

### E57 Two-Wire (AC, AC/DC, DC) Proximity Sensors



### E57 Two-Wire (AC, AC/DC, DC) Proximity Sensors

#### Product Description

Eaton carries several options for your sensing needs in the E57 two-wire family. The stainless steel models are available in a standard length or short body, while available in AC or AC/DC configurations. The nickel-brass body models are available in standard length and either AC or DC two-wire configurations.

All of these are available in NPN or PNP with cable connections or micro connectors. The stainless steel standard length models are also available with mini connectors.

The stainless steel models in both lengths have 360 degree LEDs while the nickel-brass models have a single LED indicator.

Extended sensing ranges are also available in the stainless steel and nickel-brass standard length models, while shielded and unshielded models are offered throughout the E57 two-wire sensor products.

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#### Standards and Certifications

Stainless steel body:

- cULus Listed
- CE (AC/DC models only)



Nickel-brass body:

- cCSAus
- CE (DC models only)



#### **⚠ 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.**

#### Highlighted Comparisons

Description	Stainless Steel	Stainless Steel Short Body	Nickel-Brass
Current ratings	250–500 mA	250–500 mA	200 mA
Enclosure ratings	NEMA 4, 4K, 6, 6P, 12, 13, IEC IP6, IP69K7	NEMA 4, 4K, 6, 6P, 12, 13, IEC IP67	IP67, IP69K
Operating temperature	–25 to 70 °C	–25 to 70 °C	–25 to 70 °C
Indicator	360° LED	360° LED	LED
Increased shock and vibration ratings	Yes	Yes	No

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## Inductive Proximity Sensors



### E57 Two-Wire (AC, AC/DC, DC) Proximity Sensors

#### Product Selection

#### Stainless Steel Body (Standard Length)

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#### Two-Wire Sensors

	Operating Voltage	Sensing Range (Sn)	Shielding	Connection Type <sup>①</sup>	NO Output Catalog Number	NC Output Catalog Number	
<b>12 mm</b> 	<b>12 mm Diameter End Sensing</b>						
	20–250 Vac	2 mm (standard range)	Shielded	2-meter cable	<b>E57LAL12A2</b>	<b>E57LBL12A2</b>	
				3-pin micro AC connector	<b>E57LAL12A2SA</b> ☹	<b>E57LBL12A2SA</b> ☹	
				3-pin micro AC pigtail connector	<b>E57LAL12A2SP</b> ☹	<b>E57LBL12A2SP</b> ☹	
		4 mm (standard range)	Unshielded	2-meter cable	<b>E57LAL12A2E</b>	<b>E57LBL12A2E</b>	
				3-pin micro AC connector	<b>E57LAL12A2EA</b> ☹	<b>E57LBL12A2EA</b> ☹	
				3-pin micro AC pigtail connector	<b>E57LAL12A2EP</b> ☹	<b>E57LBL12A2EP</b> ☹	
	20–132 Vac	6 mm (extended range)	Semi-shielded	2-meter cable	<b>E57-12LE06-A</b>	<b>E57-12LE06-A1</b>	
				3-pin micro AC connector	<b>E57-12LE06-AA</b> ☹	<b>E57-12LE06-A1A</b> ☹	
				3-pin micro AC pigtail connector	<b>E57-12LE06-AP</b> ☹	—	
		10 mm (extended range)	Non-embeddable	2-meter cable	<b>E57-12LE10-A</b>	<b>E57-12LE10-A1</b>	
				3-pin micro AC connector	<b>E57-12LE10-AA</b> ☹	<b>E57-12LE10-A1A</b> ☹	
				3-pin micro AC pigtail connector	<b>E57-12LE10-AP</b> ☹	<b>E57-12LE10-A1P</b> ☹	
	40–250 Vac 50/60 Hz <sup>②</sup> 20–250 Vdc	2 mm (standard range)	Shielded	2-meter cable	<b>E57SAL12A2</b>	<b>E57SBL12A2</b>	
				3-pin micro AC connector	<b>E57SAL12A2SA</b> ☹	<b>E57SBL12A2SA</b> ☹	
				3-pin mini-connector	<b>E57MAL12A2B1</b> ☹	—	
4 mm (standard range)		Unshielded	2-meter cable	<b>E57SAL12A2E</b>	<b>E57SBL12A2E</b>		
			3-pin micro AC connector	<b>E57SAL12A2EA</b> ☹	<b>E57SBL12A2EA</b> ☹		
<b>18 mm</b> 	<b>18 mm Diameter End Sensing</b>						
	20–250 Vac	5 mm (standard range)	Shielded	2-meter cable	<b>E57LAL18A2</b>	<b>E57LBL18A2</b>	
				3-pin micro AC connector	<b>E57LAL18A2SA</b> ☹	<b>E57LBL18A2SA</b> ☹	
				3-pin micro AC pigtail connector	<b>E57LAL18A2SP</b> ☹	<b>E57LBL18A2SP</b> ☹	
				3-pin mini-connector	<b>E57MAL18A2B1</b> ☹	<b>E57MBL18A2B1</b> ☹	
		8 mm (standard range)	Unshielded	2-meter cable	<b>E57LAL18A2E</b>	<b>E57LBL18A2E</b>	
				3-pin micro AC connector	<b>E57LAL18A2EA</b> ☹	<b>E57LBL18A2EA</b> ☹	
				3-pin micro AC pigtail connector	<b>E57LAL18A2EP</b> ☹	<b>E57LBL18A2EP</b> ☹	
				3-pin mini-connector	<b>E57MAL18A2EB1</b> ☹	<b>E57MBL18A2EB1</b> ☹	
		20–132 Vac	12 mm (extended range)	Semi-shielded	2-meter cable	<b>E57-18LE12-A</b>	<b>E57-18LE12-A1</b>
					3-pin micro AC connector	<b>E57-18LE12-AA</b> ☹	<b>E57-18LE12-A1A</b> ☹
					3-pin micro AC pigtail connector	<b>E57-18LE12-AP</b> ☹	<b>E57-18LE12-A1P</b> ☹
					3-pin mini-connector	<b>E57-18LE12-AB</b> ☹	<b>E57-18LE12-A1B</b> ☹
	18 mm (extended range)		Non-embeddable	2-meter cable	<b>E57-18LE20-A</b>	<b>E57-18LE20-A1</b>	
				3-pin micro AC connector	<b>E57-18LE20-AA</b> ☹	<b>E57-18LE20-A1A</b> ☹	
				3-pin micro AC pigtail connector	<b>E57-18LE20-AP</b> ☹	<b>E57-18LE20-A1P</b> ☹	
				3-pin mini-connector	<b>E57-18LE20-AB</b> ☹	<b>E57-18LE20-A1B</b> ☹	
	40–250 Vac 50/60 Hz <sup>②</sup> 20–250 Vdc	5 mm (standard range)	Shielded	2-meter cable	<b>E57SAL18A2</b>	<b>E57SBL18A2</b>	
				3-pin micro AC connector	<b>E57SAL18A2SA</b> ☹	<b>E57SBL18A2SA</b> ☹	
		8 mm (standard range)	Unshielded	2-meter cable	<b>E57SAL18A2E</b>	<b>E57SBL18A2E</b>	
				3-pin micro AC connector	<b>E57SAL18A2EA</b> ☹	<b>E57SBL18A2EA</b> ☹	



