

Global Inductive Proximity Sensors

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The Cutler-Hammer® Global Proximity Sensor Family was created by Eaton's electrical business with the high volume OEM in mind. It has been optimized to include only those functions necessary for basic, reliable sensing. Why pay for extra features when you don't need them? That's not to say these sensors lack the performance or features you expect. Our DC units are short circuit protected and will sense up to 2,000 operations per second. Plus, all sensors include a bright LED indicator to show output status.

There's no need to design your machine around these sensors. The Global family includes models in a variety of diameters so they will fit right where you need them. Select models from 8 mm diameter all the way up to 30 mm, for just the size or sensing range that you require. Need something smaller? Our standard line includes inductive proximity sensors as small as 4 mm in diameter.

The Global Proximity is available in AC or DC, 2-wire or 3-wire, and NPN or PNP. You can even choose between cable wiring or quick-disconnect connectors. For power handling, our DC units feature a 100 mA load current rating and AC units are rated up to 200 mA.

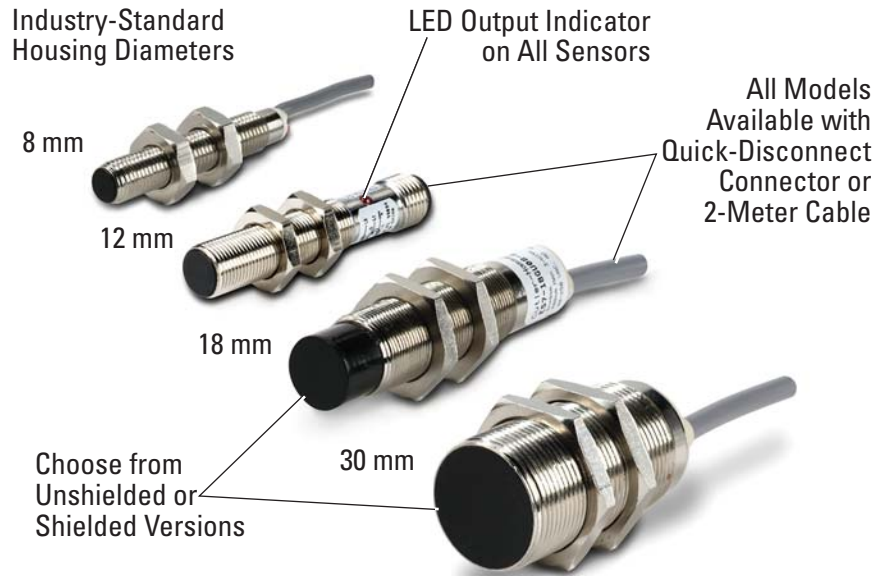
Approvals

CE (DC models only)
cCSAus



Unless otherwise noted, the products contained in this document are not designed or intended for use in human safety applications.

Cost-Effective Inductive Proximity Sensing for High Volume Use



Product Features

- The Global Proximity Line features solid performance and a basic feature set for reliable, cost-effective sensing
- 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 2-wire and 3-wire (NPN or PNP) configurations
- AC sensors operate on 20 – 250V AC in 2-wire configuration
- Switching frequency of 2 kHz for DC models
- Shielded and unshielded versions available
- Terminations include 2-meter cable, micro-connector and nano-connector
- DC units include short circuit protection





