



Up to 100 l/min Up to 350 bar

FUNCTION



The proportional flow controller is a pilotoperated, normally closed, spring-loaded poppet valve.

It smoothly controls the flow in accordance with pressure.

In accordance with the energisation of the coil, the pilot stage opens and oil flows across an orifice to the back of the main piston. The resulting pressure differential causes the main piston to follow the pilot stage, releasing a flow. When energised, the valve can control flows from port 2 to 1 and from port 1 to 2, independently from the current nominal value. When de-energised, there is free flow from port 1 to port 2 (see dp/Q characteristics). **Proportional** Flow Control Valve Poppet Type, Pilot-Operated, Normally Closed UNF Cartridge – 350 bar PWS10ZR-1.

FEATURES

- In combination with a pressure compensator, the valve can be used as a proportional 2-way flow regulator for example, for lifting/lowering variable loads at the same velocity
- Stepless adjustment of the flow, depending on the coil current
- Excellent stability throughout the entire flow range
- Coil seals protect the solenoid system
- Optional: mechanical adjustment of one point in the performance curve (versions -11 and -12)
- Optional: Soft shift function with extended response times possible (version -12)
- External surfaces with advanced corrosion protection due to Zn-Ni coating (1,000 h salt spray test)

SPECIFICATIONS*

Operating pressure:	Max. 350 bar		
Flow rate:	Max. 100 l/min		
Internal leakage:	Leak-free max. 5 drops/min (0.25 cm ³ /min)		
-			
	at 350 bar		
Media temperature range:	min20 °C to max. +100 °C		
Ambient temperature range:	min20 °C to max. +60 °C		
Operating fluid:	Hydraulic oil to DIN 51524 Part 1, 2 and 3		
Viscosity range:	min. 10 mm²/s to max. 420 mm²/s		
Filtration:	≤ 210 bar: min. 17/15/12 > 210 bar: min. 16/14/11		
MTTF _d :	150 – 1200 years, measurement according to DIN EN ISO 13849-1		
Installation position:	No orientation restrictions		
Materials:	Valve body:	Steel	
	Closing element:	Hardened and	
	-	ground steel	
	Seals:	NBR (standard)	
		FKM (optional, media	
		temperature range	
	De els sus sisteres	-20°C to +120°C)	
	Back-up rings:		
		Steel / polyamide	
Cavity:	FC10-2		
Weight:	0.5 kg		
Electrical data:			
Control currents:	850 mA, 17.6 ohm (24 V)		
	1750 mA, 4.1 ohm	(12 V)	
Dither frequency:	120–250 Hz (120 Hz recommended)		
Hysteresis with dither:	4–6% of I _{nom}		
Repeatability:	\leq 1.5% of I _{nom}		
Reversal error:	$\leq 2\%$ of I_{nom}		
Response sensitivity:	$\leq 1\%$ of I_{nom}		
Coil type:	Coil (12 or 24)-50-1836		
NOTICE: In order to achieve optimal fun	ction, any trapped a	air should be vented	
using the air bleed screw on the face of	the pole tube.		
* see "Conditions and Instructions for Valves" in	brochure 53.000		



Millimetre (inch) Subject to technical modifications

CAVITY FC10-2



MODEL CODE

PWS10ZR - 11 M - C - N - P40 - 12 PG - 4.0 Basic model Proportional flow control valve **Type** 11 = standard = with damping = with adjustable 12 13 maximum stroke limitation Manual override No details = without manual override M = manual override Body and ports C = cartridge valve only *Combinations with housing on request Sealing material N = NBR (standard) V = FKM Flow range P40 = 40 l/min (progressive performance curve) Other flow ranges on request
 Coil voltage

 DC:
 12
 = 12 volt DC

 24
 = 24 volt DC
Other voltages on request

- Coil type (50-1836) DC: PG = DIN connector, design A to EN175301-803 PT = AMP Junior Timer, 2-pole, radial PL = with two jacketed cables, 457 mm long, 0.75 mm² PN = Deutsch connector DT04-2p, 2-pole, axial
- Other connector types on request

 $\begin{array}{l} \hline \textbf{Coil resistance} \\ 4.1 &= 4.1 \ \Omega \ (12 \ V) \\ 17.6 &= 17.6 \ \Omega \ (24 \ V) \end{array}$

Standard models

Model code	Part no.
PWS10ZR-11-C-N-P40-0	3530343
PWS10ZR-12-C-N-P40-0	3638685
Other models on request	

Standard in-line bodies

Code	Part no.	Material	Ports	Pressure
FH102-SB4	3037594	Steel, zinc-plated	G1/2"	350 bar
FH102-AB4	3037777	Aluminium, anodised	G1/2"	210 bar
Other housing u	pon request			

Seal kits

Code	Material	Part no.
FS UNF 10/N	NBR	3651557
FS UNF 10/V	FKM	3651559

TYPICAL PERFORMANCE



Note

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department. Technical modifications are reserved.

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