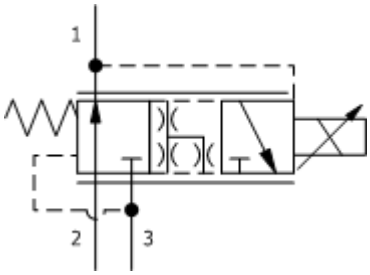
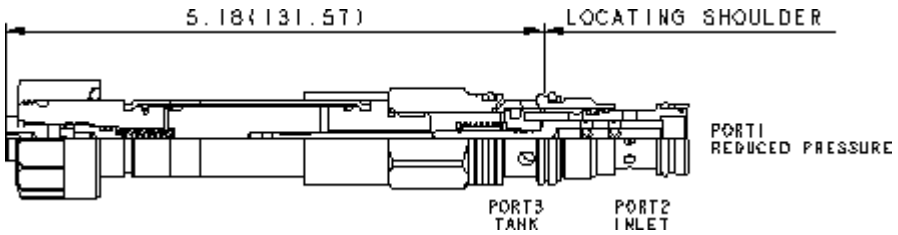
Electro-proportional, direct-acting, pressure reducing/relieving valve with open transition - high pressure setting with no command

CAPACITY: 5 gpm / CAVITY: T-11A

sunhydraulics.com/model/PRDM





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 reducing mode, connecting port 2 to port 1 at a customer specified pressure setting. Increasing the current to the coil will proportionally decrease 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.

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

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 in^3/min.
Solenoid Tube Diameter	.75 in.
Valve Hex Size	7/8 in.
Valve Installation Torque	30 - 35 lbf ft
Model Weight (with coil)	1.20 lb
Seal and nut kit - Coil	Viton: 990-770-006
Seal kit - Cartridge	Buna: 990-511-007
Seal kit - Cartridge	Viton: 990-511-006

OPTION SELECTION EXAMPLE: PRDMXDN

CONTROL	(X)
X	No Manual Override

ADJUSTMENT RANGE	(D)
D	400 - 200 psi (14 - 28 bar)
B	1000 - 400 psi (28 - 70 bar)
E	200 - 100 psi (7 - 14 bar)
S	100 - 10 psi (0,7 - 7 bar)

SEAL MATERIAL	(N)
N	Buna-N
V	Viton

COIL	
	No coil
212	DIN 43650-Form A, 12 VDC
224	DIN 43650-Form A, 24 VDC
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

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.
- Coils are interchangeable with Sun's other full flow, solenoid-operated valves and can be mounted on the tube in either direction.
- With no electrical signal, the reduced pressure setting will default to the customer specified value. Increasing the command to the coil will proportionally reduce the secondary pressure value.
- Direct acting concept provides highly reliable operation in contaminated systems, especially at dead headed conditions.
- 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.
- 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.
- 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