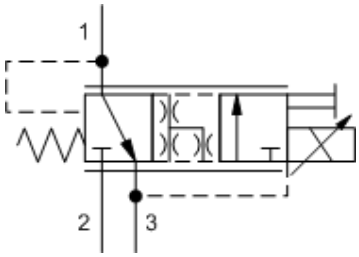
MODEL
PRDL

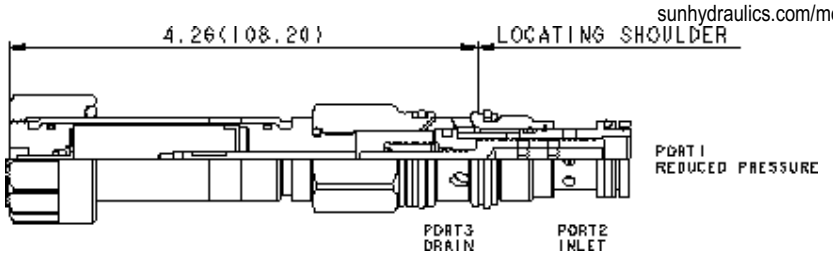
Electro-proportional, direct-acting, pressure reducing/relieving valve with open transition

SERIES 1 / CAPACITY: 5 gpm / CAVITY: T-11A

sunhydraulics.com/model/PRDL



M-Control



This electro-proportional, direct-acting reducer/reliever valve reduces a high primary pressure at the inlet (port 2) to a constant reduced pressure at port 1, with a full flow relief function from port 1 to tank (port 3). The valve is biased to the relieving mode. Energizing the coil connects port 2 to port 1. Increasing the current to the coil will proportionally increase the reduced pressure at port 1. If pressure at port 1 exceeds the setting induced by the coil, pressure at port 1 is relieved to port 3. This valve is open in the transition from reducing to relieving. It provides good pressure control and dynamic response. Optional full manual control is available.

CONFIGURATION

M	Control	Manual Override (Standard)
D	Operating Range	50 - 485 psi (3,5 - 33,5 bar)
N	Seal Material	Buna-N
(none)	Coil	No coil

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Cavity	T-11A
Series	1
Capacity	5 gpm
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	20 in³/min.
Adjustment - No. of CW Turns from Min. to Max. setting	5
Solenoid Tube Diameter	.75 in.
Valve Hex Size	7/8 in.
Valve Installation Torque	30 - 35 lbf ft
Adjustment Screw Internal Hex Size	5/32 in.
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Model Weight (with coil)	1.20 lb
Seal kit - Cartridge	Buna: 990511007
Seal kit - Cartridge	Viton: 990511006
Seal and nut kit - Coil	Viton: 990770006
Model Weight	0.72 lb.

PROPORTIONAL PERFORMANCE DATA

Hysteresis (with dither)	6%
Hysteresis with DC input	<8%
Linearity (with dither)	<2%
Repeatability (with dither)	<2%
Recommended dither frequency	140 Hz

NOTES Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.

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CONFIGURATION OPTIONS

Model Code Example: PRDLMDN

CONTROL (M)	OPERATING RANGE (D)	SEAL MATERIAL (N)	COIL *
M Manual Override (Standard)	**D** 50 - 485 psi (3,5 - 33,5 bar)	**N** Buna-N	No coil
E Twist (Extended) Manual Override	**E** 25 - 250 psi (1,7 - 18 bar)	**E** EPDM	**212** DIN 43650-Form A, 12 VDC
L Standard Screw Adjustment	**B** 100 - 1125 psi (7 - 77,5 bar)	**V** Viton	**224** DIN 43650-Form A, 24 VDC
X No Manual Override	**S** 10 - 100 psi (0,7 - 7 bar)		**224NX01** DIN 43650-Form A, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-01 driver
			224NX02 DIN 43650-Form A, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-02 driver
			912 Deutsch DT04-2P, 12 VDC
			912NX01 Deutsch DT04-2P, 12 VDC, no transient voltage suppression (TVS) diodes, with XMD-01 driver
			912NX02 Deutsch DT04-2P, 12 VDC, no transient voltage suppression (TVS) diodes, with XMD-02 driver
			924 Deutsch DT04-2P, 24 VDC
			924NX01 Deutsch DT04-2P, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-01 driver
			924NX02 Deutsch DT04-2P, 24 VDC, no transient voltage suppression (TVS) diodes, with XMD-02 driver

