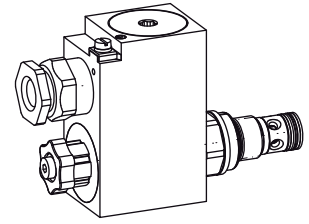


**Poppet valve cartridges**  
**2/2-way versions**

- Pilot operated
- $Q_{max} = 80$  l/min
- $p_{max} = 350$  bar

**M22x1,5**  
 ISO 7789


**II 2 G Ex d II C**  
**II 2D Ex tD A21 IP65**

**DESCRIPTION**

Pilot operated 2/2-way solenoid poppet valve in screw-in cartridge design with thread M22 x1,5 for cavity acc. to ISO 7789.

Activated with Wandfluh explosion proof solenoid.

The solenoid spool is zinc-/nickel-coated. Solenoid coil in accordance with directive 94/9/EG (ATEX) for explosion-hazard zones.

**Ex:** In accordance with European standards EN 60079-0, EN 60079-1 (gas) EN 61241-0, EN 61241-1 (dust)

**d:** Pressure-proof encapsulation

**tD:** Protection by the housing

**Device group II:** For all explosion-hazard zones, except for underground workings

**Gas group IIC:** Gas groups IIA + IIB included

**Device category 2G:** For zones 1 and 2 (gas)

**Device category 2D:** For zones 21 and 22 (dust)

**Zones:** 1/21 and 2/22

**EC-type test certification:**

PTB 07 ATEX 1023

**FUNCTION**

For the function «normally closed» with de-energised pull-type solenoid, and «normally open» with energised push-type solenoid, the differential area poppet piston is held in closed position by a spring and seals leak free from port 2 to 1. If pull-type solenoid is energised respectively push-type solenoid deenergised, the poppet piston will open flow passage from 2 to 1 after having reached the opening pressure. In the «normally closed» valve with deenergised solenoid respectively the «normally open» valve with energised solenoid flow passage from 1 to 2 is open when the opening pressure has been reached.

**APPLICATION**

Wandfluh solenoid operated poppet valves are applied where an absolutely leak free closing of the valve is essential like in load holding-, clamping- or gripping functions. These valves are suitable for hazardous areas in off-shore and shipbuilding applications as well as in the chemical-, oil- and gas industry. The screw-in cartridges are mainly used in mobile or stationary integrated blocks and in size NG4-Mini and NG6 flange and sandwich bodies. To machine the cavities in steel or aluminium blocks, cavity tools may be supplied (hire or purchase). Please refer to the data sheets in register 2.13.

**INSTALLATION**

Tightening torque of the coil fixing nut MD = 15Nm. For stack assembly please observe the remarks in the operating instructions.

**DESIGNATION**

Execution L15:

II 2 G Ex d IIC T4 Ta=-25..70°C

II 2 D Ex tD A21 IP65 T130°C

Execution L9:

II 2 G Ex d IIC T6 Ta=-25..40°C

II 2 D Ex tD A21 IP65 T80°C

II 2 G Ex d IIC T4 Ta=-25..90°C

II 2 D Ex tD A21 IP65 T130°C

**TYPE CODE**

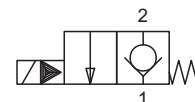
		S	V	Y	PM22	-		-		-		#	
Poppet valve													
Pilot operated													
Explosion proof solenoid EEx d													
Screw-in cartridge M22x1,5													
2/2-way, «normally closed»						DC							
2/2-way, «normally open»						CD							
Standard-nominal voltage $U_N$ :	12 VDC					G12							
	24 VDC					G24							
	115 VAC					R115							
	230 VAC					R230							
Nominal power $P_N$ :	15 W					L15							
	9 W					L9							
												Ambient temp by: 70°C 40°C or 90°C (only for CD)	
Design-Index (Subject to change)													

**GENERAL SPECIFICATIONS**

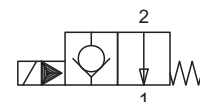
Description	Pilot operated 2/2-way solenoid poppet valve
Construction	Screw-in cartridge for cavity acc. to ISO 7789
Operation	Solenoid
Mounting	Screw-in thread M22x1,5
Admissible ambient temperature	Execution L15: -20...+70°C (operation as T1...T4/T130°C) Execution L9: -20...+40°C (operation as T1...T6/T80°C) -20...+90°C (operation as T1...T4/T130°C) In case of $U_N < 20V$ , the max. ambient temperature has to be reduced by 10°C.
Mounting position	any, preverable horizontal
Fastening torque	$M_D = 50$ Nm for cartridge $M_{D,max} = 5$ Nm for coil retaining nut
Weight	$m = 2,25$ kg
Volume flow	see symbols

**HYDRAULIC SPECIFICATIONS**

Fluid	Mineral oil, other fluid on request
Contamination efficiency	ISO 4406:1999, classe 18/16/13 (Required filtration grade $\beta_{6...10} \geq 75$ ) see data sheet 1.0-50/2
Viscosity range	12 mm <sup>2</sup> /s bis 320 mm <sup>2</sup> /s
Admissible fluid temperature	Execution L15: -20...+70°C (operation as T1...T4/T130°C) Execution L9: -20...+40°C (operation as T1...T6/T80°C) -20...+70°C (operation as T1...T4/T130°C)
Working pressure	$p_{max} = 350$ bar
Nominal flow	$Q_N = 60$ l/min
Max. volume flow	$Q_{max} = 80$ l/min
Pressure drop	see characteristics
Opening pressure	1,4 bar

**SYMBOLS**


SVYPM22-DC...



SVYPM22-CD...

