



# Sun FLeX Series Low- & High-Power Coils

## **FLeX COMPATIBLE**

*Works with Sun FLeX Series  
Solenoid Valves*

## **SIX COIL VOLTAGES**

*12, 14, 24, 28 Vdc  
115/230 Vac*

## **CONNECTOR OPTIONS**

*DIN & Deutsch*

## **OPTIMIZED DRIVERS**

*Uses the Sun XMD  
single- and dual-coil drivers*



# 740 SERIES

17-W & 25-W versions

## LOW- & HIGH-POWER COILS: DC & AC VERSIONS WITH DIN & DEUTSCH CONNECTORS

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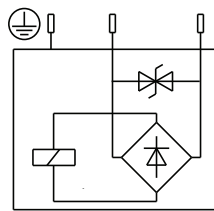
[sunhydraulics.com/models/  
electronics/coils/740-series-flex](http://sunhydraulics.com/models/electronics/coils/740-series-flex)

## MODEL 740 SERIES COILS

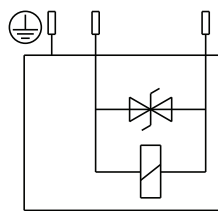
### 17- & 25-W IN VDC & VAC VERSIONS

- All coil windings utilize Class N, (392° F [200 °C] rated) wire.
- The standard FLeX Vdc 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.
- Power cable with mating connector is required and is not included with the coil.
- The coil is magnetically symmetrical and can be mounted in either direction on the solenoid tube for best cabling access without affecting performance.
- 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 is dependent on the coil connector and the mating connector used.
- Connector options include DIN 43650 A and Deutsch DT04-2P. A Deutsch connector accessory with flying leads is available to accommodate other connector and wire-end options.
- All coils are fully RoHS compliant. Restricted materials less than 0.1% total by weight.
- The external steel shell is zinc-nickel plated (1000-hour salt fog protection).

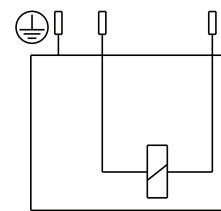
#### INTERNAL WIRING DIAGRAM CIRCUITRY




CIRCUIT DIAGRAM AC COIL



CIRCUIT DIAGRAM DC COIL



CIRCUIT DIAGRAM DC COIL  
(without TVS diode)

