



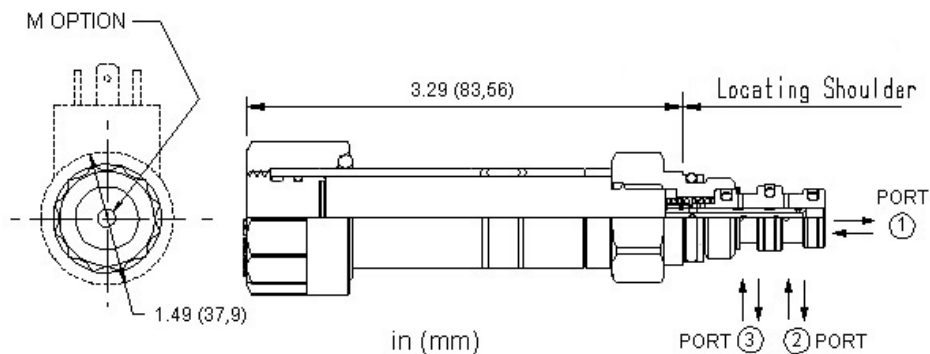
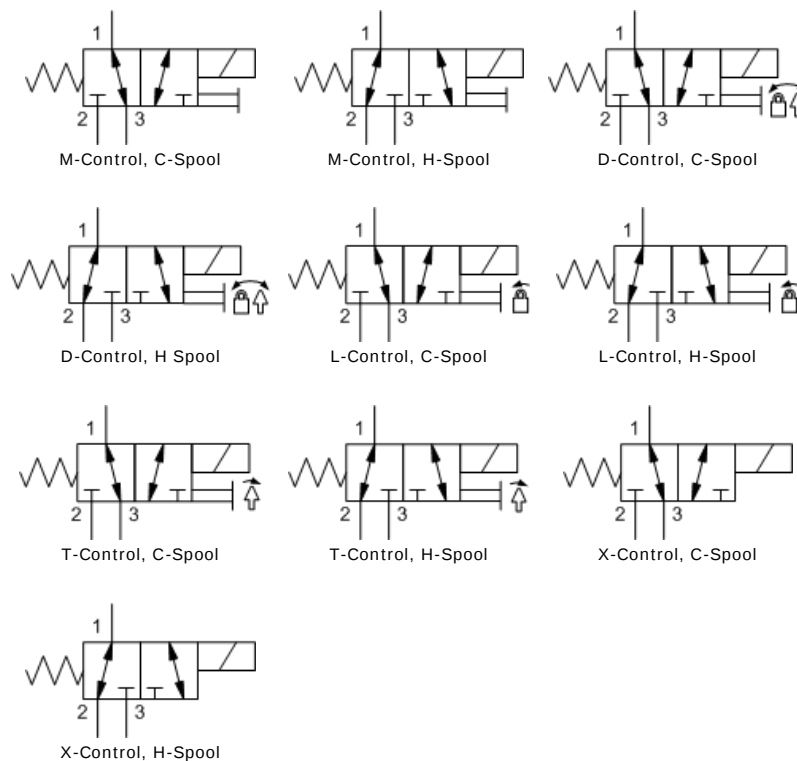
3-way, solenoid-operated directional spool valve - pilot capacity

Capacity:
.25 gpm (1 L/min.)

Model:
DBAL

Product Description

This solenoid-operated 3-way, 2-position cartridge is a direct-acting, balanced spool pilot valve used to pilot other full-flow valves. The valve is normally open between port 1 and port 2 or port 1 and port 3 and all flow paths are bidirectional.



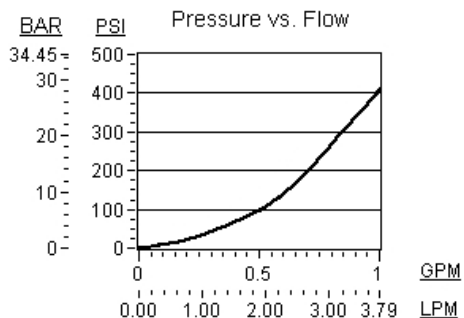
Technical Features

- The DBAL integrates the coil, connector, and manual operator options that are currently available on the Series 1 valve with the Series P pilot solenoid valve. The DBAL is interchangeable with the DBAA except for the external coil dimensions and higher coil wattage.
- This valve utilizes a wet armature design. This means that the working fluid surrounds the armature and is exposed to the heat generated by the coil. This can be a factor if the coil is energized for long periods of time. Some fluids, notably water/glycol mixtures, break down at these temperatures over time and form varnishes that will affect the function of the cartridge.

