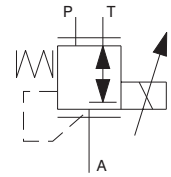


- Reducing valves suitable for mobile applications
- Compact design
- Economic Slip-In



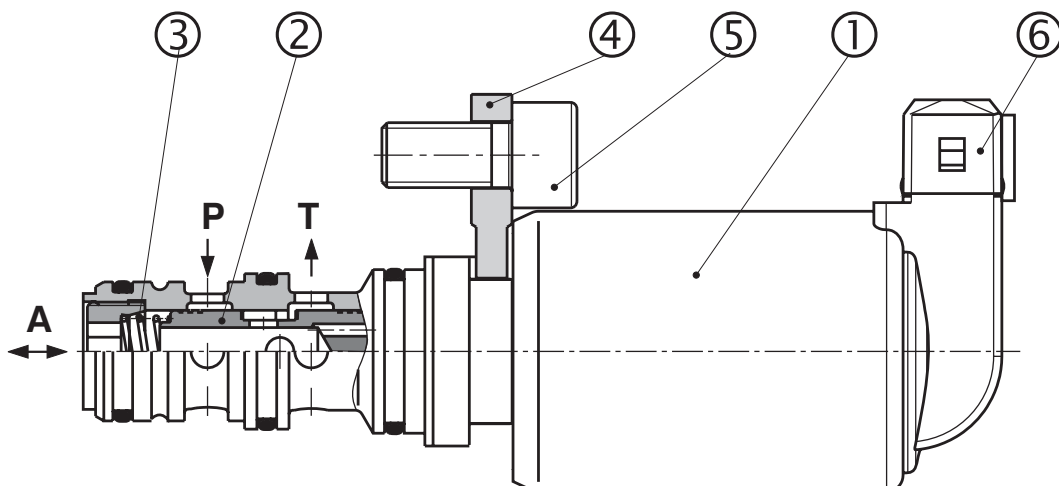
## Functional Description

The valve PP2P is the directly controlled 3 way 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 (1) force gradually increases and shifts, after overcoming the spring pretension (3), the spool (2) 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 behind the control spool, where it acts on the area of the small control piston. 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. Once the fixing screw is released, it is possible to turn the distributor around its axis by 360° and change thus the connector socket position (6).

The fixing screw (5) and fork (fastening member) (4) form also a part of the supply.

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

Type of construction **1**

Valve Cavity

D20 (mm)

**W**

Number of operating positions

**3**

Maximum regulated pressure (bar)

for 12 V

for 24 V

**20**

**32**

no designation

**V**

**Seals**

NBR

FPM (Viton)

**Electronics**

**E3**

with AMP-Junior-Timer-connector

**E4**

with integrated quenching diode and terminal for AMP-Junior-Timer connector

**E12A**

with DEUTSCH DT 04-2P

**E13A**

with integrated quenching diode and terminal for DEUTSCH DT 04-2P

**Nominal supply voltage**

**12**

**24**

12 V DC / 1 A

24 V DC / 1 A

## General Data

Design	spool valve	
Mounting mode	D20	
Mounting position	unrestricted	
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

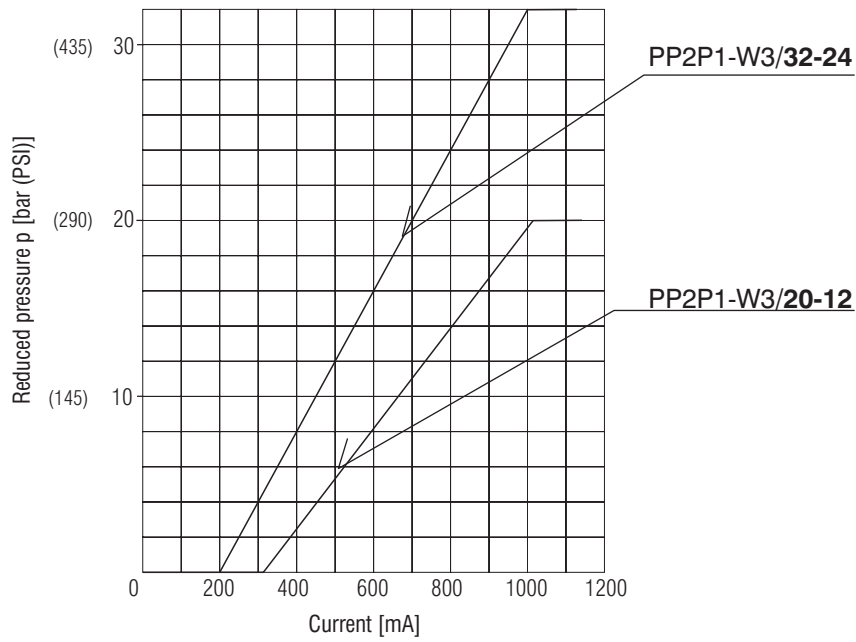
Supply voltage	V	12 DC	24 DC
Max. current	A	1	1
Rated resistance at 20 °C (68 °F)	Ω	7.2 ± 6,5%	11,2 ± 6,5%
Duty cycle	%	100	
Pressure tightness (Dynamic)	bar (PSI)	50	
Wire insulation class		200 from IEC 085	
Enclosure type to EN 60 529		IP 67	
Control	Hz	PWM-signal 100	PWM-signal 120
Quenching (E4, E13A)		BZW 06-28B	BZW06-33B

