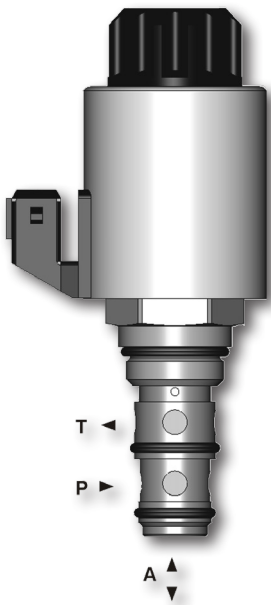


Proportional Pressure Control Valve, Reducing - Relieving, Direct-Acting

PVRM3-103

M24x1.5 • Q_{max} 40 l/min (11 GPM) • p_{max} 90 bar (1300 PSI)



Technical Features

- › Excellent stability throughout flow range with rapid response to proportional current input change
- › Low hysteresis, accurate pressure control and low pressure drop through CFD optimized flow paths
- › Precise pressure control vs current and excellent repeatability
- › Integrated relief function for protection against pressure peaks
- › Solenoid electrical terminal AMP Junior Timer, or Deutsch D04-2P
- › 12 or 24 V DC coils
- › In the standard version, the valve is zinc-coated for 240 h protection acc. to ISO 9227.
Enhanced surface protection for mobile sector available for the steel parts (ISO 9227, 520 h salt spray)

Functional Description

A direct-operated, spool-type hydraulic pressure reducing-relieving valve in the form of a screw-in cartridge. Reduced pressure in output (A) is proportional to DC current input. When the appliance is overloaded, the circuit is protected against damage by high pressure by connecting it to the tank (channel T).
Note: Consult factory for special OEM versions of this product.

Model	no mesh screen
Symbol	

Technical Data

Valve size / Cartridge cavity		M24x1.5 / QJ3			
Max. operating pressure (port P)	bar (PSI)	50 (730)		90 (1305)	
Max. reduced pressure (port A)	bar (PSI)	18 (260)	20 (290)	30 (435)	80 (1160)
Max. flow rate P-A	l/min (GPM)	40 (11)			
Fluid temperature range (NBR)	°C (°F)	-30 ... +90 (-22 ... +194), +100 (212) short-time			
Fluid temperature range (FPM)	°C (°F)	-20 ... +90 (-4 ... +194), +100 (212) short-time			
Ambient temperature range	°C (°F)	-30 ... +90 (-22 ... +194), +100 (212) short-time			
Response time at 100 % signal	ms	< 50			
Solenoid data					
Supply voltage	V	12 DC		24 DC	
Limit current	A	1.5		1	
Rated resistance at 20 °C (68 °F)	Ω	5		13.4	
Duty cycle	%	100			
Optimal PWM frequency	Hz	150			
Quenching diode		BZW06-28B		BZW06-33B	
Enclosure type acc. to EN 60529*		(acc.to terminal type) IP67 / IP69K			
Weight with solenoid	kg (lbs)	0.4 (0.88)			
*The indicated IP protection level is only reached with a properly mounted connector.					
Technical data of electronic control unit EL-7					
Operating supply voltage Ucc	V DC	9 ... 32			
Reference voltage Uref	V DC	5			
Max. current at Uref	mA	20			
Types of input command signal, when EL7 is used		see datasheet EL7*			
Max. output current / 1 coil	A	3			
PWM frequency	Hz	80 ... 1 000			
Resolution of A/D converters	bit	12			
Ramp function	s	0 ... 45			
Dither – amplitude**	% from I _{max}	0 ... 30			
Dither – frequency**	Hz	60 ... 300			
**When the dither is activated, the PWM frequency is automatically set to 15 kHz.					
	Datasheet	Type			
General information	GI_0060	Products and operating conditions			
Cavity details	SMT_0019	SMT-QJ3*			
Spare parts	SP_8010				

Ordering Code

PVRM3 - 103 / S - - -

Proportional pressure control valve, reducing - relieving, direct-acting

Valve cavity
M24x1.5 / QJ3

Model
screw-in cartridge

Max. reduced pressure

18 bar (260 PSI)	18
20 bar (290 PSI)	20
30 bar (435 PSI)	30
80 bar (1160 PSI)	80

Supply voltage / limit current

12 V DC / 1.5 A	12
24 V DC / 1 A	24

Integrated electronic control unit
(standardly on the solenoid "a")

Electronic control unit EL7-IA with an analogue input command signal **EL7-A**
Electronic control unit EL7-IC for connection to the CAN bus **EL7-C**

Surface treatment
A zinc-coated (ZnCr-3), ISO 9227 (240 h)
B zinc-coated (ZnNi), ISO 9227 (520 h)

