

3/2-way Mini Solenoid Valve



Standard version

P version

- Direct-acting
- 0 ... 10 bar¹⁾
- 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

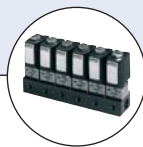
Type 6012 can be combined with...

**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)

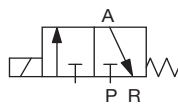
This direct-acting 3/2-way miniature solenoid valve is available in two versions.

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.

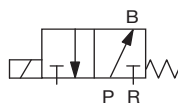
Circuit function C

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



Circuit function D

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

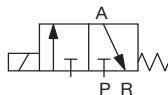


P version

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

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

¹⁾ Pressure data [bar]: Overpressure with respect to atmospheric pressure

* Previously DIN 43650

Response times

Type 6012

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

¹⁾ Pressure data [bar]:
Overpressure with
respect to atmospheric
pressure

• Kv value [m³/h]: Flow rate value for water, measured at +20 °C, 1 bar¹⁾ Pressure at valve inlet and 1 bar pressure difference

Type 6012P

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

¹⁾ Pressure data [bar]:
Overpressure with
respect to atmospheric
pressure

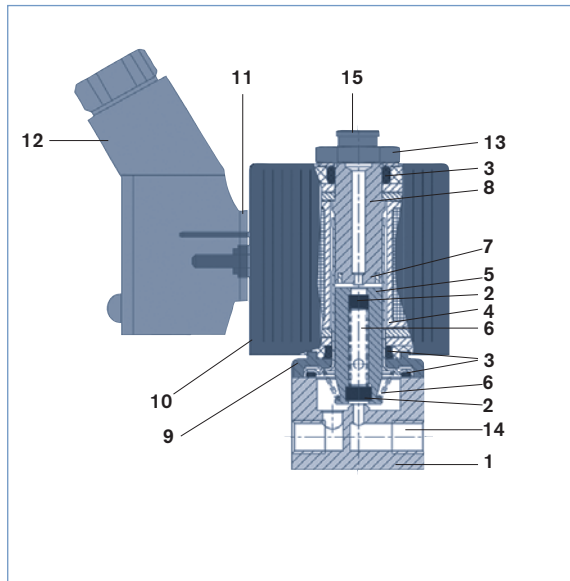
• Q_{Nn} value [l/min]: Flow rate value for air, measured at +20 °C, 6 bar¹⁾ Pressure at valve inlet and 1 bar pressure difference

• Response times [ms]: Measures at valve outlet at 6 bar¹⁾ and +20 °C acc. to ISO 12238

Opening: Pressure build up 0 ... 90 %

Closing: Pressure relief 100 ... 10 %

Material

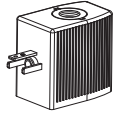


1 Body	Brass, stainless steel 1.4305 PA (polyamide)
2 Armature seal	FKM
3 O-Ring	FKM
4 Guide tube	Stainless steel 1.4303
5 Core	Stainless steel 1.4105
6 Spring	Stainless steel 1.4310
7 Shading ring	Copper, silver
8 Stopper	Stainless steel 1.4105
9 sub-base	Zn3 gl cC surface (brass version) Nickel-plated surface (St. st. version)
10 coil	DIN EN 175301-803* Form C PA Form B (Industrial standard) Epoxy
11 flat seal	NBR
12 Cable plug	PA
13 Locknut	9SMnPb28K (surface Zn5glcA)
14 Pressure inlet P with	Circuit function C
15 Pressure inlet P with	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 ³ /h]	Pressure range [bar] ¹⁾	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	
C 	1.2	M5	0.045	0-10	24/DC	134 143	-	-	-	
					24/50	134 144	-	-	-	
					110/50	134 145	-	-	-	
					230/50	134 146	-	-	-	
					24/DC	134 147	-	-	-	
					24/50	134 148	-	-	-	
	1.6	M5	0.06	0-6	110/50	134 149	-	-	-	-
					230/50	134 150	-	-	-	
					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	-	
	1.2	G1/8	0.045	0-10	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	-	
					24/DC	134 175	-	134 183	134 191	
					24/50	134 176	-	134 184	134 192	
	1.6	G1/8	0.06	0-6	110/50	134 177	-	134 185	134 193	
					230/50	134 178	-	134 186	134 194	
					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	
D 	1.2	M5	0.045	0-10	24/DC	134 199	-	-	-	
					24/50	134 200	-	-	-	
					110/50	134 201	-	-	-	
					230/50	134 202	-	-	-	
					24/DC	134 204	-	-	-	
					24/50	134 205	-	-	-	
	1.6	M5	0.06	0-6	110/50	134 206	-	-	-	
					230/50	134 207	-	-	-	
					24/DC	134 208	-	134 216	-	
					24/50	134 209	-	134 217	-	
					110/50	134 210	-	134 218	-	
					230/50	134 211	-	134 219	-	
	1.2	G1/8	0.045	0-10	24/DC	134 212	-	134 220	-	
					24/50	134 213	-	134 221	-	
					110/50	134 214	-	134 222	-	
					230/50	134 215	-	134 223	-	
					24/DC	134 219	-	134 216	-	
					24/50	134 220	-	134 217	-	
	1.6	G1/8	0.06	0-6	110/50	134 212	-	134 220	-	
					230/50	134 213	-	134 221	-	
					24/DC	134 214	-	134 222	-	
					24/50	134 215	-	134 223	-	
					110/50	134 219	-	134 216	-	
					230/50	134 220	-	134 217	-	

