

## 3/2-way Mini Solenoid Valve



Standard version

P version

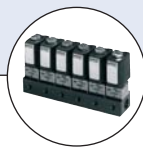
Type 6012 can be combined with...

**Type 2506**

Cable plug  
DIN EN 175301-803\*  
form C

**Type 2507**

Cable plug industrial  
standard form B

**Type 6012**

Multiple manifold  
(e.g. 6-fold)

- Direct-acting
- 0 ... 10 bar<sup>1)</sup>
- DN 1.2 mm ... DN 1.6 mm
- M5, G1/8, G1/4, sub-base, banjo-bolt connection
- 21 mm coil spacing when mounted on manifold

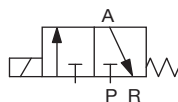
This direct-acting 3/2-way miniature solenoid valve is available in two versions.

### Standard version

Type 6012 (top left) is used for blocking, dosing, filling and ventilating neutral gases and liquids, in particular for the control of single-acting pneumatic actuators or for technical vacuum. The modular valve may be mounted singly or in block assembly on a multiple manifold.

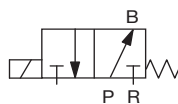
### Circuit function C

3/2-way valve,  
P normally closed,  
port A pressureless



### Circuit function D

3/2-way valve,  
P normally open,  
port B pressurized

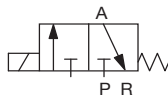


### P version

Type 6012P (top right) was developed as a special pilot valve for direct attachment to externally piloted pneumatic actuators. It consists of the solenoid actuator of Type 6012 and a special connection housing with banjo bolts for simple connection to the pilot air port of the actuator. The valve is equipped with manual override as standard.

### Circuit function C

3/2-way valve, P normally closed, port A pressureless



### Technical data

<b>Body material</b>	Type 6012 Type 6012P	Brass, polyamide (PA), stainless steel 1.4305 Polyamide (PA)
<b>Banjo bolt (Type 6012P)</b>		Nickel-plated brass
<b>Seal material</b>	Type 6012 / 6012P	FKM / NBR
<b>Medium</b>	Type 6012 Type 6012P	Neutral gases and liquids (e.g. compressed air, water, hydraulic oil, technical Vacuum) neutral gases (z.B. compressed air)
<b>Medium temperature</b>	Type 6012 Type 6012P	-10 ... +100 °C -10 ... +60 °C
<b>Ambient temperature</b>	Type 6012P	max. +55 °C -10 ... +40 °C
<b>Viscosity</b>		max. 21 mm <sup>2</sup> /s
<b>Port connection</b>	Type 6012 Type 6012P	M5, G1/8, Flange G 1/8, G1/4 and tube fitting Ø 6 mm
<b>Operating voltages</b>		24 V DC 24 V / 50 Hz 110 / 230 V / 50 Hz
<b>Voltage tolerance</b>		±10%
<b>Duty cycle/single valve</b>	for block assembly on multiple manifold	100% continuous rating Intermittent operation 60% (30 min) With 2 W coil 100% (on request)
<b>Electrical connection</b>		▪ Acc. to DIN EN 175301-803* Form C for cable plug Type 2506 (see ordering chart for accessories) ▪ Acc. to DIN 43650 Form B (Industrial standard) for cable plug Type 2507 (see ordering chart for accessories) ▪ Flying leads on request
<b>Manual override</b>		Optional, as a standard feature (for Type 6012P)
<b>Installation</b>		As required, preferably with actuator upright
<b>Weight:</b> Type 6012 / 6012P		125 g (G1/8) / 135 g
<b>Protection class</b>		IP65 with cable plug

<sup>1)</sup> Pressure data [bar]: Overpressure with respect to atmospheric pressure

