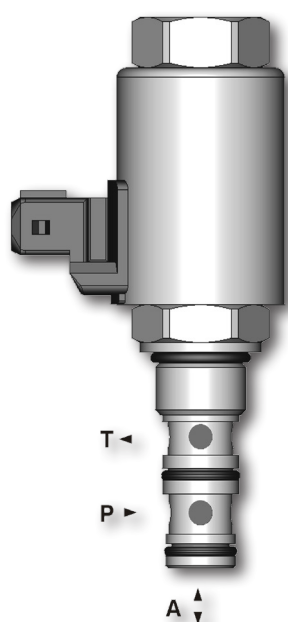


Proportional Pressure Control Valve, Reducing - Relieving, Direct-Acting

PVRM1-063

M20x1.5 • Q_{max} 20 l/min (5 GPM) • p_{max} 50 bar (700 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
- › Precise pressure control and excellent repeatability
- › Integrated relief function for protection against pressure peaks
- › Solenoid electrical terminal acc. to EN 175301-803-A, AMP Junior Timer, or Deutsch DT04-2P
- › 12 or 24 V DC coils
- › Optional mesh screen
- › 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	with mesh screen
Symbol		

Technical Data

Valve size / Cartridge cavity		M20x1.5 / QE3	
Max. operating pressure (port P)	bar (PSI)	50 (730)	
Max. reduced pressure (port A)	bar (PSI)	20 (290)	32 (464)
Max. flow rate P-A	l/min (GPM)	20 (5.3)	
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	0.75
Rated resistance at 20 °C (68 °F)	Ω	7.1±6.5 %	20.6±6.5 %
Duty cycle	%	100	
Optimal PWM frequency	Hz	100	
Quenching diode		BZW06-28B	BZW06-33B
Enclosure type acc. to EN 60529*		(acc. to terminal type) IP65 / IP67 / IP69K	
Weight with solenoid	kg (lbs)	0.4 (0.88)	
* The specified IP rating applies only in the case of correctly connected connectors (male + female) with the corresponding IP rating.			
Technical data of electronic control unit EL-7			
Operating supply voltage U _{cc}	V DC	9 ... 32	
Reference voltage U _{ref}	V DC	5	
Max. current at U _{ref}	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-QE3*	
Spare parts	SP_8010		

Ordering Code

PVRM1 - 063 / S - - -

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

Valve cavity
M20x1.5 / Q3

Model
screw-in cartridge

Max. reduced pressure
20 bar (290 PSI)
32 bar (464 PSI)

20
32

Supply voltage / limit current
12 V DC / max. 1 A
24 V DC / max. 0.75 A

12
24

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

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

EL7-A
EL7-C

No designation
SP-125

Mesh screen
without mesh screen
port P, 125 microns

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

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

No designation
V

Seals
NBR
FPM (Viton)

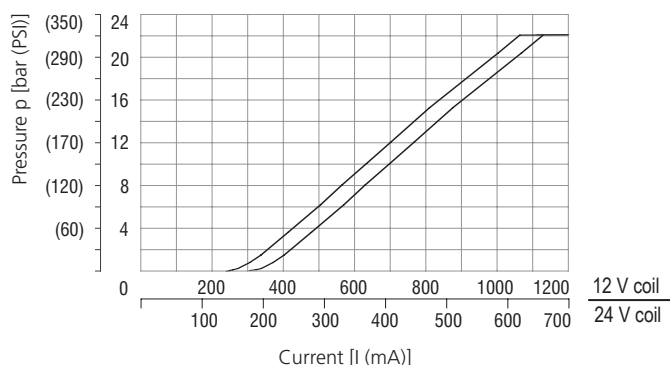
Connector
EN 175301-803-A
E1 with quenching diode
E2 with quenching diode
E3 AMP Junior Timer - radial direction (2 pins; male)
E4 E3 with quenching diode
E3A AMP Junior Timer - axial direction (2 pins; male)
E4A E3A with quenching diode
E12A Deutsch DT04-2P - axial direction
E13A E12A with quenching 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), $Q = 0 \text{ lpm}$ (GPM)
Port P, inlet pressure 50 bar (730 PSI)

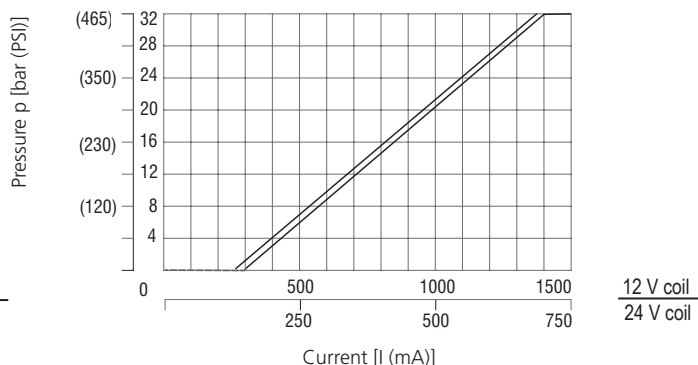
PVRM1-063/S*20



Reduced pressure related to control signal

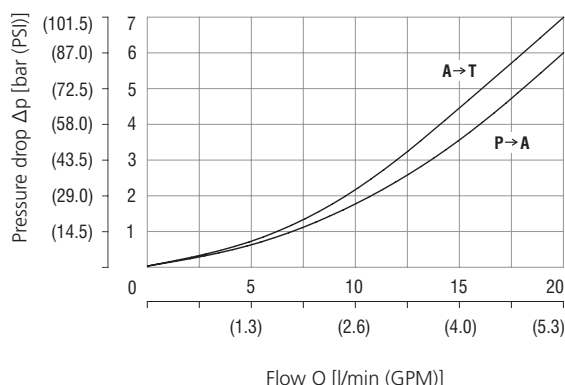
Port A, range 0 - 32 bar (464 PSI), $Q = 0 \text{ lpm}$ (GPM)
Port P, inlet pressure 50 bar (730 PSI)

PVRM1-063/S*32



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 - radial

E1, E2 - IP65

EN 175301-803-A

E3A, E4A - IP67

AMP Junior Timer
- axial

E12A, E13A - IP67/ IP69K

Deutsch DT04-2P

