XMD-01/-02

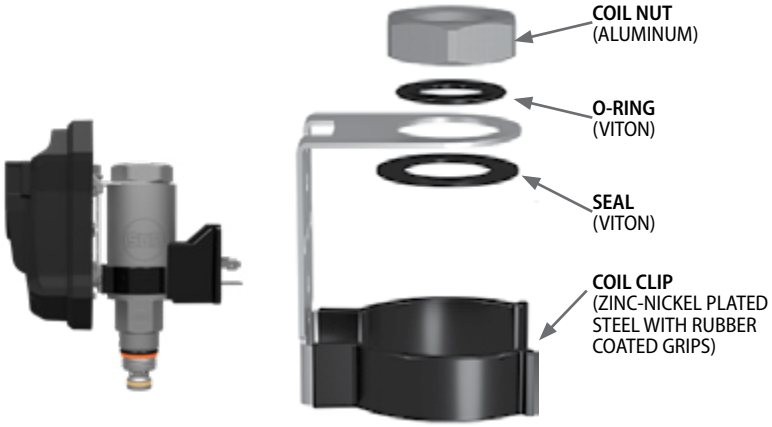
XMD Accessories

Built to stand up to extreme environmental conditions in mobile and industrial applications, Sun's XMD is a high-powered, electronic control device for electrically operated hydraulic actuators.

The electrical connection is made via a standard 12-pin Deutsch connector. The open architecture of the XMD allows many compatible connections and coil types.

See the accessories chart below.

Coil Clips / Brackets

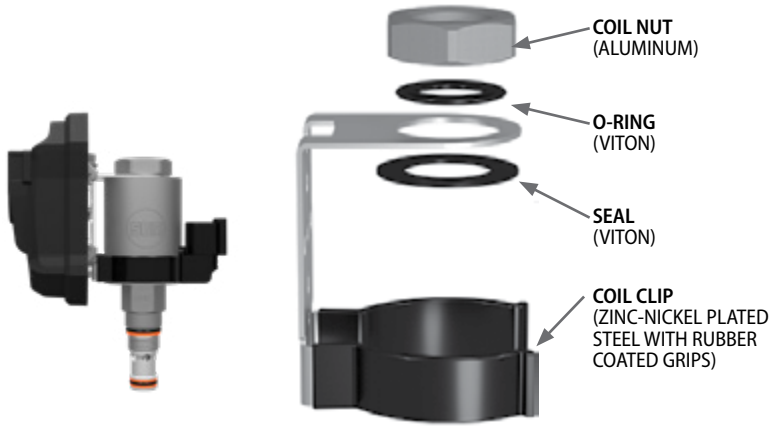


XMD Series, Low-Power Coil Clip Model 991740002

This coil clip kit is designed to attach Sun's XMD Series Driver to the FLeX 740 Series coils.

Part	Description	Quantity
375-050	Coil Nut	1
500-101-016	O-Ring	1
500-900	Seal	1
753-074	Coil Clip	1

For installation instructions, download our guide.



XMD Series, High-Power Coil Clip Model 991740001

This coil clip kit is designed to attach Sun's XMD Series Driver to the FLeX 740 Series coils.

Part	Description	Quantity
375-050	Coil Nut	1
500-101-016	O-Ring	1
500-900	Seal	1
753-073	Coil Clip	1

For installation instructions, download our guide.

XMD Series, 770 Series Coil Clip Model 991770001

This coil clip is designed to attach Sun's XMD Series Driver to the 770 Series coils with existing 770 parts.

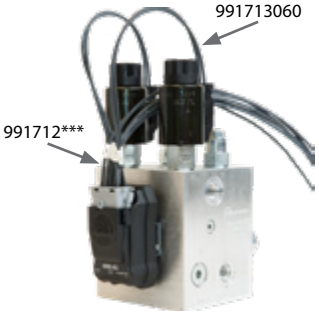
For installation instructions, download our guide.

Pub. # 999-901-855

XMD Series

Manifold Mount with Cable Harnesses

XMD-01 assembly shown mounted on a manifold and driving a single FLeX Series coil.



XMD-02 assembly shown mounted on a manifold and driving two 770 Series coils.

Coil Clips with Cable Harnesses

770 Series Coil Clip shown with 12-pin Deutsch prototype cable and 2-pin Deutsch lead.

FLeX Series Low-Power Coil Clip shown with 12-pin Deutsch prototype cable and ISO/DIN 43650, Form A lead.

Connector Kits

Connector Kit	Description	Model Code
	12-pin Deutsch connector kit	991722
	2-pin Deutsch connector kit (gray)	991723001
	2-pin Deutsch connector kit (black)	991723002

All connector kits require assembly using a crimping tool.

Cable Harnesses

Connector	Description	Model Code
	12-pin Deutsch prototype cable, single-output	991711300 (3 m) 991711600 (6 m)
	12-pin Deutsch prototype cable, dual-output	991712300 (3 m) 991712600 (6 m)
	12-pin Deutsch prototype cable, single output with 2-pin Deutsch lead	991720300 (3 m) 991720600 (6 m)
	12-pin Deutsch prototype cable, single output with ISO/DIN 43650, Form A lead	991721300 (3 m) 991721600 (6 m)
	2-pin Deutsch prototype cable*	991713030 (30 cm) 991713060 (60 cm)

*To be combined with 991711*** or 991712*** harnesses

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May 2018

Pub. # 999-901-855

XMD-01/-02
ELECTRO-HYDRAULIC DRIVERS

BLUETOOTH CONFIGURABLE, CAN CAPABLE

CONFIGURABLE

Simple & fast setup through free Bluetooth app

Bluetooth™

RUGGED

Designed for extreme environmental conditions in the mobile hydraulics industry

UNIVERSAL

Use with any electro-proportional or solenoid switching valve

sun hydraulics®

✓ Quick setup profiles

Select between predefined single- and dual-coil profiles of typical pressure and flow configurations to create reliable solutions quickly.

✓ Diagnostic mode

Allows technicians worldwide to access alarm and operational conditions while engineered profiles are password protected for safety and security.

✓ Input / output shaping

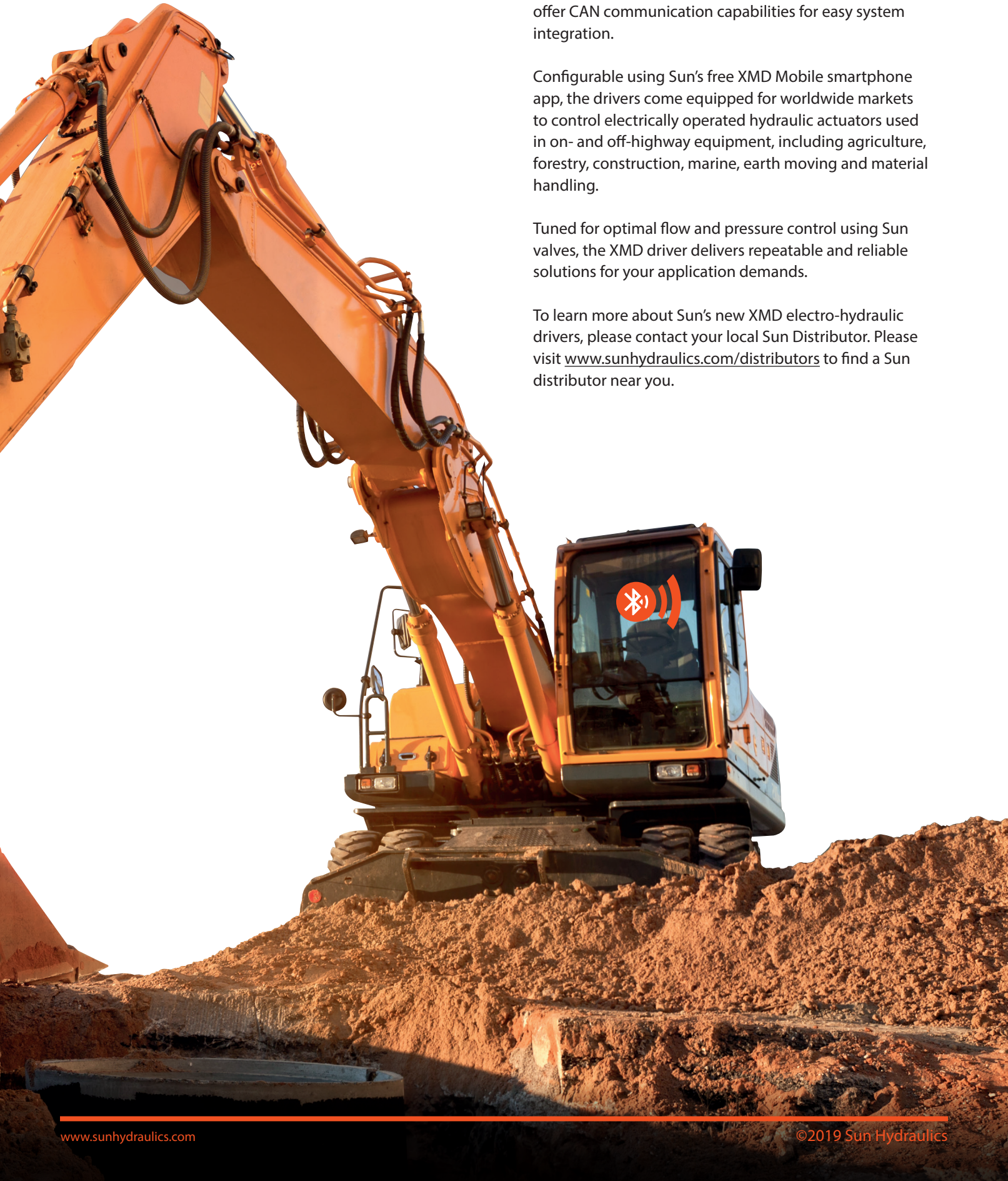
Create a custom output curve for finely tuned joystick control or custom flow/ pressure curves using universal inputs and CAN-received messages.

The XMD modules are single- and dual-coil electro-hydraulic drivers for use in mobile and industrial hydraulic equipment. Both the XMD-01 and -02 drivers offer CAN communication capabilities for easy system integration.

Configurable using Sun's free XMD Mobile smartphone app, the drivers come equipped for worldwide markets to control electrically operated hydraulic actuators used in on- and off-highway equipment, including agriculture, forestry, construction, marine, earth moving and material handling.

Tuned for optimal flow and pressure control using Sun valves, the XMD driver delivers repeatable and reliable solutions for your application demands.

To learn more about Sun's new XMD electro-hydraulic drivers, please contact your local Sun Distributor. Please visit www.sunhydraulics.com/distributors to find a Sun distributor near you.



METHOD OF **CONSTRUCTION**

Low-profile 12-pin Deutsch connector. Compatible with any DT06-12SA-XXX connector

Glass-filled enclosure is designed to meet UL94

LEDs for quick visual diagnostics - Power and Comm/Fault

High-strength bracket mount for low-profile design

Zinc nickel-plated mounting bracket (1,000-hour salt fog)

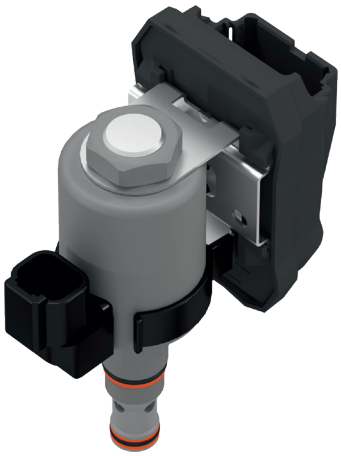
Flexible potting compound for PCB shock and vibration protection (49g peak)

Vent membrane for 0 pressure differential. Allows vapors to pass but not liquids

Zinc nickel-plated mounting bracket (1,000-hour salt fog)

Coil clips designed for 740 Series high- and low-power coils and 770 Series coils

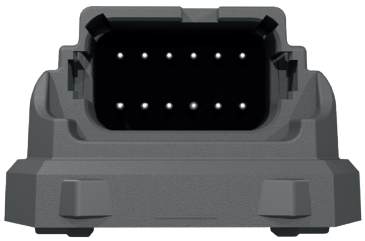
Fits any FLeX Series solenoid valves with coils



Attaches behind remote mount bracket, no additional hardware required

Viton dipped for reduced wear to coil plating

12-pin
I/O flexibility



The XMD open architecture allows for any type of termination to be used with pumps, CETOP valves, solenoid switching and proportional valves along with many others.

HOW IT **WORKS**

The XMD is designed for on- & off-highway mobile & industrial applications:

- Construction
- Agriculture
- Forestry
- Earth Moving
- Industrial Machines
- Fork Lifts

DISPLAYS

MASTER CONTROLLERS

CAN JOYSTICKS

CAN SENSORS

TELEMATICS

SAE J1939

CAN


Transmit
universal inputs
on CAN bus
2
UNIVERSAL
INPUTS
0-5v, 0-10v, 4-20 mA,
pulse, PWM, resistive
and switch
2
OUTPUTS
PWM or
duty cycle
CAN
Transmit XMD
diagnostics,
XMD input and
output values

XMD MOBILE **APP**

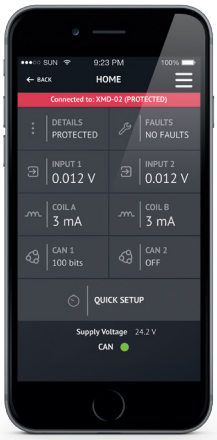
The XMD Mobile app was developed with the user in mind. The features offer simple yet advanced capabilities for technicians, engineers and developers.

HOME SCREEN

GET IT ON Google Play

Download on the App Store

XMD MOBILE



DIAGNOSTIC MODE

Access faults

Password protected settings

Real time I/O + CAN values

Tamper-proof intelligence

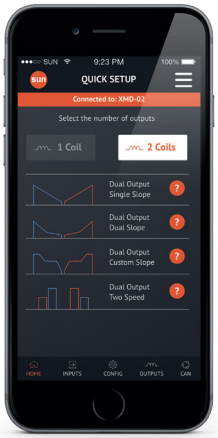
iPad version offers expanded information display

IPAD

I/O SHAPING

IPHONE

Complete output configurability



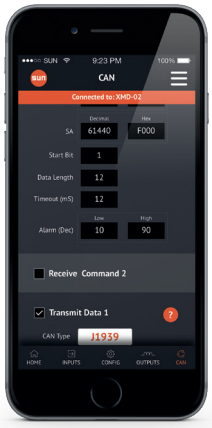
QUICK SETUP

Simple configurations

Easy setup

Typical applications profiles

Simple and flexible configuration means no changes to master controller source code



CAN SETUP

Simple configurations

Maximum flexibility

GLOBAL REACH
LOCAL SUPPORT

sun hydraulics®

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US 999-901-851

sun hydraulics®

CONFIGURABLE

Simple, safe & fast setup via free Bluetooth app within a 30-foot-radius

RUGGED

Designed for extreme environmental conditions for the mobile hydraulic industry

UNIVERSAL

Use with any electro-proportional or solenoid-operated on/off valves

E11

CE

Bluetooth®

XMD-01/-02

BLUETOOTH-CONFIGURABLE ELECTRO-HYDRAULIC DRIVERS, CAN CAPABLE

XMD Mobile App

GET IT ON Google Play

Download on the App Store

TABLE OF CONTENTS

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Pub.#999-901-850

SUN XMD Series

Exceptional Sun performance at a competitive price

XMD Intended Use

The XMD module is an electro-hydraulic driver for use with mobile and industrial hydraulic equipment.

Configurable using Sun's FREE XMD Mobile app readily available worldwide for control of electrically operated hydraulic actuators used in many applications for on- and off-highway equipment including but not limited to agriculture, forestry, construction, marine, earth moving, and material handling.

Tuned for optimal flow and pressure control using Sun valves, the XMD driver delivers repeatable and reliable solutions for your application demands.

⚠ **Please read and observe any precautions wherever this symbol is used in this document.**

XMD Features

SAE J1939 CAN Communication

Configure CAN sensors and joysticks as inputs or configure as a remote node to be used with any CAN-capable programmable controller or display. The XMD is also designed to transmit the analog universal inputs as CAN messages for enhanced intelligence and diagnostic information.

CAN-Capable Display

Quick Setup Profiles

Select between single- and dual-coil pre-defined profiles for typical pressure and flow configurations for fast, reliable solutions.

Quick Setup

Diagnostic Mode

Allows technicians worldwide to access alarm and operational conditions without editing password-protected engineered settings.

Diagnostic Mode

Input/Output Function Curves

Create a custom output curve for finely tuned joystick control or custom flow/pressure curves with the use of the universal inputs and CAN-received messages.

Input / Output Curves

Operational Specifications

Supply Voltage	9 - 32 Vdc
Supply Current	XMD-01: 3 A max
	XMD-02: 6 A max
Weight	0.3 lbs (0.136 kg)
Dimensions (L x W x H)	3.38 in x 2.30 in x 1.40 in (85.87 x 58.49 x 35.62 mm)
Enclosure	PBT, 30% glass-filled
IP Rating	IP69K
Certification	CE, E-Mark, E11 10R-05100024 2014/53/EU (Radio Equipment Directive), 2014/35/EU (Low Voltage Directive)

Communication

CAN	2.0B (Maximum voltage + 32 Vdc)
Baud Rates	125 kbit/s, 250 kbit/s, 500 kbit/s, 1 Mbit/s
Default Baud Rates	250 kbit/s
Protocol	SAE J1939

Notes:
1) No HAZARDOUS LIVE parts are present in the equipment. Terminals are rated to 32 Vdc maximum.
2) Recommended supply voltage 12 Vdc or 24 Vdc with negative to earth. 6Vdc protection for engine cranking events.
3) Use twisted or twisted shielded-pair cable for CAN per the applicable standard.

Inputs

Universal Inputs	XMD-01 (1 universal input)	0 - 5 Vdc, 0 - 10 Vdc, 4-20 mA, digital, frequency (60 Hz-10 kHz), PWM (60 Hz –10 kHz), resistive (0 – 100 kΩ), software configurable
	XMD-02 (2 universal inputs)	
Input Range	Current Input Mode: 0 to +20 mA. Maximum allowable current: +22 mA (impedance Z = ~200 Ω). Active circuit protection above 22 mA and limited to 32 V. Digital Input: 0 to +Supply, not to exceed 32 Vdc (impedance Z = ~10 kΩ). Digital Input: Debounce time 200 ms fixed in device firmware. Maximum voltage on any input pin +32 Vdc and -0.7 Vdc.	

Outputs

PWM Outputs	XMD-01 (1 PWM output)	0-3.0 Amps Peak -40°C + 75°C continuous per channel 0-2.7 Amps Peak +75°C + 85°C continuous per channel
	XMD-02 (2 PWM outputs)	
Current Regulation	± 1mA above 35 mA	
PWM Frequency	33 Hz - 5 kHz	
Dither Frequency	33 Hz - 500 Hz	
Dither Amplitude	0 - 25% of PWM Period	
Diagnostics	Open/short-circuit detection	
Flyback Protection	Integrated diode protection	
Ramp Time	0 - 65 seconds, 1-mS increments	
Reference Output	5 Vdc, ±0.1 Vdc (250 mA max.)	

Environmental

Operating Temperature	-40°C to +85°C (-40°F to +185°F)	**Vibration**	33.3 Hz 6.8g Peak (Spec: S-367 Section 11.0)
Storage Temperature	-60°C to +120°C (-76°F to +248°F)	**Shock**	49g Peak (Spec: S-367 Section 12.0)
EMC/EMI	EN 55024, EN 55032, EN 13309, EN/ISO 14982, ISO 13766, ISO 16750-2, J1113-4/11/12/13/26, ISO 1142-2/10, CISPR 25, FCC 15B, ICES-003, UNECE Reg 10.5, EN 61326-1:2013, EN 301 489-1 V2.2.0, EN 301 489-17, EN 12895		

Patent

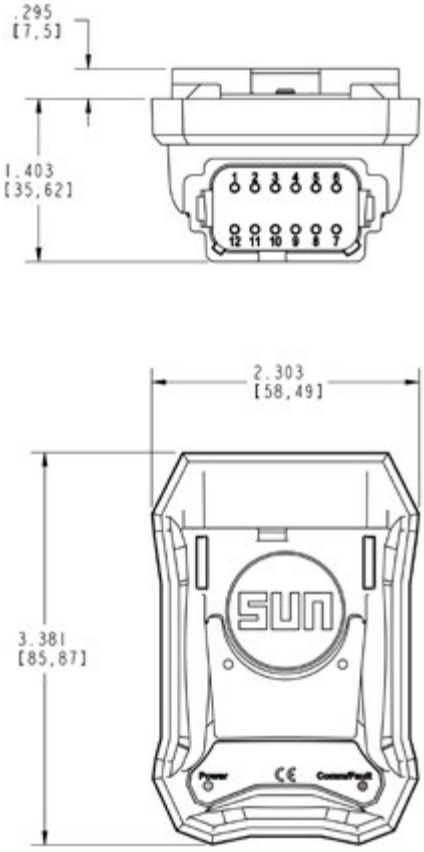
Patent Number	Patent Pending

Equipment Installation

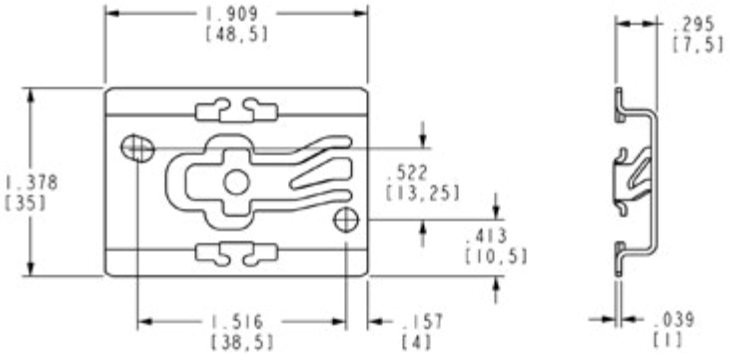
The XMD drivers should be installed and operated by a competent electrician, technician or engineer. Improper installation and use of these products can result in significant threat to both individuals and equipment. In the event of an equipment breakdown, do not attempt to repair the driver as there are no user-serviceable parts inside the product. Evidence of tampering will invalidate the warranty.

Wiring Pin Out

Pin	XMD-01 /-02 Description
1	CAN_LO
2	CAN_HI
3	GND (Inputs, Outputs & 5Vref)
4	XMD-01 No Connection XMD-02 PWM Output, Coil B
5	GND (Inputs, Outputs & 5 Vref)
6	PWM Output, Coil A
7	Supply GND
8	Supply PWR
9	Enable
10	+5 Vref (250 mA max)
11	Universal Input 1
12	XMD-01 No Connection XMD-02 Universal Input 2



⚠ A 10A ATC or ATO fuse is required to be installed ahead of the equipment.



Installation Bracket

Notes:

1) Use size 16 contact sockets for wire sizes: 16, 18, and 20 AWG.
2) Use crimp tool: HDT-48-00
3) Compatible with any DT06-12SA-XXX mating connector
4) Preferred mating connectors:
   - DT06-12SA
   - DT06-12SA-P012
5) Use standard Deutsch back shell for IP69K rating, DT12S-BT

Recommended Wiring Practices:

1) For best grounding practices, isolate pin 7, supply ground, from pins 3 and 5, command, +5Vdc reference, and output grounds.

2) Use twisted or twisted shielded-pair cable for CAN per the applicable standard.

3) Confirm that the CAN network is properly terminated using 120-Ω resistors.

4) Make certain that the harness is designed and constructed to minimize induced interference resulting from EMI coupling between signal wires.

5) Keep high-voltage AC cables separate from low-voltage DC signal and supply cables.

6) Check ALL wire connections to and from this unit to ensure NO short or open circuits are present.

7) Ensure that any unused wires/ connections are terminated safely and not shorted together.

8) Isolate the amplifier if any battery charging or battery boosting takes place on the installation.

9) Follow and abide by all applicable health and safety standards – protect yourself and others.

10) Never disconnect or connect wires to or from this unit unless it is isolated from the power supply.

11) Use best practice wiring standards

Mechanical Installation:

The controller should be mounted on a flat surface. Provide sufficient clearance from moving parts.

1) Recommend mounting hardware: #8-32 x ½ T18-8 stainless screws, suggested torque 22 in-lbf

2) Do not mount in a location that will result in ambient temperatures greater than specified operational temperature limits.

3) The XMD is compatible with standard 35-mm DIN Rail.

⚠ **Warning: Prior to welding**

In order to avoid damage to the product, ensure that all electrical connections are fully disconnected from the XMD driver prior to welding on the machine.

LED Operation

Power LED Operation		
Mode of Operation	**Status**	**Description**
Normal Operating mode, no faults		ON GREEN
Supply Voltage Below 9VDC		ON Red
Supply Voltage Above 32VDC		Blink / Red - 1 blink ON/ pause OFF 500 ms

Comm / Fault LED Operation		
Mode of Operation	**Status**	**Description**
Normal Operating mode, OFF		OFF
Connected to mobile phone app / Configuration Mode		Blink/Green - 1 blink 125 ms ON/OFF 500 ms
Receiving CAN messages		Blink / Green – 2 blinks 125 ms ON/ pause OFF 500 ms
CAN Message Timeout		Blink / Red – 2 blinks 125 ms ON/pause OFF 500 ms
Coil Short, ON RED		ON/Red
Coil Open		Blink/Red - 3 blinks 125 ms ON/ pause OFF 500 ms
Command % out of range		Blink/Red - 1 blink ON/ pause OFF 500 ms

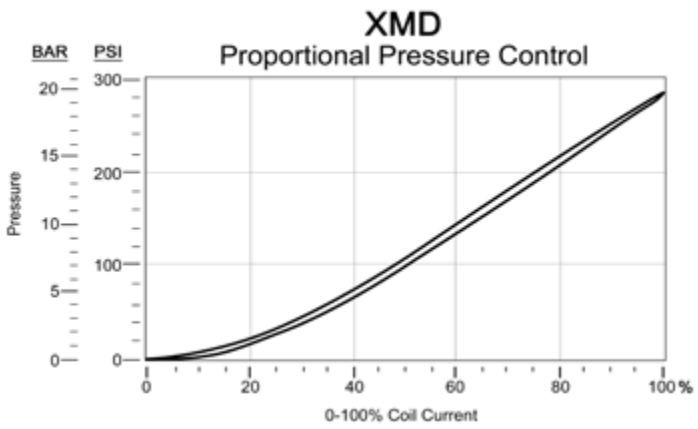
If the equipment is used in a manner not specified by the manufacturer, the protection by the equipment may be impaired.

This unit is intended only for connection to vehicle electrical systems and voltage above the identified ratings should never be connected to the unit.

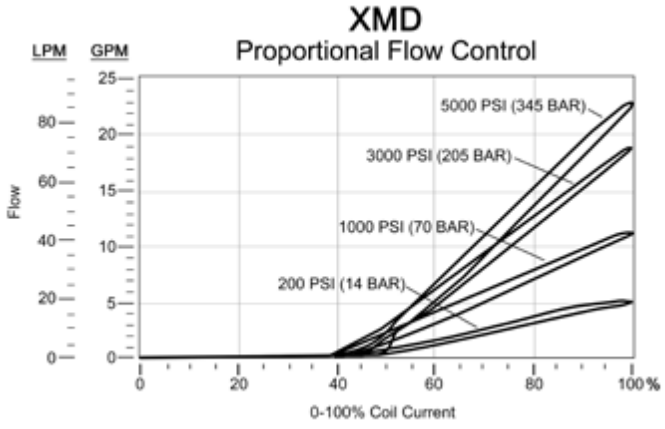
The +5V reference, pin 10, is intended to source stable voltage to external equipment and must not be connected to +Supply Power or Ground, or permanent damage to the XMD will result.

This equipment has not been investigated as a safety rated component and shall not be relied upon as a safety device. Separate emergency stop equipment must be integrated on the machine in accordance with the machinery directive. The operator of the equipment shall always be in sight of the controlled machine and be prepared to use emergency stop equipment if any malfunction occurs.

Performance Curves

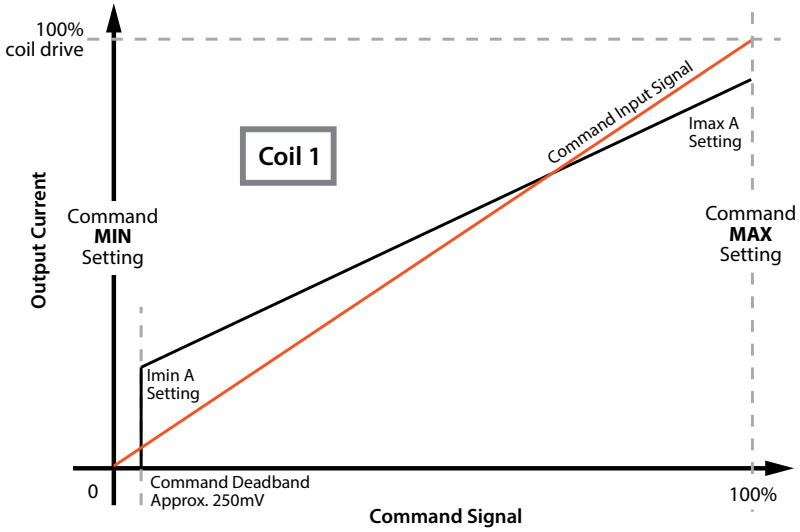


Example showing the **PRDL** pressure control valve combined with XMD precision.



Example showing the **FPBF FLeX** flow control valve combined with XMD precision.

XMD-01 Example Configuration: Motor Speed Control



Single-Coil Configuration

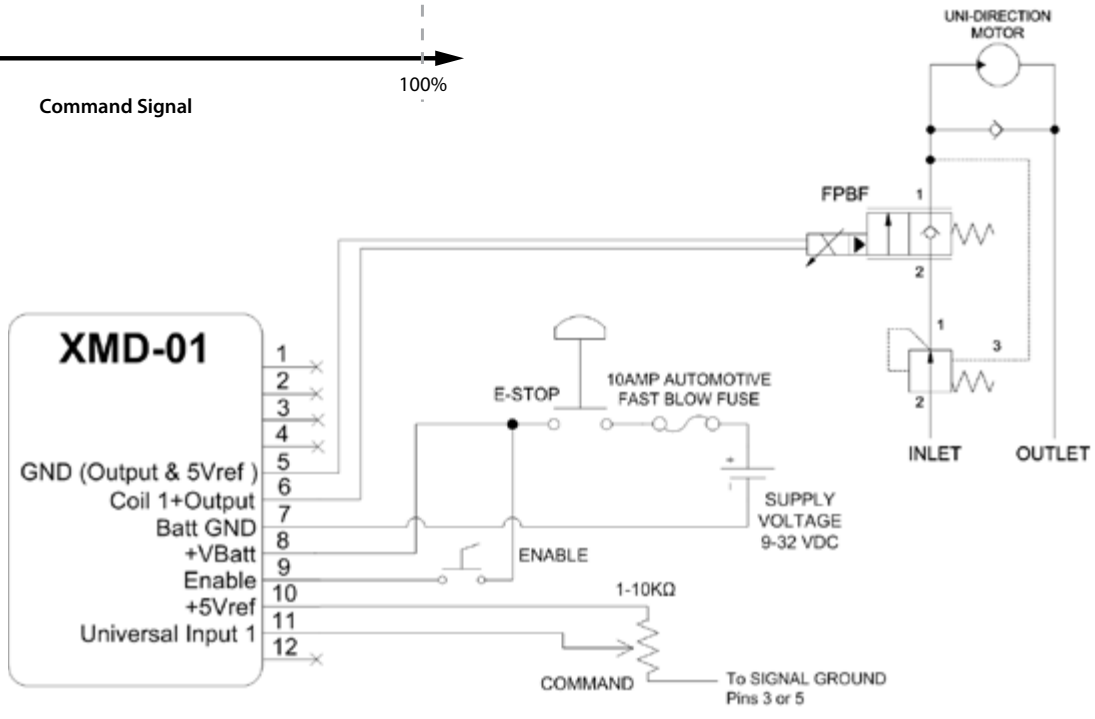
The XMD-01 is designed to control pressure or flow using a single output. This can be translated to control single- direction pumps, motor speed and torque, or single-acting cylinders.

Visit our website to download Sun's "Electro-Hydraulic Terms and Definitions".

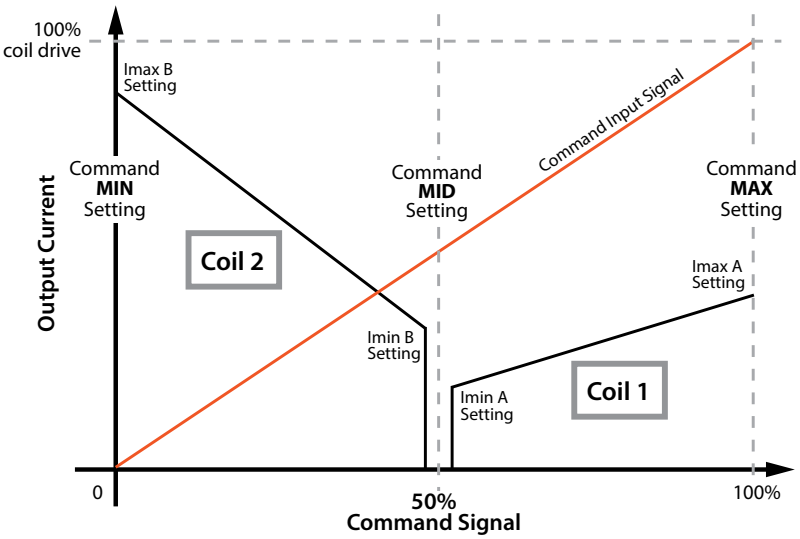
NOTE: For best grounding practices, isolate pin 7, supply ground, from pins 3 and 5, command, +5Vdc reference, and output grounds.

Warning:
Never use this unit without ensuring ALL work areas are clear of personnel.

*Hydraulic schematic for reference only.



XMD-02 Example Configuration: Cylinder Direction & Speed Control



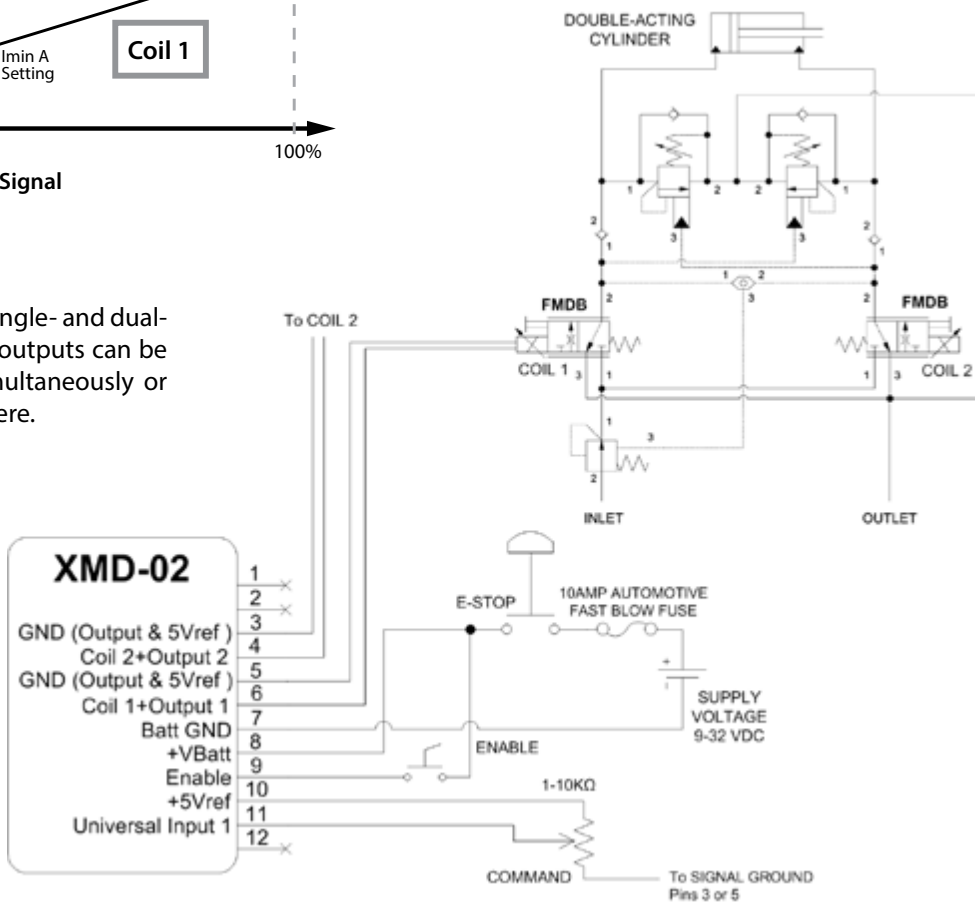
Dual-Coil Configuration

The XMD-02 is designed to control pressure or flow using two outputs that can be configured for directional or independent use. This can be translated to control bi-directional variable speed pumps, bi-directional motors and bi-directional cylinders.

Visit our website to download Sun's "Electro-Hydraulic Terms and Definitions".

XMD Mobile App Configuration

The XMD Mobile App is designed to offer single- and dual-output applications for the XMD-02. Both outputs can be configured to operate independently, simultaneously or inverted for directional control as shown here.



NOTE: For best grounding practices, isolate pin 7, supply ground, from pins 3 and 5, command, +5Vdc reference, and output grounds.

Warning:
Never use this unit without ensuring ALL work areas are clear of personnel.

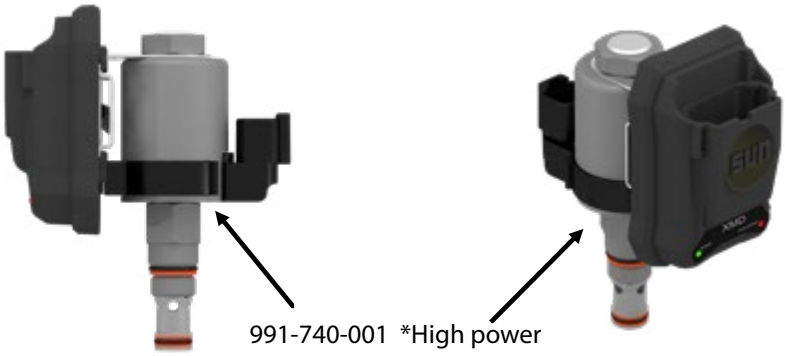
*Hydraulic schematic for reference only.

Connections

The XMD open architecture offers a wide range of connection and coil compatiblity. Connections include Deutsch, DIN 43650-A, Amp Junior Timer, twin-lead and metri-pack.

Deutsch DIN Amp Junior Twin-lead Metri-pack Exp. proof

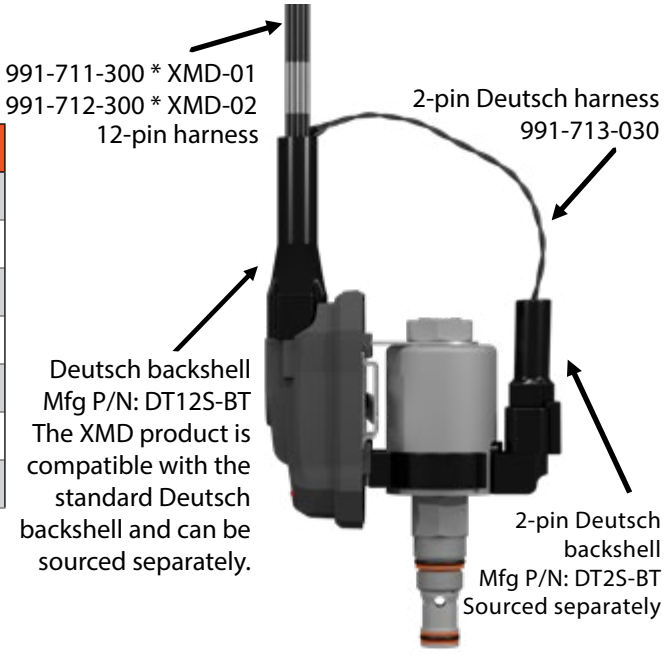
The XMD-01 and XMD-02 ship standard with the remote mount bracket.



Accessories

Item	Part Number	Description
1	XMD-01	XMD-01 assembly, includes standard mounting clip
2	XMD-02	XMD-02 assembly, includes standard mounting clip
3	991-711-300	12-pin Deutsch prototype harness, 3M, XMD-01
4	991-712-300	12-pin Deutsch prototype harness, 3M, XMD-02
5	991-713-030	2-pin Deutsch prototype harness, 30cm
6	991-740-001	FLeX high power coil clip assembly
7	991-740-002	FLeX low power coil clip assembly

Additional accessory options are available on Sun's website. Please visit www.sunhydraulics.com for more details.



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Cavity Information

Series	Ports	Cavities
Series Z Cartridges 3/8-24 UNF Cartridge Thread 5 mm Valve Hex Size 11 - 14 Nm Valve Installation Torque	3-Port	T-382A
Series P Cartridges M16 Cartridge Thread 22,2 mm Valve Hex Size 27 - 33 Nm Valve Installation Torque	2-Port 2-Port (Deep) 3-Port	T-8A T-8DP T-9A
Series 0 Cartridges M16 Cartridge Thread 19,1 mm Valve Hex Size 25,4 mm Valve Hex Size 27 - 33 Nm Valve Installation Torque	2-Port 2-Port (Deep) 3-Port 3-Port 4-Port	T-162A T-162DP T-150A T-163A T-30A
Series 0C Cartridges 3/4-16 UNF Cartridge Thread 22,2 mm Valve Hex Size 19-22 lbf ft Valve Installation Torque	4-Port (Common)	SC-08-04
Series 1 Cartridges M20 Cartridge Thread 22,2 mm Valve Hex Size 41 - 47 Nm Valve Installation Torque	2-Port 2-Port 3-Port 4-Port 4-Port 6-Port	T-10A T-13A T-11A T-21A T-31A T-61A
Series 1C Cartridges 7/8-14 UNF Cartridge Thread 25,4 mm Valve Hex Size 23-26 lbf ft Valve Installation Torque	2-Port (Common) 4-Port (Common)	SC-10-02 SC-10-04
Series 2 Cartridges 1"-14 UNS Cartridge Thread 28,6 mm Valve Hex Size 61 - 68 Nm Valve Installation Torque	2-Port 2-Port 3-Port 4-Port 4-Port 4-Port (Dual path) 6-Port 6-Port	T-3A T-5A T-2A T-22A T-32A T-52AD T-52A T-62A
Series 3 Cartridges M36 Cartridge Thread 31,8 mm Valve Hex Size 203 - 217 Nm Valve Installation Torque	2-Port 3-Port 4-Port 4-Port 4-Port (Dual path) 6-Port 6-Port	T-16A T-17A T-23A T-33A T-53AD T-53A T-63A
Series 4 Cartridges M48 Cartridge Thread	2-Port 2-Port (Undercut)	T-18A T-18AU

41,3 mm Valve Hex Size
474 - 508 Nm Valve Installation Torque

3-Port	T-19A
3-Port (Undercut)	T-19AU
4-Port	T-24A
4-Port (Undercut)	T-24AU
4-Port	T-34A
4-Port (Dual path)	T-54AD
6-Port	T-54A
6-Port	T-64A

XMD Series CAN-to-USB hardware interface cable

The XMD CAN-to-USB hardware interface cable is a USB 2.0 high-speed device that allows the Controller Area Network (CAN) in the XMD to be transmitted and received using the CANpoint XMD Configuration Software on a computer or laptop.

TECHNICAL DATA

Cable Length	16 ft

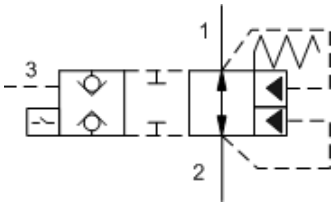
USED WITH

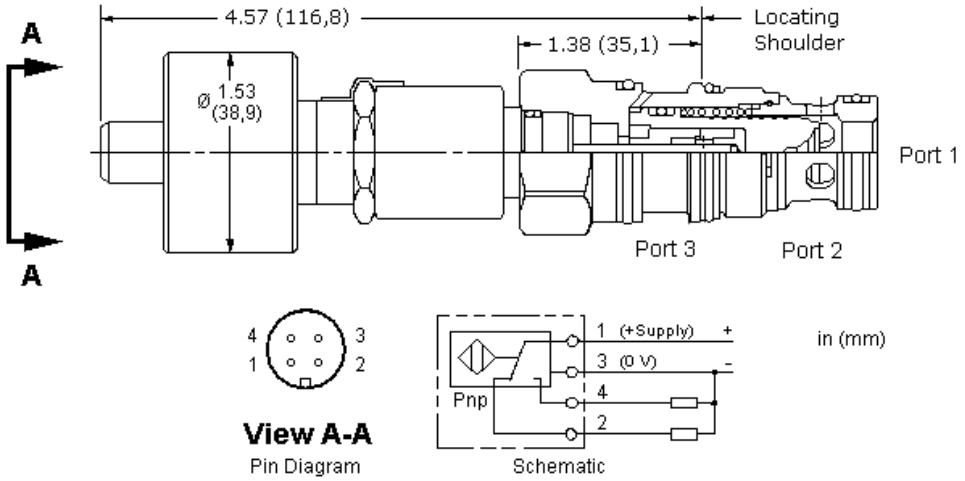
XMD-01 XMD-02

Pilot-to-close, spring-biased open, unbalanced poppet logic element with position switch

SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-2A

sunhydraulics.com/model/LOFOZ





These unbalanced, pilot-to-close logic valves are 2-way switching elements that are spring biased open. Pressure at either work port 1 or 2 will tend to keep the valve open while pressure at port 3 will tend to close it. The force generated at port 3 must be greater than the sum of the forces acting at port 1 and port 2 plus the spring force for the valve to close. NOTE: The pilot area (port 3) is 1.8 times the area at port 1 and 2.25 times the area at port 2.

This valve incorporates a position switch to provide confirmation that the valve is spring biased to the fully open position.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Pilot Volume Displacement	.07 in³
Pilot Passage into Valve	.035 in.
Area Ratio, A3 to A1	1.8:1
Area Ratio, A3 to A2	2.25:1
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: LOFOZDN

CRACKING PRESSURE (D)

D 50 psi (3,5 bar)

SEAL MATERIAL (N)

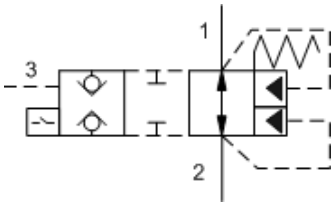
N Buna-N

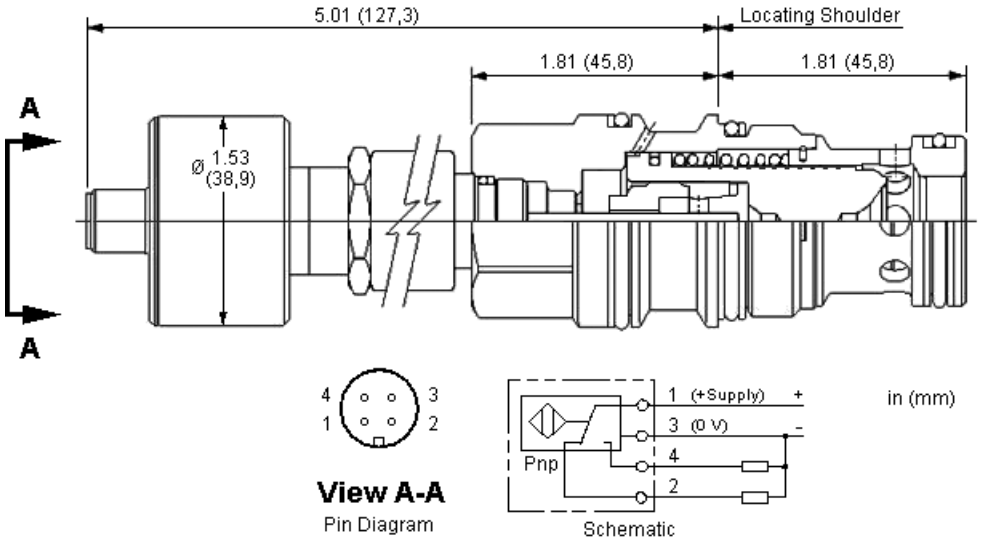
V Viton

Pilot-to-close, spring-biased open, unbalanced poppet logic element with position switch

SERIES 3 / CAPACITY: 100 gpm / CAVITY: T-17A

sunhydraulics.com/model/LOHOZ





These unbalanced, pilot-to-close logic valves are 2-way switching elements that are spring biased open. Pressure at either work port 1 or 2 will tend to keep the valve open while pressure at port 3 will tend to close it. The force generated at port 3 must be greater than the sum of the forces acting at port 1 and port 2 plus the spring force for the valve to close. NOTE: The pilot area (port 3) is 1.8 times the area at port 1 and 2.25 times the area at port 2.

