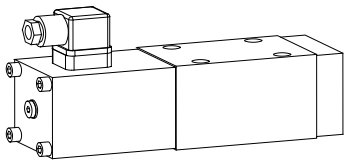
## Solenoid poppet valve

- **2/2-, 3/2- and 3/4-way construction**
- **$Q_{max}$ = 80 l/min**
- **$p_{max}$ = 350 bar**

# NG10

ISO 4401-05



### DESCRIPTION

Poppet valve, flanged design NG10, available as a 2/2 or 3/2-way valve (normally open or closed) and as a 3/4-way valve (normally closed). The central functioning element of all directly controlled poppet valves in the NG10 series is the poppet valve cartridge NG10. See data sheet 1.11-2040. The solenoids correspond to VDE standard 0580.

**Important:** When commissioning, the valve must be vented under pressure (max. 2 revolutions of screw E).

### FUNCTION

The valve is direct operated by a wet pin push type solenoid which in turn either opens or closes the poppet. The design of the poppet spool, which is equal in surface area on both sides and thus pressure balanced, means there are no undue opening and closing hydraulic forces. Due to this the oil flow through the poppet valve is possible in both directions. The valve is tight in both flow directions.

### APPLICATION

Wandfluh poppet valves can be used anywhere absolutely leak tight closing functions are important. Completely sealed loading, gripping and clamping operations are all important functions which Wandfluh poppet valves can perform. Cartridge typ poppet valves can be neatly accommodated in valve blocks. From a mechanical and functional point of view, poppet valves can replace slide valves at any time. NG10 valves are used where a light, compact unit is needed.

### TYPE CODE

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 2/2- or 3/2-way construction | A | ☐ | ☐ | 2 | 10 | ☐ | - | ☐ | # | ☐ |
| 3/4-way construction | A | ☐ | 3 | 4 | 10 | | - | ☐ | # | ☐ |

International mounting interface ISO

| | | | | |
|---|---|---|---|---|
| Medium-solenoid | M | | | |
| Super-solenoid | S | | | |
| 2-way (connections) | 2 | | | |
| 3-way (connections) | 3 | | | |
| 2 position | | | | |
| 4 position | | | | |
| Nominal size 10 | | | | |
| Normally closed | solenoid on A-side | | | 1a |
| Normally open | solenoid on B-side | | | 0b |
| Nominal voltage $U_N$ | 12 VDC | G12 | 110 VAC | R110 |
| | 24 VDC | G24 | 115 VAC | R115 |
| | | | 230 VAC | R230 |

Design-Index (Subject to change)

### GENERAL SPECIFICATIONS

| | |
|---|---|
| Description | 2/2-, 3/2- and 3/4-way poppet valve |
| Nominal size | NG10 acc. to ISO 4401-05 |
| Construction | Direct operated poppet valve |
| Operations | Solenoid |
| Mounting | Flange, 4 holes for socket cap screws M6 x 65 |
| Connections | Threaded connection plates<br>Multi-flange subplates<br>Longitudinal stacking system |
| Ambient temperature | -20…+50 °C |
| Mounting position | any, preferable horizontal |
| Fastening torque | $M_D$ = 9,5 Nm (quality 8.8) |
| Weight 2/2-, 3/2-way | m = 4,6 kg |
| 3/4-way | m = 6,4 kg |
| Volume flow direction | any (see characteristics) |

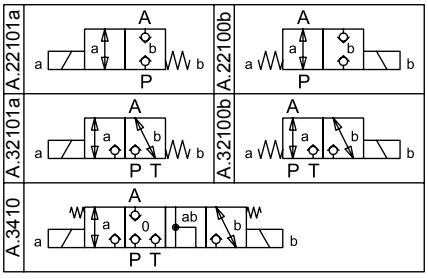
### ELECTRICAL CONTROL

| | |
|---|---|
| Construction | Solenoid, wet pin push type, pressure tight |
| Standard-nominal voltage | $U_N$ = 12 VDC, 24 VDC<br>$U_N$ = 110 VAC∗, 115 VAC∗, 230 VAC∗<br>AC = 50 to 60 Hz<br>∗ Rectifier integrated in the plug<br>Other nominal voltages and nominal performances on request |
| Voltage tolerance | ±10% of nominal voltage |
| Protection class | IP 65 to EN 60529 |
| Relative duty factor | 100% FD (see data sheet 1.1-430) |
| Switching cycles | 15000/h |
| Operating life | $10^7$ (number of switching cycles, theoretically) |
| Connection / Power supply | Over device plug connection to ISO 4400 / DIN 43 650, (2P+E), other connections on request |
| Solenoid: | – Medium SIN60V (dataasheet 1.1-145)<br>– Super SIS60V (data sheet 1.1-150) |

### HYDRAULIC SPECIFICATIONS

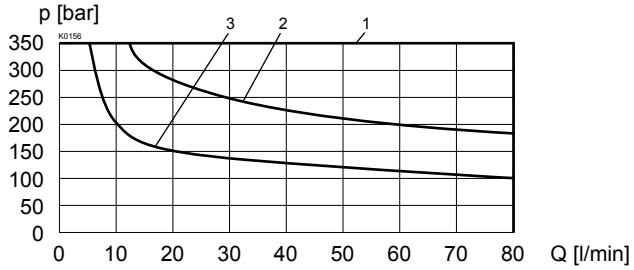
| | |
|---|---|
| Fluid | Mineral oil, other fluid on request |
| Contamination efficiency | ISO 4406:1999, class 20/18/14 (Required filtration grade ß10…16≥75) refer to data sheet 1.0-50/2 |
| Viscosity range | 12 mm²/s…320 mm²/s |
| Fluid temperature | -20…+70 °C |
| Working pressure | Medium: $p_{max}$ = 160 bar<br>Super: $p_{max}$ = 350 bar |
| Max. volume flow | $Q_{max.}$ = 80 l/min see characteristics |

