

**canfield
connector**

8000 SERIES

REED & ELECTRONIC SENSORS
FOR ROUND, TIE-ROD, OR
EXTRUDED CYLINDERS

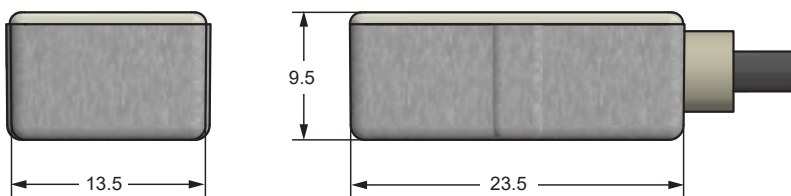
GENERAL DESCRIPTION

The Canfield Connector 8000 Series Reed and Electronic sensors are compact units designed for sensing applications on round cylinders from 9/16" - 4" and tie-rod pneumatic cylinders from 3/4" - 8" bore. These sensors offer a wide voltage range from 0-120 VAC/VDC 50/60 Hz and high current capacity up to 0.5 Amps. They include high intensity indicator lights and a wide viewing angle. The sensor's small package can fit easily on the smallest cylinder without appearing too large. The Series 8000's design promotes ease of installation with a tight fit. Options include 9ft. PVC, the 8mm quick connect male pigtail, or the Dual Sensors with 12mm quick connect male pigtail.

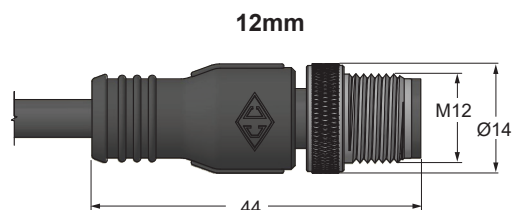
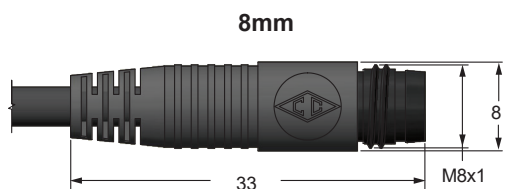


DIMENSIONAL DATA

All dimensions are in millimeters unless otherwise noted.

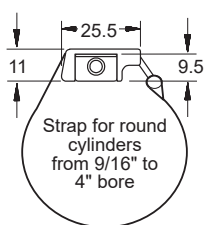


CONNECTION OPTION

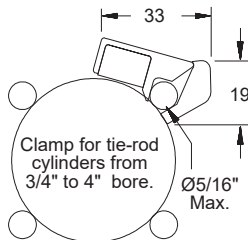


MOUNTING / CLAMP STYLES

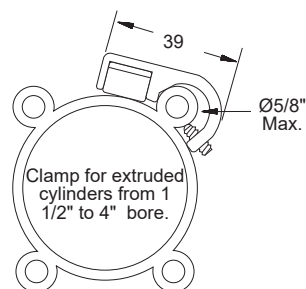
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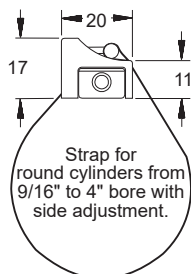
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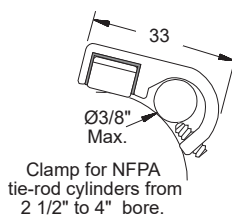
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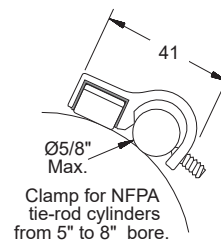
STYLE: A



