

## 2-way, 2 stage, solenoid-operated directional poppet valve - flow 2-1

Capacity:  
60 gpm (240 L/min.)

Functional Group:

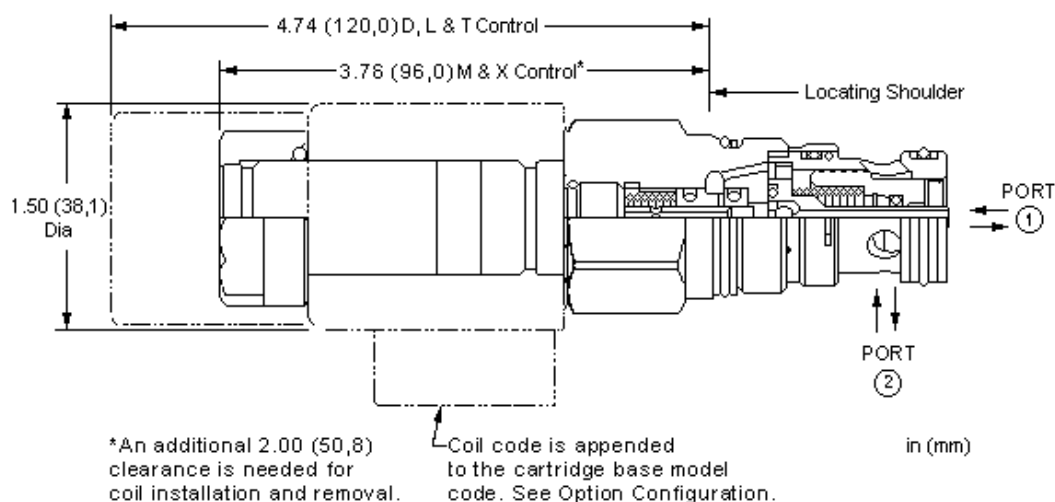
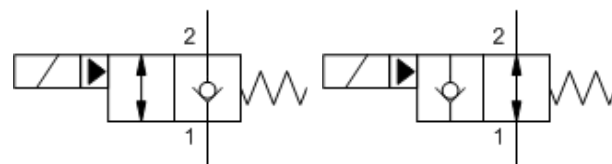
Products : Cartridges : Solenoid Operated : 2-Way : Poppet, Pilot Operated - Flow 2-1

Model:

DFEB

### Product Description

This solenoid controlled, 2-way, 2-position cartridge is a pilot-operated, poppet style directional valve with reverse free flow check. It is available in either a normally open or normally closed configuration. Due to its poppet style construction, it has extremely low leakage.



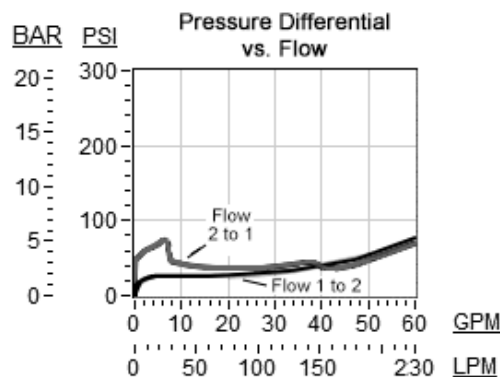
### Technical Features

- The solenoid tube assembly is fatigue rated for 5000 psi (350 bar) service.
- This cartridge has several manual override choices, including no manual override. See Option Selection below. Please note: Manual override functionality is not compatible with weatherized coils.
- Valves exhibit extremely low leakage rates; less than 10 drops/min. @ 5000 psi (0,7 cc/min @ 350 bar).
- On models equipped with the D or L control, the detent mechanism in the manual override is meant for temporary actuation. The D, L and T manual control assembly has a mechanical life expectancy of approximately 7,000 cycles.
- 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.
- A wide variety of coil termination and voltage options are available, with and without surge protection.
- The solenoid's unique magnetic design results in a high efficiency solenoid, yielding high spool actuating force per Watt expended, leading to reliable valve shifting.
- 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.

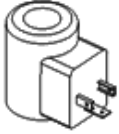
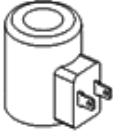
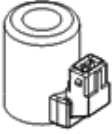

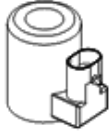
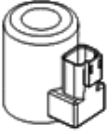
### Technical Data

	U.S. Units	Metric Units
Cavity		T-16A
Capacity	60 gpm	240 L/min.

Check Cracking Pressure	50 psi	3,5 bar
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	30 ms	
Series (from Cavity)	Series 3	
Switching Frequency	15000 cycles/hr	
Solenoid Tube Diameter	.75 in.	19 mm
Valve Hex Size	1 1/4 in.	31,8 mm
Valve Installation Torque	150 - 160 lbf ft	203 - 217 Nm
Model Weight	1.10 lb	0,50 kg
Seal Kits - Cartridge	Buna: 990-016-007	
Seal Kits - Cartridge	Viton: 990-016-006	



### DFEB-XCN-\*\*\*

Control	Poppet Configuration	Seal Material	Coil
<b>Standard Options</b>	<b>Standard Options</b>	<b>Standard Options</b>	*** See Coil Options Below
<b>D</b> Twist/Lock (Dual) Manual Override <b>L</b> Twist/Lock (Detent) Manual Override <b>M</b> Manual Override <b>T</b> Twist (Momentary) Manual Override <b>X</b> No Manual Override	<b>C</b> Normally Closed <b>H</b> Normally Open	<b>N</b> Buna-N <b>V</b> Viton	
<b>Standard Coil Options</b>			
			
