Glossary

Proximity Sensor Information

Axial Approach: The approach path of a target whose center is the same as the centerline of the sensing field.

Capacitive Sensor: A solid state switch which senses a changing dielectric mass. Usually adjustable and able to sense most materials.

Complementary Output: A form "C" type output (normally open and normally closed) which changes state simultaneously when the sensor is actuated.

Current Consumption (No Load Current): This is the current consumption of a proximity sensor when the output transistor is in the off state. It is indicated at the maximum voltage rate.

Current Sinking (NPN): A negative switching output in which the load current passes through the load first, then "sinks" through the sensor.

Current Sourcing (PNP): A positive switching output in which the current for the load is "sourced" through the sensor.

Differential: The difference between the operating point and the release point of a sensor.

Dwell Time: The minimum time needed for a particular target to be in the sensing field for the output to be energized or de-energized.

Eddy Currents: Small circular currents induced on the surface of a metallic target by an inductive sensor.

Hysteresis: The difference between the operating point and the release point of a sensor. (See Fig. 1)

Inductive Sensor: A solid state switch which emits a small directional radio frequency field. When a metallic target enters the field, eddy current losses are created thereby loading the oscillator. If this loading exceeds an internal setpoint, the output of the sensor is energized.

Interference Protection: All Namco proximity sensors feature an interference protection circuitry. This feature assures that voltage peaks or release interference caused by relays does not destroy the proximity sensor.

Leakage Current: The current which flows through the load when the sensor is non-energized. Also called burden or residual current.

LED: Namco proximity sensors feature a light emitting diode to indicate with a red LED that the sensor output is conducting. WFI proximity sensors have a red LED to show unit is powered up and a green LED to indicate target is present.

Maximum Load Current: This is the maximum load at which a proximity sensor may be operated continuously.

Minimum Load Current: The minimum current necessary to assure proper output operation.

Operate Point: The point at which a target is sensed. (See Fig. 1)

Release Point: The point at which the sensor returns to a non-energized state as the target leaves the sensing field. (See Fig. 1)

Repeatability: The relative variation in effective operating distance measured repeatedly over an established period of time during which environmental and electrical conditions, (i.e., applied voltage, temperature, relative humidity, mounting, etc.) are held constant.

Response Time: The time delay between when the target appears at the operate point and the output is energized.

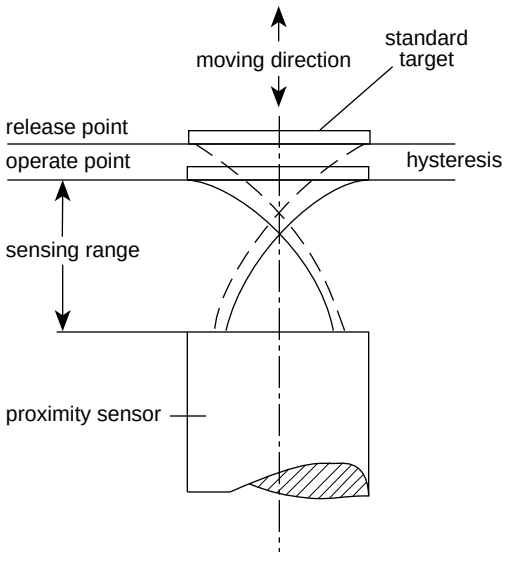

Figure 1

Reverse Polarity Protection: Usually a diode inserted in one of the power leads of a D.C. Switch. This protects the internal circuitry if connections are accidentally reversed.

Sensing Range: The distance from the sensing face to a standard target at a specific temperature (usually 77°F). Most industrial type sensors usually will hold this range +/- 10% of rated sensing range. (See Fig. 1)

Shielded Sensor: A sensor which has a very directional sensing field. This allows the sensing face to be flush mounted in metal.

Short Circuit Protection (SCP): Internal circuitry which protects the sensor against accidental short circuits. SCP is not intended to protect other control circuit components or interconnecting wiring.

Standard Target: A mild steel plate 1mm thick, with sides equal to the diameter of the sensing face or 3 times rated sensing range, whichever is greater. (See Fig. 1)

Switching Frequency: The maximum speed at which a sensor will deliver discrete individual pulses as the target(s) enter and leave the sensing field. This value is always dependent on target size, distance from sensing face, speed of target and switch type. The catalog values given are obtained using a standard target.

Temperature Drift: The temperature drift indicates the change of the switching point caused by ambient temperature variations within the range of -13°F to +158°F. The temperature of the measuring plate does not influence the switching point. The switching point at -13°F to +158°F may vary up to 10% compared to the point measured at +68°F. (See Figure 2.)

Unshielded Sensor: A sensor which has an extended sensing range for its size. **Must not be flush mounted in metal unless a counterbore is cut such that the sensor is not influenced by the surrounding metal.**

Voltage Drop: The difference in voltage at the load measured with and without the sensor in a circuit. Must be taken into account when designing with any 2-wire device.

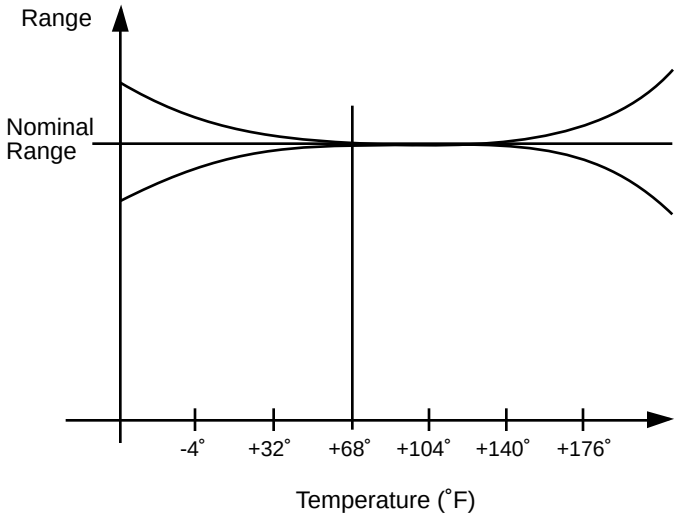

Figure 2

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