This valve incorporates a position switch to provide confirmation that the valve is spring biased to the fully open position.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Pilot Volume Displacement	.25 in³
Pilot Passage into Valve	.06 in.
Area Ratio, A3 to A1	1.8:1
Area Ratio, A3 to A2	2.25:1
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990117006

CONFIGURATION OPTIONS

Model Code Example: LOHOZDN

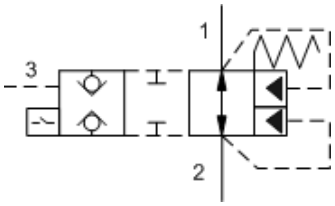
CRACKING PRESSURE	(D)
D 50 psi (3,5 bar)	

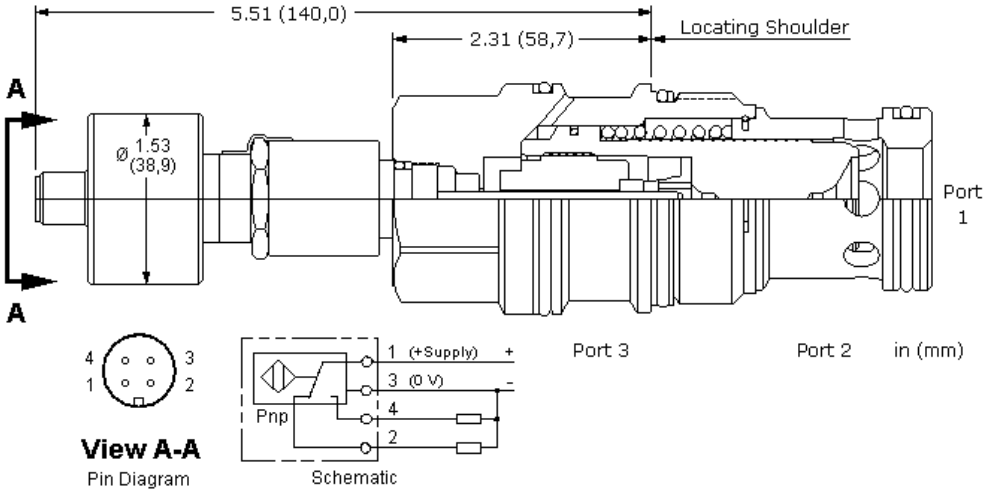
SEAL MATERIAL	(N)
N Buna-N	
V Viton	

Pilot-to-close, spring-biased open, unbalanced poppet logic element with position switch

SERIES 4 / CAPACITY: 200 gpm / CAVITY: T-19A

sunhydraulics.com/model/LOJOZ





These unbalanced, pilot-to-close logic valves are 2-way switching elements that are spring biased open. Pressure at either work port 1 or 2 will tend to keep the valve open while pressure at port 3 will tend to close it. The force generated at port 3 must be greater than the sum of the forces acting at port 1 and port 2 plus the spring force for the valve to close. NOTE: The pilot area (port 3) is 1.8 times the area at port 1 and 2.25 times the area at port 2.

This valve incorporates a position switch to provide confirmation that the valve is spring biased to the fully open position.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Pilot Volume Displacement	.42 in³
Pilot Passage into Valve	.09 in.
Area Ratio, A3 to A1	1.8:1
Area Ratio, A3 to A2	2.25:1
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: LOJOZDN

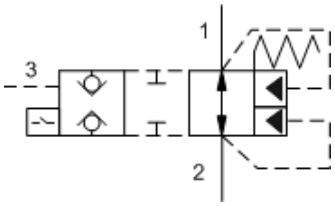
CRACKING PRESSURE	(D)
D 50 psi (3,5 bar)	

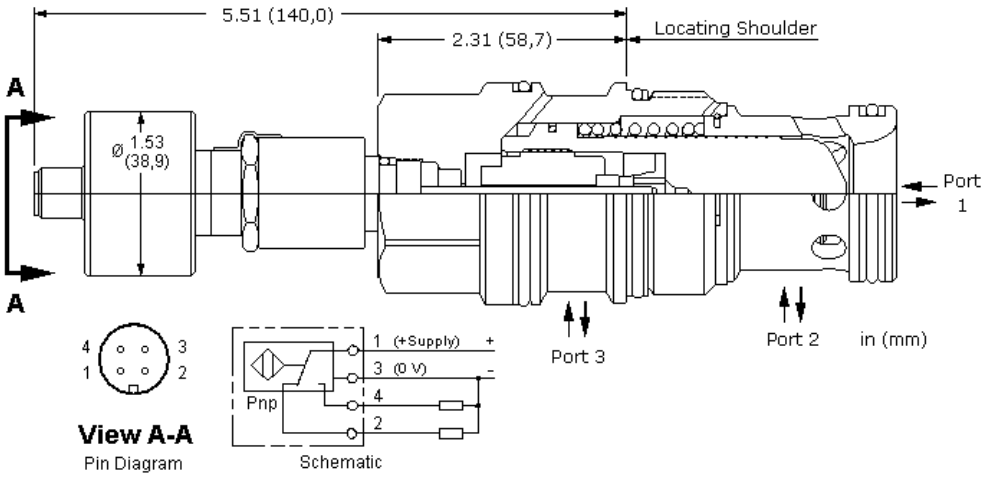
SEAL MATERIAL	(N)
N Buna-N	
V Viton	

Pilot-to-close, spring-biased open, unbalanced poppet logic element with position switch

SERIES 4 / CAPACITY: 300 gpm / CAVITY: T-19AU

sunhydraulics.com/model/LOKOZ





These unbalanced, pilot-to-close logic valves are 2-way switching elements that are spring biased open. Pressure at either work port 1 or 2 will tend to keep the valve open while pressure at port 3 will tend to close it. The force generated at port 3 must be greater than the sum of the forces acting at port 1 and port 2 plus the spring force for the valve to close. NOTE: The pilot area (port 3) is 1.8 times the area at port 1 and 2.25 times the area at port 2.

This valve incorporates a position switch to provide confirmation that the valve is spring biased to the fully open position.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Pilot Volume Displacement	.47 in^3
Pilot Passage into Valve	.09 in.
Area Ratio, A3 to A1	1.8:1
Area Ratio, A3 to A2	2.25:1
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: LOKOZDN

CRACKING PRESSURE (D)

D 50 psi (3,5 bar)

SEAL MATERIAL (N)

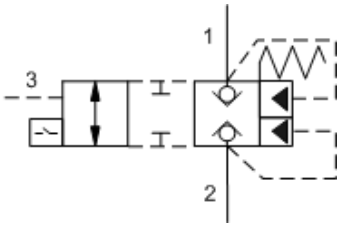
N Buna-N

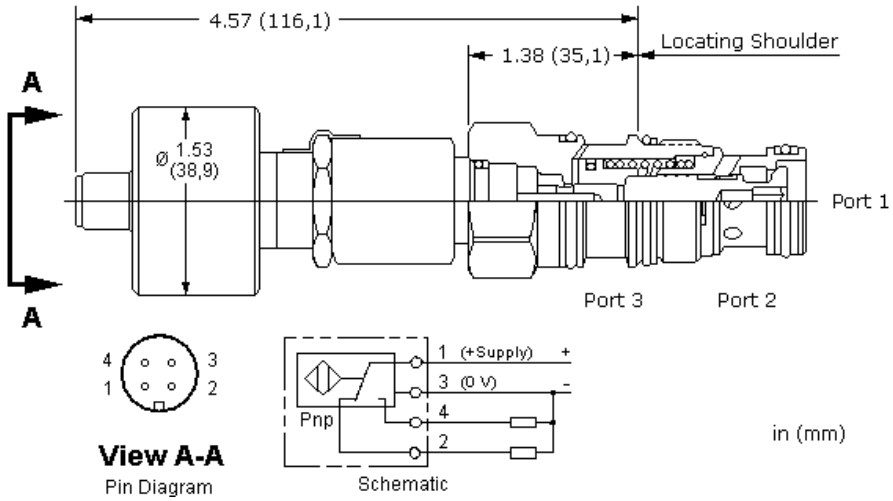
V Viton

Pilot-to-open, spring-biased closed, unbalanced poppet logic element with position switch

SERIES 2 / CAPACITY: 20 gpm / CAVITY: T-2A

sunhydraulics.com/model/LKFCZ





These unbalanced poppet, logic valves are 2-way switching elements that are spring-biased closed. Pressure at either work port 1 or 2 will further bias the valve to the closed position while pressure at port 3 will tend to open it. The force generated at port 3 must be greater than the sum of the forces acting at port 1 and port 2 plus the spring force for the valve to open. NOTE: The pilot area (port 3) is 1.8 times the area at port 1 and 2.25 times the area at port 2.

This valve incorporates a position switch to provide confirmation that the valve is closed.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Pilot Volume Displacement	.06 in^3
Pilot Passage into Valve	.035 in.
Area Ratio, A3 to A1	1.8:1
Area Ratio, A3 to A2	2.25:1
Transition leakage at 110 SUS (24 cSt)	2 in^3/min.@1000 psi
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	EPDM: 990202014
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: LKFCZDN

MINIMUM PILOT PRESSURE (D)

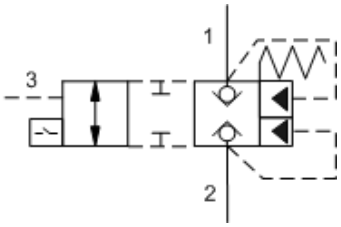
- **D** 50 psi (3,5 bar)

SEAL MATERIAL (N)

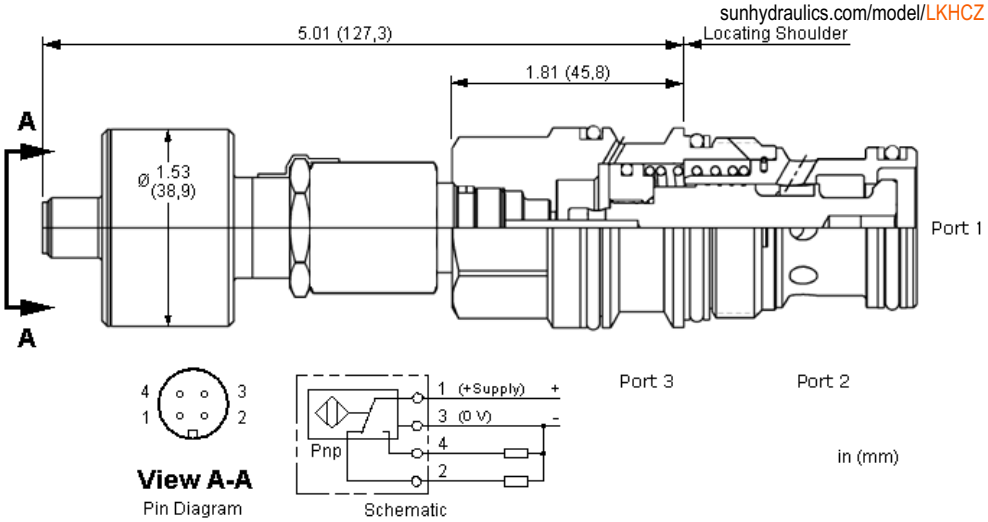
- **N** Buna-N
- **E** EPDM
- **V** Viton

Pilot-to-open, spring-biased closed, unbalanced poppet logic element with position switch

SERIES 3 / CAPACITY: 40 gpm / CAVITY: T-17A



sunhydraulics.com/model/LKHCZ



These unbalanced poppet, logic valves are 2-way switching elements that are spring-biased closed. Pressure at either work port 1 or 2 will further bias the valve to the closed position while pressure at port 3 will tend to open it. The force generated at port 3 must be greater than the sum of the forces acting at port 1 and port 2 plus the spring force for the valve to open. NOTE: The pilot area (port 3) is 1.8 times the area at port 1 and 2.25 times the area at port 2.

This valve incorporates a position switch to provide confirmation that the valve is closed.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Pilot Volume Displacement	.15 in^3
Pilot Passage into Valve	.06 in.
Area Ratio, A3 to A1	1.8:1
Area Ratio, A3 to A2	2.25:1
Transition leakage at 110 SUS (24 cSt)	2 in^3/min.@1000 psi
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	EPDM: 990017014
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: LKHCZDN

MINIMUM PILOT PRESSURE (D)

- **D** 50 psi (3,5 bar)

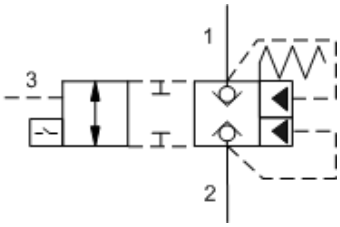
SEAL MATERIAL (N)

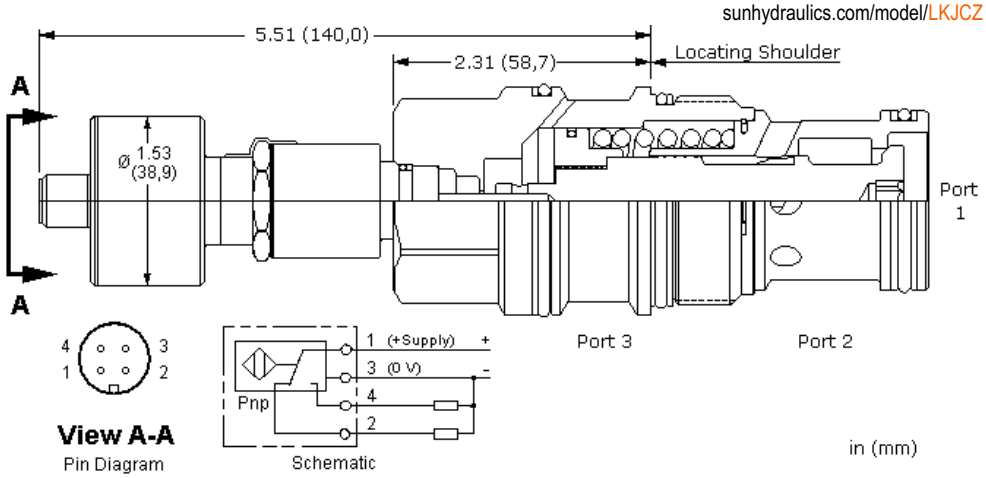
- **N** Buna-N
- **E** EPDM
- **V** Viton

Pilot-to-open, spring-biased closed, unbalanced poppet logic element with position switch

SERIES 4 / CAPACITY: 80 gpm / CAVITY: T-19A

sunhydraulics.com/model/LKJCZ





These unbalanced poppet, logic valves are 2-way switching elements that are spring-biased closed. Pressure at either work port 1 or 2 will further bias the valve to the closed position while pressure at port 3 will tend to open it. The force generated at port 3 must be greater than the sum of the forces acting at port 1 and port 2 plus the spring force for the valve to open. NOTE: The pilot area (port 3) is 1.8 times the area at port 1 and 2.25 times the area at port 2.

This valve incorporates a position switch to provide confirmation that the valve is closed.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Pilot Volume Displacement	.30 in³
Pilot Passage into Valve	.09 in.
Area Ratio, A3 to A1	1.8:1
Area Ratio, A3 to A2	2.25:1
Transition leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: LKJCZDN

MINIMUM PILOT PRESSURE (D)

D 50 psi (3,5 bar)

SEAL MATERIAL (N)

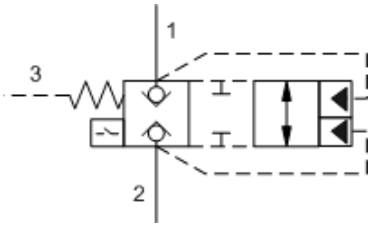
N Buna-N

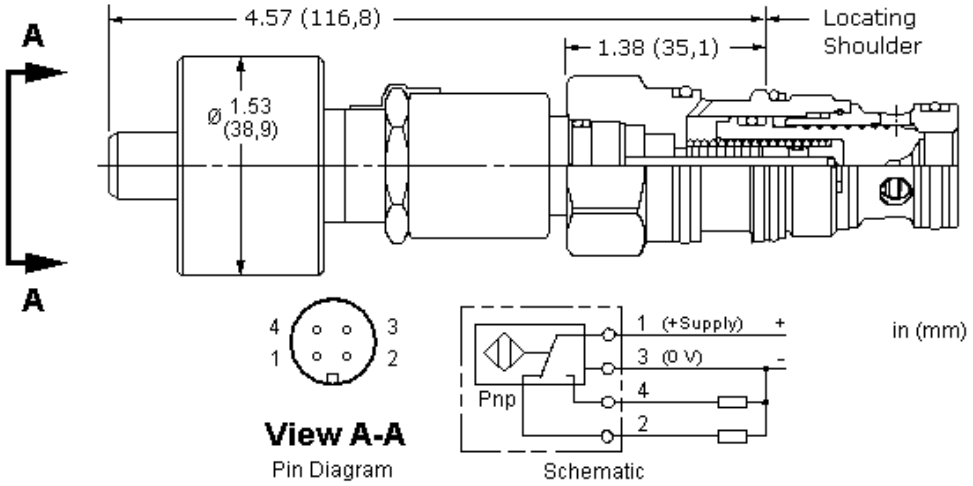
V Viton

Pilot-to-close, spring-biased closed, unbalanced poppet logic element with position switch

SERIES 2 / CAPACITY: 50 gpm / CAVITY: T-2A

sunhydraulics.com/model/LOFCZ





These unbalanced, pilot-to-close logic valves are 2-way switching elements that are spring biased closed. Pressure at either work port 1 or 2 will oppose the spring and tend to open the valve while pressure at port 3 will tend to close it. The force generated by the pressure at port 3, plus the spring force, must be greater than the sum of the forces generated by the pressures at ports 1 and 2 for the valve to remain closed.

This valve incorporates a position switch to provide confirmation that the valve is closed.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Pilot Volume Displacement	.07 in^3
Pilot Passage into Valve	.035 in.
Area Ratio, A3 to A1	1.8:1
Area Ratio, A3 to A2	2.25:1
Transition leakage at 110 SUS (24 cSt)	2 in^3/min.@1000 psi
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: LOFCZDN

NOMINAL CONTROL PRESSURE (D)

D 50 psi (3,5 bar)

SEAL MATERIAL (N)

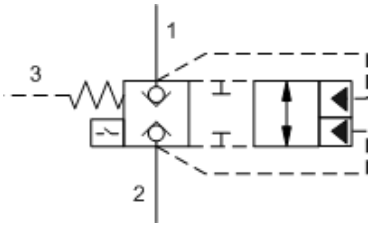
N Buna-N

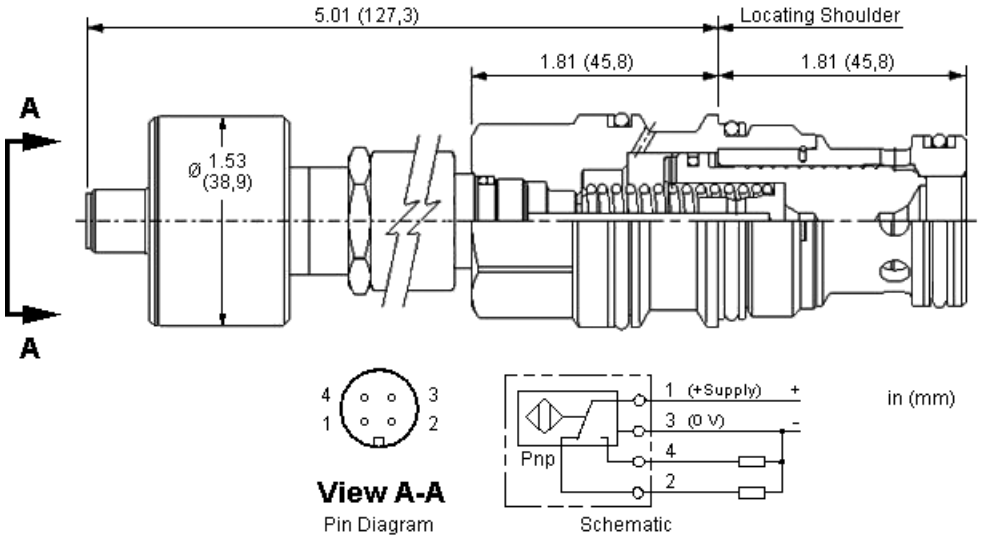
V Viton

Pilot-to-close, spring-biased closed, unbalanced poppet logic element with position switch

SERIES 3 / CAPACITY: 100 gpm / CAVITY: T-17A

sunhydraulics.com/model/LOHCZ





These unbalanced, pilot-to-close logic valves are 2-way switching elements that are spring biased closed. Pressure at either work port 1 or 2 will oppose the spring and tend to open the valve while pressure at port 3 will tend to close it. The force generated by the pressure at port 3, plus the spring force, must be greater than the sum of the forces generated by the pressures at ports 1 and 2 for the valve to remain closed.

This valve incorporates a position switch to provide confirmation that the valve is closed.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Pilot Volume Displacement	.25 in³
Pilot Passage into Valve	.06 in.
Area Ratio, A3 to A1	1.8:1
Area Ratio, A3 to A2	2.25:1
Transition leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: LOHCZDN

CRACKING PRESSURE (D)

D 50 psi (3,5 bar)

SEAL MATERIAL (N)

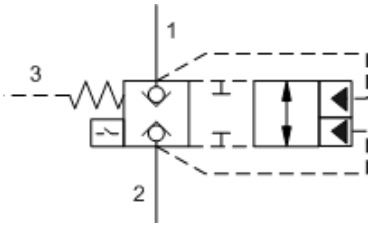
N Buna-N

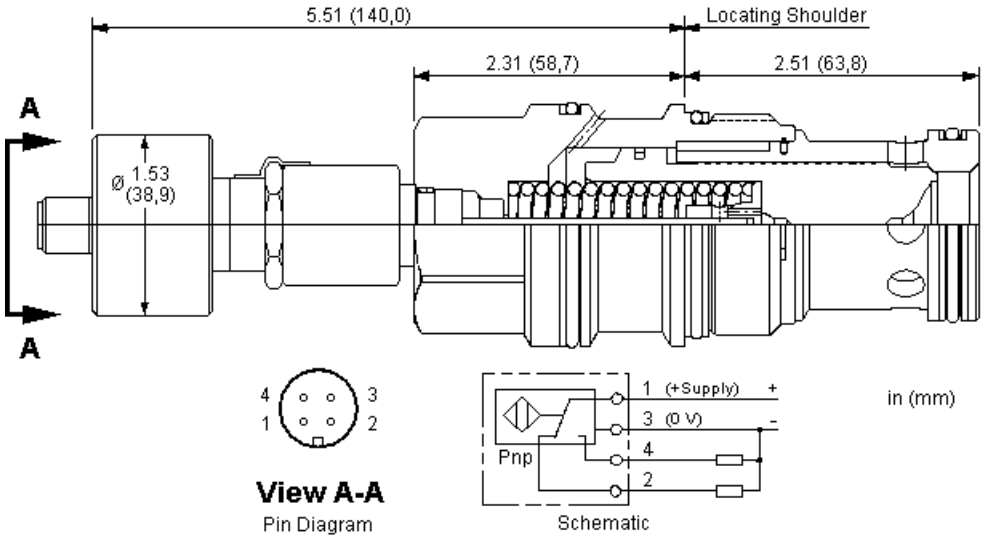
V Viton

Pilot-to-close, spring-biased closed, unbalanced poppet logic element with position switch

SERIES 4 / CAPACITY: 200 gpm / CAVITY: T-19A

sunhydraulics.com/model/LOJCZ





These unbalanced, pilot-to-close logic valves are 2-way switching elements that are spring biased closed. Pressure at either work port 1 or 2 will oppose the spring and tend to open the valve while pressure at port 3 will tend to close it. The force generated by the pressure at port 3, plus the spring force, must be greater than the sum of the forces generated by the pressures at ports 1 and 2 for the valve to remain closed.

This valve incorporates a position switch to provide confirmation that the valve is closed.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Pilot Volume Displacement	.42 in³
Pilot Passage into Valve	.09 in.
Area Ratio, A3 to A1	1.8:1
Area Ratio, A3 to A2	2.25:1
Transition leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: LOJCZDN

CRACKING PRESSURE (D)

D 50 psi (3,5 bar)

SEAL MATERIAL (N)

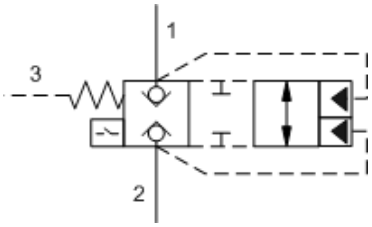
N Buna-N

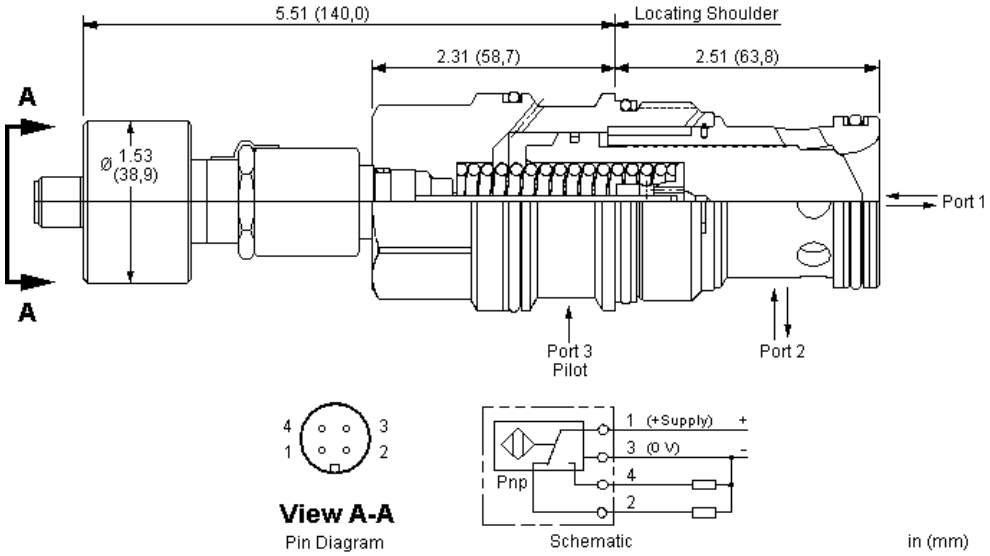
V Viton

Pilot-to-close, spring-biased closed, unbalanced poppet logic element with position switch

SERIES 4 / CAPACITY: 300 gpm / CAVITY: T-19AU

sunhydraulics.com/model/LOKCZ





These unbalanced, pilot-to-close logic valves are 2-way switching elements that are spring biased closed. Pressure at either work port 1 or 2 will oppose the spring and tend to open the valve while pressure at port 3 will tend to close it. The force generated by the pressure at port 3, plus the spring force, must be greater than the sum of the forces generated by the pressures at ports 1 and 2 for the valve to remain closed.

This valve incorporates a position switch to provide confirmation that the valve is closed.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Pilot Volume Displacement	.47 in³
Pilot Passage into Valve	.09 in.
Area Ratio, A3 to A1	1.8:1
Area Ratio, A3 to A2	2.25:1
Transition leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

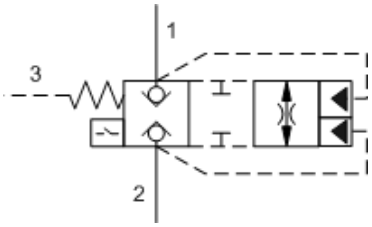
Model Code Example: LOKCZDN

CRACKING PRESSURE	(D)
D 50 psi (3,5 bar)	

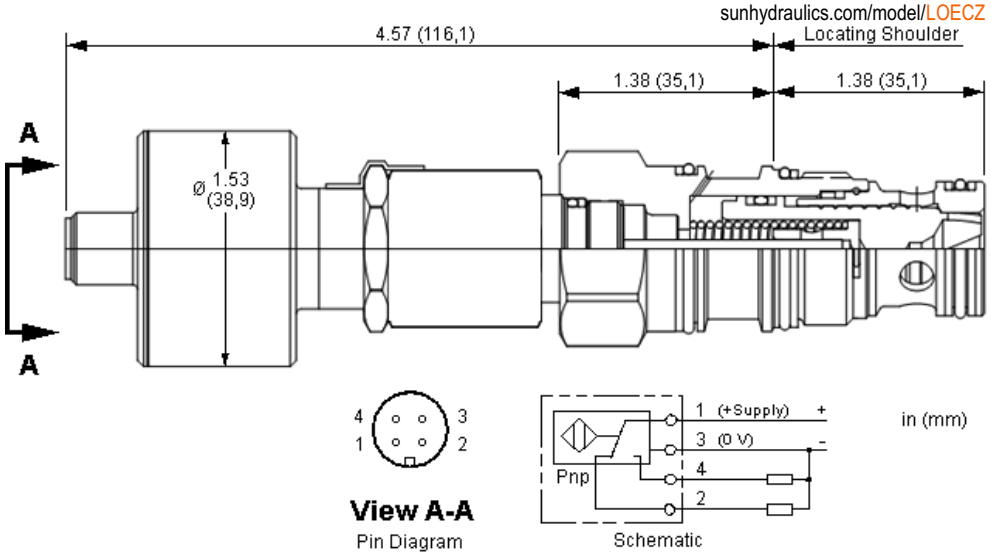
SEAL MATERIAL	(N)
N Buna-N	
V Viton	

Pilot-to-close, spring-biased closed, unbalanced poppet logic element with metering notches and position switch

SERIES 2 / CAPACITY: 12 gpm / CAVITY: T-2A



sunhydraulics.com/model/LOECZ



These unbalanced, pilot-to-close logic valves are 2-way switching elements that are spring biased closed. Pressure at either work port 1 or 2 will oppose the spring and tend to open the valve while pressure at port 3 will tend to close it. The force generated by the pressure at port 3, plus the spring force, must be greater than the sum of the forces generated by the pressures at ports 1 and 2 for the valve to remain closed.

This valve incorporates a position switch to provide confirmation that the valve is closed.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Pilot Volume Displacement	.07 in^3
Pilot Passage into Valve	.035 in.
Area Ratio, A3 to A1	1.8:1
Area Ratio, A3 to A2	2.25:1
Transition leakage at 110 SUS (24 cSt)	2 in^3/min.@1000 psi
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: LOECZDN

NOMINAL CONTROL PRESSURE (D)

D 50 psi (3,5 bar)

SEAL MATERIAL (N)

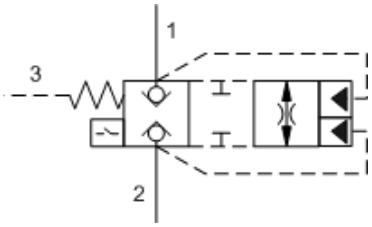
N Buna-N

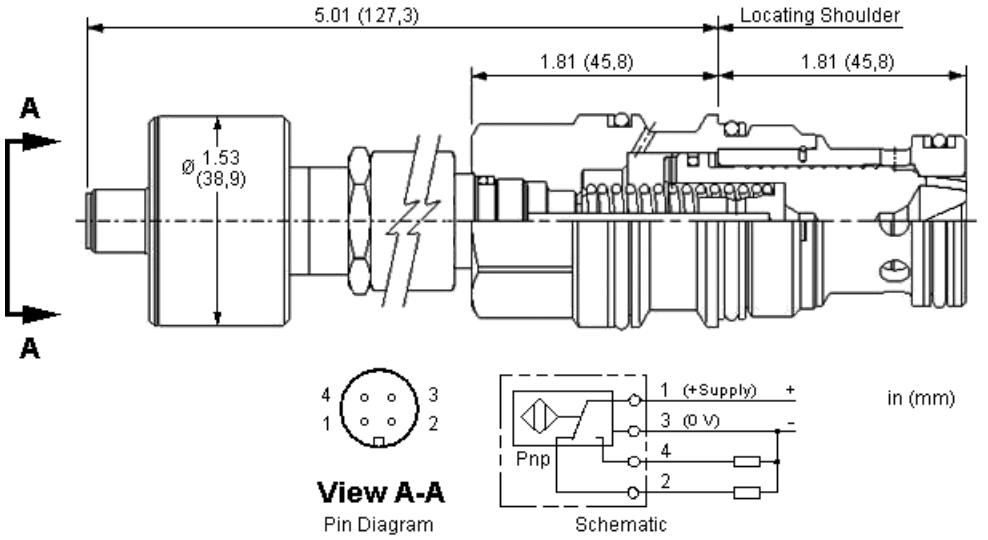
V Viton

Pilot-to-close, spring-biased closed, unbalanced poppet logic element with metering notches and position switch

SERIES 3 / CAPACITY: 40 gpm / CAVITY: T-17A

sunhydraulics.com/model/LOGCZ





These unbalanced, pilot-to-close logic valves are 2-way switching elements that are spring biased closed. Pressure at either work port 1 or 2 will oppose the spring and tend to open the valve while pressure at port 3 will tend to close it. The force generated by the pressure at port 3, plus the spring force, must be greater than the sum of the forces generated by the pressures at ports 1 and 2 for the valve to remain closed.

This valve incorporates a position switch to provide confirmation that the valve is closed.

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Pilot Volume Displacement	.25 in³
Pilot Passage into Valve	.06 in.
Area Ratio, A3 to A1	1.8:1
Area Ratio, A3 to A2	2.25:1
Transition leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: LOGCZDN

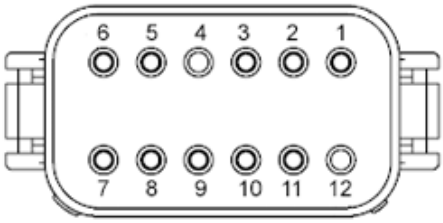
NOMINAL CONTROL PRESSURE (D)

D 50 psi (3,5 bar)

SEAL MATERIAL (N)

N Buna-N

V Viton



WIRING DIAGRAM

Terminal	Function
1	CAN_LO
2	CAN_HI
3	GND (Output & 5Vref)
4	No Connection
5	GND (Output & 5Vref)
6	PWM Output, Coil A

Terminal	Function
7	Batt GND
8	+VBatt
9	Enable
10	+5Vref
11	Universal Input 1
12	No Connection

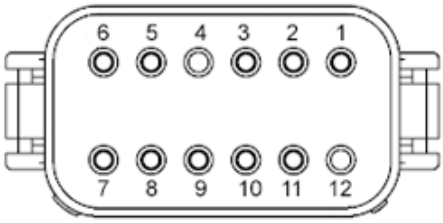
This single-output, 12 Pin Deutsch cable assembly is for use with Sun's XMD-01 electro-hydraulic driver.

TECHNICAL DATA

Connector	Molex 93445-6212, Keying Option A, Grey

USED WITH

991713030 991713060 XMD-01



WIRING DIAGRAM

Terminal	Function
1	CAN_LO
2	CAN_HI
3	GND (Output & 5Vref)
4	No Connection
5	GND (Output & 5Vref)
6	PWM Output, Coil A

Terminal	Function
7	Batt GND
8	+VBatt
9	Enable
10	+5Vref
11	Universal Input 1
12	No Connection

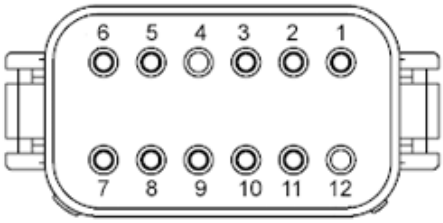
This single-output, 12 Pin Deutsch cable assembly is for use with Sun's XMD-01 electro-hydraulic driver.

TECHNICAL DATA

Connector	Molex 93445-6212, Keying Option A, Grey

USED WITH

991713030 991713060 XMD-01



WIRING DIAGRAM

Terminal	Function
1	CAN_LO
2	CAN_HI
3	GND (Output & 5Vref)
4	PWM Output, Coil B
5	GND (Output & 5Vref)
6	PWM Output, Coil A

Terminal	Function
7	Batt GND
8	+VBatt
9	Enable
10	+5Vref
11	Universal Input 1
12	Universal Input 2

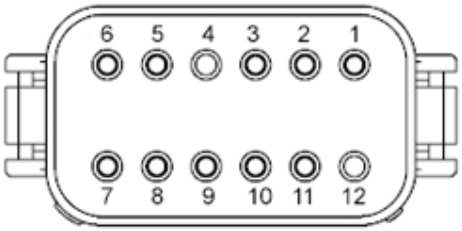
This double-output, 12 Pin Deutsch cable assembly is for use with Sun's XMD-02 electro-hydraulic driver.

TECHNICAL DATA

Connector	Molex 93445-6212, Keying Option A, Grey

USED WITH

991713030 991713060 XMD-02



WIRING DIAGRAM

Terminal	Function
1	CAN_LO
2	CAN_HI
3	GND (Output & 5Vref)
4	PWM Output, Coil B
5	GND (Output & 5Vref)
6	PWM Output, Coil A

Terminal	Function
7	Batt GND
8	+VBatt
9	Enable
10	+5Vref
11	Universal Input 1
12	Universal Input 2

This double-output, 12 Pin Deutsch cable assembly is for use with Sun's XMD-02 electro-hydraulic driver.

TECHNICAL DATA

Connector	Molex 93445-6212, Keying Option A, Grey

USED WITH

991713030 991713060 XMD-02

Deutsch cable assembly for use with Sun's XMD Series electro-hydraulic drivers.

TECHNICAL DATA

Connector	Molex 93445-1101, Black

USED WITH

991711300 991711600 991712300 991712600 XMD-01 XMD-02

Deutsch cable assembly for use with Sun's XMD Series electro-hydraulic drivers.

TECHNICAL DATA

Connector	Molex 93445-1101, Black

USED WITH

XMD-01 XMD-02

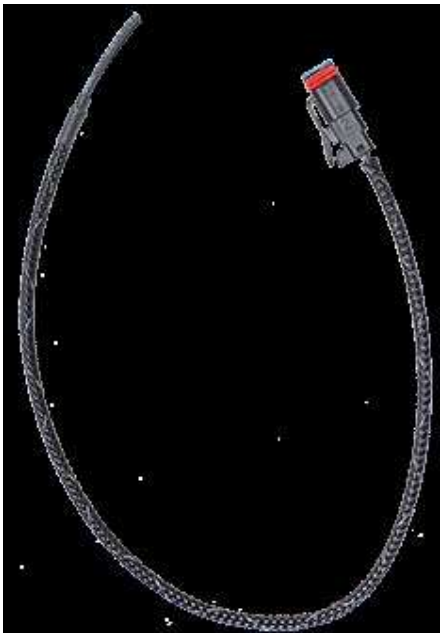
This adapter cable is used to convert Sun's FLeX Series coil with Deutsch connector to Metri-Pack Series 150-2M.

TECHNICAL DATA

Length	7.50 in.

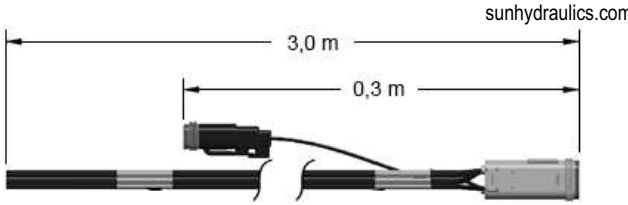
This adapter cable is used to convert Sun's FLeX Series coil with Deutsch connector to AMP Junior Timer.

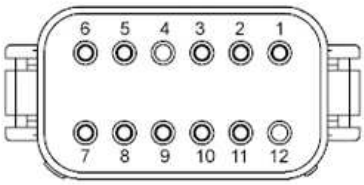
TECHNICAL DATA



This adapter cable is used to convert Sun's FLeX Series coil with Deutsch connector to twin leads.

TECHNICAL DATA





WIRING DIAGRAM

Terminal	Function
1	CAN_LO
2	CAN_HI
3	GND (Output & 5Vref)
4	No Connection
5	GND (Output & 5Vref)
6	PWM Output, Coil A

Terminal	Function
7	Batt GND
8	+VBatt
9	Enable
10	+5Vref
11	Universal Input 1
12	No Connection

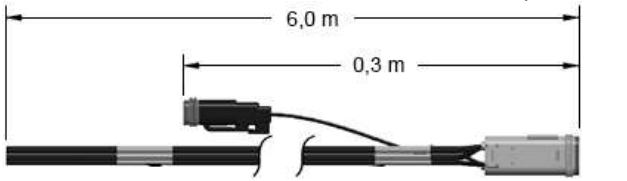
This single-output, 12 Pin Deutsch cable assembly is for use with Sun's XMD-01 electro-hydraulic driver. It comes equipped with a 2-pin Deutsch lead that connects directly to the FLeX or 770 Series Deutsch coils when combined with the coil clip accessory.

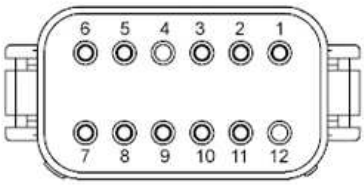
TECHNICAL DATA

Connector	Molex 93445-6212, Keying Option A, Grey

USED WITH

740912	740912D	740912L	740912LD	740914	740914D	740914L	740914LD	740924	740924D
740924L	740924LD	740928	740928D	740928L	740928LD	770912	770914	770914N	770924
770924N	770928	991713030	991713060	991740001	991740002	XMD-01	XMD-02		





WIRING DIAGRAM

Terminal	Function
1	CAN_LO
2	CAN_HI
3	GND (Output & 5Vref)
4	No Connection
5	GND (Output & 5Vref)
6	PWM Output, Coil A

Terminal	Function
7	Batt GND
8	+VBatt
9	Enable
10	+5Vref
11	Universal Input 1
12	No Connection

This single-output, 12 Pin Deutsch cable assembly is for use with Sun's XMD-01 electro-hydraulic driver. It comes equipped with a 2-pin Deutsch lead that connects directly to the FLeX or 770 Series Deutsch coils when combined with the coil clip accessory.

TECHNICAL DATA

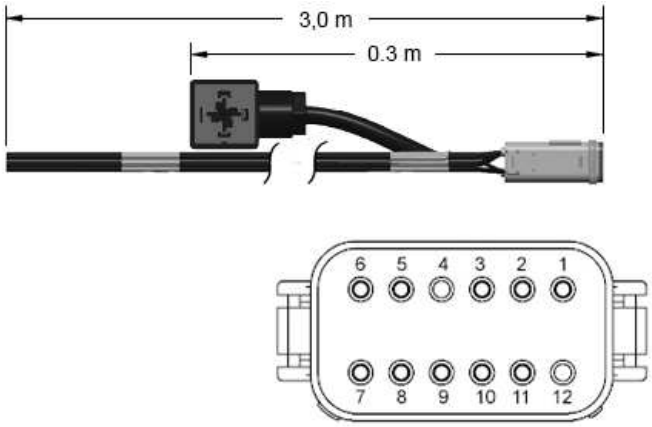
Connector	Molex 93445-6212, Keying Option A, Grey

USED WITH

740912	740912D	740912L	740912LD	740914	740914D	740914L	740914LD	740924	740924D
740924L	740924LD	740928	740928D	740928L	740928LD	770912	770914	770914N	770924
770924N	770928	991713030	991713060	991740001	991740002	XMD-01	XMD-02		

XMD Series, 3M, 12-pin Deutsch prototype cable, single-output with ISO/DIN 43650, Form A lead

snhy.com/991721300



WIRING DIAGRAM

Terminal	Function
1	CAN_LO
2	CAN_HI
3	GND (Output & 5Vref)
4	No Connection
5	GND (Output & 5Vref)
6	PWM Output, Coil A

Terminal	Function
7	Batt GND
8	+VBatt
9	Enable
10	+5Vref
11	Universal Input 1
12	No Connection

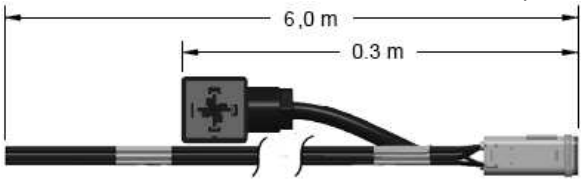
This single-output, 12 Pin Deutsch cable assembly is for use with Sun's XMD-01 electro-hydraulic driver. It comes equipped with a ISO/DIN 43650, Form A overmolded connector that connects directly to the FLeX or 770 Series VDC ISO/DIN 43650 coils when combined with the coil clip accessory.

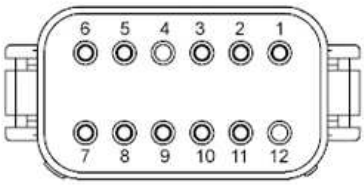
TECHNICAL DATA

Connector	Molex 93445-6212, Keying Option A, Grey

USED WITH

740212	740212D	740212L	740212LD	740214	740214D	740214L	740214LD	740224	740224D
740224L	740224LD	740228	740228D	740228L	740228LD	770212	770214	770224	770228





WIRING DIAGRAM

Terminal	Function
1	CAN_LO
2	CAN_HI
3	GND (Output & 5Vref)
4	No Connection
5	GND (Output & 5Vref)
6	PWM Output, Coil A

Terminal	Function
7	Batt GND
8	+VBatt
9	Enable
10	+5Vref
11	Universal Input 1
12	No Connection

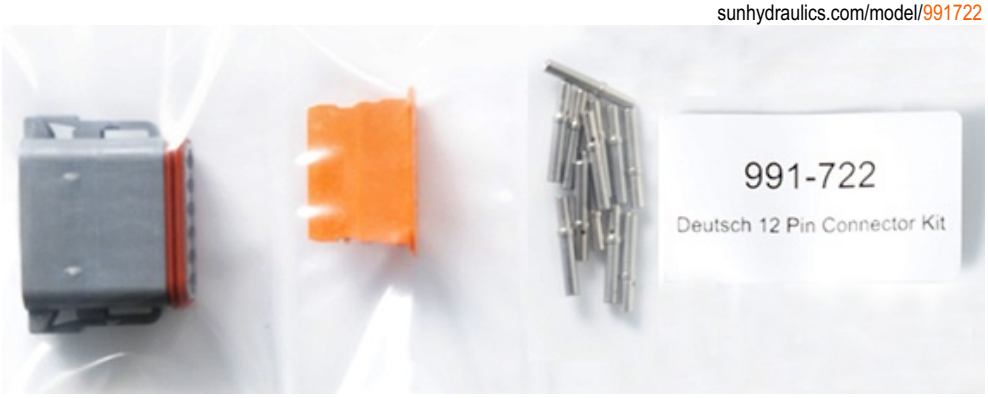
This single-output, 12 Pin Deutsch cable assembly is for use with Sun's XMD-01 electro-hydraulic driver. It comes equipped with a ISO/DIN 43650, Form A overmolded connector that connects directly to the FLeX or 770 Series VDC ISO/DIN 43650 coils when combined with the coil clip accessory.

TECHNICAL DATA

Connector	Molex 93445-6212, Keying Option A, Grey

USED WITH

740212	740212D	740212L	740212LD	740214	740214D	740214L	740214LD	740224	740224D
740224L	740224LD	740228	740228D	740228L	740228LD	770212	770214	770224	770228



This Deutsch 12 pin connector kit is for use with Sun's XMD series electro-hydraulic drivers. Assembly is required.

