

July 2005

Global Plus Inductive Proximity Sensors

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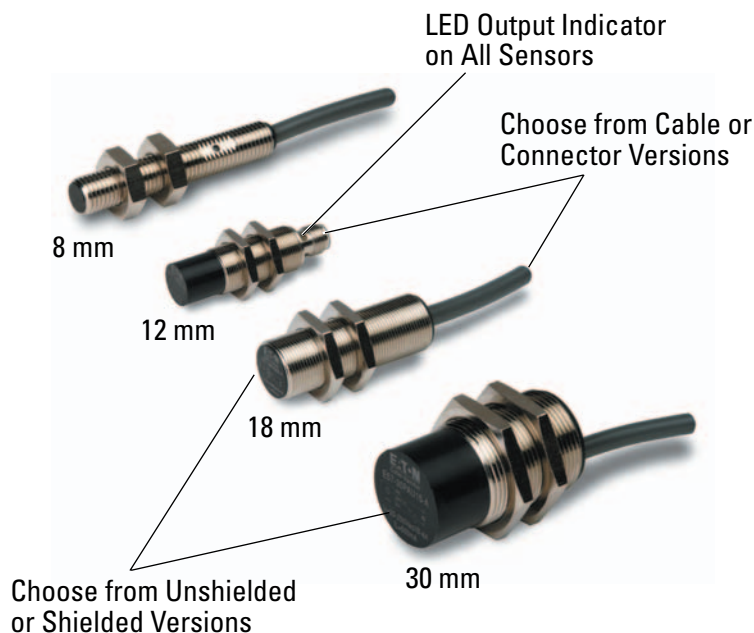
The Cutler-Hammer® Global Plus Proximity Sensor Family was designed by Eaton's electrical business as the optimal solution for high volume OEM customers. It has been optimized to include the basic functions for high sensing reliability at the price you need. The Global Plus Line offers 8, 12, 18 and 30 mm diameter connectorized and cable versions with a bright LED indicator to show output status. Regardless of the electrical scheme you're using, we've got you covered — AC or DC, 2-wire and 3-wire, NPN or PNP, we have it in our line at the right price.

Approvals



For the most current information on this product, visit our web site: www.EatonElectrical.com

Most Cost-Effective Inductive Proximity on the Market



Product Features

- The Global Plus Proximity Line is designed as the most cost-effective solution for every tubular proximity need
- Available in a variety of sizes to fit in all of your applications: 8 mm, 12 mm, 18 mm and 30 mm diameters
- DC sensors operate on 10 – 30V DC in 3-wire (NPN or PNP) configurations
- AC sensors operate on 20 – 250V AC in 2-wire configuration
- Bright output LED indicator on all models, 360 degree indicators also available
- Shielded and unshielded versions available

For Customer Service in the U.S. call **1-800-356-1243**,
in Canada call **1-800-268-3578**.
For Application Assistance in the U.S. and Canada
call **1-800-426-9184**.