#### Notes

☹ See listing of compatible connector cables on **Page V8-T3-40**.

① For cable lengths longer than 2 meters, add the number of the desired length in meters to the end of the listed catalog number (for catalog numbers ending with a number, add an **S** and then the length). Examples for a 5-meter cable: E57-18LE12-A becomes E57-18LE12-A5; E57LAL12A2 becomes E57LAL12A2S5.

### Stainless Steel Body (Standard Length)

#### Two-Wire Sensors, continued

	Operating Voltage	Sensing Range (Sn)	Shielding	Connection Type <sup>①</sup>	NO Output Catalog Number	NC Output Catalog Number
<b>Right Angle</b> 	<b>18 mm Diameter Right Angle Sensing</b>					
	20–250 Vac	5 mm	Shielded	2-meter cable	<b>E57RAL18A2</b>	<b>E57RBL18A2</b>
				3-pin micro AC connector	<b>E57RAL18A2SA</b> ☺	<b>E57RBL18A2SA</b> ☺
				3-pin micro AC pigtail connector	<b>E57RAL18A2SP</b> ☺	<b>E57RBL18A2SP</b> ☺
				3-pin mini-connector	<b>E57RAL18A2B1</b> ☺	<b>E57RBL18A2B1</b> ☺
	8 mm	Unshielded	2-meter cable	<b>E57RAL18A2E</b>	<b>E57RBL18A2E</b>	
			3-pin micro AC connector	<b>E57RAL18A2EA</b> ☺	<b>E57RBL18A2EA</b> ☺	
			3-pin micro AC pigtail connector	<b>E57RAL18A2EP</b> ☺	<b>E57RBL18A2EP</b> ☺	
			3-pin mini-connector	<b>E57RAL18A2EB1</b> ☺	<b>E57RBL18A2EB1</b> ☺	
	<b>30 mm</b> 	<b>30 mm Diameter End Sensing</b>				
20–250 Vac		10 mm (standard range)	Shielded	2-meter cable	<b>E57LAL30A2</b>	<b>E57LBL30A2</b>
				3-pin micro AC connector	<b>E57LAL30A2SA</b> ☺	<b>E57LBL30A2SA</b> ☺
				3-pin micro AC pigtail connector	<b>E57LAL30A2SP</b> ☺	<b>E57LBL30A2SP</b> ☺
				3-pin mini-connector	<b>E57MAL30A2B1</b> ☺	<b>E57MBL30A2B1</b> ☺
15 mm (standard range)		Unshielded	2-meter cable	<b>E57LAL30A2E</b>	<b>E57LBL30A2E</b>	
			3-pin micro AC connector	<b>E57LAL30A2EA</b> ☺	<b>E57LBL30A2EA</b> ☺	
			3-pin micro AC pigtail connector	<b>E57LAL30A2EP</b> ☺	<b>E57LBL30A2EP</b> ☺	
			3-pin mini-connector	<b>E57MAL30A2EB1</b> ☺	<b>E57MBL30A2EB1</b> ☺	
20–132 Vac		22 mm (extended range)	Semi-shielded	2-meter cable	<b>E57-30LE22-A</b>	<b>E57-30LE22-A1</b>
				3-pin micro AC connector	<b>E57-30LE22-AA</b> ☺	<b>E57-30LE22-A1A</b> ☺
				3-pin micro AC pigtail connector	<b>E57-30LE22-AP</b> ☺	<b>E57-30LE22-A1P</b> ☺
				3-pin mini-connector	<b>E57-30LE22-AB</b> ☺	<b>E57-30LE22-A1B</b> ☺
40–250 Vac 50/60 Hz <sup>②</sup> 20–250 Vdc		10 mm (standard range)	Shielded	2-meter cable	<b>E57SAL30A2</b>	<b>E57SBL30A2</b>
				3-pin micro AC connector	<b>E57SAL30A2SA</b> ☺	<b>E57SBL30A2SA</b> ☺
		15 mm (standard range)	Unshielded	2-meter cable	<b>E57SAL30A2E</b>	<b>E57SBL30A2E</b>
				3-pin micro AC connector	<b>E57SAL30A2EA</b> ☺	<b>E57SBL30A2EA</b> ☺

