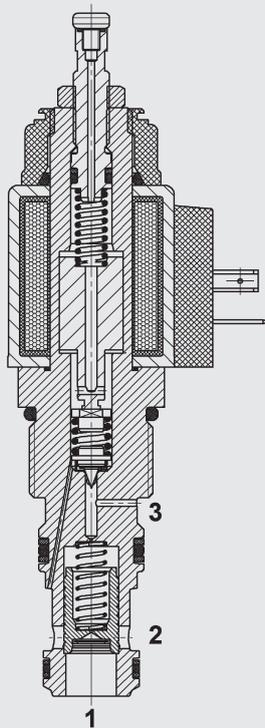


up to 200 l/min
up to 350 bar

FUNCTION



The proportional valve is an inverse, pilot-operated, spool type pressure relief valve with remote control port 3.

If pressure at port 1 exceeds the nominal value that has been set electrically, the pilot stage opens and oil flows from the back of the main piston to tank port 3. Due to the resulting pressure difference, the main piston moves against the return spring and allows oil to flow from port 1 to 2. Additionally, the pilot control flow can be diverted at port 3 and the valve switches to depressurised circulation from port 1 to port 2. In accordance with the electrical nominal value, the pressure to be limited can be continuously adjusted at port 1. The valve is controlled inversely: the highest pressure is applied at the lowest control current.

Important: Pressures at port 2 are additive to the pilot control pressure.

Proportional Pressure Relief Valve spool type, pilot-operated, inverse, remote controlled Metric Cartridge – 350 bar PDBM12121PFZ-08

FEATURES

- Excellent stability throughout the entire flow range
- Very good dynamic performance
- Coil seals protect the solenoid system
- Wide variety of connectors available
- External surfaces with advanced corrosion protection due to Zn-Ni coating (1,000 h salt spray test)

SPECIFICATIONS*

Operating pressure:	max. 350 bar
Tank pressure:	max. 50 bar
Pressure ranges:	12 to 60 bar 12 to 230 bar 12 to 350 bar
Nominal flow:	max. 200 l/min
Leakage:	< 900 cm ³ /min at 80% nominal pressure
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. 10 mm ² /s to max. 420 mm ² /s
Filtration: (to ISO 4406)	≤ 210 bar: min. class 17/15/12 > 210 bar: min. class 16/14/11
MTTF _d :	150–1200 years, according to DIN EN ISO 13849-1
Installation:	No orientation restrictions, preferably vertical
Materials:	Valve body: steel Piston: hardened and ground steel Seals: NBR (standard) FKM (optional, media operating temperature range -20 °C to +120 °C) Back-up rings: PTFE Solenoid coil: steel/ polyamide
Cavity:	12121 metric
Weight:	Valve assembly: 0.55 kg Coil only: 0.23 kg
Electronics	
Control currents:	1050 mA, 8.8 ohm (24 volt) 2100 mA, 2.2 ohm (12 volt)
Dither frequency:	160 - 250 Hz
Hysteresis with dither:	2 - 4% of p _{nom}
Repeatability:	≤ 2% of p _{nom}
Reversal error:	≤ 2% of I _{nom}
Response sensitivity:	≤ 1% of I _{nom}
Coil type:	Coil P...-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

MODEL CODE

PDBM12121PFZ - 08 M - C - N - 060 V 060 - 24 PG - 2.2

Basic model

Proportional pressure relief valve, pilot-operated

Type

08 = standard

Manual override

No details = without manual override
M = manual override

Body and ports*

C = cartridge valve only
*Combinations with manifold on request

Sealing material

N = NBR (standard)
V = FKM

Setting range

060 = 12 to 60 bar
230 = 12 to 230 bar
350 = 12 to 350 bar
Other setting ranges on request

Type of adjustment

V = adjustable using tool

Setpoint

060 = factory pre-set pressure, on request

Rated voltage

DC: 12 = 12 VDC
24 = 24 VDC
Other voltages on request

Coil connectors (type 40-1836)

DC: PG = DIN connector to EN175301-803
PT = AMP Junior Timer, 2-pole, radial
PL = connector with 2 single leads, 457mm long
PN = Deutsch connector, 2-pole
Other connectors on request