### SYMBOLS



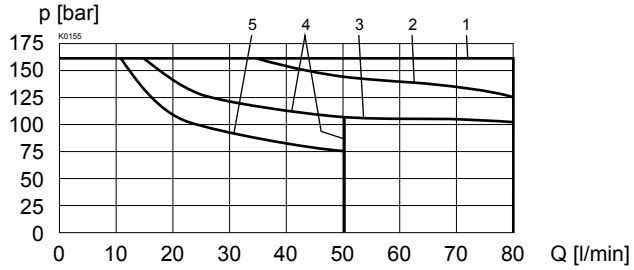
**CHARACTERISTICS** Oil viscosity $\upsilon$ = 30 mm²/s

p = f (Q) Performance limit
with standard voltage -10%
Super



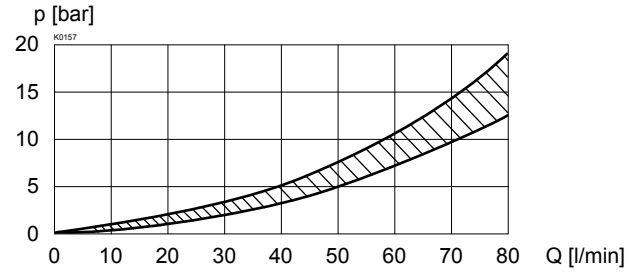

| Type | Flow direction | | | |
|---|---|---|---|---|
| | P - A | A - T | A - P | T - A |
| AS22101a | 1 | - | 2 | - |
| AS22100b | 1 | - | 2 | - |
| AS32101a | 1 | 2 | 3 | 1 |
| AS32100b | 1 | 2 | 3 | 1 |
| AS3410 | 1 | 1 | 2 | 2 |

p = f (Q) Performance limit
with standard voltage -10%
Medium



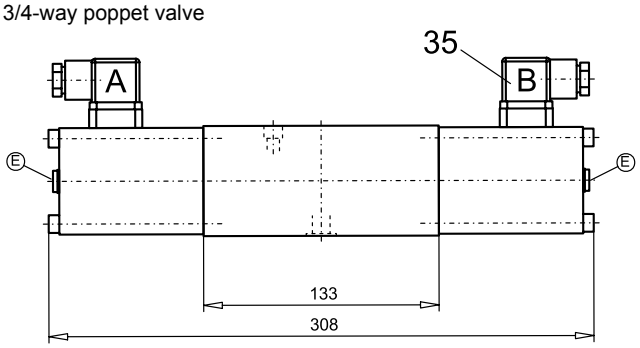

| Type | Flow direction | | | |
|---|---|---|---|---|
| | P - A | A - T | A - P | T - A |
| AM22101a | 1 | - | 4 | - |
| AM22100b | 1 | - | 2 | - |
| AM32101a | 1 | 3 | 5 | 1 |
| AM32100b | 1 | 3 | 3 | 1 |
| AM3410 | 1 | 1 | 4 | 4 |

$\Delta$p = f (Q) Pressure loss/flow characteristics

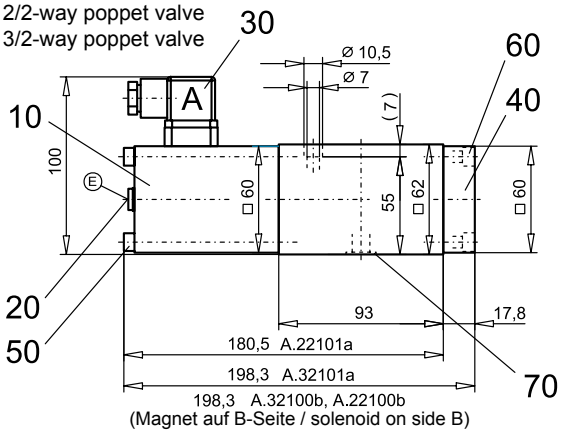



**DIMENSIONS**

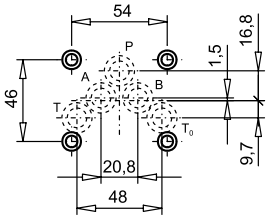
3/4-way poppet valve




2/2-way poppet valve
3/2-way poppet valve




E = air bleed screw




**PARTS LIST**

| Position | Article | Description |
|---|---|---|
| 10 | 260.8…<br>260.9… | Medium-solenoid SIN60V<br>Super-solenoid SIS60V |
| 20 | 239.2033 | Plug<br>(incl. seal) HB0 |
| 30 | 219.2001 | Plug A (grey) |
| 35 | 219.2002 | Plug B (black) |
| 40 | 059.2200 | Cover |
| 50 | 246.3190 | Socket head cap screw M6 x 90 DIN 912 |
| 60 | 246.3121 | Socket head cap screw M6 x 20 DIN 912 |
| 70 | 160.2140 | O-ring ID 14,00 x 1,78 |

**ACCESSORIES**

Threaded connection plates, Multi-flange subplates and
Longitudinal stacking system see Register 2.9

Technical explanation see data sheet 1.0-100