DIN 43650 3 pin (Hirschman)	SAE J858A	AMP Junior Timer	Twin Lead
			
Metri-Pack	Deutsch DT04-2P		
*** no coil	<b>528</b> SAE J858A, 28 VDC	<b>814</b> Metri-Pack, 14 VDC	
<b>211</b> DIN 43650 3 pin (Hirschman), 115 VAC	<b>536</b> SAE J858A, 36 VDC	<b>814N</b> Metri-Pack, 14 VDC, no transient voltage suppression (TVS) diodes	
<b>212</b> DIN 43650 3 pin (Hirschman), 12 VDC	<b>612</b> AMP Junior Timer, 12 VDC	<b>824</b> Metri-Pack, 24 VDC	
<b>212N</b> DIN 43650 3 pin (Hirschman), 12 VDC, no	<b>612N</b> AMP Junior Timer, 12 VDC, no transient voltage	<b>828</b> Metri-Pack, 28 VDC	

	transient voltage suppression (TVS) diodes		suppression (TVS) diodes		
<b>214</b>	DIN 43650 3 pin (Hirschman), 14 VDC	<b>614</b>	AMP Junior Timer, 14 VDC	<b>836</b>	Metri-Pack, 36 VDC
<b>214N</b>	DIN 43650 3 pin (Hirschman), 14 VDC, no transient voltage suppression (TVS) diodes	<b>624</b>	AMP Junior Timer, 24 VDC	<b>848</b>	Metri-Pack, 48 VDC
<b>223</b>	DIN 43650 3 pin (Hirschman), 230 VAC	<b>624N</b>	AMP Junior Timer, 24 VDC, no transient voltage suppression (TVS) diodes	<b>912</b>	Deutsch DT04-2P, 12 VDC
<b>224</b>	DIN 43650 3 pin (Hirschman), 24 VDC	<b>628</b>	AMP Junior Timer, 28 VDC	<b>912N</b>	Deutsch DT04-2P, 12 VDC, no transient voltage suppression (TVS) diodes
<b>224N</b>	DIN 43650 3 pin (Hirschman), 24 VDC, no transient voltage suppression (TVS) diodes	<b>636</b>	AMP Junior Timer, 36 VDC	<b>914</b>	Deutsch DT04-2P, 14 VDC
<b>228</b>	DIN 43650 3 pin (Hirschman), 28 VDC	<b>712</b>	Twin Lead, 12 VDC	<b>914N</b>	Deutsch DT04-2P, 14 VDC, no transient voltage suppression (TVS) diodes
<b>236</b>	DIN 43650 3 pin (Hirschman), 36 VDC	<b>712N</b>	Twin Lead, 12 VDC, no transient voltage suppression (TVS) diodes	<b>924</b>	Deutsch DT04-2P, 24 VDC
<b>248</b>	DIN 43650 3 pin (Hirschman), 48 VDC	<b>724</b>	Twin Lead, 24 VDC	<b>924N</b>	Deutsch DT04-2P, 24 VDC, no transient voltage suppression (TVS) diodes
<b>297</b>	DIN 43650 3 pin (Hirschman), 24 VAC	<b>724N</b>	Twin Lead, 24 VDC, no transient voltage suppression (TVS) diodes	<b>928</b>	Deutsch DT04-2P, 28 VDC
<b>298</b>	DIN 43650 3 pin (Hirschman), 220 VDC	<b>728</b>	Twin Lead, 28 VDC	<b>936</b>	Deutsch DT04-2P, 36 VDC
<b>299</b>	DIN 43650 3 pin (Hirschman), 127 VDC	<b>736</b>	Twin Lead, 36 VDC	<b>948</b>	Deutsch DT04-2P, 48 VDC
<b>514</b>	SAE J858A, 14 VDC	<b>812</b>	Metri-Pack, 12 VDC	<b>HN24AA</b>	Hazardous environment duty, 1/2 inch MPT mechanical conduit, 24 VDC, 10 feet twin lead, ATEX Certification Ex mb IIC T3 Gb.
<b>524</b>	SAE J858A, 24 VDC	<b>812N</b>	Metri-Pack, 12 VDC, no transient voltage suppression (TVS) diodes	<b>HN24AB</b>	Hazardous environment duty, 1/2 inch MPT mechanical conduit, 24 VDC, 10 feet twin lead, CSA Certification

#### **Additional Options**

#### **Additional Coils**

<b>512</b>	SAE J858A, 12 VDC	<b>71219</b>	Twin Lead, to Delphi Weather-Pack Connector, 9 inch lead length, 12 VDC	<b>72419</b>	Twin Lead, to Delphi Weather-Pack Connector, 9 inch lead length 24 VDC
<b>548</b>	SAE J858A, 48 VDC	<b>71299</b>	Twin Lead, to Deutsch connector, 9 inch lead length	<b>72499</b>	Twin Lead, to Deutsch connector, 9 inch lead length
<b>648</b>	AMP Junior Timer, 48 VDC	<b>714</b>	Twin Lead, 14 VDC	<b>748</b>	Twin Lead, 48 VDC

If the coil is HN24AA, the control must be M or X

If the coil is HN24AB, the control must be M or X

Stainless options not available for this model