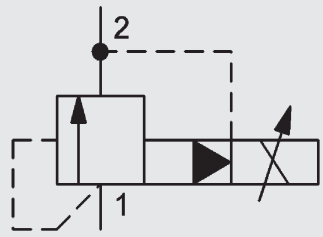


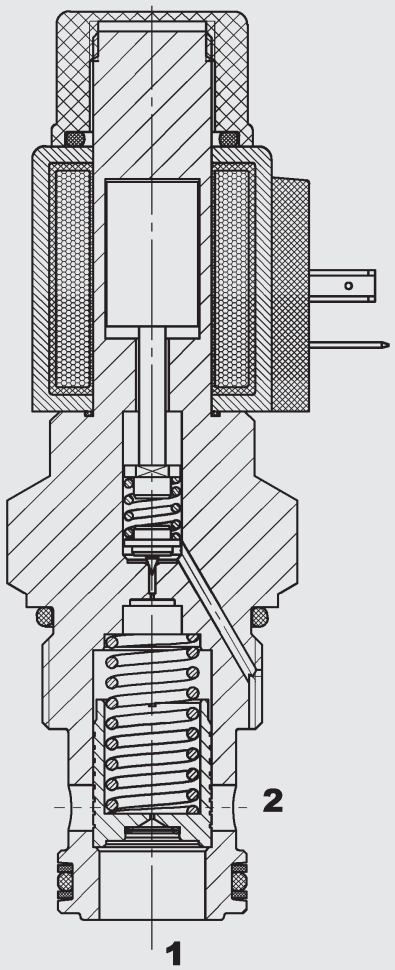
300 l/min
350 bar

Proportional Pressure Relief Valve Spool Type, Pilot-Operated SAE-16 Cartridge – 350 bar

UNF

PDB16P-01

FUNCTION



The PDB16P is a pilot-operated, spool type proportional pressure relief valve. If pressure at port 1 exceeds the setting defined by the electrical signal, the pilot poppet opens and oil flows from behind the main spool to tank port 2. The resulting pressure differential causes the main spool to lift against the return spring and allows flow from port 1 to port 2. As a function of the electrical signal, the relief pressure at port 1 can be changed steplessly.

FEATURES

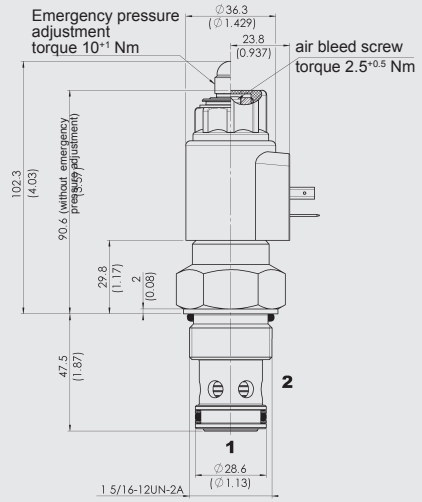
- External surfaces zinc-plated and corrosion-proof
- Hardened and ground internal valve components to ensure minimal wear and extended service life
- Coil seals protect the solenoid system
- Excellent stability throughout the entire flow range
- Excellent dynamic performance
- Low pressure drop due to CFD optimized flow path
- Screen-protected metering orifice enhances safety

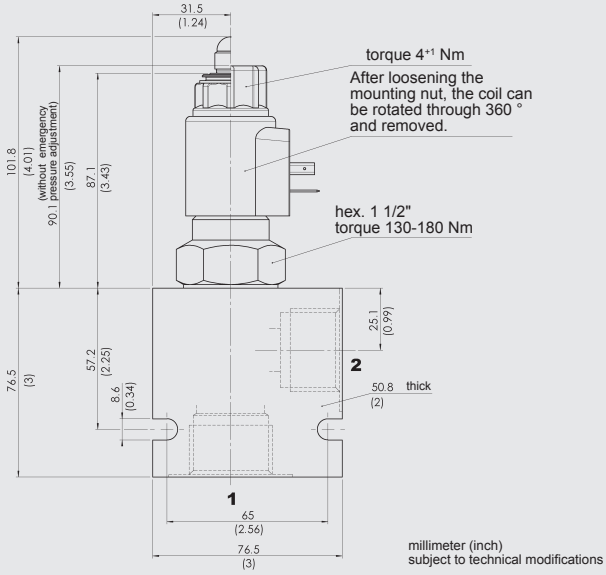
SPECIFICATIONS

Operating pressure:	max. 350 bar	
Nominal flow:	max. 300 l/min	
Operating pressure ranges:	up to 60 bar up to 230 bar up to 350 bar	
Media operating temperature range:	min. -20 °C to max. +100 °C	
Ambient temperature range:	min. -20 °C to max. 60 °C	
Operating fluid:	Hydraulic oil to DIN 51524 Part 1 and 2	
Viscosity range:	min. 7.4 mm²/s to max. 420 mm²/s	
Filtration:	Class 18/16/13 to class 19/17/14 to ISO 4406 or cleaner	
$MTTF_d$:	150 years (see "Conditions and instructions for valves" in brochure 5.300)	
Installation:	No orientation restrictions	
Materials:	Valve body:	free-cutting steel
	Spool:	hardened and ground steel
	Seals:	NBR (standard) FKM (optional, media temperature range -20 °C to +120 °C)
	Back-up rings:	PTFE
	Coil:	steel / polyamide
Cavity:	FC16-2	
Weight:	Valve complete	0.79 kg
	Coil only	0.23 kg
Electronic data:		
Control currents:	1050 mA, 8.8 Ohm (24 Volt) 2100 mA, 2.2 Ohm (12 Volt)	
Internal leakage:	< 1 l/min at 350 bar	
Dither frequency:	approx. 160 Hz - 250 Hz	
Response time:	Energized: De-energized:	approx. 70 ms approx. 40 ms
Hysteresis with dither:	2 - 4% of I_{nom}	
Repeatability:	≤ 1.5 % of I_{nom}	
Reversal error:	≤ 2 % of I_{nom}	
Response sensitivity:	≤ 1 % of I_{nom}	
Coil type:	Coil…-40-1836	

The PDB16P can also be supplied with an emergency pressure adjustment (version –01M). This allows a manual pressure adjustment of the valve if the electrical signal is interrupted. This adjustment should be used only in the case of electrical failure since the manual setting would be additive to the electrical setting and the system could be damaged when power is restored.

