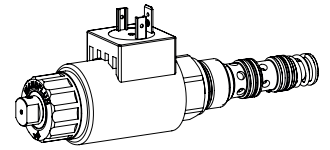


Proportional 2-way flow control poppet cartridge

- ◆ pilot operated
- ◆ $Q_{max} = 35$ l/min
- ◆ $Q_{Nmax} = 25$ l/min
- ◆ $p_{max} = 350$ bar

$\frac{7}{8}$ "-14 UNF



DESCRIPTION

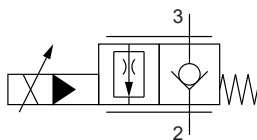
Pilot operated, load-compensated proportional flow control poppet valve as screw-in cartridge for UNF cavity. When the solenoid is deenergised, the control spool closes practically leakage-free. With increasing solenoid current the flow from inlet port (3) to the regulated outlet port (2) increases independently of the load pressure. For the control, Wandfluh proportional amplifiers are available (see register 1.13).

APPLICATION

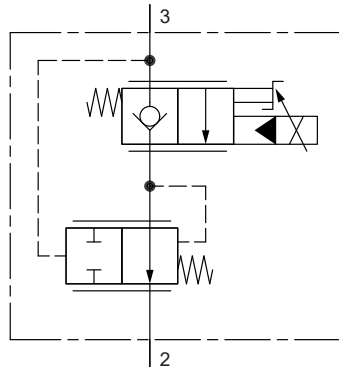
These valves are used in hydraulic systems, in which the positioning of loads and the simultaneous controlling of the lowering of these loads are demanded. The insensitivity to load changes and the very small leakage are a great advantage for this purpose. They are ideally used in the bypass to the pump. The screw-in cartridge is perfectly suitable for installation in control blocks. 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

Simplified



Detailed



ACTUATION

Actuation	Proportional solenoid, wet pin pull type, pressure tight.
Execution	V.E37 / 19 x 50 (Data sheet 1.1-168) N.S35 / 19 x 50 (Data sheet 1.1-175)
Connection	Connector socket EN 175301 – 803 Connector socket AMP Junior-Timer Connector Deutsch DT04 – 2P

GENERAL SPECIFICATIONS

Designation	Proportional 2-way flow control poppet valve
Construction	Pilot operated
Mounting	Screw-in cartridge construction
Nominal size	$\frac{7}{8}$ "-14 UNF
Actuation	Proportional solenoid
Ambient temperature	-25...+70 °C
Weight	0,52 kg
MTTFd	150 years

ELECTRICAL SPECIFICATIONS

Protection class	Connection execution D: IP65 Connection execution J: IP66 Connection execution G: IP67 and IP69K
Relative duty factor	100 % DF
Voltage tolerance	± 10 % with regard to nominal voltage
Standard nominal voltage	12 VDC, 24 VDC
Limiting current at 50 °C	$I_G = 1260$ mA ($U_N = 12$ VDC) $I_G = 620$ mA ($U_N = 24$ VDC)

Note!



Other electrical specifications see data sheet 1.1-168 (slip-on coil V) and 1.1-175 (slip-on coil N)

TYPE CODE

		Q S P PU10 - 25 - <input type="text"/> / <input type="text"/> <input type="text"/> - <input type="text"/> <input type="text"/> # <input type="text"/>	
Flow control valve			
Normally closed			
Proportional			
Screw-in cartridge 7/8" - 14 UNF			
Nominal volume flow rate Q_N	25 l/min		
Nominal voltage U_N	12 VDC <input type="text"/> G12		
	24 VDC <input type="text"/> G24		
	without coil <input type="text"/> X5		
Slip-on coil	Metal housing round <input type="text"/> V		
	Metal housing square <input type="text"/> N		
Connection execution	Connector socket EN 175301-803 / ISO 4400 <input type="text"/> D		
	Connector socket AMP Junior-Timer <input type="text"/> J		
	Connector Deutsch DT04-2P <input type="text"/> G		
Sealing material	NBR <input type="text"/>		
	FKM (Viton) <input type="text"/> D1		
Manual override	without <input type="text"/> HBO		
	with <input type="text"/> HZ		
Design index (subject to change)			
2.6-638			

HYDRAULIC SPECIFICATIONS

Working pressure	$p_{max} = 350$ bar
Maximum volume flow	$Q_{max} = 35$ l/min
Minimum volume flow	$Q_{min} = 0,5$ l/min
Volume flow direction	3 → 2
Leakage oil	Poppet type, max. 0,5 ml / min (approx. 10 drop / min) at 30 cSt
Nominal volume flow range	$Q_N = 25$ l/min
Hysteresis	≤ 10 % at optimal dither signal
Repeatability	≤ 2 % 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

SURFACE TREATMENT

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

INSTALLATION NOTES

Mounting type	Screw-in cartridge type 7/8"-14 UNF
Mounting position	Any, preferably horizontal
Tightening torque	$M_D = 60$ Nm Screw-in cartridge $M_D = 5$ Nm knurled nut $M_D = 5,5$ Nm HZ $M_D = 9,5$ Nm HBO