TECHNICAL DATA

Socket	0462-201-16141, HD30 Series, 16 to 18 AWG, terminal size 16, Nickel
Wedge lock	W12S, DT Series, 12 pin
Crimp tool	HDT-48-00
Connector	DT06-12SA, DT Series, 12 pin, contact size 16, gray

USED WITH

XMD-01 XMD-02

This Deutsch 2 pin connector kit is for use with Sun's 2 pin Deutsch coils. Assembly is required.

TECHNICAL DATA

Socket	0462-201-16141, HD30 Series, 16 to 18 AWG, terminal size 16, Nickel
Wedge lock	W2S, DT Series 2 pin
Crimp tool	HDT-48-00
Connector	DT06-2S, DT Series, 2 pin, contact size 16, gray

USED WITH

740912	740912D	740912L	740912LD	740914	740914D	740914L	740914LD	740924	740924D
740924L	740924LD	740928	740928D	740928L	740928LD	770912	770912N	770914	770914N
770924	770924N	770928	780912N	780924N					

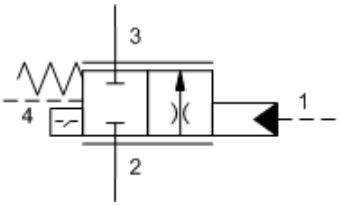
This Deutsch 2 pin connector kit is for use with Sun's 2 pin Deutsch coils. Assembly is required.

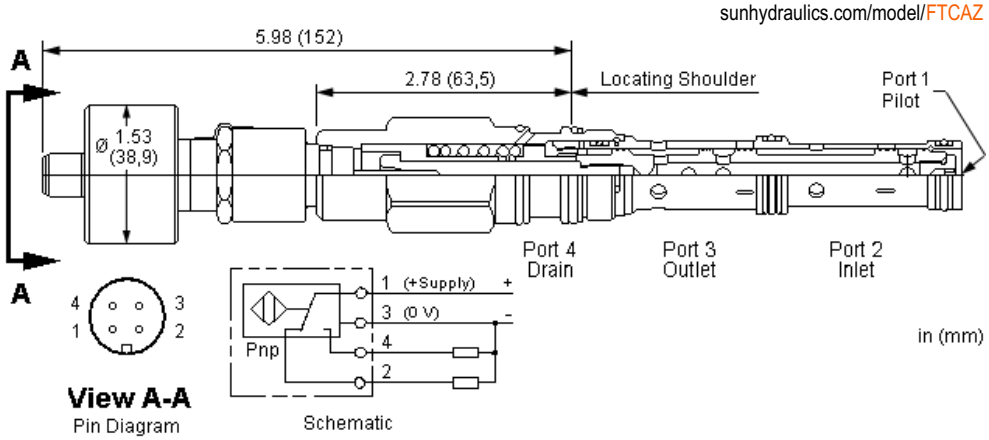
TECHNICAL DATA

Socket	0462-201-16141, HD30 Series, 16 to 18 AWG, terminal size 16, Nickel
Wedge lock	W2S, DT Series 2 pin
Crimp tool	HDT-48-00
Connector	DT06-2S, DT Series, 2 pin, contact size 16, black

USED WITH

740912	740912D	740912L	740912LD	740914	740914D	740914L	740914LD	740924	740924D
740924L	740924LD	740928	740928D	740928L	740928LD	770912	770912N	770914	770914N
770924	770924N	770928	780912N	780924N					





This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The metering passage is self-compensating.

This valve uses a dual-path design. Ports 2 and 3 incorporate a double-port area.

This valve incorporates a position switch to provide confirmation that the valve is closed.

TECHNICAL DATA

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

Pilot Pressure Required for Full Shift at Rated Flow	290 - 340 psi
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.@1000 psi
Pilot Volume Displacement	.05 in³
Seal kit - Cartridge	Buna: 990152007
Seal kit - Cartridge	Viton: 990152006

NOTES When installed in Sun's standard T-52A line mount manifold, plug unused ports and expect higher pressure drops.

CONFIGURATION OPTIONS

Model Code Example: FTCAZCN

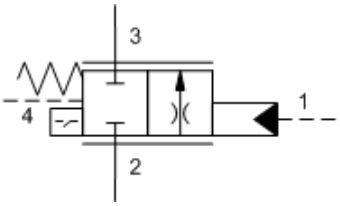
SPOOL CONFIGURATION (C)

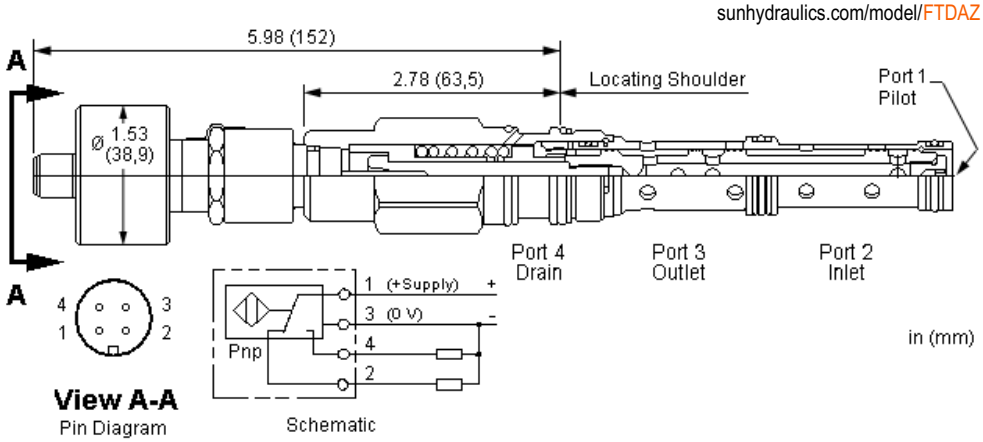
C Normally Closed

SEAL MATERIAL (N)

N Buna-N

V Viton





This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The metering passage is self-compensating.

This valve uses a dual-path design. Ports 2 and 3 incorporate a double-port area.

This valve incorporates a position switch to provide confirmation that the valve is closed.

TECHNICAL DATA

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

Pilot Pressure Required for Full Shift at Rated Flow	290 - 340 psi
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	5 in³/min.@1000 psi
Pilot Volume Displacement	.05 in³
Seal kit - Cartridge	Buna: 990152007
Seal kit - Cartridge	Viton: 990152006

NOTES

When installed in Sun's standard T-52A line mount manifold, plug unused ports and expect higher pressure drops.

CONFIGURATION OPTIONS

Model Code Example: FTDAZCN

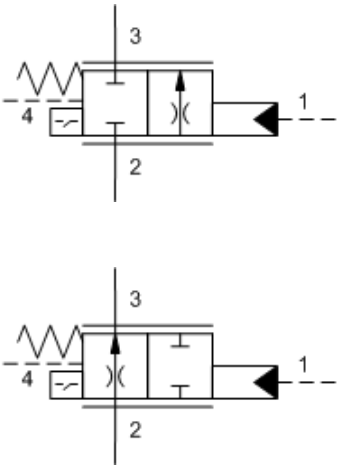
SPOOL CONFIGURATION (C)

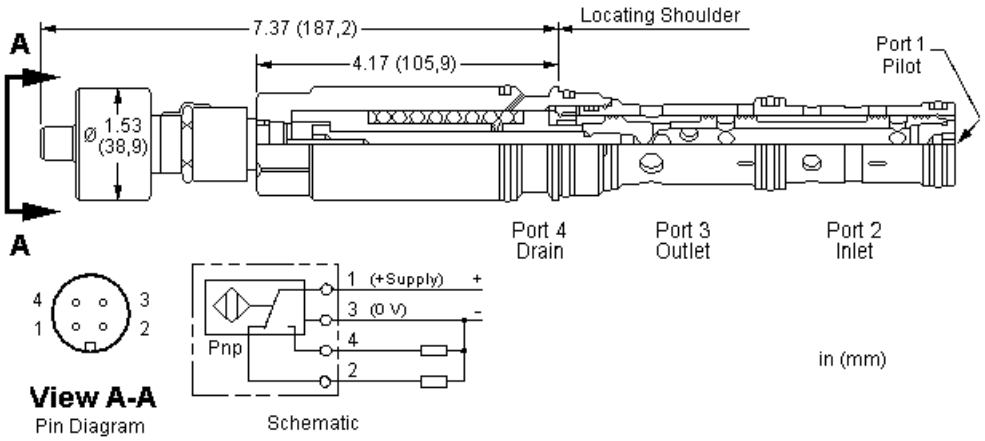
C Normally Closed

SEAL MATERIAL (N)

N Buna-N

V Viton





This valve is a 2-way, 2-position proportional throttle. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The metering passage is self-compensating.

This valve uses a dual-path design, Ports 2 and 3 incorporate a double-port area.

This valve incorporates a position switch to provide position confirmation.

TECHNICAL DATA

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

Pilot Pressure Required for Full Shift at Rated Flow	290 - 340 psi
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	10 in³/min.@1000 psi
Pilot Volume Displacement	.10 in³
Seal kit - Cartridge	Buna: 990053007
Seal kit - Cartridge	Viton: 990053006

NOTES

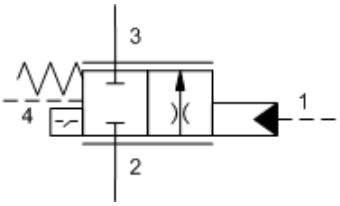
When installed in Sun's standard T-53A line mount manifold, plug unused ports and expect higher pressure drops.

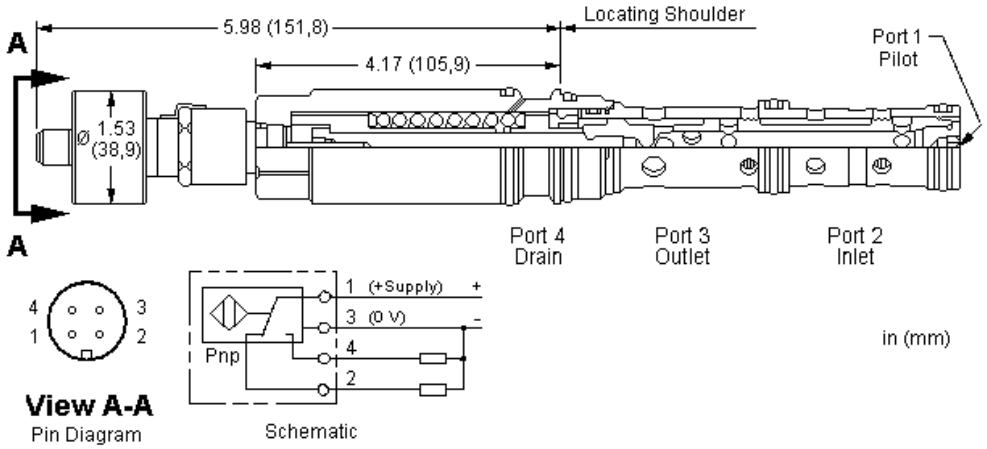
CONFIGURATION OPTIONS

Model Code Example: FTEAZCN

SPOOL CONFIGURATION	(C)
C Normally Closed	
H Normally Open	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	





This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The metering passage is self-compensating.

This valve uses a dual-path design. Ports 2 and 3 incorporate a double-port area.

This valve incorporates a position switch to provide confirmation that the valve is closed.

TECHNICAL DATA

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

Pilot Pressure Required for Full Shift at Rated Flow	290 - 340 psi
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	10 in³/min.@1000 psi
Pilot Volume Displacement	.10 in³
Seal kit - Cartridge	Buna: 990053007
Seal kit - Cartridge	Viton: 990053006

NOTES

When installed in Sun's standard T-53A line mount manifold, plug unused ports and expect higher pressure drops.

CONFIGURATION OPTIONS

Model Code Example: FTFAZCN

SPOOL CONFIGURATION (C)	SEAL MATERIAL (N)
C Normally Closed	**N** Buna-N
	V Viton

Sun's Infrared Cable Adapter provides a convenient interface between Sun's 790 Series Embedded Digital Proportional Valve Amplifier and the Hand Held Programmer or a Windows Based PC. Included with the Cable Adaptor is a USB memory key containing Sun's Amplifier Set Up Software.

TECHNICAL DATA

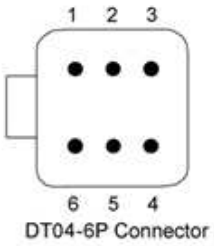
Supply Voltage	HHP or PC port powered
Operating Temperature Range	-4 - 140 °F
Cable Length	6 ft

USED WITH

7902B12A 7902B12V 7902B24A 7902B24V 7902C12V 7902C24V 7902D12A 7902D24A 7902D24V 7902E12V
7902E24V 7902F12V 7902F24V 7904A12A 7904A12V 7904A24A 7904A24V 7904E12V 7904E24V 7904F12V
7904F24V

Wiring Diagram

Color	Terminal	Function
Brown	1	+V Supply
Black	2	Command Input
Blue	3	Supply Common
Red	4	+5 V Ref
Green/Yellow	5	Command Common
White	6	Enable
Bare		Shield Drain



DT04-6P Connector

Deutsch Cable Assembly for use with Sun's 790 series embedded amplifier equipped with a Deutsch DT06-6S connector.

TECHNICAL DATA

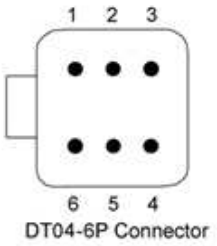
Connector	Deutsch DT06-6S (mates with DT04-6P)
Cable Length	10 ft

USED WITH

7904A12A 7904A12V 7904A24A 7904A24V 7904E12V 7904E24V 7904F12V 7904F24V

Wiring Diagram

Color	Terminal	Function
Brown	1	+V Supply
Black	2	Command Input
Blue	3	Supply Common
Red	4	+5 V Ref
Green/Yellow	5	Command Common
White	6	Enable
Bare		Shield Drain



DT04-6P Connector

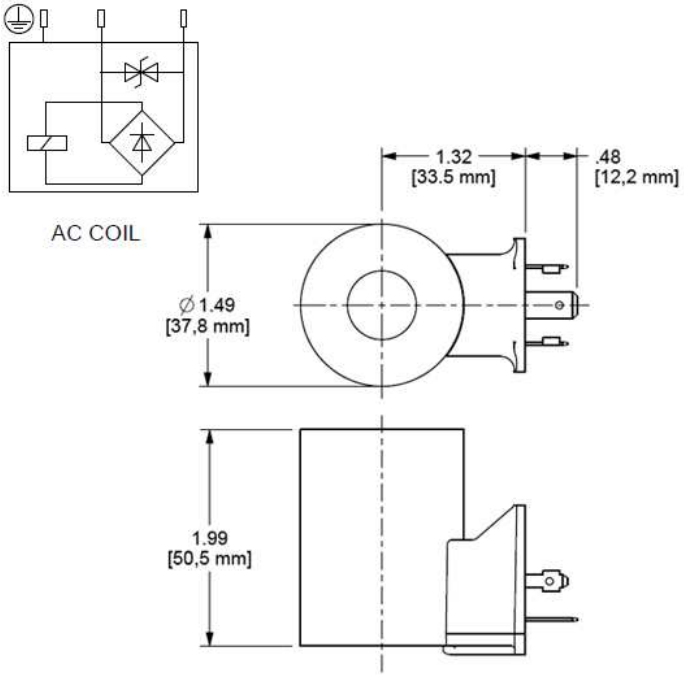
Deutsch Cable Assembly for use with Sun's 790 series embedded amplifier equipped with a Deutsch DT06-6S connector.

TECHNICAL DATA

Connector	Deutsch DT06-6S (mates with DT04-6P)
Cable Length	20 ft

USED WITH

7904A12A 7904A12V 7904A24A 7904A24V 7904E12V 7904E24V 7904F12V 7904F24V

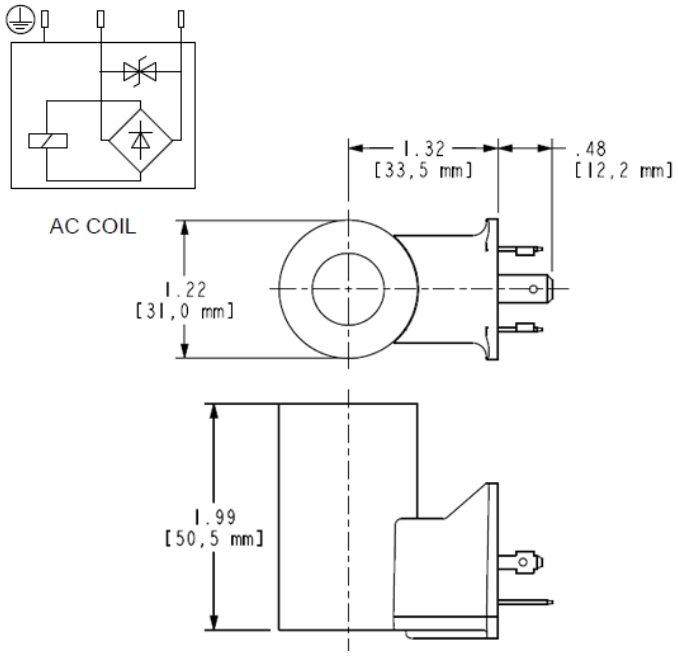


TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	115 VAC 50/60 Hz
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
DFFI	DFFJ	DLDF	DLDFS	DMBF	DNBF	DTAF	DTAFS	DTBF	DTCF
DTDF	DTDFS	DWBF	DWDF	FREP	PRDF	PRDG	RVCK	RVCL	RVCM
RVCN									

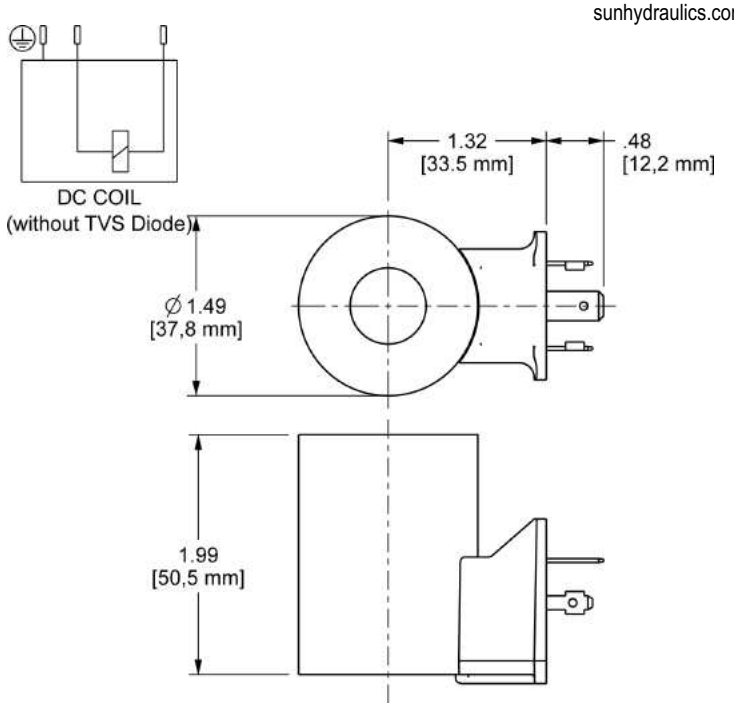


TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	115 VAC 50/60 Hz
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF DBAFS DFBD DFBE DMBD DNBD DTAF DTAFS DTBF

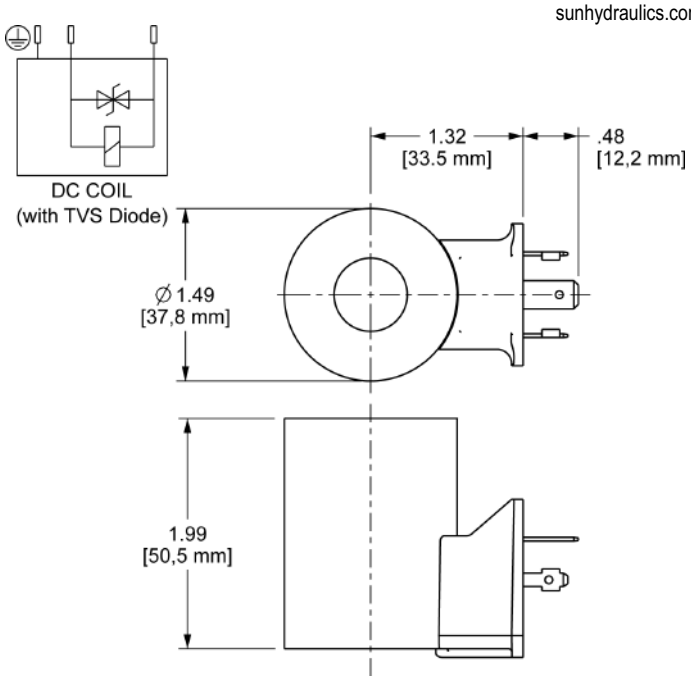


TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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	

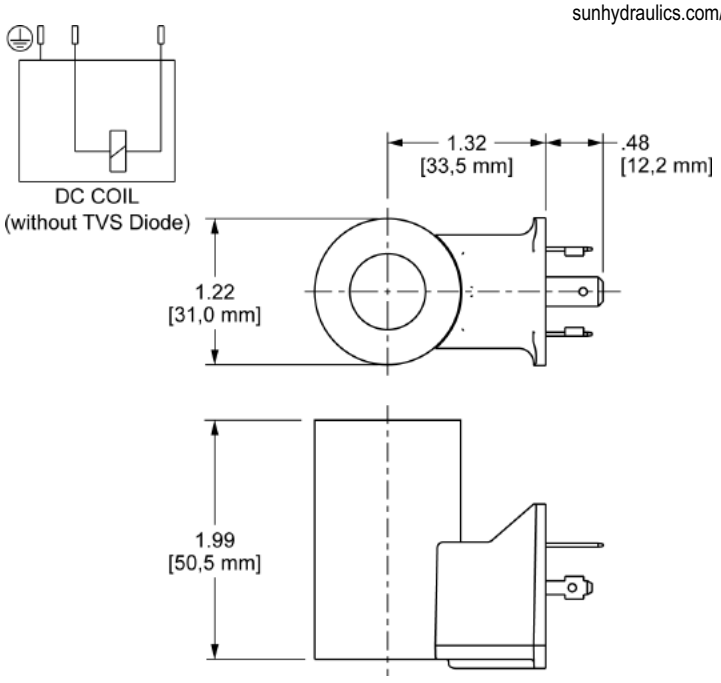


TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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	

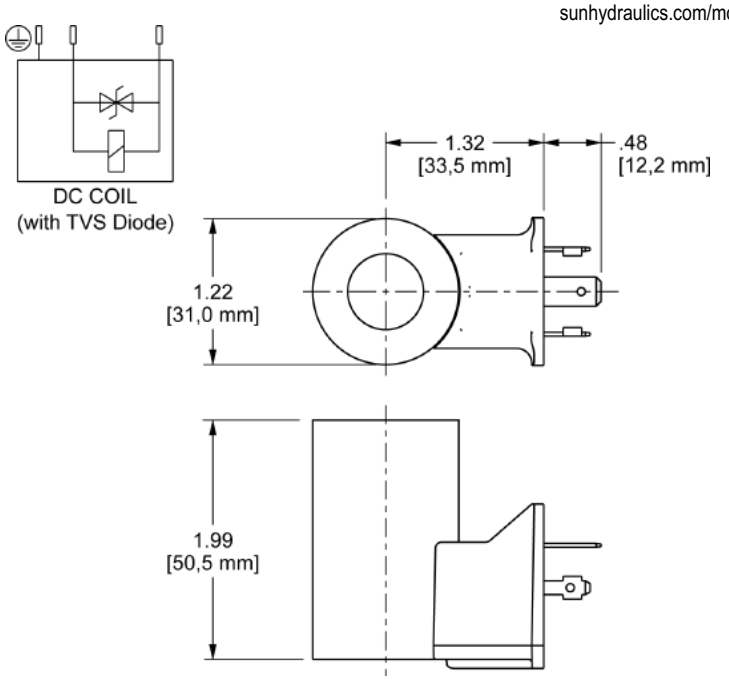


TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBD	DFBE	DMBD	DNBD	DTAF	DTAFS	DTBF	FPBD
FPBE	FPBM	FPBN	RPEI	991711300	991712300	991712600	991713030	991713060	991740002
XMD-01	XMD-02								

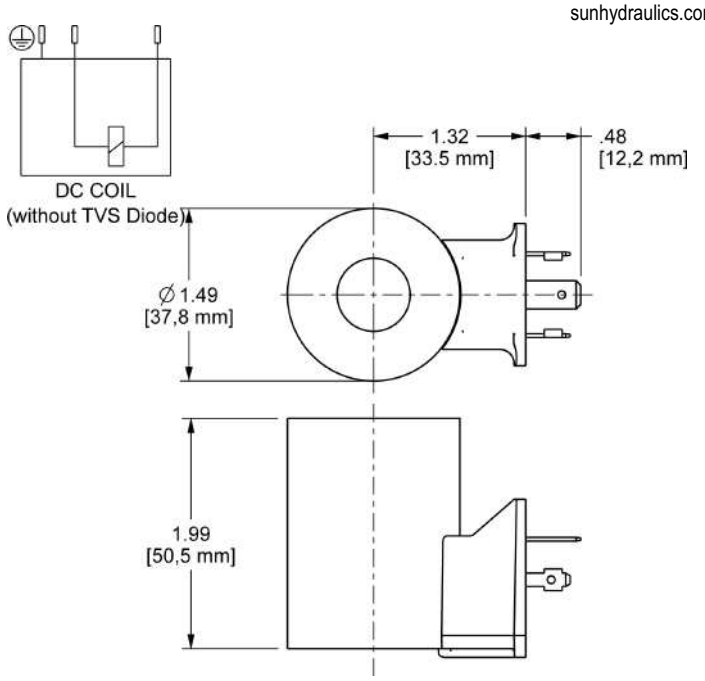


TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBD	DFBE	DMBD	DNBD	DTAF	DTAFS	DTBF	FPBD
FPBE	FPBM	FPBN	RPEI	991711300	991711600	991712300	991712600	991713030	991713060
991740002	XMD-01	XMD-02							

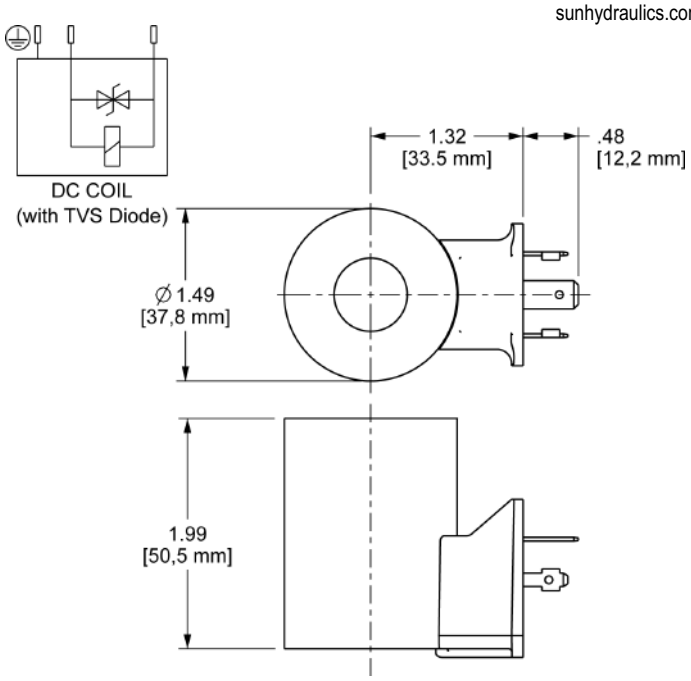


TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	14 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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	

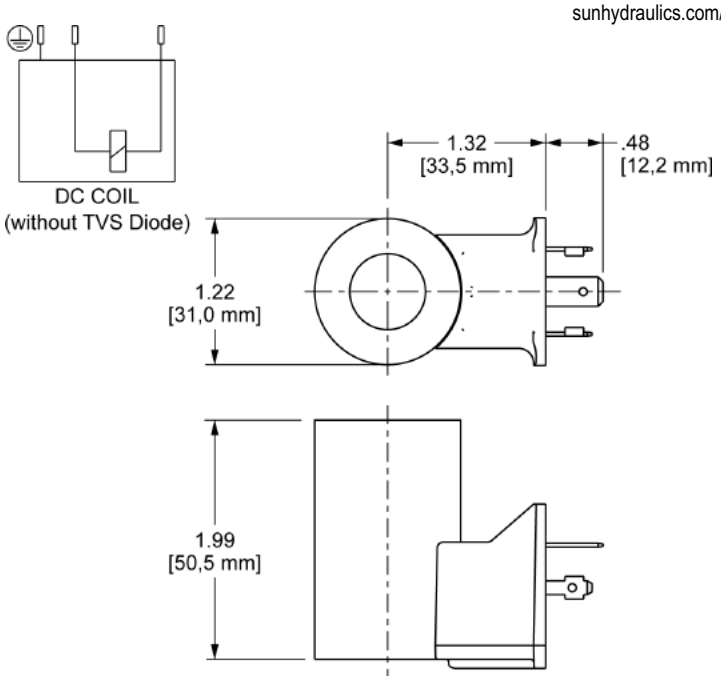


TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	14 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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	

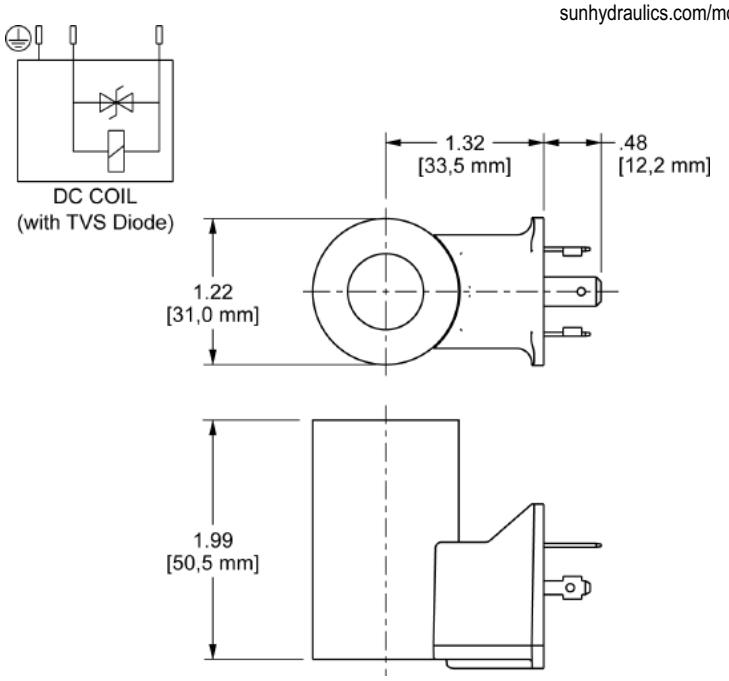


TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	14 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBD	DFBE	DMBD	DNBD	DTAF	DTAFS	DTBF	FDEP
FPBD	FPBE	FPBM	FPBN	RPEI	991711300	991711600	991712300	991712600	991713030
991713060	991740002	XMD-01	XMD-02						

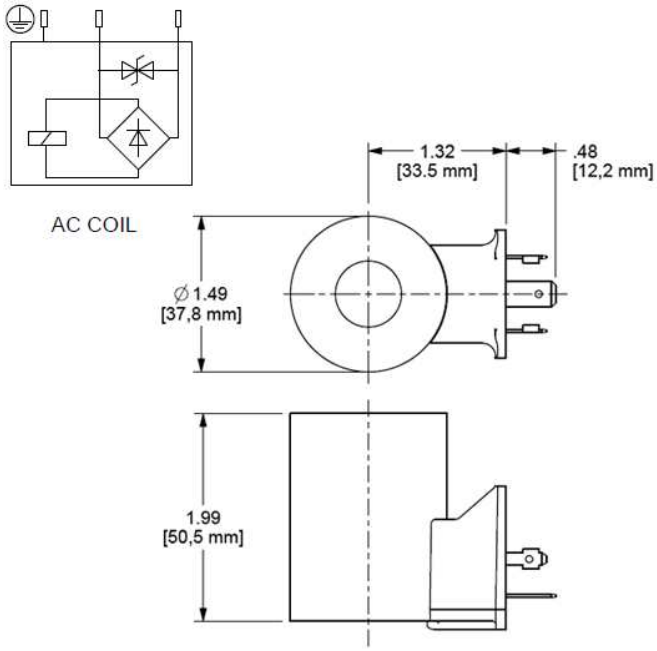


TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	14 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBD	DFBE	DMBD	DNBD	DTAF	DTAFS	DTBF	FPBD
FPBE	FPBM	FPBN	RPEI	991711300	991711600	991712300	991712600	991713030	991713060
991740002	XMD-01	XMD-02							

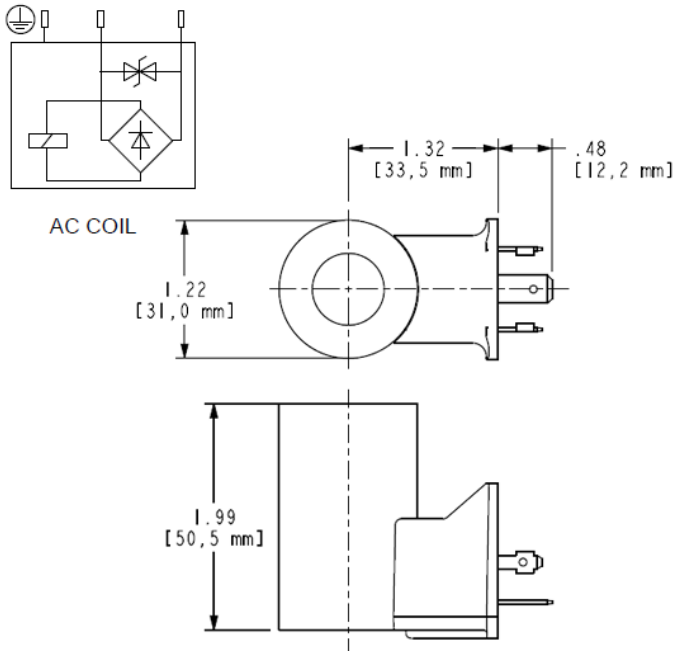


TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	230 VAC 50/60 Hz
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
DFFI	DFFJ	DLDF	DLDFS	DMBF	DNBF	DTAF	DTAFS	DTBF	DTCF
DTDF	DTDFS	DWBF	DWDF	FREP	PRDF	PRDG	RVCK	RVCL	RVCM
RVCN									

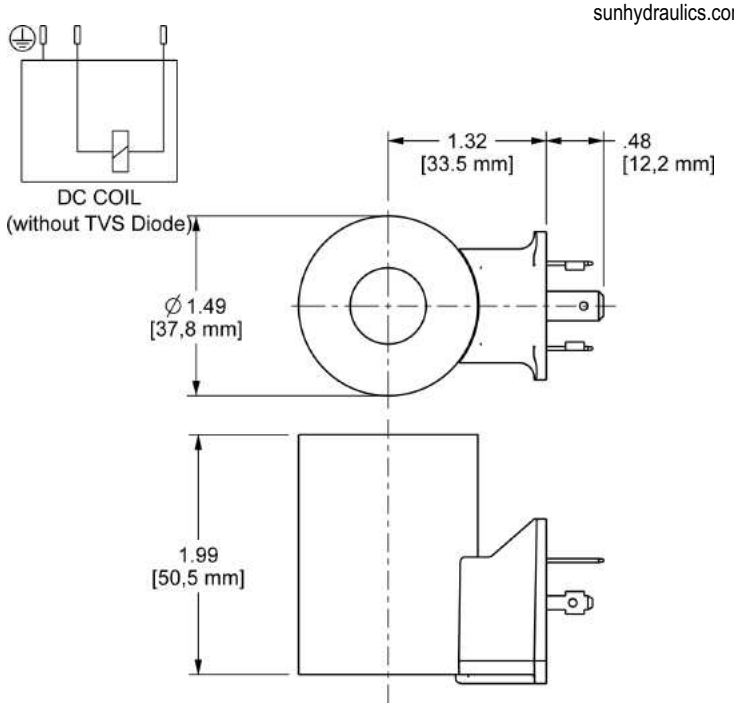


TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	230 VAC 50/60 Hz
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF 991711600	DBAFS 991712300	DFBD 991712600	DFBE 991713030	DMBD 991713060	DNBD 991740002	DTAF XMD-01	DTAFS XMD-02	DTBF	991711300

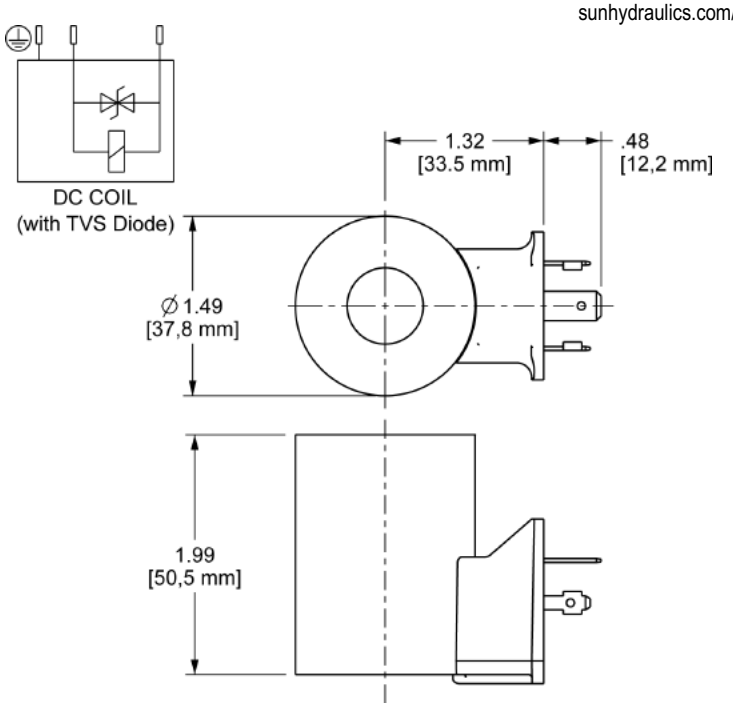


TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
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
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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	

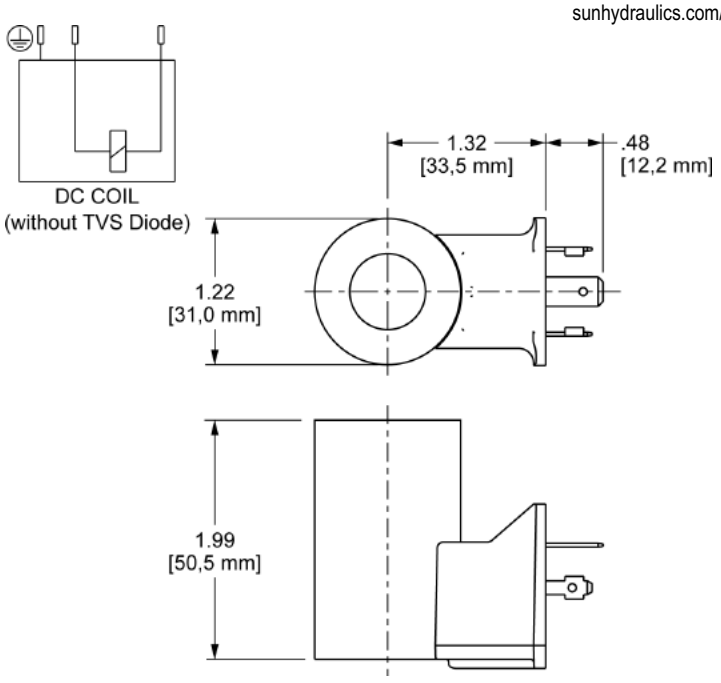


TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
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
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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	

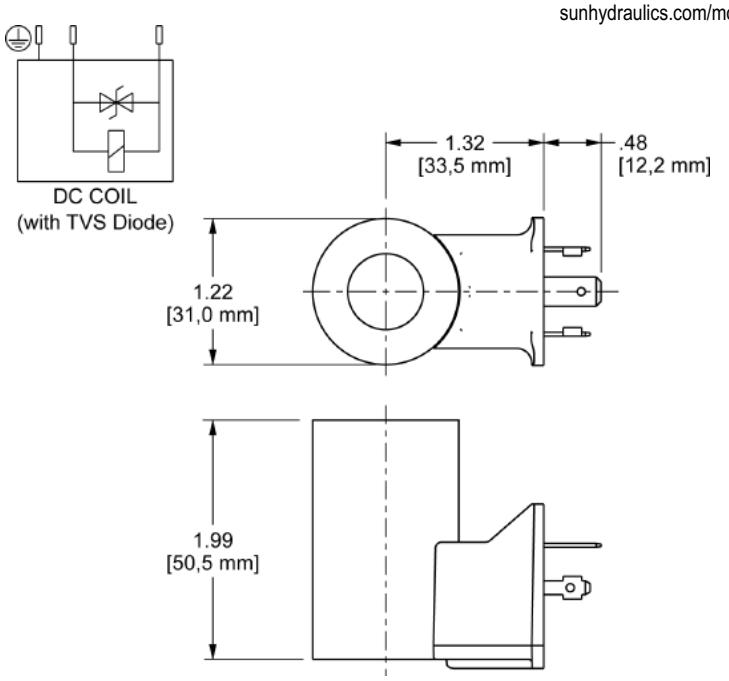


TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
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
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBD	DFBE	DMBD	DNBD	DTAF	DTAFS	DTBF	FPBD
FPBE	FPBM	FPBN	RPEI	991711300	991711600	991712300	991712600	991713030	991713060
991740002	XMD-01	XMD-02							

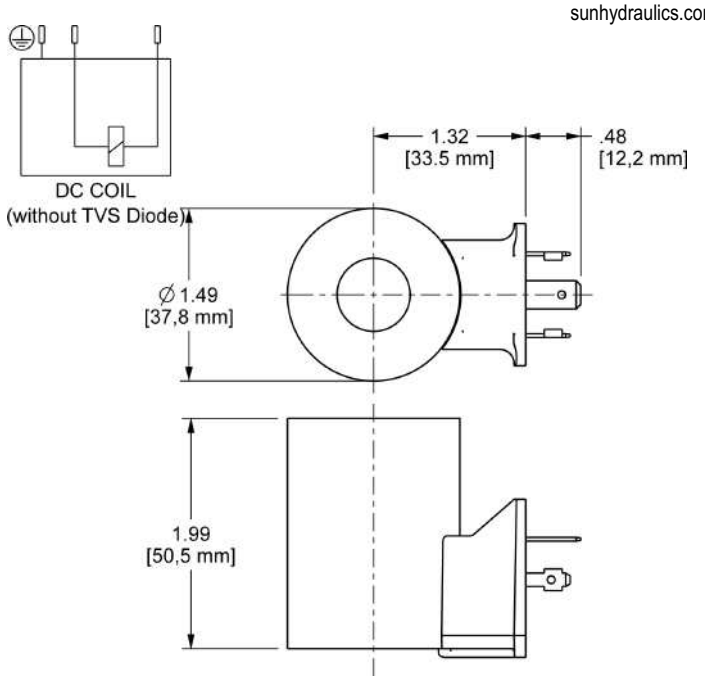


TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
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
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBD	DFBE	DMBD	DNBD	DTAF	DTAFS	DTBF	FPBD
FPBE	FPBM	FPBN	RPEI	991711300	991711600	991712300	991712600	991713030	991713060
991740002	XMD-01	XMD-02							

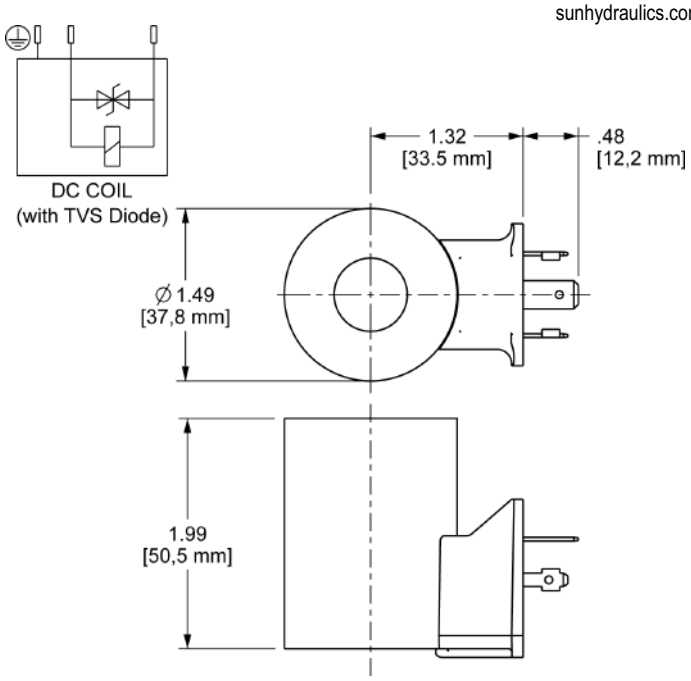


TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	28 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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	

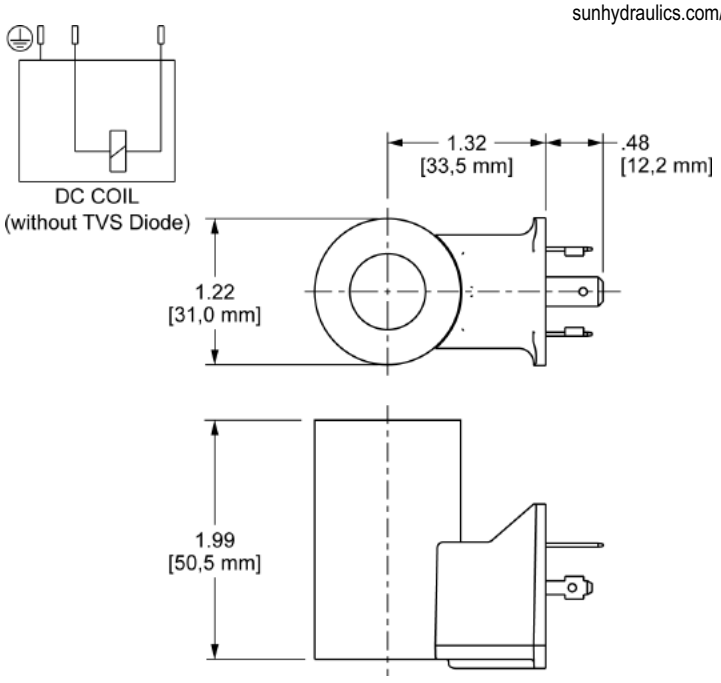


TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	28 VDC
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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	

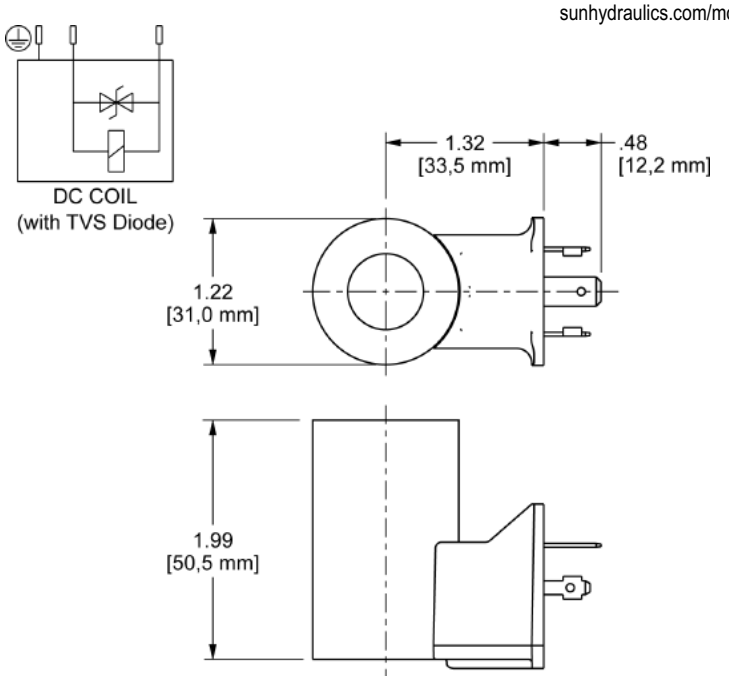


TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	28 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBD	DFBE	DMBD	DNBD	DTAF	DTAFS	DTBF	FPBD
FPBE	FPBM	FPBN	RPEI	991711300	991711600	991712300	991712600	991713030	991713060
991740002	XMD-01	XMD-02							

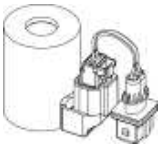


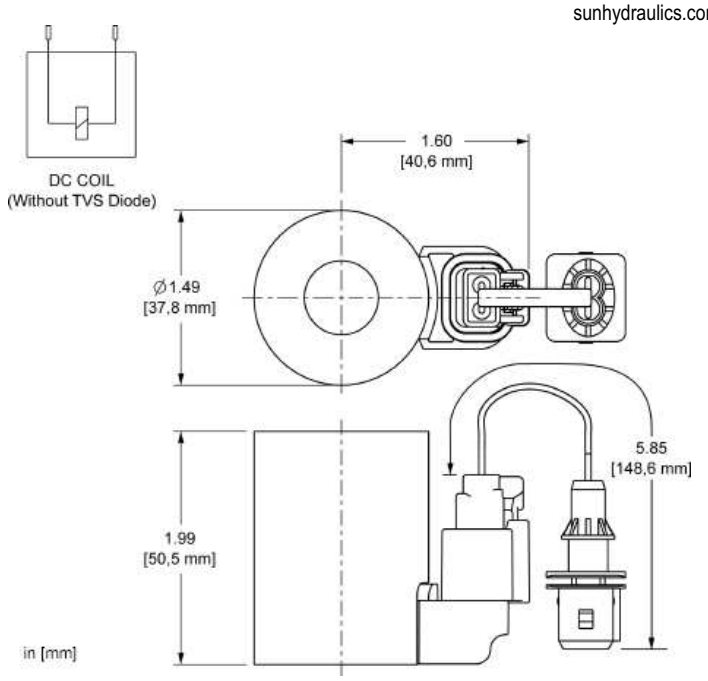
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	28 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBD	DFBE	DMBD	DNBD	DTAF	DTAFS	DTBF	FPBD
FPBE	FPBM	FPBN	RPEI	991711300	991711600	991712300	991712600	991713030	991713060
991740002	XMD-01	XMD-02							





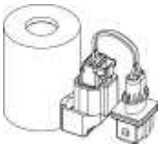
This 740 Series Coil configuration uses a connector adapter kit to provide the required termination.