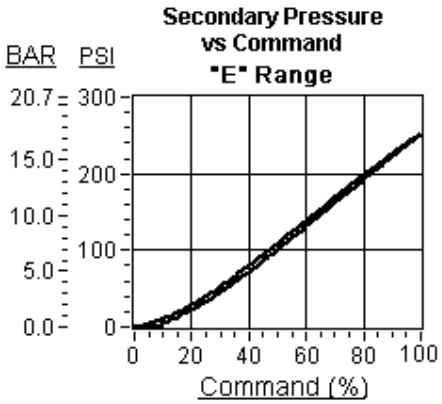
* Additional coil options are available

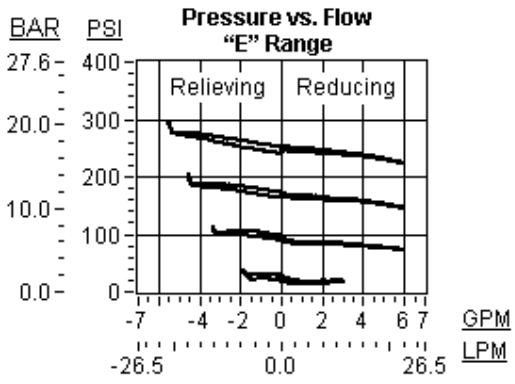
TECHNICAL FEATURES

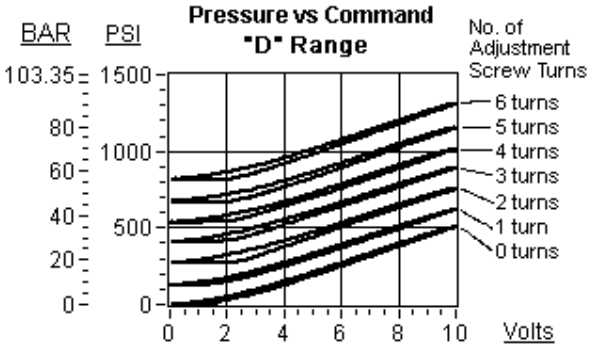
- Maximum pressure at port 3 should be limited to 3000 psi (210 bar).
- Pressure at port 3 is directly additive to the valve setting at a 1:1 ratio and should not exceed 3000 psi (210 bar).
- The transition from reducing to relieving is slightly open. The result is very good pressure control with oil consumption of about 0.1 gpm (0,4 L/min.).
- For optimum performance, an amplifier with current sensing and adjustable dither should be used. Dither should be adjustable between 100 - 250 Hz.
- Direct acting concept provides highly reliable operation in contaminated systems, especially at dead headed conditions.
- Full reverse flow from reduced pressure (port 1) to inlet (port 2) may cause the main spool to close. If reverse free flow is required in the circuit, consider adding a separate check valve to the circuit.
- All three-port pressure reducing and reducing/relieving cartridges are physically interchangeable (i.e. same flow path, same cavity for a given frame size). When considering mounting configurations, it is sometimes recommended that a full capacity return line (port 3) be used with reducing/relieving cartridges.
- NOTE: There is no upper limit to the pressure setting when using the M control. The more force you exert on the manual override, the higher the resulting pressure.
- The 'E' manual control assembly has a mechanical life expectancy of approximately 7,000 cycles.
- The momentary/twist override option "E" allows the operator to shift the valve by twisting the manual override clockwise 90 degrees.
- Cartridges configured with EPDM seals are for use in systems with phosphate ester fluids. Exposure to petroleum based fluids, greases and lubricants will damage the seals.
- Uses for the 'L' manual screw adjustment include: emergency valve setting during power failure or alternatively boosting the valve setting
- With the 'L' adjustment screw, all ranges are factory set at zero (adjustment screw fully backed out). With the coil de-energized, clockwise adjustment of the screw will increase the spring bias load up to the maximum setting for that range. With the coil energized, any mechanical pressure setting is directly additive to the coil induced value.
- Incorporates the Sun floating style construction to minimize the possibility of internal parts binding due to excessive installation torque and/or cavity/cartridge machining variations.

PERFORMANCE CURVES

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