

- > Port size: G1/4, G1/2
- > Working from 0 bar up
- > Suitable for medium-high vacuum down to $1.33 \cdot 10^{-2}$ mbar-l/s
- > Compact design
- > For AC solenoid systems with integrated rectifier (40 ... 60 Hz)
- > Valves and solenoids are ATEX approved. Additional international approvals IEC Ex, FM, CSA (XP) see solenoid table



Technical features

Medium:

Neutral or aggressive gases and liquids
(Install an upstream filter when using contaminated fluids.)

Operation:

Electromagnetic actuated, directly controlled

Operating pressure:

0 ... 10 bar (0 ... 145 psi)

Port size:

G1/4 (DN5), G1/2 (DN10)

Flow direction:

DN5 any, DN10 defined

Mounting position:

Any, but preferably with solenoid vertical

Switching cycles:

100/min

Fluid temperature:

NBR: -25 ... +80°C (-13° ... 176°F)

FPM:

-10 ... +120°C (+14 ... 240°F)

Water +95°C (+203°F)

PTFE: -50 ... +180°C (-58 ... 356°F)

Ambient temperature:

+80°C (+176°F) maximum

Depending on solenoid system

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

Materials:

Valve housing:

Brass 2.0401 (Ms 58), stainless steel 1.4404 (316 L)

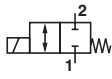
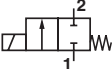
Internal parts: Brass 2.0401 (Ms 58), stainless steel 1.4104 (430 F) and 1.4523

Seals: NBR, FPM, PTFE

Alternative variants:

For low and high ambient and fluid temperatures
With manual override
Free of oil and grease for oxygen

Technical data

Symbol	Port size	Operating pressure (bar)	kv-value (Cv (US) $\approx kv \times 1,2$)	Valve seal	Material valve housing	Weight without solenoid (kg)	Dimensions No.	Model *1)
	G1/4	0 ... 10	0,46	NBR	Brass	0,75	1	2102300
	G1/4	0 ... 10	0,46	FPM	Brass	0,75	1	2102308
	G1/4	0 ... 10	0,46	FPM	Stainless steel	0,8	1	2102304
	G1/4	0 ... 10	0,46	PTFE	Stainless steel	0,8	1	2102307 *2)
	G1/2	0 ... 10	0,75	NBR	Brass	0,95	2	2102500
	G1/2	0 ... 10	0,75	FPM	Brass	0,95	2	2102503
	G1/2	0 ... 10	0,75	PTFE	Stainless steel	1,0	2	2102524 *2)
	G1/2	0 ... 10	0,75	FPM	Stainless steel	1,0	2	2102525 *3)

