



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

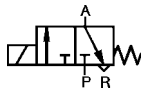
3/2-Way Miniature Solenoid Valve, Sub-base connection

Type 301

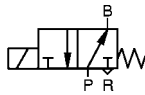
Technical Data

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

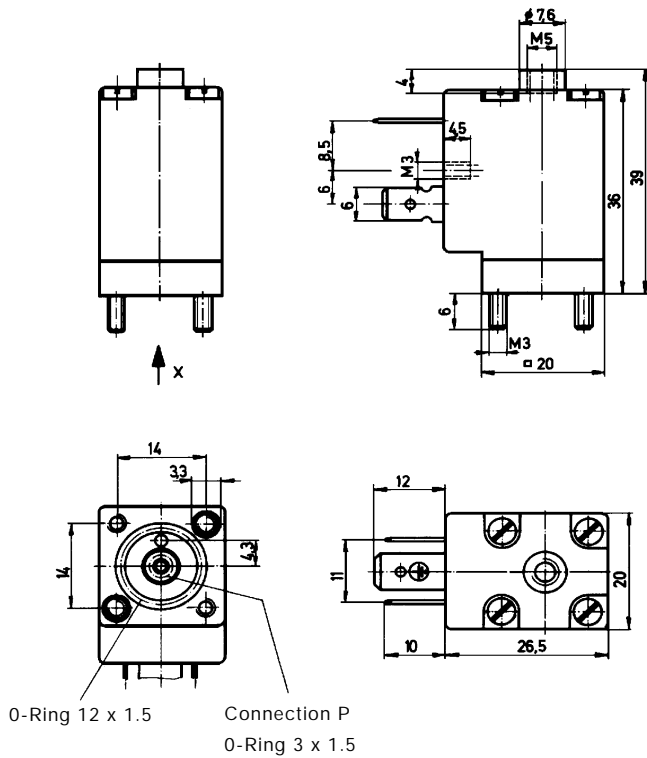
Electrical connection

- 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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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 |

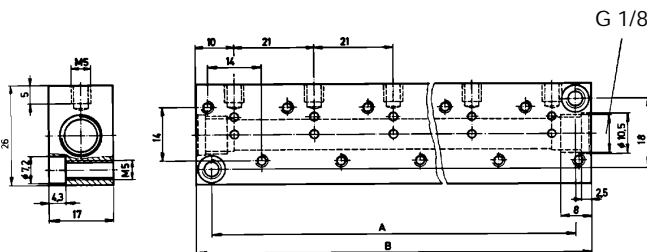
i.e. the pressure port for circuit function D is located on the top of the valve.

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.