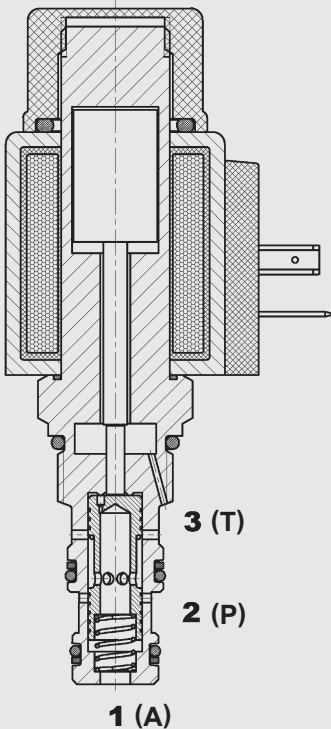


Up to 17 l/min
Up to 350 bar

FUNCTION



The proportional pressure reducing valve is a direct-acting 3-way spool-type valve, with max. pressure relief. De-energized the valve is closed from port 2 to 1. When energized, pressure is applied to the spool in proportion to the electrical control signal. The spool opens and allows flow from port 2 to port 1. Any pressure at tank port 3 is additive to the pre-set control pressure. If, as a result of external pressures, the pressure at port 1 rises above the setting, the valve opens completely from port 1 to tank port 3.

3-Way Proportional Pressure Reducing Valve Spool Type, Direct Acting UNF Cartridge – 350 bar PDR08-02

FEATURES

- Main application is in accumulator charging circuits and as a pilot control for directional valves
- Particularly low pressure step when transferring from pressure reducing to pressure relief function
- Excellent stability throughout the entire flow range
- Excellent dynamic performance
- Coil seals protect the solenoid system
- Wide variety of connectors available
- Fine adjustment available as an option
- Exposed surfaces zinc-nickel plated for increased corrosion protection (1.000 h Salt spray test)
- **Differences between PDR08-02 and PDR08-01:** In contrast to the PDR08-01, the PDR08-02 is designed asymmetrically, i.e. the valve is rated from P to A (pressure reducing function) up to 17 l/min and from A to T (pressure relief function) up to 10 l/min. Moreover the valve has zero overlap which has the effect of reducing the hysteresis.

SPECIFICATIONS*

Operating pressure:	max. 350 bar (port 2)
Control pressure:	max. 138 bar (port 1)
Tank pressure:	max. 300 bar (port 3)
Pressure ranges:	14; 20; 35; 38; 49; 75; 138 bar
Nominal flow:	max. 10 l/min A→T; max. 17 l/min P→A
Leakage (2 to 1):	Less than 50 cm ³ /min at 350 bar, at port 2 (0 mA)
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. 7.4 mm ² /s to max. 420 mm ² /s
Filtration:	Class 19/17/14 according to ISO 4406 or cleaner
MTTF _a :	150 - 1200 years, according to DIN EN ISO 13849-1
Installation:	No orientation restrictions
Materials:	Valve body: steel Spool: hardened and ground steel Seals: NBR (standard) FKM (optional, media temperature range -20 °C to +120 °C) Back-up rings: PTFE
Cavity:	FC08-3 UNF
Weight:	Valve only: 0.5 kg, Coil: 0.22 kg

Electronic data

Type of voltage:	1050 mA, 8.8 Ohm (24 V) 2100 mA, 2.2 Ohm (12 V)
Voltage tolerance:	± 15% of nominal
Dither frequency:	140 – 250 Hz
Hysteresis with dither:	2 – 4 % of I _{nenn}
Repeatability:	≤ 1 % of p _{nenn}
Reversal error:	≤ 1 % of I _{nenn}
Response sensitivity:	≤ 1 % of I _{nenn}
Coil type:	Coil (12 or 24) P ...40-1836

Note:

The PDR08 can also be supplied with an emergency pressure adjustment (version -02M). 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. In order to achieve optimal function, any trapped air should be vented using the venting screw on the face of the pole tube (not fitted to version -02M).

* see "Conditions and instructions for valves" in brochure 53.000

MODEL CODE

PDR08-02 M - C - N - 50 - 12 PG - 2.2

Basic model

Proportional pressure reducing valve, UNF

Type

02 = standard

Options

No details = no option

M = manual override

T = tolerance compensation
(on request, with fine adjustment)

Body and ports*

C = cartridge only

Versions with housings on request

Seals

N = NBR (standard)

V = FKM

Pressure range

20 = up to 14 bar outlet pressure (200 PSI +10)

30 = up to 20 bar outlet pressure (300 PSI +10)

50 = up to 35 bar outlet pressure (500 PSI +10)

55 = up to 38 bar outlet pressure (550 PSI +10)

(model T only)

60 = up to 42 bar outlet pressure (600 PSI +10)

70 = up to 49 bar outlet pressure (700 PSI +10)

110 = up to 75 bar outlet pressure (1100 PSI +10)

200 = up to 138 bar outlet pressure (2000PSI +10)