Coil resistance

8.8 = 8.8 Ω
2.2 = 2.2 Ω

Standard models

Code	Part no.
PDBM12121PFZ-08-C-N-060V060-0	4055135
PDBM12121PFZ-08-C-N-230V230-0	4055131
PDBM12121PFZ-08-C-N-350V250-0	4055049
PDBM12121PFZ-08-C-N-350V350-0	4055127

Other versions on request

*Standard in-line bodies

Code	Material	Ports	Pressure	Part no.
R12121-01X-0	Steel, zinc-plated	G3/4", G3/8"	350 bar	3130704

Other housings on request

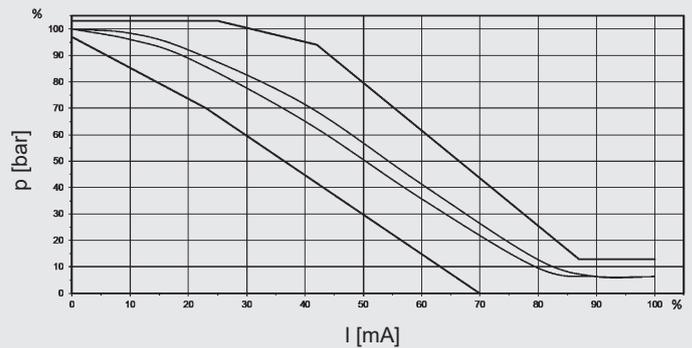
Seal kits

Code	Material	Part no.
FS METRIC 12121/N	NBR	3651335
FS METRIC 12121/V	FKM	4080086