ONLY 740-2\*\*\*\* COILS (DIN 43650 A) HAVE GROUND CONNECTION 

**MODEL 740 SERIES COILS**  
**17- & 25-W IN VDC & VAC VERSIONS**

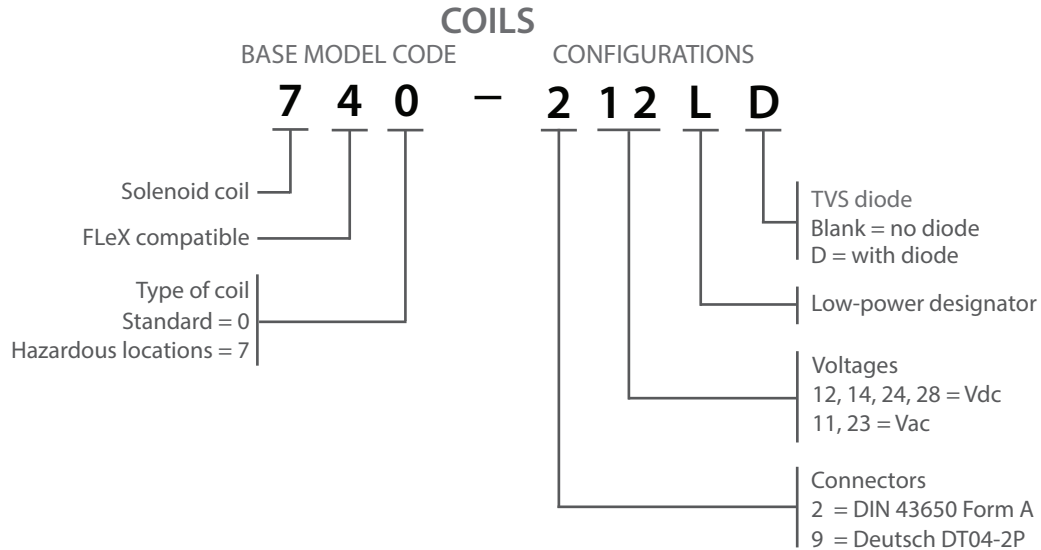
TECHNICAL SPECIFICATIONS	LOW-POWER	HIGH-POWER
Power Consumption (cold) at Rated Voltage	17 W	25 W
Ambient Temperature @ 100% Duty Cycle (Maximum)	100° C (212° F)	50° C (122° F)
Operating Temperature Range	-30° to 110° C (-22° to 230° F)	-30° to 110° C (-22° to 230° F)
Typical Coil Temp at 68°F (20°C) Ambient (@100% Duty Cycle)	80° C (176° F)	90° C (194° F)
Voltages (Vdc)	12, 14, 24, 28 Vdc	12, 14, 24, 28 Vdc
Voltages (Vac, 50/60-Hz operation)	115, 230 Vac	115, 230 Vac
Operating Voltage Tolerance (AC & DC coils)	+10%/-15%	+10%/-15%
Duty Cycle Rating	100%	100%
Connector Options (Seal Ratings)	DIN 43650 Form A (IP65/IP67)	DIN 43650 Form A (IP65/IP67)
	Deutsch DT04-2P (IP69K)	Deutsch DT04-2P (IP69K)
Seal & Nut Kit - Coil	990-740-006	990-740-006
Transient Voltage Suppression (TVS) Diode	Optional for DC, Standard for AC	Optional for DC, Standard for AC
Solenoid Tube Diameter	0.62 in (16 mm)	0.62 in (16 mm)
Coil Nut Torque	4.5 lbf in (0.51 N-m)	4.5 lbf in (0.51 N-m)
Coil Weight	6.4 oz (181 g)	9.6 oz (272 g)
<b>PROPORTIONAL PERFORMANCE DATA</b>		
Maximum Control Current	12 Vdc (820 mA) 24 Vdc (420 mA)	12 Vdc (1140 mA) 24 Vdc (580mA)
Nominal Resistance at 68° F (20° C)	See table on P 4	

## MODEL 740 SERIES COILS 17- & 25-W IN VDC & VAC VERSIONS

### MODEL CODE EXPLANATION

Sun FLeX 740 Series Solenoid Coils have a three-digit base model number. Each of the digits in the sequence has significance as shown in the model code explanation below.

Configuration codes identify connection option, voltage, low- or high-power coil, and with or without surge suppression diode. All modifiers are not applicable for every model.



