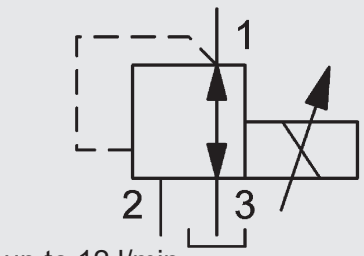
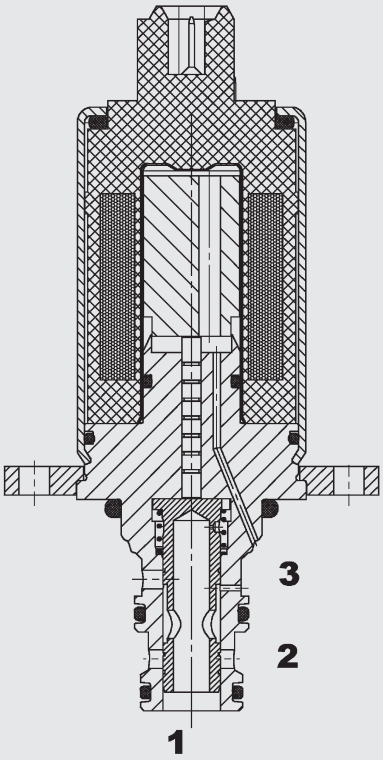


up to 12 l/min
up to 60 bar

3-Way Proportional Pressure reducing valve spool type with area-ratio advantage Slip-in valve – 60 bar

PDMC05S30A-11

FUNCTION



The proportional pressure reducing valve is a direct-acting spool type valve. When de-energized, port 2 is closed and port 1 (consumer) is connected to port 3 (tank). When the inlet pressure fluctuates it provides an almost constant outlet pressure - depending on the energization of the coil. When the control current increases, the solenoid coil exerts a force on the control spool which is proportional to the control current and thereby defines the regulated pressure at port 1. This setting is proportional to the control current. Any pressure at tank port 3 is additive to the pre-set control pressure. If, as a result of external factors, the pressure at port 1 exceeds the preset pressure, the valve opens from port 1 to tank port 3.

FEATURES

- Compact design
- Excellent dynamic performance
- Excellent stability throughout the entire flow range
- Coil seals protect the solenoid system
- Adjustable throughout flow range
- Excellent small signal characteristics
- External surfaces with extended corrosion protection

SPECIFICATIONS*

Primary pressure at port 2:	max. 60 bar
Control pressure at port 1:	max. 35 bar
Tank pressure at port 3:	max. 10 bar dynamic max. 30 bar static
(Should be piped separately to tank, i.e not connected to the working hydraulics)	
Nominal flow:	max. 12 l/min
Pressure ranges:	0 to 25 bar, 0 to 35 bar
Internal leakage:	energized: < 0.1 l/min de-energized: < 0.02 l/min (at 60 bar pump pressure, Dither 110 Hz)
Media operating temperature range:	min. -30 °C to max. +80 °C
Ambient temperature range:	min. -30 °C to max. +60 °C *(see note on thermal load capacity of the coil)
Operating fluid:	Hydraulic oil to DIN 51524 Part 1, 2 and 3
Viscosity range:	min. 7.4 mm²/s to max. 420 mm²/s
Filtration:	Class 18/16/13 according to ISO 4406 or cleaner
$MTTF_d$:	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)
Cavity:	05S30
Weight:	0.27 kg
Electronic data	
Coil duty rating:	100% duty cycle (continuous)
Control currents:	0 – 950 mA, 10.5 Ω (24 V) 0 – 2000 mA, 2.65 Ω (12 V) *(see note on thermal load capacity of the coil)
Response time:	On: < 40 ms, Off: < 30 ms
Dither frequency:	110 Hz recommended
Hysteresis with dither:	2 – 4 % of the max. control current
Repeatability:	≤ 1 % of the max. pressure range
Reversal error:	≤ 1 % of the max. control current
Response sensitivity:	≤ 1 % of the max. control current
Insulation material class:	H to VDE0580, 180 °C

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

MODEL CODE

PDMC05S30A – 11 – C – N – 35 – 24 PU01 – 10.5

Basic model
Proportional pressure reducing valve, with area-ratio advantage and compact

Type
11 = standard

Body and ports*
C = cartridge only

Seals
N = NBR
Others on request

Pressure range
25 = 0 to 25 bar
35 = 0 to 35 bar

Coil voltage
12 = 12 Volt (2.65 Ω)
24 = 24 Volt (10.5 Ω)

Coil connectors
PN = Deutsch connector DT04, 2-pole, axial
PU = AMP Junior Timer, 2-pole, axial

Coil resistance
2.65 = 2.65 Ω (12 V)
10.5 = 10.5 Ω (24 V)

Standard models

Model code	Part No.
PDMC05S30A-11-C-N-25-12PU-2.65	3497963
PDMC05S30A-11-C-N-25-24PU-10.5	3508509
PDMC05S30A-11-C-N-35-12PU-2.65	3705086
PDMC05S30A-11-C-N-35-24PU-10.5	3270226
PDMC05S30A-11-C-N-35-24PN-10.5	3509704

