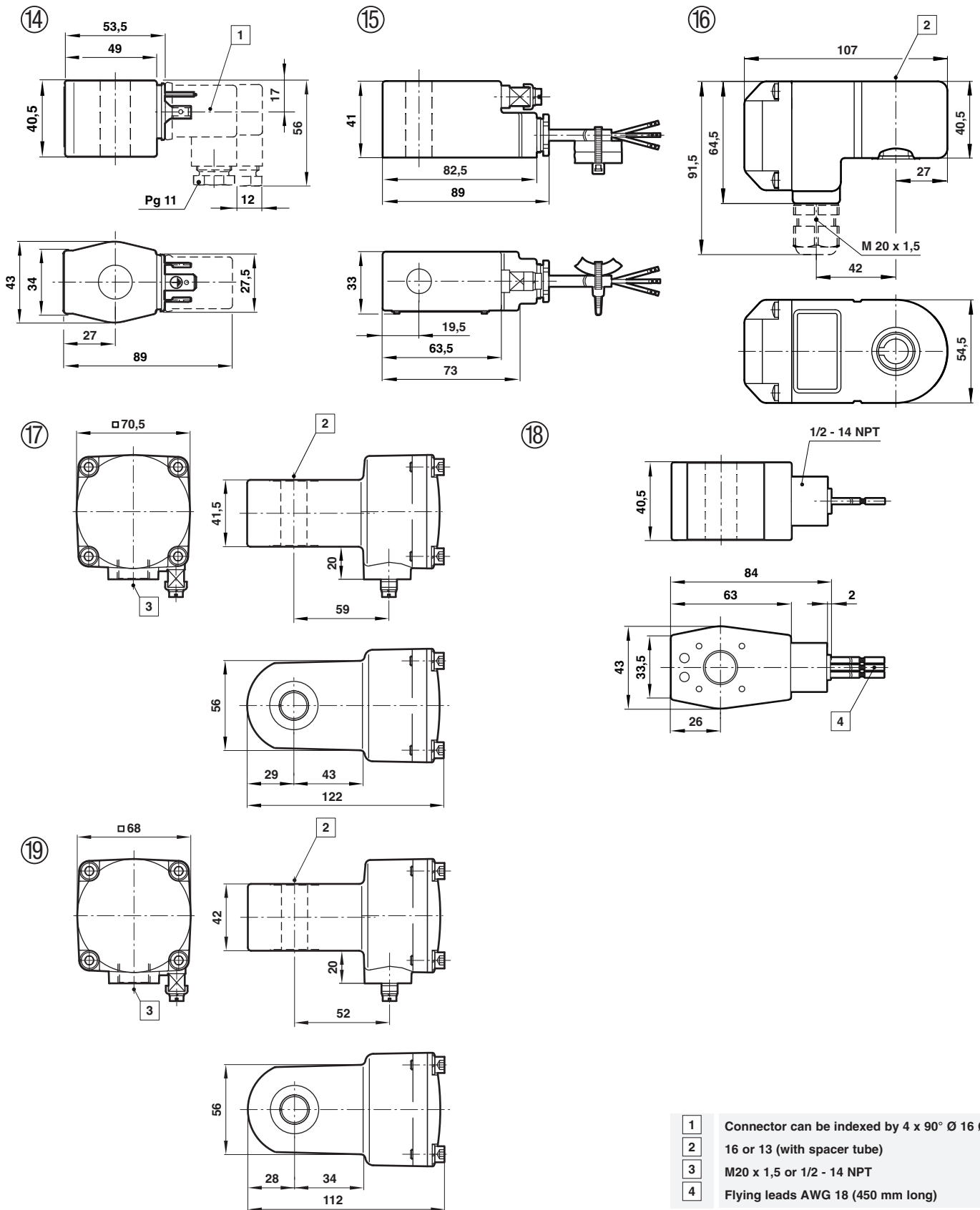
Electrical connection

005



2	External control pressure connection G1/8
3	Working port G1/4, G1/2 or 1/4 NPT, 1/2 NPT
4	Electrical connection, M16x1,5
9	Position of gasket internal pilot air
10	Position of gasket external pilot air

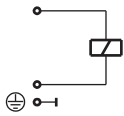
Basic dimensions solenoids



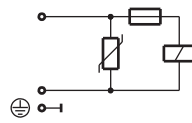
- 1 Connector can be indexed by 4 x 90° Ø 16 Ø
- 2 16 or 13 (with spacer tube)
- 3 M20 x 1,5 or 1/2 - 14 NPT
- 4 Flying leads AWG 18 (450 mm long)

Circuit diagrams

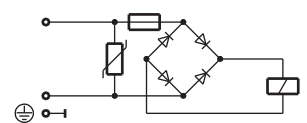
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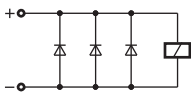
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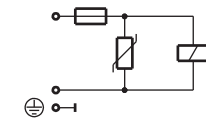
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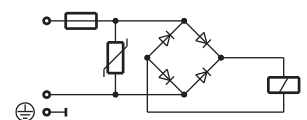
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Warning

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 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 NORGREN. 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.