STYLE: B



STYLE: C



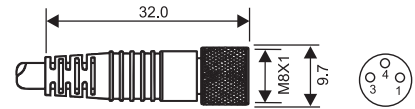


TECHNICAL DATA

Switch Type / Tech. Specs.	See Ordering Information [†]
Sensitivity / Orientation	Reed / Electronic: 85 Gauss Parallel (measured from sensor surface)
Shock	Up to 30G (11ms) Reed Only (not applicable for electronics)
Vibration	Up to 20G (10-55 Hz) Reed only
Materials	Cable: PVC House: PA
Temperature Range	-20° to +80°C
Environmental Protection	Designed for IP 65 / NEMA 4, IP 67 / NEMA 6 available on request
Cable Diameter	3.7mm
Wire Gauge	24 AWG standard

(ADDITIONAL) MATING CORDSETS / PIN CONFIGURATION

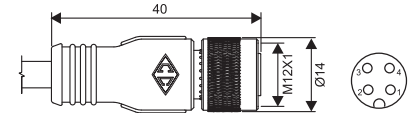
8mm female molded locking connector



Brown = Pin 1
Blue = Pin 3
Black = Pin 4

Order P/N:
RC08-AFM030-0120C10A (2m length)
RC08-AFM030-0150C10A (5m length)

12mm female molded locking connector



Brown = Pin 1
White = Pin 2
Blue = Pin 3
Black = Pin 4

Order P/N:
RC12-AFM040-0120C10A (2m length)
RC12-AFM040-0150C10A (5m length)

ORDERING INFORMATION

Mounting / Clamp Styles

- 0 - Universal round cylinder clamp
- 1 - No clamp
- 2 - Universal tie-rod clamp
- 3 - Extruded cylinder clamp
- A - Side adjust round cylinder clamp
- B - NFPA 2 1/2" - 4" tie-rod cylinder clamp
- C - NFPA 5" - 8" tie-rod cylinder clamp

Connection Options

- 0 - 9 ft PVC cable
- 1 - 8mm quick connect male pigtail*
- 8 - Dual Sensors w/12mm quick connect male pigtail*

*Mates with cordsets shown above

8 1 0 - 0 0 -

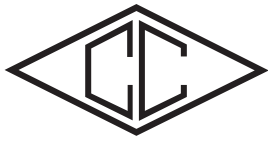
Switch Type [†]	Description	Function	Switching Voltage	Switching Current	Switching Power	Voltage Drop	Magnetic Sensitivity
01	Reed Switch	Normally Open SPST	0 - 120V AC/DC	0.5 Amps Max.	10 watts Max.	0 Volts	85 Ga.
02	Reed Switch & Red LED	Normally Open SPST	5 - 120V AC/DC	0.025 Amps Max. 0.001 Amps Min.	3 watts Max.	6.0 Volts	85 Ga.
04	Reed Switch, Red LED & MOV	Normally Open SPST	5 - 120V AC/DC	0.5 Amps Max. 0.005 Amps Min.	10 watts Max.	3.0 Volts	85 Ga.
31	Electronic for Reed Magnet, Red LED & Sourcing	Normally Open PNP	6 - 24 VDC	0.3 Amps Max.	7.2 watts Max.	.5 Volts	85 Ga.
32	Electronic for Reed Magnet, Red LED & Sinking	Normally Open NPN	6 - 24 VDC	0.3 Amps Max.	7.2 watts Max.	.5 Volts	85 Ga.



Consult factory for available versions listed by Canadian Standards Association for use with certified electrical equipment.

Ordering Example: 810-000-002

Universal round cylinder clamp, 9ft PVC cable, reed switch with LED, SPST, normally open, 5 - 120V AC/DC



canfield connector
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SERIES 8000 INSTALLATION GUIDE

