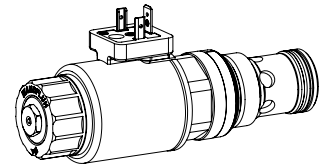


Proportional 2-way flow control cartridge

- ◆ direct operated
- ◆ $Q_{max} = 80$ l/min
- ◆ $Q_{Nmax} = 80$ l/min
- ◆ $p_{max} = 350$ bar

1 5/16" -12 UN

DESCRIPTION

Direct operated, load compensated proportional flow control valve as screw-in cartridge for UNF cavity. With the solenoid deenergised, the control spool is held in the closed position by a spring. The change of the electric current is followed by a proportional volume flow change. From the input (1), the fluid flows over the control and throttling spool to the controlled output (2). For the control, Wandfluh proportional amplifiers are available (see register 1.13).

APPLICATION

Proportional flow control valves are suitable for precise speed control, where the load current has to be maintained constant independent of the input and output pressure. 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.

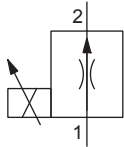
TYPE CODE

		Q		N		P		PU16		-		/		-		HB4,5		#		
Flow control valve																				
Normally closed																				
Proportional																				
Screw-in cartridge 1 5/16" - 12 UN																				
Nominal volume flow rate Q_N	32 l/min	<input type="text" value="32"/>		80 l/min	<input type="text" value="80"/>															
	63 l/min	<input type="text" value="63"/>																		
Nominal voltage U_N	12 VDC	<input type="text" value="G12"/>																		
	24 VDC	<input type="text" value="G24"/>																		
	without coil	<input type="text" value="X5"/>																		
Slip-on coil	Metal housing round	<input type="text" value="W"/>																		
	Metal housing square	<input type="text" value="M"/>																		
Connection execution	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	NBR	<input type="text"/>																		
	FKM (Viton)	<input type="text" value="D1"/>																		
Manual override																				
Design index (subject to change)																				

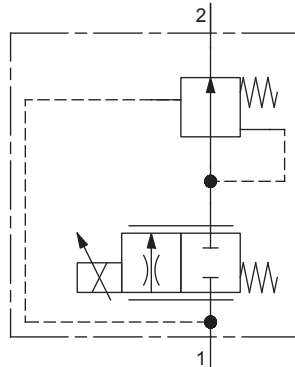
2.6-675

SYMBOL

Simplified



Detailed QN...


ACTUATION

Actuation	Proportional solenoid, wet pin push type, pressure tight
Execution	W.S45 / 23 x 50 (Data sheet 1.1-180) M.S45 / 23 x 50 (Data sheet 1.1-181)
Connection	Connector socket EN 175301 – 803 Connector socket AMP Junior-Timer Connector Deutsch DT04 – 2P

GENERAL SPECIFICATIONS

Designation	Proportional 2-way flow control valve
Construction	Direct operated
Mounting	Screw-in cartridge construction
Nominal size	1 5/16" -12 UN according to Wandfluh standard
Actuation	Proportional solenoid
Ambient temperature	-25...+70 °C
Weight	0,95 kg
MTTFd	150 years

HYDRAULIC SPECIFICATIONS

Working pressure	$p_{max} = 350$ bar
Maximum volume flow	$Q_{max} = 80$ l/min
Minimum volume flow	$Q_{min} = 0,2$ l/min
Volume flow direction	1 → 2
Leakage oil	See characteristics
Nominal volume flow range	$Q_N = 32; 63; 80$ l/min
Hysteresis	≤ 5 % at optimal dither signal
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 18 / 16 / 13
Filtration	Required filtration grade $\beta_{6...10} \geq 75$, see data sheet 1.0-50

MANUAL OVERRIDE

HB4,5

Optionally: Screw plug (HB0), no actuation possible

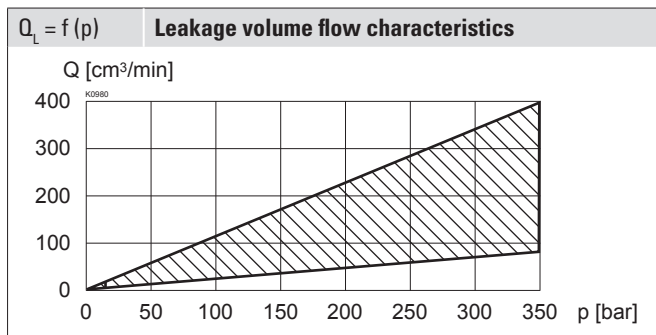
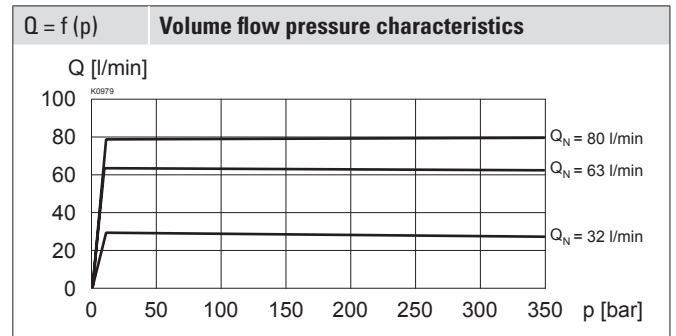
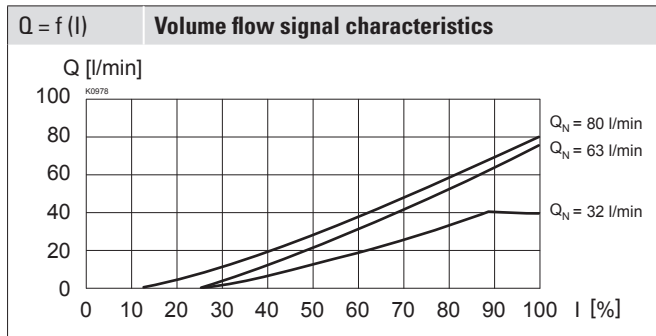
ELECTRICAL SPECIFICATIONS