ACCESSORIES

Proportional amplifier	Register 1.13
Mating connector black (B)	Articel no. 219.2002
Technical explanations	Data sheet 1.0-100
Filtration	Data sheet 1.0-50

MANUAL OVERRIDE

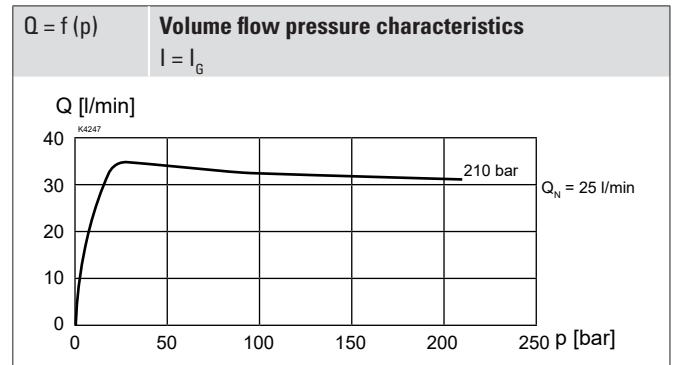
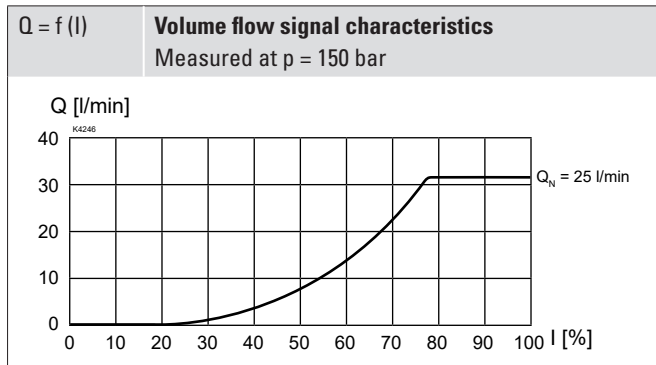
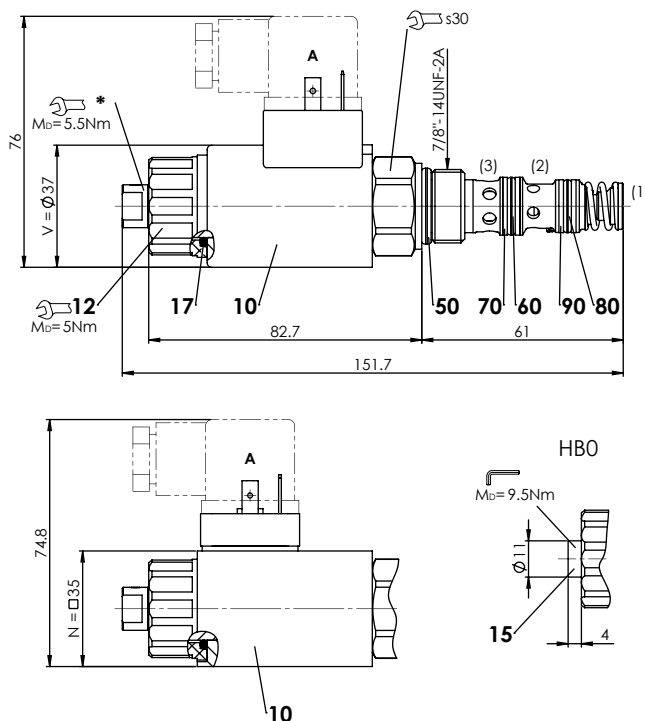
Screw plug (HBO), no actuation possible.
Optionally: HZ (pull)

Attention! The manual override HZ cannot be retrofitted.


SEALING MATERIAL

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

PERFORMANCE SPECIFICATIONS

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

DIMENSIONS


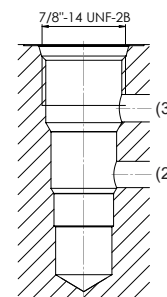
*After loosening, open further only by hand (without tools).

STANDARDS

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

HYDRAULIC CONNECTION

Cavity drawing according to UNF


Attention! For detailed cavity drawing and cavity tools see data sheet 2.13-1058

PARTS LIST

Position	Article	Description
10	206.2... 260.5...	V.E37 / 19 x 50 N.S35 / 19 x 50
12	154.2700	Knurled nut
15	239.2033	Screw plug HBO (incl. seal)
17	160.2187	O-ring ID 18,72 x 2,62 (NBR)
50	160.2188 160.8188	O-ring ID 18,77 x 1,78 (NBR) O-ring ID 18,77 x 1,78 (FKM)
60	160.2140 160.8140	O-ring ID 14,00 x 1,78 (NBR) O-ring ID 14,00 x 1,78 (FKM)
70	160.2120 160.8124	O-ring ID 12,42 x 1,78 (NBR) O-ring ID 12,42 x 1,78 (FKM)
80	049.8177	Back-up ring PTSM rd 12,4 x 15,3 x 1,4
90	049.8166	Backup ring PTSM rd 10,8 x 13,7 x 1,4