

ASCO

SOLENOID VALVES



indirect drives



Fittings

Description

A solenoid valve is an electromechanically operated valve. The valve is controlled by an electric current through a solenoid: in case of a two-port valve the flow is switched on or off; in case of a three-port valve, the outflow is switched between the two outlet ports. Multiple solenoid valves can be placed together on a manifold. Solenoid valves are the most frequently used control elements in fluidics. Their tasks are to shut off, release, dose, distribute or mix fluids. They are found in many application areas. Solenoids offer fast and safe switching, high reliability, long service life, good medium compatibility of the materials used, low control power and compact design. Solenoid valves are also characterized by how they operate. A small solenoid can generate a limited force. A solenoid valve has two main parts: the solenoid and the valve. The solenoid converts electrical energy into technical energy which, in turn, opens or closes the valve mechanically. A direct acting valve has only a small flow circuit, this section is mentioned below as a pilot valve. In this example, a diaphragm piloted valve multiplies this small pilot flow, by using it to control the flow through a much larger orifice.

Flowrate

The flow rate is indicated by the flow factor K_v , which represents the quantity of water, expressed in m³/h, that flows through the solenoid valve with a pressure drop of 1 bar and a temperature between 5 °C and 30 °C (Standard VDI/VDE2173)

Response time

The time requested to pass from fully open to fully closed or vice versa, changes according to different parameters. In particular, the voltage value, the type of fluids, the pressure, the valve, its mobile parts dimensions and the operating system are all factors that affect the response time. For the valves of the "L" series, the response time is about a few tens of milliseconds for direct acting valves and hundreds (in some cases thousands) of milliseconds for pilot operated valves.



Specifications

- o for use with non-aggressive clean liquids and gasses compatible with the used materials
- o available versions:
 - brass body also available in stainless steel
 - sealing and diaphragm depending on different parameters such as temperature and controlled fluids
 - standard gas female threaded ports (ISO 228) or for sub-base mounting.
 - 2/2 or 3/2, NO or NC
- o max viscosity: 35 mm²/s
- o liquid temperature: according table
- o voltages:
 - standard 24-11-220-230 Volt, 50 Hz and 12-24VDC
 - other voltages and frequencies on request
 - tolerance: +10%/-15% for AC, +10%/-5% for DC
- o coils according 73/23/EC
- o duty: 100%ED
- o seals: NBR, Viton® FPM, PTFE, EPDM or VMQ
- o pressure: vacuum up to 30 bar



Capacity Sirai™ solenoid valves for neutral liquid and gaseous media 2/2 NC solenoid valves indirect acting

