

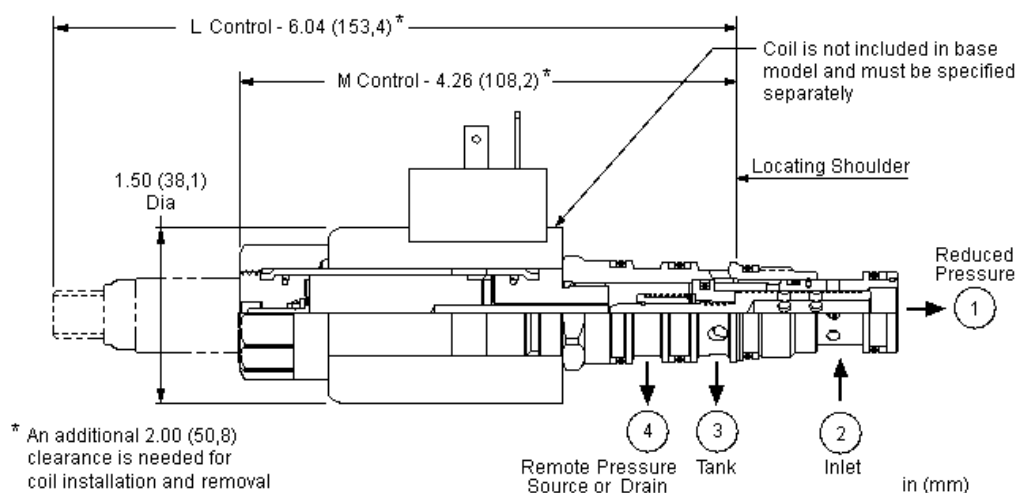
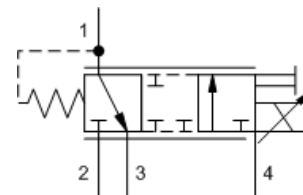


Electro-proportional, direct-acting, pressure reducing/relieving valve with drain to port 4

Capacity:
5 gpm (20
L/min.)
Model:
PSDP

Product Description

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. Draining port 4 makes the valve insensitive to pressure at port 3. This valve is closed in the transition between reducing and relieving resulting in very low consumption of oil. Optional full manual control is available.

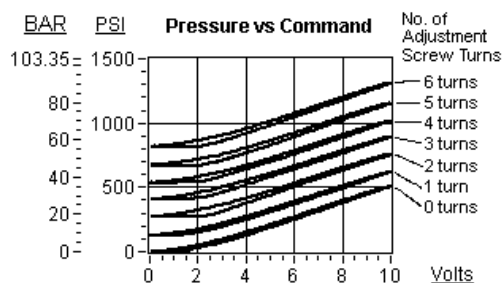
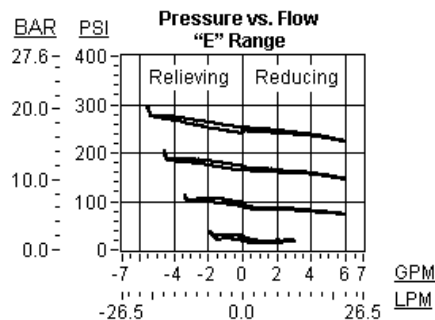
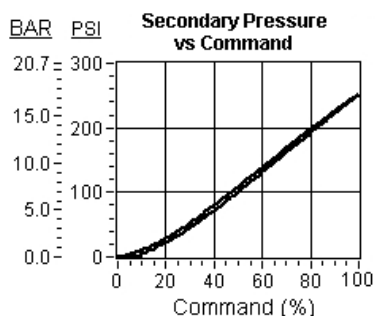


Technical Features

- Maximum pressure at port 3 should be limited to 3000 psi (210 bar).
- All spring ranges are tested for correct operation with 5000 psi (350 bar) inlet pressure.
- Suitable for accumulator circuits since the absence of pilot control flow results in reduced secondary circuit leakage.
- Direct acting concept provides highly reliable operation in contaminated systems, especially at dead headed conditions.
- Leakage specified in Technical Data is out of port 3 with a supply pressure of 2000 psi (140 bar) and the valve set at mid range. This leakage is directly proportional to pressure differential and inversely proportional to viscosity expressed in centistokes.
- The transition from reducing to relieving is closed. The result is very low leakage. However, there is a transitional step increase in pressure between reducing and relieving modes. This step equals about 5% of the high end of the adjustment range, independent of the valve setting.
- For optimum performance, an amplifier with current sensing and adjustable dither should be used. Dither should be adjustable between 100 - 250 Hz.
- 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.
- Uses for the 'L and K' manual screw adjustment include: emergency valve setting during power failure or alternatively boosting the valve setting.
- With the 'L and K' 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.
- By controlling the pressure at the drain (port 4), the effective setting of the valve can be increased over the nominal valve setting.
- Pressure on the drain (port 4) is directly additive to the valve setting at a 1:1 ratio and should not exceed 3000 psi (210 bar).
- 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.