No designation
V

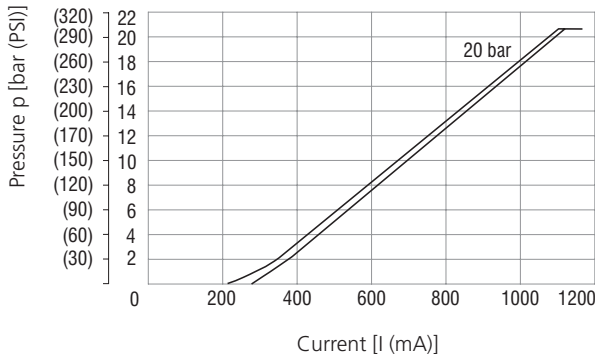
Seals
NBR
FPM (Viton)

Connector
EN 175301-803-A
E1 E1 with quenching diode
E2 E1 with quenching diode
E3A AMP Junior Timer - axial direction (2 pins; male)
E4A E3A with quenching diode
E12A Deutsch DT04-2P - axial direction
E13A E12A with quenching diode

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

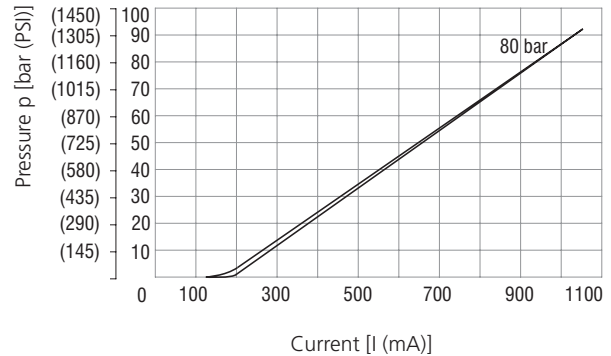
Reduced pressure related to control signal

Port A, range 0 - 20 bar (290 PSI), Q=0 lpm (GPM)
Port P, inlet pressure 50 bar (730 PSI)



Reduced pressure related to control signal

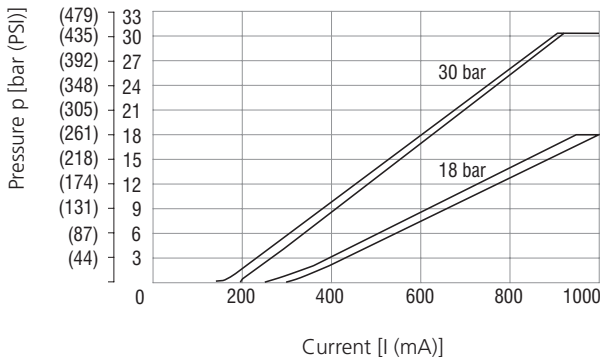
Port A, range 0 - 80 bar (1160 PSI), Q=0 lpm (GPM)
Port P, inlet pressure 90 bar (1305 PSI)



Reduced pressure related to control signal

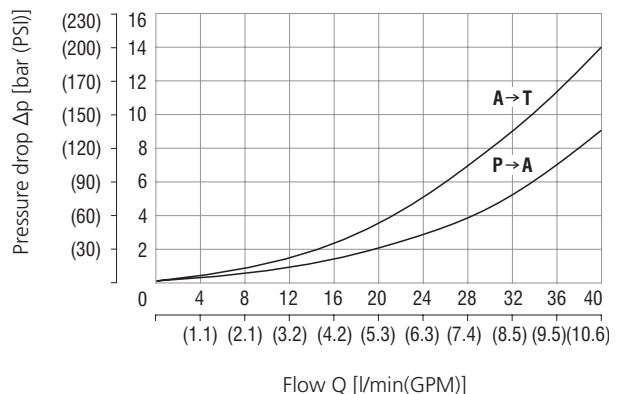
Port A, range 0 - 18 bar (260 PSI), Q=0 lpm (GPM)
Port P, inlet pressure 50 bar (730 PSI)

Port A, range 0 - 30 bar (435 PSI), Q=0 lpm (GPM)
Port P, inlet pressure 50 bar (730 PSI)



Pressure drop related to flow rate

A-T, Valve coil de-energized (relieving function)
P-A, Valve coil energized (reducing function)



Elektronic control unit EL7

An electronic control unit (ECU) EL7 is used for the valve control. The ECU converts the input command signal into an output current control PWM signal for solenoid coils. The ECU EL7 is available as external for connection to the DIN rail (EL7-E, see datasheet HA 9152) or integrated on the valve in the form of connector plug (EL7-I, see datasheet HA 9151).

Dimensions in millimeters (inches)

Connector type

E3, E4 - IP67
AMP Junior Timer

E12A, E13A - IP67 / IP69K
Deutsch DT04-2P

Vent screw

only for version with reduced pressure **80 bar**

