

# INDUCTIVE PROXIMITY SENSORS

## HIGH PERFORMANCE E57 PREMIUM+ SERIES

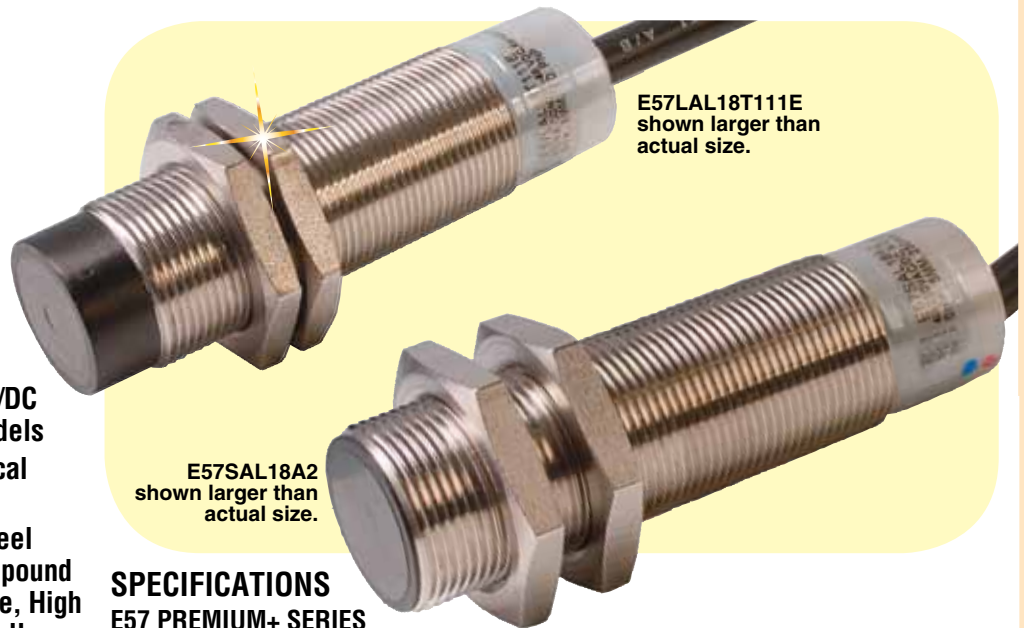
### 12, 18 AND 30 mm DIAMETER

#### E57 Series



- 2-Wire, 3-Wire, DC, and AC/DC Multiple Range Sensor Models
- Manufactured to Take Physical and Environmental Abuse
- Designed with Stainless Steel Barrel and New Potting Compound for Robust, High Temperature, High Pressure Washdown, as Well as Intense Shock and Vibration Applications
- Unmatched High Noise Immunity Eliminates Problems Associated with Electrical Noise (All Models >20V/Meter)
- 360° Output Status Indicator is Visible from Any Angle and in Any Light Condition
- Resettable Short Circuit Protection and Reverse Polarity in Select Models
- Wide Temperature Range -25 to 70°C (-13 to 158°F) on Cable, Micro-Style Connections

The Cutler-Hammer® Premium+ Series inductive proximity sensors have improved sensing performance, product durability and selection. This improved line of sensors carries the Premium+ Series name because we have upgraded the design to a rugged stainless steel body, shock resistant front caps and impact absorbing potting compound. Also, the Premium+ Series line now includes a choice of AC/DC and DC-only, 12, 18 and 30 mm sensors with unmatched noise immunity of greater than 20V/meter.



E57LAL18T11E shown larger than actual size.

E57SAL18A2 shown larger than actual size.

#### SPECIFICATIONS

##### E57 PREMIUM+ SERIES

	2-WIRE SENSORS AC/DC	3-WIRE DC SENSORS
Operating Voltage	20 to 240 Vac/Vdc	6 to 48 Vdc
Maximum Load Current	250 mA @ 25°C 200 mA @ 70°C	500 mA @ 6 to 30 Vdc
Switching Frequency	60 Hz	12 mm: 1000 Hz 18 mm: 800 Hz 30 mm: 500 Hz
Leakage Current	≤2.0 mA	≤100 µA
Voltage Drop	≤12V @ <10 mA ≤4V @ >25 mA	≤2.5V
Holding Current	5 mA min	—
Burden Current	—	≤10 mA
Protection	Resettable short circuit; overload protection	Auto reset
Switching Hysteresis	<15% rated sensing distance	
Repeat Accuracy	Shielded Models: <1% sensing distance; Unshielded and extended range: <3%	
Time Delay Before Availability	<200 mS	
COMMON SPECIFICATIONS		
Output Indicator LED	360° viewable LED	
Operating Temperature	-25 to 70°C (-13 to 158°F)	
Enclosure Ratings	NEMA 4, 4X, 6, 6P, 12 and 13 (IP67)	
Shock	30 g, 11 mS per IEC 68-2-76	
Vibration	10 to 55 Hz, 1 mm amplitude	
Housing Material	Stainless steel; Polycarbonate end bells; Ryton® front ends	