\* Previously DIN 43650

## Response times

### Type 6012

Orifice [mm]	Kv value water [m <sup>3</sup> /h]	Pressure range		Coil power	Power consumption		Response times	
		WWC [bar] <sup>1)</sup>	WWD [bar] <sup>1)</sup>		Inrush	Hold	Opening [ms]	Closing [ms]
1.2	0.045	0-10	0-10	4 W AC or 4 W DC	9 VA 4 W	6 VA (4 W) 4 W	7-10	9-12
1.6	0.06	0-6	0-6	4 W DC	4 W	4 W	7-12	7-12

• Kv value [m<sup>3</sup>/h]: Flow rate value for water, measured at +20 °C, 1 bar<sup>1)</sup> Pressure at valve inlet and 1 bar pressure difference

<sup>1)</sup> Pressure data [bar]:  
Overpressure with respect to atmospheric pressure

### Type 6012P

Orifice [mm]	Q <sub>Nn</sub> value air [l/min]	Pressure range [bar] <sup>1)</sup>	Coil power	Power consumption		Response times	
				Inrush	Hold	Opening [ms]	Closing [ms]
			4 W AC or 4 W DC	9 VA 4 W	6 VA (4 W) 4 W	7-10	9-12
1.2	48	0-10	4 W DC	4 W	4 W	7-12	7-12

• Q<sub>Nn</sub> value [l/min]: Flow rate value for air, measured at +20 °C, 6 bar<sup>1)</sup> Pressure at valve inlet and 1 bar pressure difference

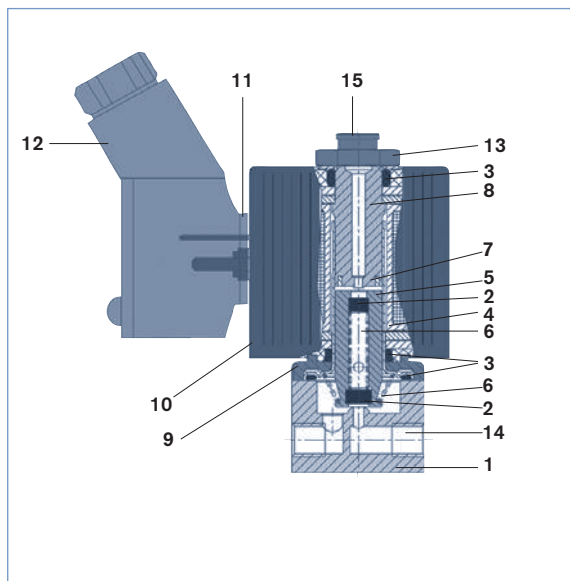
• Response times [ms]: Measures at valve outlet at 6 bar<sup>1)</sup> and +20 °C acc. to ISO 12238

*Opening:* Pressure build up 0 ... 90 %

*Closing:* Pressure relief 100 ... 10 %

<sup>1)</sup> Pressure data [bar]:  
Overpressure with respect to atmospheric pressure

## Material

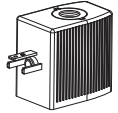


<b>1 Body</b>	Brass, stainless steel 1.4305 PA (polyamide)
<b>2 Armature seal</b>	FKM
<b>3 O-Ring</b>	FKM
<b>4 Guide tube</b>	Stainless steel 1.4303
<b>5 Core</b>	Stainless steel 1.4105
<b>6 Spring</b>	Stainless steel 1.4310
<b>7 Shading ring</b>	Copper, silver
<b>8 Stopper</b>	Stainless steel 1.4105
<b>9 sub-base</b>	Zn3 gl cC surface (brass version) Nickel-plated surface (St. st. version)
<b>10 coil</b>	DIN EN 175301-803* Form C PA Form B (Industrial standard) Epoxy
<b>11 flat seal</b>	NBR
<b>12 Cable plug</b>	PA
<b>13 Locknut</b>	9SMnPb28K (surface Zn5glcA)
<b>14 Pressure inlet P with</b>	Circuit function C
<b>15 Pressure inlet P with</b>	Circuit function D