Model Selection — Global Plus Prox Sensors

	Operating Voltage	Sensing Range	Shielding	Output Type	Connection Type	Catalog Number	
						N.O. Output	N.C. Output
2-Wire Sensors							
12 mm Diameter 	20 – 250V AC	2 mm	Shielded	—	2-meter Cable	E57-12PAS02-A	E57-12PBS02-A
				—	3-pin Micro AC Connector	E57-12PAS02-AD ☼	E57-12PBS02-AD ☼
		4 mm	Unshielded	—	2-meter Cable	E57-12PAU04-A	E57-12PBU04-A
				—	3-pin Micro AC Connector	E57-12PAU04-AD ☼	E57-12PBU04-AD ☼
18 mm Diameter 	20 – 250V AC	5 mm	Shielded	—	2-meter Cable	E57-18PAS05-A	E57-18PBS05-A
				—	3-pin Micro AC Connector	E57-18PAS05-AD ☼	E57-18PBS05-AD ☼
		8 mm	Unshielded	—	2-meter Cable	E57-18PAU08-A	E57-18PBU08-A
				—	3-pin Micro AC Connector	E57-18PAU08-AD ☼	E57-18PBU08-AD ☼
30 mm Diameter 	20 – 250V AC	10 mm	Shielded	—	2-meter Cable	E57-30PAS10-A	E57-30PBS10-A
				—	3-pin Micro AC Connector	E57-30PAS10-AD ☼	E57-30PBS10-AD ☼
		15 mm	Unshielded	—	2-meter Cable	E57-30PAU15-A	E57-30PBU15-A
				—	3-pin Micro AC Connector	E57-30PAU15-AD ☼	E57-30PBU15-AD ☼
3-Wire Sensors							
8 mm Diameter 	10 – 30V DC	1.5 mm	Shielded	NPN	2-meter Cable	E57-08PAS15-C	E57-08PBS15-C
					4-pin Micro DC Connector	E57-08PAS15-CD ☼	E57-08PBS15-CD ☼
				PNP	2-meter Cable	E57-08PAS15-G	E57-08PBS15-G
					4-pin Micro DC Connector	E57-08PAS15-GD ☼	E57-08PBS15-GD ☼
		2 mm	Unshielded	NPN	2-meter Cable	E57-08PAU02-C	E57-08PBU02-C
					4-pin Micro DC Connector	E57-08PAU02-CD ☼	E57-08PBU02-CD ☼
PNP	2-meter Cable	E57-08PAU02-G	E57-08PBU02-G				
	4-pin Micro DC Connector	E57-08PAU02-GD ☼	E57-08PBU02-GD ☼				

☐ Fast turn product with typical one day lead-time to shipment.

☼☼ See listing of compatible connector cables on **Page 4-37**.

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Model Selection — Global Plus Prox Sensors (Continued)

	Operating Voltage	Sensing Range	Shielding	Output Type	Connection Type	Catalog Number	
						N.O. Output	N.C. Output
3-Wire Sensors (Continued)							
12 mm Diameter 	10–30V DC	2 mm	Shielded	NPN	2-meter Cable	E57-12PAS02-C	E57-12PBS02-C
					4-pin Micro DC Connector	E57-12PAS02-CD ⊕	E57-12PBS02-CD ⊕
				PNP	2-meter Cable	E57-12PAS02-G	E57-12PBS02-G
		4-pin Micro DC Connector	E57-12PAS02-GD ⊕		E57-12PBS02-GD ⊕		
		4 mm	Unshielded	NPN	2-meter Cable	E57-12PAU04-C	E57-12PBU04-C
					4-pin Micro DC Connector	E57-12PAU04-CD ⊕	E57-12PBU04-CD ⊕
PNP	2-meter Cable			E57-12PAU04-G	E57-12PBU04-G		
	4-pin Micro DC Connector	E57-12PAU04-GD ⊕	E57-12PBU04-GD ⊕				
18 mm Diameter 	10–30V DC	5 mm	Shielded	NPN	2-meter Cable	E57-18PAS05-C	E57-18PBS05-C
					4-pin Micro DC Connector	E57-18PAS05-CD ⊕	E57-18PBS05-CD ⊕
				PNP	2-meter Cable	E57-18PAS05-G	E57-18PBS05-G
		4-pin Micro DC Connector	E57-18PAS05-GD ⊕		E57-18PBS05-GD ⊕		
		8 mm	Unshielded	NPN	2-meter Cable	E57-18PAU08-C	E57-18PBU08-C
					4-pin Micro DC Connector	E57-18PAU08-CD ⊕	E57-18PBU08-CD ⊕
PNP	2-meter Cable			E57-18PAU08-G	E57-18PBU08-G		
	4-pin Micro DC Connector	E57-18PAU08-GD ⊕	E57-18PBU08-GD ⊕				
30 mm Diameter 	10–30V DC	10 mm	Shielded	NPN	2-meter Cable	E57-30PAS10-C	E57-30PBS10-C
					4-pin Micro DC Connector	E57-30PAS10-CD ⊕	E57-30PBS10-CD ⊕
				PNP	2-meter Cable	E57-30PAS10-G	E57-30PBS10-G
		4-pin Micro DC Connector	E57-30PAS10-GD ⊕		E57-30PBS10-GD ⊕		
		15 mm	Unshielded	NPN	2-meter Cable	E57-30PAU15-C	E57-30PBU15-C
					4-pin Micro DC Connector	E57-30PAU15-CD ⊕	E57-30PBU15-CD ⊕
PNP	2-meter Cable			E57-30PAU15-G	E57-30PBU15-G		
	4-pin Micro DC Connector	E57-30PAU15-GD ⊕	E57-30PBU15-GD ⊕				

