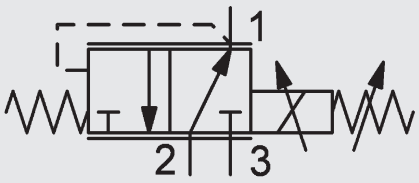
HYDAC INTERNATIONAL



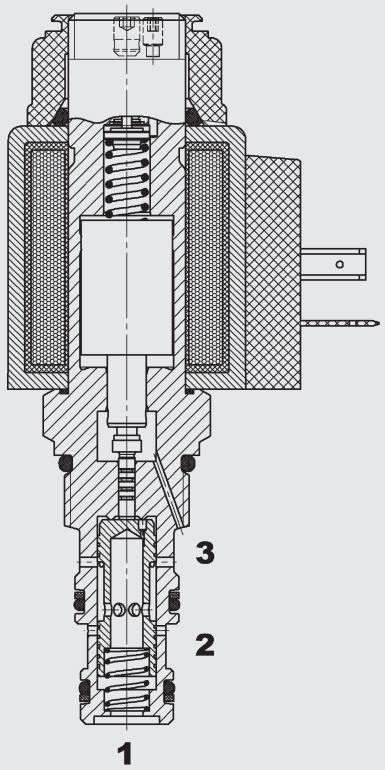
up to 14 l/min
up to 80 bar

Proportional Pressure Reducing Valve

spool type, direct-acting, inverse UNF Cartridge – 80 bar

PDR08Z-02

FUNCTION



The proportional pressure reducing valve PDR08Z is a spool-type direct-acting 3-way pressure control valve with inverse function, i.e. when de-energized, the greatest control pressure is applied (fail-safe function).
The main function of the valve is to maintain a constant set pressure at consumer port 1. When de-energized, port 2 (pump) is connected to port 1.
If the pressure at port 1 exceeds the set nominal value, oil flows to port 3 (tank).
If the control current increases, the valve is closed and the pressure discharged at port 1 drops. In addition, the maximum control pressure can be preset with spring loading by making adjustments at the pole tube.
As a function of the electrical control signal the control pressure can be continuously adjusted. Any pressure at port 3 is additive to the pressure setting.

FEATURES

- External surfaces zinc-plated and corrosion-proof
- Very good dynamic performance
- Hardened and ground internal valve components to ensure minimal wear and extended service life
- Coil seals protect the solenoid system
- Wide variety of connectors available
- Low pressure drop due to CFD-optimised flow path

SPECIFICATIONS*

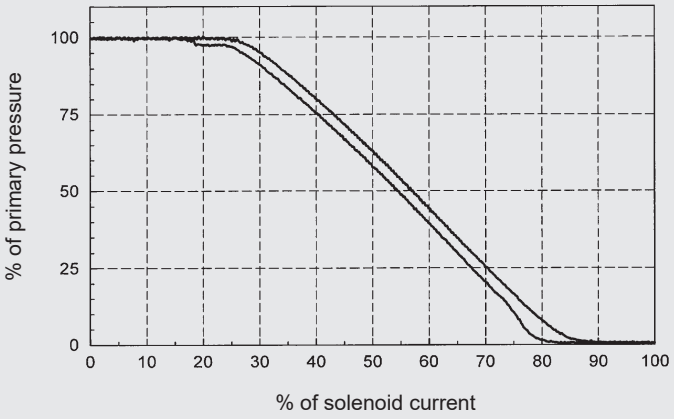
Operating pressure (p):	at port 2: max. control pressure of pressure level	
Control pressure:	max. 80 bar	
Tank pressure (T):	at port 3: max. 300 bar	
Pressure levels:	12, 20, 30, 50, 80 bar	
Nominal flow:	max. 14 l/min P→A / max. 5 l/m A→T	
Internal leakage:	less than 800cm³/min at nominal pressure 80 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, 2 and 3	
Viscosity range:	min. 7 mm²/s to max. 400 mm²/s	
Filtration:	Permitted operating fluid contamination level according to ISO 4406 Class 19/17/14 or better	
$MTTF_d$:	150 years*	
Installation position:	No orientation restrictions	
Materials:	Valve body:	steel
	Piston:	hardened and ground steel
	Seals:	NBR (standard) FKM (optional, media temperature range up to +120 °C)
	Back-up rings:	PTFE
	Solenoid coil:	steel/ polyamide
Cavity:	FC08-3	
Weight:	Valve assembly	0.33 kg
	Coil only	0.19 kg
Electronics		
Control currents:	1050 mA, 8.8 Ω (24 volt) 2100 mA, 2.2 Ω (12 volt)	
PWM frequency:	110 - 130 Hz recommended	
Hysteresis with dither:	2 - 4% at I_{nom}	
Repeatability:	≤ 2% at I_{nom}	
Reversal error:	≤ 2% at I_{nom}	
Response sensitivity:	≤ 1% at I_{nom}	
Coil type:	Coil (12 or 24) PG… -40-1836	