\* previously DIN 43650

## Ordering chart

Type 6012: Solenoid valve in threaded port or sub-base version with electrical coil connection  
acc. to DIN EN 175301-803\* Form C for cable plug Type 2506



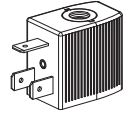
Circuit function	Orifice [mm]	Port Connection	Kv value water [m <sup>3</sup> /h]	Pressure range [bar] <sup>1)</sup>	Voltage/frequency [V/Hz]	Item no. brass body without manual override	Item no. brass body with manual override	Item no. St. st. body without manual override	Item no. PA body with manual override	
<b>C</b> 	1.2	M5	0.045	0-10	24/DC	134 143	-	-	-	
					24/50	134 144	-	-	-	
					110/50	134 145	-	-	-	
						230/50	134 146	-	-	-
	1.6	M5	0.06	0-6	24/DC	134 147	-	-	-	-
					24/50	134 148	-	-	-	
					110/50	134 149	-	-	-	
						230/50	134 150	-	-	-
	1.2	G1/8	0.045	0-10	24/DC	134 151	134 159	134 167	-	-
					24/50	134 152	134 160	134 168	-	
					110/50	134 153	134 161	134 169	-	
						230/50	134 154	134 162	134 170	-
	1.6	G1/8	0.06	0-6	24/DC	134 155	134 163	134 171	-	-
					24/50	134 156	134 164	134 172	-	
					110/50	134 157	134 165	134 173	-	
						230/50	134 158	134 166	134 174	-
	1.2	sub-base	0.045	0-10	24/DC	134 175	-	134 183	134 191	-
					24/50	134 176	-	134 184	134 192	
					110/50	134 177	-	134 185	134 193	
						230/50	134 178	-	134 186	134 194
	1.6	sub-base	0.06	0-6	24/DC	134 179	-	134 187	134 195	-
					24/50	134 180	-	134 188	134 196	
					110/50	134 181	-	134 189	134 197	
						230/50	134 182	-	134 190	134 198
<b>D</b> 	1.2	M5	0.045	0-10	24/DC	134 199	-	-	-	
					24/50	134 200	-	-	-	
					110/50	134 201	-	-	-	
						230/50	134 202	-	-	-
	1.6	M5	0.06	0-6	24/DC	134 204	-	-	-	-
					24/50	134 205	-	-	-	
					110/50	134 206	-	-	-	
						230/50	134 207	-	-	-
	1.2	G1/8	0.045	0-10	24/DC	134 208	-	134 216	-	-
					24/50	134 209	-	134 217	-	
					110/50	134 210	-	134 218	-	
						230/50	134 211	-	134 219	-
	1.6	G1/8	0.06	0-6	24/DC	134 212	-	134 220	-	-
					24/50	134 213	-	134 221	-	
					110/50	134 214	-	134 222	-	
						230/50	134 215	-	134 223	-

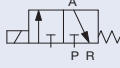
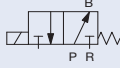
<sup>1)</sup> Pressure data [bar]: Overpressure with respect to atmospheric pressure  
\* previously DIN 43650

- All valves with FKM seal; without cable plug.
- other versions on request.

## Ordering chart

Type 6012: Solenoid Valve with threaded port or sub-base version with electrical coil connection acc. to DIN 43650 Form B (Industrial standard) for cable plug Type 2507