☐ Fast turn product with typical one day lead-time to shipment.

⊕ See listing of compatible connector cables below.

Model Selection — Compatible Connector Cables ①

	Voltage Style	Number of Pins	Gauge	Length	Catalog Number			Pin Configuration/Wire Colors (Face View Female Shown)
					PVC Jacket	PUR Jacket	IRR PUR Jacket	
Standard Cables — Micro Style								
Micro Style Straight Female 	AC	3-pin 3-wire	22 AWG	6.0 feet (2m)	CSAS3F3CY2202	CSAS3F3RY2202	—	 1-Green 2-Red/Black 3-Red/White
					DC	4-pin 3-wire	22 AWG	6.0 feet (2m)
	4-pin 4-wire	22 AWG	6.0 feet (2m)	CSDS4A4CY2202				

① For a full selection of connector cables, see **Section 10**.

☐ Fast turn product with typical one day lead-time to shipment.

Model Selection — Accessories

Description	Reference
Mounting Brackets and Other Accessories	See Section 8
Connector Cables	See Section 10

Wiring Diagrams (Pin numbers are for reference only, rely on pin location when wiring)

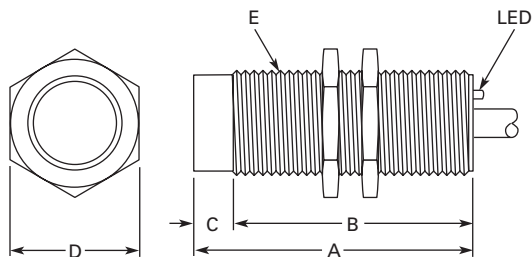
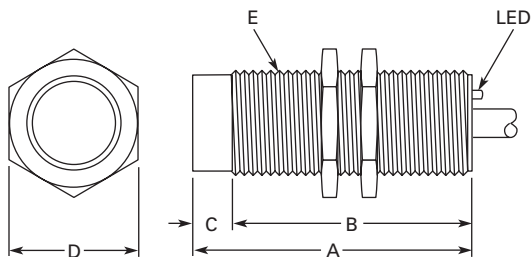
Operating Voltage	Output	Cable Models	Connector Models (Face View Male Shown)
			Micro
2-Wire Sensors			
20 – 250V AC	N.O./N.C.	<p>* Internally connected to housing (use of this wire is optional)</p>	<p>* Internally connected to housing (use of this wire is optional)</p>
3-Wire Sensors			
10 – 30V DC	N.O. (NPN)		
	N.O. (PNP)		
	N.C. (NPN)		
	N.C. (PNP)		