#### Notes

☺ See listing of compatible connector cables on **Page V8-T3-40**.

① For cable lengths longer than 2 meters, add the number of the desired length in meters to the end of the listed catalog number (for catalog numbers ending with a number, add an **S** and then the length). Examples for a 5-meter cable: E57-18LE12-A becomes E57-18LE12-A**5**; E57LAL12A2 becomes E57LAL12A2**S5**.

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## Inductive Proximity Sensors

### E57 Two-Wire (AC, AC/DC, DC) Proximity Sensors

#### Stainless Steel Short Body

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#### Two-Wire Sensors

Operating Voltage	Sensing Range (Sn)	Shielding	Connection Type <sup>①</sup>	NO Output Catalog Number	NC Output Catalog Number		
<b>12 mm</b>							
<b>12 mm Diameter</b>							
	20–250 Vac	2 mm	Shielded	2-meter cable	<b>E57SAL12A4</b>	<b>E57SBL12A4</b>	
				3-pin micro AC connector	<b>E57SAL12A4SA</b> ☺	<b>E57SBL12A4SA</b> ☺	
	4 mm	Unshielded	2-meter cable		<b>E57SAL12A4E</b>	<b>E57SBL12A4E</b>	
				3-pin micro AC connector	<b>E57SAL12A4EA</b> ☺	<b>E57SBL12A4EA</b> ☺	
	40–250 Vac 50/60 Hz <sup>②</sup> 20–250 Vdc	2 mm	Shielded	2-meter cable		<b>E57SAL12A2</b>	<b>E57SBL12A2</b>
					3-pin micro AC connector	<b>E57SAL12A2SA</b> ☺	<b>E57SBL12A2SA</b> ☺
4 mm		Unshielded	2-meter cable		<b>E57SAL12A2E</b>	<b>E57SBL12A2E</b>	
				3-pin micro AC connector	<b>E57SAL12A2EA</b> ☺	<b>E57SBL12A2EA</b> ☺	
<b>18 mm</b>							
<b>18 mm Diameter</b>							
	20–250 Vac	5 mm	Shielded	2-meter cable	<b>E57SAL18A4</b>	<b>E57SBL18A4</b>	
				3-pin micro AC connector	<b>E57SAL18A4SA</b> ☺	<b>E57SBL18A4SA</b> ☺	
	8 mm	Unshielded	2-meter cable		<b>E57SAL18A4E</b>	<b>E57SBL18A4E</b>	
				3-pin micro AC connector	<b>E57SAL18A4EA</b> ☺	<b>E57SBL18A4EA</b> ☺	
	40–250 Vac 50/60 Hz <sup>②</sup> 20–250 Vdc	5 mm	Shielded	2-meter cable		<b>E57SAL18A2</b>	<b>E57SBL18A2</b>
					3-pin micro AC connector	<b>E57SAL18A2SA</b> ☺	<b>E57SBL18A2SA</b> ☺
8 mm		Unshielded	2-meter cable		<b>E57SAL18A2E</b>	<b>E57SBL18A2E</b>	
				3-pin micro AC connector	<b>E57SAL18A2EA</b> ☺	<b>E57SBL18A2EA</b> ☺	
<b>30 mm</b>							
<b>30 mm Diameter</b>							
	20–250 Vac	10 mm	Shielded	2-meter cable	<b>E57SAL30A4</b>	<b>E57SBL30A4</b>	
				3-pin micro AC connector	<b>E57SAL30A4SA</b> ☺	<b>E57SBL30A4SA</b> ☺	
	15 mm	Unshielded	2-meter cable		<b>E57SAL30A4E</b>	<b>E57SBL30A4E</b>	
				3-pin micro AC connector	<b>E57SAL30A4EA</b> ☺	<b>E57SBL30A4EA</b> ☺	
	40–250 Vac 50/60 Hz <sup>②</sup> 20–250 Vdc	10 mm	Shielded	2-meter cable		<b>E57SAL30A2</b>	<b>E57SBL30A2</b>
					3-pin micro AC connector	<b>E57SAL30A2SA</b> ☺	<b>E57SBL30A2SA</b> ☺
15 mm		Unshielded	2-meter cable		<b>E57SAL30A2E</b>	<b>E57SBL30A2E</b>	
				3-pin micro AC connector	<b>E57SAL30A2EA</b> ☺	<b>E57SBL30A2EA</b> ☺	




#### Notes

☺ See listing of compatible connector cables on **Page V8-T3-40**.

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**.