Note: In order to achieve optimal function, any trapped air should be vented using the screw on the face of the pole tube.

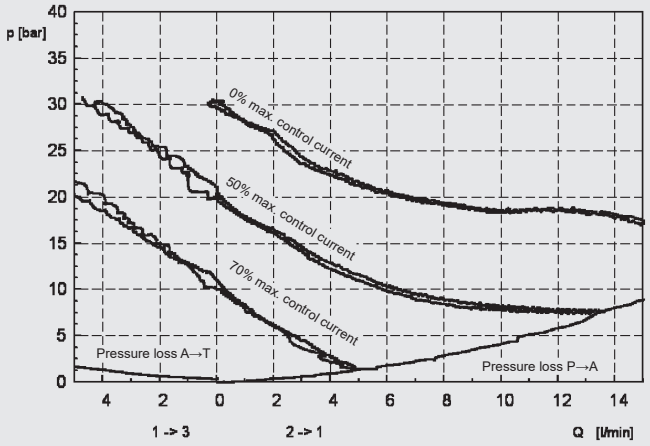
* See “Conditions and Instructions for Valves” in brochure 53.000

TYPICAL PERFORMANCE

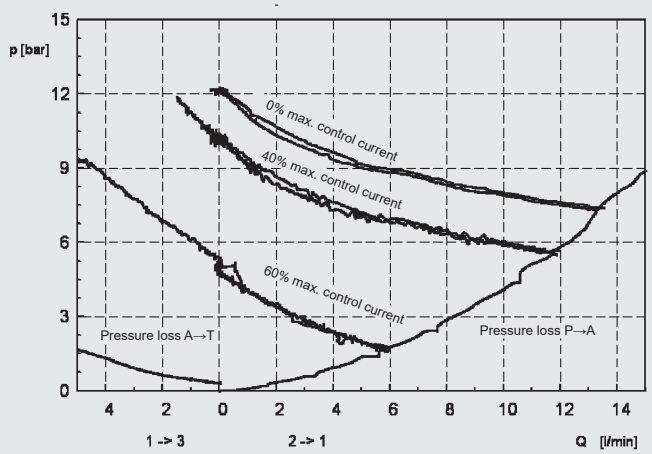
measured at ν = 33 mm²/s, T_{oil} = 46 °C, PWM = 110 Hz