Installation Tips

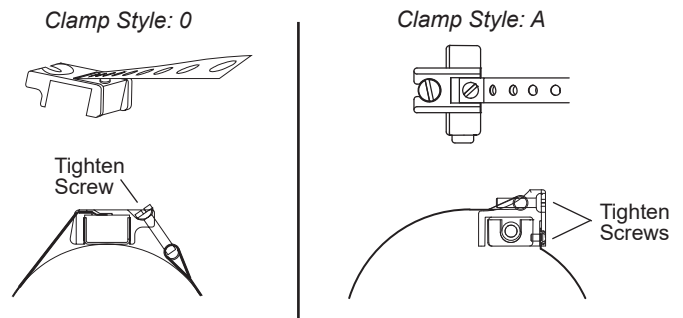
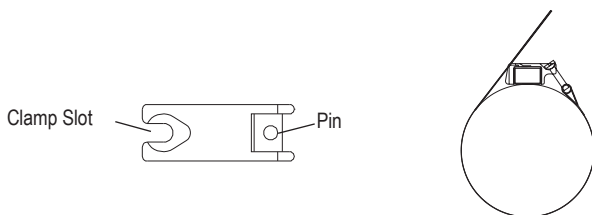
1. Current & voltage demands of the load must NOT exceed the current & voltage ratings of the selected switch (shown on the enclosed wiring diagram). Failure to use proper load will ruin the switch.
2. Two wire versions can NOT be connected directly across the power supply without a series load. Failure to use a series load will damage the switch and possibly the power supply.
3. Never test switch with a filament light bulb as a load. Severe inrush currents will impair the switch or cause premature failure.
4. There are three types of loads: resistive (PC or PLC) • capacitive (long wire runs) • inductive (solenoids)
5. The shorter the wire runs, the lower the capacitive load and the longer the switch life.
6. Always keep the area around the switch clean and free from potentially magnetic field-carrying debris. The switches actuate on magnetic fields produced from the cylinder position. Stray magnetism can give unwanted switch actuation or change the switch point.
7. When using reed switches to actuate a solenoid, always use a surge suppression version and/or Canfield MPC solenoid valve surge suppression connectors. Without it, large inductive spikes can severely limit switch life expectancy.
8. Use the switch to indicate end of physical stroke. Do not rely on switch alone to stop cylinder travel.
9. Be sure the sensing area of the switch is installed completely against the cylinder wall.
10. Some Reed and Electronic switches are equipped with indicator lights. Their light always depicts the on state of the switch. On these versions, the two wire hook-up necessitates a minimum load current rating which must be enough to light the LED (@ 0.005 Amps). Three wire versions take no minimum load current rating to light the LED.

Installation Instructions

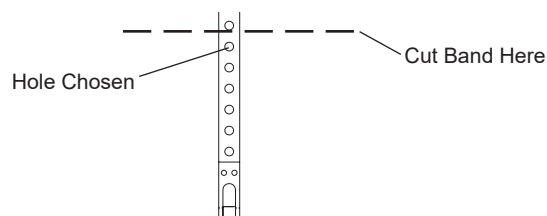
1. Connect Switch to the cylinder as shown below, according to proper clamp style. Lightly tighten clamp only, so as to be able to adjust sensor position on cylinder.
2. Connect Wiring as per enclosed Diagram.
3. While operating cylinder, adjust sensor to desired position. Firmly secure clamp assembly, once desired results are achieved.

Round Cylinder Mechanical Installation

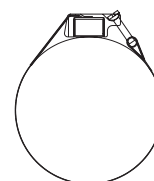
1. Start screw 2 - 3 turns into barrel nut on end of band assembly.
2. Place screw head into clamp slot and wrap band tightly around cylinder, inserting pin into nearest hole on band as shown below.
4. a) Remove screw head from clamp slot. Insert cut end of band into slot at rear of clamp. Place chosen hole over pin and bend band firmly down with thumb.



3. Choose hole in band assembly that fits to the cylinder size. Cut the band midway between the above adjacent hole.



- b) Wrap band around cylinder barrel and re-insert screw head into clamp. Position switch on cylinder and tighten.
Do not over tighten. Over tightening can cause damage to the switch and/or cylinder.



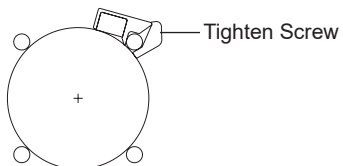
Tighten only enough to keep the switch/clamp assembly from sliding on the cylinder.