Available from

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December 2008

Model Selection — Global Proximity Sensors




	Operating Voltage	Sensing Range	Shielding	Output Type	Connection Type	Catalog Number		
2-Wire Sensors								
 <p>12 mm Diameter</p>	20 – 250V AC	2 mm	Shielded	N.O.	2-meter Cable	E57-12GS02-A		
		4 mm	Unshielded	N.O.	3-pin Micro AC Connector	E57-12GS02-AAB ☺		
		10 – 30V DC	2 mm	Shielded	N.O. (NPN/PNP)	2-meter Cable	E57-12GU04-A	
			4 mm	Unshielded	N.O. (NPN/PNP)	3-pin Micro AC Connector	E57-12GU04-AAB ☺	
			8 mm (Extended Range)	N.O. (NPN/PNP)	2-meter Cable	E57-12GS02-D		
				N.C. (NPN/PNP)	4-pin Micro DC Connector	E57-12GS02-DBB ☺		
	N.O. (NPN/PNP)			2-meter Cable	E57-12GU04-D			
	N.C. (NPN/PNP)			4-pin Micro DC Connector	E57-12GU04-DBB ☺			
	 <p>18 mm Diameter</p>	20 – 250V AC	5 mm	Shielded	N.O.	2-meter Cable	E57-18GS05-A	
			8 mm	Unshielded	N.O.	3-pin Micro AC Connector	E57-18GS05-AAB ☺	
			16 mm	10 – 30V DC	5 mm	Shielded	N.O. (NPN/PNP)	E57-18GU08-A
			8 mm		N.O. (NPN/PNP)	2-meter Cable	E57-18GU08-AAB ☺	
N.C. (NPN/PNP)					3-pin Micro AC Connector	E57-18GU08-A		
N.O. (NPN/PNP)					4-pin Micro DC Connector	E57-18GU08-DBB ☺		
N.C. (NPN/PNP)		2-meter Cable			E57-18GE16-D			
16 mm (Extended Range)		N.O. (NPN/PNP)	4-pin Micro DC Connector		E57-18GE16-DBB ☺			
		N.C. (NPN/PNP)	2-meter Cable	E57-18GE16-D1				
		N.C. (NPN/PNP)	4-pin Micro DC Connector	E57-18GE16-D1DB ☺				
		 <p>30 mm Diameter</p>	20 – 250V AC	10 mm	Shielded	N.O.	2-meter Cable	E57-30GS10-A
				15 mm	Unshielded	N.O.	3-pin Micro AC Connector	E57-30GS10-AAB ☺
	10 – 30V DC			10 mm	Shielded	N.O. (NPN/PNP)	2-meter Cable	E57-30GU15-A
15 mm				N.O. (NPN/PNP)	3-pin Micro AC Connector	E57-30GU15-AAB ☺		
				N.O. (NPN/PNP)	4-pin Micro DC Connector	E57-30GS10-D		
				N.O. (NPN/PNP)	2-meter Cable	E57-30GS10-DBB ☺		
			N.C. (NPN/PNP)	4-pin Micro DC Connector	E57-30GS10-DDB ☺			
25 mm (Extended Range)			N.O. (NPN/PNP)	2-meter Cable	E57-30GU15-D			
	N.O. (NPN/PNP)		4-pin Micro DC Connector	E57-30GU15-DBB ☺				
	N.O. (NPN/PNP)		2-meter Cable	E57-30GE25-D				
	N.C. (NPN/PNP)		4-pin Micro DC Connector	E57-30GE25-DBB ☺				
N.C. (NPN/PNP)	2-meter Cable		E57-30GE25-D1					
N.C. (NPN/PNP)	4-pin Micro DC Connector	E57-30GE25-D1DB ☺						
3-Wire Sensors								
 <p>8 mm Diameter</p>	10 – 30V DC	1 mm	Shielded	N.O. (NPN)	2-meter Cable	E57-08GS01-C		
					3-pin Nano-Connector	E57-08GS01-CNB ☺		
					4-pin Micro DC Connector	E57-08GS01-CDB ☺		
					N.O. (PNP)	2-meter Cable	E57-08GS01-G	
				N.O. (PNP)	3-pin Nano-Connector	E57-08GS01-GBB ☺		
					4-pin Micro DC Connector	E57-08GS01-GDB ☺		
					N.O. (NPN)	2-meter Cable	E57-08GE03-C	
						3-pin Nano-Connector	E57-08GE03-CNB ☺	
				4-pin Micro DC Connector		E57-08GE03-CDB ☺		
				N.C. (NPN)		2-meter Cable	E57-08GE03-C	
				N.O. (PNP)	2-meter Cable	E57-08GE03-G		
					3-pin Nano-Connector	E57-08GE03-GBB ☺		
		4-pin Micro DC Connector	E57-08GE03-GDB ☺					
		2 mm	Unshielded		N.O. (NPN)	2-meter Cable	E57-08GU02-C	
				3-pin Nano-Connector		E57-08GU02-CNB ☺		
				4-pin Micro DC Connector		E57-08GU02-CDB ☺		
				N.O. (PNP)		2-meter Cable	E57-08GU02-G	
				N.O. (PNP)	3-pin Nano-Connector	E57-08GU02-GBB ☺		
					4-pin Micro DC Connector	E57-08GU02-GDB ☺		
					N.O. (NPN)	2-meter Cable	E57-08GE06-C	
						3-pin Nano-Connector	E57-08GE06-CNB ☺	
				4-pin Micro DC Connector		E57-08GE06-CDB ☺		
				N.O. (PNP)		2-meter Cable	E57-08GE06-G	
				N.O. (PNP)	3-pin Nano-Connector	E57-08GE06-GBB ☺		
4-pin Micro DC Connector	E57-08GE06-GDB ☺							

☺☺ See listing of compatible connector cables on **Page 4**.

