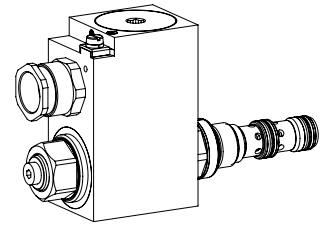


Solenoid operated poppet valve cartridge

- ◆ solenoid actuated
- ◆ direct operated
- ◆ 3/2-way
- ◆ $Q_{max} = 10 \text{ l/min}$
- ◆ $p_{max} = 350 \text{ bar}$
- ◆ low power

M22 x 1,5
ISO 7789

- ⊕ II 2 G Ex db IIC T6, T4
 - ⊕ II 2 D Ex tb III C T80 °C, T130 °C
 - ⊕ I M2 Ex db I Mb
- Class I Division 1
-
- Class I Zone 1



DESCRIPTION

Direct operated 3/2-way solenoid poppet valve in screw-in cartridge construction for cavity according to ISO 7789. By means of the pressure tight switching solenoid, the pressure compensated, metallically sealing poppet spool is either opened or closed. The seat spool guide is sealed by means of an O-ring. The pressure tight encapsulated Ex-protection solenoid coil prevents an explosion on the inside penetrating to the outside as well as an ignitable surface temperature.

CERTIFICATES

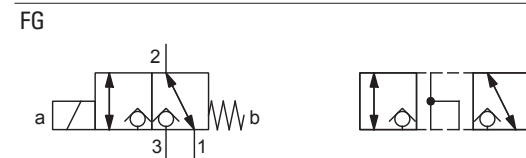
| | Surface | Mining | Standard -25°C to... |
|-----------|---------|--------|-------------------------|
| ATEX | x | x | x |
| IECEX | x | x | x |
| EAC | x | x | x |
| Australia | x | x | x |

The certificates can be found on www.wandfluh.com

APPLICATION

These valves are suitable for applications in explosion-hazard areas, open cast and also in mines. Poppet valves are used where tight closing functions of the valve are essential like leakage-free load holding, clamping or gripping. For machining the cartridge cavity in steel and aluminum blocks, cavity tools are available (hire or purchase). Please refer to the data sheets in register 2.13.

SYMBOL



TYPE CODE

| | | S L Y PM22 - FG - <input type="text"/> / <input type="text"/> <input type="text"/> - <input type="text"/> # <input type="text"/> | |
|----------------------------------|-------------------------------|--|-------------------|
| Poppet valve | | | |
| Direct operated, Low wattage | | | |
| Ex-protection execution, Exd | | | |
| Screw-in cartridge M22 x 1,5 | | | |
| Designation of symbols | | | |
| Nominal voltage U_N | 24 VDC | <input type="text" value="G24"/> | |
| Nominal power P_N | 6 W 6 W | <input type="text" value="L6R4"/> <input type="text" value="L6"/> | Holding power 4 W |
| Certification | ATEX, IECEX, EAC Australia | <input type="text"/> <input type="text" value="AU"/> | |
| Sealing material | NBR FKM (Viton) | <input type="text"/> <input type="text" value="D1"/> | |
| Design index (subject to change) | | | |

1.11-2066

GENERAL SPECIFICATIONS

| | |
|---------------------|--|
| Designation | 3/2-way poppet valve |
| Construction | Direct operated |
| Mounting | Screw-in cartridge construction |
| Nominal size | M22 x 1,5 according to ISO 7789 |
| Actuation | Ex-protection switching solenoid |
| Ambient temperature | Execution L6, L6R4 -25...+70 °C (T4) |
| Weight | 2,30 kg (3/2-way) |
| MTTFd | 150 years |

