

Part Numbers*

Bore	Reed (Low AMP)	NPN Sinking	PNP Sourcing
9/16"	L077030000	L076950000	L076990000
3/4", 1-1/8"	L077040000	L076960000	L077000000
1-1/2", 2"	L077050000	L076970000	L077010000
2-1/2", 3", 4"	L077060000	L076980000	L077020000

* For sensors with an 8mm connector, replace the last digit with a 'C'. For example: L07696000C.

Specifications

Solid State Sensors (NPN/PNP)

Switching Logic..... N.O. NPN (Sinking)
 N.O. PNP (Sourcing)
 Supply Voltage Range 5 - 30 VDC
 On-State Voltage Drop..... 1.5 V max. at 100 mA
 Current Output Range 100 mA
 Burden Current..... 7 mA at 12 V 14 mA at 24 V
 Leakage Current..... 0.01 mA
 LED Function..... NPN: Red (Target Present)
 PNP: Green (Target Present)
 Minimum Current to Light LED 1 mA
 Operating Temperature..... 14° to 158°F (-10° to 70°C)
 Storage Temperature..... -4° to 176°F (-20° to 80°C)
 Enclosure Protection IEC standard IP 67 NEMA 6P
 Lead Wire 3 conductor, 24 gauge
 Lead Wire Length 59 inches, 1.5 meter
 Color of Cable..... Black
 Switching Response..... Max. 1k Hz
 Shock Resistance..... 50 G (490 m/s²)
 Vibration Resistance..... Double Amplitude 1.5 mm
 (Frequency 10 to 55 Hz
 1 scanning, 1 minute)

Reed Sensor (Low AMP)

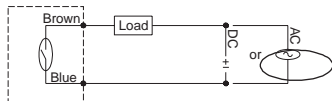
Switching Logic..... N.O. SPST (Form A)
 Supply Voltage Range 3 - 125 V AC/DC
 On-State Voltage Drop..... 1.8V max. at 20 mA DC
 Power Rating* 5 W (2.5 W) 5 VA (2.5 VA)
 Switching Current Range* 5-40 mA (5-20 mA)
 Leakage Current..... 0
 LED Function..... Red (Target Present)
 Minimum Current to Light LED 3 mA
 Operating Temperature..... 14° to 158°F (-10° to 70°C)
 Storage Temperature -4° to 176°F (-20° to 80°C)
 Enclosure Protection IEC standard IP 67 NEMA 6P
 Lead Wire 2 conductor, 24 gauge
 Lead Wire Length 59 inches, 1.5 meter
 Color of Cable..... Gray
 Switching Response Max. 300 Hz
 Shock Resistance..... 30 G (300 m/s²)
 Vibration Resistance..... Double Amplitude 1.5 mm
 (Frequency 10 to 55 Hz
 1 scanning, 1 minute)

*Number in parentheses pertains to inductive loads.

Circuits

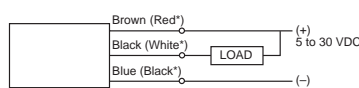
Reed Sensor

NOTE: Polarity must be observed for DC operation only.



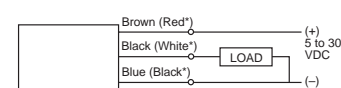
NPN Sensor – Sinking Output

Color of Cable.....Black
 "On" State Voltage Drop..... 1.5V Maximum



PNP Sensor – Sourcing Output

Color of Cable.....Black
 "On" State Voltage Drop..... 1.5V Maximum

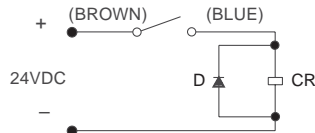


*Wire colors in parentheses pertain to sensors manufactured before 10/15/93.

Circuit for Switching Contact Protection (Inductive Loads) – for Reed Sensor Only

(Required for proper operation 24V DC)

Put Diode parallel to load (CR) following polarity as shown below.



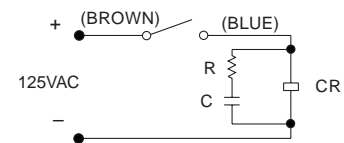
D: Diode: select a Diode with the breakdown voltage and current rating according to the load.

Typical Example – 100 Volt, 1 Amp Diode
 CR: Relay coil (under 0.5W coil rating)

(Recommended for longer life 125 VAC)

Put a resistor and capacitor in parallel with the load (CR). Select the resistor and capacitor according to the load.

Typical Example:
 CR: Relay coil (under 2W coil rating)
 R: Resistor 1 KΩ – 5 KΩ, 1/4 W
 C: Capacitor 0.1 μF, 600 V



Caution

- Use an ampmeter to test reed sensor current. Testing devices such as incandescent light bulbs may subject the reed sensor to high in-rush loads.
- **NOTE:** When checking an unpowered reed sensor for continuity with a digital ohmmeter the resistance reading will change from infinity to a very large resistance (2 M ohm) when the sensor is activated. This is due to the presence of a diode in the reed sensor.
- Anti-magnetic shielding is recommended for reed sensors exposed to high external RF or magnetic fields.
- The magnetic field strength of the piston magnet is designed to operate with our sensors. Other manufacturers' sensors may not operate correctly in conjunction with these magnets.

- Current capabilities are relative to operational temperatures.
- Use relay coils for reed sensor contact protection.
- The operation of some 120 VAC PLC's (especially some older Allen-Bradley PLC's) can overload the reed sensor. The sensor may fail to release after the piston magnet has passed. This problem may be corrected by the placement of a 700 to 1K OHM resistor between the sensor and the PLC input terminal. Consult the manufacturer of the PLC for appropriate circuit.
- Sensors with long wire leads (greater than 15 feet) can cause capacitance build-up and sticking will result. Attach a resistor in series with the reed sensor (the resistor should be installed as close as possible to the sensor). The resistor should be selected such that R (ohms) >E/0.3.