AccuProx analog sensor

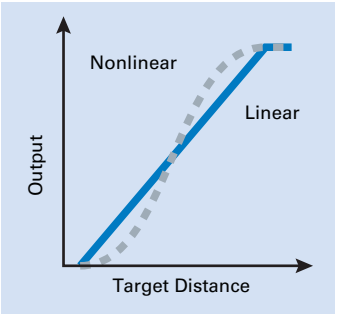
AccuProx™ is a new, high-performance analog inductive sensor from Eaton. The AccuProx family of analog sensors provides unmatched measurement range, linearity and accuracy in an affordable and compact tubular package.

Unlike standard inductive sensors, which send an output based on target presence or absence, AccuProx analog sensors provide an electrical signal that varies in proportion to the position of the metal target within their 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 using components and technologies from the cutting-edge Eaton 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 using 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 nonlinear outputs, which must be corrected at the PLC.



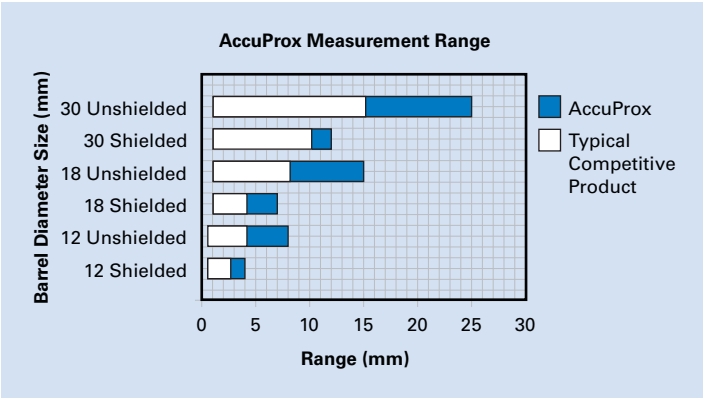
Quality construction

AccuProx uses many of the same proven materials found in other Eaton 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 as opposed to the more commonly used nickel-plated brass. A high-performance potting compound, also found in other Eaton 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 the Eaton *Sensing Solutions Catalog* (CA08100010E) or visit www.eaton.com/sensors.



Powering Business Worldwide

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 (0–10V)
- 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 microconnector, pigtail connector or potted cable

Catalog numbering system

E59-A 30 A1 12 D01 – C1

Product Family
E59-A = AccuProx analog inductive sensor

Barrel Diameter
12 = 12 mm
18 = 18 mm
30 = 30 mm

Shielding
A1 = Shielded/embeddable
C1 = Unshielded/nonembeddable

Maximum Range
This value varies. Sensing range in millimeters.

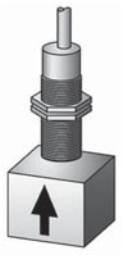
Connection
C02 = 2-meter cable
D01 = 4-pin micro DC connector
D01P = 4-pin micro DC pigtail connector

Output Configuration
C1 = Current output, 4–20 mA
CV = Current output, 0–20 mA, voltage output, 0–10V
C1N1 = Current output, 4–20 mA, digital output, NPN, NO
CN1 = Current output, 0–20 mA, digital output, NPN, NO
C1P1 = Current output, 4–20 mA, digital output, PNP, NO
CP1 = Current output, 0–20 mA, digital output, PNP, NO
VN1 = Voltage output, 0–10V, digital output, NPN, NO
VP1 = Voltage output, 0–10V, digital output, PNP, NO
V1 = Voltage output, 0–5V
V2 = Voltage output, 1–5V
CN2 = Current output, 0–20 mA, digital output, NPN, NC
CP2 = Current output, 0–20 mA, digital output, PNP, NC

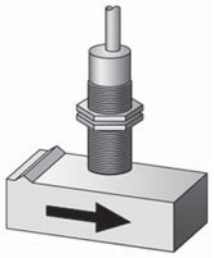
Specifications

	Value					
	12 mm Models		18 mm Models		30 mm Models	
Parameter	**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	< ±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, 6P, 13, IP69K					
Housing material	Stainless steel; polycarbonate endbell; polyphenylene sulfide front cap					
Termination	Microconnector; potted cable, 2m; pigtail microconnector, 2m					

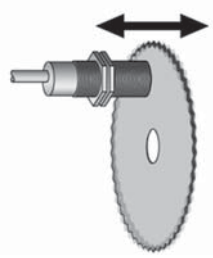
Application examples



Axial Sensing



Error Proofing



Saw Blade Deflection

Eccentricity

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