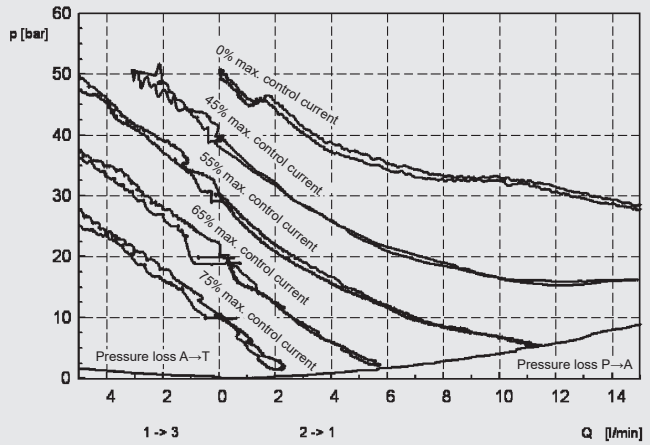
Pressure level 30 bar / 440 psi



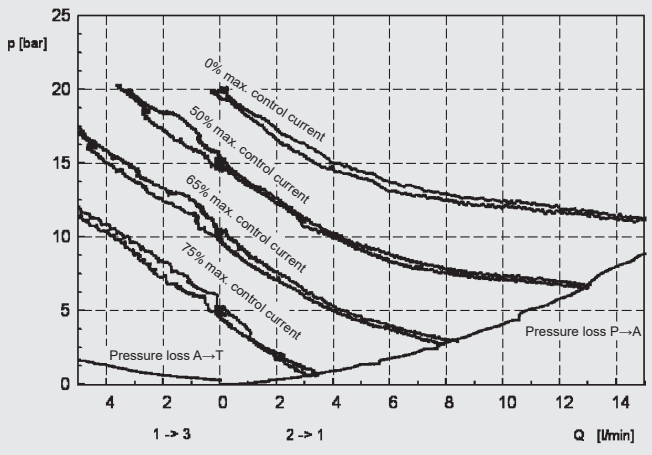
Pressure level 12 bar / 170 psi



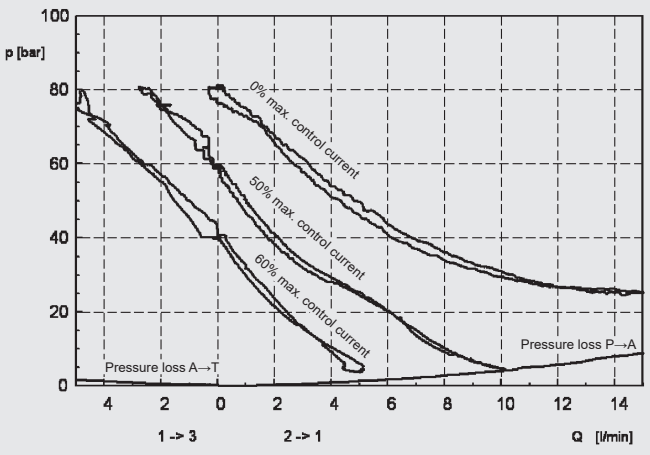
Pressure level 50 bar / 720 psi



Pressure level 20 bar / 290 psi



Pressure level 80 bar / 1160 psi



MODEL CODE

PDR08Z-02M - C - N - 116V073 - 24 PN - 8.8

Basic model
Proportional
pressure reducing valve, 3-way

Type
02 = standard

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

Body and ports*
C = cartridge only
*In-line bodies on request

Sealing material
N = NBR (standard)
V = FKM

Setting range
017 = 12 bar (PSI x10 / 14.4)
029 = 20 bar (PSI x10 / 14.4)
044 = 30 bar (PSI x10 / 14.4)
072 = 50 bar (PSI x10 / 14.4)
116 = 80 bar (PSI x10 / 14.4)
Other setting ranges on request

Pressure setting
087 = 60 bar customised cracking pressure (on request)
075 = 50 bar

Rated voltage
12 = 12 V DC
24 = 24 V DC
Other voltages on request

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

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

Standard models

Code	Part no.
PDR08Z-02-C-V-017V017-0	3742281
PDR08Z-02-C-V-029V029-0	3742282
PDR08Z-02-C-V-044V044-0	3580502
PDR08Z-02-C-V-072V072-0	3742283
PDR08Z-02-C-V-116V116-0	3742284

