

Solenoid Valve Type 165



Product description

The pilot-controlled gate Valve Type 165 with servo diaphragm is closed when there is no current. A minimum differential pressure of 0.5 bar is required to fully open and close the valve. Actuator and media chamber are separated by a diaphragm. The solenoid coils are encapsulated with a highly chemically resistant epoxy.

Servo assisted solenoid valves have less power consumption than direct acting solenoid valves in the same dimension.

Function

A solenoid valve is a valve which is actuated by an electromagnet. Their tasks are to shut off, release, dose, distribute or mix gases and fluids. The solenoid valves can switch very fast, and guarantee high reliability and a long lifetime at a low actuator power. Solenoid valves with position measuring can be operated as servo valves.

Applications

- Water treatment
- Process/chemical engineering
- Plant/mechanical engineering
- Semiconductor industry
- Environmental engineering
- Medical engineering
- Apparatus engineering
- Analytical technology

Benefits/features

- Function: A
- PN 0.5 – 6 bar
- Pilot-controlled valve with servo diaphragm
- Separate from media
- No metal internal parts
- Pivoted armature pilot control with lockable emergency manual override
- Simple installation and removal
- Plastic valve for aggressive and contaminated media
- Service-friendly manual operation

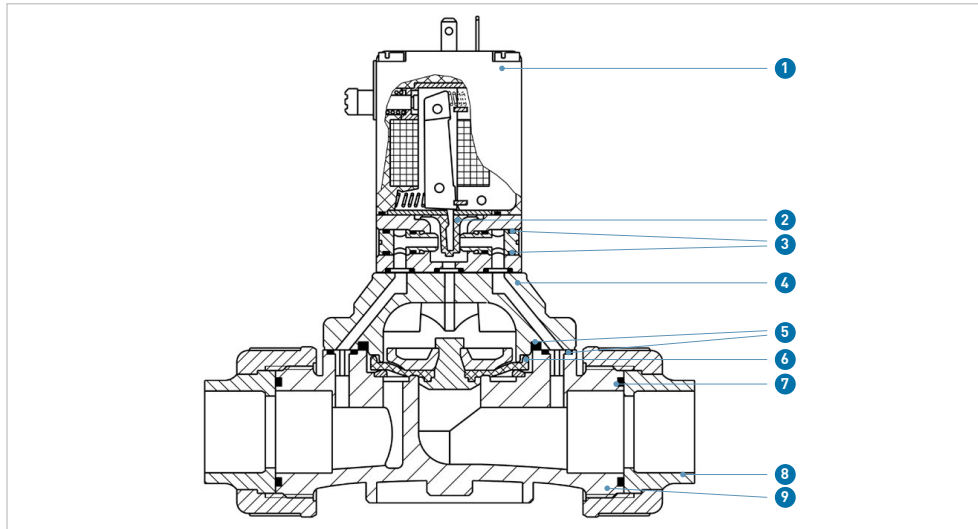
Limitations

- Sensitive to solids
- Δp of 0.5 bar absolutely necessary

Flow media

Clean liquids without solid particles (neutral or aggressive)

Technical data



- ① Reel housing (Epoxy)
- ② Diaphragms (EPDM, FKM)
- ③ O-ring (EPDM, FKM)
- ④ Cover (PVC, PVDF)
- ⑤ O-ring (EPDM, FKM)
- ⑥ Diaphragms (EPDM, FKM)
- ⑦ O-ring (EPDM, FKM)
- ⑧ Insert (sleeve) (PVC, PVDF)
- ⑨ Housing (PVC, PVDF)

