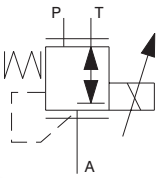
Proportional Reducing Valves Slip-In Style

PP2P

HA 5125 04/2007

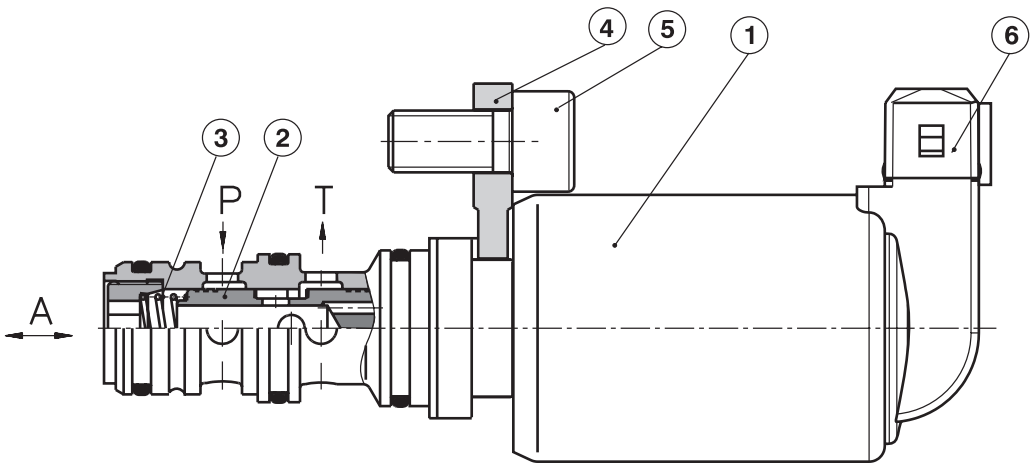
Size to 06 (03) • ... 50 bar (725 PSI) • ...20 L/min (5.28 US GPM)



- **Reducing valves suitable for mobile applications**
- **Compact design**
- **Economical Slip-In Style**

Functional Description

The valve PP2P is the directly controlled 3 way [2] reducing valve controlled by a proportional solenoid. In basic position (zero coil current) the channel A is connected to tank via channel T, where as the channel P is closed. In this state the reduced pressure in channel A equals zero. With increasing the coil current the solenoid force gradually increases [1] and shifts, after overcoming the spring pretension [4], the spool [3] to position gradually decreasing the opened way A-T until the pressure in channel A increases due to opening the way P-A. The reduced pressure is led through the spool boring into the space of the actuating system, where it acts on the smaller spool are. With increasing the reduced pressure in channel A, the created force acting in direction of the solenoid force increases and assist in overcoming the hydrodynamic forces acting on spool. For every value of the coil exciting current, there is a state of equilibrium of forces between the solenoid force, spring force, force acting on the smaller spool area and hydrodynamic forces. The reduced pressure is exactly defined by coil current, as shown on the static pressure characteristic. In basic variant a part of the valve is exhibited to influence of the environmental atmosphere and the coil zinc plated.



Ordering Code

PP2P □ - □ □ □ / □ - □ □ □

Proportional Reducing Valves Slip-In Style

Type of construction 1

Valve Cavity
D20 (mm) **W**

Number of operating positions **3**

Design
Standard **S**
Customised **C**

Maximum regulated pressure
(bar) **20**

Seals
no designation NBR
V FPM (Viton)

Electronics
E3 with AMP-Junior-Timer-connector
E4 with integrated quenching diode and terminal for AMP-Junior-Timer connector
E12 with DEUTSCH DT 04-2P
E13 with integrated quenching diode and terminal for DEUTSCH DT 04-2P

Nominal supply voltage
12 12 V DC

General Data

Design		spool valve
Mounting mode		D20
Mounting position		optional
Flow direction		see the symbol
Maximum fixing bolt tightening torque	Nm (lbf.ft)	9+2 (6.64+1.48)
Ambient temperature, max.	°C (°F)	-30 ...90 (-22 ...194), +100 °C (212 °F for a short term)