### Nickel-Brass Body

#### Two-Wire Sensors

	Operating Voltage	Sensing Range	Shielding	Output Type	Connection Type	NO Output Catalog Number	NC Output Catalog Number	
	<b>12 mm Diameter</b>							
	20–250 Vac	2 mm	Shielded	—	2-meter cable	<b>E57-12GS02-A</b>	<b>E57-12GS02-A1</b>	
					3-pin micro AC connector	<b>E57-12GS02-AAB</b> ☺	<b>E57-12GS02-A1AB</b> ☺	
		4 mm	Unshielded	—	2-meter cable	<b>E57-12GU04-A</b>	<b>E57-12GU04-A1</b>	
					3-pin micro AC connector	<b>E57-12GU04-AAB</b> ☺	<b>E57-12GU04-A1AB</b> ☺	
		10–30 Vdc	2 mm	Shielded	NPN/PNP	2-meter cable	<b>E57-12GS02-D</b>	<b>E57-12GS02-D1</b>
						4-pin micro DC connector	<b>E57-12GS02-DDB</b> ☺	<b>E57-12GS02-D1DB</b> ☺
	4 mm		Unshielded	NPN/PNP	2-meter cable	<b>E57-12GU04-D</b>	<b>E57-12GU04-D1</b>	
					4-pin micro DC connector	<b>E57-12GU04-DDB</b> ☺	<b>E57-12GU04-D1DB</b> ☺	
	8 mm (extended range)			NPN/PNP	2-meter cable	<b>E57-12GE08-D</b>	<b>E57-12GE08-D1</b>	
					4-pin micro DC connector	<b>E57-12GE08-DDB</b> ☺	<b>E57-12GE08-D1DB</b> ☺	
		<b>18 mm Diameter</b>						
20–250 Vac		5 mm	Shielded	—	2-meter cable	<b>E57-18GS05-A</b>	<b>E57-18GS05-A1</b>	
					3-pin micro AC connector	<b>E57-18GS05-AAB</b> ☺	<b>E57-18GS05-A1AB</b> ☺	
		8 mm	Unshielded	—	2-meter cable	<b>E57-18GU08-A</b>	<b>E57-18GU08-A1</b>	
					3-pin micro AC connector	<b>E57-18GU08-AAB</b> ☺	<b>E57-18GU08-A1AB</b> ☺	
		16 mm				3-pin micro AC connector	<b>E57-18GE16-AAB</b> ☺	<b>E57-18GE16-A1AB</b> ☺
10–30 Vdc		5 mm	Shielded	NPN/PNP	2-meter cable	<b>E57-18GS05-D</b>	<b>E57-18GS05-D1</b>	
					4-pin micro DC connector	<b>E57-18GS05-DDB</b> ☺	<b>E57-18GS05-D1DB</b> ☺	
		8 mm	Unshielded	NPN/PNP	2-meter cable	<b>E57-18GU08-D</b>	<b>E57-18GU08-D1</b>	
					4-pin micro DC connector	<b>E57-18GU08-DDB</b> ☺	<b>E57-18GU08-D1DB</b> ☺	
16 mm (extended range)				NPN/PNP	2-meter cable	<b>E57-18GE16-D</b>	<b>E57-18GE16-D1</b>	
	4-pin micro DC connector				<b>E57-18GE16-DDB</b> ☺	<b>E57-18GE16-D1DB</b> ☺		
	<b>30 mm Diameter</b>							
	20–250 Vac	10 mm	Shielded	—	2-meter cable	<b>E57-30GS10-A</b>	<b>E57-30GS10-A1</b>	
					3-pin micro AC connector	<b>E57-30GS10-AAB</b> ☺	<b>E57-30GS10-A1AB</b> ☺	
		15 mm	Unshielded	—	2-meter cable	<b>E57-30GU15-A</b>	<b>E57-30GU15-A1</b>	
					3-pin micro AC connector	<b>E57-30GU15-AAB</b> ☺	<b>E57-30GU15-A1AB</b> ☺	
		10–30 Vdc	10 mm	Shielded	NPN/PNP	2-meter cable	<b>E57-30GS10-D</b>	<b>E57-30GS10-D1</b>
						4-pin micro DC connector	<b>E57-30GS10-DDB</b> ☺	<b>E57-30GS10-D1DB</b> ☺
	15 mm		Unshielded	NPN/PNP	2-meter cable	<b>E57-30GU15-D</b>	<b>E57-30GU15-D1</b>	
					4-pin micro DC connector	<b>E57-30GU15-DDB</b> ☺	<b>E57-30GU15-D1DB</b> ☺	
	25 mm (extended range)			NPN/PNP	2-meter cable	<b>E57-30GE25-D</b>	<b>E57-30GE25-D1</b>	
					4-pin micro DC connector	<b>E57-30GE25-DDB</b> ☺	<b>E57-30GE25-D1DB</b> ☺	

**Note**

☺☺ See listing of compatible connector cables on [Page V8-T3-40](#).

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## Inductive Proximity Sensors

### E57 Two-Wire (AC, AC/DC, DC) Proximity Sensors


#### Compatible Connector Cables

##### Standard Cables <sup>①</sup>

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Micro-Style  
Straight Female



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>						
AC	3-pin, 3-wire	22 AWG	6.0 ft (2m)	 1-Green 2-Red/Black 3-Red/White	CSAS3F3CY2202	CSAS3F3RY2202

#### Accessories

##### E57 Two-Wire Proximity 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>

##### Note

<sup>①</sup> For a full selection of connector cables, see **Tab 10, section 10.1**.