Coil voltage

12 = 12 V (2.2 Ohm)

24 = 24 V (8.8 Ohm)

Coil connectors ... 40-1836

PG = DIN connector to EN175301-803

PL = 2 flying leads, 457 mm long; 0.75 mm²

PN = Deutsch connector, 2-pole, axial

PU = AMP Junior Timer, 2-pole, axial

Other connectors on request

Coil resistance

2.2 = 2.2 Ohm (12 V)

8.8 = 8.8 Ohm (24 V)

Standard models

Model code	Part No.
PDR08-02-C-N-20-12PG-2.2	3437006
PDR08-02-C-N-30-12PG-2.2	3437007
PDR08-02-C-N-50-12PG-2.2	3436994
PDR08-02-C-N-70-12PG-2.2	3437008
PDR08-02-C-N-110-12PG-2.2	3437009
PDR08-02-C-N-200-12PG-2.2	3437010
PDR08-02-C-N-20-24PG-8.8	3437011
PDR08-02-C-N-30-24PG-8.8	3437012
PDR08-02-C-N-50-24PG-8.8	3437005
PDR08-02-C-N-70-24PG-8.8	3437013
PDR08-02-C-N-110-24PG-8.8	3437014
PDR08-02-C-N-200-24PG-8.8	3437015
PDR08-02T-C-N-55-24PU-8.8	3386613

Other models on request

*Standard in-line bodies

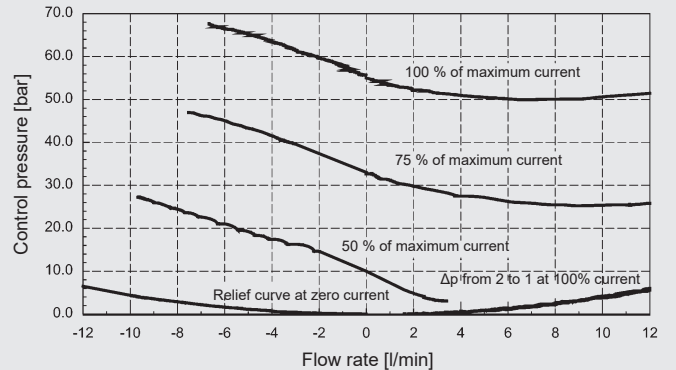
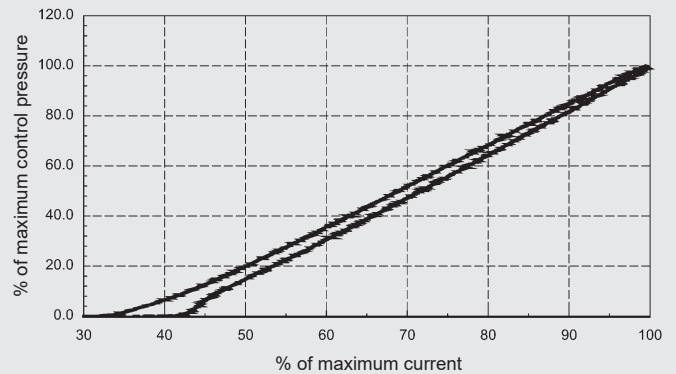
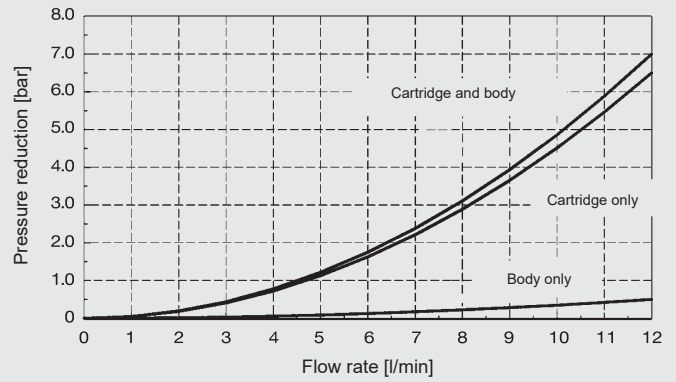
Code	Part No.	Material	Ports	Max. pressure
FH083-SB3	560922	Steel, zinc-plated	G3/8"	350 bar
FH083-AB3	3011427	Aluminium, clear anodized	G3/8"	210 bar