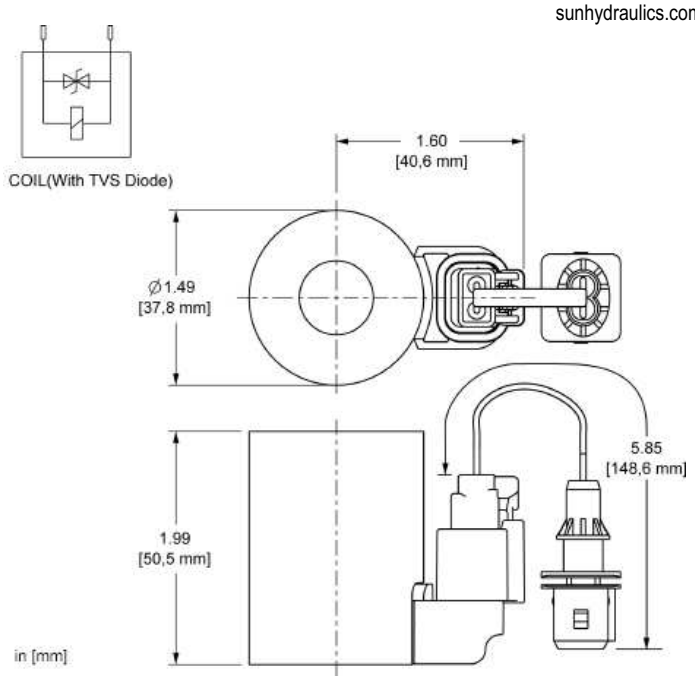
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	AMP Junior Timer
Connector Environment Rating	IP67
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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





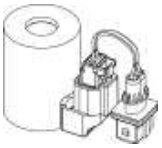
This 740 Series Coil configuration uses a connector adapter kit to provide the required termination.

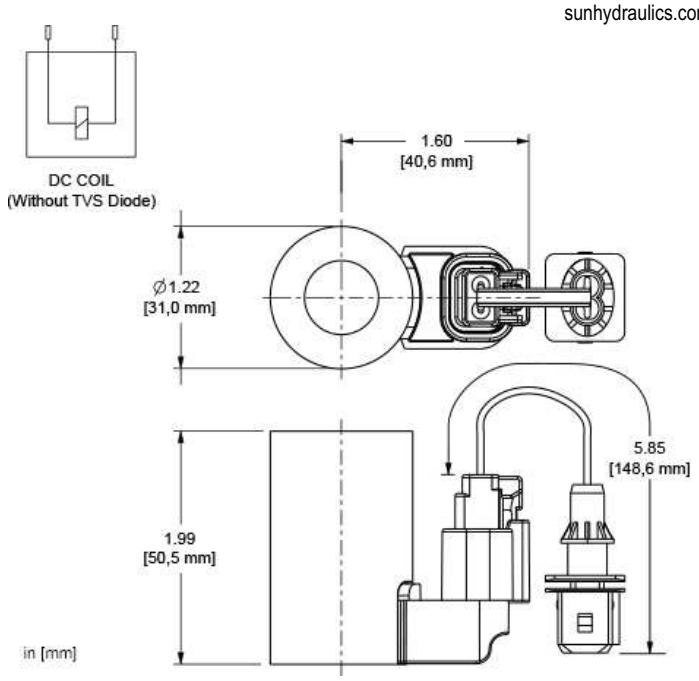
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	AMP Junior Timer
Connector Environment Rating	IP67
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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





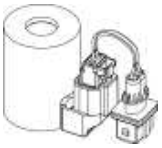
This 740 Series Coil configuration uses a connector adapter kit to provide the required termination.

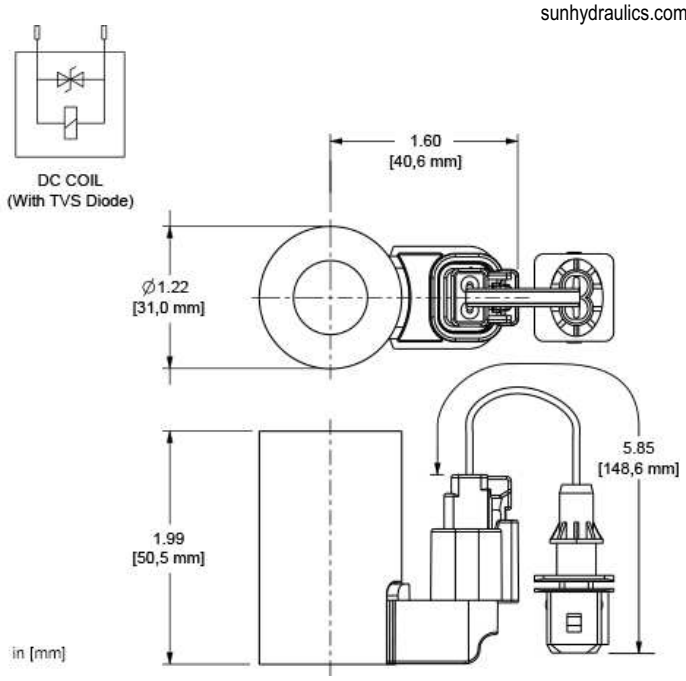
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	AMP Junior Timer
Connector Environment Rating	IP67
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF DBAFS DFBD DMBD DNBD DTAF DTAFS DTBF FPBD FPBE
FPBM RPEI





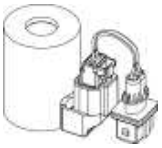
This 740 Series Coil configuration uses a connector adapter kit to provide the required termination.

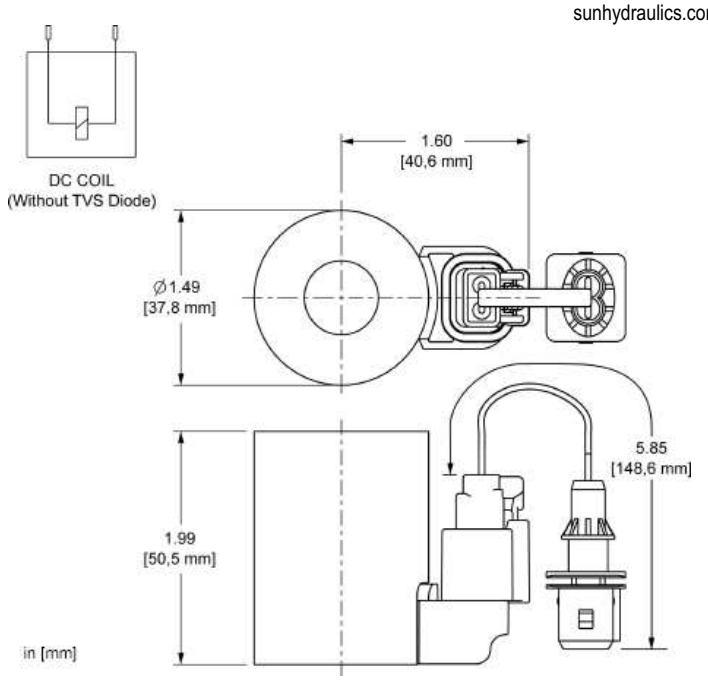
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	AMP Junior Timer
Connector Environment Rating	IP67
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF DBAFS DFBD DMBD DNBD DTAF DTAFS DTBF FPBD FPBE
FPBM RPEI





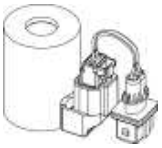
This 740 Series Coil configuration uses a connector adapter kit to provide the required termination.

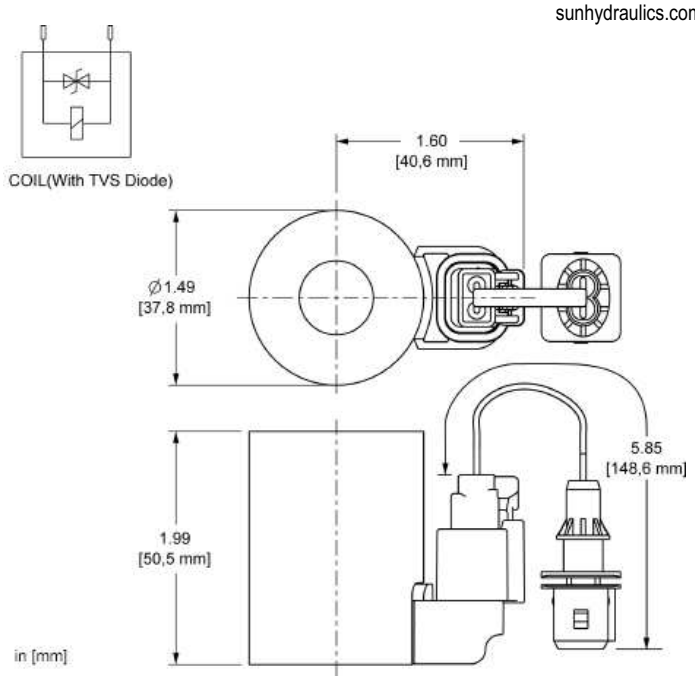
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	14 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	AMP Junior Timer
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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





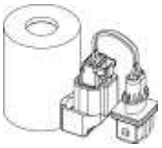
This 740 Series Coil configuration uses a connector adapter kit to provide the required termination.

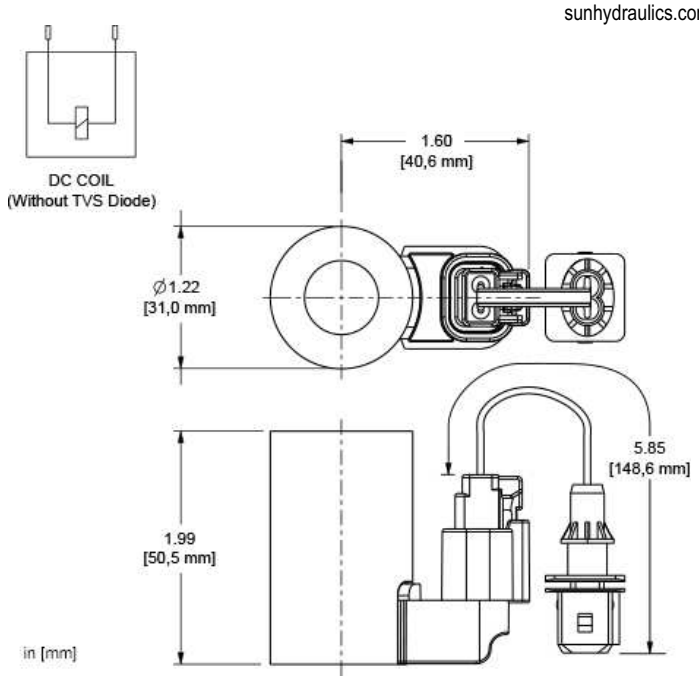
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	14 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	AMP Junior Timer
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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





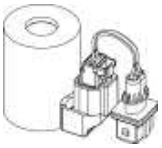
This 740 Series Coil configuration uses a connector adapter kit to provide the required termination.

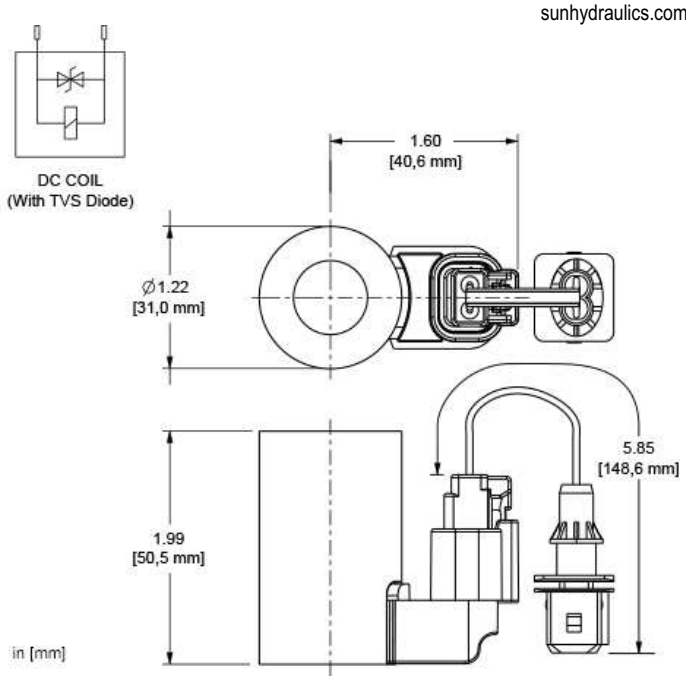
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	14 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	AMP Junior Timer
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF DBAFS DFBD DFBE DMBD DNBD DTAF DTAFS DTBF FPBD
FPBE FPBM FPBN RPEI





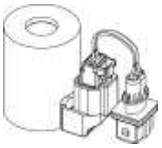
This 740 Series Coil configuration uses a connector adapter kit to provide the required termination.

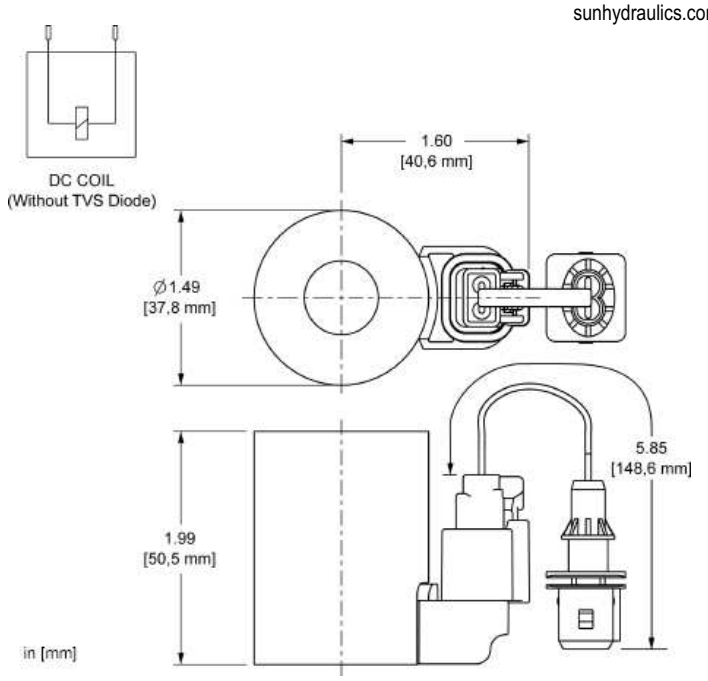
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	14 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	AMP Junior Timer
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF DBAFS DFBD DFBE DMBD DNBD DTAF DTAFS DTBF FPBD
FPBE FPBM FPBN RPEI





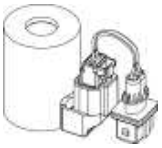
This 740 Series Coil configuration uses a connector adapter kit to provide the required termination.

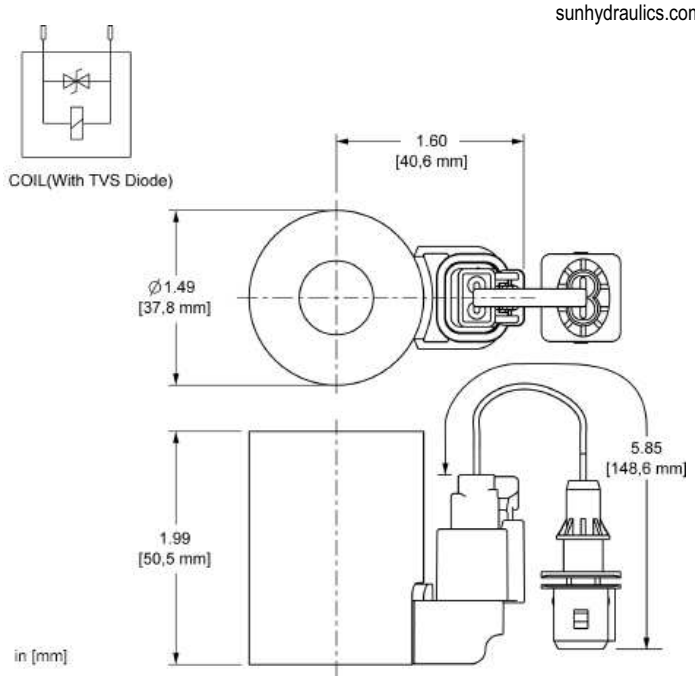
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	24 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	AMP Junior Timer
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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





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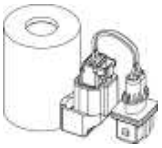
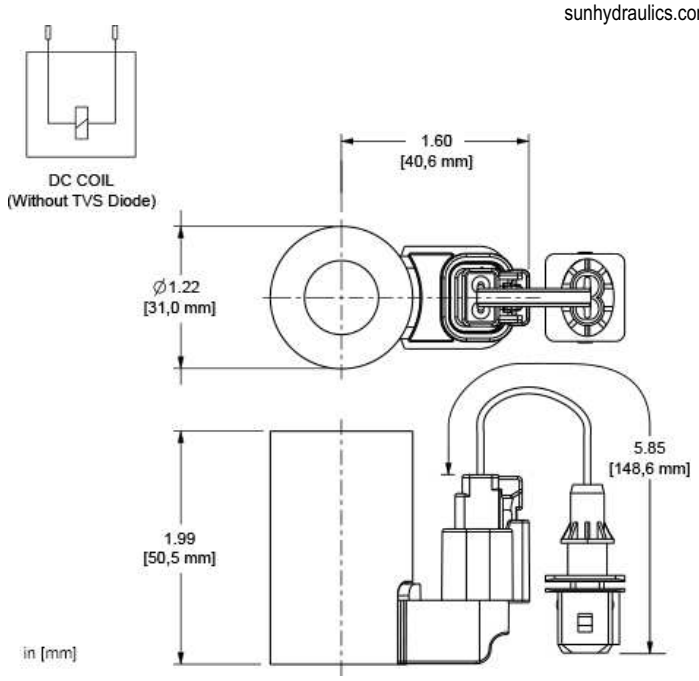
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	24 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	AMP Junior Timer
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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





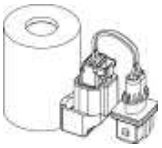
This 740 Series Coil configuration uses a connector adapter kit to provide the required termination.

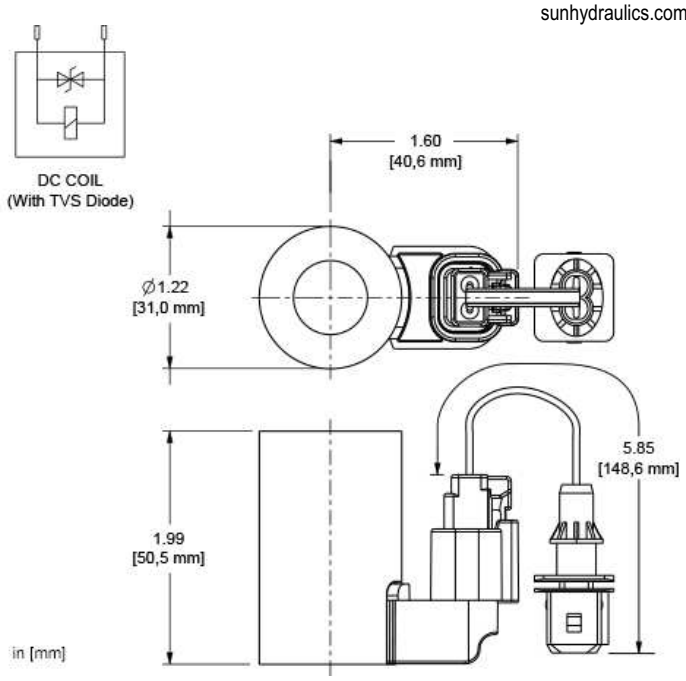
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	24 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	AMP Junior Timer
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF DBAFS DFBD DFBE DMBD DNBD DTAF DTAFS DTBF FPBD
FPBE FPBM FPBN RPEI





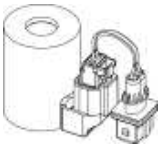
This 740 Series Coil configuration uses a connector adapter kit to provide the required termination.

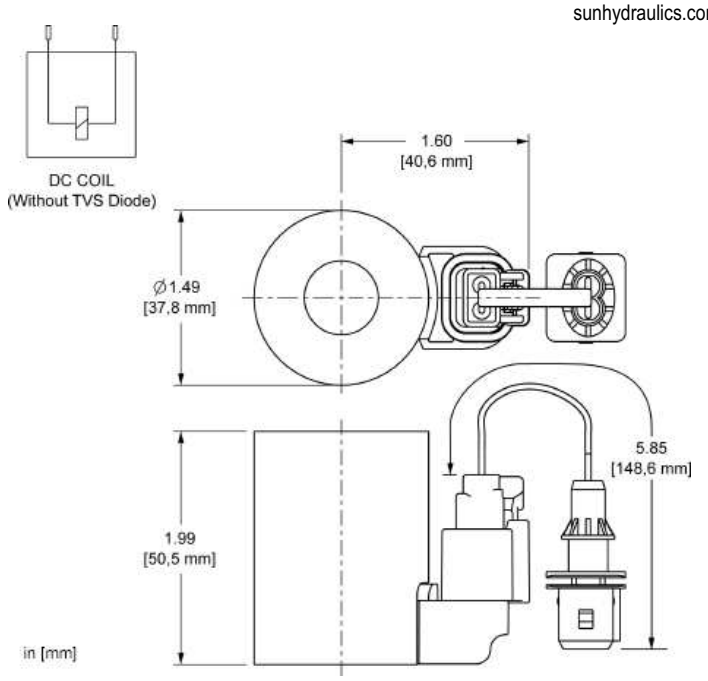
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	24 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	AMP Junior Timer
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF DBAFS DFBD DFBE DMBD DNBD DTAF DTAFS DTBF FPBD
FPBE FPBM FPBN RPEI





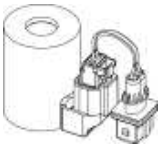
This 740 Series Coil configuration uses a connector adapter kit to provide the required termination.

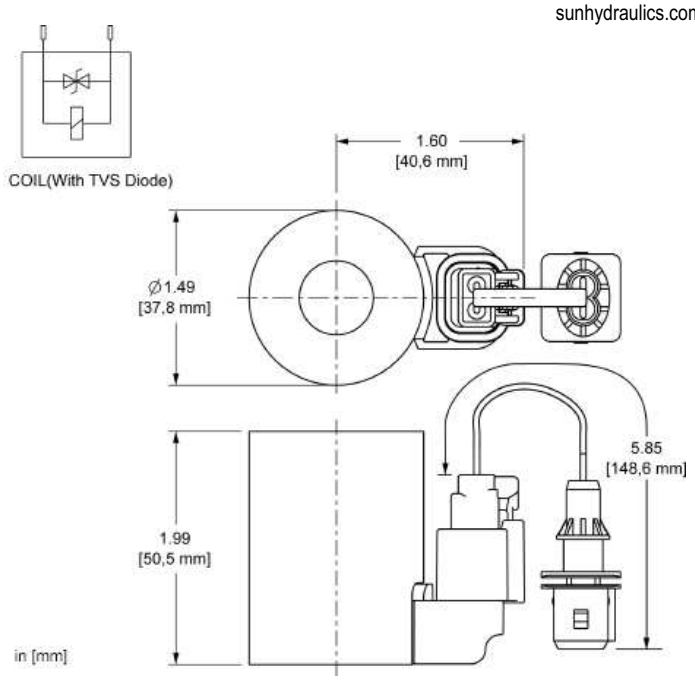
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	28 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	AMP Junior Timer
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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





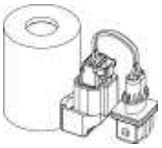
This 740 Series Coil configuration uses a connector adapter kit to provide the required termination.

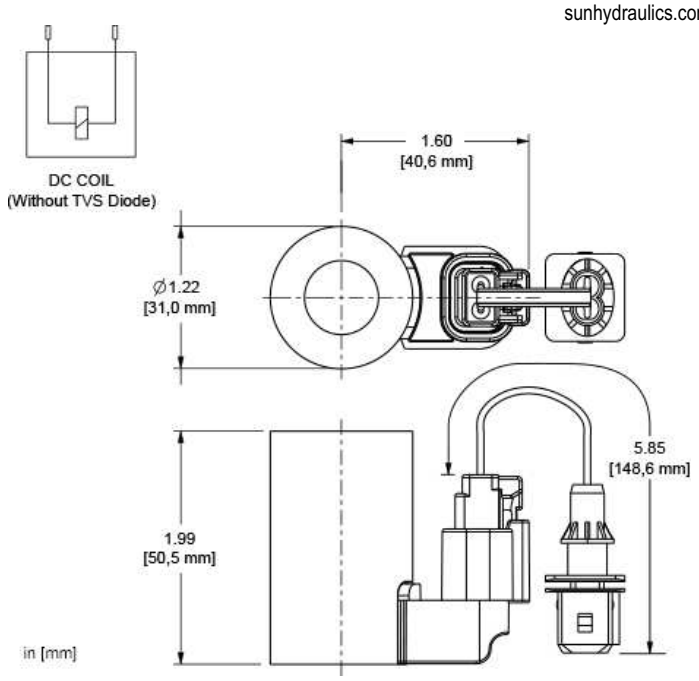
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	28 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	AMP Junior Timer
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFDI	DFDJ	DFEI	DFEJ	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	





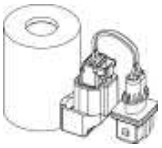
This 740 Series Coil configuration uses a connector adapter kit to provide the required termination.

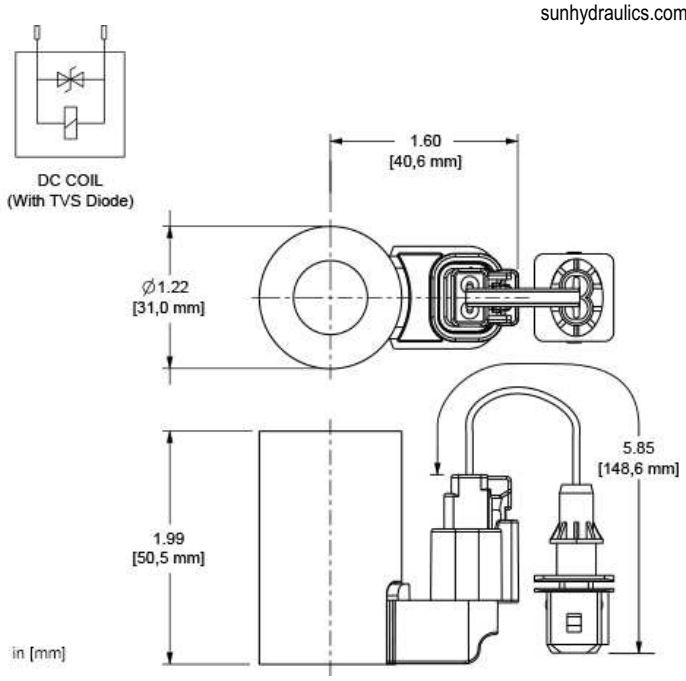
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	28 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	AMP Junior Timer
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF DBAFS DFBD DFBE DMBD DNBD DTAF DTAFS DTBF FPBD
FPBE FPBM FPBN RPEI





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Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	28 VDC
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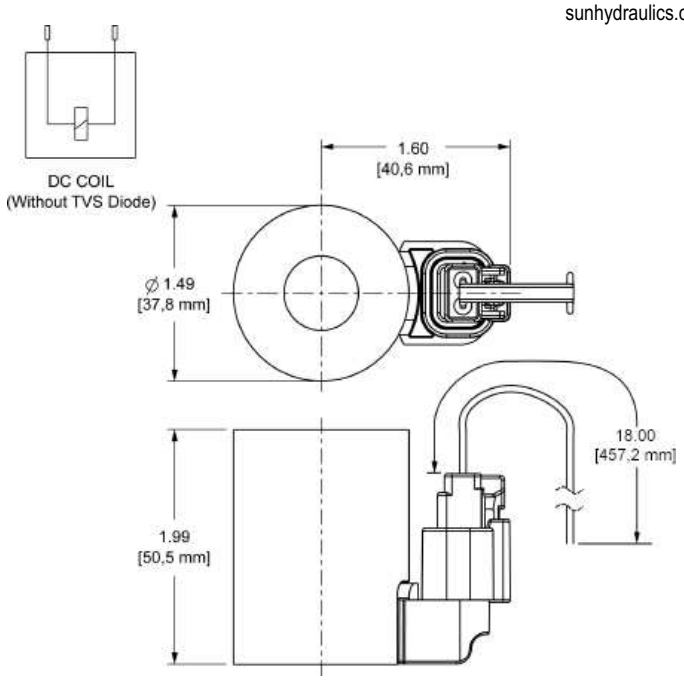
Duty Cycle Rating	100 %
Connector	AMP Junior Timer
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF DFBD DFBE DMBD DNBD DTAF DTAFS DTBF FPBD FPBE
FPBM FPBN RPEI



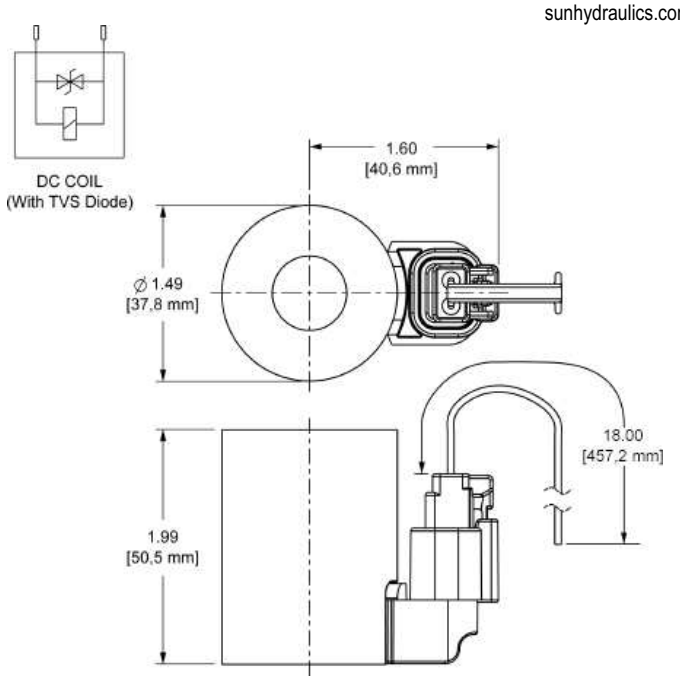
This 740 Series Coil configuration uses a connector adapter kit to provide the required termination.

TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Twin lead 18 AWG x 18 in. (460 mm)
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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



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Voltage/Frequency	12 VDC
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Duty Cycle Rating	100 %
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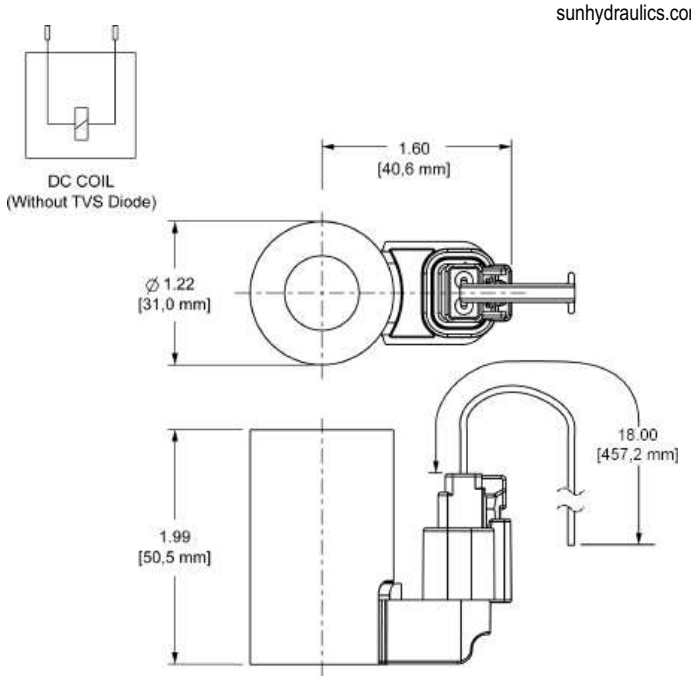
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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



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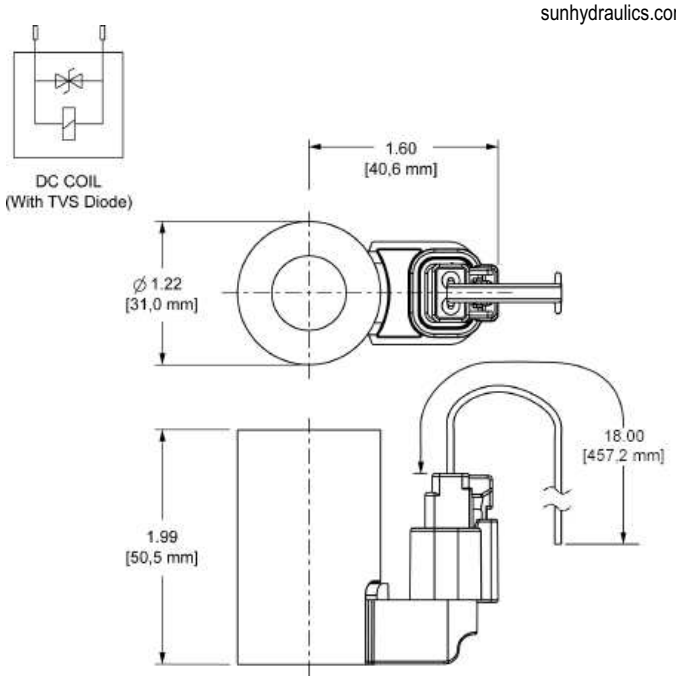
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Twin lead 18 AWG x 18 in. (460 mm)
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF DBAFS DFBD DFBE DMBD DNBD DTAF DTAFS DTBF FPBD
FPBE FPBM FPBN RPEI



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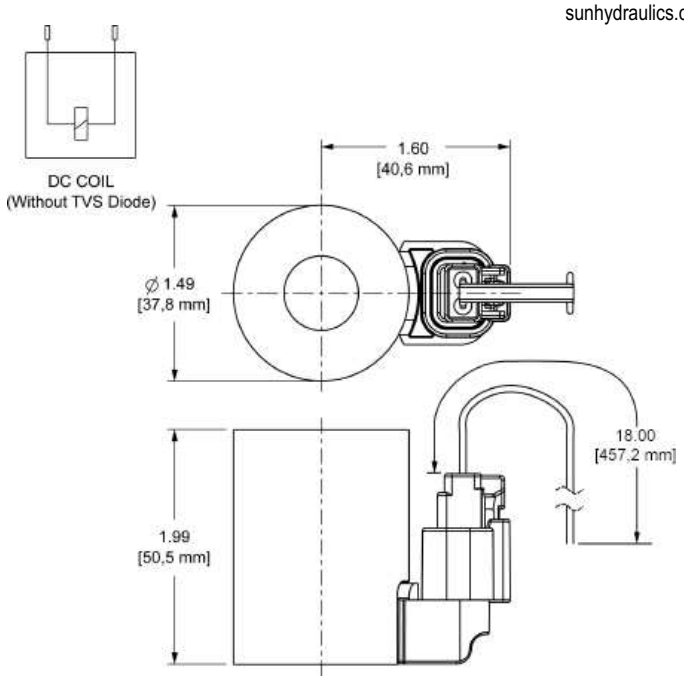
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Twin lead 18 AWG x 18 in. (460 mm)
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF DBAFS DFBD DFBE DMBD DNBD DTAF DTAFS DTBF FPBD
FPBE FPBM FPBN RPEI



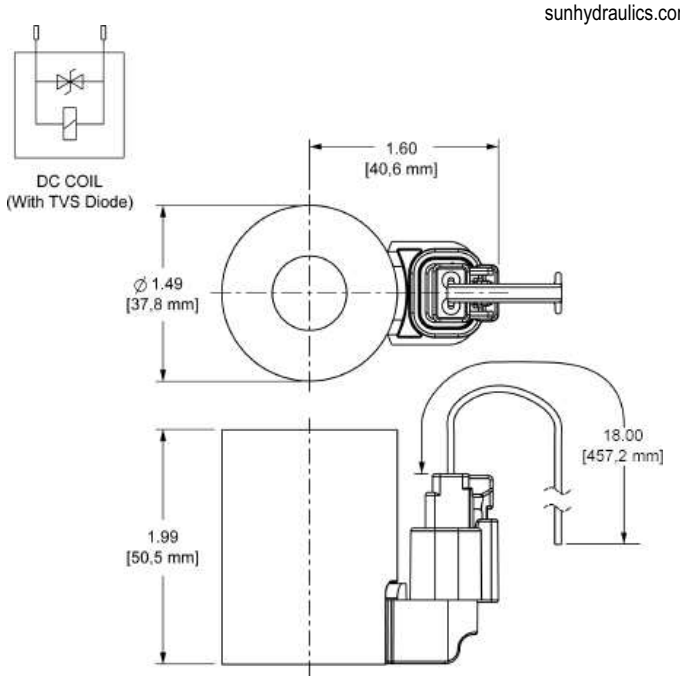
This 740 Series Coil configuration uses a connector adapter kit to provide the required termination.

TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	14 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Twin lead 18 AWG x 18 in. (460 mm)
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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



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Duty Cycle Rating	100 %
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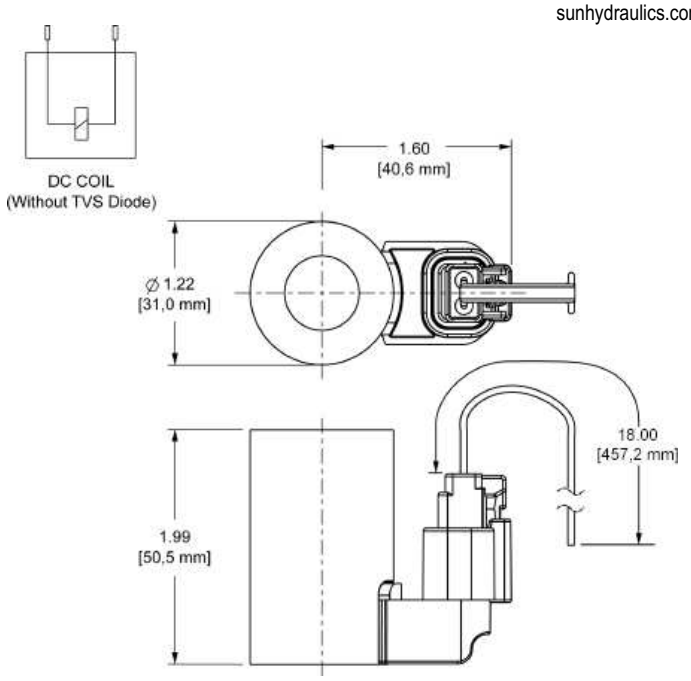
USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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



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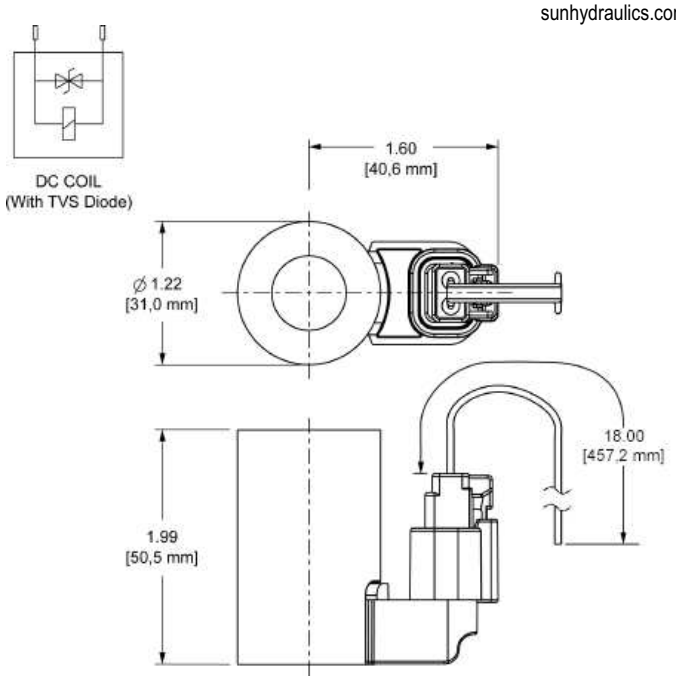
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF DBAFS DFBD DFBE DMBD DNBD DTAF DTAFS DTBF FPBD
FPBE FPBM FPBN RPEI



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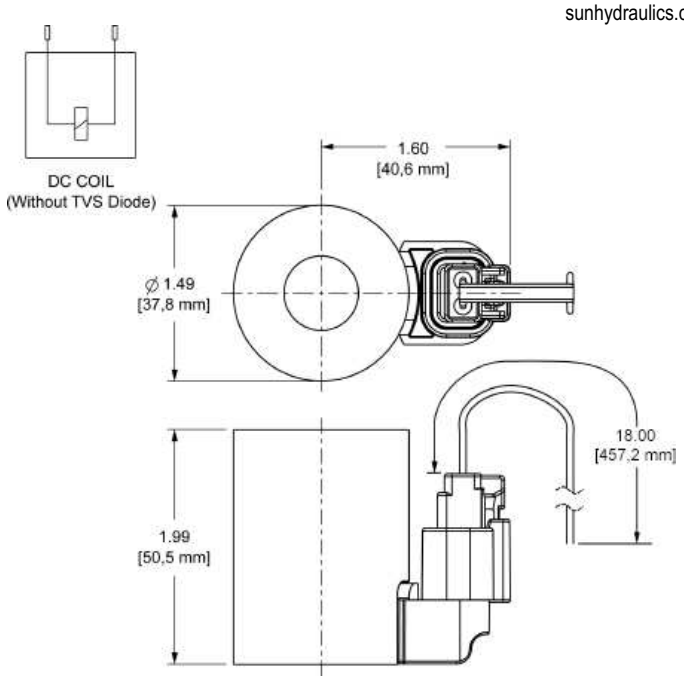
DBAF DBAFS DFBD DFBE DMBD DNBD DTAF DTAFS DTBF FPBD
FPBE FPBM FPBN RPEI



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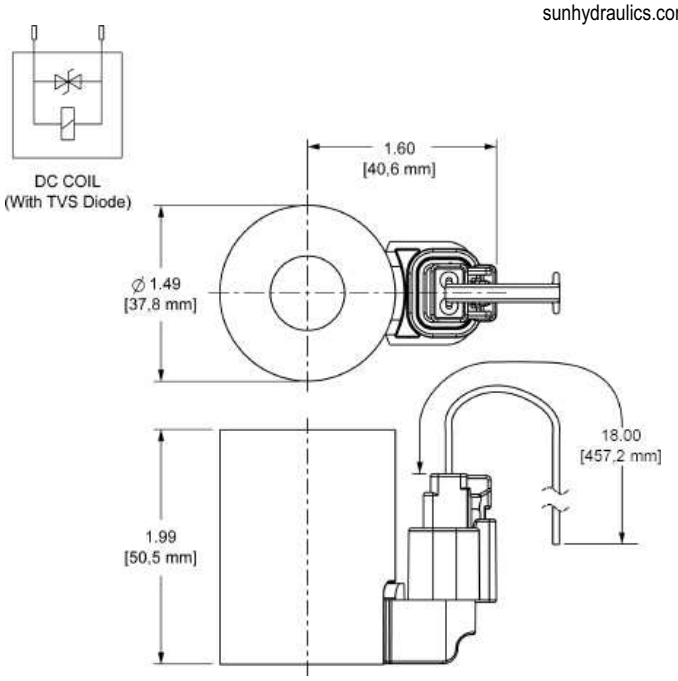
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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



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USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
DFFI	DFFJ	DLDF	DLDFS	DMBF	DNBF	DTAF	DTAFS	DTBF	DTCF
DTDF	DTDFS	DWBF	DWDF	FDEP	FMDF	FMDG	FPBF	FPBG	FPBI
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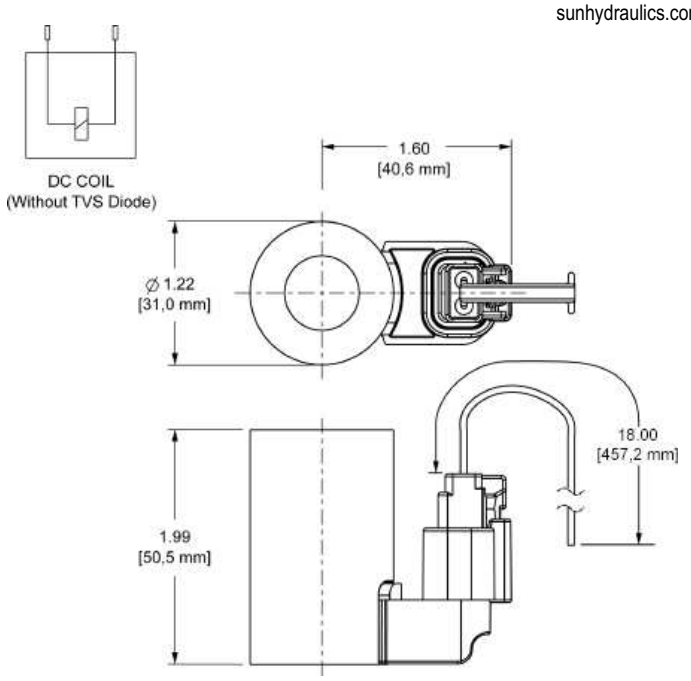