Solenoid Technical Data

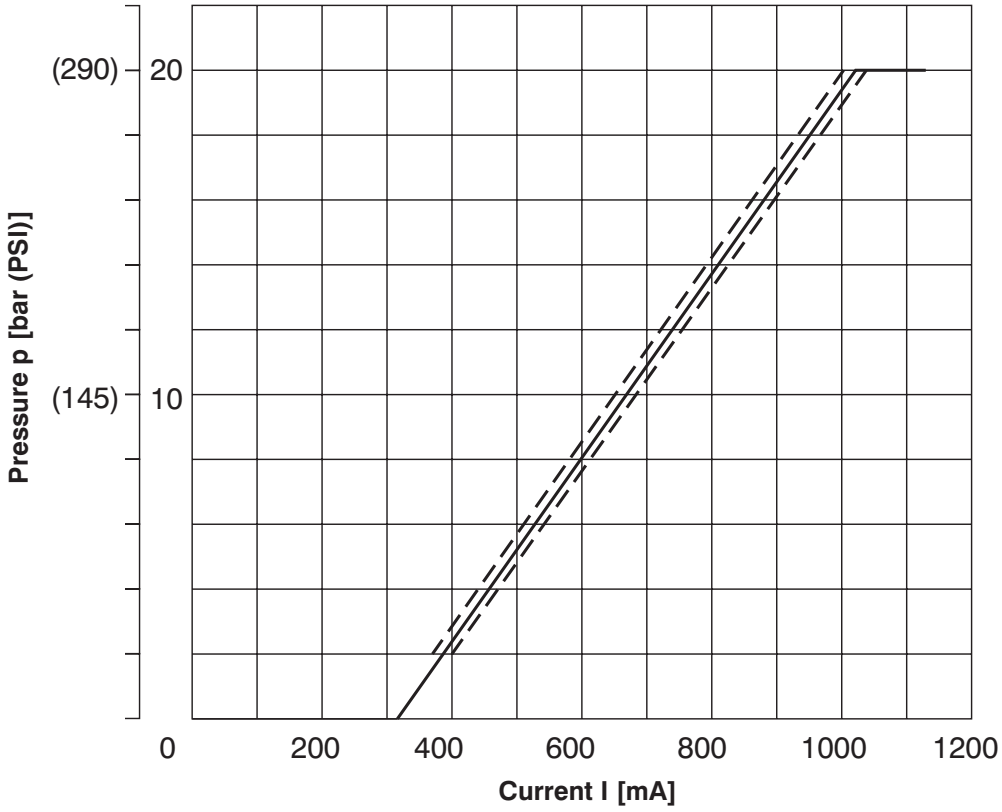
Supply voltage	V	12
Rated current	A	1
Rated resistance at 20 °C (68 °F)	Ω	7.1 ± 6,5%
Rated power	W	11
Duty cycle	%	100
Wire insulation class		200 from IEC 085
Enclosure type to EN 60 529		IP 65
Quenching		BZW 06 P28B
Control		PWM-signal 150 Hz

Valve Technical Data

Max. input pressure	bar (PSI)	50 (725)
Max. regulated pressure	bar (PSI)	20 (290)
Max. flow rate	L/min (US GPM)	20 (5.28)
Hydraulic fluid		Hydraulic oils of power classes (HL, HLP) to DIN 51 524
Viscosity range	mm^2/s (SUS)	10 ... 800 (49 ....3920)
Fluid temperature range	°C (°F)	-30 ...90 (-22 ...194), +100 °C (212 °F for a short term)
Maximum degree of fluid contamination		Class 21/18/15 to ISO 4406
Response time at 100 % signal	ms	< 50