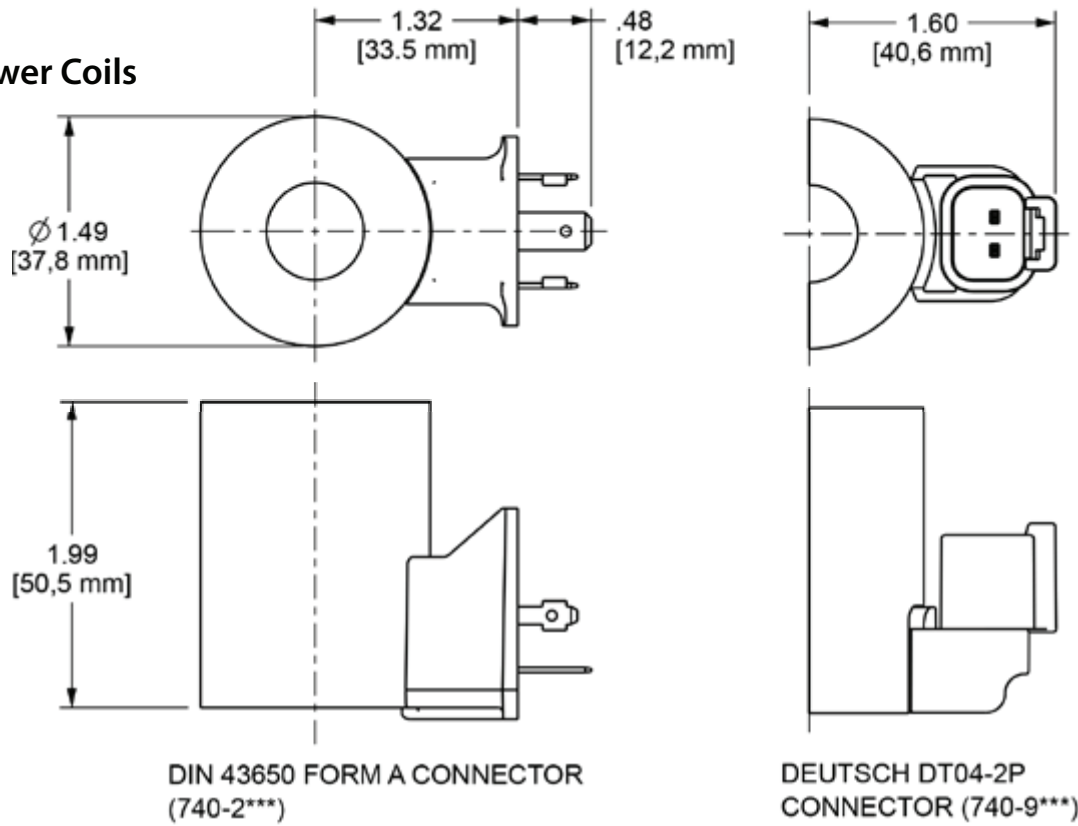
### COIL CONFIGURATION OPTIONS

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

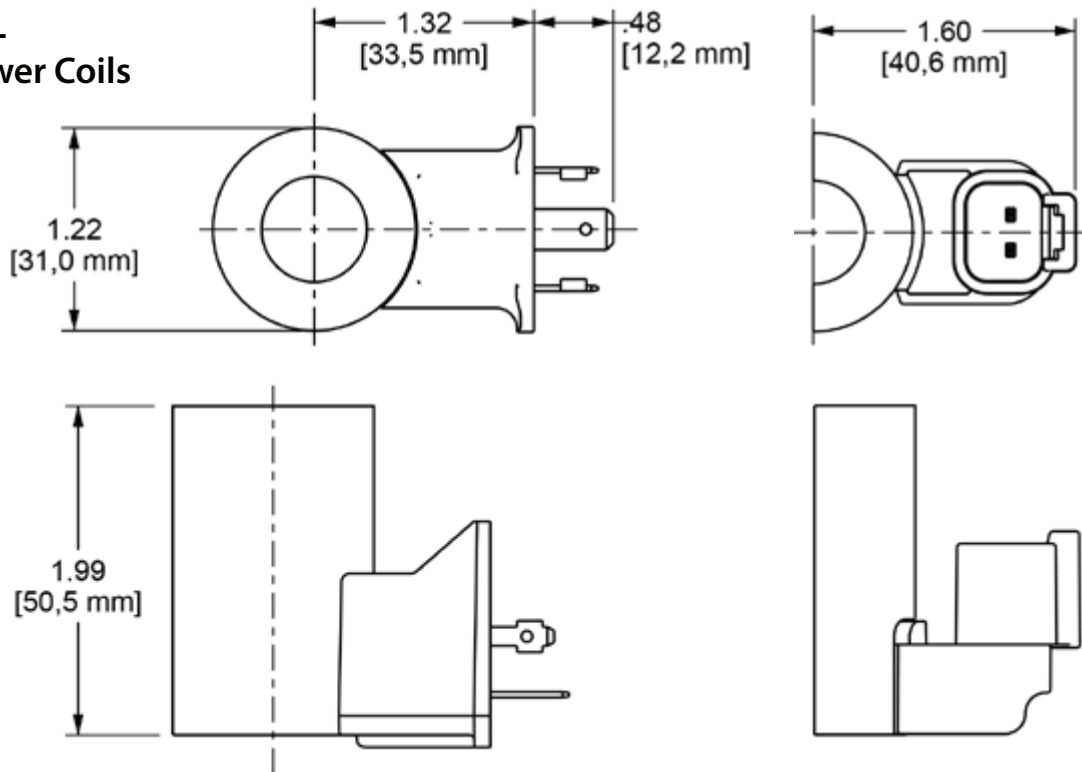
Voltage	DIN 43650 Form A (IP65/IP67)		Deutsch DT04-2P (IP69K)		Resistance @20°C (ohms) ±10% (with diode*)	TVS Diode (Nominal Breakdown Voltage (with diode*))
	High-Power	Low-Power	High-Power	Low-Power		
12 Vdc	740-212	740-212L	740-912	740-912L	5.8 ohms	68 Vdc
14 Vdc	740-214	740-214L	740-914	740-914L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