Tie-Rod Mechanical Installation

1. Position switch on cylinder with clamp over tie-rod as shown, and tighten screw.

Clamp Styles: 2, 3, B, C



WARNING: Do not use in life or limb threatening applications. Severe injury could result.

Test the switches on your cylinder first as Canfield Connector has designed the switch to be used well within the magnetic gauss ratings of most cylinder manufacturers. Canfield Connector takes no liability for improper cylinder design or assembly.

Technical Data

- Temperature Range: Operational from -20° to +80°C
- Shock: Operational up to 30G (11 ms.) reeds only. Not applicable for electronic
- Vibration: Operational up to 20G (10 - 55 Hz) reeds only. Not applicable for electronic
- Sensitivity and orientation: 85 gauss parallel (standard minimum required for proper operation, as measured on sensor surface. Size of sensing area depends on size and strength of magnet and thickness of cylinder wall
- Most versions designed to meet NEMA 6/IP67 specifications
- Note: Not compatible with alcohol based fluids. Contact factory for suitable replacement

Trouble Shooting Notes:

Problem

Solution

Reed Switch Models

Reed Switch works but LED does not light

1. Check current draw of load. It must be > 5 mA for LED to light.
2. Check polarity: Refer to wiring diagram if using DC power supply.

Reed switch sticks in closed position.

1. Check current draw, power/VA and voltage of load and compare with specs of the appropriate model sensor. These can not be exceeded.
2. Voltage/Current spikes may be excessive for your particular load. External transient suppression may be required.
3. Long wire runs (greater than 25') can cause capacitance build-up and sticking will result. Consult factory for solution.

Current or voltage leakage when reed switch is off.

1. Check current, power/VA and voltage rating of load and compare with specs of appropriate model sensor. Those can not be exceeded.
2. Reed element was damaged. Consult factory.

Reed switch will not turn on.

1. Check magnet strength on surface of sensor. It must be >85 Gauss.
2. Switch is damaged. Consult factory.
3. Check for proper wiring.

Reed switch turns on more than once as magnet passes beneath it.

1. Check for proper magnet polarity. The poles must be parallel to the switch as shown in the wiring diagram.
2. Check for dead spots on the magnet if polarity is correct.

Electronic Models

Electronic switch stays on always.

1. Power supply exceeds 24 VDC. Regulate if possible.
2. Switch is wired incorrectly. Check wiring diagram.
3. Switch was damaged possibly by transients, or excessive current draw. Consult factory.

Electronic switch will not turn on.

1. Check magnet strength on surface of sensor. Check chart for sensitivity.
2. Check for proper wiring.
3. Switch is damaged. Consult factory.

Electronic switch turns on more than once as magnet passes beneath it.

1. Check polarity of the magnet. Poles should be oriented as shown in the wiring diagram.
2. Check for dead spots on the magnet if polarity is correct.

Current or voltage leakage when Electronic switch is off.

1. Check current, and voltage rating of load and compare with specs of appropriate model sensor. Those can not be exceeded.
2. Check for proper wiring.
3. Electronic element was damaged. Consult factory.

