

# 3.3

## Inductive Proximity Sensors

### E57PS Performance Short Body Sensors

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#### E57PS Performance Short Body Sensors

##### Product Description

For demanding sensing applications in areas too small for standard length units, the E57PS Performance Short Body series is an ideal solution as it incorporates the premium features of the E57P series but in a shorter body length. With its stainless steel tubular body, IP69K rating, wide temperature range (down to -40 °C), fast switching speed and laser-etched markings, the E57PS series provides value at a low price point.

##### Features

- 360° LED indicator
- Stainless steel tube
- 10–48 Vdc operating voltage
- Short-circuit protection
- -40 to 70 °C temperature range
- IP69K environmental rating
- Durable laser-engraved label
- Available in cable and micro-connector styles

##### Standards and Certifications

- cULus Listed
- CE



##### DANGER

**THIS SENSOR IS NOT A SAFETY DEVICE AND IS NOT INTENDED TO BE USED AS A SAFETY DEVICE. This sensor is designed only to detect and read certain data in an electronic manner and perform no use apart from that, specifically no safety-related use. This sensor product does not include self-checking redundant circuitry, and the failure of this sensor product could cause either an energized or de-energized output condition, which could result in death, serious bodily injury, or property damage.**




For the most current information on this product, visit our Web site: [www.eaton.com](http://www.eaton.com)

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.

### Product Selection



#### E57PS Performance Short Body Sensors

##### Three-Wire Sensors

|   | Operating Voltage | Sensing Range (Sn)  | Shielding        | Connection Type <sup>①</sup> | NO Output Catalog Number           | NC Output Catalog Number           |                                    |                                    |
|---|-------------------|---|------------------|------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
|  | 10–48 Vdc         | 2 mm (standard range)   | Shielded (PNP)   | 2-meter cable                | <b>E57PS-12SNN2-C2</b>             | <b>E57PS-12SNC2-C2</b>             |                                    |                                    |
|   |                   |   |                  | 4-pin micro DC connector     | <b>E57PS-12SNN2-Q</b> <sup>⊕</sup> | <b>E57PS-12SNC2-Q</b> <sup>⊕</sup> |                                    |                                    |
|   |                   |   | Shielded (NPN)   | 2-meter cable                | <b>E57PS-12SPN2-C2</b>             | <b>E57PS-12SPC2-C2</b>             |                                    |                                    |
|   |                   |   |                  | 4-pin micro DC connector     | <b>E57PS-12SPN2-Q</b> <sup>⊕</sup> | <b>E57PS-12SPC2-Q</b> <sup>⊕</sup> |                                    |                                    |
|   |                   | 4 mm (standard range)   | Unshielded (PNP) | 2-meter cable                | <b>E57PS-12UNN4-C2</b>             | <b>E57PS-12UNC4-C2</b>             |                                    |                                    |
|   |                   |   |                  | 4-pin micro DC connector     | <b>E57PS-12UNN4-Q</b> <sup>⊕</sup> | <b>E57PS-12UNC4-Q</b> <sup>⊕</sup> |                                    |                                    |
|   |                   |   | Unshielded (NPN) | 2-meter cable                | <b>E57PS-12UPN4-C2</b>             | <b>E57PS-12UPC4-C2</b>             |                                    |                                    |
|   |                   |   |                  | 4-pin micro DC connector     | <b>E57PS-12UPN4-Q</b> <sup>⊕</sup> | <b>E57PS-12UPC4-Q</b> <sup>⊕</sup> |                                    |                                    |
|  | 10–48 Vdc         | 5 mm (standard range)   | Shielded (PNP)   | 2-meter cable                | <b>E57PS-18SNN2-C2</b>             | <b>E57PS-18SNC2-C2</b>             |                                    |                                    |
|   |                   |   |                  | 4-pin micro DC connector     | <b>E57PS-18SNN2-Q</b> <sup>⊕</sup> | <b>E57PS-18SNC2-Q</b> <sup>⊕</sup> |                                    |                                    |
|   |                   |   | Shielded (NPN)   | 2-meter cable                | <b>E57PS-18SPN2-C2</b>             | <b>E57PS-18SPC2-C2</b>             |                                    |                                    |
|   |                   |   |                  | 4-pin micro DC connector     | <b>E57PS-18SPN2-Q</b> <sup>⊕</sup> | <b>E57PS-18SPC2-Q</b> <sup>⊕</sup> |                                    |                                    |
|   |                   | 8 mm (standard range)   | Unshielded (PNP) | 2-meter cable                | <b>E57PS-18UNN4-C2</b>             | <b>E57PS-18UNC4-C2</b>             |                                    |                                    |
|   |                   |   |                  | 4-pin micro DC connector     | <b>E57PS-18UNN4-Q</b> <sup>⊕</sup> | <b>E57PS-18UNC4-Q</b> <sup>⊕</sup> |                                    |                                    |
|   |                   |   | Unshielded (NPN) | 2-meter cable                | <b>E57PS-18UPN4-C2</b>             | <b>E57PS-18UPC4-C2</b>             |                                    |                                    |
|   |                   |   |                  | 4-pin micro DC connector     | <b>E57PS-18UPN4-Q</b> <sup>⊕</sup> | <b>E57PS-18UPC4-Q</b> <sup>⊕</sup> |                                    |                                    |
|   |                   |  | 10–48 Vdc        | 10 mm (standard range)       | Shielded (PNP)                     | 2-meter cable                      | <b>E57PS-30SNN2-C2</b>             | <b>E57PS-30SNC2-C2</b>             |
|   |                   |   |                  |                              |                                    | 4-pin micro DC connector           | <b>E57PS-30SNN2-Q</b> <sup>⊕</sup> | <b>E57PS-30SNC2-Q</b> <sup>⊕</sup> |
|   |                   |   |                  |                              | Shielded (NPN)                     | 2-meter cable                      | <b>E57PS-30SPN2-C2</b>             | <b>E57PS-30SPC2-C2</b>             |
|   |                   |   |                  |                              |                                    | 4-pin micro DC connector           | <b>E57PS-30SPN2-Q</b> <sup>⊕</sup> | <b>E57PS-30SPC2-Q</b> <sup>⊕</sup> |
| 15 mm (standard range)  | Unshielded (PNP)  |   |                  | 2-meter cable                | <b>E57PS-30UNN4-C2</b>             | <b>E57PS-30UNC4-C2</b>             |                                    |                                    |
|   |                   |   |                  | 4-pin micro DC connector     | <b>E57PS-30UNN4-Q</b> <sup>⊕</sup> | <b>E57PS-30UNC4-Q</b> <sup>⊕</sup> |                                    |                                    |
|   | Unshielded (NPN)  |   |                  | 2-meter cable                | <b>E57PS-30UPN4-C2</b>             | <b>E57PS-30UPC4-C2</b>             |                                    |                                    |
|   |                   |   |                  | 4-pin micro DC connector     | <b>E57PS-30UPN4-Q</b> <sup>⊕</sup> | <b>E57PS-30UPC4-Q</b> <sup>⊕</sup> |                                    |                                    |