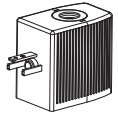
Circuit function	Orifice [mm]	Port Connection	Kv value water [m <sup>3</sup> /h]	Pressure range [bar] <sup>1)</sup>	Voltage/frequency [V/Hz]	Item no. brass body without manual override	Item no. brass body with manual override	Item no. St. st. body without manual override	Item no. PA body with manual override
<b>C</b> 	1.2	M5	0.045	0-10	24/DC	163 569	-	-	-
					24/50	163 570	-	-	-
					110/50	163 571	-	-	-
					230/50	163 572	-	-	-
	1.6	M5	0.06	0-6	24/DC	163 573	-	-	-
					24/50	163 574	-	-	-
					110/50	163 575	-	-	-
					230/50	163 576	-	-	-
	1.2	G1/8	0.045	0-10	24/DC	161 904	163 584	163 592	-
					24/50	163 577	163 585	163 593	-
					110/50	163 578	163 586	163 594	-
					230/50	163 579	163 587	163 595	-
	1.6	G1/8	0.06	0-6	24/DC	163 580	163 588	163 596	-
					24/50	163 581	163 589	163 597	-
					110/50	163 582	163 590	163 598	-
					230/50	163 583	163 591	163 599	-
	1.2	sub-base	0.045	0-10	24/DC	163 600	-	163 608	161 063
					24/50	163 601	-	163 609	163 616
					110/50	163 602	-	163 610	163 617
					230/50	163 603	-	163 611	163 618
	1.6	sub-base	0.06	0-6	24/DC	163 604	-	163 612	163 619
					24/50	163 605	-	163 613	163 620
					110/50	163 606	-	163 614	163 621
					230/50	217 634	-	163 615	163 622
<b>D</b> 	1.2	M5	0.045	0-10	24/DC	163 623	-	-	-
					24/50	163 624	-	-	-
					110/50	163 625	-	-	-
					230/50	163 626	-	-	-
	1.6	M5	0.06	0-6	24/DC	163 627	-	-	-
					24/50	163 628	-	-	-
					110/50	163 629	-	-	-
					230/50	163 630	-	-	-
	1.2	G1/8	0.045	0-10	24/DC	163 631	-	163 639	-
					24/50	163 632	-	163 640	-
					110/50	163 633	-	163 641	-
					230/50	163 634	-	163 642	-
	1.6	G1/8	0.06	0-6	24/DC	163 635	-	163 643	-
					24/50	163 636	-	163 644	-
					110/50	163 637	-	163 645	-
					230/50	163 638	-	163 646	-

<sup>1)</sup> Pressure data [bar]: Overpressure with respect to atmospheric pressure  
 \* previously DIN 43650

- All valves with FKM seal; without cable plug.
- other versions on request.

## Ordering chart

Type 6012P: Pilot valve for direct mounting on to pneumatic actuator with coil connection acc. to DIN EN 175301-803\* Form C for cable plug Type 2506

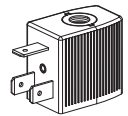


Circuit function	Orifice [mm]	Pressure inlet P (valve body)	Service port A (banjo bolt)	Q <sub>90%</sub> value air [l/min]	Pressure range [bar] <sup>1)</sup>	Voltage/frequency [V/Hz]	Item no.
	1.2	G1/8	G1/8	48	0-10	24/DC	429 112
						24/50	429 113
						110/50	429 115
						230/50	429 117
		G1/4	G1/8	48	0-10	24/DC	429 126
						24/50	429 127
						110/50	429 128
						230/50	429 129
		G1/4	G1/4	48	0-10	24/DC	427 919
						24/50	427 920
						110/50	427 921
						230/50	427 922
	Tube fitting Ø 6 mm	G1/8	48	0-10	24/DC	425 299	
					24/50	425 300	
					110/50	428 570	
					230/50	425 304	
Tube fitting Ø 6 mm	G1/4	48	0-10	24/DC	425 285		
				24/50	425 286		
				110/50	428 569		
				230/50	425 290		

<sup>1)</sup> Pressure values [bar]: Measured as overpressure to the atmospheric pressure \* previously DIN 43650

- All valves with PA body, NBR seal and manual override; without cable plug.
- other versions on request

Type 6012P: pilot valve for direct mounting onto pneumatic actuator with electrical coil connection acc. to DIN EN 43650\* Form B Industrial standard for cable plug Type 2507