## To Order

### INDUCTIVE PROXIMITY SENSORS

TYPE	MODEL NO.	OPERATING VOLTAGE	SENSING RANGE (SN) mm (in)	SHIELDING	CONNECTION TYPE <sup>1</sup>	
<b>2-WIRE SENSORS</b>						
18 mm Dia End Sensing NO Output	E57SAL18A2	24 to 240 Vac 50/60 Hz <sup>2</sup> 20 to 240 Vdc	5 (0.2)	Shielded	2 m (6') cable	
	E57SAL18A2SA				3-pin micro AC connector	
	E57SAL18A2E		8 (0.3)	Unshielded	2 m (6') cable	
	E57SAL18A2EA				3-pin micro AC connector	
30 mm Dia End Sensing NO Output	E57SAL30A2	24 to 240 Vac 50/60 Hz <sup>2</sup> 20 to 240 Vdc	10 (0.4)	Shielded	2 m (6') cable	
	E57SAL30A2SA				3-pin micro AC connector	
	E57SAL30A2E		15 (0.6)	Unshielded	2 m (6') cable	
	E57SAL30A2EA				3-pin micro AC connector	
<b>3-WIRE SENSORS</b>						
12 mm Dia End Sensing NO Output	E57LAL12T110	6 to 48 Vdc	2 (0.08)	Shielded NPN	2 m (6') cable	
	E57LAL12T110SD					4-pin micro DC connector
	E57LAL12T111			4 (0.16)	Shielded PNP	2 m (6') cable
	E57LAL12T111SD					
	E57LAL12T110E		Unshielded NPN		2 m (6') cable	
	E57LAL12T110ED					4-pin micro DC connector
	E57LAL12T111E			Unshielded PNP	2 m (6') cable	
	E57LAL12T111ED					4-pin micro DC connector
18 mm Dia End Sensing NO Output	E57LAL18T110	6 to 48 Vdc	5 (0.2)	Shielded NPN	2 m (6') cable	
	E57LAL18T110SD					4-pin micro DC connector
	E57LAL18T111			8 (0.3)	Shielded PNP	2 m (6') cable
	E57LAL18T111SD					
	E57LAL18T110E		Unshielded NPN		2 m (6') cable	
	E57LAL18T110ED					4-pin micro DC connector
	E57LAL18T111E			Unshielded PNP	2 m (6') cable	
	E57LAL18T111ED					4-pin micro DC connector
30 mm Dia End Sensing NO Output	E57LAL30T110	6 to 48 Vdc	10 (0.4)	Shielded NPN	2 m (6') cable	
	E57LAL30T110SD					4-pin micro DC connector
	E57LAL30T111			15 (0.6)	Shielded PNP	2 m (6') cable
	E57LAL30T111SD					
	E57LAL30T110E		Unshielded NPN		2 m (6') cable	
	E57LAL30T110ED					4-pin micro DC connector
	E57LAL30T111E			Unshielded PNP	2 m (6') cable	
	E57LAL30T111ED					4-pin micro DC connector

<sup>1</sup> For cable lengths longer than 2 m (6'), add the number of the desired length in meters to the end of the listed model number (for model numbers ending with a number, add an "S" and then the length). Example for a 5 m cable: **E57LAL12A2** becomes **E57LAL12A2S5**.

<sup>2</sup> Avoid wiring these AC/DC models in series as the sensors may not perform reliably. Contact OMEGA's Applications Engineering with questions.

**Ordering Examples:** **E57SAL18A2**, 18 mm (0.7") Dia end sensing proximity switch with NO output and 2 m (6') cable.

**E57LAL18T110SD**, 18 mm (0.7") diameter, end sensing proximity switch with NO output and 4-pin micro DC connector.

**Optional Cable:** **CSDS4A4CY2202**, 4-pin micro AC cable, 2 m (6') long.

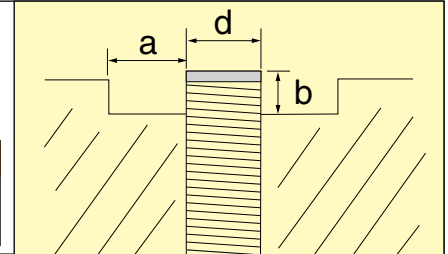
### Accessories

MODEL	DESCRIPTION
<b>CSAS3F3CY2202</b>	AC cable, 3-pin, 3-wire, 22 AWG, 2 m (6') PVC jacket
<b>CSDS4A4CY2202</b>	DC cable, 4-pin, 4-wire, 22 AWG, 2 m (6') PVC jacket
<b>E57KM12</b>	Bracket for 12 mm tubular sensors
<b>E57KM18</b>	Bracket for 18 mm tubular sensors
<b>E58KAM18B</b>	Bracket, adjustable ball swivel for 18 mm tubular sensors
<b>E57KM30</b>	Bracket for 30 mm tubular sensors