DIMENSIONS

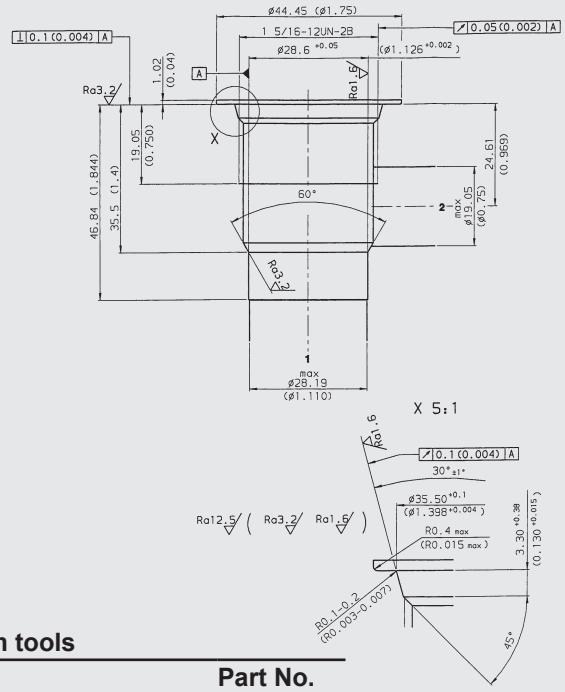




millimeter (inch)
subject to technical modifications

CAVITY

FC16-2



Form tools

Tool	Part No.
Countersink FC16-2	176218
Reamer FC16-2	176219

millimeter (inch)
subject to technical modifications

MODEL CODE

PDB16P-01 M - C - N - 330 - 24 PG - 8.8

Basic model
Proportional pressure relief valve, UNF

Manual override
No details = without manual override
M = manual override

Body and Ports*
C = cartridge only
SB8 = G1 ports, steel body
AB8 = G1 ports, aluminium body

Seals
N = NBR (standard)
V = FKM

Pressure range
87 = up to 60 bar (870 PSI)
330 = up to 230 bar (2300 PSI)
500 = up to 350 bar (5000 PSI)

Coil voltage
12 = 12 V DC (2.2 Ohm)
24 = 24 V DC (8.8 Ohm)

Coil connectors (type 40-1836)
DC: PG = DIN connector to EN175301-803
PU = AMP Junior Timer, 2-pole, axial
PL = 2 flying leads, 457 mm long; 0.75 mm²
PN = Deutsch connector, 2-pole, axial, DT04-22P-EF 04
Other connectors on request

Coil resistance
2.2 = 2.2 Ω (12 V)
8.8 = 8.8 Ω (24 V)

Standard models

Model code	Part No.
PDB16P-01-C-N-87-12PG-2.2	3144468
PDB16P-01-C-N-330-12PG-2.2	3144469
PDB16P-01-C-N-500-12PG-2.2	3144470
PDB16P-01-C-N-87-24PG-8.8	3144471
PDB16P-01-C-N-330-24PG-8.8	3144472
PDB16P-01-C-N-500-24PG-8.8	3144473

*Standard in-line bodies

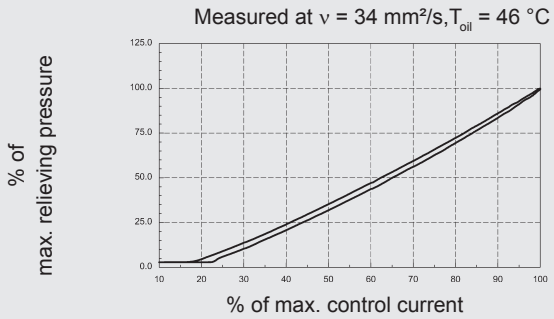
Code	Part No.	Material	Ports	Pressure
FH162-SB8	3032496	Steel, zinc-plated	G1	420 bar
FH162-AB8	3037193	Aluminium, anodized	G1	210 bar

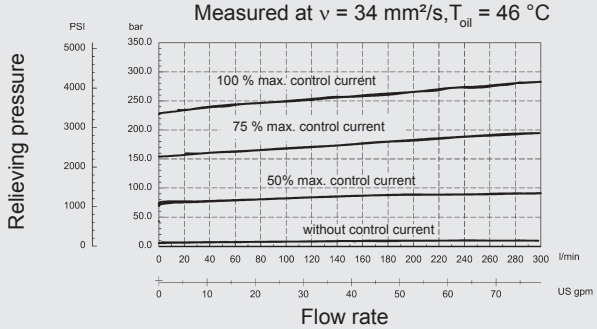
Other bodies on request

Seal kits

Code	Material	Part No.
FS162-N SEAL KIT	NBR	3052427
FS162-V SEAL KIT	FKM	3051758

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.
Subject to technical modifications.

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