## Technical Data and Specifications

### Stainless Steel Body

Description	Two-Wire AC/DC Sensors		
	Two-Wire AC Sensors	AC Operation	DC Operation
Operating voltage	40–250 Vac	40–250 Vac	20–250 Vdc
Maximum load current	250 mA	200 mA	200 mA
Switching frequency	20 Hz	60 Hz	60 Hz
Leakage current	1.7 mA maximum at 70 °C	1.7V mA maximum at 120 Vac	≤2.0 mA
Voltage drop	7V maximum	≤4 V at >25 mA	12 V at <10 mA
Holding current	5 mA minimum	5 mA minimum	5 mA maximum
Protection	—	Resettable short circuit; overload protection	Resettable short circuit; overload protection
Switching hysteresis	2–20% of rated sensing distance	2–20% of rated sensing distance	2–20% of rated sensing distance
Repeat accuracy	<3% sensing distance	<3% sensing distance	<3% sensing distance
Output indicator LED	360° viewable LED	360° viewable LED	360° viewable LED
Operating temperature	–13 to 158 °F (–25 to 70 °C) <sup>①</sup>	–13 to 158 °F (–25 to 70 °C) <sup>①</sup>	–13 to 158 °F (–25 to 70 °C) <sup>①</sup>
Enclosure ratings	NEMA 4, 4X, 6, 6P, 12 and 13 (IP67)	NEMA 4, 4X, 6, 6P, 12 and 13 (IP67)	NEMA 4, 4X, 6, 6P, 12 and 13 (IP67)
Shock	30 g sine wave, 11 ms per IEC68-2-76	30 g sine wave, 11 ms per IEC68-2-76	30 g sine wave, 11 ms per IEC68-2-76
Vibration	10 to 55 Hz, 1 mm amplitude	10 to 55 Hz, 1 mm amplitude	10 to 55 Hz, 1 mm amplitude
Material of construction	Stainless steel, polycarbonate end bells, Ryton <sup>®</sup> front cap	Stainless steel, polycarbonate end bells, Ryton <sup>®</sup> front cap	Stainless steel, polycarbonate end bells, Ryton <sup>®</sup> front cap
Cable	AWM Style 20387 (PVC)	AWM Style 20387 (PVC)	AWM Style 20387 (PVC)

#### Notes

Ryton<sup>®</sup> is a registered trademark of Phillips Chemical (division of Phillips Petroleum).

<sup>①</sup> 240 Vac operation is limited to less than 122 °F (50 °C) in two-wire AC/DC models.

# 3.5

## Inductive Proximity Sensors

### E57 Two-Wire (AC, AC/DC, DC) Proximity Sensors

3

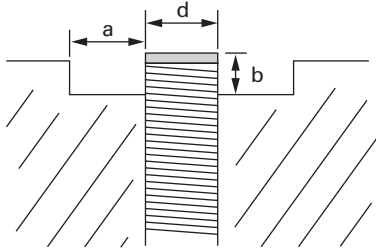
#### Nickel-Brass Body

Description	Two-Wire AC Sensors	Two-Wire DC Sensors
Operating voltage	20–250 Vac	10–30 Vdc
OFF-state leakage	<1.8 mA	<0.8 mA
Maximum load current	200 mA	100 mA
Minimum load current	5 mA	3 mA
Surge current	5 A (20 ms)	—
Voltage drop	<8 Vac at 400 mA	<6 V
Switching frequency	—	—
8 mm diameter	—	—
12 mm diameter	25 Hz	1 kHz (shielded); 1 kHz (unshielded)
18 mm diameter	25 Hz	1 kHz (shielded); 500 Hz (unshielded)
30 mm diameter	25 Hz	500 Hz (shielded); 200 Hz (unshielded)
Short-circuit protection	No	Yes
Overload trip point	—	>120 mA
Time delay before availability	—	—
Transient protection	—	2 kV, 1 ms, 1 kohm
Repeat accuracy	Shielded: <1.0%/Unshielded: <3.0% (Sr)	<2.0% (Sr)
Switching hysteresis	<15%	<15%
Operating temperature	–13 to 158 °F (–25 to 70 °C) (32 to 140 °F [0 to 60 °C] for all extended range models)	–13 to 158 °F (–25 to 70 °C) (32 to 140 °F [0 to 60 °C] for all extended range models)
Temperature drift	<10% (Sr)	<10% (Sr)
Protection	IP67, IP69K	IP67, IP69K
Housing material	Nickel plated brass (stainless steel for 8 mm diameter, nano-connector models)	Nickel plated brass (stainless steel for 8 mm diameter, nano-connector models)
Cable	PVC jacket, 2-meter length	PVC jacket, 2-meter length

### Recommended Mounting Clearances

For unshielded standard range sensors and extended 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.)