Seal kits

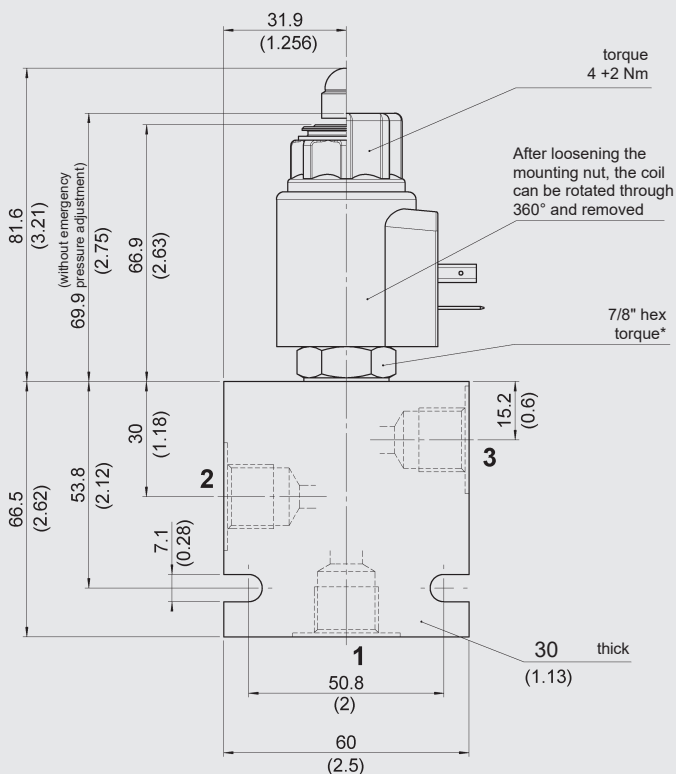
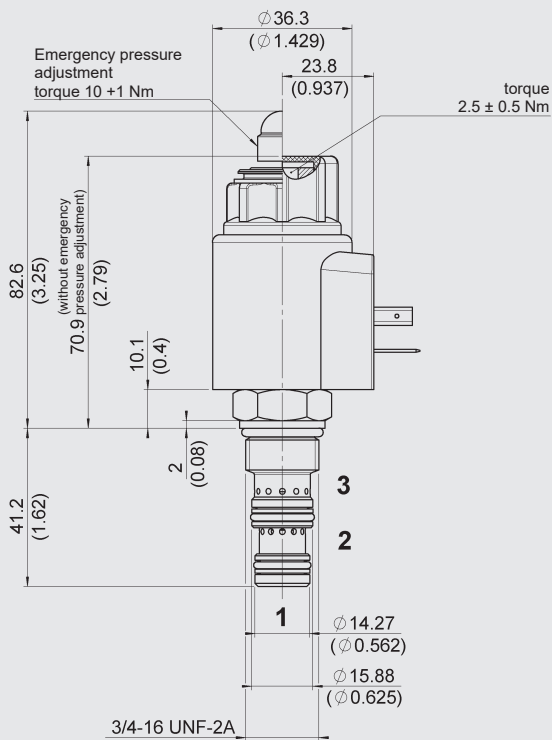
Code	Material	Part No.
FS UNF 08/N	NBR	3651385
FS UNF 08/V	FKM	3651356

PERFORMANCE

$T_{oil} = 46\text{ °C}$, $v = 34\text{ mm}^2/\text{s}$



DIMENSIONS

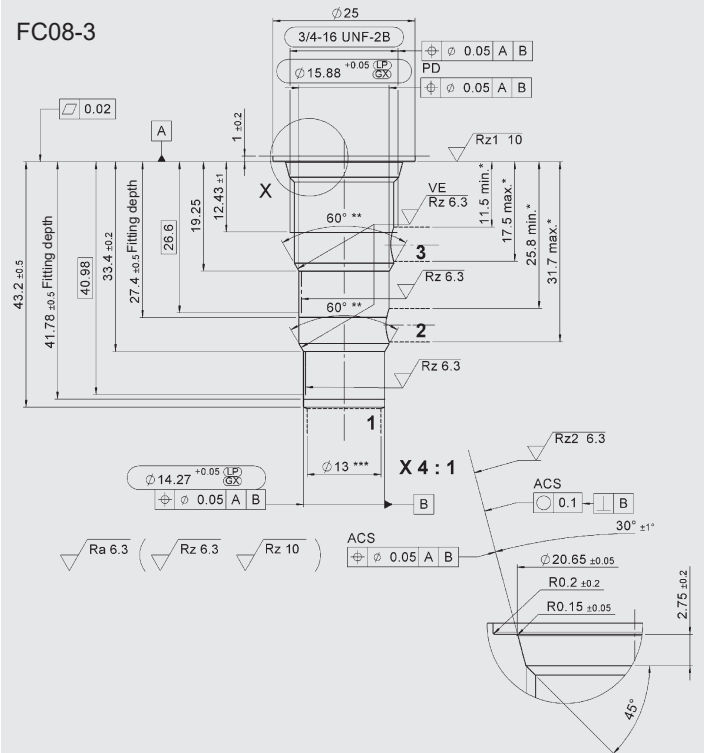


*Torque:
Steel manifold
(ultimate tensile strength < 360 N/mm²): 30 Nm
Aluminium manifold
(ultimate tensile strength < 330 N/mm²): 30 Nm
(tool acc. to DIN EN ISO 6789,
tool type II class A or B)
For further informations see brochure No. 53.000
"Conditions and instructions for valves"

mm (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 too diameter)

Form tools

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

mm (inch)
Subject to technical modifications.

NOTE

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

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