

EATON

Cutler-Hammer

AccuProx™ Analog

Product Focus

Inductive Proximity Sensors



Introduction

The new Cutler-Hammer® AccuProx™ is a new, high-performance analog inductive sensor from Eaton's electrical business. The AccuProx family of analog sensors provides unmatched measurement range, linearity and accuracy in an affordable and compact tubular package.

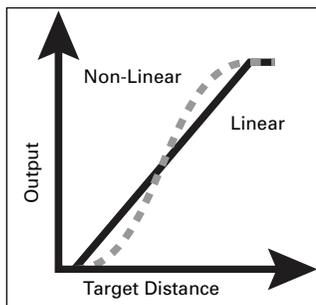
Unlike standard inductive sensors, which send an output based on target presence or absence, an AccuProx analog sensor provides an electrical signal that varies in proportion to the position of the metal target within its sensing range. This makes AccuProx ideal for applications requiring precision sensing and measurement.

Sensing performance is what really sets AccuProx apart from more traditional analog inductive designs. By utilizing components and technologies from the cutting-edge Cutler-Hammer iProx™ microprocessor-based sensor family, AccuProx achieves sensing ranges of three to four times that of typical tubular analog inductive sensors — all without compromising accuracy.

Unmatched Analog Range in a Proven Package

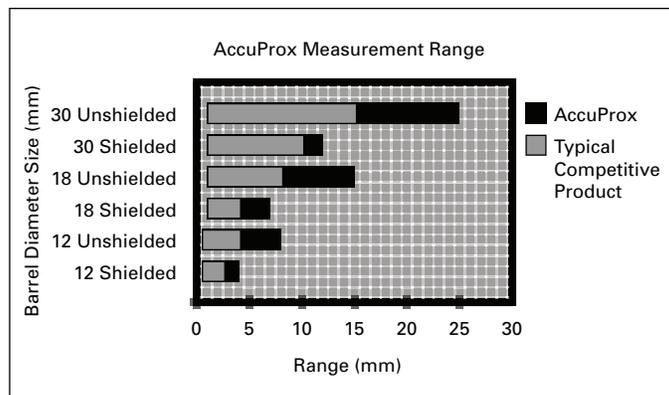
Historically, tubular analog sensors have always been limited by very short sensing ranges — as little as one or two millimeters. This has restricted analog sensors to applications involving very short target travel. By utilizing much of the technology first perfected in the iProx™ family of digital inductive sensors, AccuProx analog sensors can measure objects as far as 25 millimeters from the sensor face.

This extended range can be achieved without making compromises often found in competitive products, such as reducing output accuracy or using non-linear outputs.



Quality Construction

AccuProx utilizes many of the same proven materials found in other Cutler-Hammer tubular sensor families. Just like the iProx and E57 Premium+ inductive families, the AccuProx threaded barrel is made of high-quality Grade 303 stainless steel which exhibits



superior corrosion and abrasion resistance versus the more commonly used nickel-plated brass. A high-performance potting compound, also found in other Cutler-Hammer premium inductive sensors, helps the sensor to better absorb impact and vibration. The materials used in the construction of AccuProx are time-tested and proven to work.

The Accuracy You Demand

Analog sensors are frequently used in applications that require a higher level of precision than a standard digital sensor. For example, applications such as part inspection require a sensor that can detect very small measurement variances — sometimes fractions of a millimeter. AccuProx has been specifically designed with these applications in mind.