¹⁾ 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

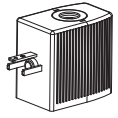
Type 6012: Solenoid Valve with threaded port or sub-base version with electrical coil connection acc. to DIN 43650 Form B (Industrial standard) for cable plug Type 2507

Circuit function	Orifice [mm]	Port Connection	Kv value water [m ³ /h]	Pressure range [bar] ¹⁾	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
C 	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
D 	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	-

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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

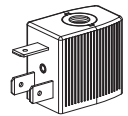


Circuit function	Orifice [mm]	Pressure inlet P (valve body)	Service port A (banjo bolt)	Q _{90°} value air [l/min]	Pressure range [bar] ¹⁾	Voltage/frequency [V/Hz]	Item no.
	1.2	G1/8	G1/8	48	0-10	24/DC	429 112
						24/50	429 113
						110/50	429 115
						230/50	429 117
		G1/4	G1/8	48	0-10	24/DC	429 126
						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		

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

¹⁾ Pressure values [bar]: Measured as overpressure to the atmospheric pressure * previously DIN 43650

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 _{90°} value air [l/min]	Pressure range [bar] ¹⁾	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		

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

¹⁾ Pressure values [bar]: Overpressure with respect to atmospheric pressure

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)

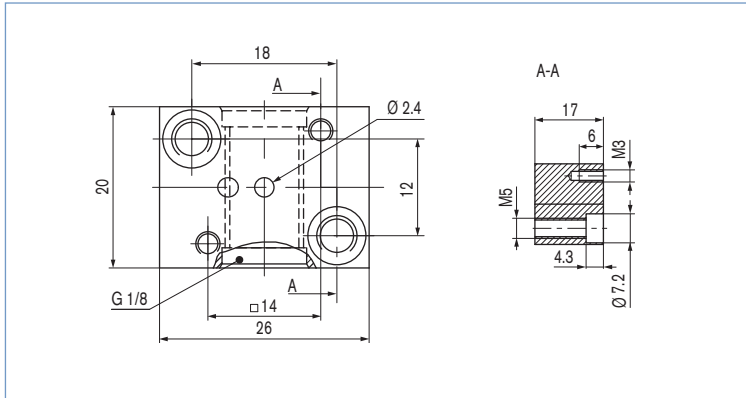


Circuitry	Voltage	Item no.
None (Standard)	2 - 250 V AC/DC	423 845
with LED	24 V AC/DC	423 849
with LED and freewheeling diode	12 - 24 V DC	423 851
with rectifier, LED and varistor	12 - 24 V AC/DC	423 853