*1) Please add solenoid, voltage and power supply data (frequency) when ordering

*2) O -ring FPM

*3) Slot ring PTFE

Solenoids group A, 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)								
	16,9	—	703	—	IP65 (with connector)	—	-25 ... +60 Media: +80 max	Connector DIN EN 175301-803, Form A *1)	0,26	3	1	0800
	—	17,3	—	75	IP65 (with connector)	—	-25 ... +60 Media: +80 max	Connector DIN EN 175301-803, Form A *1)	0,35	4	6	3803
	8,9	—	369	—	IP65	—	-30...+90 Media: +110	Terminals, cable gland Pg 13,5	0,5	9	2	4120
	—	10	—	43	IP65	—	-30...+90 Media: +110	Terminals, cable gland Pg 13,5	0,5	9	6	4121
	8,9	—	369	—	IP67	—	-30...+90 Media: +110	3 m cable, encapsulated in EP resin	0,7	9	2	4122
	—	10	—	43	IP67	—	-30...+90 Media: +110	3 m cable, encapsulated in EP resin	0,7	9	6	4123
	8,9	—	369	—	IP66 (with cable gland)	II 2 G Ex e mb IIC T4/T5 Gb II 2 D Ex tb IIC T130°C Db IP66	T4: -40 ... +65 T5: -40 ... +55 -40 ... +65	M20 x 1,5 *1)	0,5	6	4	4270
	—	10,0	—	43	IP66 (with cable gland)	II 2 G Ex e mb IIC T4/T5 Gb II 2 D Ex tb IIC T130°C Db IP66	T4: -40 ... +65 T5: -40 ... +55 -40 ... +65	M20 x 1,5 *1)	0,5	6	7	4271
	8,9	—	369	—	IP66 (with cable gland)	III 2G Ex db mb IIC T4/T6 Gb II 2 G Ex eb mb IIC T4/T6 Gb II 2 D Ex tb IIC T130°C Db	T4: -40 ... +70 T6: -40 ... +40 -40 ... +70	1/2 NPT *1)	0,8	7	20	4670
	—	10,0	—	43	IP66 (with cable gland)	III 2G Ex db mb IIC T4/T6 Gb II 2 G Ex eb mb IIC T4/T6 Gb II 2 D Ex tb IIC T130°C Db	T4: -40 ... +70 T6: -40 ... +40 -40 ... +70	1/2 NPT *1)	0,8	7	21	4671
	8,9	—	369	—	IP66 (with cable gland)	III 2G Ex db mb IIC T4/T6 Gb II 2 G Ex eb mb IIC T4/T6 Gb II 2 D Ex tb IIC T130°C Db	T4: -40 ... +70 T6: -40 ... +40 -40 ... +70	M20 x 1,5 *1)	0,8	7	20	4672
	—	10,0	—	43	IP66 (with cable gland)	III 2G Ex db mb IIC T4/T6 Gb II 2 G Ex eb mb IIC T4/T6 Gb II 2 D Ex tb IIC T130°C Db	T4: -40 ... +70 T6: -40 ... +40 -40 ... +70	M20 x 1,5 *1)	0,8	7	21	4673
	8,9	—	369	—	IP66 (with cable gland)	II 2G Ex db mb IIC T4 Gb II 2G Ex eb mb IIC T4 Gb	T4: -40 ... +50	M20 x 1,5 *1)	1,2	10	4	4872
	—	10	—	43	IP66 (with cable gland)	II 2G Ex db mb IIC T4 Gb II 2G Ex eb mb IIC T4 Gb	T4: -40 ... +50	M20 x 1,5 *1)	1,2	10	7	4873

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«

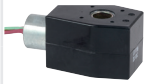
Attention: The protection class for coil series 46xx and 48xx is determined by the choice of cable gland.

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	Datasheet
42xx	KEMA 98 ATEX 4452 X	IECEX KEM 09.0068X	7.1.580
46xx	PTB 02 ATEX 2085 X	IECEX PTB 11.0094X	7.1.585
48xx	EPS 18 ATEX 1 019	IECEX EPS 18.0013	7.1.590

Solenoids group A, 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)								
	13,6	—	567	—	4x	Cl. I, Div. 1, Gr. A - D Cl. II/III, Div. 1, Gr. E - G T3C (160°C)	-20 ... +60	Flying leads length 460 mm	0,5	8	1	3826
	—	15,7	—	68	4x	Cl. I, Div. 1, Gr. A - D Cl. II/III, Div. 1, Gr. E - G T3C (160°C)	-20 ... +60	Flying leads length 460 mm	0,5	8	5	3827

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«

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 FM	Datasheet
372x, 382x	CSA-LR 57643-6	7.1.575

Partnumbers for international approval

Land/Approval	Coil/Code	42xx	46xx	48xx
Europa/ATEX	Standard	x	x	x
International/IECEX	Standard	x	x	x
China/NEPSI	-01	x	x	—
Brasilien/INMETRO	-02	x	x	—
Korea/KOSHA (only gas approval)	-03	x	x	x
Russland, Kasachstan & Weißrussland/TR-CU 012	-04	x	x	x
Indien/CCOE	Standard	x	x	—
Taiwan/ITRI	Standard	x	x	—
USA/FM	Standard	—	—	—
Kanada/CSA	Standard	—	—	—

Example: 0000000427002400-04

(Coil: 4270; Voltage: 24V DC; Approval: TR-CU 012)

