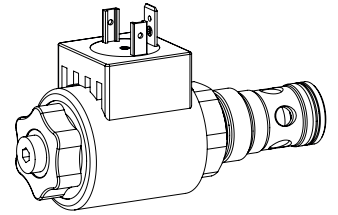


Solenoid operated poppet valve cartridge

- ◆ solenoid operated
- ◆ pilot operated
- ◆ normally open and normally closed
- ◆ 2/2-way
- ◆ $Q_{max} = 80 \text{ l/min}$
- ◆ $p_{max} = 350 \text{ bar}$

M22 x 1,5
ISO 7789



DESCRIPTION

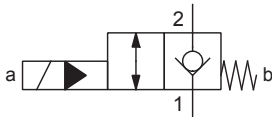
Pilot operated 2/2-way solenoid poppet valve in screw-in cartridge construction for cavity according to ISO 7789. The CB execution is closed in the energised position, the BC execution in the de-energised position. In this, the main spool closes practically leakage-free by means of the applied pressure. In the opposite flow direction, the valve opens after reaching the opening pressure.

APPLICATION

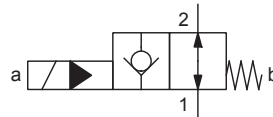
Wandfluh solenoid operated poppet valve cartridges are used where tight closing functions are essential like leakage-free load holding, clamping or gripping. For machining the cartridge cavity in steel and aluminum blocks, cavity tools are available (hire or purchase). Please refer to the data sheets in register 2.13.

SYMBOL

„Normally closed“ BC



„Normally open“ CB



TYPE CODE

	S V S PM22 - <input type="text"/> - <input type="text"/> / <input type="text"/> <input type="text"/> - <input type="text"/> # <input type="text"/>												
Poppet valve													
Pilot operated													
Solenoid, Super													
Screw-in cartridge M22 x 1,5													
2/2 way, «normally closed»	<input type="text" value="BC"/>												
2/2 way, «normally open»	<input type="text" value="CB"/>												
Nominal voltage U_N	<table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">12 VDC</td> <td style="width: 30%;"><input type="text" value="G12"/></td> <td style="width: 30%;">115 VAC</td> <td style="width: 10%;"><input type="text" value="R115"/></td> </tr> <tr> <td>24 VDC</td> <td><input type="text" value="G24"/></td> <td>230 VAC</td> <td><input type="text" value="R230"/></td> </tr> <tr> <td>without coil</td> <td><input type="text" value="X5"/></td> <td></td> <td></td> </tr> </table>	12 VDC	<input type="text" value="G12"/>	115 VAC	<input type="text" value="R115"/>	24 VDC	<input type="text" value="G24"/>	230 VAC	<input type="text" value="R230"/>	without coil	<input type="text" value="X5"/>		
12 VDC	<input type="text" value="G12"/>	115 VAC	<input type="text" value="R115"/>										
24 VDC	<input type="text" value="G24"/>	230 VAC	<input type="text" value="R230"/>										
without coil	<input type="text" value="X5"/>												
Slip-on coil	<table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">Metal housing, round</td> <td style="width: 30%;"><input type="text" value="W"/></td> <td style="width: 30%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td>Metal housing, square</td> <td><input type="text" value="M"/></td> <td></td> <td></td> </tr> </table>	Metal housing, round	<input type="text" value="W"/>			Metal housing, square	<input type="text" value="M"/>						
Metal housing, round	<input type="text" value="W"/>												
Metal housing, square	<input type="text" value="M"/>												
Connection execution	<table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">Connector socket EN 175301-803 / ISO 4400</td> <td style="width: 30%;"><input type="text" value="D"/></td> <td style="width: 30%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td>Connector socket AMP Junior-Timer</td> <td><input type="text" value="J"/></td> <td></td> <td></td> </tr> <tr> <td>Connector Deutsch DT04-2P</td> <td><input type="text" value="G"/></td> <td></td> <td></td> </tr> </table>	Connector socket EN 175301-803 / ISO 4400	<input type="text" value="D"/>			Connector socket AMP Junior-Timer	<input type="text" value="J"/>			Connector Deutsch DT04-2P	<input type="text" value="G"/>		
Connector socket EN 175301-803 / ISO 4400	<input type="text" value="D"/>												
Connector socket AMP Junior-Timer	<input type="text" value="J"/>												
Connector Deutsch DT04-2P	<input type="text" value="G"/>												
Sealing material	<table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">NBR</td> <td style="width: 30%;"><input type="text"/></td> <td style="width: 30%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td>FKM (Viton)</td> <td><input type="text" value="D1"/></td> <td></td> <td></td> </tr> </table>	NBR	<input type="text"/>			FKM (Viton)	<input type="text" value="D1"/>						
NBR	<input type="text"/>												
FKM (Viton)	<input type="text" value="D1"/>												
Design index (subject to change)													

