Tech Tips

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Proximity Sensors stocked at Twittlebit.com:

HTMelectronics

CONTRINEX

SUNX

Autonics
SENSORS & CONTROLLER

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How to Select a Proximity Sensor

What needs to be considered when selecting an inductive proximity sensor?

1. Target Material

2. Environment

3. Mounting Restrictions

What if my target material is different from iron?

The "Standard Detectable Object" for most proximity sensors is a target made of iron (ferrous) material. Any other material used as a target will typically result in a reduced sensing range, up to 30% of what it would be with an iron target. Some sensors, like the Contrinex #DW-AD-701-M12, will sense all metals with 0 correction factor. See the bottom of the page for more information.

What if the sensor will be mounted in a volatile environment?

If you are mounting the sensor in an area that is prone to weld slag, chips, high-temperature, cutting fluids or chemicals, then you may want to consider a sensor with a Teflon coating. The HTM #ECS1-0802P-ACS3-PTFE100C has a Teflon coating that will protect the sensor from all of the previous conditions so it will provide consistent readings and limit machine down-time.

How do I choose between using a shielded or unshielded proximity sensor?

Mounting restrictions will ultimately determine the type of proximity sensor you need to order. An application that requires a sensor to be mounted flush inside a metal fixture will need a shielded sensor. Shielded sensors will have a lower sensing distance than similar unshielded models, but will allow closer mounting to surrounding metal. If the sensor does not need to be mounted flush and has no surrounding metal that could interfere with its reading capability, then an unshielded or shielded proximity sensor can be used. Two diagrams are shown below to illustrate the "flame" that is produced by an inductive prox. Metal that enters into the flame of the sensor (depending on type of material) will produce an output, so care must be taken when selecting between shielded and unshielded models if you have applications with surrounding metal.
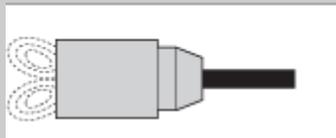
Shielded type   Non-shield type
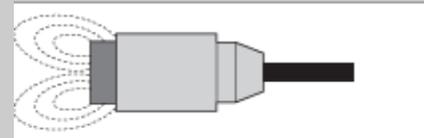
700 Series by Contrinex

Contrinex has the best inductive proximity sensor on the market in the 700 series for two reasons:

1. Durability

2. All-metal sensing

The 700 series is manufactured with a one-piece stainless steel housing. This sensor can withstand abusive environments.

The 700 series also senses all metals with 0 correction factor. Typical proximity sensors have a correction factor that reduces the sensing range when a target material is not made of iron. This prox will sense copper, aluminum, brass, stainless steel and iron targets equally.