

## Inductive Proximity Sensors The most popular automation sensor

Technology:	Inductive (Eddy Current)	Typical Housings
<b>Jargon:</b>	Prox, Proximity Switch, Prox Switch, Prox Sensor	
<b>Types of Targets:</b>	Metals, Ferrous and Non-ferrous	
<b>Typical Sensing Range:</b>	0.5 mm to 50 mm (depends on size)	
<b>Area of Application:</b>	Inductive probes are used to detect metal parts and metal machine components.	
<b>How It Works:</b>	An oscillating electromagnetic field is projected from the active surface. Metal targets entering the field absorb a tiny amount of power from the oscillator through the eddy current effect. When the power transfer reaches a threshold level, target detection is confirmed and the sensor output changes state.	

### Three Gotcha's

**Target Size**

- A small target is hard to see with a big sensor
- Targets larger than sensing face are easier to see

**Target Material**

- Reduced range for non-ferrous metals
- The more conductive, the less range

**Correction factors**

Material	Factor
steel	1.0
copper	0.25...0.45
brass	0.35...0.50
aluminum	0.30...0.45
stainless steel	0.60...1.00
nickel	0.65...0.75
cast iron	0.93...1.05

**Target Approach Direction**

- Different switch point  
Side vs  
Front Approach

### Common Applications

**Part Seated/Nested**

**Part Presence**

**Cylinder End of Stroke**