



**FLeX**<sup>TM</sup>

October 2018 UPDATE

**DIRECTIONAL**  
**PROPORTIONAL**  
**RELIEF** NEW



# Sun FLeX<sup>TM</sup> Series Solenoid Valves

## Product Availability Chart & Accessories

### HIGH RELIABILITY

*Designed & tested to exceed 10-million operational cycles at full rated pressure*

### LOW INTERNAL LEAKAGE

*As low as one drop per minute*

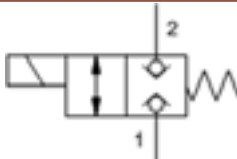
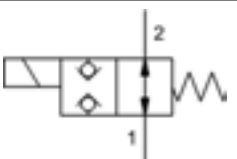
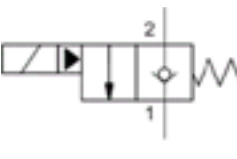
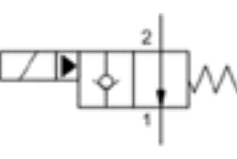
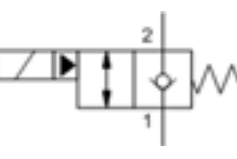
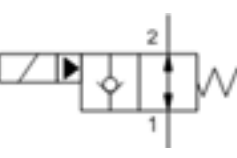
### USES 740 / 747 SERIES DC & AC COILS

*Low-power, high-power & hazardous location coils*



**hydraulics**<sup>®</sup>

# Solenoid-Operated Directional

Symbol	Description	Model	Cavity	Pressure	Capacity (nominal)	Coil Options		
						Low-Power	High Power	Exp. Proof
	2-way, direct-acting, solenoid-operated directional valve	DTAF-*C*	T-8A	5000 psi (350 bar)	2.2 gpm (8.3 L/min)	YES	YES	YES
		DTBF-*C*	T-162A	5000 psi (350 bar)	2.0 gpm (7.6 L/min)	YES	YES	YES
	2-way, direct-acting, solenoid-operated directional valve	DTAF-*H*	T-8A	5000 psi (350 bar)	1.6 gpm (6.1 L/min)		YES	YES
		DTBF-*H*	T-162A	5000 psi (350 bar)	0.9 gpm (3.4 L/min)		YES	YES
	2-way, 2-stage, solenoid-operated directional poppet valve	DFBD-*C*	T-162A	3000 psi (210 bar)	10 gpm (40 L/min)	YES		YES
		DFBF-*C*	T-162A	5000 psi (350 bar)	10 gpm (40 L/min)		YES	YES
	2-way, 2-stage, solenoid-operated directional poppet valve	DFBD-*H*	T-162A	3000 psi (210 bar)	10 gpm (40 L/min)	YES		YES
		DFBF-*H*	T-162A	5000 psi (350 bar)	10 gpm (40 L/min)		YES	YES
	2-way, 2-stage, solenoid-operated directional poppet valve	DFBE-*C*	T-162A	3000 psi (210 bar)	10 gpm (40 L/min)	YES		YES
		DFBG-*C*	T-162A	5000 psi (350 bar)	10 gpm (40 L/min)		YES	YES
	2-way, 2-stage, solenoid-operated directional poppet valve	DFBE-*H*	T-162A	3000 psi (210 bar)	10 gpm (40 L/min)	YES		YES
		DFBG-*H*	T-162A	5000 psi (350 bar)	10 gpm (40 L/min)		YES	YES

## Solenoid-Operated Proportional

Symbol	Description	Model	Cavity	Pressure	Capacity (nominal)	Coil Options		
						Low-Power	High Power	Exp. Proof
	Pilot-operated, normally closed, electro-proportional throttle - control flow 2-1	FPBF-XD*	T-162A	5000 psi (350 bar)	5 gpm (20 L/min)		YES	YES
		FPBD-XD*	T-162A	3000 psi (210 bar)	5 gpm (20 L/min)	YES		YES
	Pilot-operated, normally closed, electro-proportional throttle with reverse flow check - control flow 2-1	FPBG-XD*	T-162A	5000 psi (350 bar)	5 gpm (20 L/min)		YES	YES
		FPBE-XD*	T-162A	3000 psi (210 bar)	5 gpm (20 L/min)	YES		YES
	Pilot-operated, normally open, electro-proportional throttle - control flow 2-1	FPBI-XD*	T-162A	5000 psi (350 bar)	5 gpm (20 L/min)		YES	YES
		FPBM-XD*	T-162A	3000 psi (210 bar)	5 gpm (20 L/min)	YES		YES
	Pilot-operated, normally open, electro-proportional throttle with reverse flow check - control flow 2-1	FPBJ-XD*	T-162A	5000 psi (350 bar)	5 gpm (20 L/min)		YES	YES
		FPBN-XD*	T-162A	3000 psi (210 bar)	5 gpm (20 L/min)	YES		YES
	2-way, direct-acting, electro-proportional throttle blocking poppet valve	FPBU-XC*	T-162A	5000 psi (350 bar)	2.6 gpm (9.8 L/min)		YES	YES

All Sun electro-proportional valves are XMD driver compatible. See p 4 for more details.