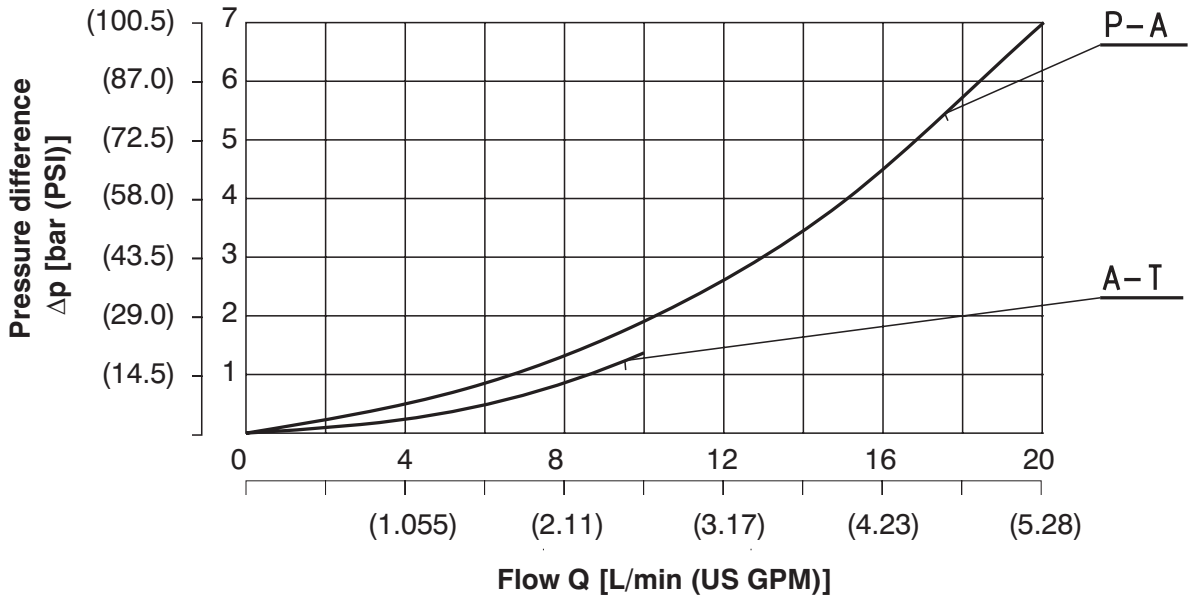
p-Q Characteristics

Measured at $\nu = 32\ mm^2/s$ (156 SUS)



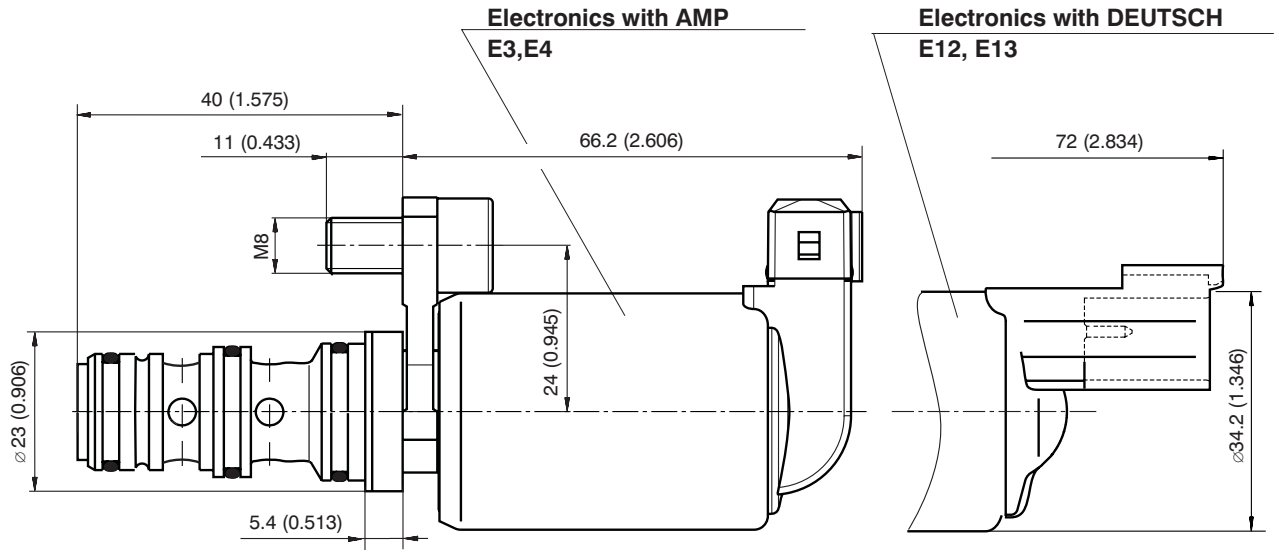
Δp-Q Characteristics

Measured at $\nu = 32\ mm^2/s$ (156 SUS)