- 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

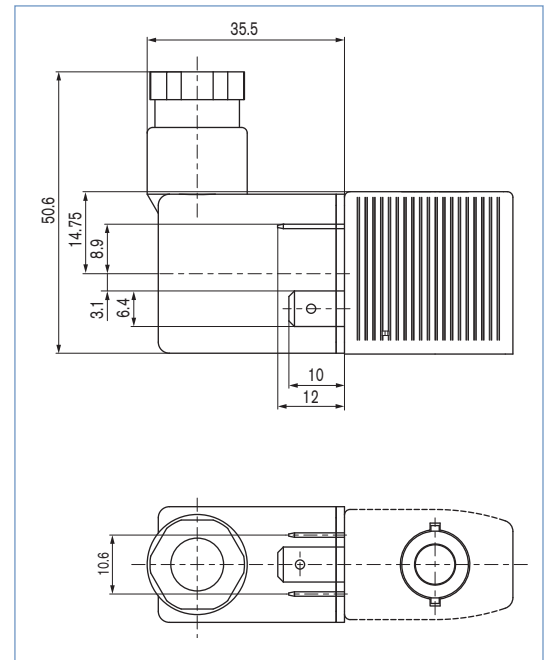
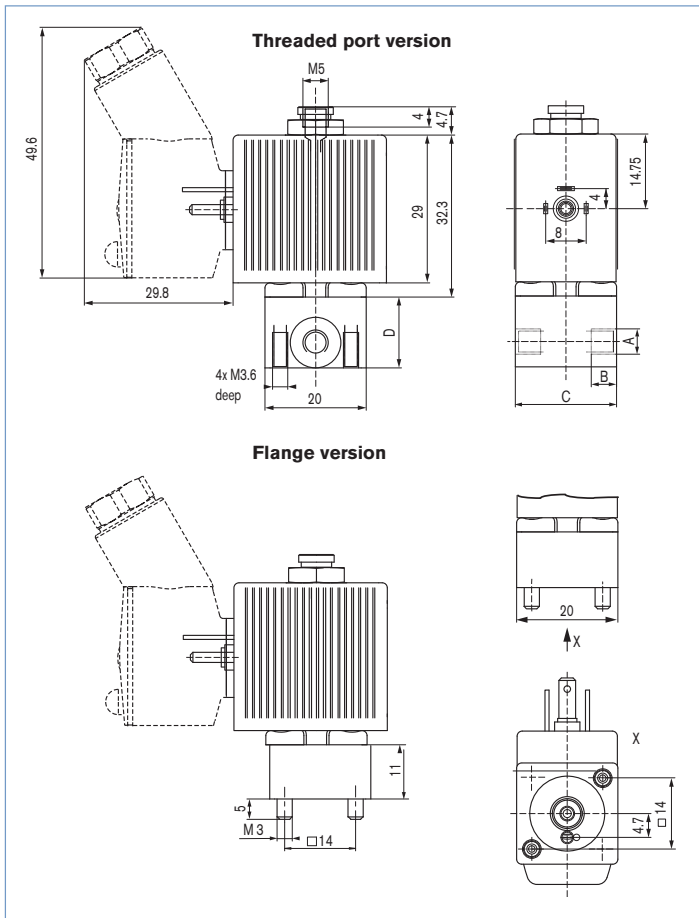
Technical drawing of a multiple manifold. The front view shows a long rectangular block with a total width of 251 mm and a height of 18 mm. It features 12 G 1/8 ports along its length. The distance between the centers of adjacent ports is 21 mm. The distance from the center of the first port to the left edge is 10 mm. The distance from the center of the last port to the right edge is 10 mm. The manifold is divided into sections of length 'C' and 'B'. The cross-sectional view (A) shows a total width of 251 mm. It features an M5 thread on the left side, a central port with a diameter of $\varnothing 7.2$ mm, and an M3 thread on the right side. The distance from the center of the M5 thread to the center of the central port is 4.3 mm, and the distance from the center of the central port to the center of the M3 thread is 6 mm.

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)