#### Compatible Connector Cables

##### Standard Cables <sup>②</sup>

|   | Voltage Style                       | Number of Pins | Gauge  | Length      | Pin Configuration/Wire Colors (Face View Female Shown)  | PVC Jacket Catalog Number | PUR Jacket Catalog Number |
|---|-------------------------------------|----------------|--------|-------------|---|---------------------------|---------------------------|
|  | <b>Micro-Style, Straight Female</b> |                |        |             |   |                           |                           |
|   | DC                                  | 4-pin, 4-wire  | 22 AWG | 6.0 ft (2m) |  1-Brown<br>2-White<br>3-Blue<br>4-Black | <b>CSDS4A4CY2202</b>      | <b>CSDS4A4RY2202</b>      |

##### Notes

- ⊕ See listing of compatible connector cables above.
- ① Cable models are supplied as standard with a 2-meter cable. A 5-meter cable is available by adding **S5** to the catalog number. Example: E57SAL12T110 becomes E57SAL12T110**S5**.
- ② For a full selection of connector cables, see **Tab 10, section 10.1**.

## Accessories

### E57PS Performance Short Body Sensors

| Description                                     | Reference                       |
|---|---------------------------------|
| Mounting brackets                               | See <b>Tab 8, section 8.2</b>   |
| Replacement mounting nuts and other accessories | See <b>Tab 8, section 8.3</b>   |
| Connector cables                                | See <b>Tab 10, section 10.1</b> |

## Technical Data and Specifications

### E57PS Performance Short Body Sensors

| Description              | Three-Wire DC Sensors  |
|--------------------------|--|
| Operating voltage        | 10–48 Vdc  |
| Maximum load current     | 300 mA   |
| Switching frequency [Hz] | 12 mm—Shielded: 2000; Unshielded: 2000<br>18 mm—Shielded: 1200; Unshielded: 1200<br>30 mm—Shielded: 600; Unshielded: 500 |
| Leakage current          | 100 µA maximum   |
| Voltage drop             | ≤2.5 V   |
| Holding current          | ≤10 mA   |
| Short-circuit protection | Yes (Auto Reset)   |
| Switching hysteresis     | 2–20% of rated sensing distance  |
| Repeat accuracy          | 1% shielded, 3% unshielded   |
| Output indicator LED     | 360° amber LED   |
| Operating temperature    | –40 to 158 °F (–40 to 70 °C)   |
| Enclosure ratings        | IP67, IP69K; NEMA 4, 4X, 6, 6P   |
| Shock                    | 30 g sine wave, 11 ms per IEC68-2-76   |
| Vibration                | 10 to 55 Hz, 1 mm amplitude  |
| Material of construction | Stainless steel, polycarbonate end bells, Ryton® front cap   |
| Cable                    | AWM Style 20387 (PVC)  |

#### Note

Ryton® is a registered trademark of Phillips Chemical (division of Phillips Petroleum).