## Solenoid-Operated Relief PATENT PENDING

Symbol	Description	Model	Cavity	Pressure	Capacity (nominal)	Coil Options		
						Low-Power	High Power	Exp. Proof
	2-stage, normally vented, solenoid-operated adjustable relief valve	<b>NEW</b> RVCK-*J*	T-10A	5000 psi (350 bar)	15 gpm (60 L/min)		YES	YES
	2-stage, energize-to-vent, solenoid-operated adjustable relief valve	<b>NEW</b> RVCL-*J*	T-10A	5000 psi (350 bar)	15 gpm (60 L/min)		YES	YES
	2-stage, energize-to-block, solenoid-operated adjustable relief valve	<b>NEW</b> RVCM-*J*	T-10A	5000 psi (350 bar)	25 gpm (100 L/min)		YES	YES
	2-stage, normally blocked, solenoid-operated adjustable relief valve	<b>NEW</b> RVCN-*J*	T-10A	5000 psi (350 bar)	25 gpm (100 L/min)		YES	YES

The Sun FLeX Series family of solenoid valves offers high-performance components in flexible configuration options. In addition to the low- and high-power coils of the 740 Series, the FLeX family can be used with the the 747 Series hazardous environment (explosion-proof) coils.

For more details on all the 740/747 Series coils, refer to our website ([www.SunHydraulics.com](http://www.SunHydraulics.com)) or your local Sun Authorized Distributor for more information.

### Low-Power (17-W) & High-Power (25-W) Coils

Voltage	DIN 43650 Form A (IP65/IP67)		Deutsch DT04-2P (IP69K)		Resistance @20°C (ohms) ±10% (with diode*)		TVS Diode (Nominal Breakdown Voltage (with diode*))
	High-Power	Low-Power	High-Power	Low-Power	High-Power	Low-Power	
12 Vdc	740-212	740-212L	740-912	740-912L	5.8 Ω	8.5 Ω	68 Vdc
14 Vdc	740-214	740-214L	740-914	740-914L	7.8 Ω	11.5 Ω	68 Vdc
24 Vdc	740-224	740-224L	740-924	740-924L	23.0 Ω	33.9 Ω	68 Vdc
28 Vdc	740-228	740-228L	740-928	740-928L	31.4 Ω	46.1 Ω	68 Vdc
115 Vac	740-211	740-211L	N/A	N/A	416 Ω	612 Ω	250 Vac
230 Vac	740-223	740-223L	N/A	N/A	1686 Ω	2479 Ω	400 Vac

\* Above model codes are shown without transient voltage suppression (TVS) diodes.  
To order FLeX coils with a TVS diode, append model code with "D" (Example: 740-212LD).

### Hazardous Location, Explosion-Proof (30-W) Coils

Voltage	M20 x 1.5 180°	M20 x 1.5 90°	1/2" NPT 180°	1/2" NPT 90°	Wattage @ 20°C	Circuitry
12 Vdc	747-JM12BD	747-JM12CD	747-JN12BD	747-JN12CD	29.6 W	With diode
24 Vdc	747-JM24BD	747-JM24CD	747-JN24BD	747-JN24CD	29.9 W	With diode
115 Vac	747-JM11BD	747-JM11CD	747-JN11BD	747-JN11CD	29.7 W	Rectified
230 Vac	747-JM23BD	747-JM23CD	747-JN23BD	747-JN23CD	28.9 W	Rectified

### XMD Single- and Dual-Output Drivers

The XMD is a single- or dual-output driver used with solenoid-operated electro-proportional valves for the mobile and industrial hydraulic industries. The driver can be mounted on a manifold using the standard mount clip or directly to the FLeX Series low- and high-power coils using an optional coil-mount clip.

DESCRIPTION	PART NUMBER
Single-output PWM driver w/ standard mounting bracket	XMD-01
Dual-output PWM driver w/ standard mounting bracket	XMD-02
12-pin Deutsch prototype harness, 3M, XMD-01	991-711-300
12-pin Deutsch prototype harness, 3M, XMD-02	991-713-030
2-pin Deutsch prototype harness, 30cm	991-740-001
FLeX high-power coil clip assembly	991-740-001
FLeX low-power coil clip assembly	991-740-002

Additional accessory options are available on Sun's website.



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