Circuit function	Orifice [mm]	Pressure inlet P (valve body)	Service port A (Banjo bolt)	Q <sub>90%</sub> value air [l/min]	Pressure range [bar] <sup>1)</sup>	Voltage/frequency [V/Hz]	Item no.
	1.2	G1/8	G1/8	48	0-10	24/DC	552 299
						24/50	552 300
						110/50	552 301
						230/50	552 302
		G1/4	G1/8	48	0-10	24/DC	552 295
						24/50	552 296
						110/50	552 297
						230/50	552 298
		G1/4	G1/4	48	0-10	24/DC	552 291
						24/50	552 292
						110/50	552 293
						230/50	552 294
	Tube fitting Ø 6 mm	G1/8	48	0-10	24/DC	552 287	
					24/50	552 288	
					110/50	552 289	
					230/50	552 290	
Tube fitting Ø 6 mm	G1/4	48	0-10	24/DC	552 283		
				24/50	552 284		
				110/50	552 285		
				230/50	552 286		

<sup>1)</sup> Pressure values [bar]: Overpressure with respect to atmospheric pressure

- All valves with PA body, NBR seal and manual override; without cable plug.
- other versions on request

## Ordering chart for accessories

### Manifolds for Type 6012


Material	No. of valves	Item no.
Aluminium	1	005 312
	2	005 355
	3	005 313
	4	005 314
	5	005 315
	6	005 316
	7	005 893
	8	005 166
	9	005 241
	10	005 819
	11	005 242
	12	005 222

### Manifold accessories for Type 6012

Accessory	Features	Item no.
Blanking plug	with seal ring, G1/8	005 041
Covering plate	for unused valves	005 100

- only available with circuit function C (normally closed).

### Cable plug Type 2506 acc. to DIN EN 175301-803\* Form C




Circuitry	Voltage	Item no.
None (Standard)	0 - 250 V AC/DC	008 353
with LED	12 - 24 V AC/DC	008 402
with LED and varistor	12 - 24 V AC/DC	008 408
with rectifier, LED and varistor	12 - 24 V AC/DC	008 354

- Supplied with cable plug, flat seal and fixing screw.
- Further versions of cable plug with circuitry acc. to DIN EN 175301-803\* Form C (see datasheet for Type 2506).

\* previously DIN 43650

### Cable plug Type 2507 acc. to DIN 43650 Form B (Industrial standard)

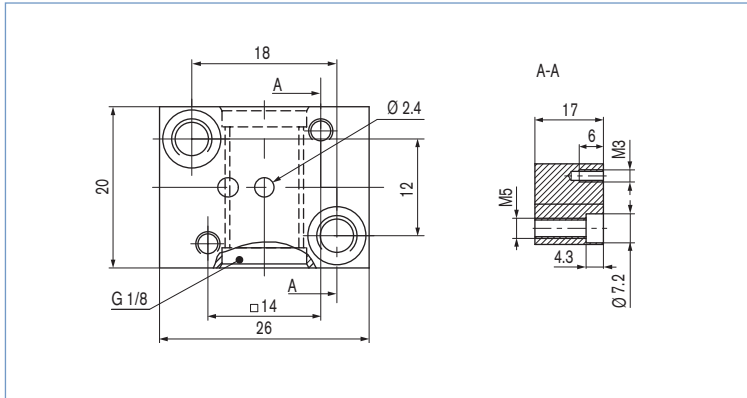


Circuitry	Voltage	Item no.
None (Standard)	2 - 250 V AC/DC	423 845
with LED	24 V AC/DC	423 849
with LED and freewheeling diode	12 - 24 V DC	423 851
with rectifier, LED and varistor	12 - 24 V AC/DC	423 853