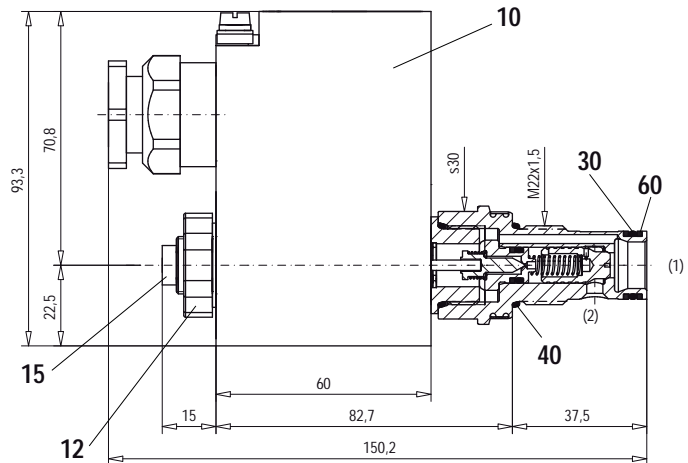
**ELECTRICAL CONTROL**

Construction	Switching solenoid, wet pin pull- or push type, pressure tight
Standard-nominal voltage	$U_N = 12 \text{ VDC}$ , $U_N = 24 \text{ VDC}$ $U_N = 115 \text{ VAC}$ , $U_N = 230 \text{ VAC}$ DC wired with VDR AC = 50 to 60 Hz $\pm 2\%$ ; with integrated two way rectifier and recovery diode
Voltage tolerance	$\pm 10\%$ of nominal voltage
Protection class	IP 65 acc. to EN 60 529
Relative duty cycle	100% DF
Switching cycles	5 000/h
Operating life	$10^7$ (number of switching cycles, theoretically)
Connection/Power supply	Through cable entry for cable diameter $\varnothing 11 \dots 14 \text{ mm}$
Temperature class	acc. to EN 60079-0
Execution L15:	T1...T4
Execution L9:	T1...T6
Nominal power	
Execution L15:	15W
Execution L9:	9W

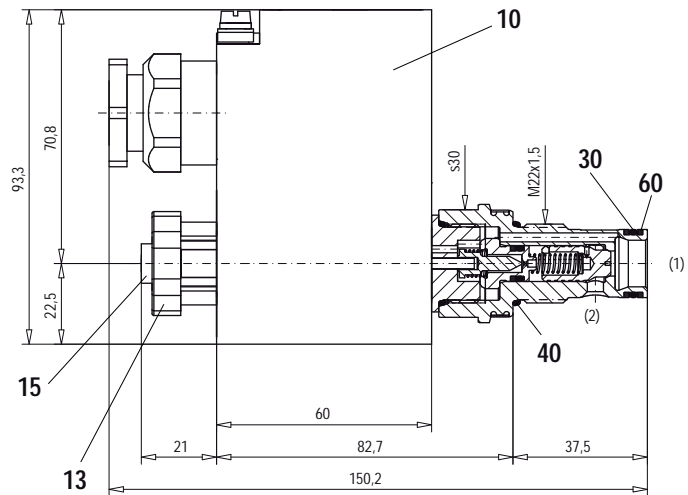
For further electrical characteristics, refer to the data sheet of the solenoid coil: 1.1-183

**DIMENSIONS / SECTIONAL DRAWING**

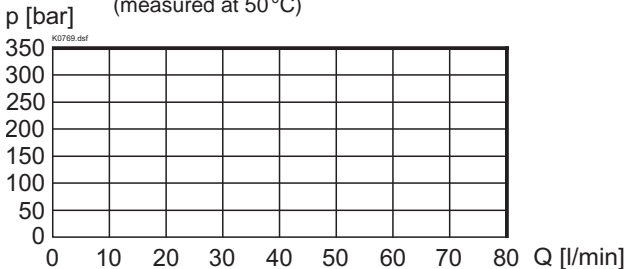
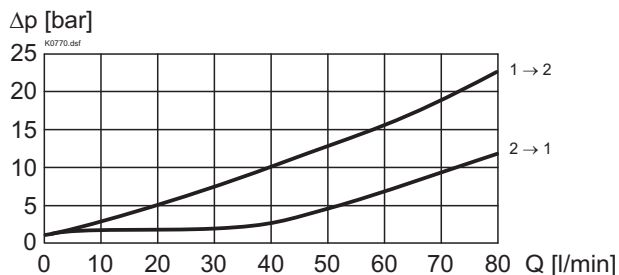
2/2-way version, «normally closed» [DC]



2/2-way version, «normally open» [CD]


**START-UP**

Information concerning the installation and commissioning is contained in the operating instructions supplied together with the solenoid coil.

**CHARACTERISTICS** Oil viscosity  $\nu = 30 \text{ mm}^2/\text{s}$ 
 $p = f(Q)$  Performance limits with standard voltage  $-10\%$  (measured at  $50^\circ\text{C}$ )

 $\Delta p = f(Q)$  Pressure drop volume flow characteristics

**PARTS LIST**

Position	Article	Description
10	263.6...	Coil type MKY 45/18 x 60...
12	154.2600	Knurled nut M16x1x9
13	154.2601	Knurled nut M16x1x18
15	239.2033	Plug HB0 (incl. seal)
30	160.2156	O-ring ID 15,60x1,78
40	160.2188	O-ring ID 18,77x1,78
60	049.3196	Back-up ring RD 16,1x19x1,4

**ACCESSORIES**

Cartridge built-in in flange- or sandwich body:

 Flange valve register 1.11  
 Sandwich valve register 1.11

Cavity drawing ISO 7789-22-01-0-98 and cavity tools see data sheet 2.13-1008

Technical explanation see data sheet 1.0-100