Protection class	Connection execution D: IP65 Connection execution J: IP66 Connection execution G: IP67 and IP69K
Relative duty factor	100 % DF
Standard nominal voltage	12 VDC, 24 VDC
Limiting current at 50 °C	$I_G = 1560$ mA ($U_N = 12$ VDC) $I_G = 780$ mA ($U_N = 24$ VDC)

Note!


Other electrical specifications see data sheet 1.1-180 (slip-on coil W) and 1.1-181 (slip-on coil M)

PERFORMANCE SPECIFICATIONS

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

ACCESSORIES

Proportional amplifier	Register 1.13
Electric plug B (black)	Article no. 219.2002
Technical explanations	Data sheet 1.0-100
Filtration	Data sheet 1.0-50

SURFACE TREATMENT

- ◆ The cartridge body is gas-nitro-carburised
- ◆ The armature tube and the slip-on coil are zinc- / nickel-coated

SEALING MATERIAL

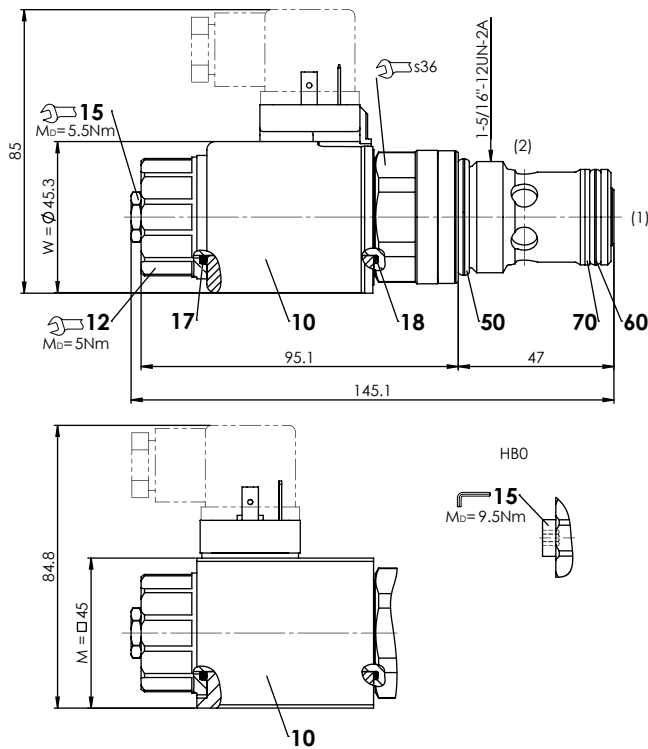
NBR or FKM (Viton) as standard, choice in the type code

INSTALLATION NOTES

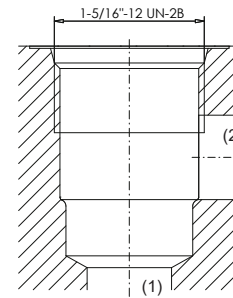
Mounting type	Screw-in cartridge 1 5/16"-12 UN
Mounting position	Any, preferably horizontal
Tightening torque	$M_D = 80 \text{ Nm}$ Screw-in cartridge $M_D = 5 \text{ Nm}$ knurled nut $M_D = 9,5 \text{ Nm}$ HB0 $M_D = 5,5 \text{ Nm}$ HB4,5

STANDARDS

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

DIMENSIONS

HYDRAULIC CONNECTION

Cavity drawing according to Wandfluh standard


Attention! For detailed cavity drawing and cavity tools see data sheet 2.13-1049

PARTS LIST

Position	Article	Description
10	206.12..	W.S45 / 23 x 50
	206.7...	M.S45 / 23 x 50
12	154.2701	Knurled nut M23 x 1,5 x 19,7
15	253.8000	HB4,5 manual override
	239.2033	HB0 Screw plug
17	160.2222	O-ring ID 22,22 x 2,62 (NBR)
18	160.2220	O-ring ID 21,95 x 1,78 (NBR)
50	160.2298	O-ring ID 29,82 x 2,62 (NBR)
	160.6296	O-ring ID 29,82 x 2,62 (FMK)
60	160.2238	O-ring ID 23,81 x 2,62 (NBR)
	160.6238	O-ring ID 23,81 x 2,62 (FMK)
70	049.3297	Backup ring rd 24,5 x 29 x 1,4