1.11-2082

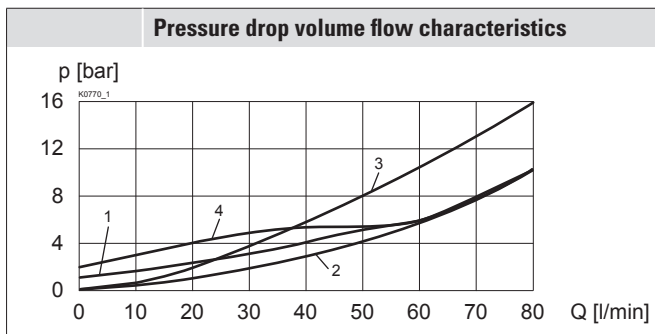
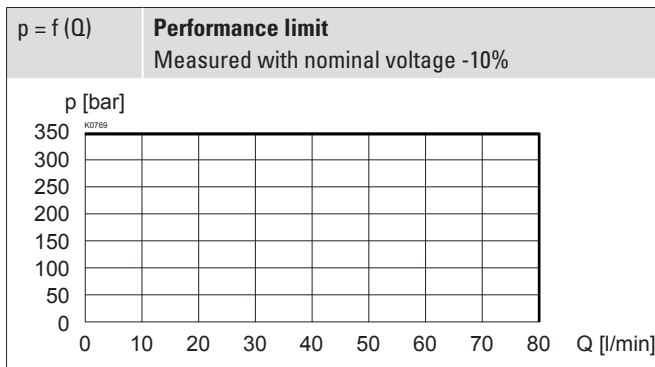
GENERAL SPECIFICATIONS

Designation	2/2-way poppet valve
Construction	Pilot operated
Mounting	Screw-in cartridge construction
Nominal size	M22 x 1,5 according to ISO 7789
Actuation	Switching solenoid
Ambient temperature	-25...+70 °C
Weight	0,45 kg
MTTFd	150 years

HYDRAULIC SPECIFICATIONS

Working pressure	$p_{max} = 350 \text{ bar}$
Maximum volume flow	$Q_{max} = 80 \text{ l/min}$, see characteristics
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	-25...+70 °C (NBR) -20...+70 °C (FKM)
Contamination efficiency	Class 20 / 18 / 14
Filtration	Required filtration grade $\beta_{10...16} \geq 75$, see data sheet 1.0-50

PERFORMANCE SPECIFICATIONS

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


ACTUATION

Actuation	Switching solenoid, wet pin push + pull type, pressure tight
Execution	W.E37 / 16 x 40 (Data sheet 1.1-169) M.E35 / 16 x 40 (Data sheet 1.1-171)
Connection	Connector socket EN 175301 – 803 Connector socket AMP Junior-Timer Connector Deutsch DT04 – 2P

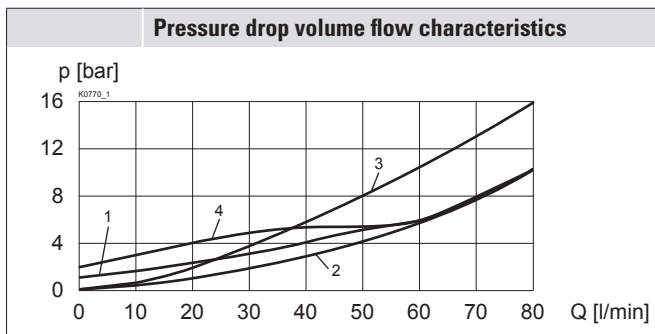
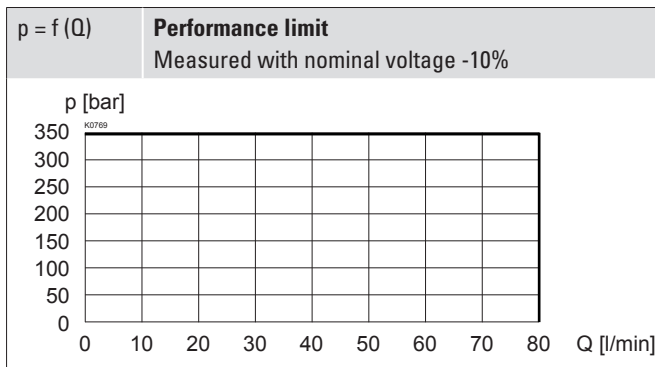
ELECTRICAL SPECIFICATIONS