### E57 Premium Sensors, Mounting



Type	Shielding	a	b
Standard range	Shielded	0	0
	Unshielded	Cap height	2 x Sn
Extended range	Semi-shielded	d	Sn
	Non-embeddable	Cap height	2 x Sn

### Wiring Diagrams

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

### Stainless Steel Body

Operating Voltage	Output	Cable Models	Connector Models (Face View Male Shown)	
			Micro	Mini
<b>Two-Wire Sensors</b>				
20–250 Vac/dc and AC-only AC wiring example	NO and NC			
20–250 Vac/dc DC wiring example	NO and NC (NPN)			—
	NO and NC (PNP)			—

# 3.5

## Inductive Proximity Sensors

E57 Two-Wire (AC, AC/DC, DC) Proximity Sensors

### Nickel-Brass Body

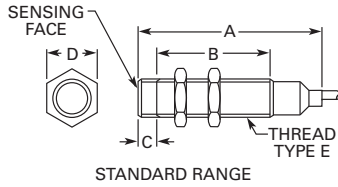
Operating Voltage	Output	Cable Models	Connector Models (Face View Male Shown) Micro
<b>Two-Wire Sensors</b>			
20–250 Vac	NO	<p>* Internally connected to housing (use of this wire is optional)</p>	<p>* Internally connected to housing (use of this wire is optional)</p>
10–30 Vdc	NO (NPN)		
	NO (PNP)		

### Dimensions

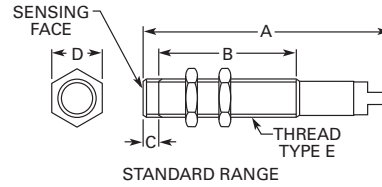
Approximate Dimensions in Inches (mm)

### Stainless Steel Body (Standard Length) ①②

#### Cable Models



#### Connector Models



Size	Shielding	Overall Length A	Threaded Length B	Cap Height C	Nut Width D	Thread Size E
<b>Two-Wire AC Sensors – Cable Models</b>						
12 mm	Shielded	2.46 (62.4)	1.98 (50.3)	—	0.67 (16.8)	M12 x 1
	Semi-shielded	2.87 (72.8)	2.28 (57.9)	0.06 (1.62)	0.67 (16.8)	M12 x 1
	Unshielded	2.87 (72.7)	1.98 (50.3)	0.36 (9.14)	0.67 (16.8)	M12 x 1
18 mm	Shielded	2.54 (64.5)	2.00 (50.9)	—	0.94 (23.8)	M18 x 1
	Semi-shielded	2.60 (66.1)	1.90 (48.2)	0.10 (2.54)	0.94 (23.8)	M18 x 1
	Unshielded	2.60 (66.0)	1.47 (37.2)	0.56 (14.1)	0.94 (23.8)	M18 x 1
30 mm	Shielded	2.73 (69.3)	1.98 (50.3)	—	1.41 (35.9)	M30 x 1.5
	Semi-shielded	2.67 (67.8)	1.90 (48.2)	0.13 (3.30)	1.41 (35.9)	M30 x 1.5
	Unshielded	2.73 (69.3)	1.49 (37.8)	0.52 (13.26)	1.41 (35.9)	M30 x 1.5
<b>Two-Wire AC Sensors – Micro-Connector Models</b>						
12 mm	Shielded	2.69 (68.4)	1.98 (50.3)	—	0.67 (16.8)	M12 x 1
	Semi-shielded	3.04 (77.2)	2.28 (57.9)	0.06 (1.62)	0.67 (16.8)	M12 x 1
	Unshielded	3.06 (77.7)	1.98 (50.3)	0.36 (9.14)	0.36 (9.14)	M12 x 1
18 mm	Shielded	2.72 (69.06)	2.00 (50.9)	—	0.94 (23.8)	M18 x 1
	Semi-shielded	2.72 (69.1)	1.90 (48.2)	0.10 (2.54)	0.94 (23.8)	M18 x 1
	Unshielded	2.74 (69.4)	1.47 (37.2)	0.56 (14.1)	0.94 (23.8)	M18 x 1
30 mm	Shielded	2.91 (73.8)	1.98 (50.3)	—	1.41 (35.9)	M30 x 1.5
	Semi-shielded	2.78 (70.6)	1.90 (48.2)	0.13 (3.30)	1.41 (35.9)	M30 x 1.5
	Unshielded	2.91 (73.8)	1.49 (37.8)	0.52 (13.26)	1.41 (35.9)	M30 x 1.5

#### Notes

- ① These dimensions apply to the Premium+ Series models in this section. Not indicated Premium Series models.
- ② For short body model dimensions (E57SAL ...) refer to **Page V8-T3-24**.

# 3.5

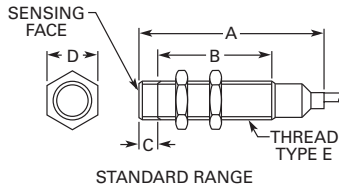
## Inductive Proximity Sensors

### E57 Two-Wire (AC, AC/DC, DC) Proximity Sensors

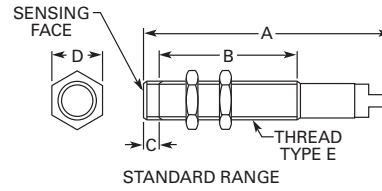
Approximate Dimensions in Inches (mm)