Accessories
Electrical connection

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



Page 6

For solenoid	Thread	Cable ø (mm)	Material	Protection class (ATEX)	Ambient temperatur limitation *1)	Model
42xx	M20 x 1,5	7,0 ... 12,0	Plastic	II 2G Ex e / II 2D Ex t	See table	0589735
42xx	M20 x 1,5	10,0 ... 14,0	Plastic	II 2G Ex e / II 2D Ex t	See table	0589736
42xx	M20 x 1,5	6,0 ... 12,0	Plastic	II 2G Ex e / II 2D Ex t	See table	0589737
42xx	M20 x 1,5	5,0 ... 10,0	Plastic	II 2G Ex e / II 2D Ex t	See table	0589739
46xx	M20 x 1,5	5,0 ... 8,0	Nickel plated brass	II 2G Ex e / II 2D Ex t	-	0588819
46xx	M20 x 1,5	10,0 ... 14,0	Nickel plated brass	II 2G Ex d / II 2D Ex t	-	0588851
46xx	1/2 NPT	7,5 ... 11,9	Nickel plated brass	II 2G Ex d / II 2D Ex t	-	0588925
46xx, 48xx	M20 x 1,5	9,0 ... 13,0	Stainless steel 1.4571	II 2G Ex e / II 2D Ex t	-	0589385
46xx, 48xx	M20 x 1,5	7,0 ... 12,0	Stainless steel 1.4404	II 2G Ex d / II 2D Ex t	-	0589395
46xx, 48xx	M20 x 1,5	10,0 ... 14,0	Stainless steel 1.4404	II 2G Ex d / II 2D Ex t	-	0589387

*1) The limitation of the temperature range to the mentioned range is due to the self-heating of the solenoid.

For solenoid	Ambient temperatur limitation solenoid 42xx		
	0589735 & 0589736 *2)	0589737	0589739 *2)
422x/427x	T4 & Dust Ex: -35°C +65°C	T4 & Dust Ex: -40°C...+ 62°C	T4 & Dust Ex: -40...+65°C
	T5: -35°C + 55°C	T5: -40°C + 55°C	T5: -40...+55°C

*2) Tested for the lower level of mechanical risk (4 joule), an additional protection against impacts might be needed.



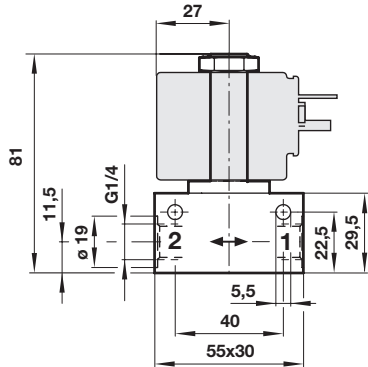
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Dimensions
Valves

Dimensions in mm
Projection/First angle



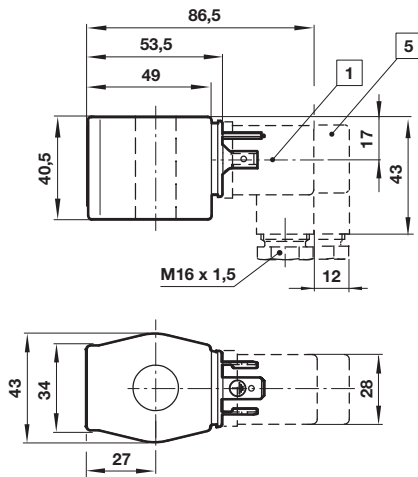
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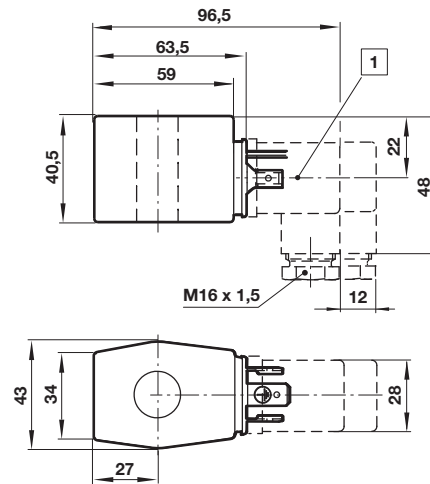
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Dimensions
Solenoid operators

