ELECTRO-SENSORS

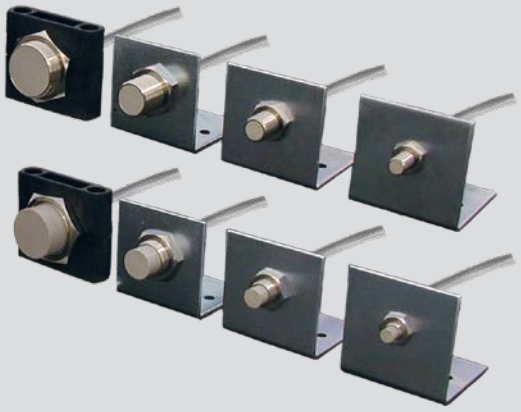
Reliable Products
Trustworthy People

600 Series Proximity

Proximity Sensors

Key Features

- Non-contact sensing
- Solid-state - no moving parts
- Durable corrosion resistant metal housings
- High speed repeatability
- Short-circuit and reverse polarity protection
- Outputs CMOS compatible
- Full output signal down to zero Hz
- LED operation indicator on all models



Description

600 Series Proximity Sensors are active digital devices that generate one pulse per pass of an actuating target within their sensing field. No direct contact with target material is necessary. Each sensor is entirely solid state with no moving parts to wear out. This provides for long life with little or no maintenance. The wide range of supply voltages to the 600 Series permits them to be directly interfaced with low voltage solid state controls, such as programmable controllers and electromechanical relay loads. All sensors are polyurethane or epoxy encapsulated and are provided complete with mounting bracket, jam nuts, and 6 feet of cable.

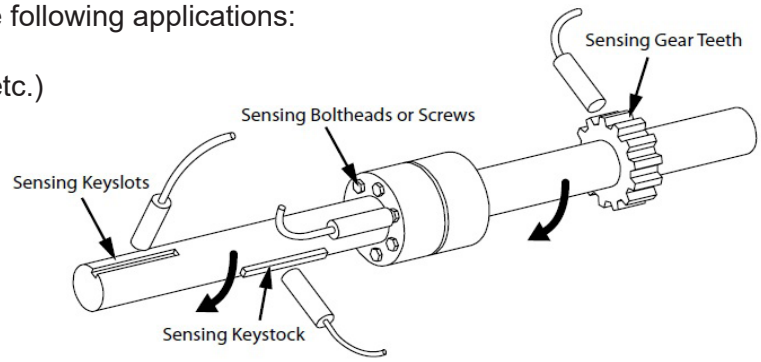
Principle of Operation

The Model Series Proximity Sensors utilize an oscillator circuit to generate a high frequency field that is radiated from a coil in the tip of the sensor. When a metal object or “target” enters this high frequency field, eddy currents are induced into the target. A detection circuit immediately senses a loss of energy in the oscillator circuit. This low amplitude condition causes the solid state output from the sensor to switch. When the “target” material moves away from the sensing face of the sensor, the oscillator regenerates and the sensor returns to its normal state. Electro-Sensors’ products bring efficiency and safety to your operations by preventing machine damage, product waste, and costly downtime.

Typical Applications

600 Series Proximity sensors can be used for the following applications:

- Detect conductive materials
- Motion detection (keyways, bolt-heads, gears, etc.)
- Parts detection and counting
- Tool detection (broken or damaged)
- Indexing control
- Sequencing automated equipment
- Interlocking machine process control
- Drive motor stall detection
- Input to programmable controllers



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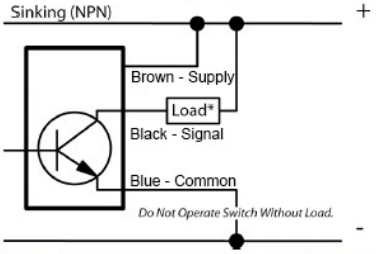
5 YEAR WARRANTY

600 Series Proximity
Proximity Sensors

Sensor Selection
The 600 Series offers two types of Proximity Sensors. For general purpose applications unshielded sensors are usually preferable to shielded because they have greater sensing range capabilities. Shielded sensors, however, have the distinct advantages of being capable of flush mounting directly into a metal surface. This permits minimum spacing between sensors, and conductive materials not directly in line with the sensor's face will not affect operation. See Figures 1 and 2.

Installation
The sensor should be mounted as close as possible to the target material for best performance. Care should be taken to mount the sensor firmly in such a position as to give the sensing face the best possible view of the target material, free from conductive obstructions. The target material likewise should present as much surface area as possible to the sensor face. It is recommended that proximity sensors be mounted with a vertical sensing face or looking down when possible. Metal filings or chips will not normally affect proximity sensors, but careful placement of sensors provides the most accurate results possible.

Wiring Diagram
All Models Normally Open



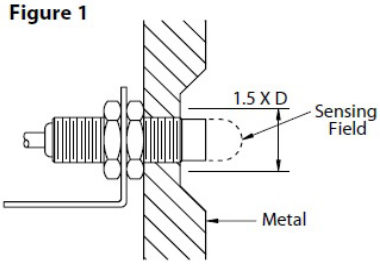
Note: When this sensor is used as a stand alone pulse generator, an external pull up resistor(*) must be applied across the output as shown.

Recommended Values: 2.2K Ohms or 3.3K Ohms

External resistors are not required when sensor is used with standard Electro-Sensor products.

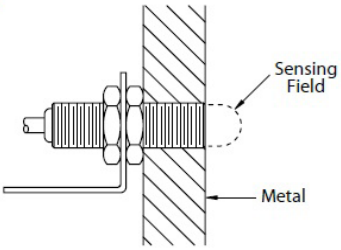
Unshielded Types
Require metal-free area

Figure 1



Shielded Types
Flush-mount condition

Figure 2



Specifications • 600 Series Proximity Switch

Model No.	Body Size Diameter (mm)	Body Size Diameter (in)	Sensing Range (in)	Max Switching Hz	Body Thread Size	Body Length (mm)	Body Length (in)
Unshielded Sensors (Entended Range)							
608	8	0.314	0.080	800	M8×1	30	1.18
612	12	0.472	0.200	400	M12×1	35	1.38
618	18	0.708	0.390	200	M18×1	40	1.57
630	30	1.18	0.710	100	M30×1.5	50	1.97
Shielded Sensors (Suitable for Flush Mounting)							
608-1	8	0.314	0.060	2,000	M8×1	30	1.18
612-1	12	0.472	0.080	1,500	M12×1	35	1.38
618-1	18	0.708	0.200	600	M18×1	40	1.57
630-1	30	1.18	0.390	400	M30×1.5	50	1.97

All outputs: Open collector current sinking (NPN) normally open

Customization
If one of our standard products does not meet your specifications, please call one of our application specialists. Many of our products can be customized to fit specific needs.

Additional Specifications

Switching capability	±10% of rated sensing range
Hysteresis	15% max.
Input voltage range	10-30 Vdc
Ripple of DC supply	10% max.
Maximum load	200 mA
Current consumption	17 mA max.
Voltage drop	2 Vdc (switch actuated)
No load current	3 mA
Maximum duty cycle	100%
Operating temperature	-25°C to +70°C
Mounting	Jam nuts and a bracket
Cable length	6.5' of 3-conductor
Housing material	Nickel plated brass
Protection	Short circuit & reverse polarity
NEMA ratings	1, 3, 4, 6, 12 & 13

Specifications subject to change without notice.

Additional Information
For more information about Proximity Sensors, please contact Electro-Sensors.