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

☺ Stocked product, typical order quantities guaranteed in stock.

Model Selection — Global Proximity Sensors (Continued)

	Operating Voltage	Sensing Range	Shielding	Output Type	Connection Type	Catalog Number
3-Wire Sensors (Continued)						
12 mm Diameter 	10 – 30V DC	2 mm	Shielded	N.O. (NPN)	2-meter Cable	E57-12GS02-C
					4-pin Micro DC Connector	E57-12GS02-CDB ☼
				N.O. (PNP)	2-meter Cable	E57-12GS02-G
					4-pin Micro DC Connector	E57-12GS02-GDB ☼
				N.O. (NPN)	2-meter Cable	E57-12GE05-C
					4-pin Micro DC Connector	E57-12GE05-CDB ☼
		N.O. (PNP)	2-meter Cable	E57-12GE05-G		
			4-pin Micro DC Connector	E57-12GE05-GDB ☼		
		4 mm	Unshielded	N.O. (NPN)	2-meter Cable	E57-12GU04-C
					4-pin Micro DC Connector	E57-12GU04-CDB ☼
				N.O. (PNP)	2-meter Cable	E57-12GU04-G
					4-pin Micro DC Connector	E57-12GU04-GDB ☼
N.O. (NPN)	2-meter Cable			E57-12GE10-C		
	4-pin Micro DC Connector			E57-12GE10-CDB ☼		
N.O. (PNP)	2-meter Cable	E57-12GE10-G				
	4-pin Micro DC Connector	E57-12GE10-GDB ☼				
18 mm Diameter 	10 – 30V DC	5 mm	Shielded	N.O. (NPN)	2-meter Cable	E57-18GS05-C
					4-pin Micro DC Connector	E57-18GS05-CDB ☼
				N.O. (PNP)	2-meter Cable	E57-18GS05-G
					4-pin Micro DC Connector	E57-18GS05-GDB ☼
				N.O. (NPN)	2-meter Cable	E57-18GE08-C
					4-pin Micro DC Connector	E57-18GE08-CDB ☼
		N.O. (PNP)	2-meter Cable	E57-18GE08-G		
			4-pin Micro DC Connector	E57-18GE08-GDB ☼		
		8 mm	Unshielded	N.O. (NPN)	2-meter Cable	E57-18GU08-C
					4-pin Micro DC Connector	E57-18GU08-CDB ☼
				N.O. (PNP)	2-meter Cable	E57-18GU08-G
					4-pin Micro DC Connector	E57-18GU08-GDB ☼
N.O. (NPN)	2-meter Cable			E57-18GE18-C		
	4-pin Micro DC Connector			E57-18GE18-CDB ☼		
N.O. (PNP)	2-meter Cable	E57-18GE18-G				
	4-pin Micro DC Connector	E57-18GE18-GDB ☼				
30 mm Diameter 	10 – 30V DC	10 mm	Shielded	N.O. (NPN)	2-meter Cable	E57-30GS10-C
					4-pin Micro DC Connector	E57-30GS10-CDB ☼
				N.O. (PNP)	2-meter Cable	E57-30GS10-G
					5-meter Cable	E57-30GS10-G5
				N.O. (NPN)	4-pin Micro DC Connector	E57-30GS10-GDB ☼
					2-meter Cable	E57-30GE15-C
		N.O. (PNP)	4-pin Micro DC Connector	E57-30GE15-CDB ☼		
			2-meter Cable	E57-30GE15-G		
		N.O. (PNP)	4-pin Micro DC Connector	E57-30GE15-GDB ☼		
			N.O. (NPN)	2-meter Cable	E57-30GU15-C	
		N.O. (PNP)		4-pin Micro DC Connector	E57-30GU15-CDB ☼	
			N.O. (NPN)	2-meter Cable	E57-30GU15-G	
N.O. (PNP)	4-pin Micro DC Connector	E57-30GU15-GDB ☼				
	N.O. (NPN)	2-meter Cable	E57-30GE29-C			
N.O. (PNP)		4-pin Micro DC Connector	E57-30GE29-CDB ☼			
	N.O. (NPN)	2-meter Cable	E57-30GE29-G			
N.O. (PNP)		4-pin Micro DC Connector	E57-30GE29-GDB ☼			

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




☐ Stocked product, typical order quantities guaranteed in stock.