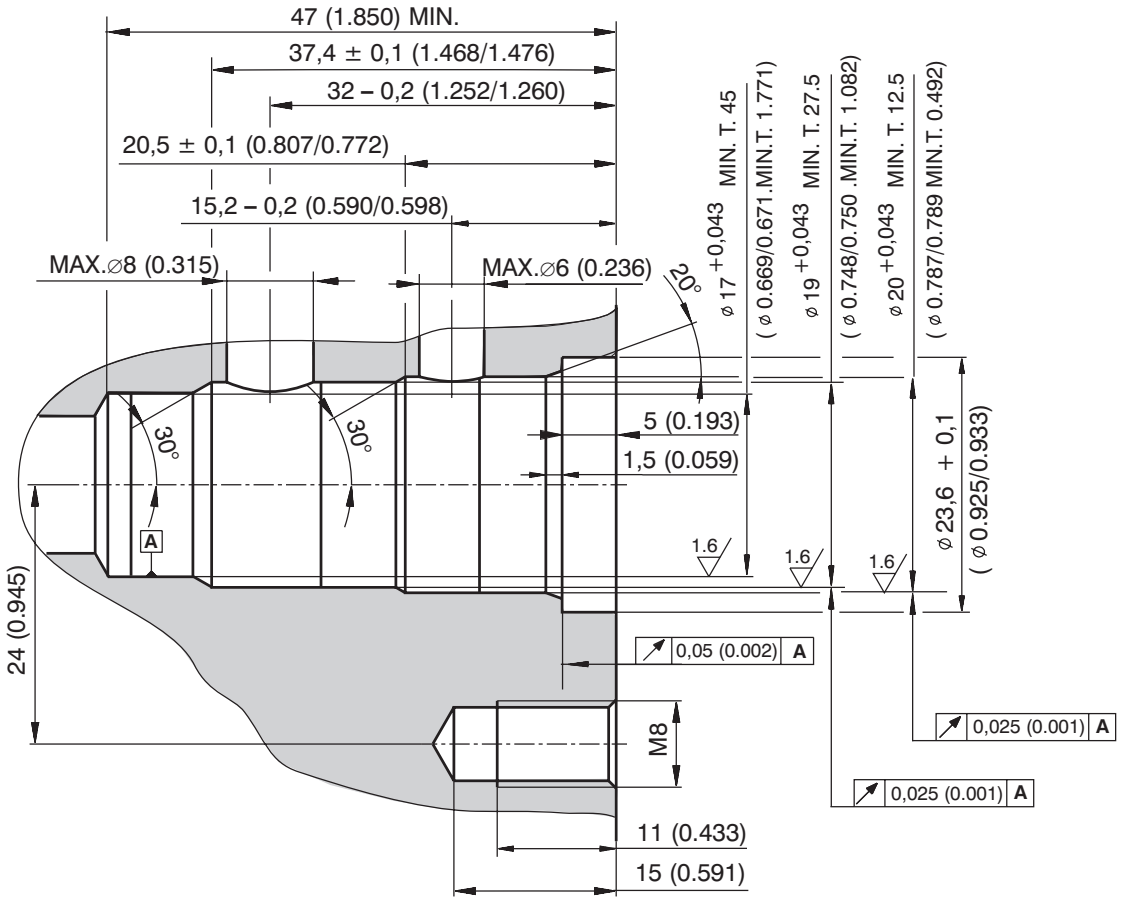
Valve Dimensions

Dimensions in millimeters and (inches)



Cavity

Dimensions in millimeters and (inches))



Caution!

- The technical information regarding the product presented in this catalogue is for descriptive purposes only. It should not be construed in any case as a guaranteed representation of the product properties in the sense of the law.

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