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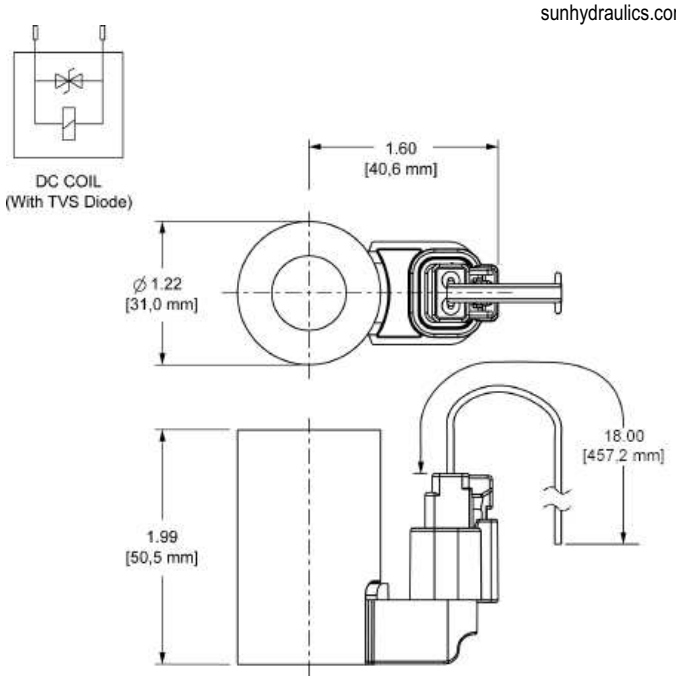
USED WITH

DBAF DBAFS DFBD DFBE DMBD DNBD DTAF DTAFS DTBF FPBD
FPBE FPBM FPBN RPEI



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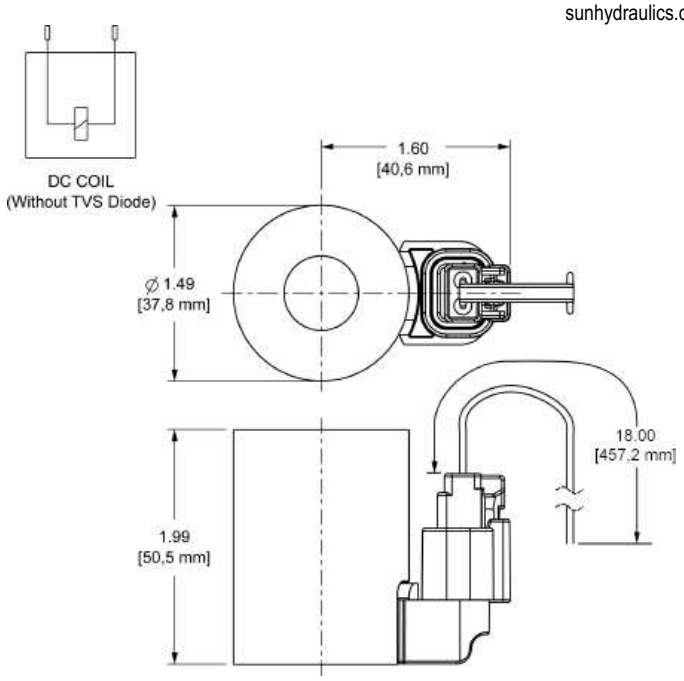

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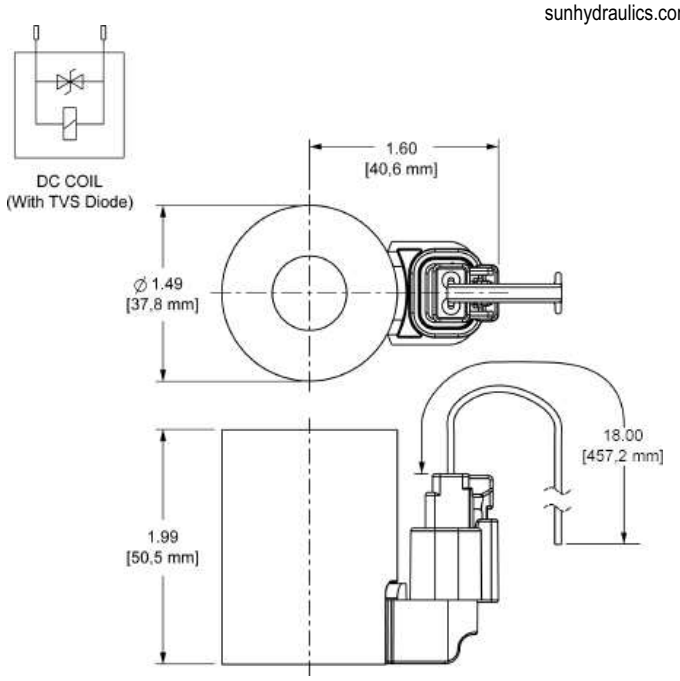
Voltage/Frequency	28 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Twin lead 18 AWG x 18 in. (460 mm)
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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



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Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
DFFI	DFFJ	DLDF	DLDFS	DMBF	DNBF	DTAF	DTAFS	DTBF	DTCF
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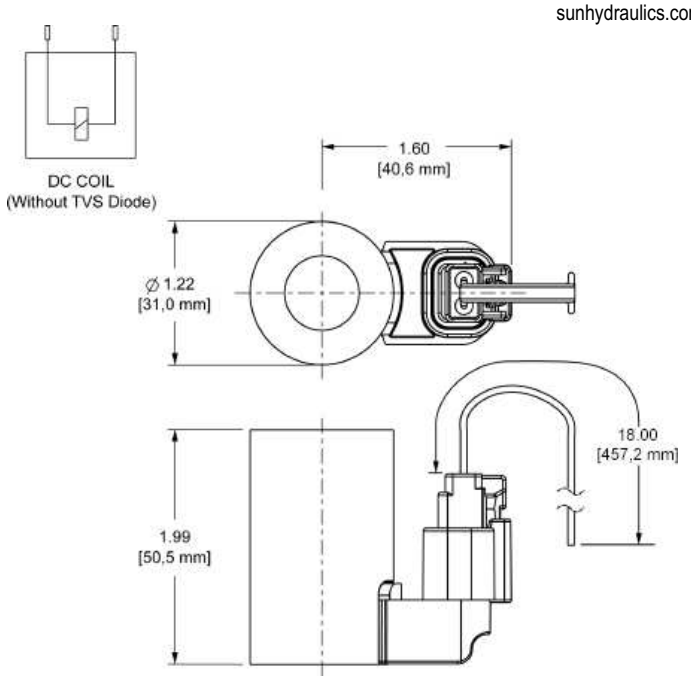

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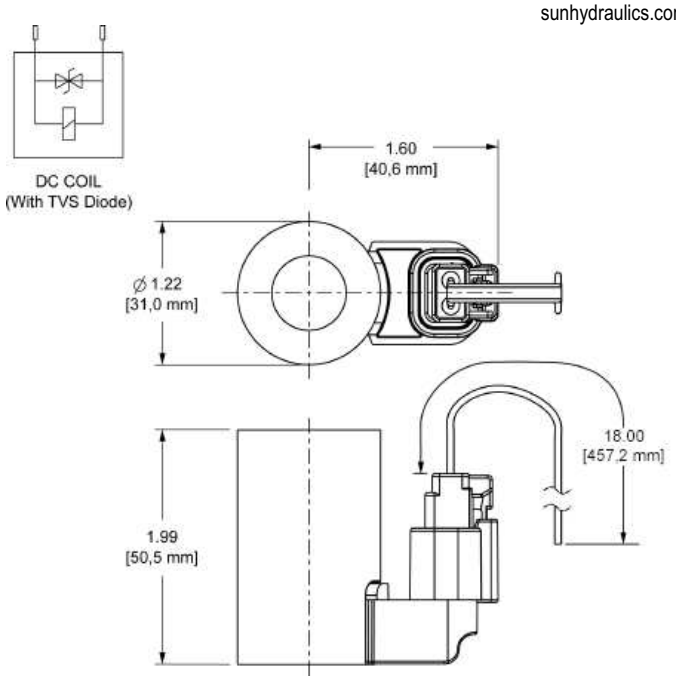
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBD	DFBE	DMBD	DNBD	DTAF	DTAFS	DTBF	FPBD
FPBE	FPBM	FPBN	RPEI						



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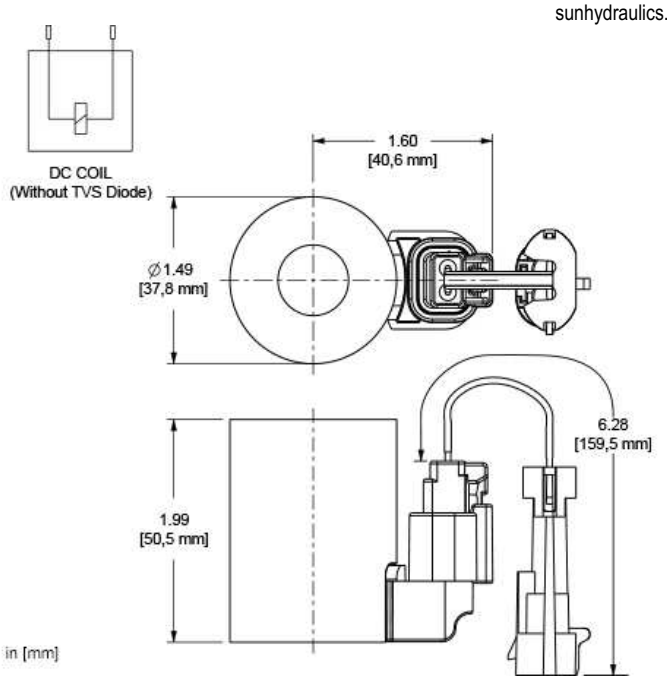
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Twin lead 18 AWG x 18 in. (460 mm)
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF DBAFS DFBD DFBE DMBD DNBD DTAF DTAFS DTBF FPBD
FPBE FPBM FPBN RPEI



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TECHNICAL DATA

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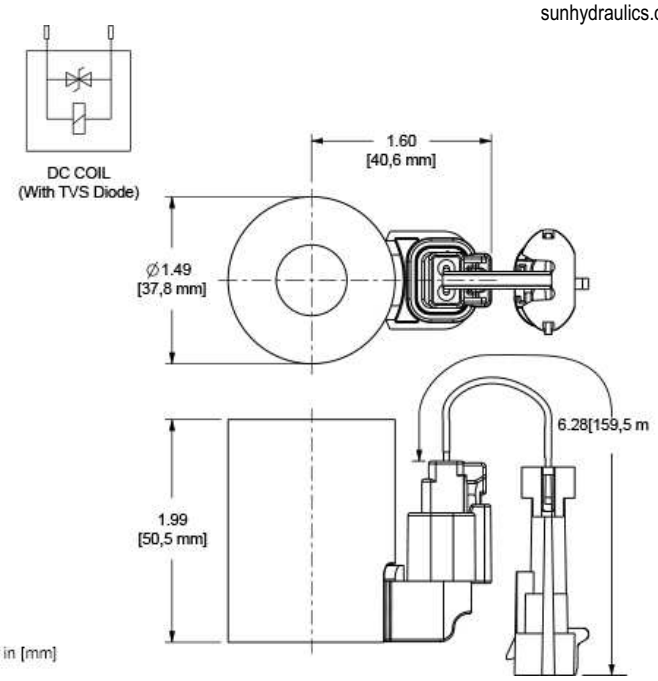
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Metripack Series 150-2M
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ	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	



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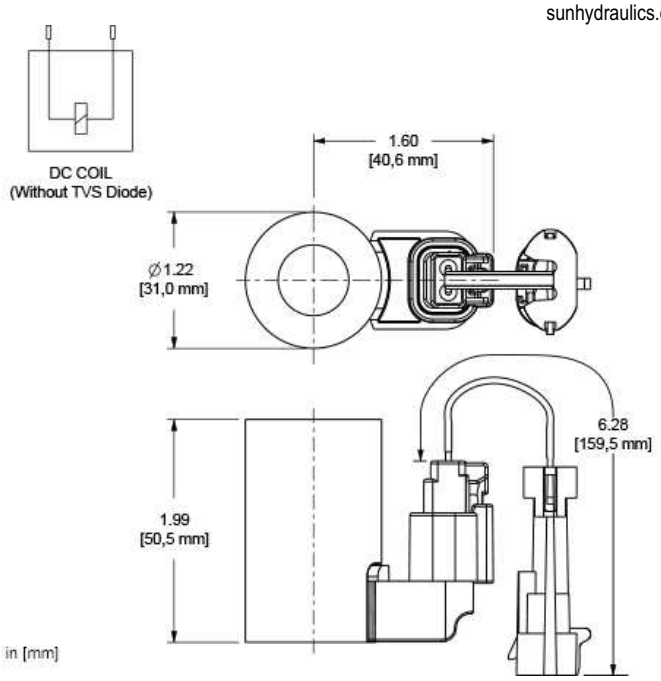
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Metripack Series 150-2M
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ	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	



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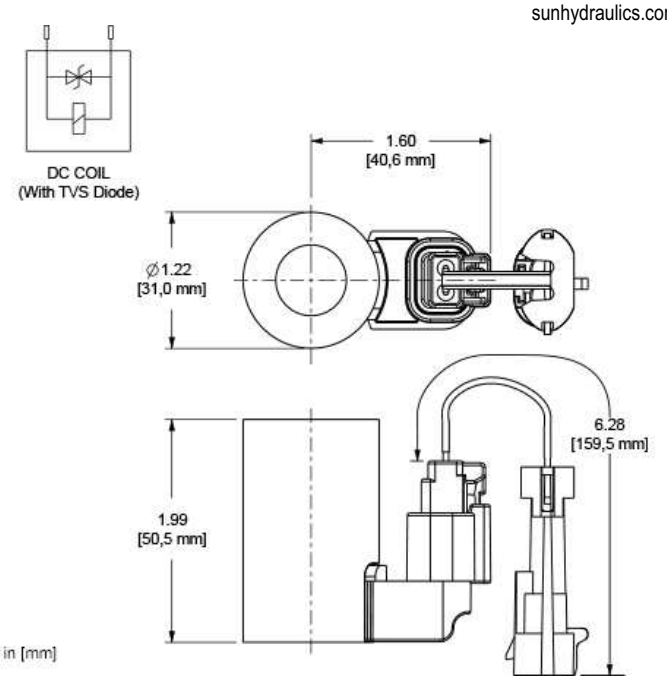
Voltage/Frequency	12 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Metripack Series 150-2M
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF DFBD DFBE DMBD DNBD DTAF DTAFS DTBF FPBD FPBE
FPBM FPBN RPEI



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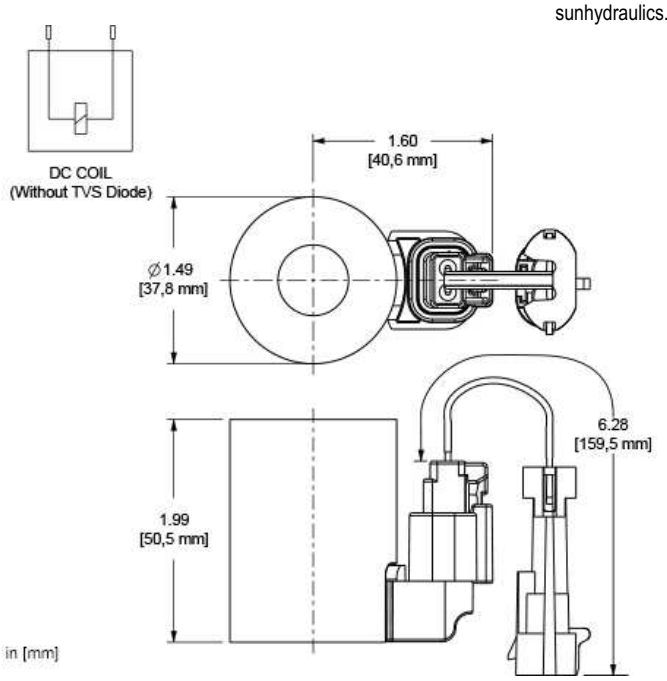
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Metripack Series 150-2M
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF DFBD DFBE DMBD DNBD DTAF DTAFS DTBF FPBD FPBE
FPBM FPBN RPEI



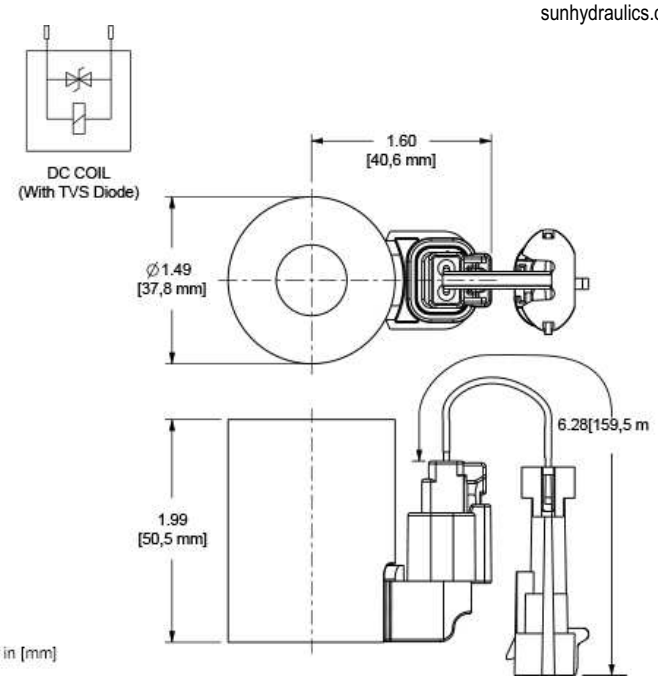
This 740 Series Coil configuration uses a connector adapter kit to provide the required termination.

TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	14 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Metripack Series 150-2M
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ	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	



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TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	25 Watts
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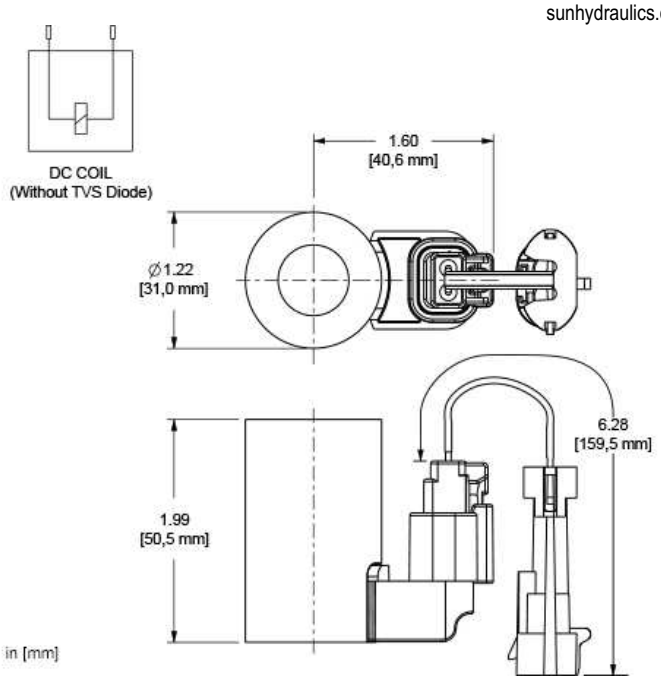
Voltage/Frequency	14 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Metripack Series 150-2M
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ	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	



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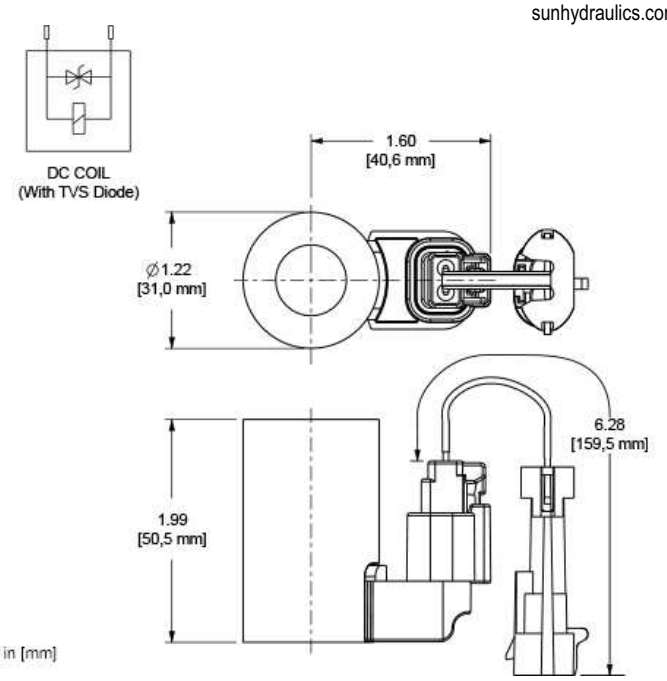
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	14 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Metripack Series 150-2M
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF DFBD DFBE DMBD DNBD DTAF DTAFS DTBF FPBD FPBE
FPBM FPBN RPEI



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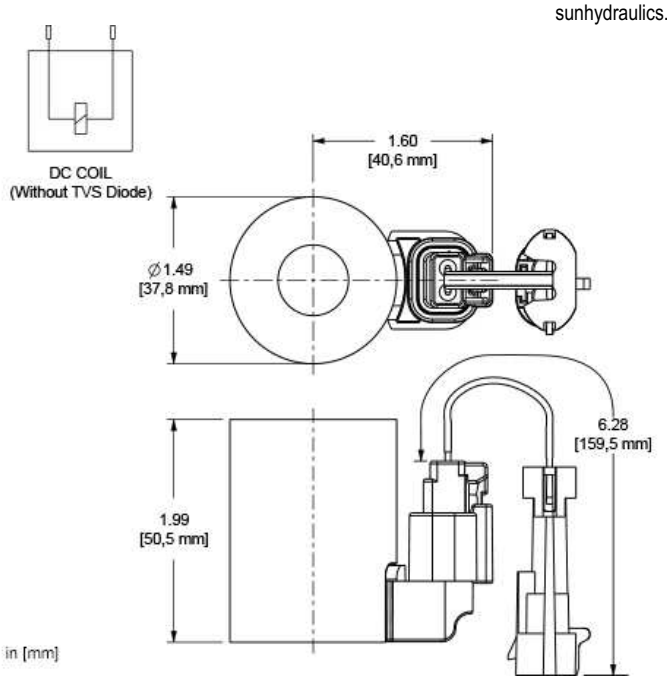
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	14 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Metripack Series 150-2M
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF DFBD DFBE DMBD DNBD DTAF DTAFS DTBF FPBD FPBE
FPBM FPBN RPEI



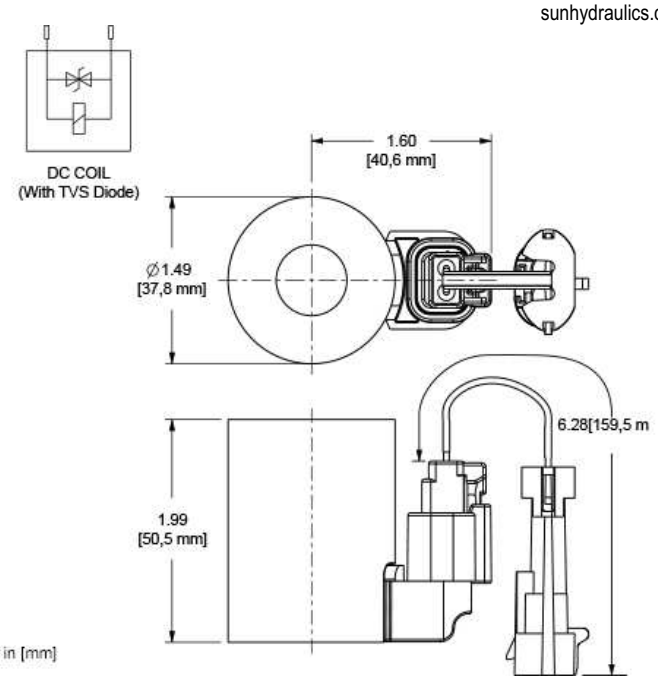
This 740 Series Coil configuration uses a connector adapter kit to provide the required termination.

TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	24 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Metripack Series 150-2M
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ	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	



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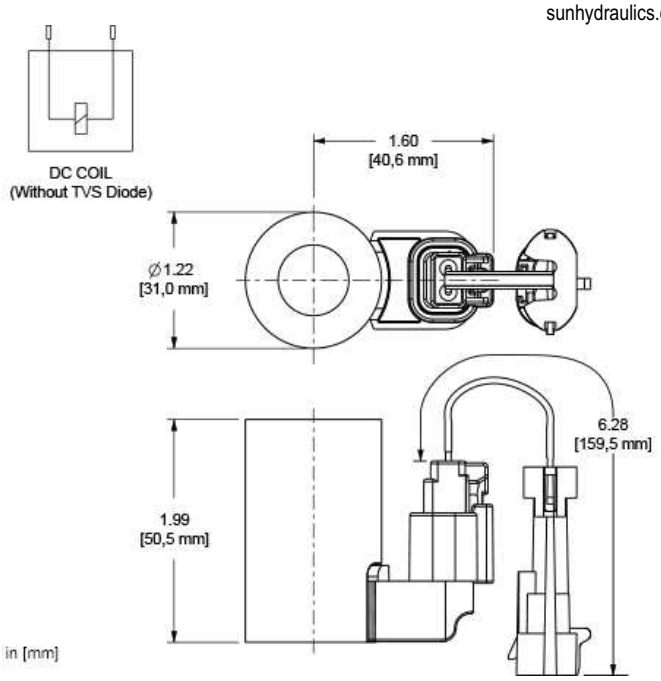
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	24 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Metripack Series 150-2M
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ	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	



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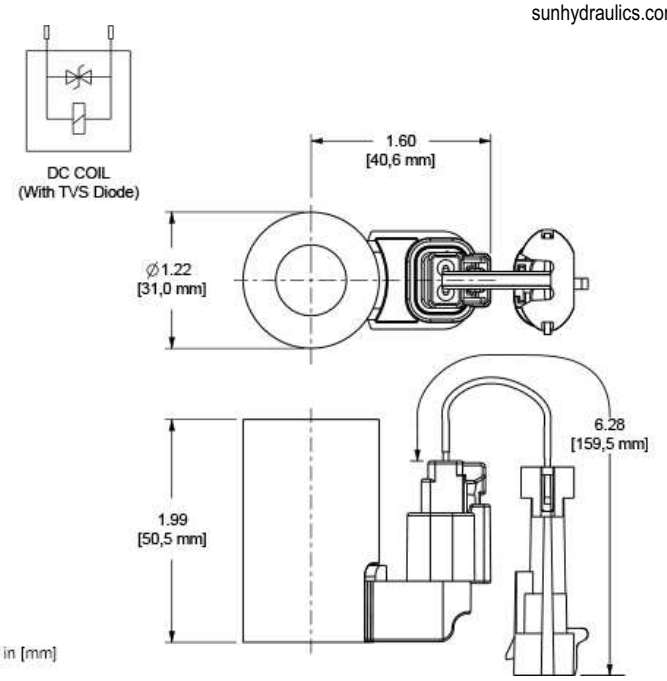
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	24 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Metripack Series 150-2M
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF DFBD DFBE DMBD DNBD DTAF DTAFS DTBF FPBD FPBE
FPBM FPBN RPEI



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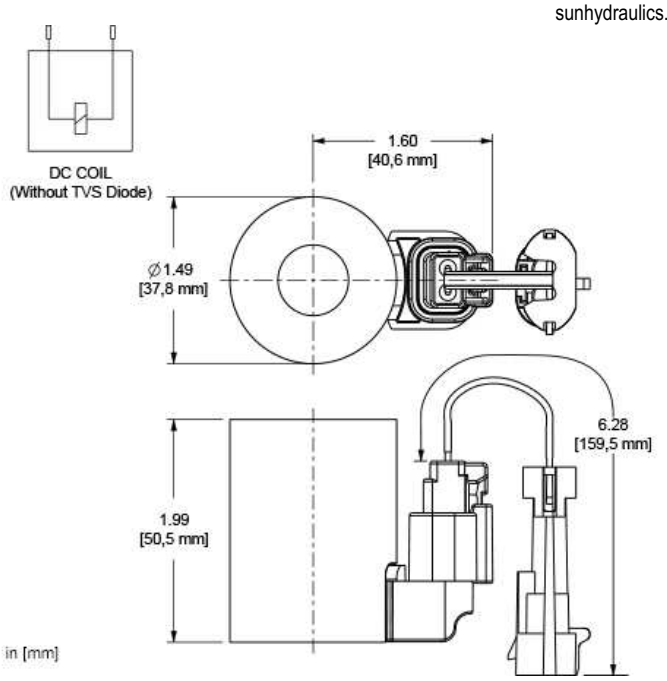
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	24 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Metripack Series 150-2M
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF DFBD DFBE DMBD DNBD DTAF DTAFS DTBF FPBD FPBE
FPBM FPBN RPEI



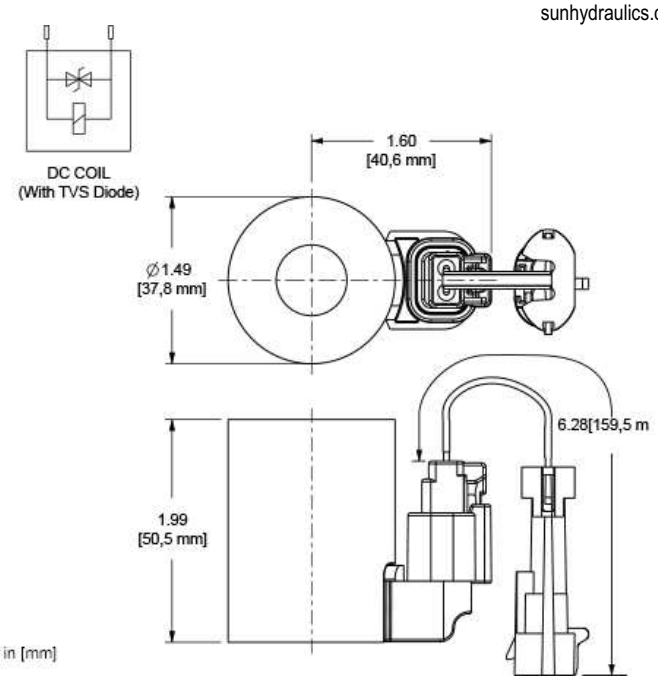
This 740 Series Coil configuration uses a connector adapter kit to provide the required termination.

TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	28 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Metripack Series 150-2M
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ	DFFI
DFFJ	DLDF	DLDFS	DMBF	DTAF	DTAFS	DTBF	DTCF	DTDF	DTDFS
DWBF	DWDF	FDEP	FMDF	FMDG	FPBF	FPBG	FPBI	FPBJ	FPBU
FREP	PRDF	PRDG	RPEI	RVCK	RVCL	RVCM	RVCN		



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TECHNICAL DATA

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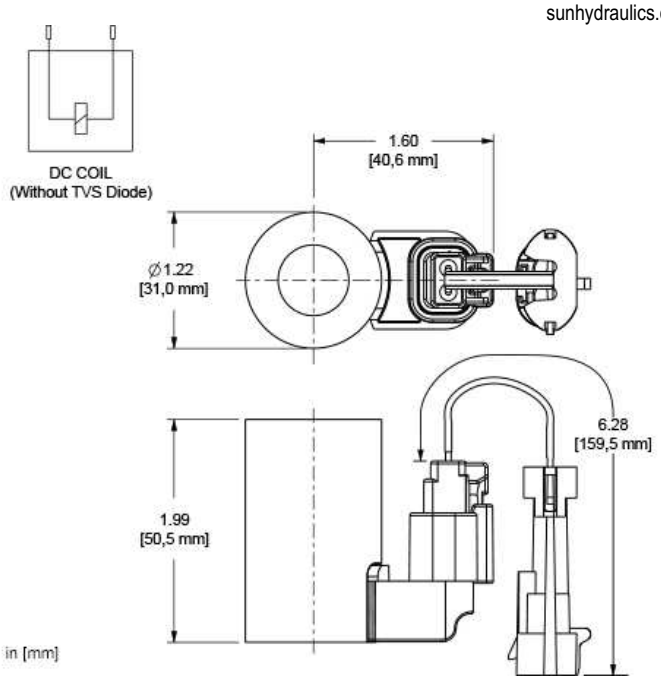
Maximum Ambient Temperature	122 °F
Voltage/Frequency	28 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Metripack Series 150-2M
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ	DFFI
DFFJ	DLDF	DMBF	DTAF	DTAFS	DTBF	DTCF	DTDF	DTDFS	DWBF
DWDF	FDEP	FMDF	FMDG	FPBF	FPBG	FPBI	FPBJ	FPBU	FREP
PRDF	PRDG	RPEI	RVCK	RVCL	RVCM	RVCN			



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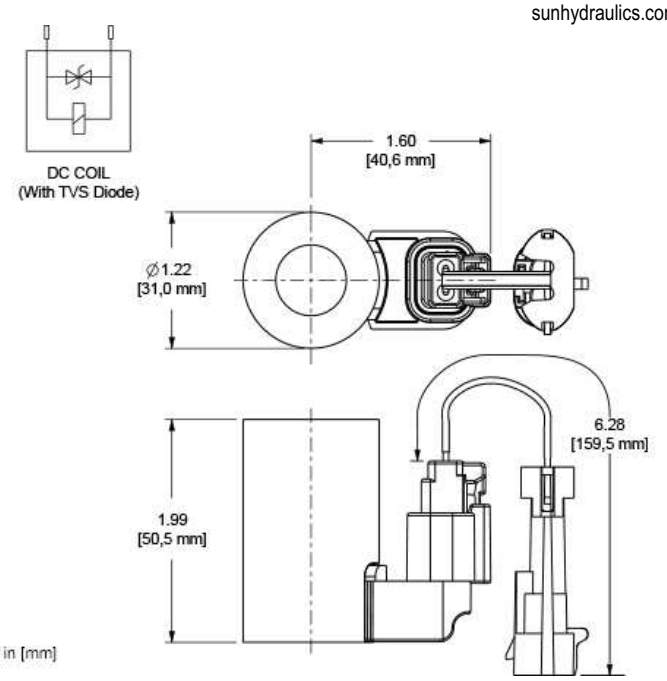
Maximum Ambient Temperature	212 °F
Voltage/Frequency	28 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Metripack Series 150-2M
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF DFBD DFBE DMBD DNBD DTAF DTAFS DTBF FPBD FPBE
FPBM FPBN RPEI



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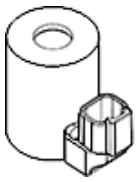
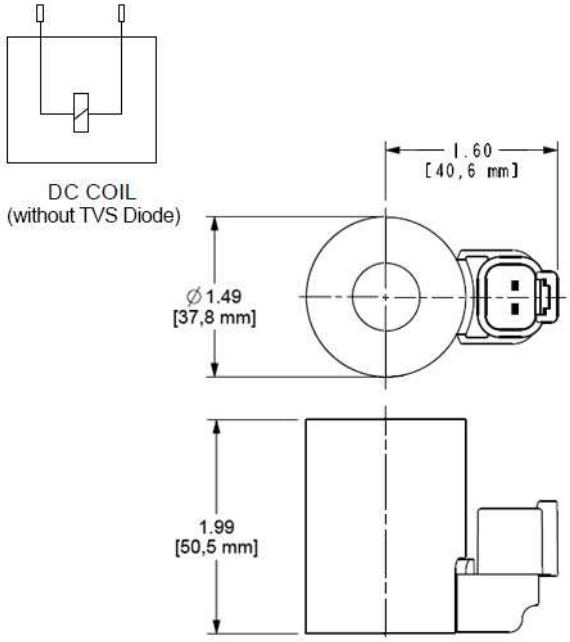
Voltage/Frequency	28 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Metripack Series 150-2M
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF DFBD DFBE DMBD DNBD DTAF DTAFS DTBF FPBD FPBE
FPBM FPBN RPEI





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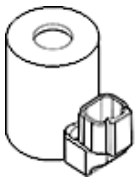
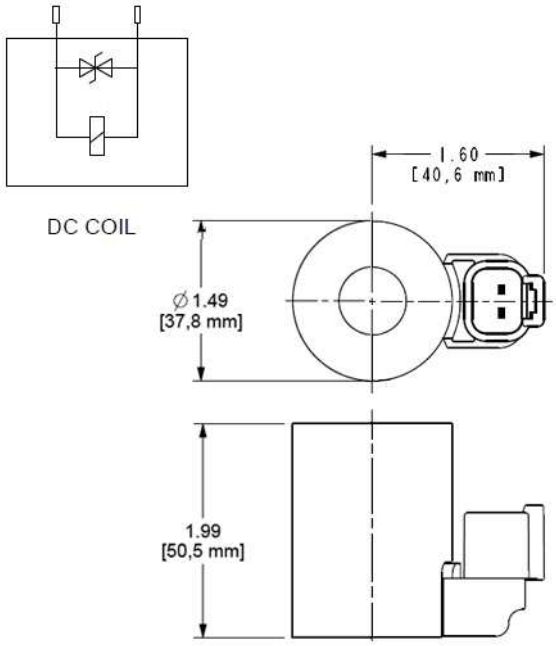
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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	991717	991718	991719	991723001
991723002	991740001	XMD-01	XMD-02						





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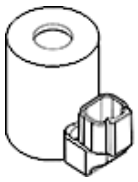
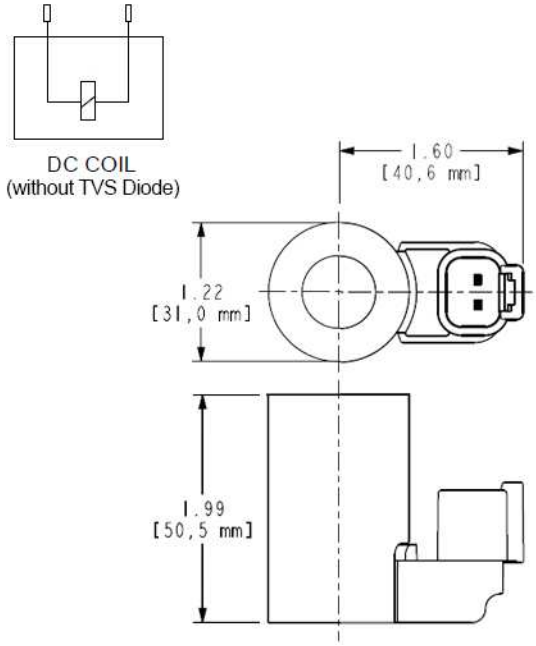
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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	991717	991718	991719	991723001
991723002	991740001	XMD-01	XMD-02						





TECHNICAL DATA

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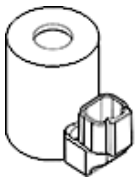
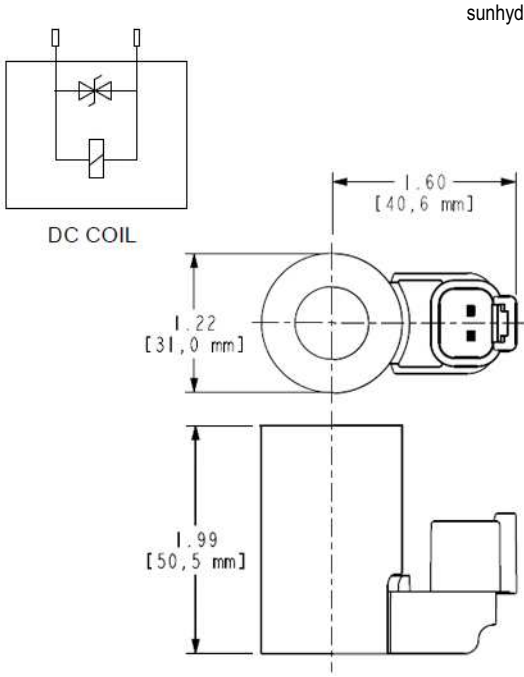
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBD	DFBE	DMBD	DNBD	DTAF	DTAFS	DTBF	FPBD
FPBE	FPBM	FPBN	RPEI	991711300	991711600	991712300	991712600	991713030	991713060
991717	991718	991719	991723001	991723002	991740002	XMD-01	XMD-02		





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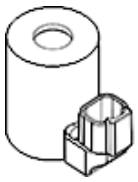
Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBD	DFBE	DMBD	DNBD	DTAF	DTAFS	DTBF	FPBD
FPBE	FPBM	FPBN	RPEI	991711300	991711600	991712300	991712600	991713030	991713060
991717	991718	991719	991723001	991723002	991740002	XMD-01	XMD-02		

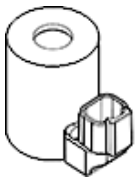


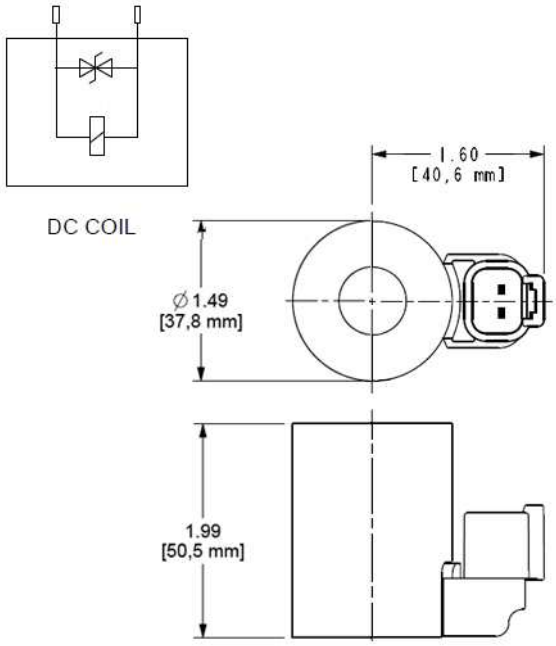
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	14 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
DFFI	DFFJ	DLDF	DLDFS	DMBF	DNBF	DTAF	DTAFS	DTBF	DTCF
DTDF	DTDFS	DWBF	DWDF	FPBF	FPBG	FPBI	FPBJ	FPBU	FREP
PRDF	PRDG	RVCK	RVCL	RVCM	RVCN	991711300	991711600	991712300	991712600
991713030	991713060	991717	991718	991719	991723001	991723002	991740001	XMD-01	XMD-02





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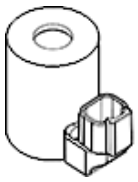
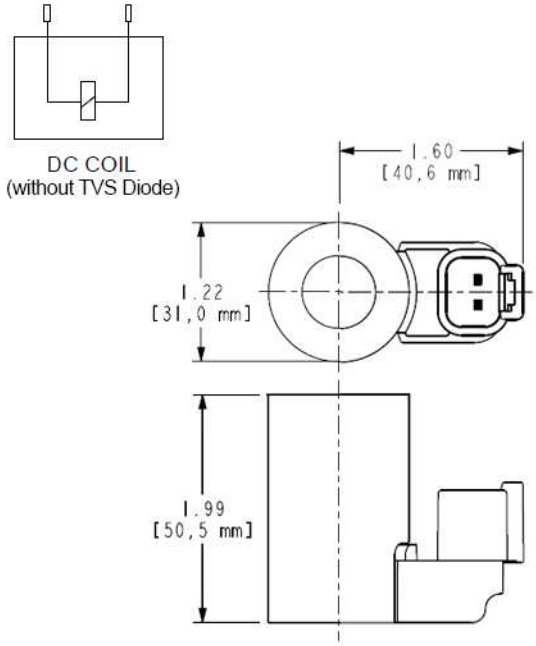
Voltage/Frequency	14 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
DFFI	DFFJ	DLDF	DLDFS	DMBF	DNBF	DTAF	DTAFS	DTBF	DTCF
DTDF	DTDFS	DWBF	DWDF	FPBF	FPBG	FPBI	FPBJ	FPBU	FREP
PRDF	PRDG	RVCK	RVCL	RVCM	RVCN	991711300	991711600	991712300	991712600
991713030	991713060	991717	991718	991719	991723001	991723002	991740001	XMD-01	XMD-02



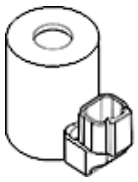


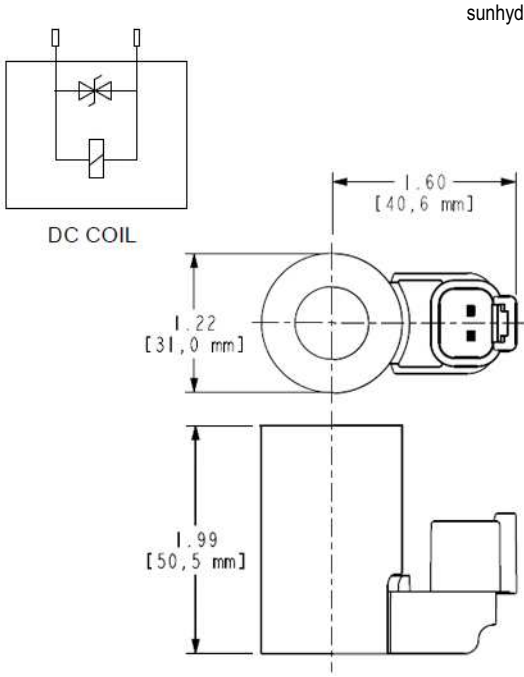
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	14 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBD	DFBE	DFDJ	DMBD	DNBD	DTAF	DTAFS	DTBF
FPBD	FPBE	FPBM	FPBN	RPEI	991711300	991711600	991712300	991712600	991713030
991713060	991717	991718	991719	991723001	991723002	991740002	XMD-01	XMD-02	



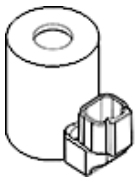


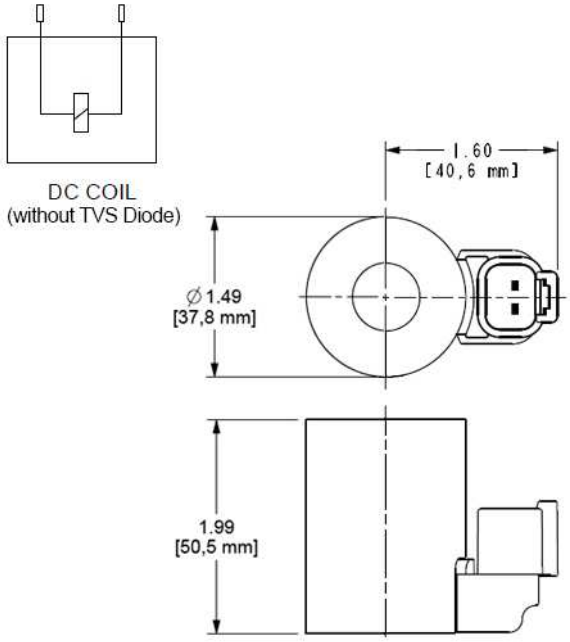
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	14 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBD	DFBE	DMBD	DNBD	DTAF	DTAFS	DTBF	FPBD
FPBE	FPBM	FPBN	RPEI	991711300	991711600	991712300	991712600	991713030	991713060
991717	991718	991719	991723001	991723002	991740002	XMD-01	XMD-02		



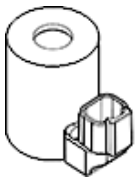


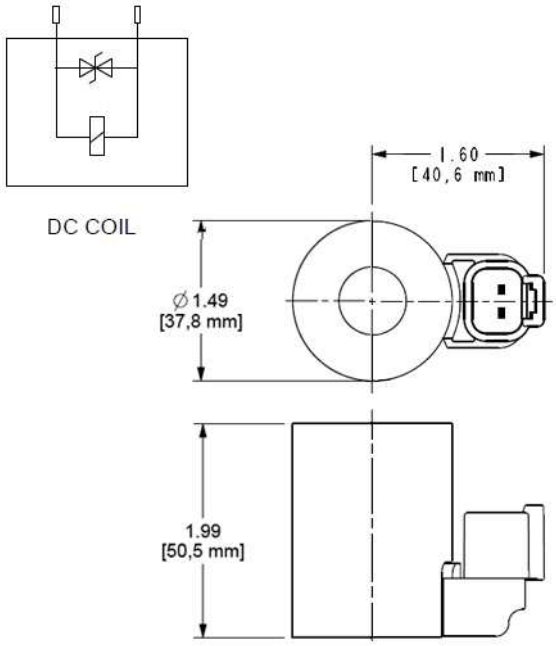
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	24 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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	991717	991718	991719	991723001
991723002	991740001	XMD-01	XMD-02						