### Wiring Diagrams

Pin numbers are for reference, rely on pin location when wiring.

#### E57PS Performance Short Body Sensors

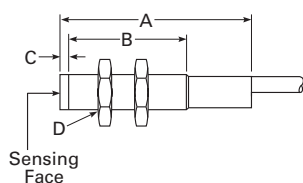
| Operating Voltage         | Output   | Cable Models | Micro-Connector Models (Face View Male Shown) |
|---------------------------|----------|--------------|---|
| <b>Three-Wire Sensors</b> |          |              |   |
| 10–48 Vdc                 | NO (NPN) |              |   |
|                           | NO (PNP) |              |   |
|                           | NC (NPN) |              |   |
|                           | NC (PNP) |              |   |

### Dimensions

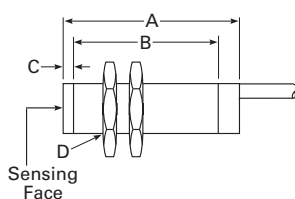
Approximate Dimensions in Inches (mm)

#### E57PS Performance Short Body Sensors—Cable Models

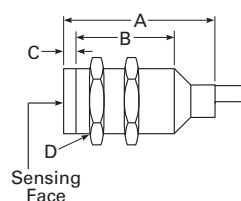
##### 12 mm



##### 18 mm



##### 30 mm



| Size                         | Shielding  | Overall Length A | Threaded Length B | Cap Height C | Thread Size D |
|------------------------------|------------|------------------|-------------------|--------------|---------------|
| <b>Three-Wire DC Sensors</b> |            |                  |                   |              |               |
| 12 mm                        | Shielded   | 1.61 (40.9)      | 1.07 (27.2)       | —            | M12 x 1       |
|                              | Unshielded | 1.61 (40.9)      | 0.89 (22.7)       | 0.20 (5.0)   | M12 x 1       |
| 18 mm                        | Shielded   | 1.77 (44.9)      | 1.17 (29.8)       | —            | M18 x 1       |
|                              | Unshielded | 1.77 (44.9)      | 0.92 (23.3)       | 0.28 (7.0)   | M18 x 1       |
| 30 mm                        | Shielded   | 1.84 (46.6)      | 1.15 (29.3)       | —            | M30 x 1.5     |
|                              | Unshielded | 1.84 (46.6)      | 0.66 (16.8)       | 0.51 (13.0)  | M30 x 1.5     |

# 3.3

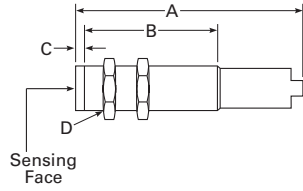
## Inductive Proximity Sensors

### E57PS Performance Short Body Sensors

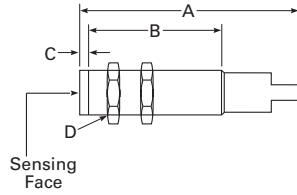
Approximate Dimensions in Inches (mm)

#### E57PS Performance Short Body Sensors—Micro-Connector Models

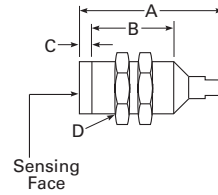
12 mm



18 mm



30 mm



| Size                         | Shielding  | Overall Length<br>A | Threaded Length<br>B | Cap Height<br>C | Thread Size<br>D |
|------------------------------|------------|---------------------|----------------------|-----------------|------------------|
| <b>Three-Wire DC Sensors</b> |            |                     |                      |                 |                  |
| 12 mm                        | Shielded   | 1.64 (41.5)         | 1.07 (27.2)          | —               | M12 x 1          |
|                              | Unshielded | 1.64 (41.5)         | 0.89 (22.7)          | 0.20 (5.0)      | M12 x 1          |
| 18 mm                        | Shielded   | 1.59 (40.3)         | 1.17 (29.8)          | —               | M18 x 1          |
|                              | Unshielded | 1.59 (40.3)         | 0.92 (23.3)          | 0.28 (7.0)      | M18 x 1          |
| 30 mm                        | Shielded   | 1.77 (45.0)         | 1.15 (29.3)          | —               | M30 x 1.5        |
|                              | Unshielded | 1.96 (49.7)         | 0.66 (16.8)          | 0.51 (13.0)     | M30 x 1.5        |

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