- The solenoid tube assembly is fatigue rated for 5000 psi (350 bar) service.
- This valve is direct actuated and requires no minimum hydraulic pressure for operation.
- Valves exhibit extremely low leakage rates; less than 10 drops/min. @ 5000 psi (0,7 cc/min @ 350 bar).
- This cartridge has several manual override choices, including no manual override. See Option Selection below.
- Coils are interchangeable with other Sun Series 1 solenoid products and can be mounted on the tube in either direction.
- Coil connector options offer ratings up to IP69K. See individual coil product pages for details. Additional weatherized coils and kits are available for more complete environmental protection.
- 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.

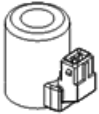
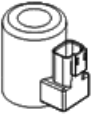
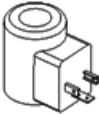
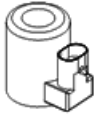
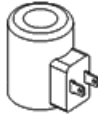
Technical Data

	U.S. Units	Metric Units
Cavity	T-9A	
Capacity	.25 gpm	1 L/min.
Manual Override Force Requirement	10 lbs/1000 psi @ Port 1	6,6 kgs/100 bar @ Port 1
Manual Override Stroke	.10 in.	2,5 mm
Maximum Operating Pressure	5000 psi	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	10 drops/min.@5000 psi	0,7 cc/min.@350 bar
Response Time - Typical	50 ms	
Series (from Cavity)	Series P	
Switching Frequency	15000 cycles/hr	
Solenoid Tube Diameter	.75 in.	19 mm
Valve Hex Size	7/8 in.	22,2 mm
Valve Installation Torque	20 - 25 lbf ft	27 - 33 Nm
Seal Kits - Cartridge	Buna: 990-009-007	
Seal Kits - Cartridge	Viton: 990-009-006	
Seal Kits - Coil	Viton: 990-770-006	
Model Weight	0.56 lb.	0.25 kg.



DBAL-XHN-***

Control	Spool Configuration	Seal Material	Coil
Standard Options	Standard Options	Standard Options	*** See Coil Options Below
D Twist/Lock (Dual) Manual Override	C Normally Open 1 to 3, Closed 1 to 2	N Buna-N	
L Twist/Lock (Detent) Manual Override	H Normally Open 1 to 2, Closed 1 to 3	V Viton	
M Manual Override			
T Twist Manual Override			
X No Manual Override			
Standard Coil Options			

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

*** no coil

		524	SAE J858A 24 VDC	812	Metri-Pack 12 VDC
211	DIN 43650 4 pin (Hirschman) 115 VAC	528	SAE J858A 28 VDC	814	Metri-Pack 14 VDC
212	DIN 43650 4 pin (Hirschman) 12 VDC	536	SAE J858A 36 VDC	824	Metri-Pack 24 VDC
214	DIN 43650 4 pin (Hirschman) 14 VDC	612	AMP Junior Timer 12 VDC	828	Metri-Pack 28 VDC
223	DIN 43650 4 pin (Hirschman) 230 VAC	614	AMP Junior Timer 14 VDC	836	Metri-Pack 36 VDC
224	DIN 43650 4 pin (Hirschman) 24 VDC	624	AMP Junior Timer 24 VDC	848	Metri-Pack 48 VDC
228	DIN 43650 4 pin (Hirschman) 28 VDC	628	AMP Junior Timer 28 VDC	912	Deutsch DT04-2P 12 VDC
236	DIN 43650 4 pin (Hirschman) 36 VDC	636	AMP Junior Timer 36 VDC	914	Deutsch DT04-2P 14 VDC
248	DIN 43650 4 pin (Hirschman) 48 VDC	712	Twin Lead 12 VDC	924	Deutsch DT04-2P 24 VDC
297	DIN 43650 4 pin (Hirschman) 24 VAC	724	Twin Lead 24 VDC	928	Deutsch DT04-2P 28 VDC
298	DIN 43650 4 pin (Hirschman) 220 VDC	728	Twin Lead 28 VDC	936	Deutsch DT04-2P 36 VDC
299	DIN 43650 4 pin (Hirschman) 127 VDC	736	Twin Lead 36 VDC	948	Deutsch DT04-2P 48 VDC
514	SAE J858A 14 VDC				

Embedded Coil Options

2E12V	DIN 43650 4 pin (Hirschman) programmable via IR link coil/power saver 12 VDC 0-10V	4E12V	Deutsch DT04-6P programmable via IR link coil/power saver 12 VDC 0- 10V	4E24V	Deutsch DT04-6P programmable via IR link coil/power saver 24 VDC 0- 10V
2E24V	DIN 43650 4 pin (Hirschman) programmable via IR link coil/power saver 24 VDC 0-10V				

*Additional Options**Additional Coils*

512	SAE J858A 12 VDC	71219	Twin Lead to Delphi Weather-Pack Connector, 9 inch lead length, 12 VDC	72419	Twin Lead to Delphi Weather-Pack Connector, 9 inch lead length 24 VDC
548	SAE J858A 48 VDC	714	Twin Lead 14 VDC	748	Twin Lead 48 VDC
648	AMP Junior Timer 48 VDC				