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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


	AC	3-pin 3-wire	22 AWG	6.0 feet (2m)	CSAS3F3CY2202	CSAS3F3RY2202	—	
	DC	4-pin 3-wire	22 AWG	6.0 feet (2m)	CSDS4A3CY2202	CSDS4A3RY2202	—	

	Voltage Style	Number of Pins	Gauge	Length	Catalog Number		Pin Configuration/Wire Colors (Face View Female Shown)
					PVC Jacket	PUR Jacket	

Standard Cables — Nano Style

	—	3-pin	24 AWG	6.0 feet (2m)	CSNS3A3CY2402	CSNS3A3RY2402	
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① For a full selection of connector cables, see **PG.05.05.T.E.**

 Stocked product, typical order quantities guaranteed in stock.

Model Selection — Accessories

Description	Reference
Mounting Brackets and Other Accessories	See PG.05.03.T.E and PG.05.04.T.E
Connector Cables	See PG.05.05.T.E

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

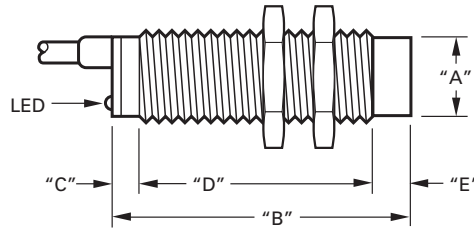
Operating Voltage	Output	Cable Models	Connector Models (Face View Male Shown)	
			Micro	Nano
2-Wire Sensors				
20 – 250V AC	N.O.	<p>* Internally connected to housing (use of this wire is optional)</p>	<p>* Internally connected to housing (use of this wire is optional)</p>	—
10 – 30V DC	N.O. (NPN)		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

Specifications

	2-Wire		3-Wire
	AC Models	DC Models	DC Models
Operating Voltage	20 – 250V AC	10 – 30V DC	10 – 30V DC
Off-State Leakage	<1.8 mA	<0.8 mA	<0.01 mA
Maximum Load Current	200 mA	100 mA	100 mA
Minimum Load Current	5 mA	3 mA	—
Surge Current	5A (20 mS)	—	—
Voltage Drop	<8V AC at 400 mA	<6V	<1.5V
Switching Frequency	8 mm Diameter 12 mm Diameter 18 mm Diameter 30 mm Diameter	— 25 Hz 25 Hz 25 Hz	2 kHz (shielded and unshielded) 2 kHz (shielded); 1 kHz (unshielded) 1 kHz (shielded); 500 Hz (unshielded) 300 Hz (shielded); 150 Hz (unshielded)
Short Circuit Protection	No	Yes	Yes
Overload Trip Point	—	>120 mA	220 mA
Time Delay Before Availability	—	—	<10 mS
Transient Protection	—	2 kV, 1 mS, 1KΩ	1kV, 0.1 mS, 1KΩ
Repeat Accuracy	Shielded: <1.0% / Unshielded: <3.0% (Sr)	<2.0% (Sr)	<1.0% (Sr)
Switching Hysteresis	<15%		
Operating Temperature	-25° to 70°C (0° to 60°C for all Extended Range models)		
Temperature Drift	<10% (Sr)		
Protection	IP67		
Housing Material	Nickel plated brass (stainless steel for 8 mm diameter, nano-connector models)		
Cable	PVC jacket, 2-meter length		

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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

