

INDUCTIVE PROXIMITY SENSORS

HIGH PERFORMANCE E57 PREMIUM+ SERIES

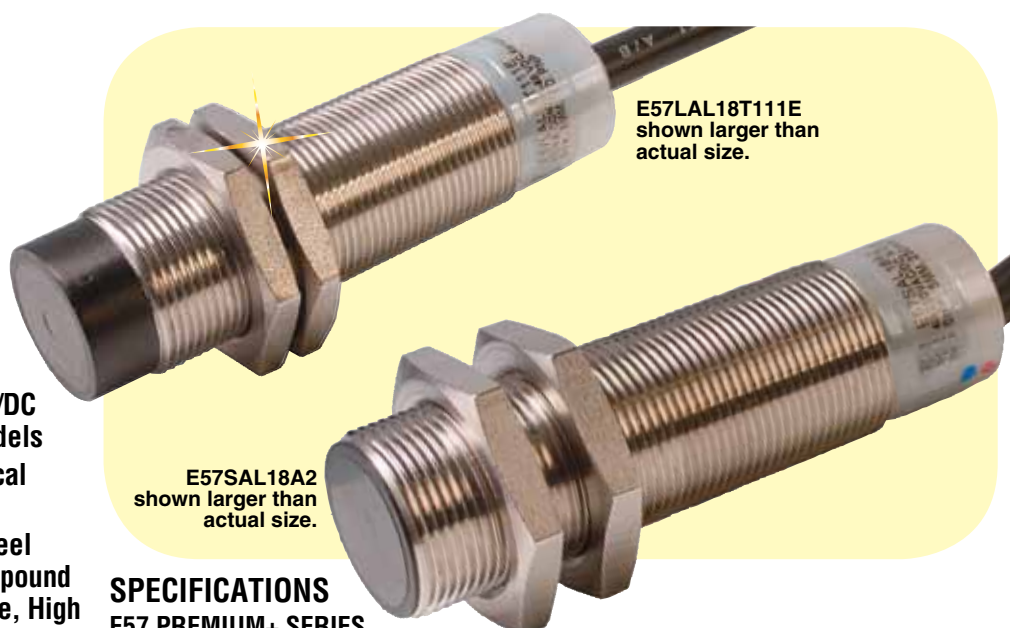
12, 18 AND 30 mm DIAMETER

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.



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

| 2-WIRE SENSORS | | | | | |
|---------------------------------------|----------------|---|-------------------------------|--------------------------|------------------------------|
| TYPE | MODEL NO. | OPERATING VOLTAGE | SENSING RANGE (SN) mm (in) | SHIELDING | CONNECTION TYPE ¹ |
| 18 mm Dia End Sensing NO Output | E57SAL18A2 | 24 to 240 Vac 50/60 Hz ² 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 ² 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 | |
| 3-WIRE SENSORS | | | | | |
| 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 | | | Shielded PNP | 2 m (6') cable |
| | E57LAL12T111SD | | | | 4-pin micro DC connector |
| | E57LAL12T110E | | 4 (0.16) | 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 | | | Shielded PNP | 2 m (6') cable |
| | E57LAL18T111SD | | | | 4-pin micro DC connector |
| | E57LAL18T110E | | 8 (0.3) | 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 | | | Shielded PNP | 2 m (6') cable |
| | E57LAL30T111SD | | | | 4-pin micro DC connector |
| | E57LAL30T110E | | 15 (0.6) | 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 |

¹ 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**.

² Avoid wiring these AC/DC models in series as the sensors may not perform reliably. Contact **TRODEX'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.

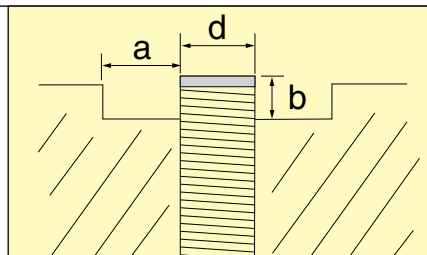
Accessories

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

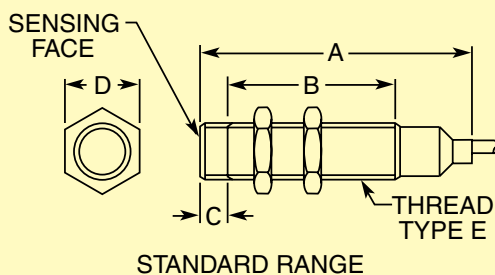
Recommended Mounting Clearances

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 |

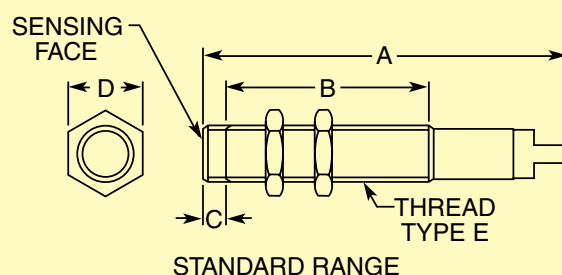


Cable Models



STANDARD RANGE

Connector Models



STANDARD RANGE

| SIZE | SHIELDING | DIMENSIONS: mm (in) | | | | |
|--|------------|---------------------|--------------------|--------------|----------------|------------------|
| | | OVERALL LENGTH A | THREAD LENGTH B | C | NUT WIDTH D | THREAD SIZE E |
| 2-WIRE AC/DC—CABLE MODELS | | | | | | |
| 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 |
| 2-WIRE AC/DC—CONNECTOR MODELS | | | | | | |
| 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 |
| 3-WIRE DC SENSORS—CABLE MODELS | | | | | | |
| 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 |
| 3-WIRE DC SENSORS—MICRO-CONNECTOR MODELS | | | | | | |
| 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 |