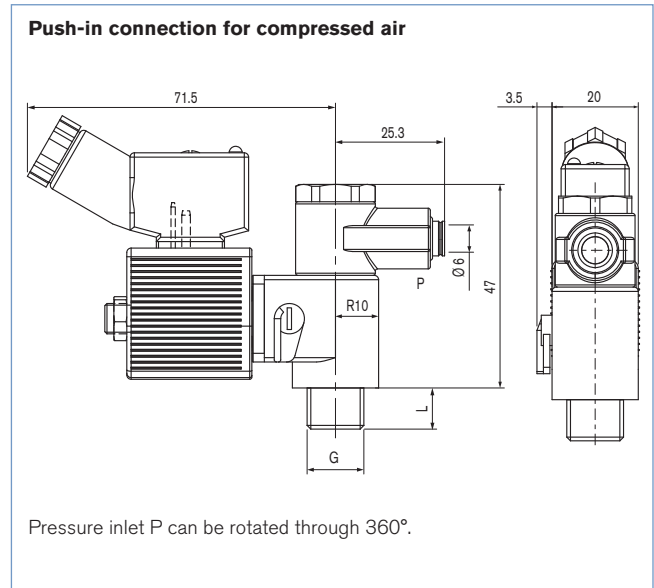
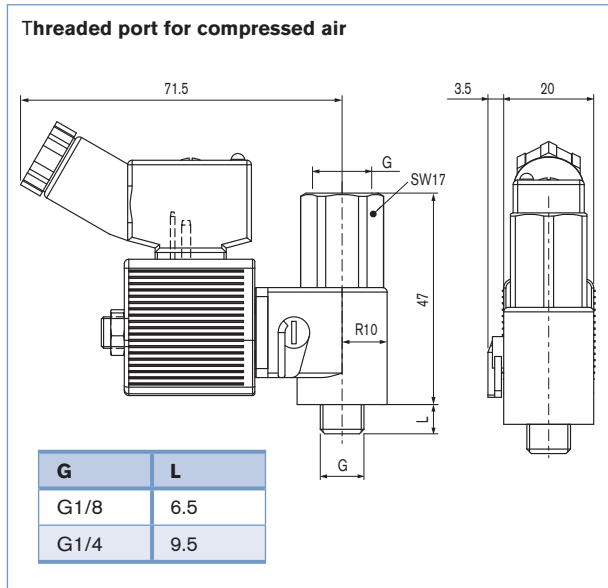


Port connection	A	B	C	D
Sleeve	M5	5	20	14
Sleeve	G1/8	8	25	19.5
sub-base	-	-	20	11

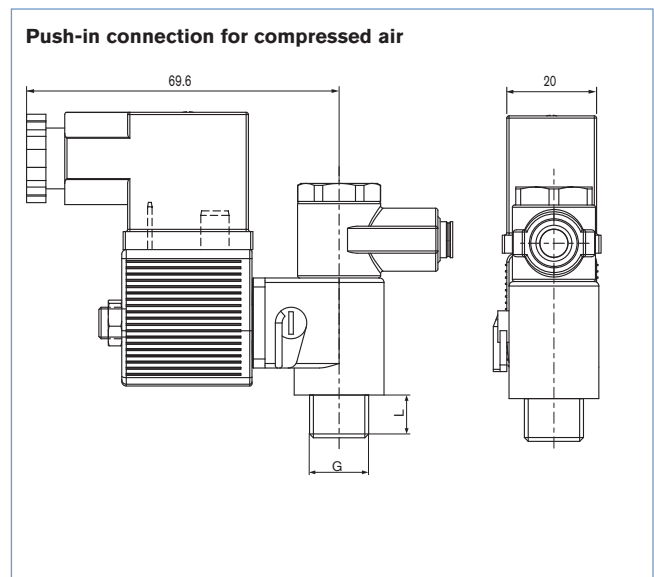
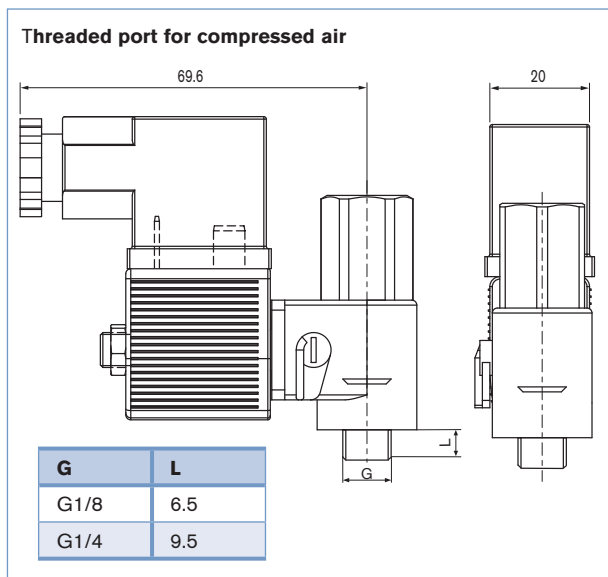
* previously DIN 43650

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