## Valve Technical Data

Max. input pressure	bar (PSI)	50 (725)	
Max. regulated pressure	bar (PSI)	20 (290)	32 (464)
Max. flow rate P-A	L/min (GPM)	max. 20 (5.28)	max.16 (4.23)
Hydraulic fluid		Hydraulic oils of power classes (HL, HLP) to DIN 51 524	
Viscosity range	mm <sup>2</sup> /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	

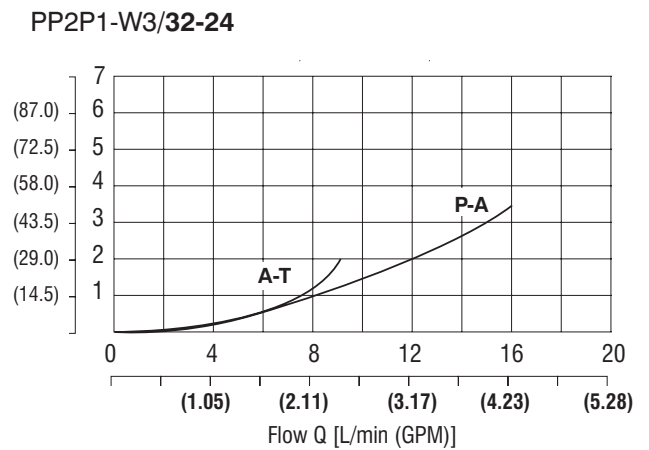
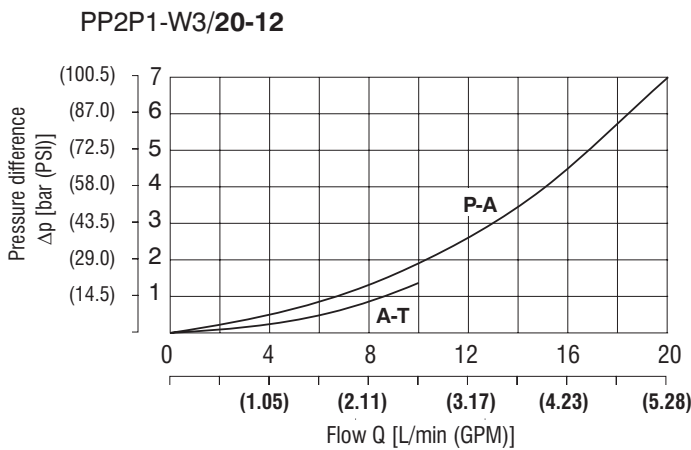
### p-Q Characteristics

Measured at  $v = 32 \text{ mm}^2/\text{s}$  (156 SUS)

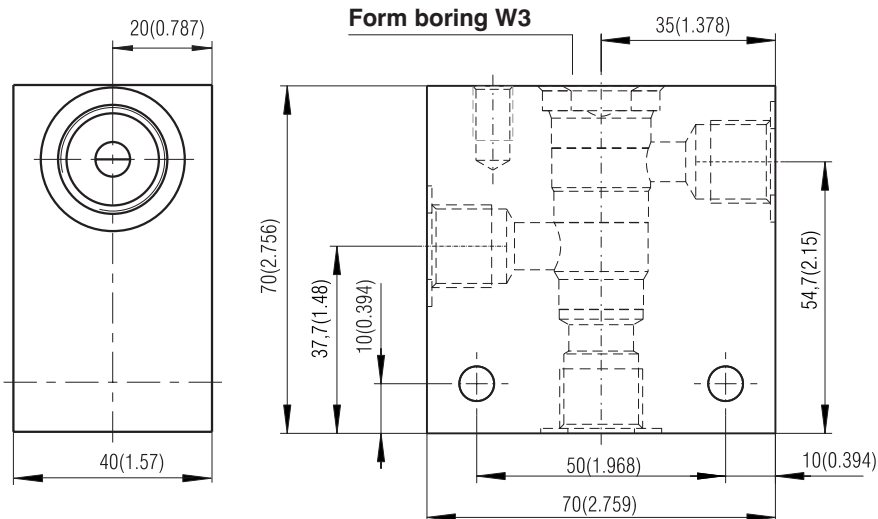


### $\Delta p$ -Q Characteristics

Measured at  $v = 32 \text{ mm}^2/\text{s}$  (156 SUS)



### Valve Body



Form boring	Connecting size	Type code	Body material	Operating pressures
W	G3/8	SB-W3-0103AL	Aluminium	250 bar (3626 PSI)

