

Metal Face Inductive Proximity Sensors

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Cutler-Hammer® Metal Face Inductive Proximity Sensors by Eaton's electrical business incorporate tough stainless steel sensing faces in place of the plastic faces found in standard sensors. This provides a higher level of protection for more reliable operation and longer life in harsh environments.

The sensors stand up to abrasion and impact caused by flying metal chips, grit, and misaligned or vibrating targets. In addition, the stainless steel body resists corrosion and chemical attack.

Common sensor diameters, voltage styles and wiring connections make it easy to retrofit your existing, damaged sensors. Solve the problem of damaged sensors permanently with Eaton's Cutler-Hammer Metal Face Sensors.



Unless otherwise noted, the products contained in this document are not designed or intended for use in human safety applications.

The Thick Metal Face Protects Against Damage from Impact and Abrasion



Extra Thick
20 mil
Stainless Steel
Sensing Face

12 mm, 18 mm and
30 mm Diameters to
Fit Where You Need It





Product Features

- 2-wire AC/DC models and 3-wire DC models are compatible with your existing wiring
- Common 12 mm, 18 mm and 30 mm housing diameters allow easy change-out of existing damaged sensors
- The 20 mil stainless steel sensing face is thicker than competing units for a higher level of protection
- The stainless steel body is damage and corrosion resistant
- Wide operating temperature range: -13° to 158°F (-25° to 70°C)

For Customer Service in the U.S. call **1-877-ETN CARE (386-2273)**,
in Canada call **1-800-268-3578**.
For Application Assistance in the U.S. and Canada
call **1-800-426-9184**.

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Model Selection — Metal Face Proximity Sensors

	Operating Voltage	Sensing Range (Sn)	Shielding	Connection Type	Catalog Number
					N.O. Output
2-Wire Sensors					
12 mm Diameter 	20 – 250V AC/DC 50/60 Hz	2 mm	Shielded	3-pin Micro AC Connector	E57FAL12A2SA-M ☼
30 mm Diameter 	20 – 250V AC/DC 50/60 Hz	10 mm	Shielded	3-pin Micro AC Connector	E57FAL30A2SA-M ☼
3-Wire Sensors					
12 mm Diameter 	10 – 30V DC	2 mm	Shielded (PNP)	4-pin Micro DC Connector	E57FAL12T111SD-M ☼
18 mm Diameter 	10 – 30V DC	5 mm	Shielded (PNP)	4-pin Micro DC Connector	E57FAL18T111SD-M ☼

☼ Stocked product, typical order quantities guaranteed in stock.

☼☼ See listing of compatible connector cables below.

Model Selection — Compatible Connector Cables ①

	Voltage Style	Number of Pins	Gauge	Length	Catalog Number			Pin Configuration/Wire Colors (Face View Female Shown)
					PVC Jacket	PUR Jacket	IRR PUR Jacket	
Standard Cables — Micro Style								
Micro Style Straight Female 	AC	3-pin 3-wire	22 AWG	6.0 feet (2m)	CSAS3F3CY2202	CSAS3F3RY2202	—	 1-Green 2-Red/Black 3-Red/White
	DC	4-pin 4-wire	22 AWG	6.0 feet (2m)	CSDS4A4CY2202	CSDS4A4RY2202	CSDS4A4IO2202	 1-Brown 2-White 3-Blue 4-Black

① For a full selection of connector cables, see PG.05.05.T.E.

☼ Stocked product, typical order quantities guaranteed in stock.

Wiring Diagrams (Pin numbers are for reference, rely on pin location when wiring)

Operating Voltage	Output	Connector Models (Face View Male Shown)
		Micro

2-Wire Sensors

20 – 250V AC/DC 50/60 Hz	N.O.	
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3-Wire Sensors

10 – 30V DC	N.O. (NPN)	
	N.O. (PNP)	

Specifications

	2-Wire Sensors	3-Wire Sensors
	AC/DC Models	DC Only Models
Operating Voltage	20 – 250V AC/DC	10 – 30V DC
Maximum Load Current	100 mA	100 mA
Switching Frequency	15 Hz	12 mm: 2000 Hz 18 mm: 1000 Hz 30 mm: 300 Hz
Leakage Current	2.5 mA maximum	600 μ A maximum
Voltage Drop	10V maximum	1.5V maximum
Holding Current	5 mA minimum	—
Burden Current	—	17 mA
Protection	Transient, power on false pulse suppression	Short circuit protection
Switching Hysteresis	<15% rated sensing distance	
Repeat Accuracy	<1% sensing distance	
Time Delay Before Availability	<200 mS	
Output Indicator LED	Lights when output is ON	
Operating Temperature	-13° to 131°F (-25° to 55°C)	
Enclosure Ratings	NEMA 4, 4X, 6, 6P, 12 and 13 (IP67)	
Shock	30g sine wave, 11 mS per IEC68-2-76	
Vibration	10 to 55 Hz, 1 mm amplitude in all three planes	
Housing Material	303 stainless steel	
Face Thickness	20 mils	

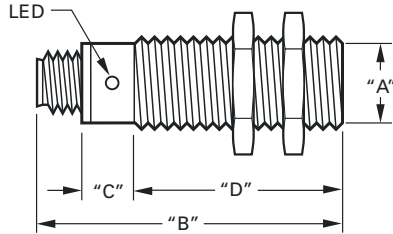
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Model Selection — Accessories

Description	Reference
Mounting Brackets and Other Accessories	See PG.05.03.T.E and PG.05.04.T.E
Connector Cables	See PG.05.05.T.E

Approximate Dimensions in Inches (mm)

Connector Models



Model	Catalog Number	A	B	C	D
2-Wire	E57FAL12A2SA-M	M x 12	2.67 (68)	1.10 (28)	1.58 (40)
	E57FAL30A2SA-M	M x 30	3.70 (94)	1.34 (34)	2.36 (60)
3-Wire	E57FAL12T111SD-M	M x 12	2.67 (68)	1.02 (26)	1.65 (42)
	E57FAL18T110SD-M	M x 18	3.11 (79)	1.14 (29)	1.97 (50)
	E57FAL18T111SD-M	M x 18	3.11 (79)	1.14 (29)	1.97 (50)