2-way, 2-stage, solenoid-operated directional poppet valve - flow 2-1 (740 Series)

SERIES 1 / CAPACITY: 60 L/min. / CAVITY: T-13A

sunhydraulics.com/model/DFCJ

CONFIGURATION

M	Control	Manual Override
C	Spool Configuration	Normally Closed
N	Seal Material	Buna-N
224	Coil	DIN 43650-Form A, 24 VDC

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.

This valve is designed to be used with 740 and 747 Series coils.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Cavity	T-13A
Series	1
Capacity	60 L/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,7 cc/min.@350 bar
Check Cracking Pressure	3,5 bar
Response Time - Typical	30 ms
Switching Frequency	15,000 max. cycles/hr
Solenoid Tube Diameter	16 mm
Valve Hex Size	22,2 mm
Valve Installation Torque	41 - 47 Nm
Seal kit - Cartridge	Buna: 990310007
Seal kit - Cartridge	EPDM: 990310014
Seal kit - Cartridge	Viton: 990310006
Model Weight	0.56 kg.

NOTES

- Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.
- An additional 2.00 inches (50,8 mm) beyond the valve extension is needed for coil installation and removal.

CONFIGURATION OPTIONS

Model Code Example: DFCJArray

CONTROL (M)

- **M** Manual Override
- **D** Twist/Lock (Dual) Manual Override
- **L** Twist/Lock (Detent) Manual Override
- **T** Twist (Momentary) Manual Override
- **X** No Manual Override

SPOOL CONFIGURATION (C)

- **C** Normally Closed
- **H** Normally Open

SEAL MATERIAL (N)

- **N** Buna-N
- **E** EPDM
- **V** Viton

COIL * (224)

