



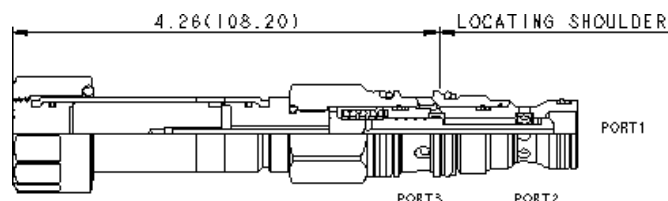
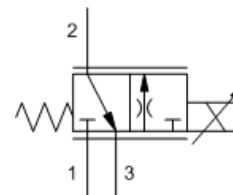
Electro-proportional 3-way flow control valve, meter in

Capacity:
6 gpm (23 L/min.)

Model:
FMDB

Product Description

This valve is a 3-way, meter-in, electro-proportional throttle. The flow path, unenergized, has the supply blocked at port 1 and port 2 connected to tank at port 3. Energizing the coil generates a closing force on the spool, creating a metering orifice in the 1 to 2 direction that is proportional to the coil command current. The valve self-compensates in the 1 to 2 direction and with the addition of an external compensator will provide pressure compensated flow control. Flow in the 2 to 3 direction is not proportional.

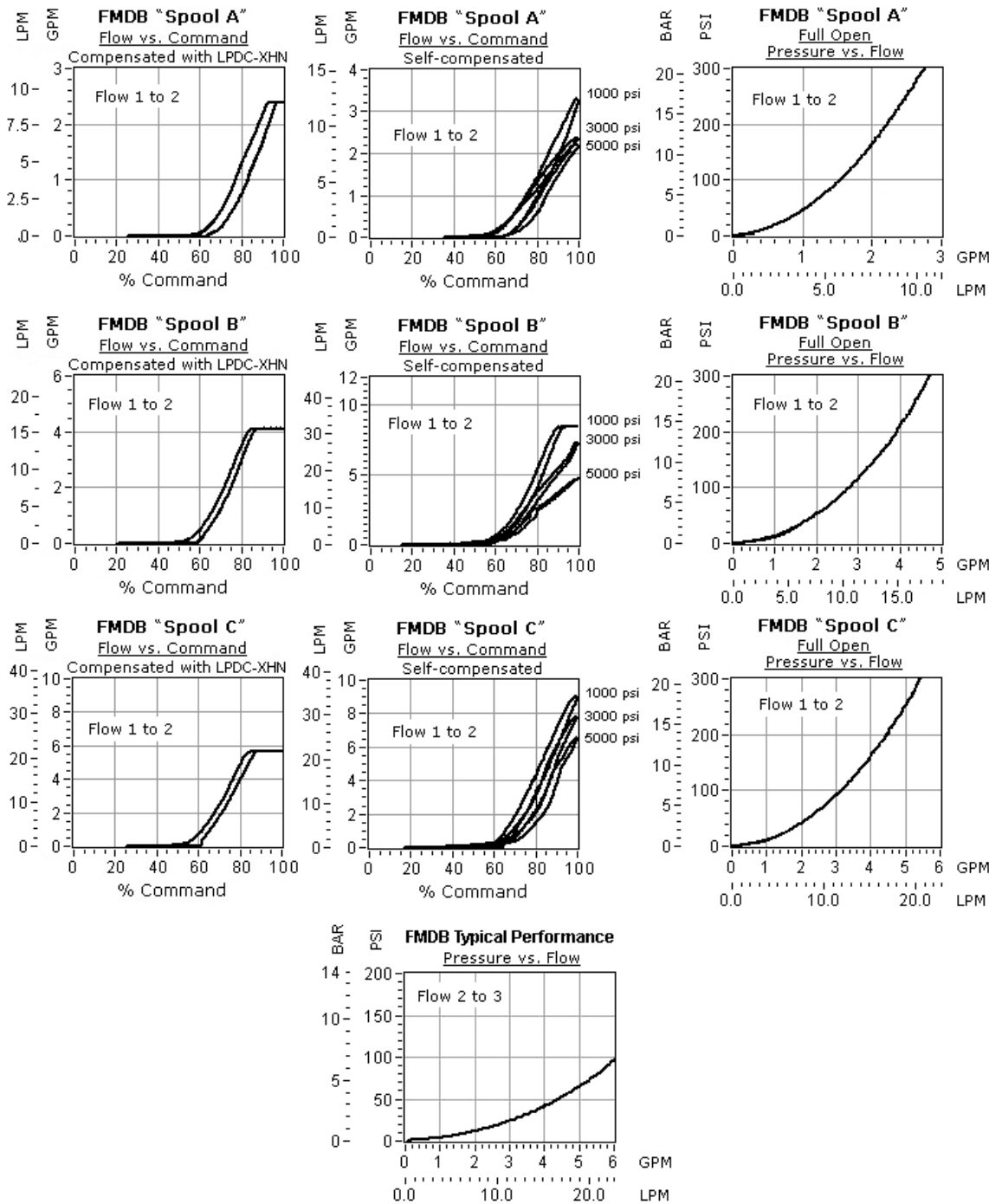


Technical Features

- The transition between positions is closed.
- Using 2 3-ways to create a 4-way allows one to choose existing flow ranges instead of cutting a special spool.
- These valves may be pressure compensated by an external, modulating, logic element. Use LR_C-XHN for a bypass circuit or LP_C-XHN for a restrictive circuit.
- If the flow control need is absolute, a pressure compensator is needed. If the flow control need is not absolute, as with a joystick, self-compensation may suffice.
- All ports will accept 5000 psi (350 bar).
- Coils are interchangeable with Sun's other full flow, solenoid-operated valves and can be mounted on the tube in either direction.
- For optimum performance, an amplifier with current sensing and adjustable dither should be used. Dither should be adjustable between 100 - 250 Hz.
- 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.

