



Advantages/Benefits

- ▶ When de-energized, outlet port exhausted or pressurized
- ▶ Body materials: brass, polyamide
- ▶ Fast response times
- ▶ Compact design

Design/Function

Type 301 is available in a variety of different circuit functions for different applications.

When energized, the solenoid armature is drawn against a spring.

The flow path through the valve is dependent on the chosen circuit function. The solenoid epoxy encapsulation efficiently dissipates the heat generated by the coil.

Applications

- Neutral gases and liquids
- Pneumatic control
- Vacuum
- Shut-off, dosing, filling and ventilating
- Small scale instruments, laboratory and measuring equipment
- Gas control, welding equipment

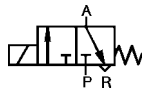
3/2-Way Miniature Solenoid Valve, Sub-base connection

Type 301

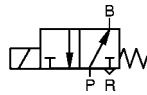
Technical Data

Circuit Function

C 3/2-way valve, when de-energized outlet port A exhausted



D 3/2-way valve, when de-energized outlet port B pressurized



Body Material

Body and seat of brass
Body and seat of polyamide

Specifications

Orifice DN [mm]	Kv-Value Water [m ³ /h]	QNm-Value Air ¹⁾ [l/min]	Pressure Range ²⁾ [bar]	Weight	
				threaded port [kg]	sub-base [kg]
1,2	0,045	48	0-10	-	0,09
1,6	0,060	65	0- 6	0,12	0,09

¹⁾ Measured with 6 bar upstream pressure and 1 bar pressure drop across the valve at +20 °C.

²⁾ Also suitable for technical vacuum.

All pressures quoted are gauge pressures with respect to the prevailing atmospheric pressure.

Operating Data (Valve)

Seal Materials/Fluids Handled/Temp.- Range

NBR Neutral fluids, e.g. compressed air, water, hydraulic oil, oils and fat without additives, town gas, -10 to +90 °C

For more detailed information please refer to resistance chart (Leaflet-No. 1896009).

Max. ambient temperature + 55 °C

Max. viscosity 21 mm²/s

Response times opening 12 ms
closing 8 ms

Times measured at outlet A from switching on until pressure rise to 90 % / pressure drops to 10 % at a max. working pressure of 6 bar.

Port connection sub-base or manifold and G 1/8 banjo coupler for direct installation to remotely piloted valves

Operating Data (Actuator)

Operating voltages 24, 230, 240 V/50 Hz
12, 24 V/=

Voltage tolerance ±10 %

Power consumption AC 9 VA (inrush)
6 VA/ 4 W (hold)
DC 4 W or 2 W depending on version

Duty cycle 100% continuously rated for manifold assembly use reduced switch-on time or 2-W- version

Cycling rate up to 1000 c.p.m

Rating with cable plug, cable or lead IP 65

Installation / Accessories

Installation as required, but preferably with solenoid system upright

Electrical connection

- plug connection without cable plug (supplied as standard)
- moulded-in cable on request
- moulded-in flying leads 3 x 0,75 mm², on request
- moulded-in flying leads 2 x 0,75 mm², on request



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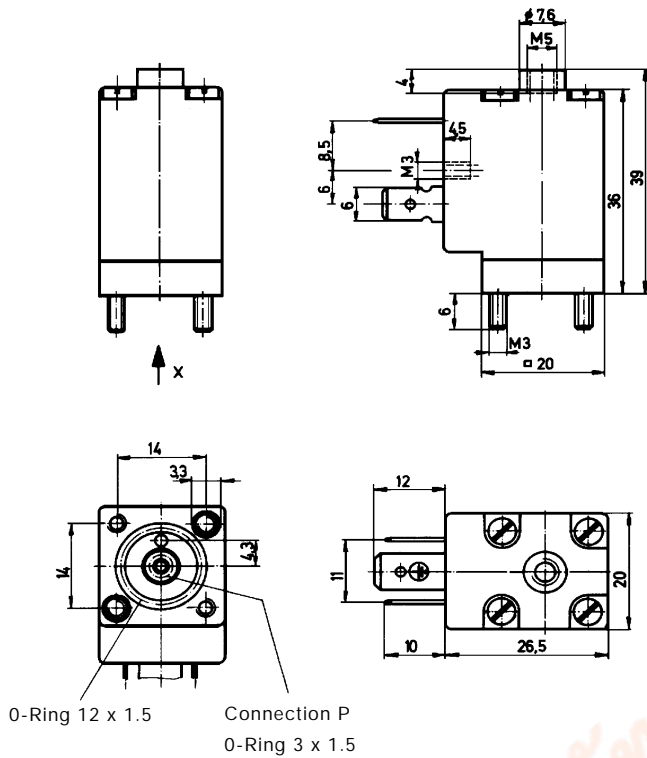
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3/2-Way Miniature Solenoid Valve, Sub-base connection

Type 301

Dimensions in mm



Connections

All illustrations in this data sheet show valves of circuit function C, using the connections P, R and A. These connections may vary with the circuit function D as indicated in the following overview.