- **224** DIN 43650-Form A, 24 VDC
- No coil

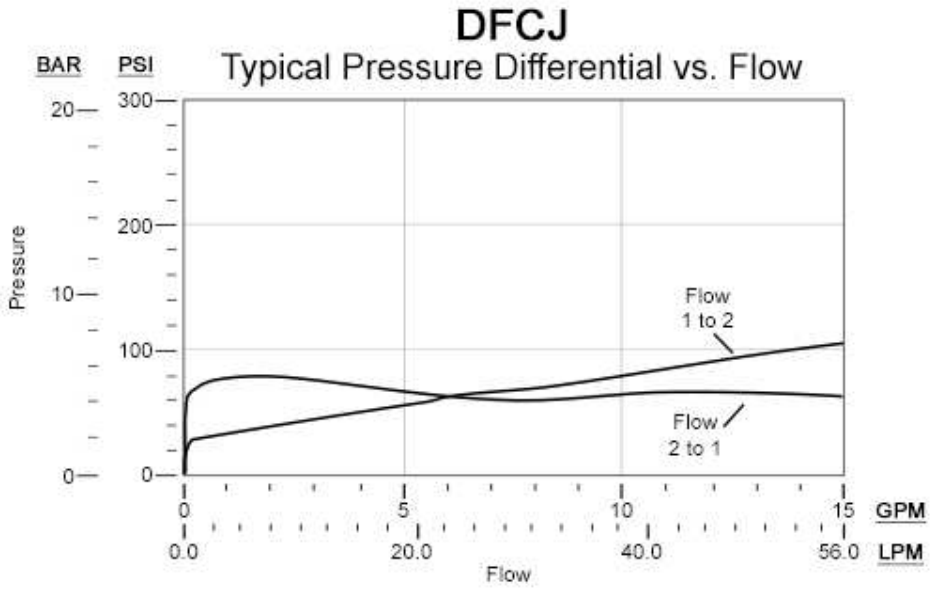
* Additional coil options are available

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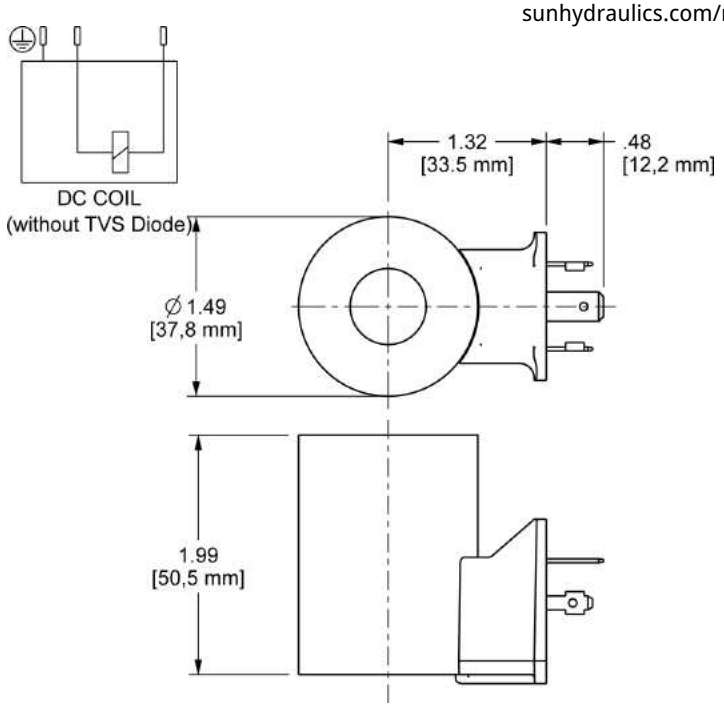
TECHNICAL FEATURES

- The solenoid tube assembly is fatigue rated for 5000 psi (350 bar) service.
- Cartridges configured with EPDM seals are for use in systems with phosphate ester fluids. Exposure to petroleum based fluids, greases and lubricants will damage the seals.
- All configurations of this valve include zinc-nickel plating as standard for 1000-hour salt fog protection.
- This cartridge utilizes both 740 Series high-power and 747 Series hazardous location coils.
- This cartridge has an option for manual override. See the CONFIGURATION section.
- 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 assemblies have 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. See the CONFIGURATION section.
- 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 can be mounted on the tube in either direction.
- 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







CONFIGURATION

TECHNICAL DATA

Operating Temperature Range	-40 to 110 °C
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	50 °C
Voltage/Frequency	24 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Solenoid Tube Diameter	15,7 mm
Coil Nut Torque	0,5 Nm
Model Weight	0.27 kg.

PROPORTIONAL PERFORMANCE DATA

Resistance at 20° C	23.0 ohms ±10%
Maximum Current - FLeX Valves (100% Duty Cycle at Maximum Ambient Temperature)	580 mA
Maximum Current - Non-FLeX Valves (100% Duty Cycle at Maximum Ambient Temperature)	650 mA

USED WITH

DBAF DBAFS DFBF DFBG DFCI DFCJ DFDI DFDJ DFEI DFEJ

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DFFI	DFFJ	DLDF	DLDFS	DMBF	DNBF	DTAF	DTAFS	DTBF	DTCF
DTDF	DTDFS	DWBF	DWDF	FDEP	FMDF	FMDG	FPBF	FPBG	FPBI
FPBJ	FPBU	FREP	PRDF	PRDG	RPEI	RVCK	RVCL	RVCM	RVCN
991711300	991711600	991712300	991712600	991713030	991713060	991740001	XMD-01	XMD-02	

TECHNICAL FEATURES

- Coil windings utilize Class N, (392° F [200 °C] rated) magnet wire.
- Power cable with mating connector is required and is not included with the coil.
- The coil is magnetically symmetrical and can be mounted on the solenoid tube in either direction for best cable access without affecting performance.
- Coil is fully RoHS compliant. Restricted materials less than 0.1% total by weight.
- The external steel shell is zinc-nickel plated and provides 1000-hour salt fog protection.
- For optimum proportional performance, an amplifier with current sensing and adjustable dither should be used. Dither should be adjustable between 100 - 250 Hz.
- IP rating for this coil is IP65/IP67.
- This coil does not include a transient voltage suppression (TVS) diode and should only be used when surge suppression is included elsewhere in the electrical system. If no surge suppression is included in the circuit, the coil version with TVS diode should be used.
- This coil is CE compliant. It meets the requirements of the Low Voltage Directive (2006/95/EC) and EN 60204-1:2006.

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