Specifications

	2-Wire	3-Wire
	AC Models	DC Models
Operating Voltage	20 – 250V AC; 50 – 60 Hz	10 – 30V DC
Ripple	—	≤ 10%
Current Consumption	—	< 20 mA
Max. Output Current	500 mA	M8: 100 mA; Others: 200 mA ± 15%
Output Protection	—	1 kV / 10 mS / 10K
Voltage Drop	< 5V	≤ 2V
Inrush Current	M12: 1A; Others: 4A	—
Minimum Load Current	5 mA	—
Surge Current	4 mA	—
Maximum Switching Frequency	10 Hz	8 mm: 1 kHz (Shielded); 600 Hz (Unshielded) 12 mm: 800 Hz (Shielded); 400 Hz (Unshielded) 18 mm: 500 Hz (Shielded); 200 Hz (Unshielded) 30 mm: 300 Hz (Shielded); 100 Hz (Unshielded)
Residual Current	< 2.5 mA	—
Repeat Accuracy	—	< 0.01 mm
Short Circuit Protection	No	Yes
Switching Hysteresis	—	5%
Operating Temperature	-13 – 158°F (-25 – 70°C)	
Shock and Vibration Immunity	30g / 55 Hz	
EMC	IEC 947-5-2, IEC 1000-4-2, 3, 4, 5 / EN 50082-2	
Protection	IP67	
Housing Material	Nickel Plated Brass	
Cable	PVC	

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Approximate Dimensions in mm — Cable Models



Operating Voltage	Catalog Number	Approximate Dimensions in mm				
		A	B	C	D	E

2-Wire Sensors

20 – 250V AC	E57-12PAS02-A ①	60	60	—	17	12
	E57-12PBS02-A ①	60	60	—	17	12
	E57-12PAU04-A ①	60	52	8	17	12
	E57-12PBU04-A ①	60	52	8	17	12
	E57-18PAS05-A	50	50	—	24	18
	E57-18PBS05-A	50	50	—	24	18
	E57-18PAU08-A	50	34	16	24	18
	E57-18PBU08-A	50	34	16	24	18
	E57-30PAS10-A	50	50	—	36	30
	E57-30PBS10-A	50	50	—	36	30
	E57-30PAU15-A	50	32	18	36	30
	E57-30PBU15-A	50	32	18	36	30

① LED on threaded tube not back end.

Operating Voltage	Catalog Number	Approximate Dimensions in mm				
		A	B	C	D	E

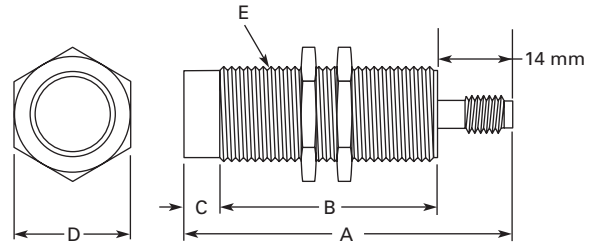
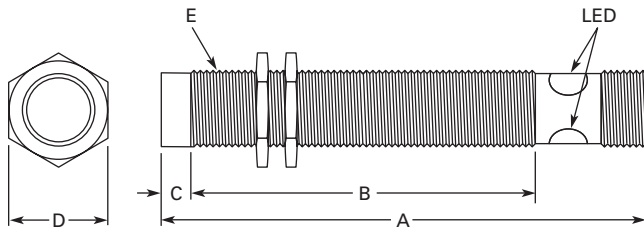
3-Wire Sensors