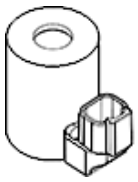


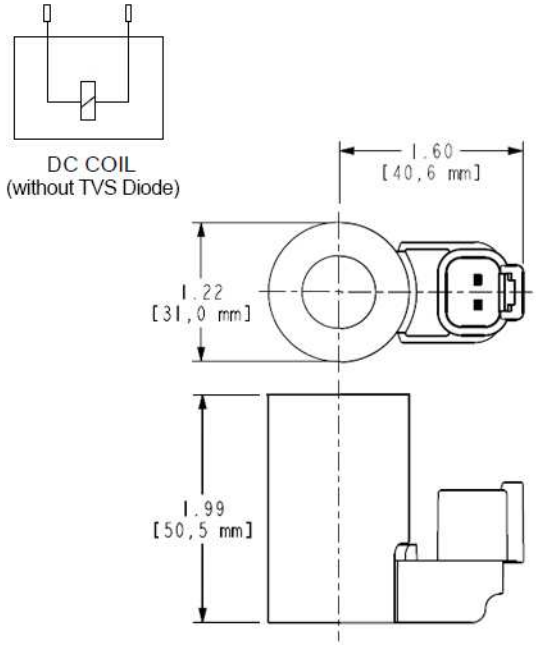
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	24 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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	991717	991718	991719	991723001
991723002	991740001	XMD-01	XMD-02						



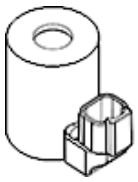


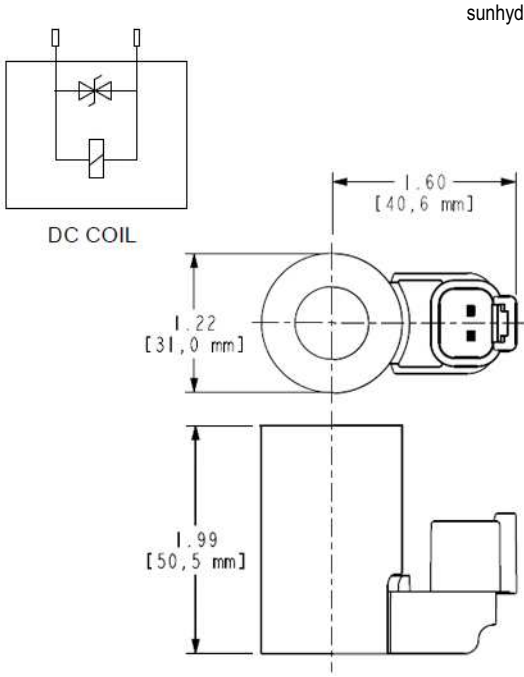
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	24 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBD	DFBE	DMBD	DNBD	DTAF	DTAFS	DTBF	FPBD
FPBE	FPBM	FPBN	RPEI	991711300	991711600	991712300	991712600	991713030	991713060
991717	991718	991719	991723001	991723002	991740002	XMD-01	XMD-02		



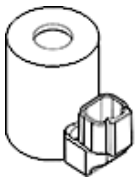


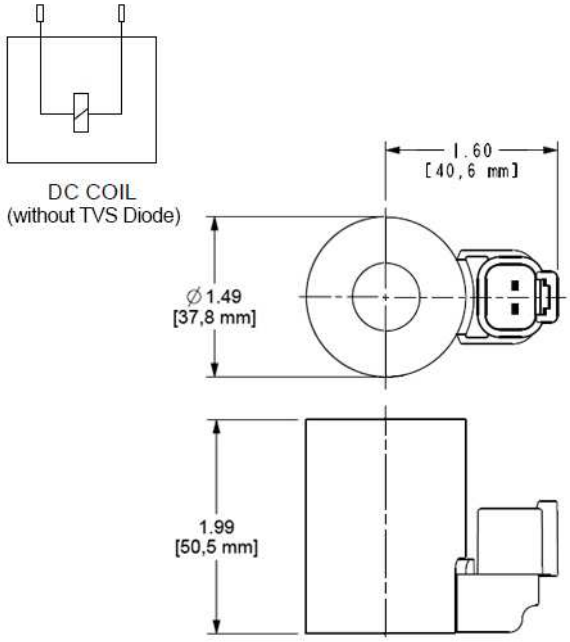
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	24 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBD	DFBE	DMBD	DNBD	DTAF	DTAFS	DTBF	FPBD
FPBE	FPBM	FPBN	RPEI	991711300	991711600	991712300	991712600	991713030	991713060
991717	991718	991719	991723001	991723002	991740002	XMD-01	XMD-02		



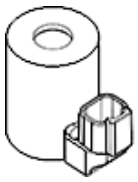


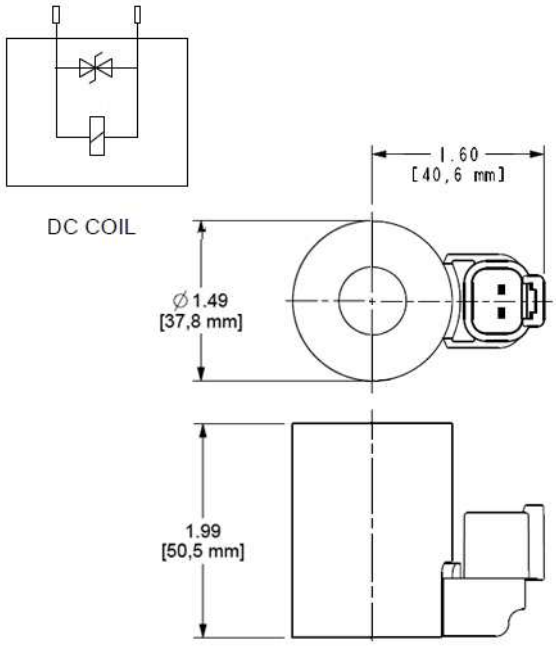
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Maximum Current - FLeX Valves (100% Duty Cycle at Maximum Ambient Temperature)	500 mA
Maximum Current - Non-FLeX Valves (100% Duty Cycle at Maximum Ambient Temperature)	560 mA
Voltage/Frequency	28 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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	991717	991718	991719	991723001
991723002	991740001	XMD-01	XMD-02						



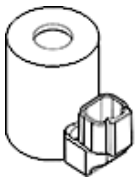


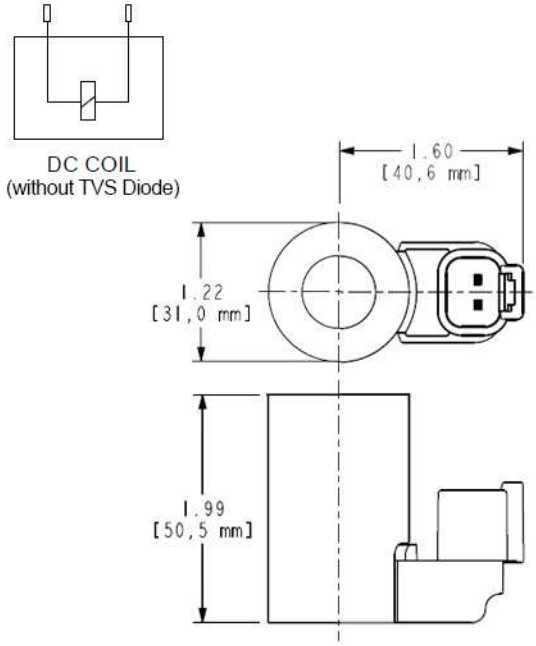
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	25 Watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	28 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ	DFEI	DFEJ
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	991717	991718	991719	991723001
991723002	991740001	XMD-01	XMD-02						



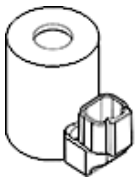


TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	28 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DBAFS	DFBD	DFBE	DMBD	DNBD	DTAF	DTAFS	DTBF	FPBD
FPBE	FPBM	FPBN	RPEI	991711300	991711600	991712300	991712600	991713030	991713060
991717	991718	991719	991723001	991723002	991740002	XMD-01	XMD-02		

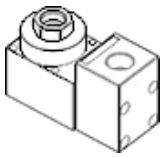


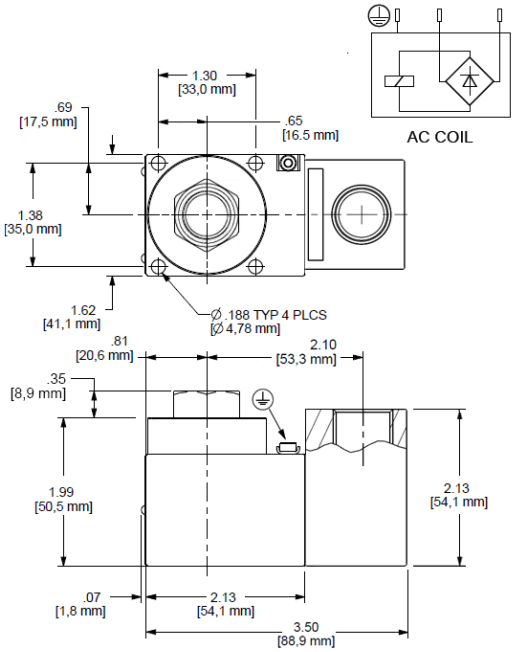
TECHNICAL DATA

Operating Temperature Range	-40 to 230 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	17 Watts
Maximum Ambient Temperature	212 °F
Voltage/Frequency	28 VDC
Operating Voltage Range	+10%/-15%
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	4.5 lbf in.

USED WITH

DBAF	DFBD	DFBE	DMBD	DNBD	DTAF	DTAFS	DTBF	FPBD	FPBE
FPBM	FPBN	RPEI	991711300	991711600	991712300	991712600	991713030	991713060	991717
991718	991719	991723001	991723002	991740002	XMD-01	XMD-02			





Model 747 Series hazardous location coils are designed for Sun's FLeX Series switching and proportional solenoid valves and for newer Sun valves that use the 16-mm actuator tubes. All models include ATEX, IECEx, and NEC, CEC/CSA certifications.

TECHNICAL DATA

Operating Temperature Range	-40 to 158 °F
Diametric Coil Clearance Requirement	2.36 in.
Power Consumption at 68°F (20°C) cold - at rated voltage	30 watts
Voltage/Frequency	115 VAC 50/60 Hz (-15%/+0%)
Duty Cycle Rating	100 %
Connector	M20 x 1.5 female connector
Coil Nut Torque	4.5 lbf in.

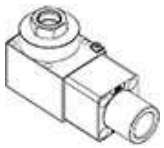
NOTES

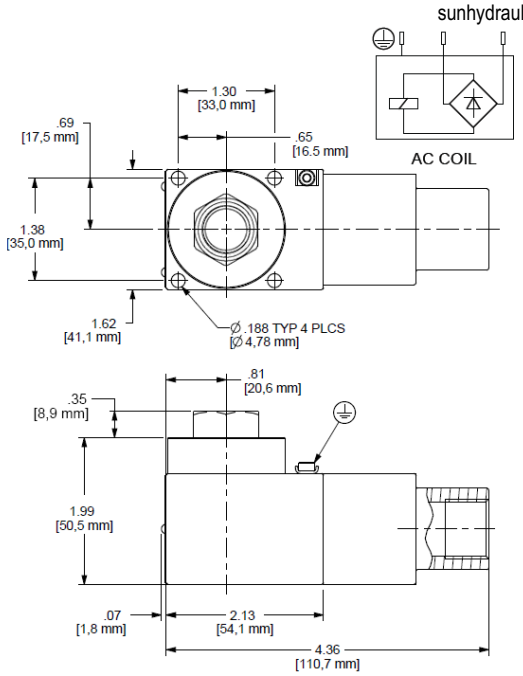
- 1. Mount coil onto spool (tube) body.
- 2. A cable entry hole is provided to accommodate any suitable certified flameproof cable entry device. Cable entry temperature may exceed 70° C (158° F).
- 3. Remove terminal box cover and connect electrical supply and earth to terminal block. Conductors according to Note 4. Note: coil is polarity insensitive. The center terminal is the internal ground. Replace cover and secure with the four screws (M4 x ,7). Torque to min 1.92
- 4. Connect external ground. North American applications: external earth (ground) connections. Use where local codes or authorities permit or require external earth (ground) connections. Torque to 1.25 ft-lbs (1.7 N-m).
- 5. When installing with multiple coils, the coils must be spaced a minimum of 0.875" (22.23 mm) apart to ensure adequate heat dissipation.
- Sun's 747 Series hazardous location coil requires more clearance than the FLeX 740 series coil. Sun manifolds with more than one cavity may not allow enough clearance for these coils. An additional 2.00" (50,8 mm) beyond the valve extension is needed for coil installation
- For installation in above-ground electrical systems in explosive atmospheres, procedures for all applicable codes must be observed. All work must be carried out by an electrician with adequate qualifications for hazardous locations.
- A common practice to protect the internal bridge rectifier from unknown incoming voltage conditions is to install a TVS diode. For the 115-Vac coil, diode part number, 1.5KE250CA is recommended; for the 230-Vac coil, diode part number 1.5KE400CA is recommended. Depending on the application, diodes higher than 1500 W are recommended.

USED WITH

DBAF	DBAFS	DFBD	DFBE	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ
DFEI	DFEJ	DFFI	DFFJ	DLDF	DLDFS	DMBD	DMBF	DNBD	DNBF

DTAF	DTAFS	DTBF	DTCF	DTDF	DTDFS	DWBF	DWDF	FDEP	FMDF
FMDG	FREP	PRDF	PRDG	RPEI	RVCK	RVCL	RVCM	RVCN	





Model 747 Series hazardous location coils are designed for Sun's FLeX Series switching and proportional solenoid valves and for newer Sun valves that use the 16-mm actuator tubes. All models include ATEX, IECEx, and NEC, CEC/CSA certifications.

TECHNICAL DATA

Operating Temperature Range	-40 to 158 °F
Diametric Coil Clearance Requirement	2.36 in.
Power Consumption at 68°F (20°C) cold - at rated voltage	30 watts
Voltage/Frequency	115 VAC 50/60 Hz (-15%/+0%)
Duty Cycle Rating	100 %
Connector	M20 x 1.5 female connector
Coil Nut Torque	4.5 lbf in.

NOTES

- 1. Mount coil onto spool (tube) body.
- 2. A cable entry hole is provided to accommodate any suitable certified flameproof cable entry device. Cable entry temperature may exceed 70° C (158° F).
- 3. Remove terminal box cover and connect electrical supply and earth to terminal block. Conductors according to Note 4. Note: coil is polarity insensitive. The center terminal is the internal ground. Replace cover and secure with the four screws (M4 x ,7). Torque to min 1.92
- 4. Connect external ground. North American applications: external earth (ground) connections. Use where local codes or authorities permit or require external earth (ground) connections. Torque to 1.25 ft-lbs (1.7 N-m).
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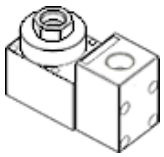
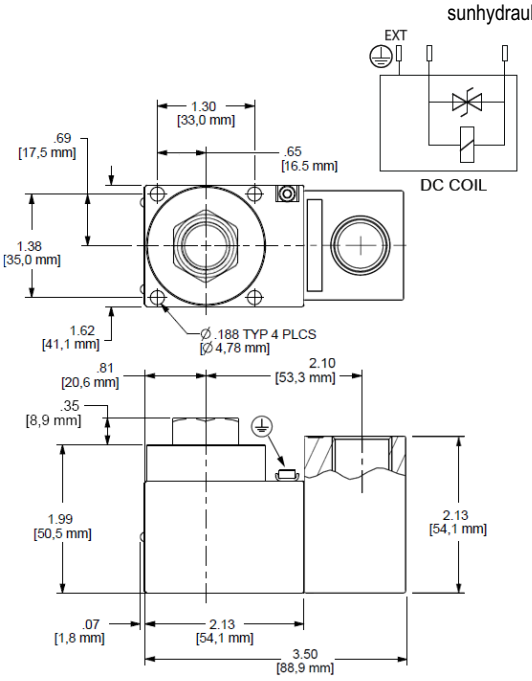
- A common practice to protect the internal bridge rectifier from unknown incoming voltage conditions is to install a TVS diode. For the 115-Vac coil, diode part number, 1.5KE250CA is recommended; for the 230-Vac coil, diode part number 1.5KE400CA is recommended. Depending on the application, diodes higher than 1500 W are recommended.
- For installation in above-ground electrical systems in explosive atmospheres, procedures for all applicable codes must be observed. All work must be carried out by an electrician with adequate qualifications for hazardous locations.
- Sun's 747 Series hazardous location coil requires more clearance than the FLeX 740 series coil. Sun manifolds with more than one cavity may not allow enough clearance for these coils. An additional 2.00" (50,8 mm) beyond the valve extension is needed for coil installation

USED WITH

DBAF	DBAFS	DFBD	DFBE	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ
DFEI	DFEJ	DFFI	DFFJ	DLDF	DLDFS	DMBD	DMBF	DNBD	DNBF

DTAF	DTAFS	DTBF	DTCF	DTDF	DTDFS	DWBF	DWDF	FDEP	FMDF
FMDG	FREP	PRDF	PRDG	RPEI	RVCK	RVCL	RVCM	RVCN	





Model 747 Series hazardous location coils are designed for Sun's FLeX Series switching and proportional solenoid valves and for newer Sun valves that use the 16-mm actuator tubes. All models include ATEX, IECEx, and NEC, CEC/CSA certifications.

TECHNICAL DATA

Operating Temperature Range	-40 to 158 °F
Diametric Coil Clearance Requirement	2.36 in.
Power Consumption at 68°F (20°C) cold - at rated voltage	30 watts
Voltage/Frequency	12 VDC (-15%/+0%)
Duty Cycle Rating	100 %
Connector	M20 x 1.5 female connector
Coil Nut Torque	4.5 lbf in.

NOTES

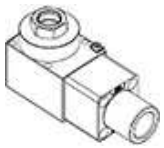
- 1. Mount coil onto spool (tube) body.
- 2. A cable entry hole is provided to accommodate any suitable certified flameproof cable entry device. Cable entry temperature may exceed 70° C (158° F).
- 3. Remove terminal box cover and connect electrical supply and earth to terminal block. Conductors according to Note 4. Note: coil is polarity insensitive. The center terminal is the internal ground. Replace cover and secure with the four screws (M4 x ,7). Torque to min 1.92
- 4. Connect external ground. North American applications: external earth (ground) connections. Use where local codes or authorities permit or require external earth (ground) connections. Torque to 1.25 ft-lbs (1.7 N-m).
- 5. When installing with multiple coils, the coils must be spaced a minimum of 0.875" (22.23 mm) apart to ensure adequate heat dissipation.
- For installation in above-ground electrical systems in explosive atmospheres, procedures for all applicable codes must be observed. All work must be carried out by an electrician with adequate qualifications for hazardous locations.
- Sun's 747 Series hazardous location coil requires more clearance than the FLeX 740 series coil. Sun manifolds with more than one cavity may not allow enough clearance for these coils. An additional 2.00" (50,8 mm) beyond the valve extension is needed for coil installation

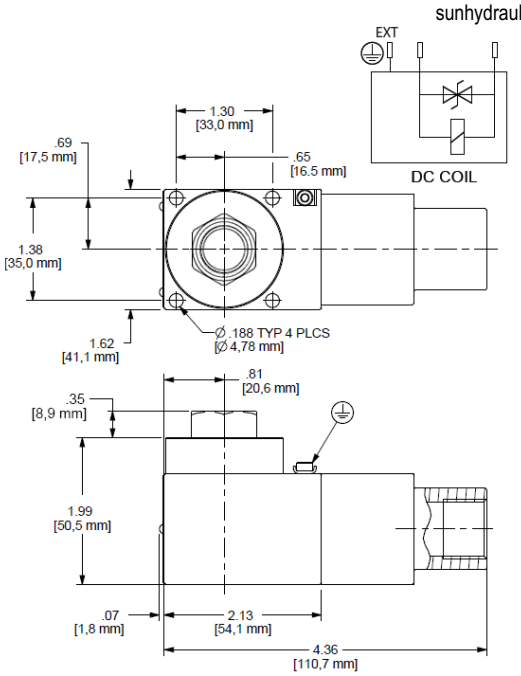
INCLUDED COMPONENTS

Part	Description	Quantity
375-048-H00	Nut	1
500-101-016	O-Ring	1
747-JM12BDF	Coil Accessory - Explosion Proof	1

USED WITH

DBAF	DBAFS	DFBD	DFBE	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ
DFEI	DFEJ	DFFI	DFFJ	DLDF	DLDFS	DMBD	DMBF	DNBD	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	XMD-01	XMD-02





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TECHNICAL DATA

Operating Temperature Range	-40 to 158 °F
Diametric Coil Clearance Requirement	2.36 in.
Power Consumption at 68°F (20°C) cold - at rated voltage	30 watts
Voltage/Frequency	12 VDC (-15%/+0%)
Duty Cycle Rating	100 %
Connector	M20 x 1.5 female connector
Coil Nut Torque	4.5 lbf in.

NOTES

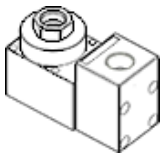
- 1. Mount coil onto spool (tube) body.
- 2. A cable entry hole is provided to accommodate any suitable certified flameproof cable entry device. Cable entry temperature may exceed 70° C (158° F).
- 3. Remove terminal box cover and connect electrical supply and earth to terminal block. Conductors according to Note 4. Note: coil is polarity insensitive. The center terminal is the internal ground. Replace cover and secure with the four screws (M4 x ,7). Torque to min 1.92
- 4. Connect external ground. North American applications: external earth (ground) connections. Use where local codes or authorities permit or require external earth (ground) connections. Torque to 1.25 ft-lbs (1.7 N-m).
- 5. When installing with multiple coils, the coils must be spaced a minimum of 0.875" (22.23 mm) apart to ensure adequate heat dissipation.
- For proportional valve applications, the maximum current of 590mA has been established so a proportional valve can function optimally under a variety of ambient temperatures.
- For installation in above-ground electrical systems in explosive atmospheres, procedures for all applicable codes must be observed. All work must be carried out by an electrician with adequate qualifications for hazardous locations.

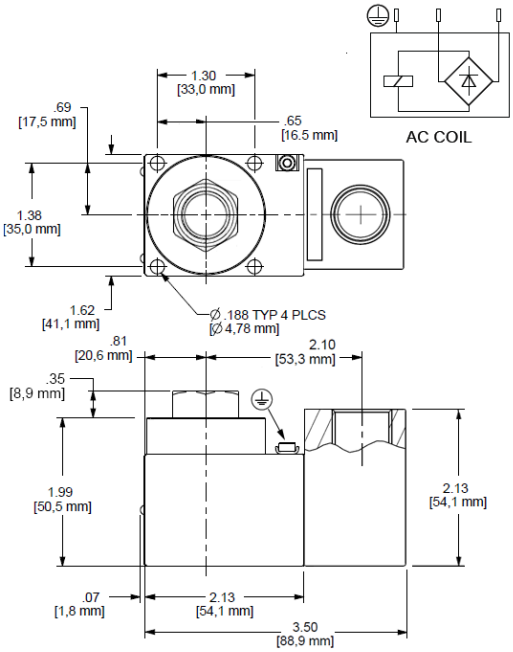
INCLUDED COMPONENTS

Part	Description	Quantity
375-048-H00	Nut	1
500-101-016	O-Ring	1
747-JM12CDF	Coil Accessory - Explosion Proof	1

USED WITH

DBAF	DBAFS	DFBD	DFBE	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ
DFEI	DFEJ	DFFI	DFFJ	DLDF	DLDFS	DMBD	DMBF	DNBD	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	XMD-01	XMD-02





Model 747 Series hazardous location coils are designed for Sun's FLeX Series switching and proportional solenoid valves and for newer Sun valves that use the 16-mm actuator tubes. All models include ATEX, IECEx, and NEC, CEC/CSA certifications.

TECHNICAL DATA

Operating Temperature Range	-40 to 158 °F
Diametric Coil Clearance Requirement	2.36 in.
Power Consumption at 68°F (20°C) cold - at rated voltage	30 watts
Voltage/Frequency	230 VAC 50/60 Hz (-15%/+0%)
Duty Cycle Rating	100 %
Connector	M20 x 1.5 female connector
Coil Nut Torque	4.5 lbf in.

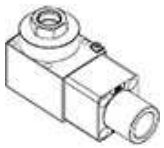
NOTES

- 1. Mount coil onto spool (tube) body.
- 2. A cable entry hole is provided to accommodate any suitable certified flameproof cable entry device. Cable entry temperature may exceed 70° C (158° F).
- 3. Remove terminal box cover and connect electrical supply and earth to terminal block. Conductors according to Note 4. Note: coil is polarity insensitive. The center terminal is the internal ground. Replace cover and secure with the four screws (M4 x ,7). Torque to min 1.92
- 4. Connect external ground. North American applications: external earth (ground) connections. Use where local codes or authorities permit or require external earth (ground) connections. Torque to 1.25 ft-lbs (1.7 N-m).
- 5. When installing with multiple coils, the coils must be spaced a minimum of 0.875" (22.23 mm) apart to ensure adequate heat dissipation.
- A common practice to protect the internal bridge rectifier from unknown incoming voltage conditions is to install a TVS diode. For the 115-Vac coil, diode part number, 1.5KE250CA is recommended; for the 230-Vac coil, diode part number 1.5KE400CA is recommended. Depending on the application, diodes higher than 1500 W are recommended.
- For installation in above-ground electrical systems in explosive atmospheres, procedures for all applicable codes must be observed. All work must be carried out by an electrician with adequate qualifications for hazardous locations.
- Sun's 747 Series hazardous location coil requires more clearance than the FLeX 740 series coil. Sun manifolds with more than one cavity may not allow enough clearance for these coils. An additional 2.00" (50,8 mm) beyond the valve extension is needed for coil installation

USED WITH

DBAF	DBAFS	DFBD	DFBE	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ
DFEI	DFEJ	DFFI	DFFJ	DLDF	DLDFS	DMBD	DMBF	DNBD	DNBF

DTAF	DTAFS	DTBF	DTCF	DTDF	DTDFS	DWBF	DWDF	FDEP	FMDF
FMDG	FREP	PRDF	PRDG	RPEI	RVCK	RVCL	RVCM	RVCN	



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TECHNICAL DATA

Operating Temperature Range	-40 to 158 °F
Diametric Coil Clearance Requirement	2.36 in.
Power Consumption at 68°F (20°C) cold - at rated voltage	30 watts
Voltage/Frequency	230 VAC 50/60 Hz (-15%/+0%)
Duty Cycle Rating	100 %
Connector	M20 x 1.5 female connector
Coil Nut Torque	4.5 lbf in.

NOTES

- 1. Mount coil onto spool (tube) body.
- 2. A cable entry hole is provided to accommodate any suitable certified flameproof cable entry device. Cable entry temperature may exceed 70° C (158° F).
- 3. Remove terminal box cover and connect electrical supply and earth to terminal block. Conductors according to Note 4. Note: coil is polarity insensitive. The center terminal is the internal ground. Replace cover and secure with the four screws (M4 x ,7). Torque to min 1.92
- 4. Connect external ground. North American applications: external earth (ground) connections. Use where local codes or authorities permit or require external earth (ground) connections. Torque to 1.25 ft-lbs (1.7 N-m).
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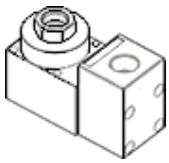
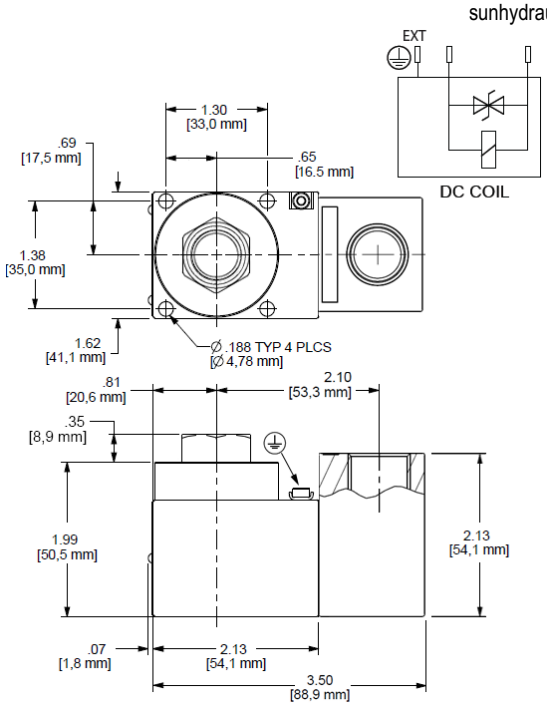
INCLUDED COMPONENTS

Part	Description	Quantity
375-048-H00	Nut	1
500-101-016	O-Ring	1
747-JM23CDF	Coil Accessory - Explosion Proof	1

USED WITH

DBAF	DBAFS	DFBD	DFBE	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ
DFEI	DFEJ	DFFI	DFFJ	DLDF	DLDFS	DMBD	DMBF	DNBD	DNBF
DTAF	DTAFS	DTBF	DTCF	DTDF	DTDFS	DWBF	DWDF	FDEP	FMDF
FMDG	FREP	PRDF	PRDG	RPEI	RVCK	RVCL	RVCM	RVCN	





Model 747 Series hazardous location coils are designed for Sun's FLeX Series switching and proportional solenoid valves and for newer Sun valves that use the 16-mm actuator tubes. All models include ATEX, IECEx, and NEC, CEC/CSA certifications.

TECHNICAL DATA

Operating Temperature Range	-40 to 158 °F
Diametric Coil Clearance Requirement	2.36 in.
Power Consumption at 68°F (20°C) cold - at rated voltage	30 watts
Voltage/Frequency	24 VDC (-15%/+0%)
Duty Cycle Rating	100 %
Connector	M20 x 1.5 female connector
Coil Nut Torque	4.5 lbf in.

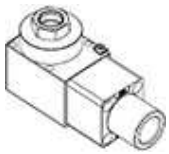
NOTES

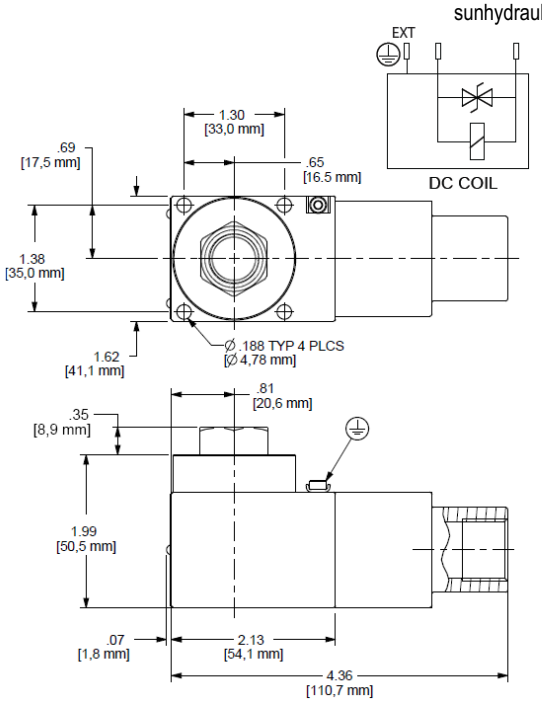
- 1. Mount coil onto spool (tube) body.
- 2. A cable entry hole is provided to accommodate any suitable certified flameproof cable entry device. Cable entry temperature may exceed 70° C (158° F).
- 3. Remove terminal box cover and connect electrical supply and earth to terminal block. Conductors according to Note 4. Note: coil is polarity insensitive. The center terminal is the internal ground. Replace cover and secure with the four screws (M4 x ,7). Torque to min 1.92
- 4. Connect external ground. North American applications: external earth (ground) connections. Use where local codes or authorities permit or require external earth (ground) connections. Torque to 1.25 ft-lbs (1.7 N-m).
- 5. When installing with multiple coils, the coils must be spaced a minimum of 0.875" (22.23 mm) apart to ensure adequate heat dissipation.
- For installation in above-ground electrical systems in explosive atmospheres, procedures for all applicable codes must be observed. All work must be carried out by an electrician with adequate qualifications for hazardous locations.
- Sun's 747 Series hazardous location coil requires more clearance than the FLeX 740 series coil. Sun manifolds with more than one cavity may not allow enough clearance for these coils. An additional 2.00” (50,8 mm) beyond the valve extension is needed for coil installation

USED WITH

DBAF	DBAFS	DFBD	DFBE	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ
DFEI	DFEJ	DFFI	DFFJ	DLDF	DLDFS	DMBD	DMBF	DNBD	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	XMD-01	XMD-02





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TECHNICAL DATA

Operating Temperature Range	-40 to 158 °F
Diametric Coil Clearance Requirement	2.36 in.
Power Consumption at 68°F (20°C) cold - at rated voltage	30 watts
Voltage/Frequency	24 VDC (-15%/+0%)
Duty Cycle Rating	100 %
Connector	M20 x 1.5 female connector
Coil Nut Torque	4.5 lbf in.

NOTES

- 1. Mount coil onto spool (tube) body.
- 2. A cable entry hole is provided to accommodate any suitable certified flameproof cable entry device. Cable entry temperature may exceed 70° C (158° F).
- 3. Remove terminal box cover and connect electrical supply and earth to terminal block. Conductors according to Note 4. Note: coil is polarity insensitive. The center terminal is the internal ground. Replace cover and secure with the four screws (M4 x ,7). Torque to min 1.92
- 4. Connect external ground. North American applications: external earth (ground) connections. Use where local codes or authorities permit or require external earth (ground) connections. Torque to 1.25 ft-lbs (1.7 N-m).
- 5. When installing with multiple coils, the coils must be spaced a minimum of 0.875" (22.23 mm) apart to ensure adequate heat dissipation.
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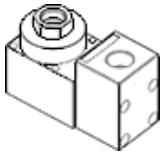
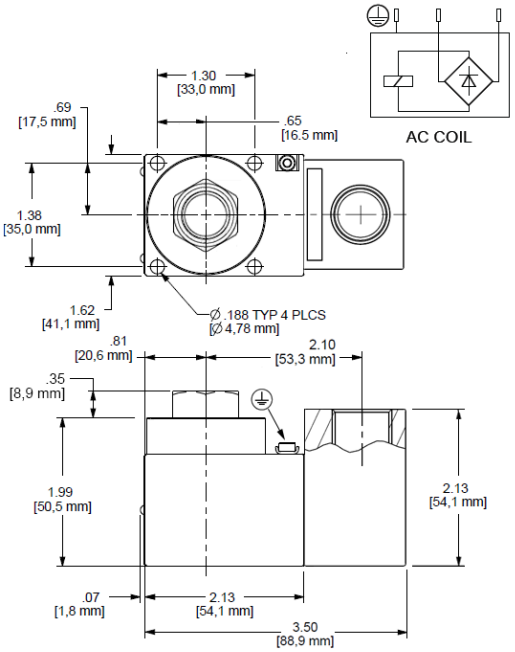
USED WITH

DBAF	DBAFS	DFBD	DFBE	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ
DFEI	DFEJ	DFFI	DFFJ	DLDF	DLDFS	DMBD	DMBF	DNBD	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	XMD-01	XMD-02





Model 747 Series hazardous location coils are designed for Sun's FLeX Series switching and proportional solenoid valves and for newer Sun valves that use the 16-mm actuator tubes. All models include ATEX, IECEx, and NEC, CEC/CSA certifications.

TECHNICAL DATA

Operating Temperature Range	-40 to 158 °F
Diametric Coil Clearance Requirement	2.36 in.
Power Consumption at 68°F (20°C) cold - at rated voltage	30 watts
Voltage/Frequency	115 VAC 50/60 Hz (-15%/+0%)
Duty Cycle Rating	100 %
Connector	1/2" NPT female connector
Coil Nut Torque	4.5 lbf in.

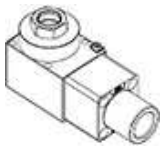
NOTES

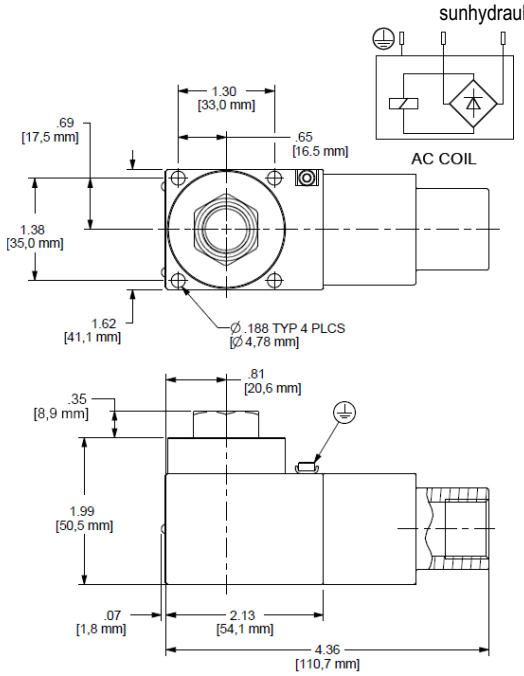
- 1. Mount coil onto spool (tube) body.
- 2. A cable entry hole is provided to accommodate any suitable certified flameproof cable entry device. Cable entry temperature may exceed 70° C (158° F).
- 3. Remove terminal box cover and connect electrical supply and earth to terminal block. Conductors according to Note 4. Note: coil is polarity insensitive. The center terminal is the internal ground. Replace cover and secure with the four screws (M4 x ,7). Torque to min 1.92
- 4. Connect external ground. North American applications: external earth (ground) connections. Use where local codes or authorities permit or require external earth (ground) connections. Torque to 1.25 ft-lbs (1.7 N-m).
- 5. When installing with multiple coils, the coils must be spaced a minimum of 0.875" (22.23 mm) apart to ensure adequate heat dissipation.
- A common practice to protect the internal bridge rectifier from unknown incoming voltage conditions is to install a TVS diode. For the 115-Vac coil, diode part number, 1.5KE250CA is recommended; for the 230-Vac coil, diode part number 1.5KE400CA is recommended. Depending on the application, diodes higher than 1500 W are recommended.
- For installation in above-ground electrical systems in explosive atmospheres, procedures for all applicable codes must be observed. All work must be carried out by an electrician with adequate qualifications for hazardous locations.
- Sun's 747 Series hazardous location coil requires more clearance than the FLeX 740 series coil. Sun manifolds with more than one cavity may not allow enough clearance for these coils. An additional 2.00" (50,8 mm) beyond the valve extension is needed for coil installation

USED WITH

DBAF	DBAFS	DFBD	DFBE	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ
DFEI	DFEJ	DFFI	DFFJ	DLDF	DLDFS	DMBD	DMBF	DNBD	DNBF

DTAF	DTAFS	DTBF	DTCF	DTDF	DTDFS	DWBF	DWDF	FDEP	FMDF
FMDG	FREP	PRDF	PRDG	RPEI	RVCK	RVCL	RVCM	RVCN	





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TECHNICAL DATA

Operating Temperature Range	-40 to 158 °F
Diametric Coil Clearance Requirement	2.36 in.
Power Consumption at 68°F (20°C) cold - at rated voltage	30 watts
Voltage/Frequency	115 VAC 50/60 Hz (-15%/+0%)
Duty Cycle Rating	100 %
Connector	1/2" NPT female connector
Coil Nut Torque	4.5 lbf in.

NOTES

- 1. Mount coil onto spool (tube) body.
- 2. A cable entry hole is provided to accommodate any suitable certified flameproof cable entry device. Cable entry temperature may exceed 70° C (158° F).
- 3. Remove terminal box cover and connect electrical supply and earth to terminal block. Conductors according to Note 4. Note: coil is polarity insensitive. The center terminal is the internal ground. Replace cover and secure with the four screws (M4 x ,7). Torque to min 1.92
- 4. Connect external ground. North American applications: external earth (ground) connections. Use where local codes or authorities permit or require external earth (ground) connections. Torque to 1.25 ft-lbs (1.7 N-m).
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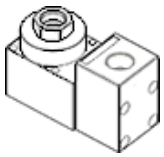
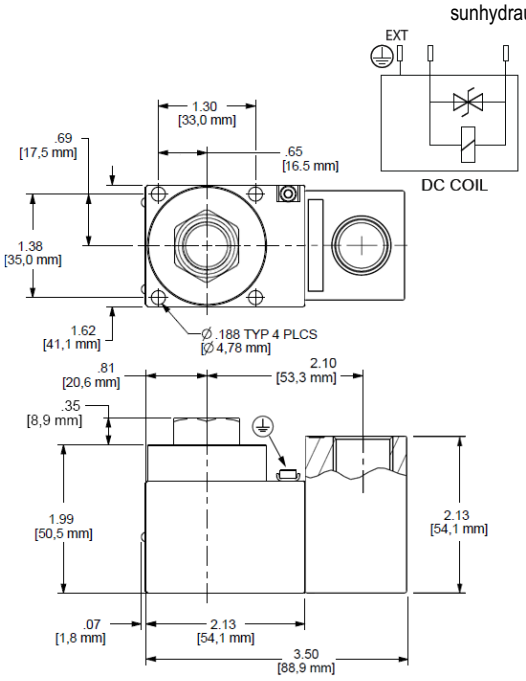
- For installation in above-ground electrical systems in explosive atmospheres, procedures for all applicable codes must be observed. All work must be carried out by an electrician with adequate qualifications for hazardous locations.
- Sun's 747 Series hazardous location coil requires more clearance than the FLeX 740 series coil. Sun manifolds with more than one cavity may not allow enough clearance for these coils. An additional 2.00" (50,8 mm) beyond the valve extension is needed for coil installation

USED WITH

DBAF	DBAFS	DFBD	DFBE	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ
DFEI	DFEJ	DFFI	DFFJ	DLDF	DLDFS	DMBD	DMBF	DNBD	DNBF

DTAF	DTAFS	DTBF	DTCF	DTDF	DTDFS	DWBF	DWDF	FDEP	FMDF
FMDG	FREP	PRDF	PRDG	RPEI	RVCK	RVCL	RVCM	RVCN	





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TECHNICAL DATA

Operating Temperature Range	-40 to 158 °F
Diametric Coil Clearance Requirement	2.36 in.
Power Consumption at 68°F (20°C) cold - at rated voltage	30 watts
Voltage/Frequency	12 VDC (-15%/+0%)
Duty Cycle Rating	100 %
Connector	1/2" NPT female connector
Coil Nut Torque	4.5 lbf in.

NOTES

- 1. Mount coil onto spool (tube) body.
- 2. A cable entry hole is provided to accommodate any suitable certified flameproof cable entry device. Cable entry temperature may exceed 70° C (158° F).
- 3. Remove terminal box cover and connect electrical supply and earth to terminal block. Conductors according to Note 4. Note: coil is polarity insensitive. The center terminal is the internal ground. Replace cover and secure with the four screws (M4 x ,7). Torque to min 1.92
- 4. Connect external ground. North American applications: external earth (ground) connections. Use where local codes or authorities permit or require external earth (ground) connections. Torque to 1.25 ft-lbs (1.7 N-m).
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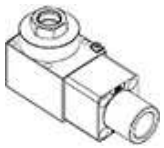
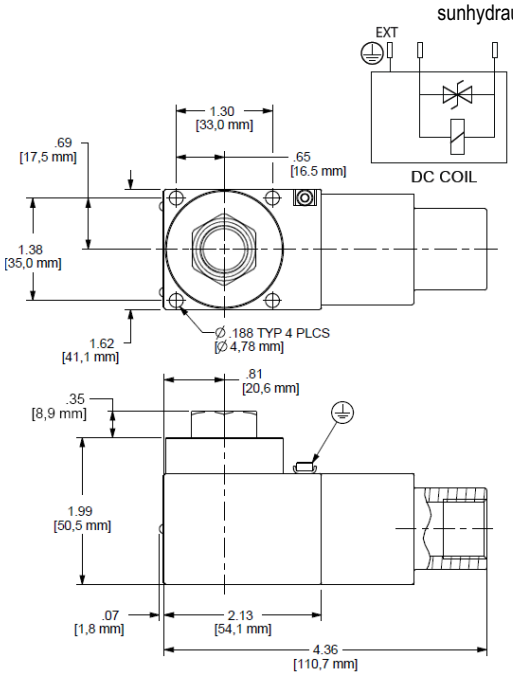
USED WITH

DBAF	DBAFS	DFBD	DFBE	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ
DFEI	DFEJ	DFFI	DFFJ	DLDF	DLDFS	DMBD	DMBF	DNBD	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	XMD-01	XMD-02





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TECHNICAL DATA

Operating Temperature Range	-40 to 158 °F
Diametric Coil Clearance Requirement	2.36 in.
Power Consumption at 68°F (20°C) cold - at rated voltage	30 watts
Voltage/Frequency	12 VDC (-15%/+0%)
Duty Cycle Rating	100 %
Connector	1/2" NPT female connector
Coil Nut Torque	4.5 lbf in.

NOTES

- 1. Mount coil onto spool (tube) body.
- 2. A cable entry hole is provided to accommodate any suitable certified flameproof cable entry device. Cable entry temperature may exceed 70° C (158° F).
- 3. Remove terminal box cover and connect electrical supply and earth to terminal block. Conductors according to Note 4. Note: coil is polarity insensitive. The center terminal is the internal ground. Replace cover and secure with the four screws (M4 x ,7). Torque to min 1.92
- 4. Connect external ground. North American applications: external earth (ground) connections. Use where local codes or authorities permit or require external earth (ground) connections. Torque to 1.25 ft-lbs (1.7 N-m).
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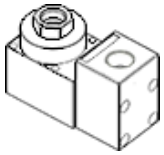
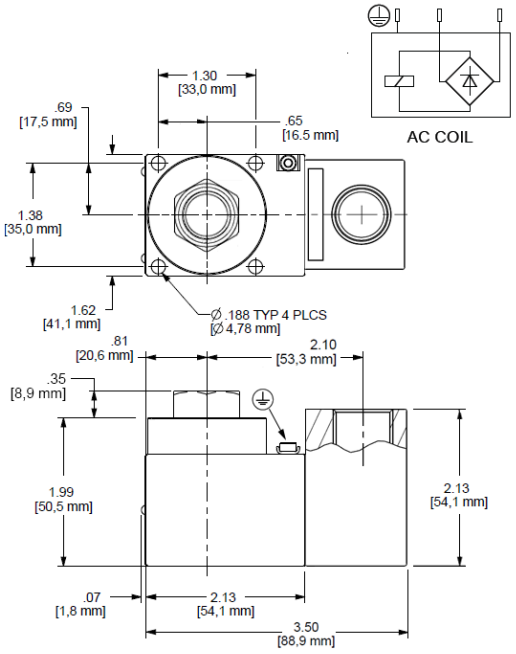
USED WITH

DBAF	DBAFS	DFBD	DFBE	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ
DFEI	DFEJ	DFFI	DFFJ	DLDF	DLDFS	DMBD	DMBF	DNBD	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	XMD-01	XMD-02





Model 747 Series hazardous location coils are designed for Sun's FLeX Series switching and proportional solenoid valves and for newer Sun valves that use the 16-mm actuator tubes. All models include ATEX, IECEx, and NEC, CEC/CSA certifications.

TECHNICAL DATA

Operating Temperature Range	-40 to 158 °F
Diametric Coil Clearance Requirement	2.36 in.
Power Consumption at 68°F (20°C) cold - at rated voltage	30 watts
Voltage/Frequency	230 VAC 50/60 Hz (-15%/+0%)
Duty Cycle Rating	100 %
Connector	1/2" NPT female connector
Coil Nut Torque	4.5 lbf in.