#### Stainless Steel Body (Standard Length) ①②

##### Cable Models, continued



##### Connector Models, continued



3

Size	Shielding	Overall Length A	Threaded Length B	Cap Height C	Nut Width D	Thread Size E
<b>Two-Wire AC/DC Sensors—Cable Models</b>						
12 mm	Shielded	2.45 (62.4)	1.98 (50.3)	—	0.67 (16.8)	M12 x 1
	Unshielded	2.45 (62.4)	1.80 (45.8)	0.20 (5)	0.67 (16.8)	M12 x 1
18 mm	Shielded	2.54 (64.5)	2.00 (50.9)	—	0.94 (23.8)	M18 x 1
	Unshielded	2.54 (64.5)	1.75 (44.4)	0.28 (7)	0.94 (23.8)	M18 x 1
30 mm	Shielded	2.72 (69.3)	2.12 (53.8)	—	1.41 (35.9)	M30 x 1.5
	Unshielded	2.72 (69.3)	1.63 (41.4)	0.52 (13.26)	1.41 (35.9)	M30 x 1.5
<b>Two-Wire AC/DC Sensors—Micro-Connector Models</b>						
12 mm	Shielded	2.69 (68.4)	1.98 (50.3)	—	0.67 (16.8)	M12 x 1
	Unshielded	2.69 (68.4)	1.80 (45.8)	0.20 (5)	0.67 (16.8)	M12 x 1
18 mm	Shielded	2.72 (69.06)	2.00 (50.9)	—	0.94 (23.8)	M18 x 1
	Unshielded	2.72 (69.06)	1.75 (44.4)	0.28 (7)	0.94 (23.8)	M18 x 1
30 mm	Shielded	2.91 (73.8)	1.98 (50.3)	—	1.41 (35.9)	M30 x 1.5
	Unshielded	2.91 (73.8)	1.49 (37.8)	0.52 (13.26)	1.41 (35.9)	M30 x 1.5
<b>Two-Wire AC Sensors—Mini-Connector Models</b>						
18 mm	Shielded	3.39 (86.1)	2.00 (50.8)	0.02 (0.5)	0.94 (23.8)	M18 x 1
	Semi-shielded	3.39 (86.0)	1.90 (48.2)	0.10 (2.54)	0.94 (23.8)	M18 x 1
	Unshielded	3.39 (86.1)	1.46 (37.0)	0.57 (14.5)	0.94 (23.8)	M18 x 1
30 mm	Shielded	3.39 (86.1)	2.1 (53.3)	0.03 (0.8)	1.41 (35.9)	M30 x 1.5
	Semi-shielded	3.44 (87.4)	1.90 (48.2)	0.13 (3.30)	1.41 (35.9)	M30 x 1.5
	Unshielded	3.39 (86.1)	1.55 (39.4)	0.55 (14.0)	1.41 (35.9)	M30 x 1.5

#### Notes

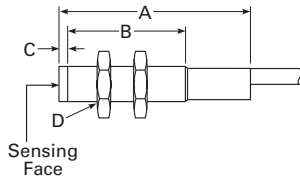
① These dimensions apply to the Premium+ Series models in this section. Not indicated Premium Series models.

② For short body model dimensions (E57SAL ...) refer to **Page V8-T3-24**.

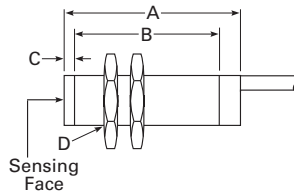
Approximate Dimensions in Inches (mm)

### Stainless Steel Short Body (Cable Connector Models)

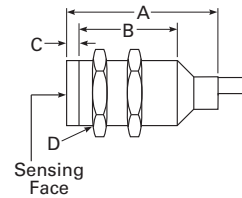
**12 mm**



**18 mm**



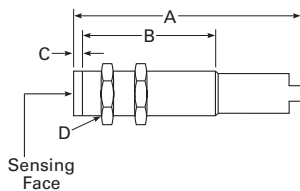
**30 mm**



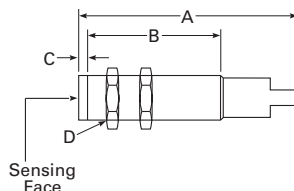
Size	Shielding	Overall Length A	Threaded Length B	Cap Height C	Thread Size D
<b>Two-Wire AC Sensors</b>					
12 mm	Shielded	2.04 (51.7)	1.56 (39.6)	0.02 (0.5)	M12 x 1
	Unshielded	2.04 (51.7)	1.38 (35.1)	0.20 (5)	M12 x 1
18 mm	Shielded	1.39 (35.3)	0.86 (21.82)	0.02 (0.5)	M18 x 1
	Unshielded	1.39 (35.3)	0.60 (15.32)	0.28 (7)	M18 x 1
30 mm	Shielded	1.58 (40.2)	0.99 (25.15)	0.03 (0.8)	M30 x 1.5
	Unshielded	1.77 (44.9)	0.68 (17.27)	0.52 (13.26)	M30 x 1.5
<b>Two-Wire AC/DC Sensors</b>					
12 mm	Shielded	2.46 (62.4)	1.98 (50.27)	—	M12 x 1
	Unshielded	2.46 (62.4)	1.80 (45.77)	0.20 (5)	M12 x 1
18 mm	Shielded	2.54 (64.5)	2.00 (50.9)	—	M18 x 1
	Unshielded	2.54 (64.5)	1.75 (44.4)	0.28 (7)	M18 x 1
30 mm	Shielded	2.72 (69.3)	2.12 (53.8)	—	M30 x 1.5
	Unshielded	2.72 (69.3)	1.63 (41.4)	0.52 (13.26)	M30 x 1.5