10 – 30V DC	E57-08PAS15-C	45	45	—	11	8
	E57-08PBS15-C	45	45	—	11	8
	E57-08PAU02-C	45	41	4	11	8
	E57-08PBU02-C	45	41	4	11	8
	E57-08PAS15-G	45	45	—	11	8
	E57-08PBS15-G	45	45	—	11	8
	E57-08PAU02-G	45	41	4	11	8
	E57-08PBU02-G	45	41	4	11	8
	E57-12PAS02-C	50	50	—	17	12
	E57-12PBS02-C	50	50	—	17	12
	E57-12PAU04-C	50	42	8	17	12
	E57-12PBU04-C	50	42	8	17	12
	E57-12PAS02-G	50	50	—	17	12
	E57-12PBS02-G	50	50	—	17	12
	E57-12PAU04-G	50	42	8	17	12
	E57-12PBU04-G	50	42	8	17	12
	E57-18PAS05-C	50	50	—	24	18
	E57-18PBS05-C	50	50	—	24	18
	E57-18PAU08-C	50	34	16	24	18
	E57-18PBU08-C	50	34	16	24	18
	E57-18PAS05-G	50	50	—	24	18
	E57-18PBS05-G	50	50	—	24	18
	E57-18PAU08-G	50	34	16	24	18
	E57-18PBU08-G	50	34	16	24	18
	E57-30PAS10-C	50	50	—	36	30
	E57-30PBS10-C	50	50	—	36	30
	E57-30PAU15-C	50	32	18	36	30
	E57-30PBU15-C	50	32	18	36	30
	E57-30PAS10-G	50	50	—	36	30
	E57-30PBS10-G	50	50	—	36	30
E57-30PAU15-G	50	32	18	36	30	
E57-30PBU15-G	50	32	18	36	30	

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Approximate Dimensions in mm — Connector Models



Operating Voltage	Catalog Number	Approximate Dimensions in mm				
		A	B	C	D	E

2-Wire Sensors

20 – 250V AC	E57-12PAS02-AD	60	38	—	17	12
	E57-12PBS02-AD	60	38	—	17	12
	E57-12PAU04-AD	60	38	8	17	12
	E57-12PBU04-AD	60	38	8	17	12
	E57-18PAS05-AD	66	50	—	24	18
	E57-18PBS05-AD	66	50	—	24	18
	E57-18PAU08-AD	66	50	16	24	18
	E57-18PBU08-AD	66	50	16	24	18
	E57-30PAS10-AD	66	50	—	36	30
	E57-30PBS10-AD	66	50	—	36	30
	E57-30PAU15-AD	66	50	18	36	30
	E57-30PBU15-AD	66	50	18	36	30

3-Wire Sensors

10 – 30V DC	E57-08PAS15-CD	65	45	—	11	8
	E57-08PBS15-CD	65	45	—	11	8
	E57-08PAU02-CD	65	41	4	11	8
	E57-08PBU02-CD	65	41	4	11	8
	E57-08PAS15-GD	65	45	—	11	8
	E57-08PBS15-GD	65	45	—	11	8
	E57-08PAU02-GD	65	41	4	11	8
	E57-08PBU02-GD	65	41	4	11	8
	E57-12PAS02-CD	60	38	—	17	12
	E57-12PBS02-CD	60	38	—	17	12
	E57-12PAU04-CD	60	38	8	17	12
	E57-12PBU04-CD	60	38	8	17	12
	E57-12PAS02-GD	60	38	—	17	12
	E57-12PBS02-GD	60	38	—	17	12
	E57-12PAU04-GD	60	38	8	17	12
	E57-12PBU04-GD	60	38	8	17	12

Operating Voltage	Catalog Number	Approximate Dimensions in mm				
		A	B	C	D	E

3-Wire Sensors

10 – 30V DC	E57-18PAS05-CD	64	50	—	24	18
	E57-18PBS05-CD	64	50	—	24	18
	E57-18PAU08-CD	64	34	16	24	18
	E57-18PBU08-CD	64	34	16	24	18
	E57-18PAS05-GD	64	50	—	24	18
	E57-18PBS05-GD	64	50	—	24	18
	E57-18PAU08-GD	64	34	16	24	18
	E57-18PBU08-GD	64	34	16	24	18
	E57-30PAS10-CD	64	50	—	36	30
	E57-30PBS10-CD	64	50	—	36	30
	E57-30PAU15-CD	64	32	18	36	30
	E57-30PBU15-CD	64	32	18	36	30
	E57-30PAS10-GD	64	50	—	36	30
	E57-30PBS10-GD	64	50	—	36	30
	E57-30PAU15-GD	64	32	18	36	30
	E57-30PBU15-GD	64	32	18	36	30