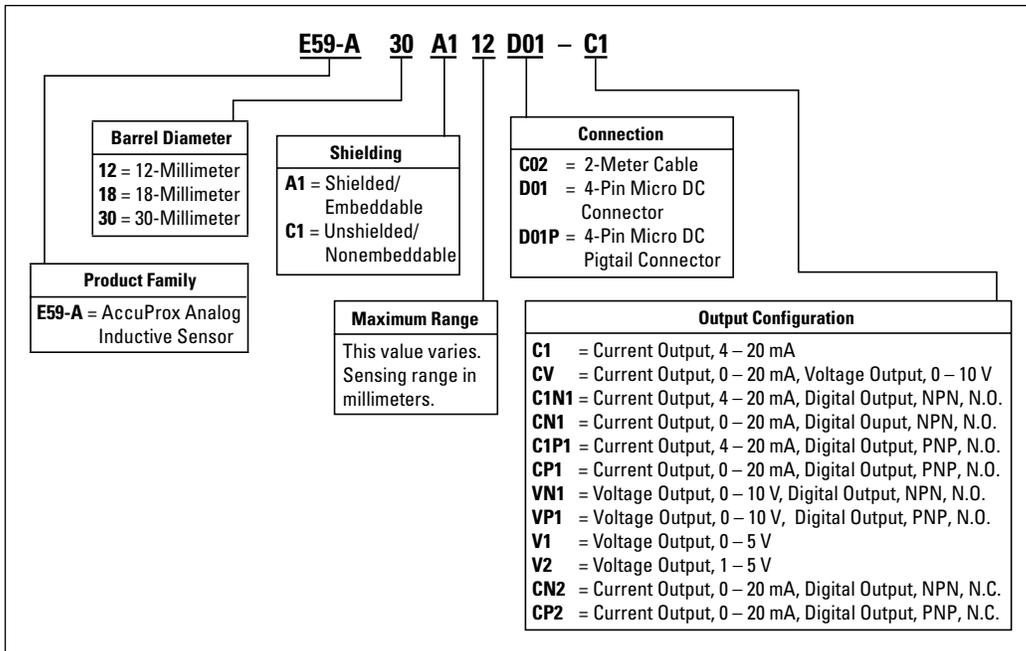
With repeatability of 20 micrometers and linear outputs, AccuProx can handle even the most precise applications. It is not necessary to sacrifice accuracy for range, or vice versa. When it comes to analog sensing performance, AccuProx truly is the best of both worlds.

For additional product information, consult Eaton's Cutler-Hammer Sensing Solutions Product Guide (PG08301004E) or visit www.EatonElectrical.com/AccuProx.

Key Features

- Extended linear sensing range of up to 25 millimeters — three times longer than standard tubular analog inductive sensors.
- Outputs available in current (4 – 20 or 0 – 20 mA) and voltage (0 – 10 V).
- High output resolution and repeatability for applications requiring precision sensing performance.
- Robust stainless steel barrel, shock-resistant front cap, 360-degree dual-color indicator LED and impact-absorbing potting compound.
- Ideal for extreme temperature or high pressure washdown environments.
- High noise immunity of 20 V/m prevents many problems associated with electrical noise.
- Extended range available in both unshielded and shielded models.
- Models available with micro connector, pigtail connector or potted cable.

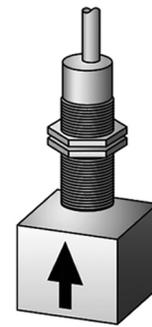
Catalog Number Key



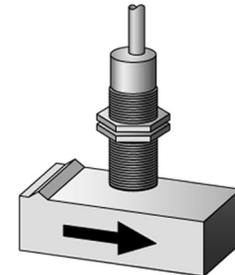
SPECIFICATIONS

Parameter	Value					
	12mm Models		18mm Models		30mm Models	
	Shielded	Unshielded	Shielded	Unshielded	Shielded	Unshielded
Analog Operating Range	0.5 – 4 mm	1 – 8 mm	1 – 7 mm	1 – 15 mm	1 – 12 mm	1 – 25 mm
Repeat Accuracy	<25 μm^6	<20 μm^6	<40 μm^6	<20 μm^6	<50 μm^6	<30 μm^6
Linearity Tolerance	< $\pm 1.0\%$ of full scale					
Operating Voltage	15 – 30 Vdc					
Current Output Signal	0 – 20 mA or 4 – 20 mA by model					
Output LED	Dual-color, 360° viewable; Green for power-on, Red for target detected					
Short Circuit Protection	Incorporated					
Wire Breakage Protection	Incorporated					
Reverse Polarity Protection	Incorporated					
Enclosure Protection	NEMA® 4, 4X, 6 P, 13					
Housing Material	Stainless steel Polycarbonate endbell Polyphenylene sulfide front cap					
Termination	Micro connector Potted cable, 2 m Pigtail micro connector, 2 m					

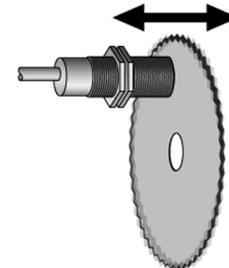
Application Examples



Axial Sensing



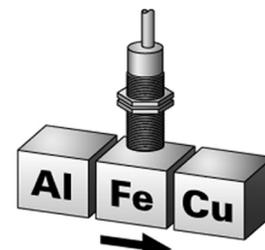
Error Proofing



Saw Blade Deflection



Eccentricity



Detecting Different Materials

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