1



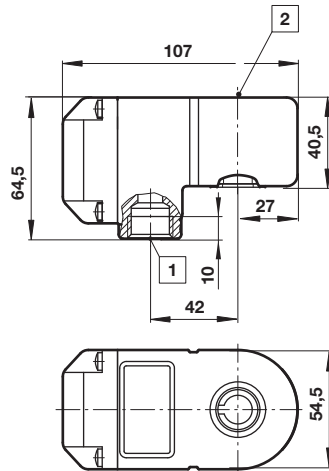
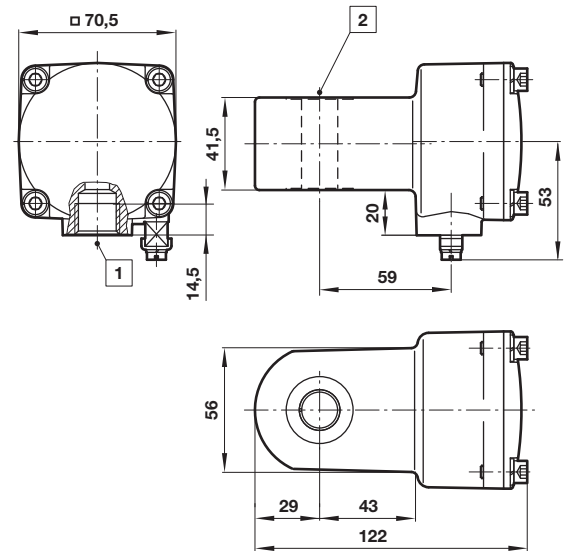
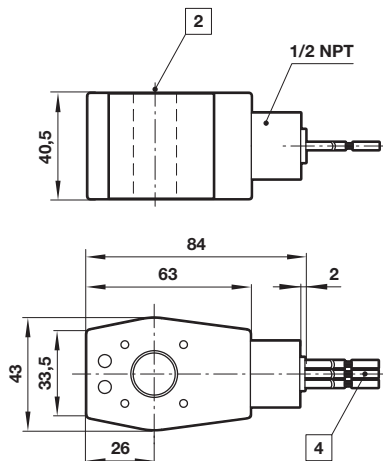
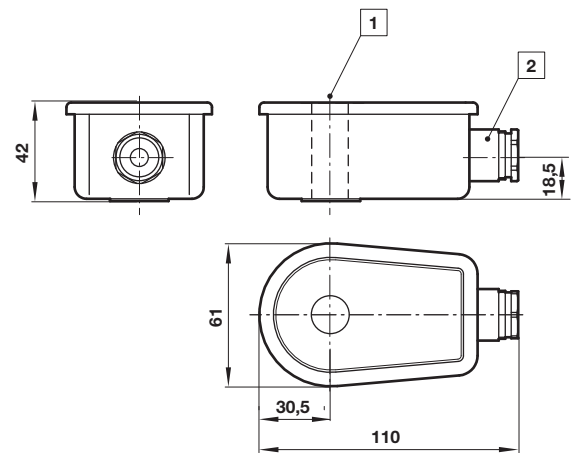
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- 1 Connector can be indexed by 4 x 90°
- 2 \varnothing 16 or 13 (with spacer tube)
- 3 M20 x 1,5 or 1/2 - 14 NPT
- 4 Flying leads AWG 18 (460 mm long)
- 5 With cable gland, Pg 13,5