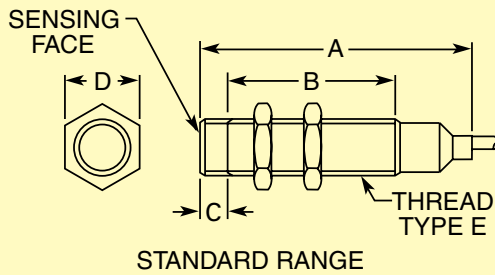
## Recommended Mounting Clearances

For unshielded standard range sensors, clearance must be provided around the sensor when mounting for reliable performance. ("Sn" is the sensing range of the sensor, "d" is the sensor diameter.)

TYPE	SHIELDING	a	b
Standard Range	Shielded	0	0
	Unshielded	0.5 d	0.5 Sn

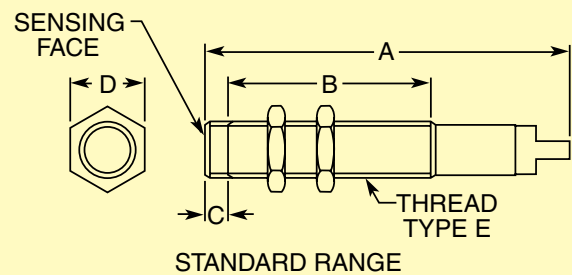


### Cable Models



STANDARD RANGE

### Connector Models



STANDARD RANGE

SIZE	SHIELDING	DIMENSIONS: mm (in)				
		OVERALL LENGTH A	THREAD LENGTH B	C	NUT WIDTH D	THREAD SIZE E
<b>2-WIRE AC/DC—CABLE MODELS</b>						
18 mm	Shielded	64.5 (2.54)	50.9 (2.00)	—	24 (0.94)	M18 x 1
	Unshielded	64.5 (2.54)	44.4 (1.75)	7.0 (0.28)	24 (0.94)	M18 x 1
30 mm	Shielded	69.3 (2.72)	50.27 (1.98)	—	36 (1.41)	M30 x 1.5
	Unshielded	69.3 (2.72)	37.85 (1.49)	13.26 (0.52)	36 (1.41)	M30 x 1.5
<b>2-WIRE AC/DC—CONNECTOR MODELS</b>						
18 mm	Shielded	69.06 (2.72)	50.9 (2.00)	—	24 (0.94)	M18 x 1
	Unshielded	69.06 (2.72)	44.4 (1.75)	7.0 (0.28)	24 (0.94)	M18 x 1
30 mm	Shielded	73.8 (2.91)	50.27 (1.98)	—	36 (1.41)	M30 x 1.5
	Unshielded	73.8 (2.91)	37.85 (1.49)	13.26 (0.52)	36 (1.41)	M30 x 1.5
<b>3-WIRE DC SENSORS—CABLE MODELS</b>						
12 mm	Shielded	62.4 (2.46)	50.27 (1.98)	—	17 (0.67)	M12 x 1
	Unshielded	62.4 (2.46)	45.77 (1.80)	5 (0.20)	17 (0.67)	M12 x 1
18 mm	Shielded	64.5 (2.54)	50.9 (2.00)	—	24 (0.94)	M18 x 1
	Unshielded	64.5 (2.54)	44.4 (1.75)	7.0 (0.28)	24 (0.94)	M18 x 1
30 mm	Shielded	69.3 (2.73)	50.27 (1.98)	—	36 (1.41)	M30 x 1.5
	Unshielded	69.3 (2.73)	37.85 (1.49)	13.26 (0.52)	36 (1.41)	M30 x 1.5
<b>3-WIRE DC SENSORS—MICRO-CONNECTOR MODELS</b>						
12 mm	Shielded	68.7 (2.71)	50.27 (1.98)	—	17 (0.67)	M12 x 1
	Unshielded	68.7 (2.71)	45.77 (1.80)	5 (0.20)	17 (0.67)	M12 x 1
18 mm	Shielded	69.3 (2.73)	50.9 (2.00)	—	24 (0.94)	M18 x 1
	Unshielded	69.3 (2.73)	44.4 (1.75)	7.0 (0.28)	24 (0.94)	M18 x 1
30 mm	Shielded	74.1 (2.92)	50.27 (1.98)	—	36 (1.41)	M30 x 1.5
	Unshielded	74.1 (2.92)	37.85 (1.49)	13.26 (0.52)	36 (1.41)	M30 x 1.5