HYDRAULIC SPECIFICATIONS

| | |
|--------------------------|--|
| Working pressure | $p_{max} = 350$ bar |
| Maximum volume flow | $Q_{max} = 10$ l/min, see characteristics |
| Nominal volume flow | $Q_N = 10$ l/min |
| Leakage oil | Seat tight, max. 0,15 ml / min (approx. 3 drops / min) at 30 cSt |
| Fluid | Mineral oil, other fluid on request |
| Viscosity range | 12 mm ² /s...320 mm ² /s |
| Temperature range fluid | NBR -25...+70 °C FKM (D1) -20...+70 °C |
| Contamination efficiency | Class 20 / 18 / 14 |
| Filtration | Required filtration grade $\beta_{6...10} \geq 75$, see data sheet 1.0-50 |

ELECTRICAL SPECIFICATIONS

| | |
|--------------------------|--|
| Protection class | IP65 / 66 / 67 |
| Relative duty factor | 100 % DF |
| Switching frequency | 5'000 / h |
| Voltage tolerance | ± 10 % with regard to nominal voltage |
| Standard nominal voltage | 24 VDC |
| Standard nominal power | 6 W 6 W with 4 W holding power (electronic power reduction) |
| Temperature class | Nominal power 6 W: T1...T4 |

Note! Other electrical specifications see data sheet 1.1-183



ACTUATION

| | |
|------------|---|
| Actuation | Switching solenoid, wet pin push type, pressure tight |
| Execution | MKY45 / 18x60 (Data sheet 1.1-183) |
| Connection | Cable gland for cable $\varnothing 6,5...14$ mm |

SEALING MATERIAL

NBR or FKM (Viton) as standard, choice in the type code

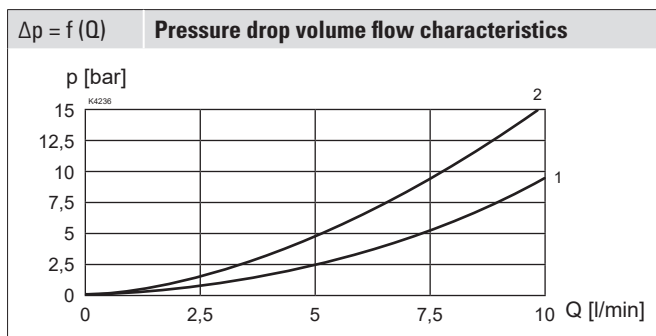
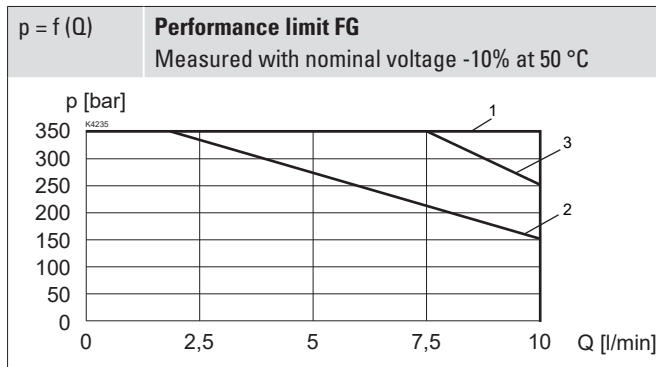
SURFACE TREATMENT

- ◆ The cartridge body, the slip-on coil and the armature tube are zinc-nickel coated

STANDARDS

| | |
|--------------------------|---------------------------------|
| Cartridge cavity | ISO 7789 |
| Explosion protection | Directive 2014 / 34 / EU (ATEX) |
| Flameproof enclosure | EN / IEC / UL 60079-1, 31 |
| Cable entry | EN 60079-0, 1, 7, 15, 31 |
| Protection class | EN 60 529 |
| Contamination efficiency | ISO 4406 |

PERFORMANCE SPECIFICATIONS

 Oil viscosity $\nu = 30 \text{ mm}^2/\text{s}$


| | 1 → 2 | 2 → 1 | 2 → 3 | 3 → 2 |
|------------|-------|-------|-------|-------|
| SLYPM22-FG | 3 | 1 | 1 | 2 |

| | 1 → 2 | 2 → 1 | 2 → 3 | 3 → 2 |
|------------|-------|-------|-------|-------|
| SLYPM22-FG | 1 | 1 | 2 | 2 |

MANUAL OVERRIDE

Screw plug (HB0), no actuation possible.

