Active Face: Portion of the sensor from which the electromagnetic field or ultrasonic pulse emanates.

Axial Approach: The approach of the target with its center maintained on the reference axis.

Complementary Outputs: (N.O. & N.C.) A proximity sensor that features both normally open and normally closed outputs, which can be used simultaneously.

Correction Factors: Suggested multiplication factors taking into account variations in the target material composition. When figuring actual sensing distance this factor should be multiplied with the nominal sensing distance.

Current Consumption: The current consumed by the proximity switch when the output device is in the off condition.

Damping Material: Material which causes a decrease in the strength of the electromagnetic or electrical field produced by the sensing coil.

Differential Travel: See Hysteresis.

Dual Output: Sensor which has two outputs which may be complementary or may be of a single type (i.e. two normally open or two normally closed).

Effective Operating Distance: (Sr) The operating distance of an individual proximity switch measured at stated temperature, voltage, and mounting condition.

False Pulse: An undesired change in the state of the output of the proximity switch that lasts for more than two milliseconds.

Ferrous Metal: Any metal containing iron.

Flush Mounting: A shielded proximity sensor which can be flush mounted in metal up to the plane of the active sensing face.

Free Zone: The area around the proximity switch which must be kept free from any damping material.

Hysteresis: The difference, in percentage (%), of the nominal sensing distance between the operate (switch on) and release point (switch off) when the target is moving away from the sensors active face. Without sufficient hysteresis a proximity sensor will "chatter" (continuously switch on and off) when there is significant vibration applied to the target or sensor.

Isolated Output: An output that is optically separated from the input and other output and independent of the other output to a specified level.

Isolation Voltage: Maximum rated voltage between isolated outputs or input and output.

Lateral Approach: The approach of the target perpendicular to the reference axis.

Leakage Current: Current which flows through the output when the output is in an "off" condition or de-energized. This current is necessary to supply power to the electronics of the sensor.

LED: Light Emitting Diode used to indicate sensor status.

Maximum Load Current: The maximum current level at which the proximity sensor can be continuously operated.

Maximum Inrush Current: The maximum current level at which the proximity sensor can be operated for a short period of time.

Minimum Load Current: The minimum amount of current required by the sensor to maintain reliable operation.

Sensing Distance: The distance at which an approaching target activates (changes state of) the proximity output.

Non-ferrous Metal: Any metal which does not contain iron.

Normally Closed: Output opens when an object is detected in the active switching area.

Normally Open: Output closes when an object is detected in the active switching area.

NPN: The sensor switches the load to the negative terminal. The load should be connected between the sensor output and positive terminal.

Operating Distance, Assured: Between 0 and 81% of the rated operating distance for inductive proximity switches.

Operating Distance, Rated: The operating distance specified by the manufacturer and used as a reference value. Also known as nominal sensing distance.

PNP: The sensor switches the load to the positive terminal. The load should be connected between the sensor output and negative terminal.

Programmable Output: (N.O. or N.C.) Output which can be changed from N.O. to N.C. or N.C. to N.O. by way of a switch or jumper wire. Also known as selectable output.

Repeatability: The variation of the effective operating distance measured at room temperature and constant supply voltage. It is expressed as a percentage of the sensing distance.

Residual Voltage: The voltage across the sensor output while energized and carrying maximum load current.

Response Time: See Switching Frequency.

Reverse Polarity Protection: Proximity sensors which are protected against a reversal in voltage polarity.

Ripple: The variance between peak-to-peak values in DC voltage. It is expressed in percentage of rated voltage.

Sensing Range: The rated operating distance.

Shielded: Sensor which can be flush mounted in metal up to the plane of the active sensing face.

Short Circuit Protection: (SCP) Sensor protected from damage when a shorted condition exists for an indefinite or defined period of time.

Sinking: See NPN.

Sourcing: See PNP.

Switching Frequency: The maximum number of times per second the sensor can change state (ON and OFF) usually expressed in Hertz (Hz). As measured in DIN EN 50010.

Target: Object which activates the sensor.

Three-Wire Proximity Switch: An AC or DC proximity sensor with three leads, two of which supply power and a third that switches the load.

Two-Wire Proximity Switch: A proximity sensor which switches a load connected in series to the power supply. Power for the proximity switch is obtained through the load at all times.

Unshielded: Sensors which have longer sensing distances and a wider magnetic field but are sensitive to surrounding metal.

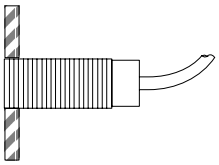
Voltage Drop: The maximum voltage drop across a conducting sensor.

Weld Field Immunity: (WFI) The ability of a sensor not to false trigger in the presence of strong electromagnetic fields.

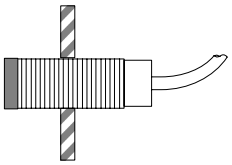
Technical Definitions and Terminology

Symbols

Shielded



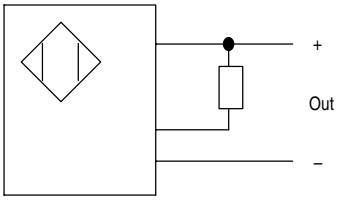
Unshielded



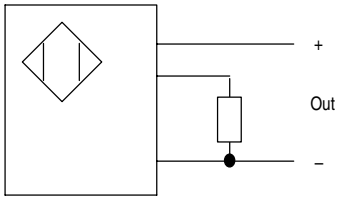
Normally Open

Normally Closed

NPN



PNP



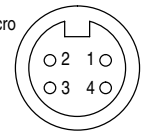
DC ——

AC/DC ⎓

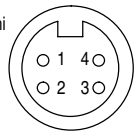
AC ~

Connectors

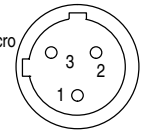
4-pin micro



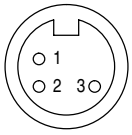
4-pin mini



3-pin micro



3-pin mini



LED