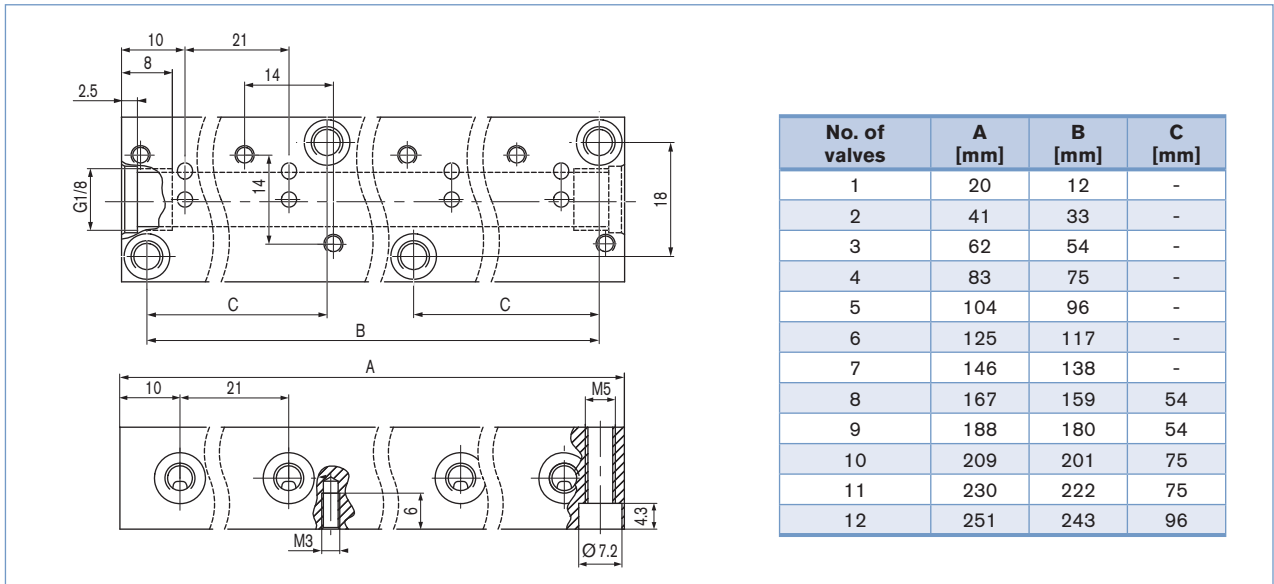
- Supplied with cable plug, flat seal and fixing screw.
- Further versions of cable plug with circuitry acc. to DIN EN 43650\* Form B (Industrial standard), see datasheet for Type 2507.