Optionally HN (K) or HR (K)

→ See data sheet 1.1-311

ACCESSORIES

| | |
|------------------------|--------------------|
| Threaded body | Data sheet 2.9-2xx |
| Technical explanations | Data sheet 1.0-100 |
| Filtration | Data sheet 1.0-50 |
| Relative duty factor | Data sheet 1.1-430 |

COMMISSIONING
Attention! When commissioning, the valve must be vented under pressure (max. two rotations of screw E).


The solenoid coil must only be put into operation, if the requirements of the operating instructions supplied are observed to their full extent. In case of non-observance, no liability is assumed.

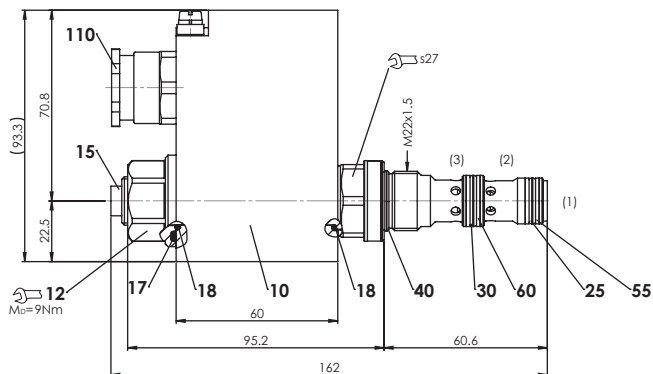
INSTALLATION NOTES

| | |
|-------------------|--|
| Mounting type | Screw-in cartridge M22 x 1,5 |
| Mounting position | Any, preferably horizontal |
| Tightening torque | $M_D = 60 \text{ Nm}$ Screw-in cartridge $M_D = 9 \text{ Nm}$ knurled nut $M_D = 9,5 \text{ Nm}$ HB0 $M_D = 5,5 \text{ Nm}$ HB4,5 |

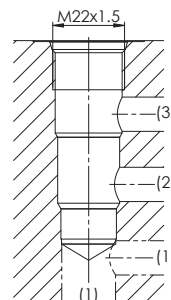
Attention! For stack assembly please observe the remarks in the operating instructions


DIMENSIONS

SLYPM22-FG


HYDRAULIC CONNECTION

Cavity drawing according to ISO 7789-22-04-0-98


Note!


For detailed cavity drawing and cavity tools see data sheet 2.13-1004

PARTS LIST

| Position | Article | Description |
|----------|----------|--------------------------------|
| 10 | 263.6... | Solenoid coil MK.45 / 18 x 60 |
| 12 | 154.2603 | Knurled nut Ex M18 x 1,5 x 18 |
| 15 | 239.2033 | Screw plug HB0 (incl. seal) |
| 17 | 160.2251 | O-ring ID 25,07 x 2,62 (NBR) |
| 18 | 160.2170 | O-ring ID 17,17 x 1,78 (NBR) |
| 25 | 160.2140 | O-ring ID 14,00 x 1,78 (NBR) |
| | 160.6141 | O-ring ID 14,00 x 1,78 (FKM) |
| 30 | 160.2156 | O-ring ID 15,60 x 1,78 (NBR) |
| | 160.6156 | O-ring ID 15,60 x 1,78 (FKM) |
| 40 | 160.2188 | O-ring ID 18,77 x 1,78 (NBR) |
| | 160.6188 | O-ring ID 18,77 x 1,78 (FKM) |
| 55 | 049.3176 | Backup ring rd 14,1 x 17 x 1,4 |
| 60 | 049.3196 | Backup ring rd 16,1 x 19 x 1,4 |
| 110 | 111.1080 | Cable gland M20 x 1,5 |