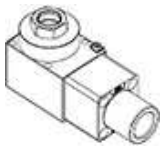
NOTES

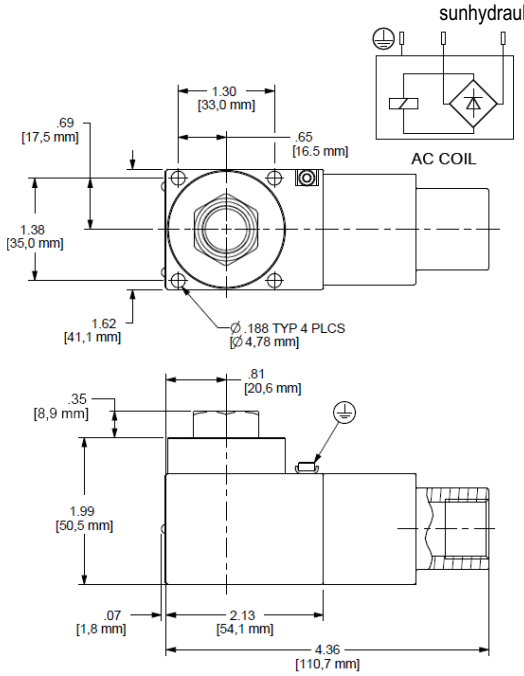
- 1. Mount coil onto spool (tube) body.
- 2. A cable entry hole is provided to accommodate any suitable certified flameproof cable entry device. Cable entry temperature may exceed 70° C (158° F).
- 3. Remove terminal box cover and connect electrical supply and earth to terminal block. Conductors according to Note 4. Note: coil is polarity insensitive. The center terminal is the internal ground. Replace cover and secure with the four screws (M4 x ,7). Torque to min 1.92
- 4. Connect external ground. North American applications: external earth (ground) connections. Use where local codes or authorities permit or require external earth (ground) connections. Torque to 1.25 ft-lbs (1.7 N-m).
- 5. When installing with multiple coils, the coils must be spaced a minimum of 0.875" (22.23 mm) apart to ensure adequate heat dissipation.
- A common practice to protect the internal bridge rectifier from unknown incoming voltage conditions is to install a TVS diode. For the 115-Vac coil, diode part number, 1.5KE250CA is recommended; for the 230-Vac coil, diode part number 1.5KE400CA is recommended. Depending on the application, diodes higher than 1500 W are recommended.
- For installation in above-ground electrical systems in explosive atmospheres, procedures for all applicable codes must be observed. All work must be carried out by an electrician with adequate qualifications for hazardous locations.
- Sun's 747 Series hazardous location coil requires more clearance than the FLeX 740 series coil. Sun manifolds with more than one cavity may not allow enough clearance for these coils. An additional 2.00" (50,8 mm) beyond the valve extension is needed for coil installation

USED WITH

DBAF	DBAFS	DFBD	DFBE	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ
DFEI	DFEJ	DFFI	DFFJ	DLDF	DLDFS	DMBD	DMBF	DNBD	DNBF

DTAF	DTAFS	DTBF	DTCF	DTDF	DTDFS	DWBF	DWDF	FDEP	FMDF
FMDG	FREP	PRDF	PRDG	RPEI	RVCK	RVCL	RVCM	RVCN	





Model 747 Series hazardous location coils are designed for Sun's FLeX Series switching and proportional solenoid valves and for newer Sun valves that use the 16-mm actuator tubes. All models include ATEX, IECEx, and NEC, CEC/CSA certifications.

TECHNICAL DATA

Operating Temperature Range	-40 to 158 °F
Diametric Coil Clearance Requirement	2.36 in.
Power Consumption at 68°F (20°C) cold - at rated voltage	30 watts
Voltage/Frequency	230 VAC 50/60 Hz (-15%/+0%)
Duty Cycle Rating	100 %
Connector	1/2" NPT female connector
Coil Nut Torque	4.5 lbf in.

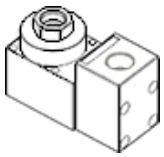
NOTES

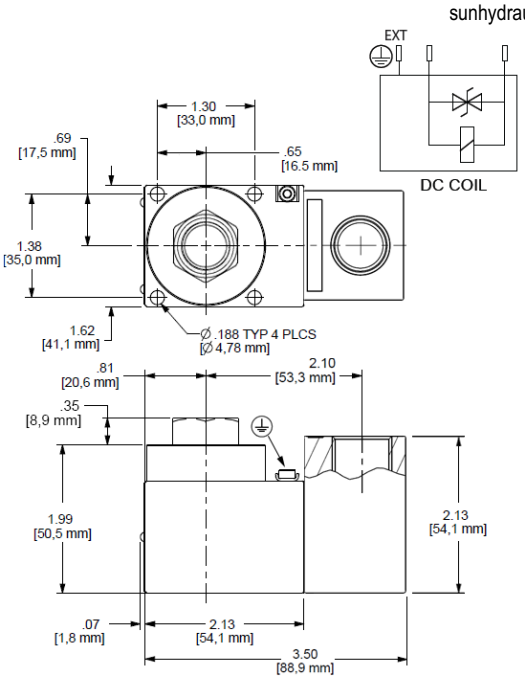
- 1. Mount coil onto spool (tube) body.
- 2. A cable entry hole is provided to accommodate any suitable certified flameproof cable entry device. Cable entry temperature may exceed 70° C (158° F).
- 3. Remove terminal box cover and connect electrical supply and earth to terminal block. Conductors according to Note 4. Note: coil is polarity insensitive. The center terminal is the internal ground. Replace cover and secure with the four screws (M4 x ,7). Torque to min 1.92
- 4. Connect external ground. North American applications: external earth (ground) connections. Use where local codes or authorities permit or require external earth (ground) connections. Torque to 1.25 ft-lbs (1.7 N-m).
- 5. When installing with multiple coils, the coils must be spaced a minimum of 0.875" (22.23 mm) apart to ensure adequate heat dissipation.
- A common practice to protect the internal bridge rectifier from unknown incoming voltage conditions is to install a TVS diode. For the 115-Vac coil, diode part number, 1.5KE250CA is recommended; for the 230-Vac coil, diode part number 1.5KE400CA is recommended. Depending on the application, diodes higher than 1500 W are recommended.
- For installation in above-ground electrical systems in explosive atmospheres, procedures for all applicable codes must be observed. All work must be carried out by an electrician with adequate qualifications for hazardous locations.
- Sun's 747 Series hazardous location coil requires more clearance than the FLeX 740 series coil. Sun manifolds with more than one cavity may not allow enough clearance for these coils. An additional 2.00" (50,8 mm) beyond the valve extension is needed for coil installation

USED WITH

DBAF	DBAFS	DFBD	DFBE	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ
DFEI	DFEJ	DFFI	DFFJ	DLDF	DLDFS	DMBD	DMBF	DNBD	DNBF

DTAF	DTAFS	DTBF	DTCF	DTDF	DTDFS	DWBF	DWDF	FDEP	FMDG
FPBF	FREP	PRDF	PRDG	RPEI	RVCK	RVCL	RVCM	RVCN	





Model 747 Series hazardous location coils are designed for Sun's FLeX Series switching and proportional solenoid valves and for newer Sun valves that use the 16-mm actuator tubes. All models include ATEX, IECEx, and NEC, CEC/CSA certifications.

TECHNICAL DATA

Operating Temperature Range	-40 to 158 °F
Diametric Coil Clearance Requirement	2.36 in.
Power Consumption at 68°F (20°C) cold - at rated voltage	30 watts
Voltage/Frequency	24 VDC (-15%/+0%)
Duty Cycle Rating	100 %
Connector	1/2" NPT female connector
Coil Nut Torque	4.5 lbf in.

NOTES

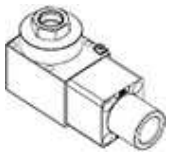
- 1. Mount coil onto spool (tube) body.
- 2. A cable entry hole is provided to accommodate any suitable certified flameproof cable entry device. Cable entry temperature may exceed 70° C (158° F).
- 3. Remove terminal box cover and connect electrical supply and earth to terminal block. Conductors according to Note 4. Note: coil is polarity insensitive. The center terminal is the internal ground. Replace cover and secure with the four screws (M4 x ,7). Torque to min 1.92
- 4. Connect external ground. North American applications: external earth (ground) connections. Use where local codes or authorities permit or require external earth (ground) connections. Torque to 1.25 ft-lbs (1.7 N-m).
- 5. When installing with multiple coils, the coils must be spaced a minimum of 0.875" (22.23 mm) apart to ensure adequate heat dissipation.
- For installation in above-ground electrical systems in explosive atmospheres, procedures for all applicable codes must be observed. All work must be carried out by an electrician with adequate qualifications for hazardous locations.
- Sun's 747 Series hazardous location coil requires more clearance than the FLeX 740 series coil. Sun manifolds with more than one cavity may not allow enough clearance for these coils. An additional 2.00" (50,8 mm) beyond the valve extension is needed for coil installation

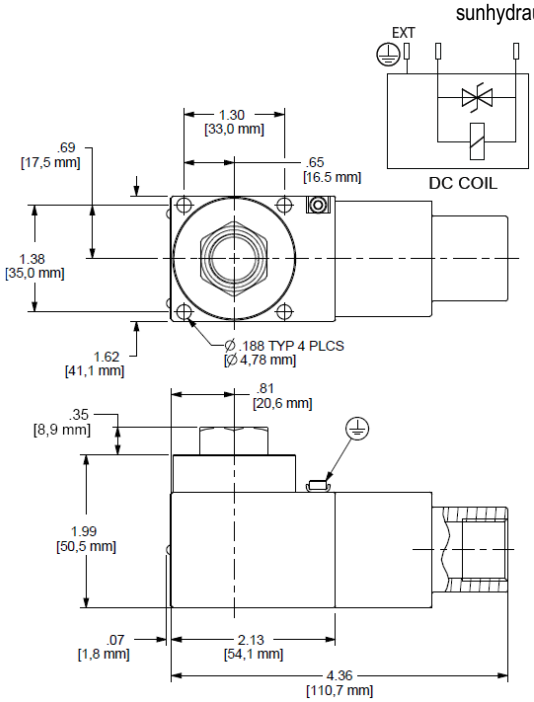
USED WITH

DBAF	DBAFS	DFBD	DFBE	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ
DFEI	DFEJ	DFFI	DFFJ	DLDF	DLDFS	DMBD	DMBF	DNBD	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	XMD-01	XMD-02

747 Series, 24 VDC hazardous location coil with 90 Deg 1/2" NPT connector - ATEX, IECEx, CSA

sunhydraulics.com/model/747JN24CD





Model 747 Series hazardous location coils are designed for Sun's FLeX Series switching and proportional solenoid valves and for newer Sun valves that use the 16-mm actuator tubes. All models include ATEX, IECEx, and NEC, CEC/CSA certifications.

TECHNICAL DATA

Operating Temperature Range	-40 to 158 °F
Diametric Coil Clearance Requirement	2.36 in.
Power Consumption at 68°F (20°C) cold - at rated voltage	30 watts
Voltage/Frequency	24 VDC (-15%/+0%)
Duty Cycle Rating	100 %
Connector	1/2" NPT female connector
Coil Nut Torque	4.5 lbf in.

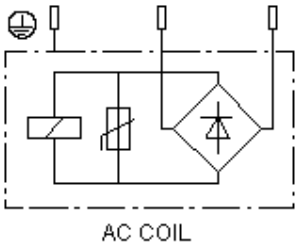
NOTES

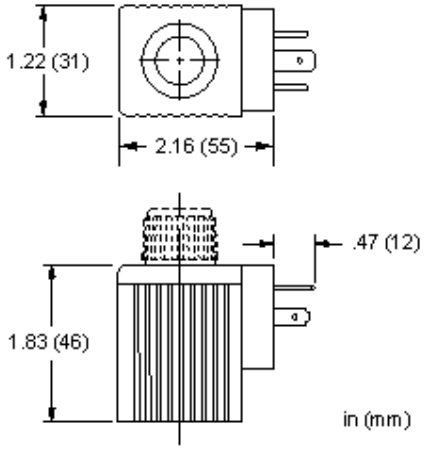
- 1. Mount coil onto spool (tube) body.
- 2. A cable entry hole is provided to accommodate any suitable certified flameproof cable entry device. Cable entry temperature may exceed 70° C (158° F).
- 3. Remove terminal box cover and connect electrical supply and earth to terminal block. Conductors according to Note 4. Note: coil is polarity insensitive. The center terminal is the internal ground. Replace cover and secure with the four screws (M4 x ,7). Torque to min 1.92
- 4. Connect external ground. North American applications: external earth (ground) connections. Use where local codes or authorities permit or require external earth (ground) connections. Torque to 1.25 ft-lbs (1.7 N-m).
- 5. When installing with multiple coils, the coils must be spaced a minimum of 0.875" (22.23 mm) apart to ensure adequate heat dissipation.
- For installation in above-ground electrical systems in explosive atmospheres, procedures for all applicable codes must be observed. All work must be carried out by an electrician with adequate qualifications for hazardous locations.
- Sun's 747 Series hazardous location coil requires more clearance than the FLeX 740 series coil. Sun manifolds with more than one cavity may not allow enough clearance for these coils. An additional 2.00” (50,8 mm) beyond the valve extension is needed for coil installation

USED WITH

DBAF	DBAFS	DFBD	DFBE	DFBF	DFBG	DFCI	DFCJ	DFDI	DFDJ
DFEI	DFEJ	DFFI	DFFJ	DLDF	DLDFS	DMBD	DMBF	DNBD	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	XMD-01	XMD-02



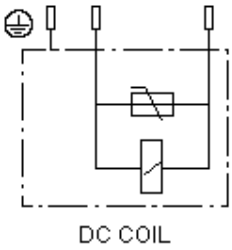


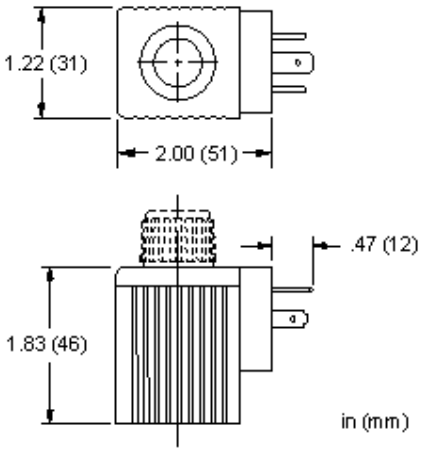
TECHNICAL DATA

Maximum Coil Temperature at 68ºF (20ºC) Ambient	218ºF (105ºC)
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	12 watts
Voltage/Frequency	115 VAC 50/60 Hz
Operating Voltage Range	+/- 20% nominal
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Connector Environment Rating	IP65
Coil Nut Torque	4.5 lbf in.

USED WITH

DAAA DACC DBAA



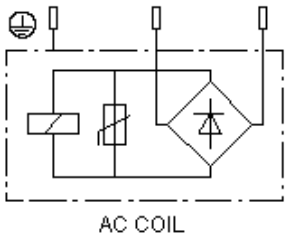


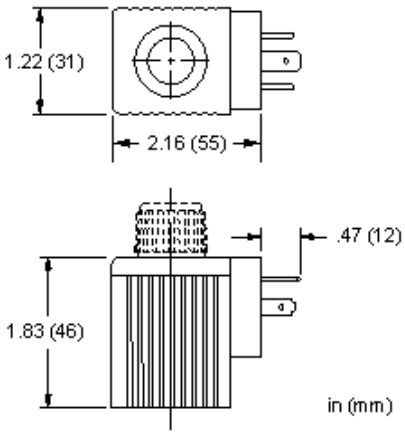
TECHNICAL DATA

Maximum Coil Temperature at 68ºF (20ºC) Ambient	218ºF (105ºC)
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	12 watts
Voltage/Frequency	12 VDC
Operating Voltage Range	+/- 20% nominal
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Connector Environment Rating	IP65
Coil Nut Torque	4.5 lbf in.

USED WITH

DAAA DACC DBAA



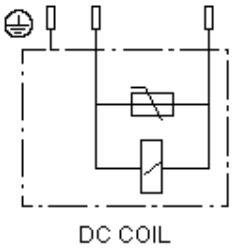


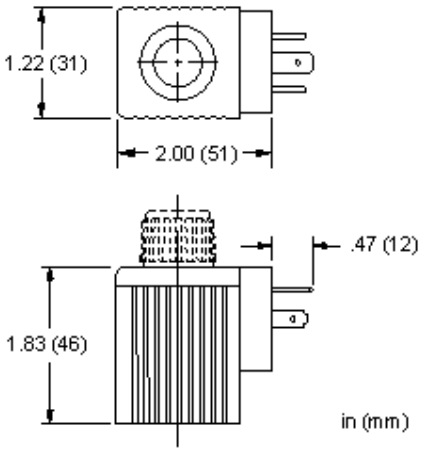
TECHNICAL DATA

Title	ISO/DIN 43650 Connector
Maximum Coil Temperature at 68ºF (20ºC) Ambient	218ºF (105ºC)
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	12 watts
Voltage/Frequency	230 VAC 50/60 Hz
Operating Voltage Range	+/- 20% nominal
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Connector Environment Rating	IP65
Coil Nut Torque	4.5 lbf in.

USED WITH

DAAA DACC DBAA



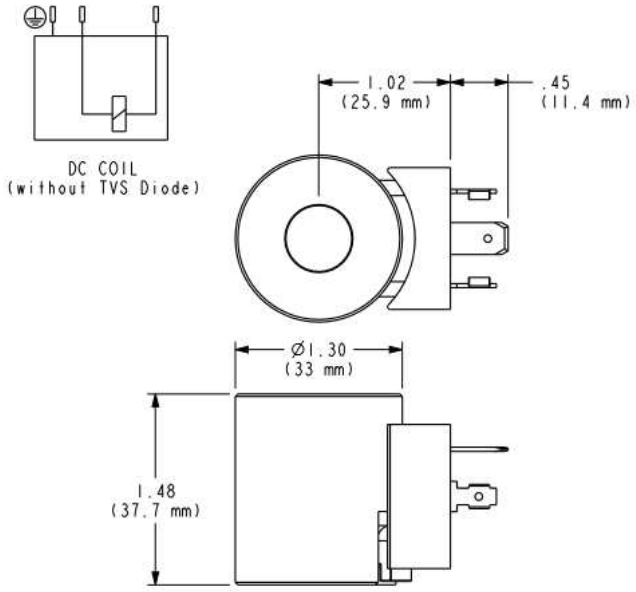


TECHNICAL DATA

Maximum Coil Temperature at 68ºF (20ºC) Ambient	218ºF (105ºC)
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	12 watts
Voltage/Frequency	24 VDC
Operating Voltage Range	+/- 20% nominal
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Connector Environment Rating	IP65
Coil Nut Torque	4.5 lbf in.

USED WITH

DAAA DACC DBAA

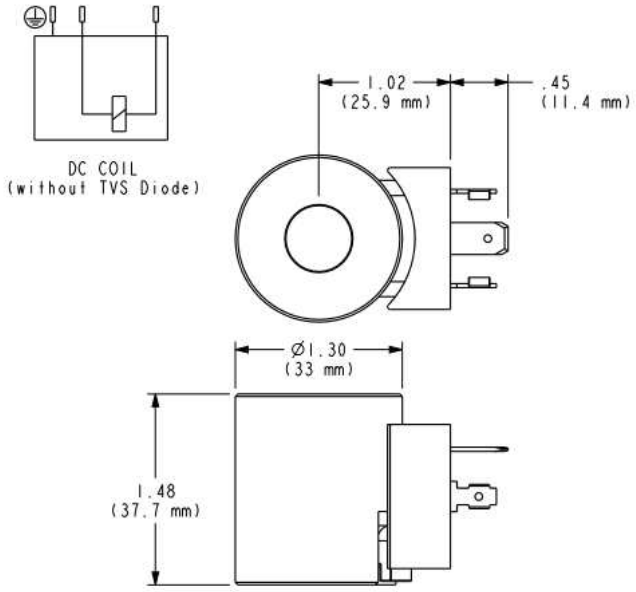


TECHNICAL DATA

Operating Temperature Range	-4 to 215 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	20.5 Watts
Maximum Ambient Temperature	104 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	44 lbf in.

USED WITH

DNTC

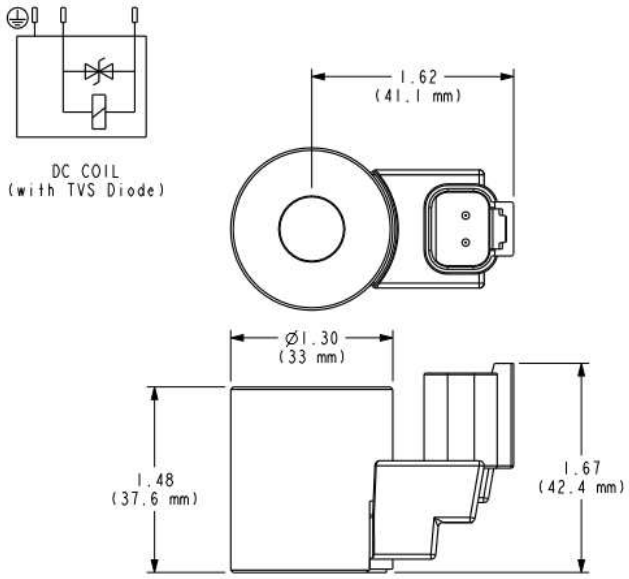


TECHNICAL DATA

Operating Temperature Range	-4 to 215 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	20.5 Watts
Maximum Ambient Temperature	104 °F
Voltage/Frequency	24 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	44 lbf in.

USED WITH

DNTC

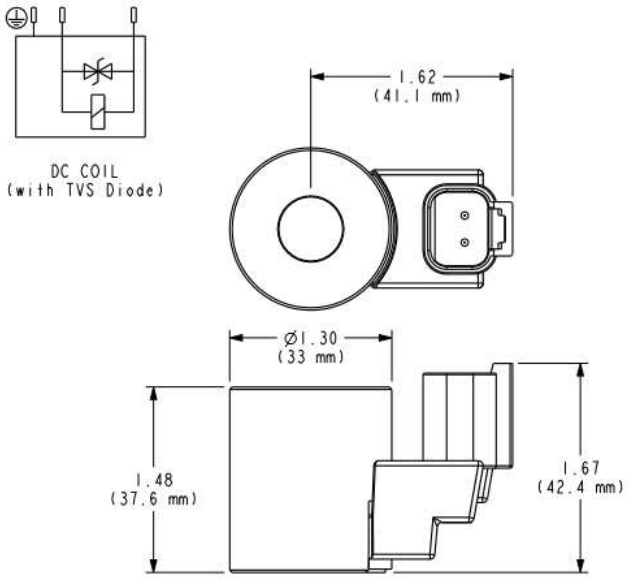


TECHNICAL DATA

Operating Temperature Range	-4 to 215 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	20.5 Watts
Maximum Ambient Temperature	104 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	44 lbf in.

USED WITH

DMTA DNTC PRTS

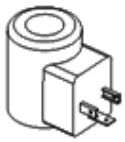


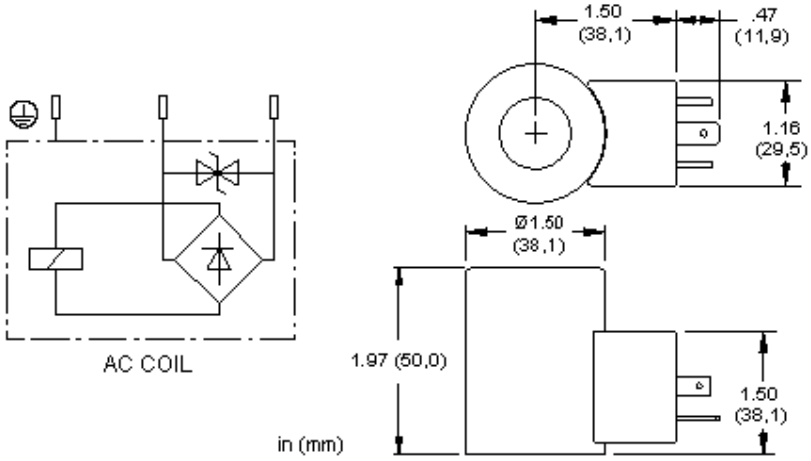
TECHNICAL DATA

Operating Temperature Range	-4 to 215 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	20.5 Watts
Maximum Ambient Temperature	104 °F
Voltage/Frequency	24 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	44 lbf in.

USED WITH

DMTA DNTC PRTS



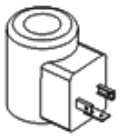


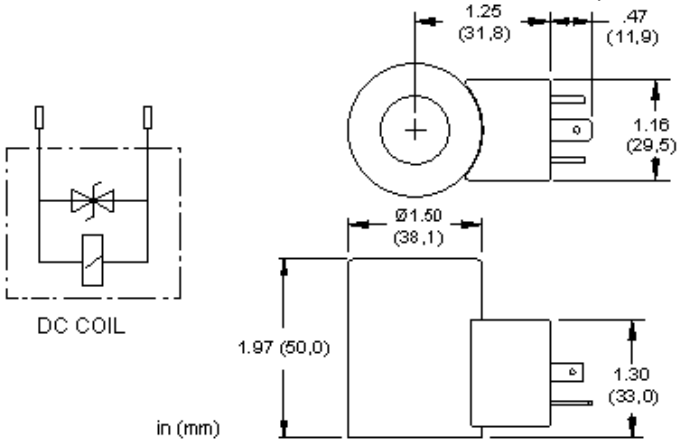
TECHNICAL DATA

Maximum Coil Temperature at 68ºF (20ºC) Ambient	218ºF (105ºC)
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	22 watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	115 VAC 50/60 Hz
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Connector Environment Rating	IP65/IP67
Coil Nut Torque	4.5 lbf in.

USED WITH

DAAL	DAALS	DBAL	DBALS	DFCA	DFCB	DFDA	DFDB	DFEA	DFEB
DFFA	DFFB	DLDA	DLDAS	DLDAZ	DMDA	DMDAS	DMDAZ	DNCA	DNCAZ
DNDA	DNDAS	DNDC	DNDY	DNDYS	DTCA	DTCAZ	DTDA	DTDAS	DWDA
HDDA									



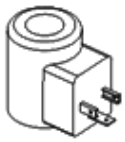


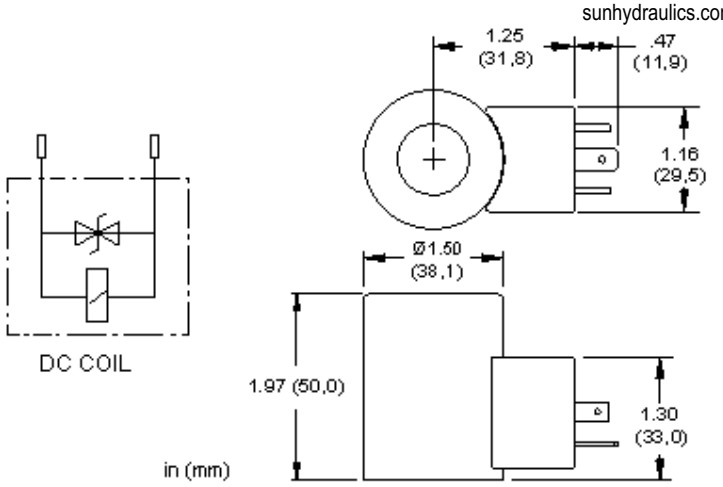
TECHNICAL DATA

Maximum Coil Temperature at 68ºF (20ºC) Ambient	218ºF (105ºC)
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	22 watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Connector Environment Rating	IP65/IP67
Coil Nut Torque	4.5 lbf in.

USED WITH

DMDA DMDAS DNCA DNDA DNDAS DNDC DNDY DNDYS FMDA FMDB
FPCC FPCH FPFK FPHK HDDA PRDM PRDN PSDL PSDP RBAN
RBAP



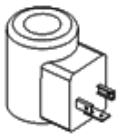


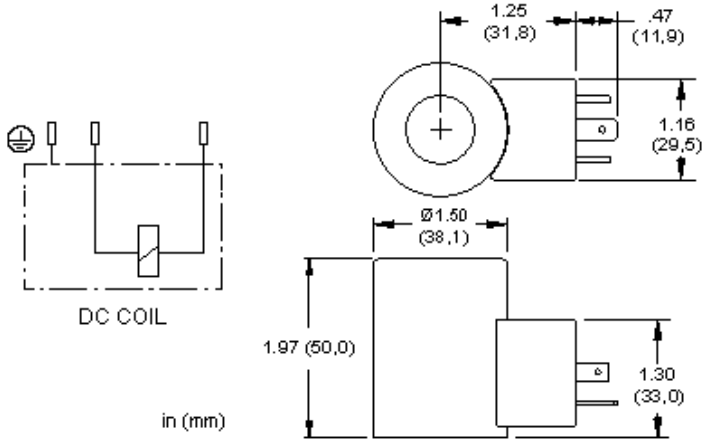
TECHNICAL DATA

Maximum Coil Temperature at 68ºF (20ºC) Ambient	218ºF (105ºC)
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	22 watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	14 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Connector Environment Rating	IP65/IP67
Coil Nut Torque	4.5 lbf in.

USED WITH

DMDA DMDAS DNCA DNDA DNDAS DNDC DNDY DNDYS FPCC FPCH FPFK FPHK



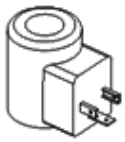


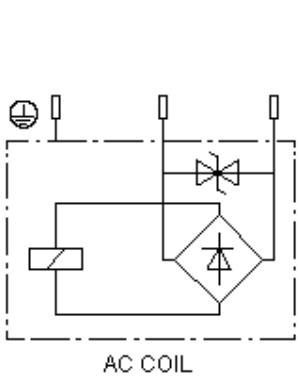
TECHNICAL DATA

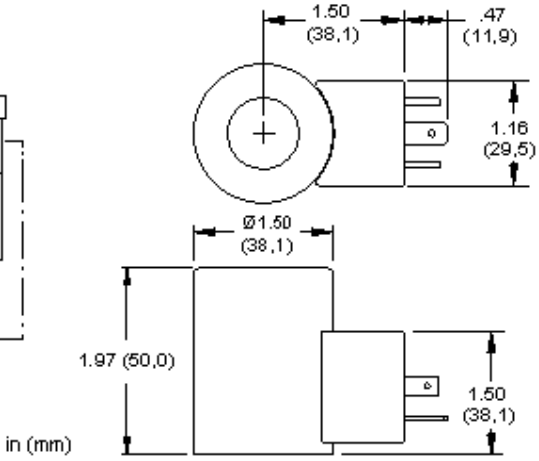
Maximum Coil Temperature at 68ºF (20ºC) Ambient	218ºF (105ºC)
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	22 watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	14 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Connector Environment Rating	IP65/IP67
Coil Nut Torque	4.5 lbf in.

USED WITH

DMDA	DMDAS	DNCA	DNDA	DNDAS	DNDC	DNDY	DNDYS	FMDA	FMDB
FPCC	FPCH	FPFK	FPHK	HDDA	PRDM	PRDN	PSDL	PSDP	RBAN
RBAP									





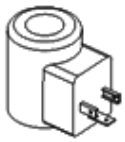


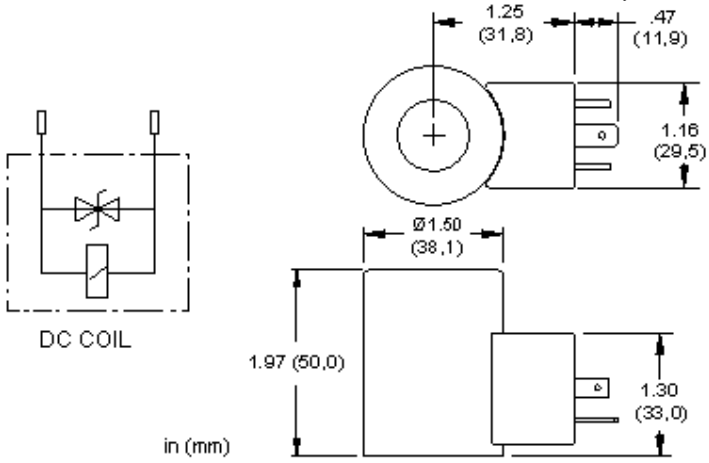
TECHNICAL DATA

Maximum Coil Temperature at 68ºF (20ºC) Ambient	218ºF (105ºC)
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	22 watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	230 VAC 50/60 Hz
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Connector Environment Rating	IP65/IP67
Coil Nut Torque	4.5 lbf in.

USED WITH

DAAL	DAALS	DBAL	DBALS	DFCA	DFCB	DFDA	DFDB	DFEA	DFEB
DFFA	DFFB	DLDA	DLDAS	DLDAZ	DMDA	DMDAS	DMDAZ	DNCA	DNCAZ
DNDA	DNDAS	DNDC	DNDY	DNDYS	DTCA	DTCAZ	DTDA	DTDAS	DWDA
HDDA									



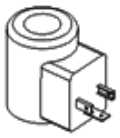


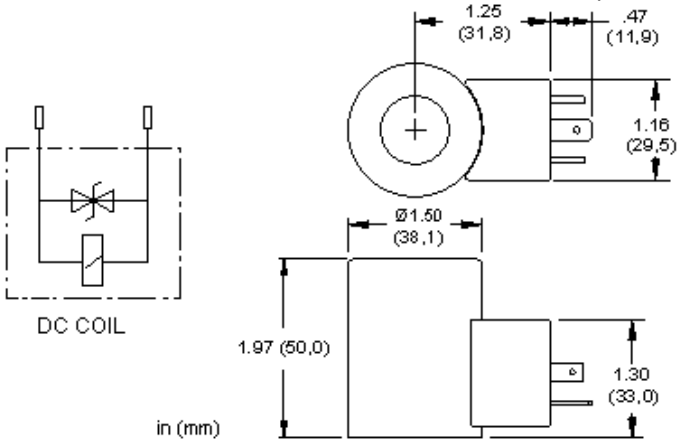
TECHNICAL DATA

Maximum Coil Temperature at 68ºF (20ºC) Ambient	218ºF (105ºC)
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	22 watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	24 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Connector Environment Rating	IP65/IP67
Coil Nut Torque	4.5 lbf in.

USED WITH

DMDA DMDAS DNCA DNDA DNDAS DNDC DNDY DNDYS FMDA FMDB
FPCC FPCH FPFK FPHK HDDA PRDM PRDN PSDL PSDP RBAN
RBAP



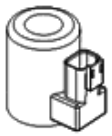


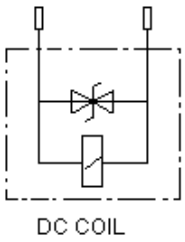
TECHNICAL DATA

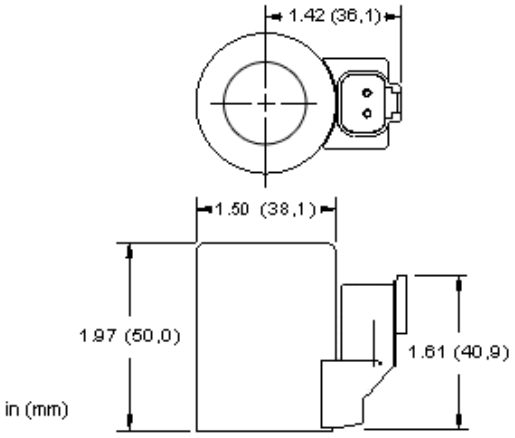
Maximum Coil Temperature at 68ºF (20ºC) Ambient	218ºF (105ºC)
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	22 watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	28 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Connector Environment Rating	IP65/IP67
Coil Nut Torque	4.5 lbf in.

USED WITH

DMDA DMDAS DNCA DNDA DNDAS DNDC DNDY DNDYS FMDA





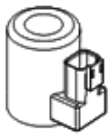


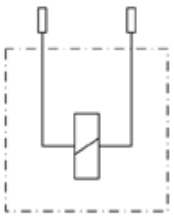
TECHNICAL DATA

Maximum Coil Temperature at 68ºF (20ºC) Ambient	218ºF (105ºC)
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	22 watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Connector Environment Rating	IP69K
Coil Nut Torque	4.5 lbf in.

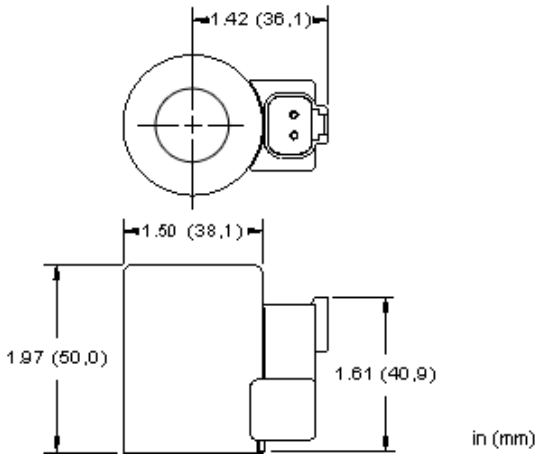
USED WITH

DMDA	DMDAS	DNCA	DNDA	DNDAS	DNDC	DNDY	DNDYS	FMDA	FMDB
FPCC	FPCH	FPFK	FPHK	HDDA	PRDM	PRDN	PSDL	PSDP	RBAN
RBAP	991723001	991723002							





DC Coil – No Diode

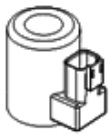


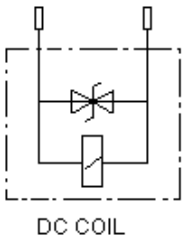
TECHNICAL DATA

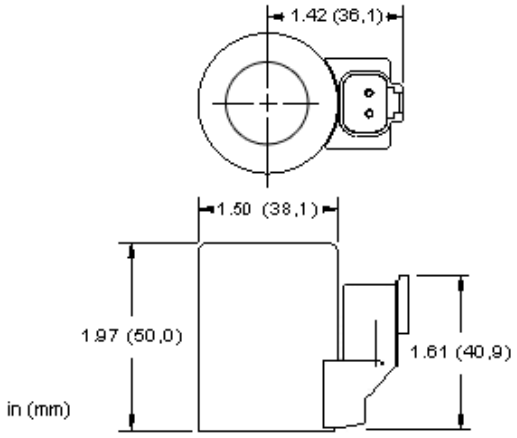
Maximum Coil Temperature at 68ºF (20ºC) Ambient	218ºF (105ºC)
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	22 watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Connector Environment Rating	IP69K
Coil Nut Torque	4.5 lbf in.

USED WITH

DMDA	DMDAS	DNCA	DNDA	DNDAS	DNDC	DNDY	DNDYS	FMDA	FMDB
FPCC	FPCH	FPFK	FPHK	HDDA	PRDM	PRDN	PSDL	PSDP	RBAN
RBAP	991723001	991723002							





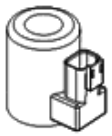


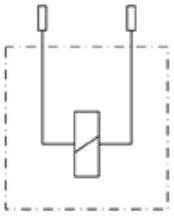
TECHNICAL DATA

Maximum Coil Temperature at 68ºF (20ºC) Ambient	218ºF (105ºC)
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	22 watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	14 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Connector Environment Rating	IP69K
Coil Nut Torque	4.5 lbf in.

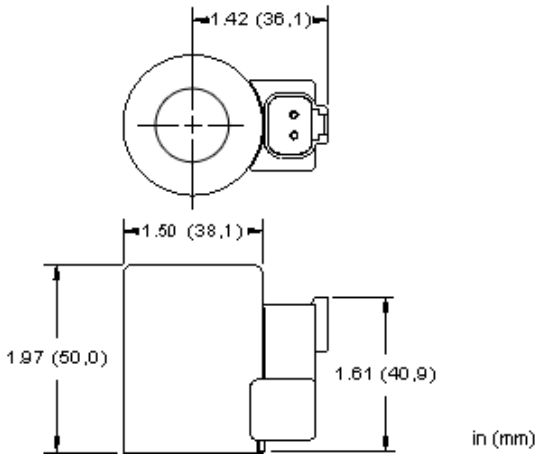
USED WITH

DMDA	DMDAS	DNCA	DNDA	DNDAS	DNDC	DNDY	DNDYS	FMDB	FPCC
FPHK	RBAP	991723001	991723002						





DC Coil – No Diode

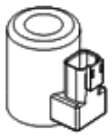


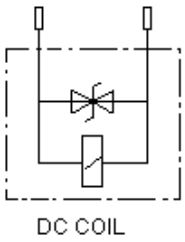
TECHNICAL DATA

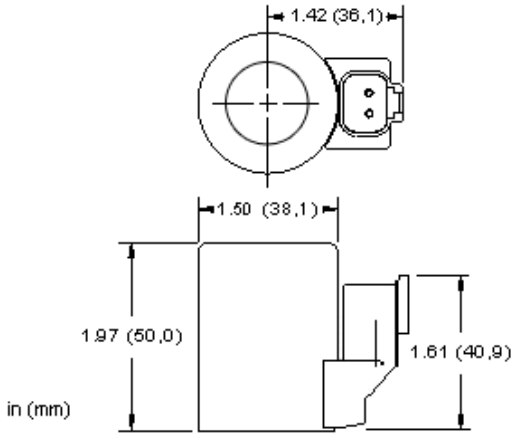
Maximum Coil Temperature at 68ºF (20ºC) Ambient	218ºF (105ºC)
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	22 watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	14 VDC
Operating Voltage Range	+/- 10% nominal
Connector	Deutsch DT04-2P
Coil Nut Torque	4.5 lbf in.

USED WITH

DMDA	DMDAS	DNCA	DNDA	DNDAS	DNDC	DNDY	DNDYS	FMDB	FPCC
FPHK	RBAP	991723001	991723002						





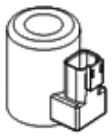


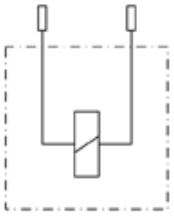
TECHNICAL DATA

Maximum Coil Temperature at 68ºF (20ºC) Ambient	218ºF (105ºC)
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	22 watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	24 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Connector Environment Rating	IP69K
Coil Nut Torque	4.5 lbf in.

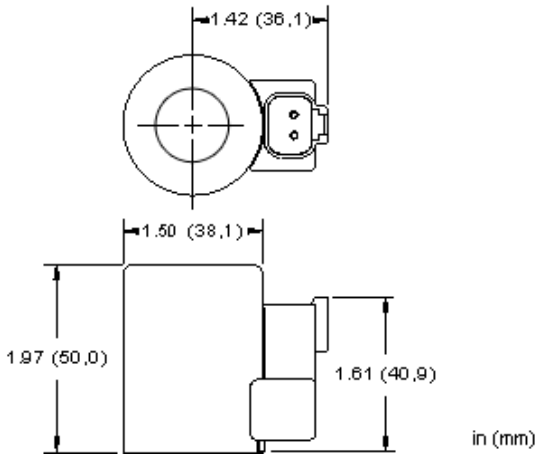
USED WITH

DMDA	DMDAS	DNCA	DNDA	DNDAS	DNDC	DNDY	DNDYS	FMDA	FMDB
FPCC	FPCH	FPFK	FPHK	HDDA	PRDM	PRDN	PSDL	PSDP	RBAN
RBAP	991723001	991723002							





DC Coil – No Diode

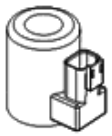


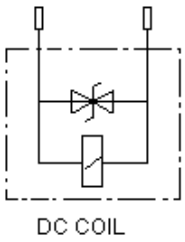
TECHNICAL DATA

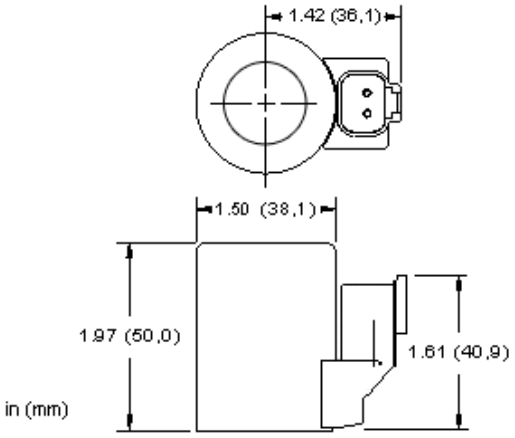
Maximum Coil Temperature at 68ºF (20ºC) Ambient	218ºF (105ºC)
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	22 watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	24 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Connector Environment Rating	IP69K
Coil Nut Torque	4.5 lbf in.

USED WITH

DMDA	DMDAS	DNCA	DNDA	DNDAS	DNDC	DNDY	DNDYS	FMDA	FMDB
FPCC	FPCH	FPFK	FPHK	HDDA	PRDM	PRDN	PSDL	PSDP	RBAN
RBAP	991723001	991723002							





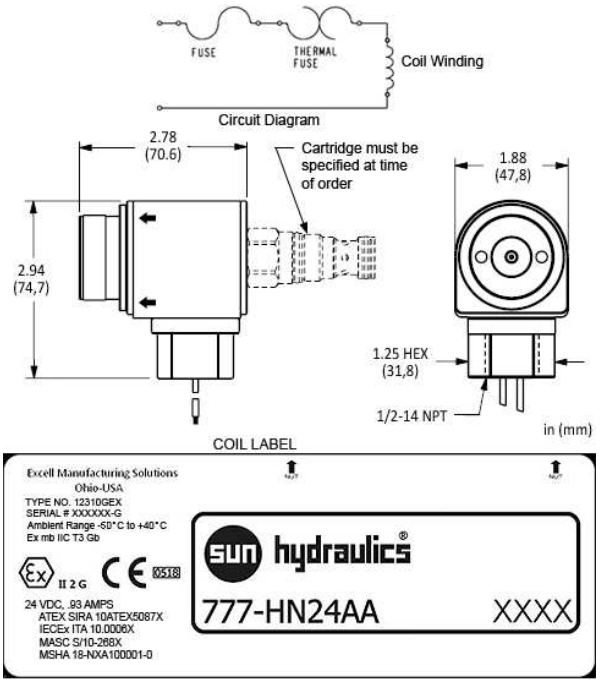


TECHNICAL DATA

Maximum Coil Temperature at 68ºF (20ºC) Ambient	218ºF (105ºC)
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	22 watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	28 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Connector Environment Rating	IP69K
Coil Nut Torque	4.5 lbf in.

USED WITH

DMDA DMDAS DNCA DNDA DNDAS DNDC DNDY DNDYS FMDA 991723001 991723002



Sun offers explosion proof coils for use in hazardous environments. Certification requires the explosion proof coil to be sold as a complete cartridge/coil assembly. Coil cannot be purchased separately. For ordering information, please see the coil option section on the applicable cartridge product page.

TECHNICAL DATA

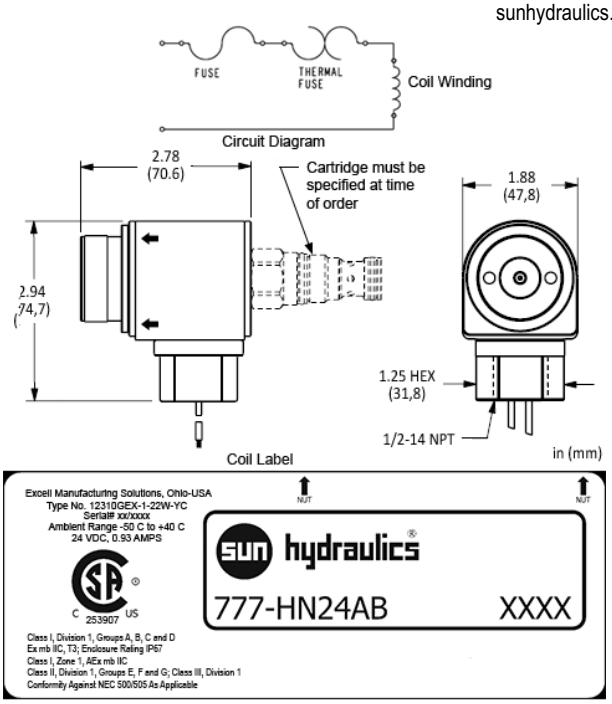
Ambient Temperature Range	-58 to 104 °F
Power Consumption (cold) - at rated voltage	22 watts
Nominal Current	0.93 amps at 68ºF (20ºC), 24 VDC
Diametric Coil Clearance Requirement	2.125 in.
Voltage/Frequency	24 VDC
Operating Voltage Range	+/- 10% nominal
Current Fuse (non-resettable)	3 amps
Thermal Fuse (non-resettable)	378 °F
Duty Cycle Rating	100 %
Connector	Twin lead 18 AWG X 10 ft. (3 m), 1/2-14 NPT female conduit connector
Connector Environment Rating	IP67
Lead Wire Rating	AWM styles 3289 150°C - 3271 125°C, 600V VW-1 LL30433 CSA CL1251 125°C or CL1503 150°C, XLPE 600V 18 AWG
Coil Nut Torque	6 - 7 lbf ft

NOTES

- Coil/cartridge assembly can be mounted in any position, however, coil orientation on cartridge assembly is critical. Arrows on coil label must face towards coil nut.
- Coil cannot be purchased separately and must be configured along with the cartridge valve. Please see the applicable cartridge product page for ordering information.
- Sun's explosion proof coil requires more clearance than 770 series coil. Sun manifolds with more than one cavity may not allow enough clearance for explosion proof coils.
- For proportional valve applications, the maximum current of 590mA has been established so a proportional valve can function optimally under a variety of ambient temperatures.