Other versions on request

*Standard in-line bodies

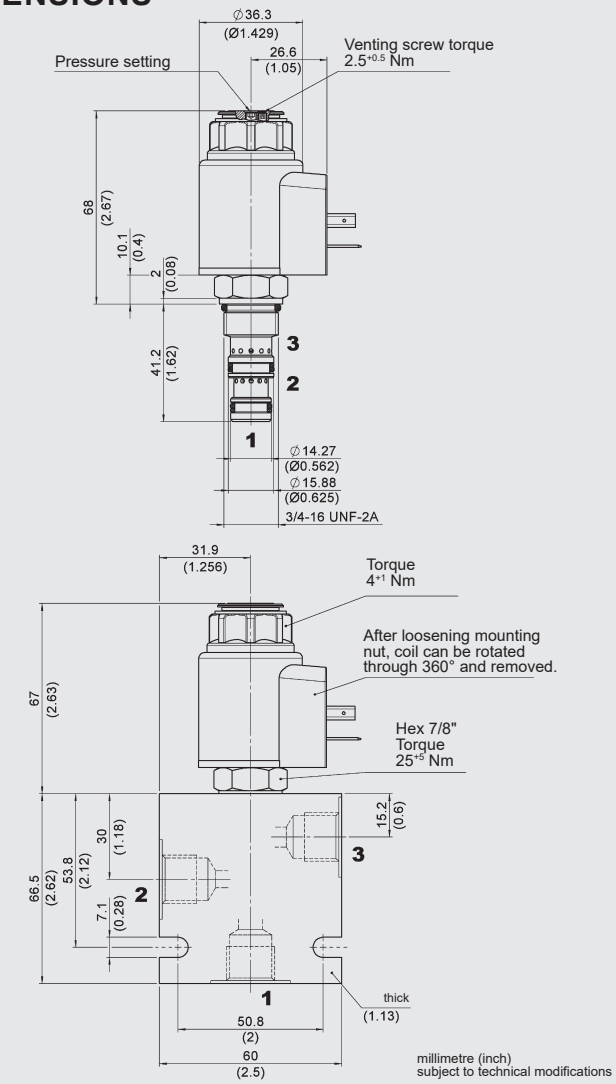
Code	Material	Connections	Pressure	Part no.
FH083-SB3	Steel, zinc-plated	3/8 BSP	80 bar	560922
FH083-AB3	Aluminium, anodised	3/8 BSP	80 bar	3011427

Other connection housings on request

Seal kits

Code	Material	Part no.
FS UNF 08/N	NBR	3651385
FS UNF 08/V	FKM	3651356

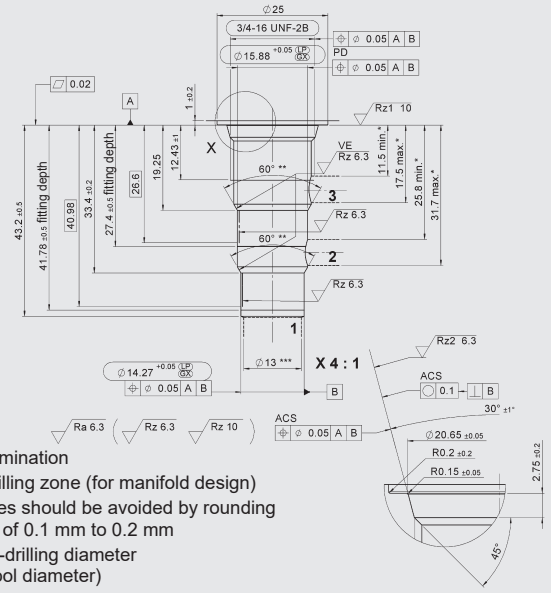
DIMENSIONS



millimetre (inch)
subject to technical modifications

CAVITY

FC08-3



VE = Visual Examination
* Allowed drilling zone (for manifold design)
** Sharp edges should be avoided by rounding to a radius of 0.1 mm to 0.2 mm
*** largest pre-drilling diameter (nominal tool diameter)

Form tools

Tool	Part no.
Countersink FC08-3	175644
Reamer FC08-3	175645

millimetre (inch)
subject to technical modifications

Note

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

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