| Specification | | |
|---------------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------------|
| Nominal diameter | DN15 – DN50 | |
| Housing material | PVC, PVDF | |
| Gasket material | EPDM, FKM | |
| Media | EPDM | Alkalines, detergent and bleach solutions |
| | FKM | Oxidizing acids and substances |
| Media temperature | PVC housing | 0 to +50 °C |
| | PVDF housing | 0 to +70 °C |
| Ambient temperature | PVC housing | 0 to +40 °C |
| | PVDF housing | 0 to +55 °C |
| Viscosity | 21 mm ² /s | |
| Supply voltage | 24V DC, 230V 50Hz/60Hz, 115V 50Hz/60Hz | |
| Voltage tolerance | ±10% | |
| Nominal mode of operation | Continuous operation 100 % ED | |
| Electrical connection | Cable plug for ø 7 mm cable in accordance with DIN EN 175301-803 form A (included in scope of delivery) | |
| Protection rating | IP65 with appliance plug | |
| Insulation class coil | Class H | |
| Air connection | Sleeve | |
| Mounting position | As desired, preferably with actuator on top | |

Kv 100 values

| Nominal diameter (mm) | Mode of operation | Kv value ¹⁾ (l/min) | Pressure range ²⁾ (bar) | Power consumption Inrush (electrical) | | Power consumption Operation (electrical) | |
|-----------------------|-------------------|--------------------------------|------------------------------------|---------------------------------------|--------|------------------------------------------|--------|
| | | | | AC (VA) | DC (W) | AC (VA/W) | DC (W) |
| 15 | A | 83 | 0.5 - 6 | 20 | 5 | 11/5 | 5 |
| 20 | A | 100 | 0.5 - 6 | 20 | 5 | 11/5 | 5 |
| 25 | A | 233 | 0.5 - 6 | 20 | 5 | 11/5 | 5 |
| 32 | A | 267 | 0.5 - 6 | 20 | 5 | 11/5 | 5 |
| 40 | A | 500 | 0.5 - 6 | 20 | 5 | 11/5 | 5 |
| 50 | A | 600 | 0.5 - 6 | 20 | 5 | 11/5 | 5 |

- ¹⁾ Kv value (l/min) at +20 °C, 1 bar pressure at valve inlet and free outlet
- ²⁾ Pressure data (bar) gauge pressure

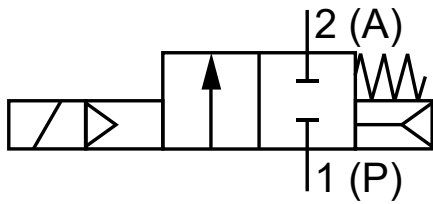
Switching time

| Open | Close |
|-----------|-------------|
| (ms) | (ms) |
| 100 - 800 | 1000 - 4000 |

Switching time (ms): Measurement at valve outlet at 6 bar and +20 °C. Open: Pressure build-up 0% to 90%. Close: Pressure build-up 100% to 10%.