Dimensions [mm] - Manifolds for Type 6012

Single manifold



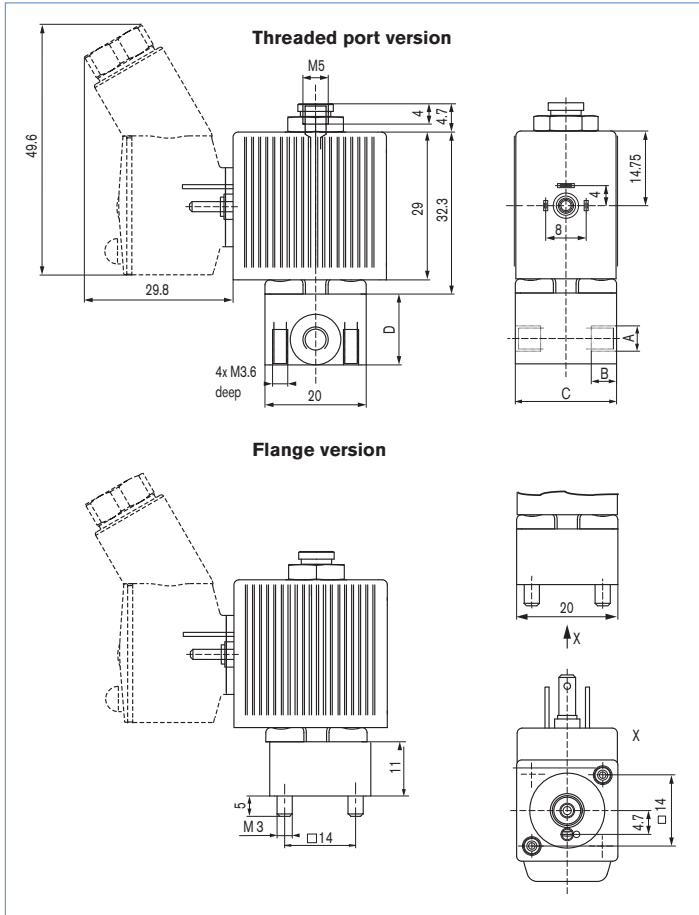
Multiple manifold



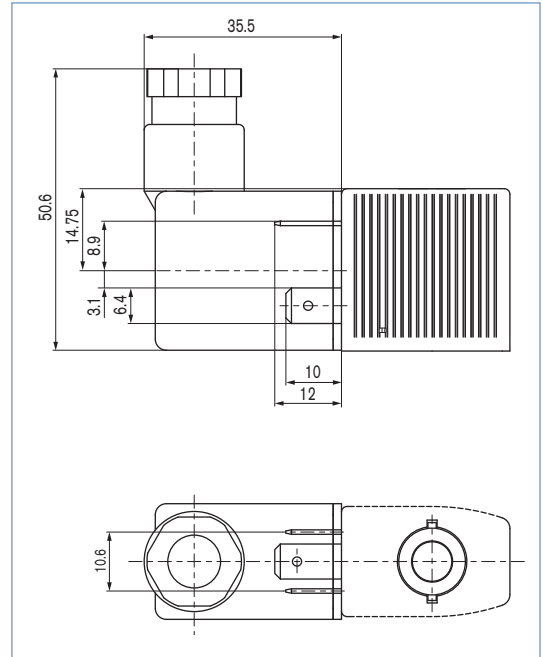
No. of valves	A [mm]	B [mm]	C [mm]
1	20	12	-
2	41	33	-
3	62	54	-
4	83	75	-
5	104	96	-
6	125	117	-
7	146	138	-
8	167	159	54
9	188	180	54
10	209	201	75
11	230	222	75
12	251	243	96

## Dimensions [mm] - Type 6012

Coil connection acc. to DIN EN 175301-803\* Form C  
(Cable Plug Type 2506)



Coil connection acc. to DIN EN 43650 Form B  
Industrial standard (cable plug 2507)



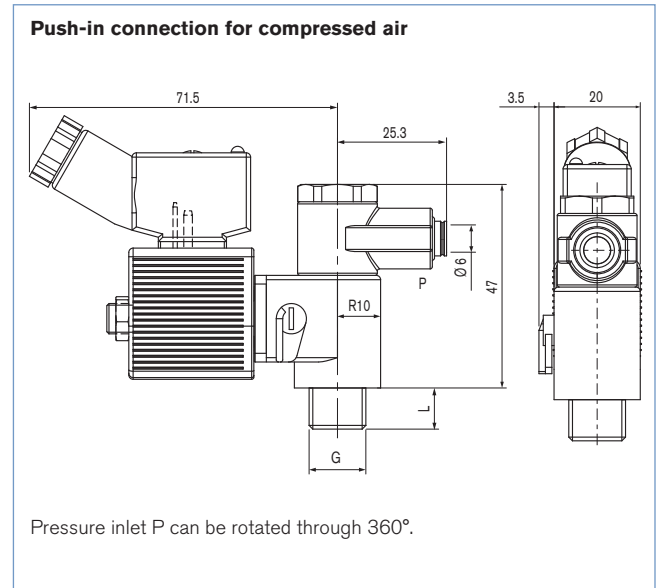
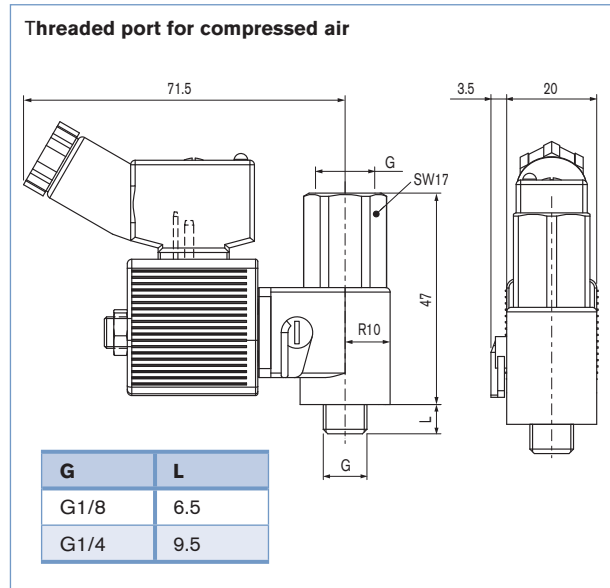
Port connection	A	B	C	D
Sleeve	M5	5	20	14
Sleeve	G1/8	8	25	19.5
sub-base	-	-	20	11