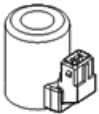
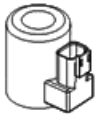
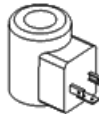
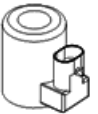
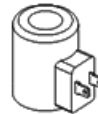
Technical Data

	U.S. Units	Metric Units
Cavity	T-11A	
Capacity	6 gpm	23 L/min.
Hysteresis (with dither)	<4%	
Hysteresis with DC input	<8%	
Linearity (with dither)	<2%	
Repeatability (with dither)	<2%	
Recommended dither frequency	140 Hz	
Deadband, nominal (as a percentage of input)	60%	
Manual Override Force Requirement	5 lbs/1000 psi @ Port 1	3 kgs/100 bar @ Port 1
Manual Override Stroke	.10 in.	2,5 mm
Maximum Valve Leakage at 110 SUS (24 cSt)	2 in ³ /min.@1000 psi	30 cc/min.@70 bar
Series (from Cavity)	Series 1	
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
Model Weight (with coil)	1.10 lb	0,50 kg
Seal Kits - Cartridge	Buna: 990-411-007	
Seal Kits - Cartridge	Viton: 990-411-006	
Seal Kits - Coil	Viton: 990-770-006	
Model Weight	0.75 lb.	0.34 kg.



FMDB-XCN-***

Control	Flow Rate	Seal Material	Coil
Standard Options	Standard Options	Standard Options	*** See Coil Options Below
M Manual Override	A .1 - 1.6 gpm (0,4 - 6.1 L/min.)	N Buna-N	
T Twist Manual Override	B .1 - 4 gpm (0,4 - 15 L/min.)	V Viton	
X No Manual Override	C .1 - 6 gpm (0,4 - 23 L/min.)		
Standard Coil Options			

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

*** no coil

212 DIN 43650 4 pin
(Hirschman) 12 VDC224 DIN 43650 4 pin
(Hirschman) 24 VDC

524 SAE J858A 24 VDC

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*2B12A DIN 43650 4 pin
(Hirschman) command
common on fourth pin 12
VDC 0-20 mA2B12V DIN 43650 4 pin
(Hirschman) command
common on fourth pin 12
VDC 0-10V2B24A DIN 43650 4 pin
(Hirschman) command
common on fourth pin 24
VDC 0-20 mA2B24V DIN 43650 4 pin
(Hirschman) command
common on fourth pin 24
VDC 0-10V2C12A DIN 43650 4 pin
(Hirschman) +5V reference
on fourth pin 12 VDC 0-20
mA2C12V DIN 43650 4 pin
(Hirschman) +5V reference
on fourth pin 12 VDC 0-10V2C24A DIN 43650 4 pin
(Hirschman) +5V reference
on fourth pin 24 VDC 0-20
mA2C24V DIN 43650 4 pin
(Hirschman) +5V reference
on fourth pin 24 VDC 0-10V2D12A DIN 43650 4 pin
(Hirschman) enable input on
fourth pin 12 VDC 0-20 mA2D12V DIN 43650 4 pin
(Hirschman) enable input on
fourth pin 12 VDC 0-10V2D24A DIN 43650 4 pin
(Hirschman) enable input on
fourth pin 24 VDC 0-20 mA2D24V DIN 43650 4 pin
(Hirschman) enable input on
fourth pin 24 VDC 0-10V2F12V DIN 43650 4 pin
(Hirschman) programmable
ramps, separate rise and fall
12 VDC 0-10V2F24V DIN 43650 4 pin
(Hirschman) programmable
ramps, separate rise and fall
24 VDC 0-10V4A12A Deutsch DT04-6P all
functions enabled (separate
command common, 5 v
reference, and an enable) 12
VDC 0-20 mA4A12V Deutsch DT04-6P all
functions enabled (separate
command common, 5 v
reference, and an enable) 12
VDC 0-10V4A24A Deutsch DT04-6P all
functions enabled (separate
command common, 5 v
reference, and an enable) 24
VDC 0-20 mA4A24V Deutsch DT04-6P all
functions enabled (separate
command common, 5 v
reference, and an enable) 24
VDC 0-10V4F12V Deutsch DT04-6P
programmable ramps,
separate rise and fall 12
VDC 0-10V4F24V Deutsch DT04-6P
programmable ramps,
separate rise and fall 24
VDC 0-10V*Additional Options**Additional Coils*

512 SAE J858A 12 VDC

Customer specified setting stamped on hex.