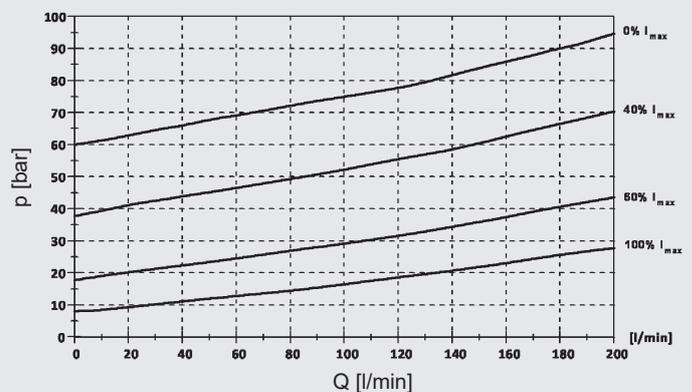
TYPICAL PERFORMANCE

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

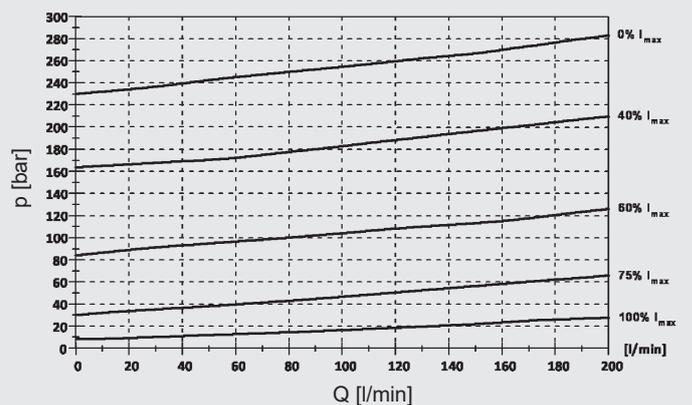
p-I graph



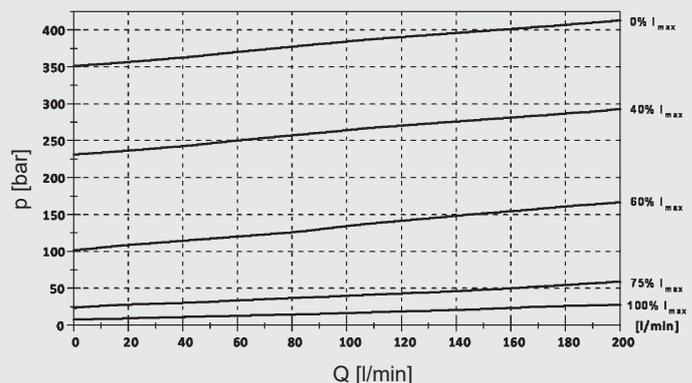
60 bar



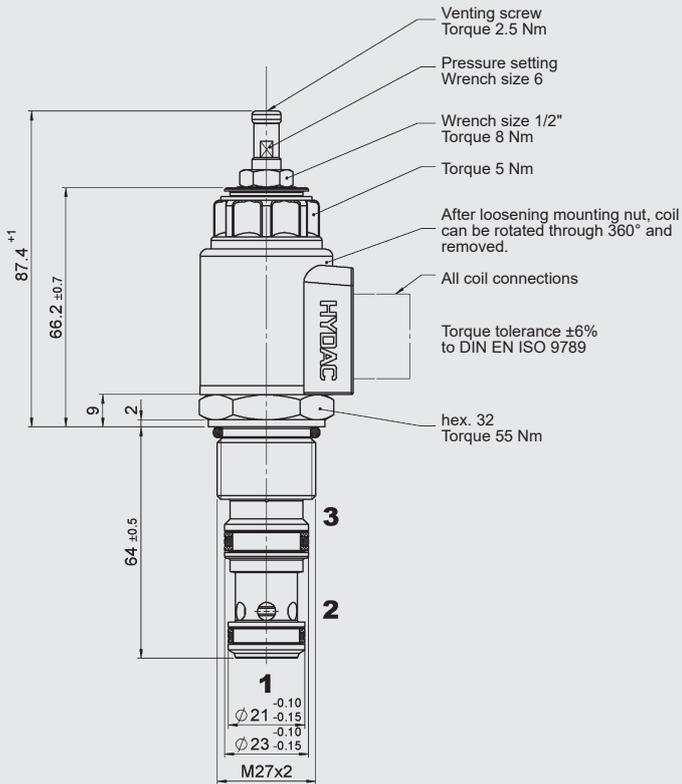
230 bar



350 bar



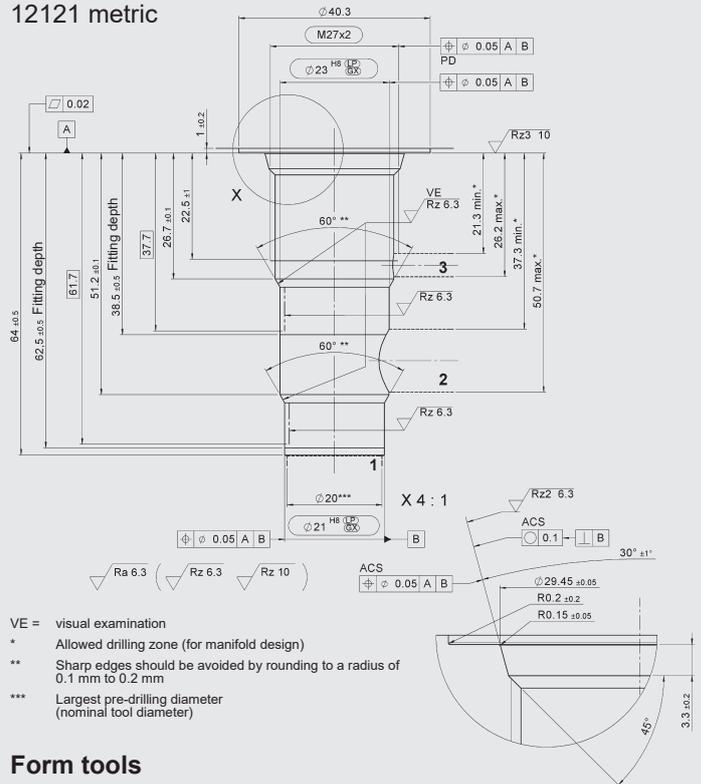
DIMENSIONS



Millimetre
Subject to technical modifications

CAVITY

12121 metric



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 MK4	177317
KK countersink	162128
Reamer MK2	175021

Millimetre
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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