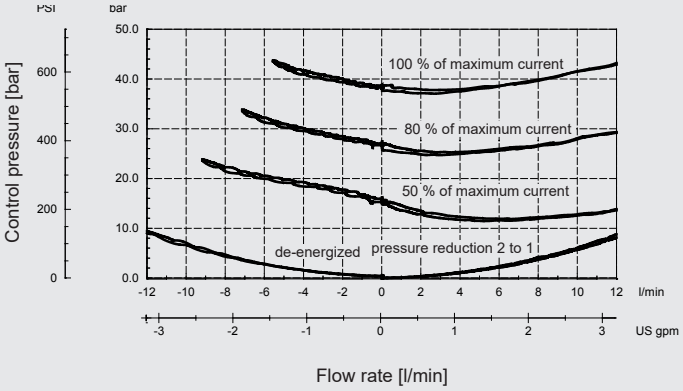
Other models on request

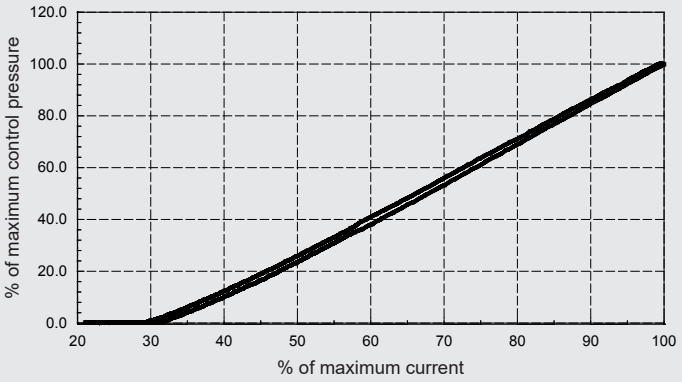
***Standard in-line bodies**

Code	Part No.	Material	Ports	Pressure
R05S30-010-01	3364559	Aluminium	G3/8"	60 bar

TYPICAL PERFORMANCE

measured at v = 34 mm²/s , T_{oil} = 46 °C

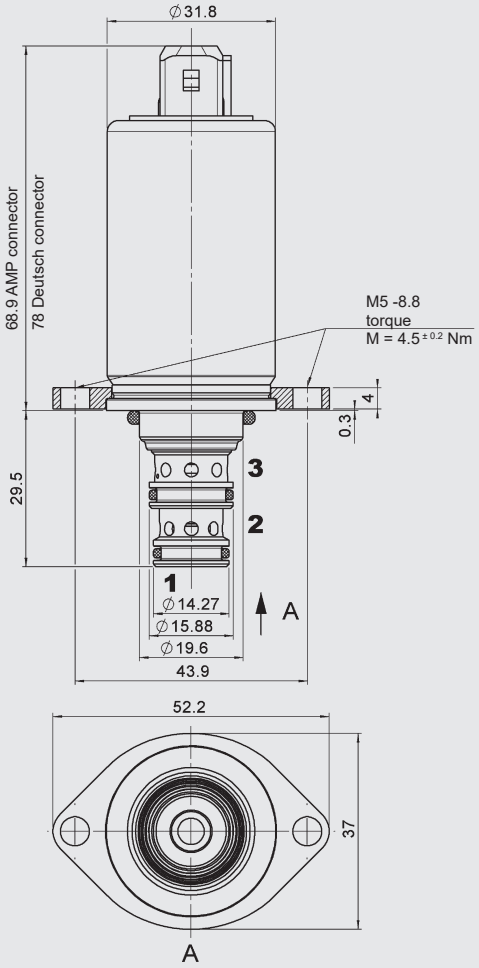




*Thermal load capacity of the coil:
100% duty cycle at $T_{A, max}$ = 80 °C

Please note: The data is based on the complete valve, mounted in a line body (block temperature: 105 °C, aluminium or steel; dimensions 40 x 60 x 56 mm), flanged to a base block (block temperature 105 °C, steel, dimensions 200 x 150 x 100 mm). The air in the climatic test cabinet is circulated by the cabinet ventilator.

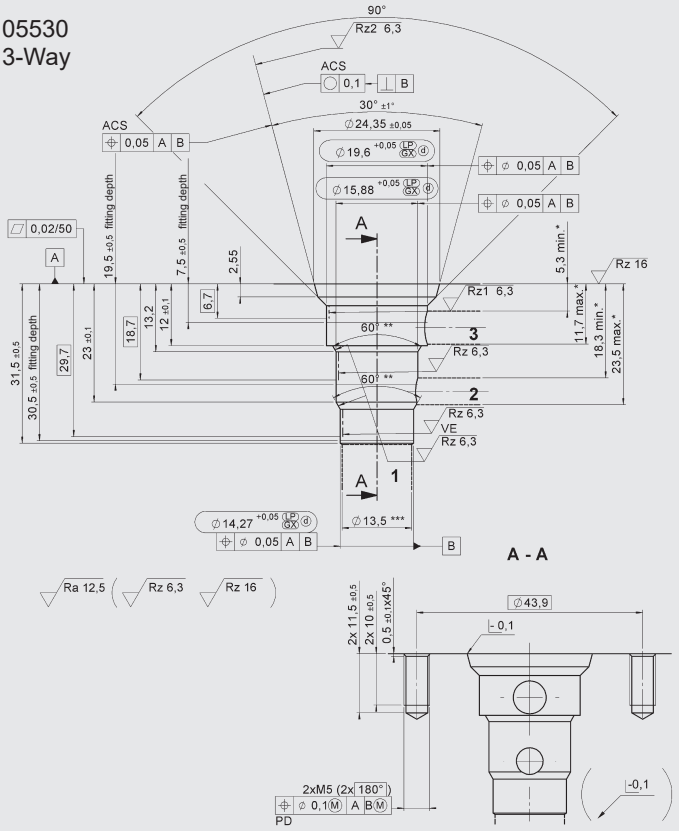
DIMENSIONS



millimeter
subject to technical modifications

CAVITY

05530
3-Way



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	178202
Reamer	178203

millimeter
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.

HYDAC Fluidtechnik GmbH
Justus-von-Liebig-Str.
D-66280 Sulzbach/Saar
Tel: 0 68 97 / 509-01
Fax: 0 68 97 / 509-598
E-Mail: valves@hydac.com