USED WITH

DAAL	DAALS	DBAL	DBALS	DFCA	DFCB	DFDA	DFDB	DFEA	DFEB
DFFA	DFFB	DLDA	DLDAS	DMDA	DMDAS	DNCA	DNDA	DNDAS	DNDC
DNDY	DNDYS	DTCA	DTDA	DTDAS	DWDA	FMDA	FMDB	FPCC	FPCH
FPFK	FPHK	HDDA	PRDL	PRDM	PRDN	PRDP	PSDL	PSDP	RBAN
RBAP									



Sun offers explosion proof coils for use in hazardous environments. Certification requires the explosion proof coil to be sold as a complete cartridge/coil assembly. Coil cannot be purchased separately. For ordering information, please see the coil option section on the applicable cartridge product page.

TECHNICAL DATA

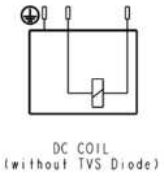
Ambient Temperature Range	-58 to 104 °F
Power Consumption (cold) - at rated voltage	22 watts
Nominal Current	0.93 amps at 68ºF (20ºC), 24 VDC
Diametric Coil Clearance Requirement	2.125 in.
Voltage/Frequency	24 VDC
Operating Voltage Range	+/- 10% nominal
Current Fuse (non-resettable)	3 amps
Thermal Fuse (non-resettable)	378 °F
Duty Cycle Rating	100 %
Connector	Twin lead 18 AWG X 10 ft. (3 m), 1/2-14 NPT female conduit connector
Lead Wire Rating	AWM styles 3289 150°C - 3271 125°C, 600V VW-1 LL30433 CSA CL1251 125°C or CL1503 150°C, XLPE 600V 18 AWG
Coil Nut Torque	6 - 7 lbf ft

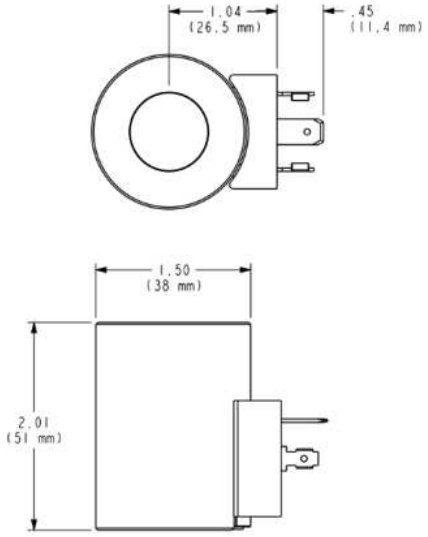
NOTES

- Coil/cartridge assembly can be mounted in any position, however, coil orientation on cartridge assembly is critical. Arrows on coil label must face towards coil nut.
- Coil cannot be purchased separately and must be configured along with the cartridge valve. Please see the applicable cartridge product page for ordering information.
- Sun's explosion proof coil requires more clearance than 770 series coil. Sun manifolds with more than one cavity may not allow enough clearance for explosion proof coils.
- For proportional valve applications, the maximum current of 590mA has been established so a proportional valve can function optimally under a variety of ambient temperatures.

USED WITH

DAAL	DAALS	DBAL	DBALS	DFCA	DFCB	DFDA	DFDB	DFEA	DFEB
DFFA	DFFB	DLDA	DLDAS	DMDA	DMDAS	DNCA	DNDA	DNDAS	DNDC
DNDY	DNDYS	DTCA	DTDA	DTDAS	DWDA	FMDA	FMDB	FPCC	FPCH
FPFK	FPHK	HDDA	PRDL	PRDM	PRDN	PRDP	PSDL	PSDP	RBAN
RBAP									



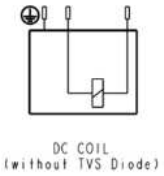


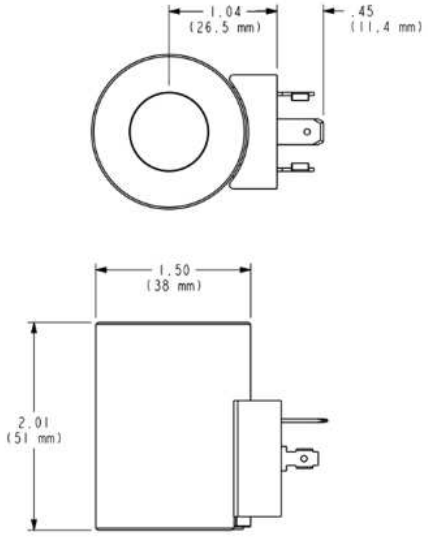
TECHNICAL DATA

Arc Suppression (TVS)	None
Maximum Ambient Temperature	104 °F
Power Consumption at 68°F (20°C) cold - at rated voltage	36.9 watts
Voltage/Frequency	12 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	3.5 - 3.9 lbf ft

USED WITH

FNUC



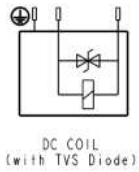


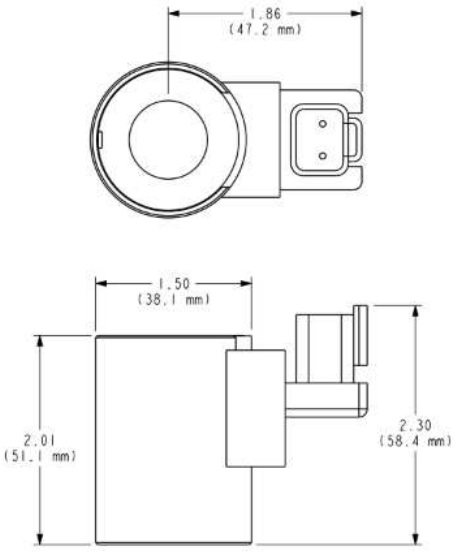
TECHNICAL DATA

Arc Suppression (TVS)	None
Maximum Ambient Temperature	104 °F
Power Consumption at 68°F (20°C) cold - at rated voltage	39.7 watts
Voltage/Frequency	24 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	3.5 - 3.9 lbf ft

USED WITH

FNUC



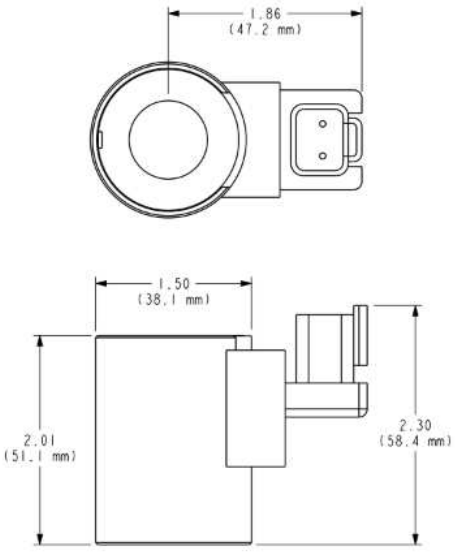


TECHNICAL DATA

Arc Suppression (TVS)	Included
Maximum Ambient Temperature	104 °F
Power Consumption at 68°F (20°C) cold - at rated voltage	36.9 watts
Voltage/Frequency	12 VDC
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	3.5 - 3.9 lbf ft

USED WITH

FNUC

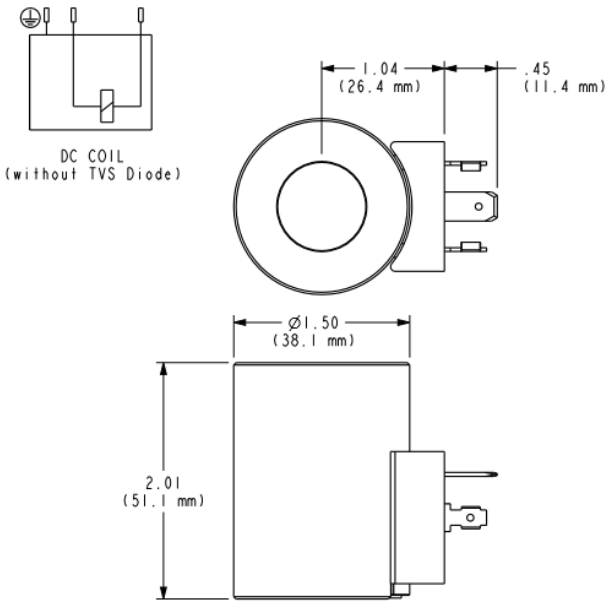


TECHNICAL DATA

Arc Suppression (TVS)	Included
Maximum Ambient Temperature	104 °F
Power Consumption at 68°F (20°C) cold - at rated voltage	39.7 watts
Voltage/Frequency	24 VDC
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	3.5 - 3.9 lbf ft

USED WITH

FNUC

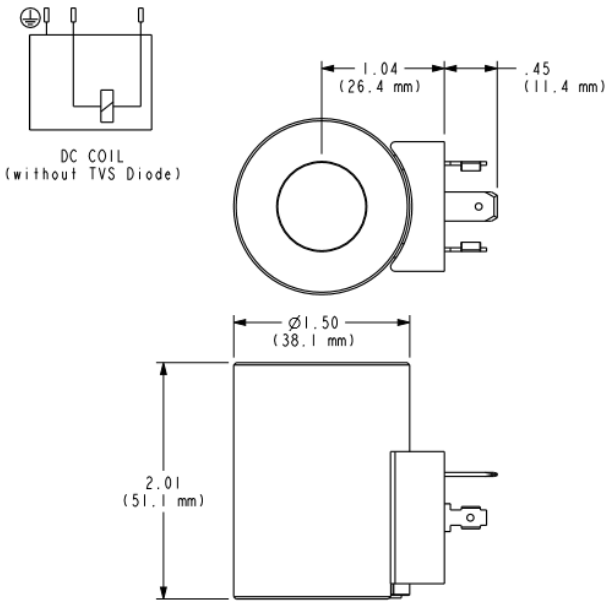


TECHNICAL DATA

Operating Temperature Range	-4 to 215 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	24 Watts
Maximum Ambient Temperature	104 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	44 lbf in.

USED WITH

DNUC

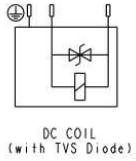


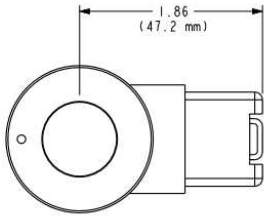
TECHNICAL DATA

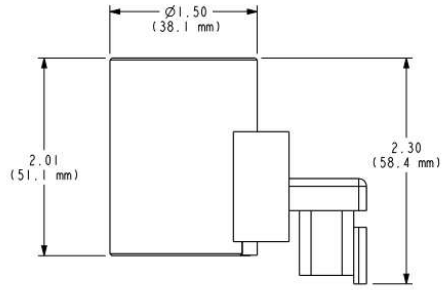
Operating Temperature Range	-4 to 215 °F
Arc Suppression (TVS)	None
Power Consumption (cold) - at rated voltage	24 Watts
Maximum Ambient Temperature	104 °F
Voltage/Frequency	24 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Coil Nut Torque	44 lbf in.

USED WITH

DNUC





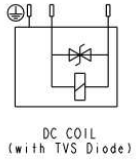


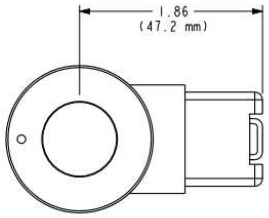
TECHNICAL DATA

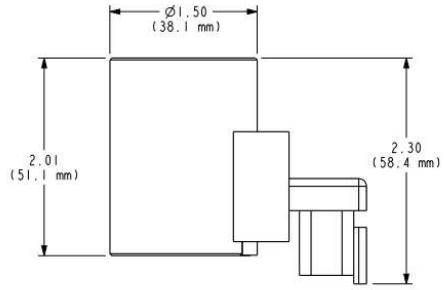
Operating Temperature Range	-4 to 215 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	24 Watts
Maximum Ambient Temperature	104 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	44 lbf in.

USED WITH

DNUC





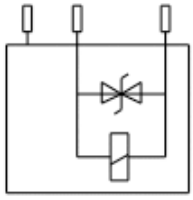


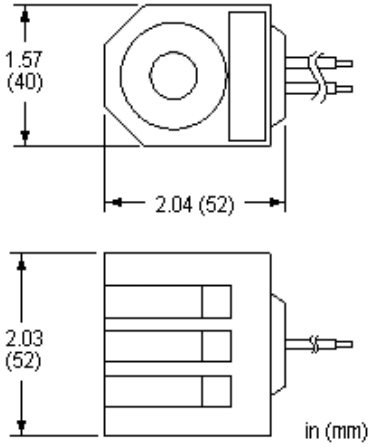
TECHNICAL DATA

Operating Temperature Range	-4 to 215 °F
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	24 Watts
Maximum Ambient Temperature	104 °F
Voltage/Frequency	24 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	44 lbf in.

USED WITH

DNUC



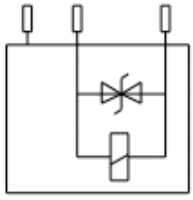


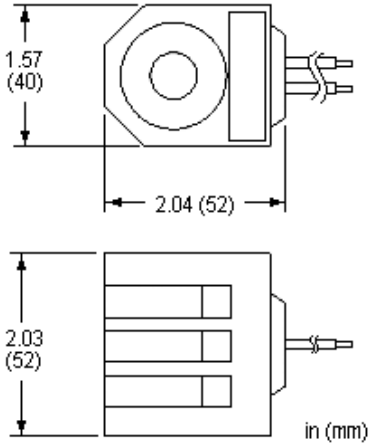
TECHNICAL DATA

Maximum Coil Temperature at 68ºF (20ºC) Ambient	221ºF (105ºC)
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	22 watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	Twin lead 18 AWG x 24 in. (610 mm)
Coil Nut Torque	44 lbf in.

USED WITH

DLUT DMUQ DMUT DNUT



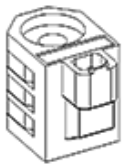


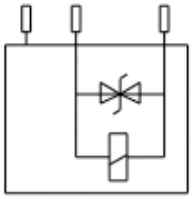
TECHNICAL DATA

Maximum Coil Temperature at 68ºF (20ºC) Ambient	221ºF (105ºC)
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	22 watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	24 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	Twin lead 18 AWG x 24 in. (610 mm)
Coil Nut Torque	44 lbf in.

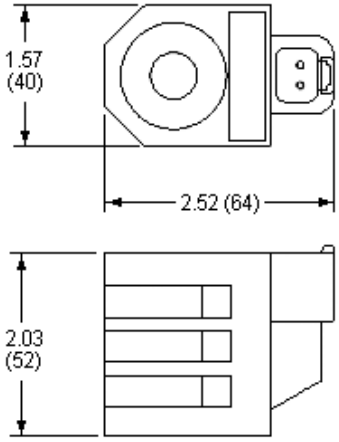
USED WITH

DLUT DMUQ DMUT DNUT





DC Coil

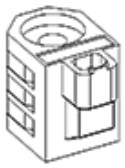


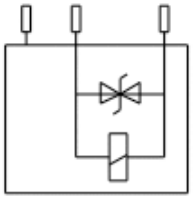
TECHNICAL DATA

Maximum Coil Temperature at 68ºF (20ºC) Ambient	221ºF (105ºC)
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	22 watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	12 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	44 lbf in.

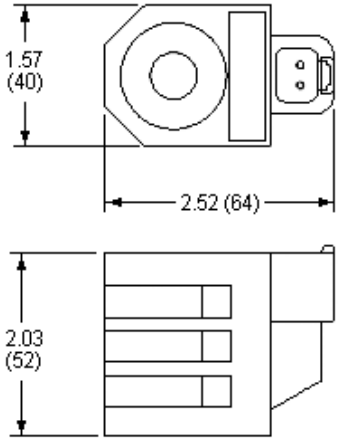
USED WITH

DLUT DMUQ DMUT DNUT





DC Coil

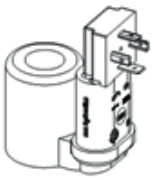


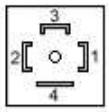
TECHNICAL DATA

Maximum Coil Temperature at 68ºF (20ºC) Ambient	221ºF (105ºC)
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	22 watts
Maximum Ambient Temperature	122 °F
Voltage/Frequency	24 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	Deutsch DT04-2P
Coil Nut Torque	44 lbf in.

USED WITH

DLUT DMUQ DMUT DNUT





DIN 43650-Form A Connector

Terminal	Function
1	Supply Common
2	+V Supply
3	Command Input
4	790-2B***-Command Common
4	790-2C***-+5V Reference
4	790-2D***-Enable Input

The Embedded Electronics Amplifier is a compact, low profile coil/controller combination for use with proportional solenoid valves. The Amplifier provides current to the coil in proportion to an input signal. Bright LED indicators on the unit provide an overview of the operating status. Setup is accomplished through Sun's Amplifier Set Up Software or the Hand Held Programmer (HHP). There is no cover to remove and no tiny pots to set. Once configured, the settings are stored in permanent memory within the unit.

TECHNICAL DATA

Supply Voltage	Equals coil voltage within +/-10%
Output Current	1200 mA
Dither Frequency	Off, 80-300 Hz, in 20 Hz increments
Operating Temperature Range	-4 - 158 °F
Analog Input Range	0-10V
Analog Input Impedance	13 Kilo-ohms
Card Function	Ground Option
Voltage/Frequency	12 VDC
Connector	ISO/DIN 43650, Form A, 4-pin
Connector Environment Rating	IP65

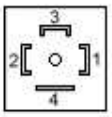
NOTES A source type input is required. A sinking type analog input will damage the amplifier.

USED WITH

FMDA	FMDB	FPCC	FPCH	FPFK	FPHK	PRDL	PRDM	PRDN	PRDP
PSDL	PSDP	RBAN	RBAP	991700	991702	991704			

24 VDC coil with embedded proportional IR amplifier, current command

snhy.com/7902B24A



DIN 43650-Form A Connector

Terminal	Function
1	Supply Common
2	+V Supply
3	Command Input
4	790-2B***-Command Common
4	790-2C***-+5V Reference
4	790-2D***-Enable Input

The Embedded Electronics Amplifier is a compact, low profile coil/controller combination for use with proportional solenoid valves. The Amplifier provides current to the coil in proportion to an input signal. Bright LED indicators on the unit provide an overview of the operating status. Setup is accomplished through Sun's Amplifier Set Up Software or the Hand Held Programmer (HHP). There is no cover to remove and no tiny pots to set. Once configured, the settings are stored in permanent memory within the unit.

TECHNICAL DATA

Supply Voltage	Equals coil voltage within +/-10%
Output Current	600 mA
Dither Frequency	Off, 80-300 Hz, in 20 Hz increments
Operating Temperature Range	-4 - 158 °F
Analog Input Range	0-20 mA
Analog Input Impedance	250 ohms
Card Function	Ground Option
Voltage/Frequency	24 VDC
Connector	ISO/DIN 43650, Form A, 4-pin
Connector Environment Rating	IP65

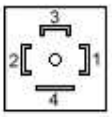
NOTES A source type input is required. A sinking type analog input will damage the amplifier.

USED WITH

FMDA	FMDB	FPCC	FPCH	FPFK	FPHK	PRDL	PRDM	PRDN	PRDP
PSDL	PSDP	RBAN	RBAP	991700	991702	991704			

24 VDC coil with embedded proportional IR amplifier, voltage command

snhy.com/7902B24V



DIN 43650-Form A Connector

Terminal	Function
1	Supply Common
2	+V Supply
3	Command Input
4	790-2B***-Command Common
4	790-2C***-+5V Reference
4	790-2D***-Enable Input

The Embedded Electronics Amplifier is a compact, low profile coil/controller combination for use with proportional solenoid valves. The Amplifier provides current to the coil in proportion to an input signal. Bright LED indicators on the unit provide an overview of the operating status. Setup is accomplished through Sun's Amplifier Set Up Software or the Hand Held Programmer (HHP). There is no cover to remove and no tiny pots to set. Once configured, the settings are stored in permanent memory within the unit.

TECHNICAL DATA

Supply Voltage	Equals coil voltage within +/-10%
Output Current	600 mA
Dither Frequency	Off, 80-300 Hz, in 20 Hz increments
Operating Temperature Range	-4 - 158 °F
Analog Input Range	0-10V
Analog Input Impedance	13 Kilo-ohms
Card Function	Ground Option
Voltage/Frequency	24 VDC
Connector	ISO/DIN 43650, Form A, 4-pin
Connector Environment Rating	IP65

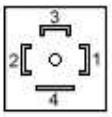
NOTES A source type input is required. A sinking type analog input will damage the amplifier.

USED WITH

FMDA	FMDB	FPCC	FPCH	FPFK	FPHK	PRDL	PRDM	PRDN	PRDP
PSDL	PSDP	RBAN	RBAP	991700	991702	991704			

24 VDC coil with embedded proportional IR amplifier, voltage command

sunhydraulics.com/model/7902C24V



DIN 43650-Form A Connector

Terminal	Function
1	Supply Common
2	+V Supply
3	Command Input
4	790-2B***-Command Common
4	790-2C***-+5V Reference
4	790-2D***-Enable Input

The Embedded Electronics Amplifier is a compact, low profile coil/controller combination for use with proportional solenoid valves. The Amplifier provides current to the coil in proportion to an input signal. Bright LED indicators on the unit provide an overview of the operating status. Setup is accomplished through Sun's Amplifier Set Up Software or the Hand Held Programmer (HHP). There is no cover to remove and no tiny pots to set. Once configured, the settings are stored in permanent memory within the unit.

TECHNICAL DATA

Supply Voltage	Equals coil voltage within +/-10%
Output Current	600 mA
Dither Frequency	Off, 80-300 Hz, in 20 Hz increments
Reference Voltage	+5V at 1mA
Operating Temperature Range	-4 - 158 °F
Analog Input Range	0-10V
Analog Input Impedance	13 Kilo-ohms
Card Function	+5V Reference Option
Voltage/Frequency	24 VDC
Connector	ISO/DIN 43650, Form A, 4-pin
Connector Environment Rating	IP65

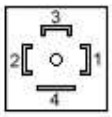
NOTES A source type input is required. A sinking type analog input will damage the amplifier.

USED WITH

FMDA	FMDB	FPCC	FPCH	FPFK	FPHK	PRDL	PRDM	PRDN	PRDP
PSDL	PSDP	RBAN	RBAP	991700	991702	991704			

24 VDC coil with embedded proportional IR amplifier, voltage command

sunhydraulics.com/model/7902D24V



DIN 43650-Form A Connector

Terminal	Function
1	Supply Common
2	+V Supply
3	Command Input
4	790-2B***-Command Common
4	790-2C***-+5V Reference
4	790-2D***-Enable Input

The Embedded Electronics Amplifier is a compact, low profile coil/controller combination for use with proportional solenoid valves. The Amplifier provides current to the coil in proportion to an input signal. Bright LED indicators on the unit provide an overview of the operating status. Setup is accomplished through Sun's Amplifier Set Up Software or the Hand Held Programmer (HHP). There is no cover to remove and no tiny pots to set. Once configured, the settings are stored in permanent memory within the unit.

TECHNICAL DATA

Supply Voltage	Equals coil voltage within +/-10%
Output Current	600 mA
Dither Frequency	Off, 80-300 Hz, in 20 Hz increments
Operating Temperature Range	-4 - 158 °F
Analog Input Range	0-10V
Analog Input Impedance	13 Kilo-ohms
Card Function	Enable Signal Option
Voltage/Frequency	24 VDC
Connector	ISO/DIN 43650, Form A, 4-pin

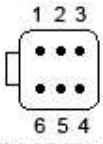
NOTES A source type input is required. A sinking type analog input will damage the amplifier.

USED WITH

FMDA	FMDB	FPCC	FPCH	FPFK	FPHK	PRDL	PRDM	PRDN	PRDP
PSDL	PSDP	RBAN	RBAP	991700	991702	991704			

12 VDC coil with embedded proportional IR amplifier, voltage command

sunhydraulics.com/model/7904A12V



DT04-6P Connector

Terminal	Function
1	+V Supply
2	Command Input
3	Supply Common
4	+5 V Reference
5	Command Common
6	Enable

The Embedded Electronics Amplifier is a compact, low profile coil/controller combination for use with proportional solenoid valves. The Amplifier provides current to the coil in proportion to an input signal. Bright LED indicators on the unit provide an overview of the operating status. Setup is accomplished through Sun's Amplifier Set Up Software or the Hand Held Programmer (HHP). There is no cover to remove and no tiny pots to set. Once configured, the settings are stored in permanent memory within the unit.

TECHNICAL DATA

Supply Voltage	Equals coil voltage within +/-10%
Output Current	1200 mA
Dither Frequency	Off, 80-300 Hz, in 20 Hz increments
Reference Voltage	+5V at 1mA
Operating Temperature Range	-20 to 70 °C
Analog Input Range	0-10V
Analog Input Impedance	13 Kilo-ohms
Card Function	All Options
Voltage/Frequency	12 VDC
Connector	Deutsch DT04-6P

NOTES A source type input is required. A sinking type analog input will damage the amplifier.

USED WITH

FMDA	FMDB	FPCC	FPCH	FPFK	FPHK	PRDL	PRDM	PRDN	PRDP
PSDL	PSDP	RBAN	RBAP	991700	991702	991704	991706003	991706006	

24 VDC coil with embedded proportional IR amplifier, current command

The Embedded Electronics Amplifier is a compact, low profile coil/controller combination for use with proportional solenoid valves. The Amplifier provides current to the coil in proportion to an input signal. Bright LED indicators on the unit provide an overview of the operating status. Setup is accomplished through Sun's Amplifier Set Up Software or the Hand Held Programmer (HHP). There is no cover to remove and no tiny pots to set. Once configured, the settings are stored in permanent memory within the unit.

TECHNICAL DATA

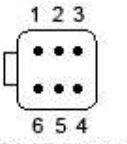
Supply Voltage	Equals coil voltage within +/-10%
Output Current	600 mA
Dither Frequency	Off, 80-300 Hz, in 20 Hz increments
Reference Voltage	+5V at 1mA
Operating Temperature Range	-4 - 158 °F
Analog Input Range	0-20 mA
Analog Input Impedance	250 ohms
Card Function	All Options
Voltage/Frequency	24 VDC
Connector	Deutsch DT04-6P

NOTES

A source type input is required. A sinking type analog input will damage the amplifier.

USED WITH

FMDA	FMDB	FPCC	FPCH	FPFK	FPHK	PRDL	PRDM	PRDN	PRDP
PSDL	PSDP	RBAN	RBAP	991700	991702	991704	991706003	991706006	



DT04-6P Connector

Terminal	Function
1	+V Supply
2	Command Input
3	Supply Common
4	+5 V Reference
5	Command Common
6	Enable

The Embedded Electronics Amplifier is a compact, low profile coil/controller combination for use with proportional solenoid valves. The Amplifier provides current to the coil in proportion to an input signal. Bright LED indicators on the unit provide an overview of the operating status. Setup is accomplished through Sun's Amplifier Set Up Software or the Hand Held Programmer (HHP). There is no cover to remove and no tiny pots to set. Once configured, the settings are stored in permanent memory within the unit.

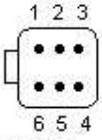
TECHNICAL DATA

Supply Voltage	Equals coil voltage within +/-10%
Output Current	600 mA
Dither Frequency	Off, 80-300 Hz, in 20 Hz increments
Reference Voltage	+5V at 1mA
Operating Temperature Range	-4 - 158 °F
Analog Input Range	0-10V
Analog Input Impedance	13 Kilo-ohms
Card Function	All Options
Voltage/Frequency	24 VDC
Connector	Deutsch DT04-6P

NOTES A source type input is required. A sinking type analog input will damage the amplifier.

USED WITH

FMDA	FMDB	FPCC	FPCH	FPFK	FPHK	PRDL	PRDM	PRDN	PRDP
PSDL	PSDP	RBAN	RBAP	991700	991702	991704	991706003	991706006	



DT04-6P Connector

Terminal	Function
1	+ V Supply
2	No Connection
3	Supply Common
4	No Connection
5	No Connection
6	No Connection

The Power Saver is a compact, low profile coil/controller combination for use with switching solenoid valves. The Power Saver controls current to the coil to minimize power consumption. Bright LED indicators on the unit provide an overview of the operating status. Setup is accomplished through Sun's Amplifier Set Up Software or the Hand Held Programmer (HHP). There is no cover to remove and no tiny pots to set. Once configured, the settings are stored in permanent memory within the unit. The Power Saver is intended for use on continuous duty applications (minimum switches between on and off).

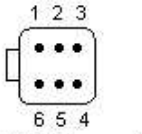
TECHNICAL DATA

Supply Voltage	Equals coil voltage within +/-10%
Operating Temperature Range	-4 - 158 °F
Analog Input Impedance	13 Kilo-ohms
Card Function	Power Saver
Output Current for 6 seconds (max.)	2000 mA
Output Current for holding (max.)	1600 mA
Voltage/Frequency	12 VDC
Connector	Deutsch DT04-6P

NOTES A source type input is required. A sinking type analog input will damage the amplifier.

USED WITH

DAAL	DAALS	DBAL	DBALS	DFDA	DLDA	DLDAS	DMDA	DMDAS	DNCA
DNDA	DNDAS	DNDC	DNDY	DNDYS	DTCA	DTDA	DWDA	HDDA	991700
991702	991704	991706003	991706006						



DT04-6P Connector

Terminal	Function
1	+ V Supply
2	No Connection
3	Supply Common
4	No Connection
5	No Connection
6	No Connection

The Power Saver is a compact, low profile coil/controller combination for use with switching solenoid valves. The Power Saver controls current to the coil to minimize power consumption. Bright LED indicators on the unit provide an overview of the operating status. Setup is accomplished through Sun's Amplifier Set Up Software or the Hand Held Programmer (HHP). There is no cover to remove and no tiny pots to set. Once configured, the settings are stored in permanent memory within the unit. The Power Saver is intended for use on continuous duty applications (minimum switches between on and off).

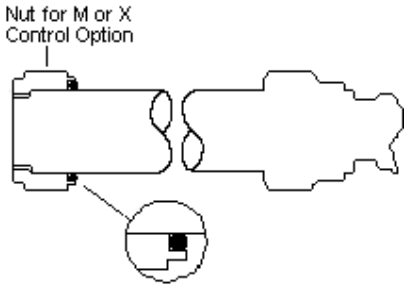
TECHNICAL DATA

Supply Voltage	Equals coil voltage within +/-10%
Operating Temperature Range	-4 to 158 °F
Analog Input Impedance	13 Kilo-ohms
Card Function	Power Saver
Output Current for 6 seconds (max.)	2000 mA
Output Current for holding (max.)	1600 mA
Voltage/Frequency	24 VDC
Connector	Deutsch DT04-6P

NOTES A source type input is required. A sinking type analog input will damage the amplifier.

USED WITH

DAALS	DBALS	DFDA	DLDAS	DMDA	DMDAS	DNCA	DNDA	DNDAS	DNDC
DNDY	DNDYS	DTCA	HDDA	991700	991702	991704	991706003	991706006	



Sun coil seal kits for full flow and proportional solenoid operated cartridges contain all replacement seals, a replacement coil nut and installation instructions. Please note: All seals contained in a coil seal kit are constructed of Viton.

USED WITH

DMDA	DNCA	DNDA	DNDC	DNDY	DTCA	FMDA	FMDB	FPCC	FPCH
FPFK	FPHK	HDDA	PRDL	PRDM	PRDN	PRDP	PSDL	PSDP	RBAN
RBAP									

Sun's Hand Held Programmer (HHP) provides a convenient method to access configuration settings in Sun's 790 Series Embedded Digital Proportional Valve Amplifier. Simply plug the adapter cable into the programmer and connect the infrared-end into the embedded electronics coil and it is ready to use. The programmer is lightweight and compact for easy handling.

TECHNICAL DATA

Supply Voltage	9 VDC (requires standard 9 Volt battery/format EN22, 6LR61, 6AM6)
Operating Temperature Range	0 to 70 °C

USED WITH

7902B12A	7902B12V	7902B24A	7902B24V	7902C12V	7902C24V	7902D12A	7902D24A	7902D24V	7902E12V
7902E24V	7902F12V	7902F24V	7904A12A	7904A12V	7904A24A	7904A24V	7904E12V	7904E24V	7904F12V
7904F24V	991702	991704							

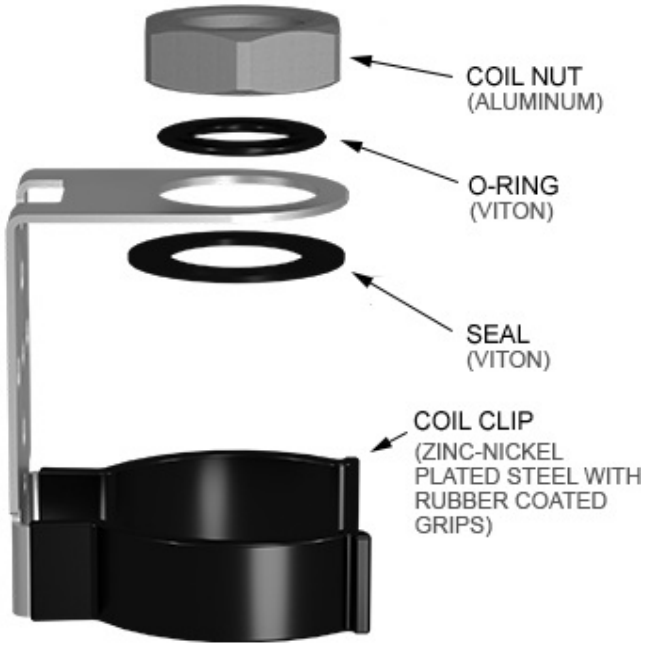
Sun's USB Infrared Cable Adapter provides a convenient interface between Sun's 790 Series Embedded Digital Proportional Valve Amplifier and a Windows based PC. Included with the Cable Adaptor is a USB memory key containing Sun's Amplifier Set Up Software.

TECHNICAL DATA

Supply Voltage	USB port powered
Operating Temperature Range	-4 - 140 °F
Cable Length	6 ft

USED WITH

7902B12A 7902B12V 7902B24A 7902B24V 7902C12V 7902C24V 7902D12A 7902D24A 7902D24V 7902E12V 7902E24V 7902F12V 7902F24V 7904A12A 7904A12V 7904A24A 7904A24V 7904E12V 7904E24V 7904F12V 7904F24V

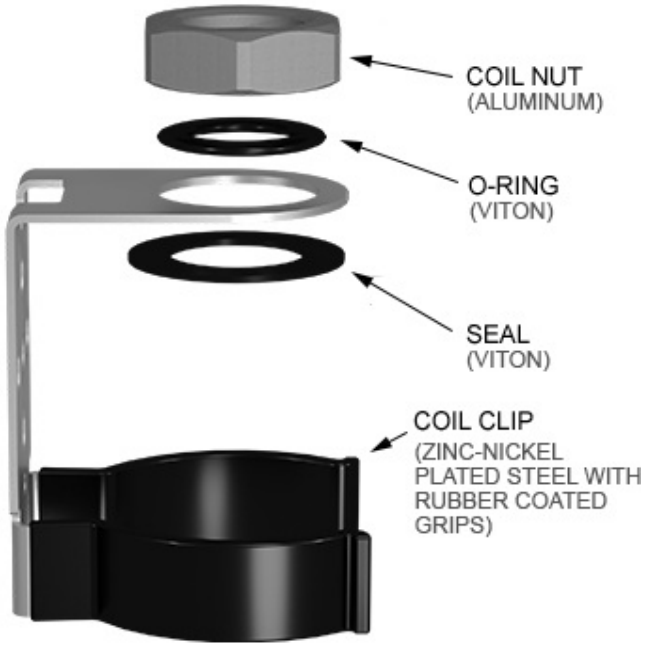


This coil clip kit is designed to attach Sun's XMD Series Driver to the FLeX high-power coil.

NOTES The coil clip included in this kit can also be used to attach to 770 Series coils. For 770 Series coils, the coil nut, o-ring, and seal included in this kit are not needed. Purchase 753073 for coil clip by itself.

USED WITH

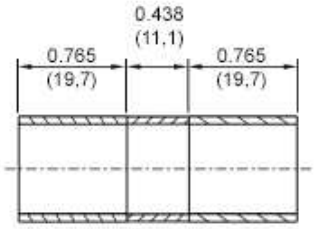
XMD-01 XMD-02



This coil clip kit is designed to attach Sun's XMD Series Driver to the FLeX low-power coil.

USED WITH

991711300 991711600 991712300 991712600 991713030 991713060 XMD-01 XMD-02

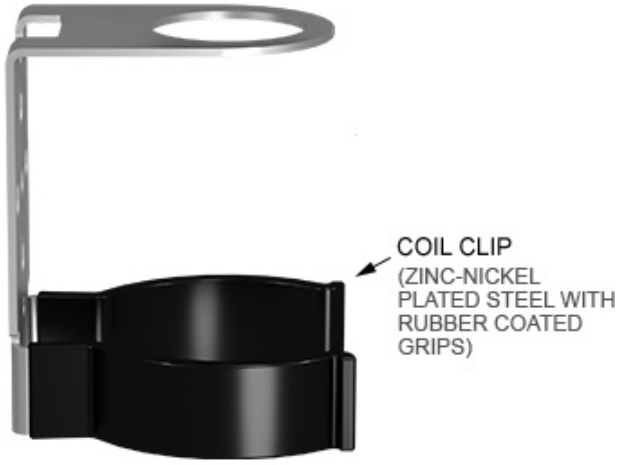


in (mm)

This kit converts 770-series (19mm) coils to be compatible with 740-series (16mm) coil valves.

TECHNICAL DATA

Material	Zinc Nickel Plated Steel

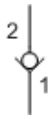


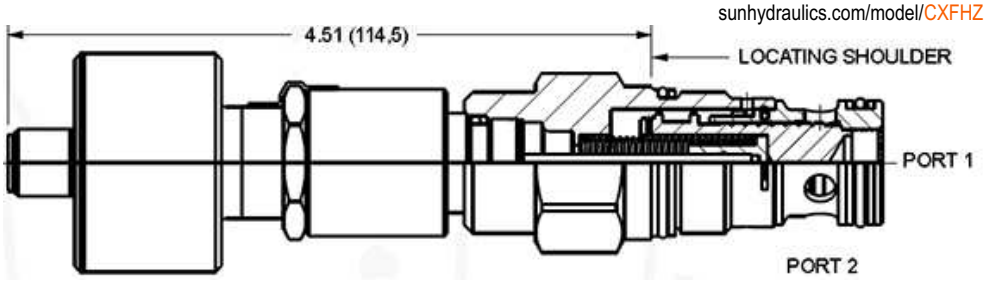
This coil clip is designed to attach Sun's XMD Series Driver to the 770 Series coils. Because it is compatible with the existing 770 series nut, no additional hardware is required.

NOTES This coil clip attaches to both 740 Series high-power and 770 Series coils. For 740 Series high-power coil, purchase kit 991-740-001 which includes required coil nut, o-ring, and seal.

USED WITH

770212	770214	770214N	770224	770224N	770228	770714	770724	770912	770914
770914N	770924	770924N	770928						





Free-flow, nose-to-side check valves are on/off circuit components that allow free flow from the inlet (port 1) to the outlet (port 2) and block flow in the opposite direction.

This valve incorporates a position switch to provide confirmation that the valve is in the transition position or seated (closed).

TECHNICAL DATA

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

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Transition leakage at 110 SUS (24 cSt)	2 in³/min.@1000 psi
Seal kit - Cartridge	Buna: 990203007
Seal kit - Cartridge	Viton: 990203006

CONFIGURATION OPTIONS

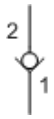
Model Code Example: CXFHZCN

CRACKING PRESSURE (C)	SEAL MATERIAL (N)
C 30 psi (2 bar)	**N** Buna-N
A 4 psi (0,3 bar)	**V** Viton

Free flow nose to side check valve with position switch

SERIES 3 / CAPACITY: 60 gpm / CAVITY: T-16A

sunhydraulics.com/model/CXHHZ



Free-flow, nose-to-side check valves are on/off circuit components that allow free flow from the inlet (port 1) to the outlet (port 2) and block flow in the opposite direction.

This valve incorporates a position switch to provide confirmation that the valve is in the transition position or seated (closed).

TECHNICAL DATA

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

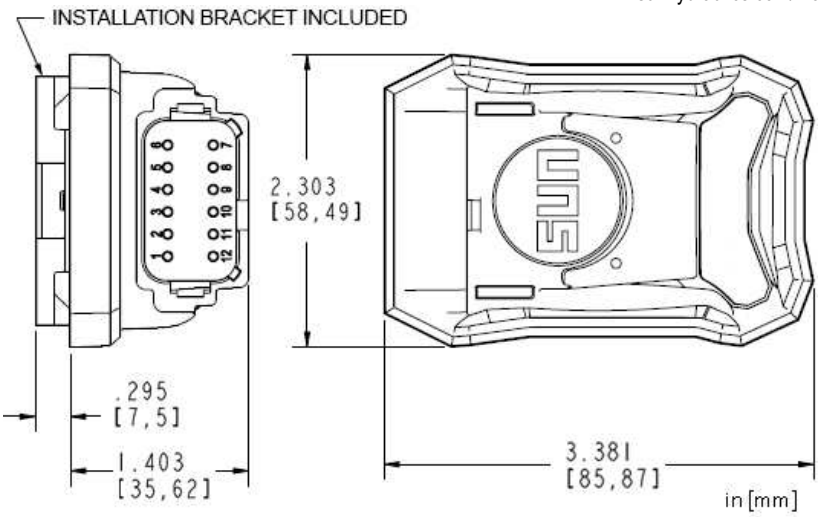
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Transition leakage at 110 SUS (24 cSt)	2 in^3/min.@1000 psi
Seal kit - Cartridge	Buna: 990016007
Seal kit - Cartridge	Polyurethane: 990016002
Seal kit - Cartridge	Viton: 990016006

CONFIGURATION OPTIONS

Model Code Example: CXHHZCN

CRACKING PRESSURE	(C)
C 30 psi (2 bar)	
A 4 psi (0,3 bar)	

SEAL MATERIAL	(N)
N Buna-N	
V Viton	



Terminal	Function
1	CAN_LO
2	CAN_HI
3	GND (Output & 5Vref)
4	No Connection
5	GND (Output & 5Vref)
6	PWM Output, Coil A

Terminal	Function
7	Supply GND
8	Supply PWR
9	Enable
10	+5Vref
11	Universal Input 1
12	No Connection

The XMD module is an electro-hydraulic driver for use with mobile and industrial hydraulic equipment. It is configurable using Sun's free CANpoint XMD Configuration Software and a CAN-to-USB interface cable connected to a computer or via the XMD Mobile app. The XMD driver can control a variety of electrically operated hydraulic actuators used in applications for on- and off-highway equipment including but not limited to agriculture, forestry, construction, marine, earth moving, and material handling. Tuned for optimal flow and pressure control using Sun valves, the XMD driver delivers repeatable and reliable results for your demanding applications.

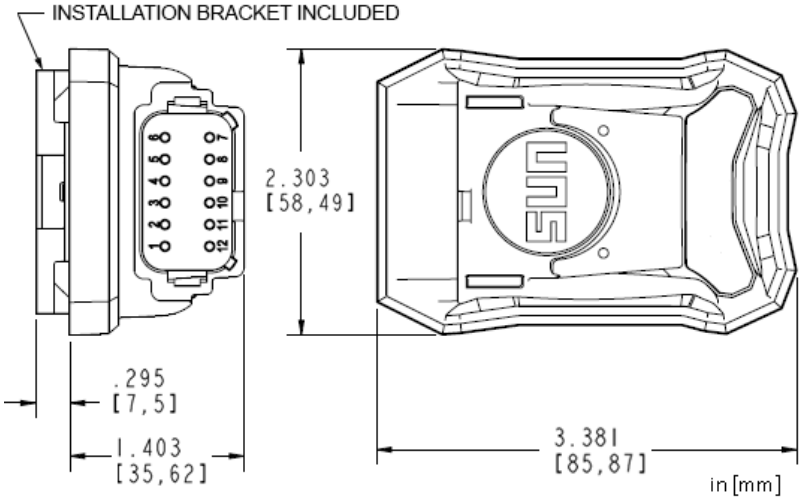
TECHNICAL DATA

Supply Voltage	9-32 VDC
Number of Outputs	1
Output Current	0 to 3000 mA
Dither Frequency	33-500 Hz
Number of Universal Inputs	1
Input Range	0-5V, 0-10V, 4-20 mA, digital, pulse (60 Hz-10 kHz), PWM (60 Hz-10 kHz), resistive (0-100 kΩ)
Reference Voltage	5 Vdc, ±0.1 Vdc (250 mA max)
Operating Temperature Range	-40 - 85 °C
Vibration	33.3 Hz 6.8g Peak (Spec: S-367 Section 11.0)
Shock	49g Peak (Spec: S-367 Section 12.0)
U.S. Patent #	Pending

NOTES Installation bracket and mounting hardware are included. Coil clips for high and low-power FLeX Series coils are sold separately.

USED WITH

991711300	991711600	991712300	991712600	991713030	991713060	991720300	991720600	991721300	991721600
991722	991723001	991723002	991728	991740001	991740002	991770001			



Terminal	Function
1	CAN_LO
2	CAN_HI
3	GND (Output & 5Vref)
4	PWM Output, Coil B
5	GND (Output & 5Vref)
6	PWM Output, Coil A

Terminal	Function
7	Supply GND
8	Supply PWR
9	Enable
10	+5Vref
11	Universal Input 1
12	Universal Input 2

The XMD module is an electro-hydraulic driver for use with mobile and industrial hydraulic equipment. It is configurable using Sun's free CANpoint XMD Configuration Software and a CAN-to-USB interface cable connected to a computer or via the XMD Mobile app. The XMD driver can control a variety of electrically operated hydraulic actuators used in applications for on- and off-highway equipment including but not limited to agriculture, forestry, construction, marine, earth moving, and material handling. Tuned for optimal flow and pressure control using Sun valves, the XMD driver delivers repeatable and reliable results for your demanding applications.

TECHNICAL DATA

Supply Voltage	9-32 VDC
Number of Outputs	2
Output Current	0 to 3000 mA
Dither Frequency	33-500 Hz
Number of Universal Inputs	2
Input Range	0-5V, 0-10V, 4-20 mA, digital, pulse (60 Hz-10 kHz), PWM (60 Hz-10 kHz), resistive (0-100 kΩ)
Reference Voltage	5 Vdc, ±0.1 Vdc (250 mA max)
Operating Temperature Range	-40 - 85 °C
Vibration	33.3 Hz 6.8g Peak (Spec: S-367 Section 11.0)
Shock	49g Peak (Spec: S-367 Section 12.0)
U.S. Patent #	Pending

NOTES Installation bracket and mounting hardware are included. Coil clips for high and low-power FLeX Series coils are sold separately.

USED WITH

991711300	991711600	991712300	991712600	991713030	991713060	991720300	991720600	991721300	991721600
991722	991723001	991723002	991728	991740001	991740002	991770001			

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