Protection class	Connection execution D: IP65 Connection execution J: IP66 Connection execution G: IP67 and IP69K
Relative duty factor	100 % DF, W.E37 only up to 50 °C
Service life time	10 ⁷ (number of switching cycles, theoretically)
Voltage tolerance	$\pm 10 \%$ with regard to nominal voltage
Standard nominal voltage	12 VDC, 24VDC, 115 VAC, 230 VAC AC = 50 to 60 Hz, rectifier integrated in the connector socket

Note! Other electrical specifications see data sheet 1.1-169 (slip-on coil W) and 1.1-171 (slip-on coil M)



PERFORMANCE SPECIFICATIONS

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


Switching times

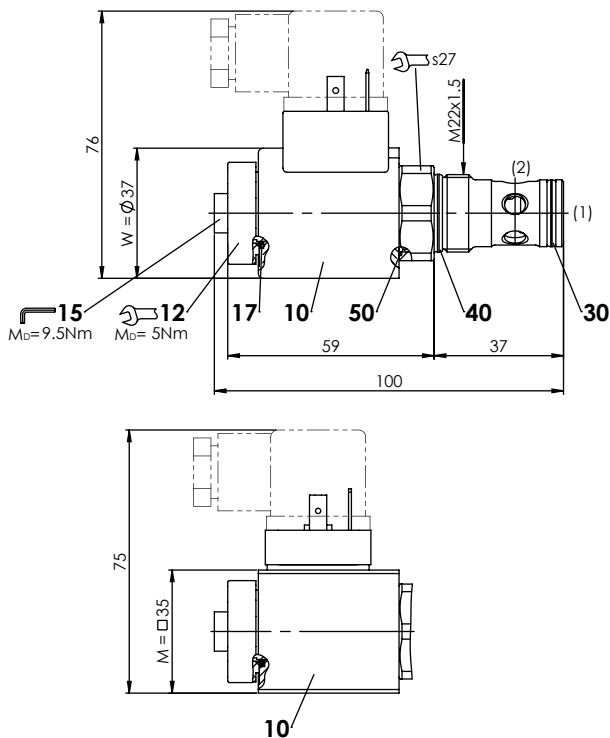
	Type	Flow direction	Switch on	Switch off
SVSPM22	BC	2 → 1	approx. 30 ms	approx. 150 ms
	CB	2 → 1	approx. 45 ms	approx. 85 ms

Note! The switching times depend on the volume flow, pressure and viscosity. In case of very large volume flows, the switching time for closing can get considerably longer.



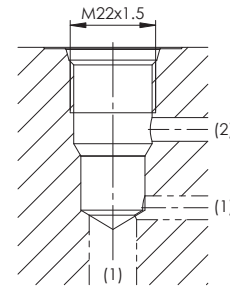
	BC	CB
de-energised 1 → 2	1	2
de-energised 2 → 1	-	3
energised 1 → 2	2	4
energised 2 → 1	3	-

DIMENSIONS



HYDRAULIC CONNECTION

Cavity drawing according to ISO 7789-22-01-0-98



Note!



For detailed cavity drawing and cavity tools see data sheet 2.13-1008

SEALING MATERIAL

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

MANUAL OVERRIDE

Optionally HN or HR (pushing) resp. HZ (pulling)

→ See data sheet 1.1-311

PARTS LIST

Position	Article	Description
10	206.2...	W.E37 / 16 x 40
	260.4...	M.E35 / 16 x 40
12	154.2600	Knurled nut M16 x 1 x 9
15	239.2033	Screw plug HB0 (incl. seal)
17	160.2156	O-ring ID 15,60 x 1,78 (NBR)
30	160.0157	O-ring ID 15,60 x 1,78 (polyurethan)
40	160.2188	O-Ring ID 18,77 x 1,78 (NBR)
	160.8188	O-Ring ID 18,77 x 1,78 (FKM)
50	160.1220	O-Ring ID 22,00 x 1,00 (NBR)

SURFACE TREATMENT

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

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

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 $M_D = 5 \text{ Nm}$ knurled nut

STANDARDS

Mounting interface	ISO 7789
Solenoids	DIN VDE 0580
Connection execution D	EN 175301 – 803
Protection class	EN 60 529
Contamination efficiency	ISO 4406