### Stainless Steel Short Body (Micro-Connector Models)

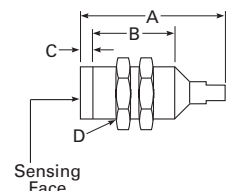
**12 mm**



**18 mm**



**30 mm**



Size	Shielding	Overall Length A	Threaded Length B	Cap Height C	Thread Size D
<b>Two-Wire AC Sensors</b>					
12 mm	Shielded	2.27 (57.8)	1.56 (39.6)	0.02 (0.5)	M12 x 1
	Unshielded	2.27 (57.8)	1.38 (35.1)	0.20 (5)	M12 x 1
18 mm	Shielded	1.57 (40.0)	0.86 (21.82)	0.02 (0.5)	M18 x 1
	Unshielded	1.57 (40.0)	0.60 (15.32)	0.28 (7)	M18 x 1
30 mm	Shielded	1.76 (44.8)	0.99 (25.15)	0.03 (0.8)	M30 x 1.5
	Unshielded	1.95 (49.5)	0.68 (17.27)	0.52 (13.26)	M30 x 1.5
<b>Two-Wire AC/DC Sensors</b>					
12 mm	Shielded	2.69 (68.4)	1.98 (50.27)	—	M12 x 1
	Unshielded	2.69 (68.4)	1.80 (45.77)	0.20 (5)	M12 x 1
18 mm	Shielded	2.72 (69.06)	2.00 (50.9)	—	M18 x 1
	Unshielded	2.72 (69.06)	1.75 (44.4)	0.28 (7)	M18 x 1
30 mm	Shielded	2.91 (73.8)	2.12 (53.8)	—	M30 x 1.5
	Unshielded	2.91 (73.8)	1.63 (41.4)	0.52 (13.26)	M30 x 1.5

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## Inductive Proximity Sensors

### E57 Two-Wire (AC, AC/DC, DC) Proximity Sensors

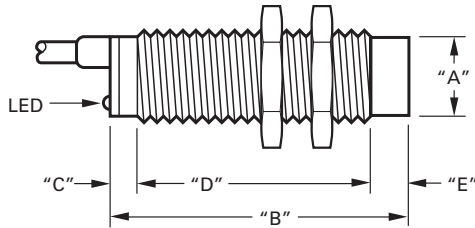
Approximate Dimensions in mm

#### Nickel-Brass Body

##### Cable Models

3

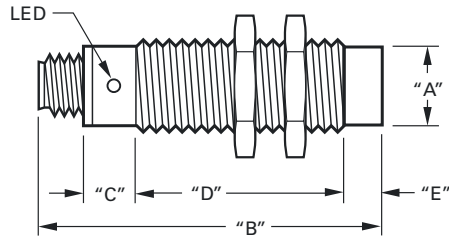
##### Two-Wire Sensors



Catalog Number	Operating Voltage	A	B	C	D	E
<b>E57-12GS02-A</b>	20–250 Vac	M12x1	65	15	50	—
<b>E57-12GU04-A</b>		M12x1	60	15	42	8
<b>E57-18GS05-A</b>		M18x1	80	20	60	—
<b>E57-18GU08-A</b>		M18x1	80	20	48	12
<b>E57-30GS10-A</b>		M30x1.5	80	20	60	—
<b>E57-30GU15-A</b>		M30x1.5	80	20	45	15
<b>E57-12GS02-D</b>	10–30 Vdc	M12x1	50	—	50	—
<b>E57-12GU04-D</b>		M12x1	50	—	42	8
<b>E57-12GE08-D</b>		M12x1	50	—	42	8
<b>E57-12GE08-D1</b>		M12x1	50	—	42	8
<b>E57-18GS05-D</b>		M18x1	55	5	50	—
<b>E57-18GU08-D</b>		M18x1	55	5	38	12
<b>E57-18GE16-D</b>		M18x1	55	5	38	12
<b>E57-18GE16-D1</b>		M18x1	55	5	38	12
<b>E57-30GS10-D</b>		M30x1.5	55	5	50	—
<b>E57-30GU15-D</b>		M30x1.5	55	5	35	15
<b>E57-30GE25-D</b>		M30x1.5	55	5	35	15
<b>E57-30GE25-D1</b>		M30x1.5	55	5	35	15

##### Connector Models

##### Two-Wire Sensors



Catalog Number <sup>①</sup>	Operating Voltage	A	B	C	D	E
<b>E57-12GS02-AAB</b>	20–250 Vac	M12x1	68	16	42	—
<b>E57-12GU04-AAB</b>		M12x1	68	16	34	8
<b>E57-18GS05-AAB</b>		M18x1	91	20	60	—
<b>E57-18GU08-AAB</b>		M18x1	91	20	48	12
<b>E57-18GE16-AAB</b>		M18x1	79.2	15	37	11.5
<b>E57-30GS10-AAB</b>		M30x1.5	80	20	60	—
<b>E57-30GU15-AAB</b>		M30x1.5	91	20	45	15
<b>E57-12GS02-DDB</b>	10–30 Vdc	M12x1	69	16	42	—
<b>E57-12GU04-DDB</b>		M12x1	68	16	34	8
<b>E57-12GE08-DDB</b>		M12x1	68	10	50	8
<b>E57-12GE08-D1DB</b>		M12x1	68	10	50	8
<b>E57-18GS05-DDB</b>		M18x1	76	15	61	—
<b>E57-18GU08-DDB</b>		M18x1	80	15	49	12
<b>E57-18GE16-DDB</b>		M18x1	79	15	52	12
<b>E57-30GS10-DDB</b>		M30x1.5	75	15	60	—
<b>E57-30GU15-DDB</b>		M30x1.5	79	15	45	15
<b>E57-30GE25-DDB</b>		M30x1.5	78	15	48	15

#### Note

① Normally closed models are dimensionally indicated to equivalent normally open models.