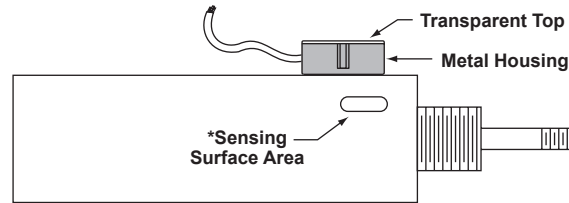
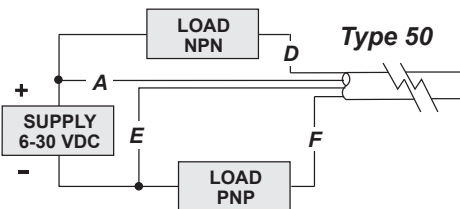
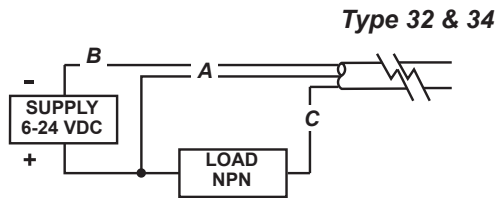
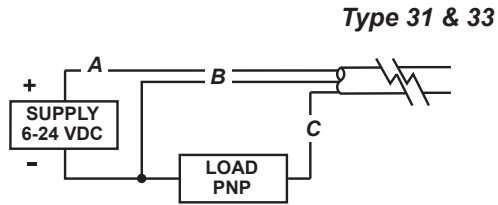
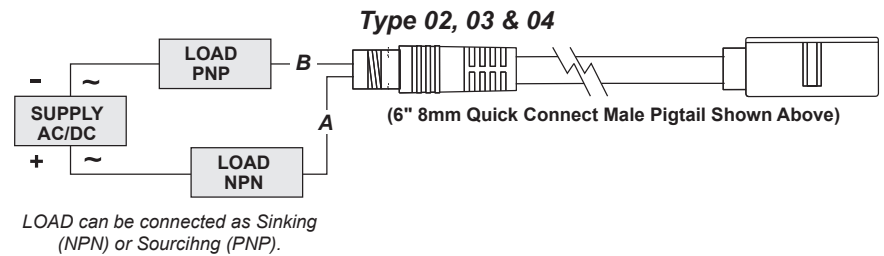
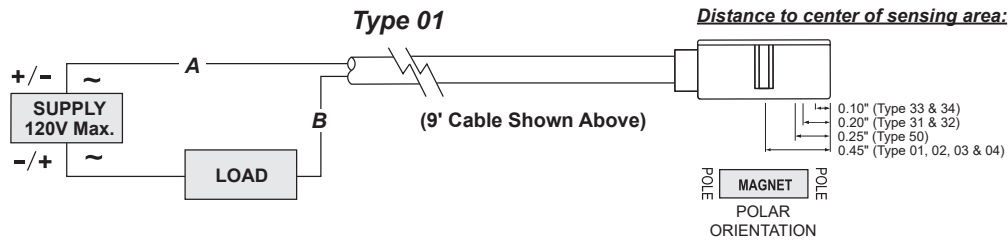
1 year warranty

All products manufactured by Canfield Connector are warranted by Canfield Connector to be free of defects in material and workmanship for a period of one year from the purchase date. Canfield Connector's obligation under this warranty is limited to repair or replacement of the defective product or refund of the purchase price paid solely at the discretion of Canfield Connector and provided such defective product is returned to Canfield Connector freight prepaid and upon examination by Canfield Connector such product is found defective. This warranty shall be void in the event that product has been subject to misuse, misapplication, improper maintenance, or tampering. This warranty is expressed in lieu of all other warranties, expressed or implied from Canfield Connector representatives or employees.



SERIES 8000 TYPE 01, 02, 03, 04, 31, 32, 33, 34 & 50

Wiring Diagram



*Size of sensing area depends upon size and strength of magnet and thickness of cylinder wall.

Pins	8mm		12mm	
	Male	Female	Male	Female
3 Pin				
4 Pin (Type 50)				

WIRE COLOR CODE		
	9' Cable	6" 8mm & 12mm Connector
A	BRN	BRN = PIN 1
B	WHT	BLU = PIN 3
C	GRN	BLK = PIN 4
D	BLK	BLK = PIN 4
E	BLU	BLU = PIN 3
F	WHT	WHT = PIN 2