## 740-\*\*\* High-Power Coils



## 740-\*\*\*L Low-Power Coils



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

The Sun FLeX Series family of solenoid valves and coils offer high-performance components in flexible configuration options, including a range of on/off and proportional solenoid valves. In addition to the low- and high-power coils of the 740 Series, the FLeX family includes the 747 Series hazardous environment coils for explosion-proof applications that are compatible with all FLeX Series valves.

Symbol	Description	Model	Cavity	Pressure	Low-Power	High-Power
	2-way, direct-acting, solenoid-operated directional blocking poppet valve, normally closed	DTAF-*C*	T-8A	5000 psi (350 bar)	YES	YES (High flow version)
		DTBF-*C*	T-162A	5000 psi (350 bar)	YES	YES (High flow version)
	2-way, direct-acting, solenoid-operated directional blocking poppet valve, normally open	DTAF-*H*	T-8A	5000 psi (350 bar)		YES
		DTBF-*H*	T-162A	5000 psi (350 bar)		YES
	2-way, 2-stage, solenoid-operated directional poppet valve - flow 2-1, normally closed	DFBD-*C*	T-162A	3000 psi (210 bar)	YES	
		DFBF-*C*	T-162A	5000 psi (350 bar)		YES
	2-way, 2-stage, solenoid-operated directional poppet valve - flow 2-1, normally open	DFBD-*H*	T-162A	3000 psi (210 bar)	YES	
		DFBF-*H*	T-162A	5000 psi (350 bar)		YES
	2-way, 2-stage, solenoid-operated directional poppet valve with reverse flow check - flow 2-1, normally closed	DFBE-*C*	T-162A	3000 psi (210 bar)	YES	
		DFBG-*C*	T-162A	5000 psi (350 bar)		YES
	2-way, 2-stage, solenoid-operated directional poppet valve with reverse flow check - flow 2-1, normally open	DFBE-*H*	T-162A	3000 psi (210 bar)	YES	
		DFBG-*H*	T-162A	5000 psi (350 bar)		YES
	Pilot-operated, normally closed, electro-proportional throttle - flow 2-1	FPBF-XD*	T-162A	5000 psi (350 bar)		YES
	Pilot-operated, normally closed, electro-proportional throttle with reverse flow check - flow 2-1	FPBG-XD*	T-162A	5000 psi (350 bar)		YES
	Pilot-operated, normally open, electro-proportional throttle - flow 2-1	FPBI-XD*	T-162A	5000 psi (350 bar)		YES
	Pilot-operated, normally open, electro-proportional throttle with reverse flow check - flow 2-1	FPBJ-XD*	T-162A	5000 psi (350 bar)		YES





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