

# 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
 12 mm	<b>12 mm Diameter</b>					
	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>			
 18 mm	<b>18 mm Diameter</b>					
	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>			
 30 mm	<b>30 mm Diameter</b>					
	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
 Micro-Style Straight Female	<b>Micro-Style, Straight Female</b>						
	DC	4-pin, 4-wire	22 AWG	6.0 ft (2m)	 1-Brown 2-White 3-Blue 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 18 mm—Shielded: 1200; Unshielded: 1200 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

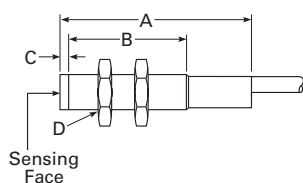
Operating Voltage	Output	Cable Models	Micro-Connector Models (Face View Male Shown)
<b>Three-Wire Sensors</b>			
10–48 Vdc	NO (NPN)		
	NO (PNP)		
	NC (NPN)		
	NC (PNP)		

### Dimensions

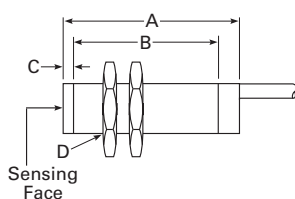
Approximate Dimensions in Inches (mm)

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

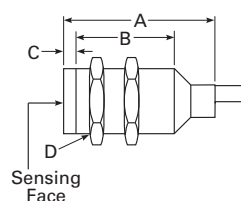
##### 12 mm



##### 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

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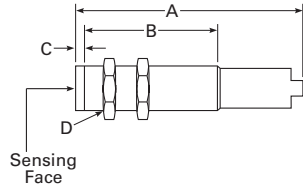
## Inductive Proximity Sensors

### E57PS Performance Short Body Sensors

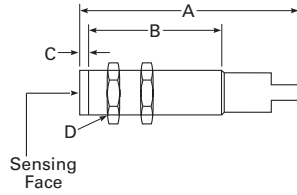
Approximate Dimensions in Inches (mm)

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

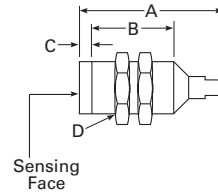
12 mm



18 mm



30 mm



Size	Shielding	Overall Length A	Threaded Length B	Cap Height C	Thread Size 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