Type	Description	Function	Switching Voltage	Switching Current	Switching Power	Voltage Drop	** Magnetic Sensitivity
01	Reed Switch	Normally Open	0 - 120V AC/DC	0.5 Amps Max.	10 watts Max.	0 Volts	85 Ga.
02	Reed Switch & LED	SPST Normally Open	5 - 120V AC/DC	0.025 Amps Max. 0.001 Amps Min.	3 watts Max.	6.0 Volts	85 Ga.
03	Reed Switch, LED & MOV	SPST Normally Open	5 - 120V AC/DC	0.5 Amps Max. 0.005 Amps Min.	10 watts Max.	3.5 Volts	120 Ga.
04	Reed Switch, LED & MOV	SPST Normally Open	5 - 120V AC/DC	0.5 Amps Max. 0.005 Amps Min.	10 watts Max.	3.0 Volts	85 Ga.
31	Electronic for Reed Magnet, LED & Sourcing	Normally Open (PNP)	6 - 24 VDC	0.3 Amps Max.	7.2 watts Max.	.5 Volts	85 Ga.
32	Electronic for Reed Magnet, LED & Sinking	Normally Open (NPN)	6 - 24 VDC	0.3 Amps Max.	7.2 watts Max.	.5 Volts	85 Ga.
33	Electronic for Reed Magnet, LED & Sourcing	Normally Open (PNP)	6 - 24 VDC	0.3 Amps Max.	7.2 watts Max.	.5 Volts	40 Ga.
34	Electronic for Reed Magnet, LED & Sinking	Normally Open (NPN)	6 - 24 VDC	0.3 Amps Max.	7.2 watts Max.	.5 Volts	40 Ga.
50	Electronic for Reed Magnet, LED & Sinking or Sourcing	Normally Open (NPN or PNP)	6 - 30 VDC	0.2 Amps Max.	6 watts Max.	1.5 Volts	25 Ga.

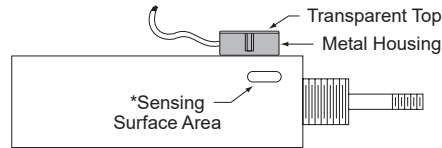
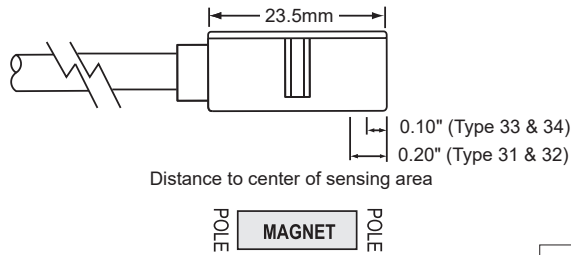
**Minimum Gauss rating required for proper operation as measured at center of sensing area on cylinder surface.

Power Supply Polarity MUST be Observed for Proper Operation (except Type 01).

WARNING: Do not exceed ratings. Permanent damage to sensor may occur.

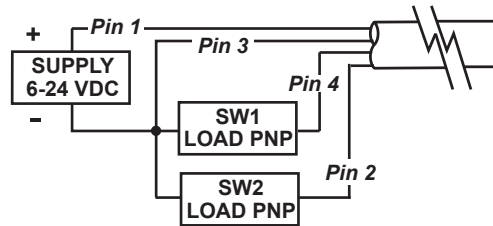
SERIES 8000 DUAL SENSORS TYPE 31, 32, 33 & 34

Wiring Diagram

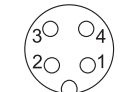
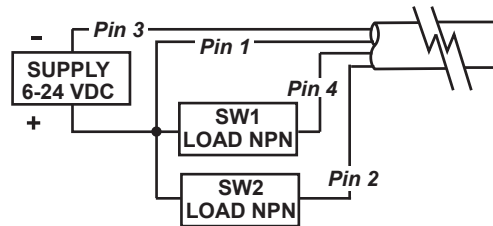


*Size of sensing area depends upon size and strength of magnet and thickness of cylinder wall.