| PORT SIZE | ORFICE SIZE mm | BODY | SEALS | DIFFERENTIAL PRESSURE | | | | PS (BAR) | Kv (m³/h) | MEDIUM TEMPERATURE | | ABSORBED POWER | | | VALVE | COIL | NOTES | |
|-----------|-------------------|------|-------|-----------------------|---------|----|---------|-------------|--------------|--------------------|-----|----------------|--------|-----------|-------|---------|---------|-----------|
| | | | | k P MIN | k P MAX | | | | | | | AC | | DC (W) | | | | |
| | | | | | GASES | | LIQUIDS | | | | | VA | VA | | | | | |
| | | | | | AC | DC | AC | | | | | DC | INRUSH | | | | | HOLDING |
| G 3/8 | 13,5 | O | NBR | 0,35 | 16 | 16 | 16 | 16 | 20 | 2,5 | -10 | 90 | 12 | 6 | 5,5 | L182B01 | ZB10A | A - B |
| | 13,5 | O | NBR | 0,35 | 16 | 16 | 16 | 16 | 20 | 2,5 | -10 | 90 | 12 | 6 | 5,5 | L182B02 | ZB10A | A - B - C |
| | 13,5 | O | FPM | 0,35 | 12 | 12 | 12 | 12 | 20 | 2,5 | 0 | 130 | 12 | 6 | 5,5 | L182V01 | ZB10A | A - B |
| | 13,5 | O | FPM | 0,35 | 12 | 12 | 12 | 12 | 20 | 2,5 | 0 | 130 | 12 | 6 | 5,5 | L182V02 | ZB10A | A - B - C |
| G 1/2 | 10 | O | NBR | 0,35 | 10 | - | 10 | - | 16 | 1,5 | -10 | 90 | 16 | 10 | - | L140B5 | Z610A | D - E |
| | 10 | O | FPM | 0,35 | 10 | - | 10 | - | 16 | 1,5 | 0 | 130 | 16 | 10 | - | L140V5 | Z610A | D |
| | 10,2 | O | NBR | 0,35 | 12 | 12 | 12 | 12 | 20 | 1,8 | -10 | 90 | 12 | 6 | 5,5 | L182B13 | ZB10A | F |
| | 13,5 | O | NBR | 0,35 | 16 | 16 | 16 | 16 | 20 | 3,8 | -10 | 90 | 12 | 6 | 5,5 | L182B01 | ZB10A | A - B |
| | 13,5 | O | NBR | 0,35 | 16 | 16 | 16 | 16 | 20 | 3,8 | -10 | 90 | 12 | 6 | 5,5 | L182B02 | ZB10A | A - B - C |
| | 13,5 | O | FPM | 0,35 | 12 | 12 | 12 | 12 | 20 | 3,8 | 0 | 130 | 12 | 6 | 5,5 | L182V01 | ZB10A | A - B |
| G 3/4 | 18 | O | NBR | 0,35 | 12 | 12 | 12 | 12 | 20 | 5 | -10 | 90 | 12 | 6 | 5,5 | L182B01 | ZB10A | A - G |
| | 18 | O | NBR | 0,35 | 12 | 12 | 12 | 12 | 20 | 5 | -10 | 90 | 12 | 6 | 5,5 | L182B02 | ZB10A | A - C - G |
| | 18 | O | FPM | 0,35 | 10 | 10 | 10 | 10 | 20 | 5 | 0 | 130 | 12 | 6 | 5,5 | L182V01 | ZB10A | A - G |
| | 18 | O | FPM | 0,35 | 10 | 10 | 10 | 10 | 20 | 5 | 0 | 130 | 12 | 6 | 5,5 | L182V02 | ZB10A | A - C - G |
| | 18 | PP | FPM | 0,2 | 6 | - | 6 | - | 10 | 4,8 | -10 | 80 | 44 | 24 | - | L131V07 | Z130A | - |
| G1 | 24 | O | NBR | 0,35 | 12 | 12 | 12 | 12 | 20 | 12 | -10 | 90 | 12 | 6 | 5,5 | L182B01 | ZB10A | A - G |
| | 24 | O | NBR | 0,35 | 12 | 12 | 12 | 12 | 20 | 12 | -10 | 90 | 12 | 6 | 5,5 | L182B02 | ZB10A | A - C - G |
| | 24 | O | FPM | 0,35 | 10 | 10 | 10 | 10 | 20 | 12 | 0 | 130 | 12 | 6 | 5,5 | L182V01 | ZB10A | A - G |
| | 24 | O | FPM | 0,35 | 10 | 10 | 10 | 10 | 20 | 12 | 0 | 130 | 12 | 6 | 5,5 | L182V02 | ZB10A | A - C - G |
| G 1 1/4 | 30 | O | NBR | 0,5 | 10 | 10 | 10 | 10 | 15 | 15 | -10 | 90 | 23 | 14 | 9 | L180B48 | ZA30A | H |
| | 30 | O | NBR | 0,5 | 10 | 10 | 10 | 10 | 15 | 15 | -10 | 90 | 23 | 14 | 9 | L180B49 | ZA30A | C - H |
| | 30 | O | FPM | 0,5 | 10 | 10 | 10 | 10 | 15 | 15 | 0 | 130 | 23 | 14 | 9 | L180B48 | L180V48 | H |
| | 30 | O | FPM | 0,5 | 10 | 10 | 10 | 10 | 15 | 15 | 0 | 130 | 23 | 14 | 9 | L180B49 | L180V48 | C-H |
| G 1 1/2 | 45 | O | NBR | 0,5 | 10 | 10 | 10 | 10 | 15 | 27 | -10 | 90 | 23 | 14 | 9 | L180B48 | ZA30A | H |
| | 45 | O | NBR | 0,5 | 10 | 10 | 10 | 10 | 15 | 27 | -10 | 90 | 23 | 14 | 9 | L180B49 | ZA30A | C - H |
| | 45 | O | FPM | 0,5 | 10 | 10 | 10 | 10 | 15 | 27 | 0 | 130 | 23 | 14 | 9 | L180V48 | ZA30A | H |
| | 45 | O | FPM | 0,5 | 10 | 10 | 10 | 10 | 15 | 27 | 0 | 130 | 23 | 14 | 9 | L180V49 | ZA30A | C - H |
| G 2 | 45 | O | NBR | 0,5 | 10 | 10 | 10 | 10 | 15 | 34 | -10 | 90 | 23 | 14 | 9 | L180B48 | ZA30A | H |
| | 45 | O | NBR | 0,5 | 10 | 10 | 10 | 10 | 15 | 34 | -10 | 90 | 23 | 14 | 9 | L180B49 | ZA30A | C - H |
| | 45 | O | FPM | 0,5 | 10 | 10 | 10 | 10 | 15 | 34 | 0 | 130 | 23 | 14 | 9 | L180V48 | ZA30A | H |
| | 45 | O | FPM | 0,5 | 10 | 10 | 10 | 10 | 15 | 34 | 0 | 130 | 23 | 14 | 9 | L180V49 | ZA30A | C - H |

PS = max pressure O = brass PP = polypropylene