Dimensions
Solenoid operators

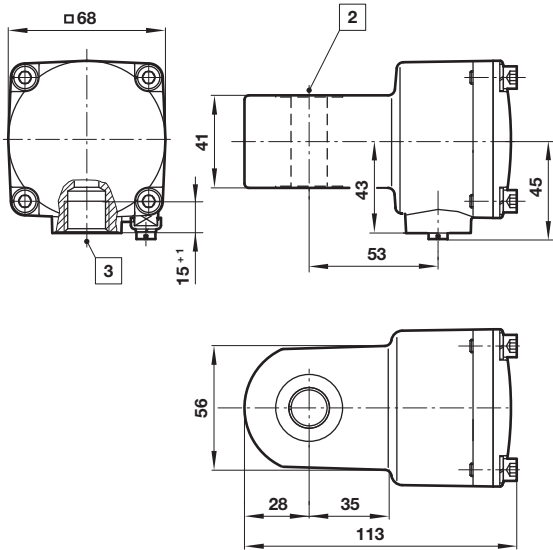
 Dimensions in mm
 Projection/First angle

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8

9


- 1** Connector can be indexed by 4 x 90°
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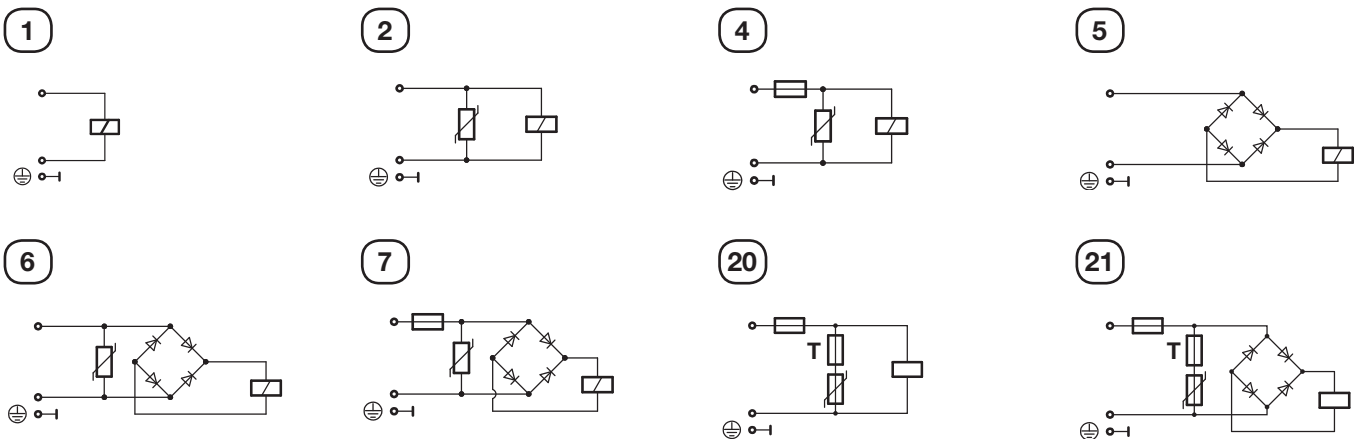
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Dimensions in mm
Projection/First angle

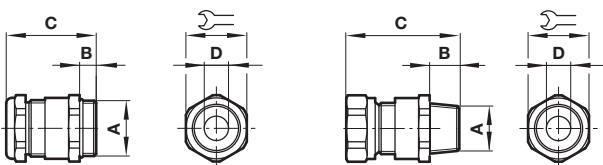


2 \varnothing 16 or 13 (with spacer tube)
3 M20 x 1,5

Circuit diagramm



Cable gland



Only for 0588925

A	B	C	\varnothing D		Model
M20 x 1,5	10	40	7,0 ... 12,0	24	0589735
M20 x 1,5	10	43	10,0 ... 14,0	27	0589736
M20 x 1,5	10	40	6,0 ... 12,0	24	0589737
M20 x 1,5	10	39,5	5,0 ... 10,0	24	0589739
M20 x 1,5	9	36	5,0 ... 8,0	22	0588819
M20 x 1,5	12	37	9,0 ... 14,0	30	0588851
1/2 NPT	15	58	7,5 ... 11,9	24	0588925
M20 x 1,5	6,5	27,5	9,0 ... 13,0	22	0589385
M20 x 1,5	16	40	7,0 ... 12,0	24	0589395
M20 x 1,5	16	41	10,0 ... 14,0	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.