Circuit Function	Connections		
C	P	R	A
D	R	P	B

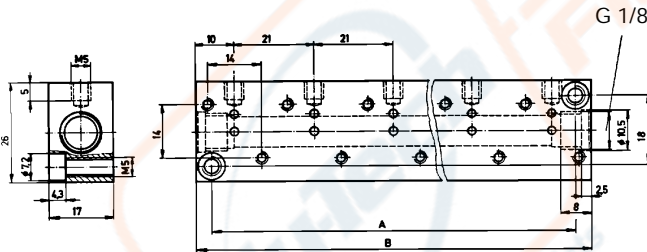
i.e. the pressure port for circuit function D is located on the top of the valve.

Multiple Manifold Assembly

The manifolds have a common pressure inlet P (R) for the pressure connection of Type 301-C or the exhaust connection of Type 301-D and an individual lateral outlet A (B) for each valve. Type 301-C may also be mounted together with Type 201 valves. They can however not be mounted with Type 301-D valves. The electrical connection can be either on the right or left of the manifold.

Manifolds may be coupled together using special push-fit O-ring connecting nipples for linking the pressure inlets P (R). Manifolds joined together in this way should be securely mounted.

Order-Code for Manifold



Manifold	Hole Spacing	Overall Length	Order-No.
	A	B	
1 valve	12	20	005 312 T
2 valves	33	41	005 355 E
3 valves	54	62	005 313 U
4 valves	75	83	005 314 V
5 valves	96	104	005 315 W
6 valves	117	125	005 316 X
7 valves	138	146	005 893 K
8 valves	159	167	005 166 Z
9 valves	180	188	005 241 C
10 valves	201	209	005 819 Y
11 valves	222	230	005 242 D
12 valves	243	251	005 222 Z

Order-Code for Accessories

Specification	Order-No.
Connector nipples with NBR-O-rings (8 x 1,25)	005 040 A
3-pin cable plug, IP 65 rating	005 377 C



3/2-Way Miniature Solenoid Valve, Sub-base connection

Type 301

Ordering Chart (Other Versions on Request)

Circuit Function	Orifice DN [mm]	Flow Rate		Port Connection [ISO 228]	Pressure Range ²⁾ [bar]	Body Material	Seal Material	Weight [kg]	Voltage/Frequency [V/Hz]	Order-No.								
		Water Kv-Value [m ³ /h]	Air ¹⁾ QNn [l/min]															
C	1,0	0,030	33	Sub-base	0-7	Brass	NBR	0,09	024/=	086 514 F ³⁾								
									1,2	0,045	48	Sub-base	0-10	PA	NBR	0,09	024/=	054 627 X
																	024/50	054 348 P
																	110/50	054 345 C
																	230/50	054 346 D
																	240/50	054 917 J
	Brass	NBR	0,09	024/=	052 327 Y ⁴⁾													
				024/=	042 974 X													
				024/=	045 239 H ⁴⁾⁵⁾													
				024/50	044 450 G ⁴⁾													
				024/50	045 137 K													
				110/50	052 326 X ⁴⁾													
				110/50	042 999 Z													
				230/50	052 325 W ⁴⁾													
				230/50	057 082 L													
				240/50	079 866 G ⁴⁾													
				240/50	054 915 Q													
				1,6	0,060	65	Sub-base	0- 6	Brass	NBR	0,09	012/=	067 386 T					
	024/=	042 870 B																
	024/50	042 872 Z																
	110/50	054 032 N																
	230/50	057 597 M																
	240/50	061 554 V																
	PA	NBR	0,09									024/50	049 755 J					
024/=												055 941 T						
110/50												066 853 W						
230/50												056 437 K						
240/50												086 486 C						
G 1/8												0- 6	Brass	NBR	0,175	024/=	062 240 P ⁶⁾	
	230/50	044 141 W ⁶⁾																
D	1,6	0,060	65	Sub-base	0- 4	Brass	NBR	0,06	024/=	062 407 U								

¹⁾ Measured with 6 bar upstream pressure and 1 bar pressure drop across the valve at +20 °C,

²⁾ also suitable for vacuum, ³⁾ 2-W power consumption, ⁴⁾ available with manual override,

⁵⁾ 3 moulded-in PVC-single strands 0.75 mm², length 300 mm, ⁶⁾ Pilot valve mounted to banjo-coupler.



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