Type 31 & 33



Type 32 & 34



Type	Description	Function	Switching Voltage	Switching Current	Switching Power	Voltage Drop	** Magnetic Sensitivity
31	Electronic for Reed Magnet, LED & Sourcing	Normally Open (PNP)	6 - 24 VDC	0.3 Amps Max.	7.2 watts Max.	.5 Volts	85 Ga.
32	Electronic for Reed Magnet, LED & Sinking	Normally Open (NPN)	6 - 24 VDC	0.3 Amps Max.	7.2 watts Max.	.5 Volts	85 Ga.
33	Electronic for Reed Magnet, LED & Sourcing	Normally Open (PNP)	6 - 24 VDC	0.3 Amps Max.	7.2 watts Max.	.5 Volts	40 Ga.
34	Electronic for Reed Magnet, LED & Sinking	Normally Open (NPN)	6 - 24 VDC	0.3 Amps Max.	7.2 watts Max.	.5 Volts	40 Ga.

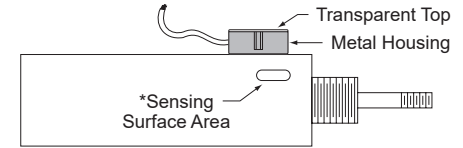
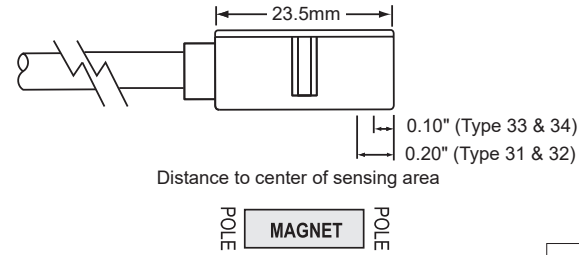
**Minimum Gauss rating required for proper operation as measured at center of sensing area on cylinder surface.

Power Supply Polarity MUST be Observed for Proper Operation

WARNING: Do not exceed ratings. Permanent damage to sensor may occur.

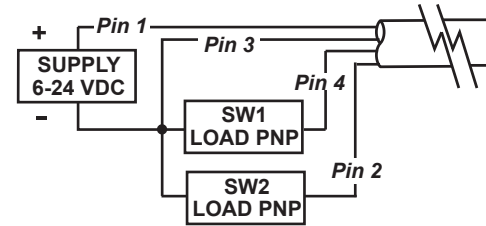
SERIES 8000 DUAL SENSORS TYPE 31, 32, 33 & 34

Wiring Diagram

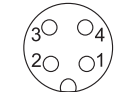
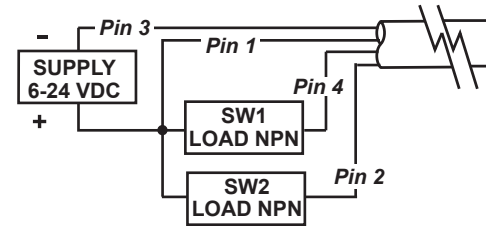


*Size of sensing area depends upon size and strength of magnet and thickness of cylinder wall.

Type 31 & 33



Type 32 & 34



Type	Description	Function	Switching Voltage	Switching Current	Switching Power	Voltage Drop	** Magnetic Sensitivity
31	Electronic for Reed Magnet, LED & Sourcing	Normally Open (PNP)	6 - 24 VDC	0.3 Amps Max.	7.2 watts Max.	.5 Volts	85 Ga.
32	Electronic for Reed Magnet, LED & Sinking	Normally Open (NPN)	6 - 24 VDC	0.3 Amps Max.	7.2 watts Max.	.5 Volts	85 Ga.
33	Electronic for Reed Magnet, LED & Sourcing	Normally Open (PNP)	6 - 24 VDC	0.3 Amps Max.	7.2 watts Max.	.5 Volts	40 Ga.
34	Electronic for Reed Magnet, LED & Sinking	Normally Open (NPN)	6 - 24 VDC	0.3 Amps Max.	7.2 watts Max.	.5 Volts	40 Ga.

**Minimum Gauss rating required for proper operation as measured at center of sensing area on cylinder surface.

Power Supply Polarity MUST be Observed for Proper Operation

WARNING: Do not exceed ratings. Permanent damage to sensor may occur.