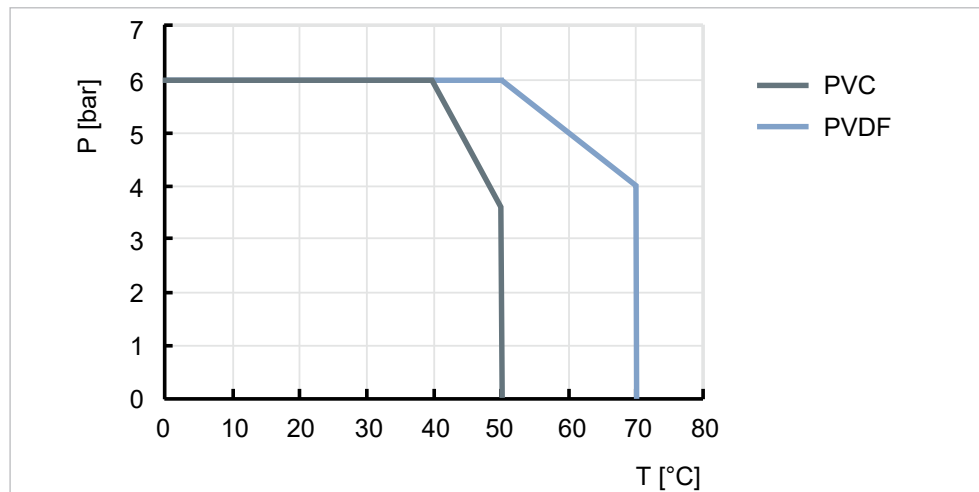
Switching functions

Circuit function A



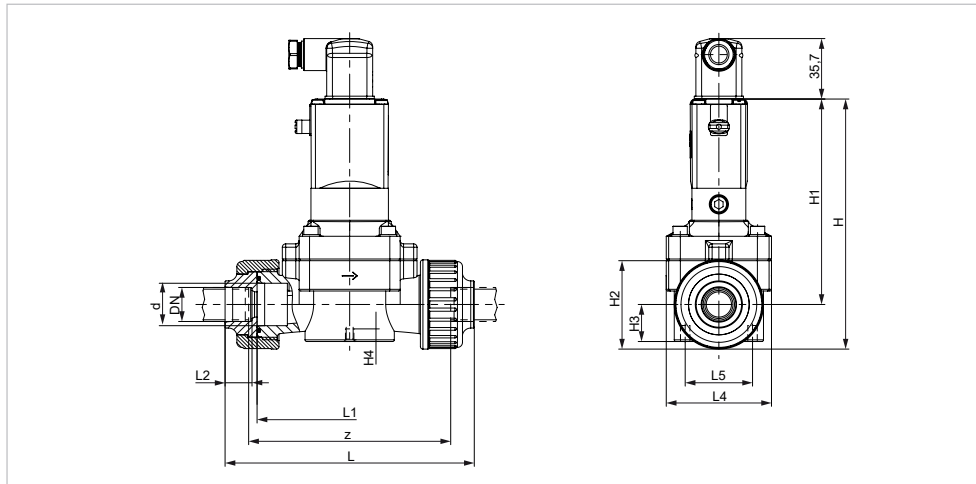
2/2-way valve
(FC, Fail safe to close)

Pressure-temperature diagrams



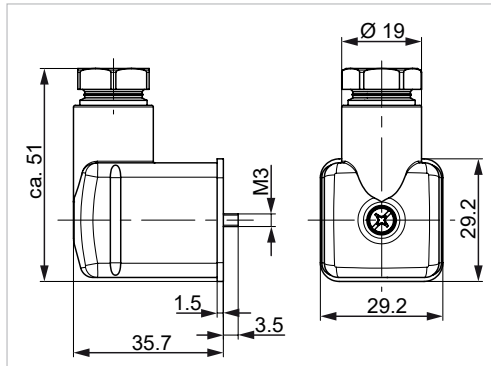
T Temperature (°C, °F)
P Permissible pressure (bar, psi)

Dimensions



| Alle Ausführungen | | | | | | | | | | | PVC housing | | PVDF housing | |
|-------------------|--------|--------|---------|---------|---------|---------|---------|---------|---------|--------|-------------|---------|--------------|---------|
| DN (mm) | d (mm) | H (mm) | H1 (mm) | H2 (mm) | H3 (mm) | H4 (mm) | L1 (mm) | L4 (mm) | L5 (mm) | z (mm) | L (mm) | L2 (mm) | L (mm) | L2 (mm) |
| 15 | 20 | 148 | 122 | 53 | 22 | 8 | 110 | 63 | 40 | 116 | 148 | 16 | 147 | 16 |
| 20 | 25 | 148 | 122 | 53 | 22 | 8 | 110 | 62 | 40 | 116 | 154 | 19 | 151 | 18 |
| 25 | 32 | 175 | 137 | 76 | 31 | 15 | 141 | 85 | 45 | 147 | 190 | 22 | 185 | 20 |
| 32 | 40 | 175 | 137 | 76 | 31 | 15 | 141 | 85 | 45 | 147 | 198 | 26 | 189 | 22 |
| 40 | 50 | 212 | 160 | 105 | 42 | 15 | 192 | 115 | 45 | 198 | 254 | 31 | 245 | 25 |
| 50 | 63 | 212 | 160 | 105 | 42 | 15 | 192 | 115 | 45 | 198 | 268 | 38 | 253 | 29 |

Cable plug dimensions



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