\* previously DIN 43650

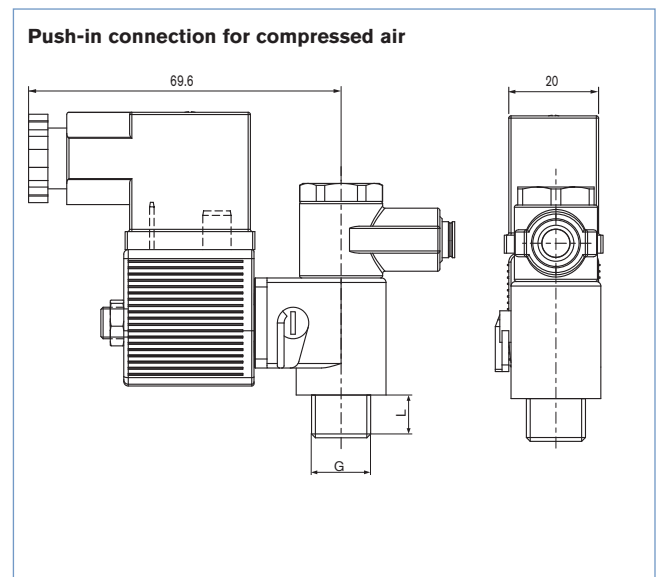
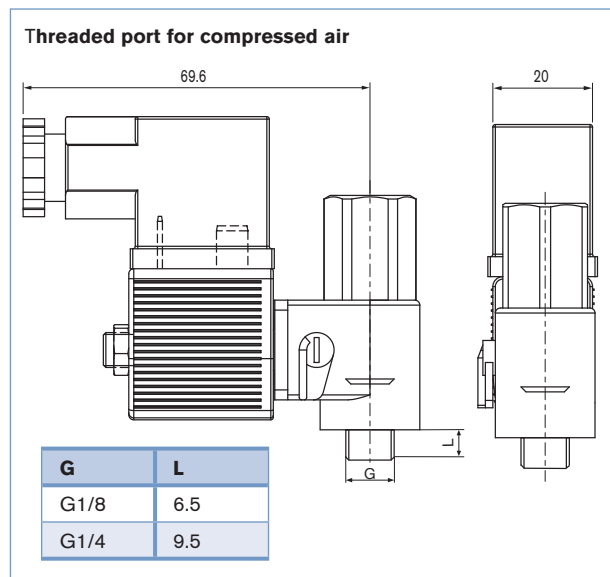


**Dimensions [mm] - Type 6012P**

Version with coil connection acc. to DIN EN 175301-803\* Form C (cable plug Type 2506)



Version with coil connection acc. to DIN 43650 Form B Industrial standard (cable plug Type 2507)



\* previously DIN 43650