Technical Data

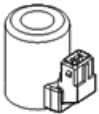
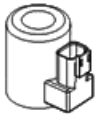
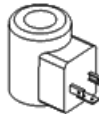
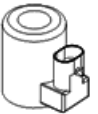
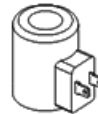
	U.S. Units	Metric Units
Cavity		T-21A
Capacity	5 gpm	20 L/min.
Hysteresis (with dither)		<4%
Hysteresis with DC input		<8%
Linearity (with dither)		<2%
Repeatability (with dither)		<2%
Recommended dither frequency		140 Hz
Maximum Operating Pressure	5000 psi	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	2.5 in ³ /min.	41 cc/min.
Series (from Cavity)		Series 1
Adjustment - Number of Clockwise Turns to Increase Setting		5
Solenoid Tube Diameter	.75 in.	19 mm
Valve Hex Size	7/8 in.	22,2 mm
Valve Installation Torque	30 - 35 lbf ft	40 - 50 Nm
Adjustment Screw Internal Hex Size	5/32 in.	4 mm
Adjustment Locknut/Cap Hex Size	9/16 in.	15 mm
Adjustment Nut Torque	80 - 90 lbf in.	9 - 10 Nm
Model Weight (with coil)	1.20 lb	0,55 kg
Seal Kits - Cartridge		Buna: 990-021-007
Seal Kits - Cartridge		Viton: 990-021-006
Seal Kits - Coil		Viton: 990-770-006
Model Weight	0.70 lb.	0.32 kg.



PSDP-MDN-***

Control	Operating Range	Seal Material	Coil
Standard Options	Standard Options	Standard Options	*** See Coil Options Below
L Standard Screw Adjustment	B 100 - 1200 psi (7 - 80 bar)	N Buna-N	
M Manual Override (Standard)	D 50 - 500 psi (3,5 - 35 bar)	V Viton	
	E 25 - 250 psi (1,7 - 18 bar)		

Standard Coil Options

					
AMP Junior Timer	Deutsch DT04-2P	DIN 43650 4 pin (Hirschman)	Metri-Pack	SAE J858A	Twin Lead

*** no coil

612	AMP Junior Timer 12 VDC
624	AMP Junior Timer 24 VDC
712	Twin Lead 12 VDC
724	Twin Lead 24 VDC

812	Metri-Pack 12 VDC
824	Metri-Pack 24 VDC
912	Deutsch DT04-2P 12 VDC
924	Deutsch DT04-2P 24 VDC

Embedded Coil Options ([Click Here](#))

2B12A	DIN 43650 4 pin (Hirschman) command common on fourth pin 12 VDC 0-20 mA	2C24V	DIN 43650 4 pin (Hirschman) +5V reference on fourth pin 24 VDC 0-10V	4A12A	Deutsch DT04-6P all functions enabled (separate command common, 5 v reference, and an enable) 12 VDC 0-20 mA
2B12V	DIN 43650 4 pin (Hirschman) command common on fourth pin 12 VDC 0-10V	2D12A	DIN 43650 4 pin (Hirschman) enable input on fourth pin 12 VDC 0-20 mA	4A12V	Deutsch DT04-6P all functions enabled (separate command common, 5 v reference, and an enable) 12 VDC 0-10V
2B24A	DIN 43650 4 pin (Hirschman) command common on fourth pin 24 VDC 0-20 mA	2D12V	DIN 43650 4 pin (Hirschman) enable input on fourth pin 12 VDC 0-10V	4A24A	Deutsch DT04-6P all functions enabled (separate command common, 5 v reference, and an enable) 24 VDC 0-20 mA
2B24V	DIN 43650 4 pin (Hirschman) command common on fourth pin 24 VDC 0-10V	2D24A	DIN 43650 4 pin (Hirschman) enable input on fourth pin 24 VDC 0-20 mA	4A24V	Deutsch DT04-6P all functions enabled (separate command common, 5 v reference, and an enable) 24 VDC 0-10V
2C12A	DIN 43650 4 pin (Hirschman) +5V reference on fourth pin 12 VDC 0-20 mA	2D24V	DIN 43650 4 pin (Hirschman) enable input on fourth pin 24 VDC 0-10V	4F12V	Deutsch DT04-6P programmable ramps, separate rise and fall 12 VDC 0-10V
2C12V	DIN 43650 4 pin (Hirschman) +5V reference on fourth pin 12 VDC 0-10V	2F12V	DIN 43650 4 pin (Hirschman) programmable ramps, separate rise and fall 12 VDC 0-10V	4F24V	Deutsch DT04-6P programmable ramps, separate rise and fall 24 VDC 0-10V
2C24A	DIN 43650 4 pin (Hirschman) +5V reference on fourth pin 24 VDC 0-20 mA	2F24V	DIN 43650 4 pin (Hirschman) programmable ramps, separate rise and fall 24 VDC 0-10V		

Additional Options**Additional Coils**

512	SAE J858A 12 VDC
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