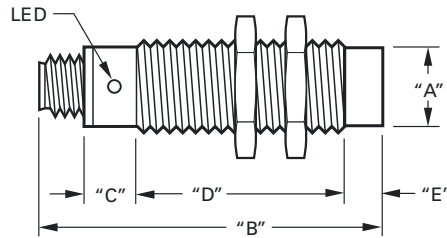
20 – 250V AC	E57-12GS02-A	M12x1	65	15	50	0
	E57-12GU04-A	M12x1	60	15	42	8
	E57-18GS05-A	M18x1	80	20	60	0
	E57-18GU08-A	M18x1	80	20	48	12
	E57-30GS10-A	M30	80	20	60	0
	E57-30GU15-A	M30	80	20	45	15
10 – 30V DC	E57-12GS02-D	M12x1	50	0	50	0
	E57-12GU04-D	M12x1	50	0	42	8
	E57-12GE08-D	M12x1	50	0	42	8
	E57-12GE08-D1	M12x1	50	0	42	8
	E57-18GS05-D	M18x1	55	5	50	0
	E57-18GU08-D	M18x1	55	5	38	12
	E57-18GE16-D	M18x1	55	5	38	12
	E57-18GE16-D1	M18x1	55	5	38	12
	E57-30GS10-D	M30	55	5	50	0
	E57-30GU15-D	M30	55	5	35	15
	E57-30GE25-D	M30	55	5	35	15
	E57-30GE25-D1	M30	55	5	35	15

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

3-Wire Sensors

10 – 30V DC	E57-08GE03-C	M8x1	46	6	40	0
	E57-08GE03-G	M8x1	46	6	40	0
	E57-08GS01-C	M8x1	45	0	45	0
	E57-08GS01-G	M8x1	45	0	45	0
	E57-08GU02-C	M8x1	45	0	41	4
	E57-08GU02-G	M8x1	45	0	41	4
	E57-12GE05-C	M12x1	51	2	49	0
	E57-12GE05-G	M12x1	51	2	49	0
	E57-12GE10-C	M12x1	50.5	1.7	41	7.8
	E57-12GE10-G	M12x1	50.5	1.7	41	7.8
	E57-12GS02-C	M12x1	50	0	50	0
	E57-12GS02-G	M12x1	50	0	50	0
	E57-12GU04-C	M12x1	50	0	42	8
	E57-12GU04-G	M12x1	50	0	42	8
	E57-18GE08-C	M18x1	67.5	2.5	65	0
	E57-18GE08-G	M18x1	65.5	2.5	65	0
	E57-18GE18-C	M18x1	66	2.5	52	11.5
	E57-18GE18-G	M18x1	66	2.5	52	11.5
	E57-18GS05-C	M18x1	55	5	50	0
	E57-18GS05-G	M18x1	55	5	50	0
	E57-18GU08-C	M18x1	55	5	38	12
	E57-18GU08-G	M18x1	55	5	38	12
	E57-30GE15-C	M30	69	5	64	0
	E57-30GE15-G	M30	69	5	64	0
	E57-30GE29-C	M30	83	5	64	15
	E57-30GE29-G	M30	83	5	64	15
	E57-30GS10-C	M30	55	5	50	0
	E57-30GS10-G	M30	55	5	50	0
	E57-30GU15-C	M30	55	5	35	15
	E57-30GU15-G	M30	55	5	35	15

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	E57-12GS02-AAB	M12x1	68	16	42	0
	E57-12GU04-AAB	M12x1	68	16	34	8
	E57-18GS05-AAB	M18x1	91	20	60	0
	E57-18GU08-AAB	M18x1	91	20	48	12
	E57-30GS10-AAB	M30	80	20	60	0
	E57-30GU15-AAB	M30	91	20	45	15
10 – 30V DC	E57-12GS02-DDB	M12x1	69	16	42	0
	E57-12GU04-DDB	M12x1	68	16	34	8
	E57-12GE08-D1DB	M12x1	68	10	50	8
	E57-12GE08-D1DB	M12x1	68	10	50	8
	E57-18GS05-DDB	M18x1	76	15	61	0
	E57-18GU08-DDB	M18x1	80	15	49	12
	E57-18GE16-DDB	M18x1	79	15	52	12
	E57-18GE16-D1DB	M18x1	79	15	52	12
	E57-30GS10-DDB	M30	75	15	60	0
	E57-30GU15-DDB	M30	79	15	45	15
	E57-30GE25-DDB	M30	78	15	48	15
	E57-30GE25-D1DB	M30	78	15	48	15

Operating Voltage	Catalog Number	Approximate Dimensions in mm				
		A	B	C	D	E
3-Wire Sensors						
10 – 30V DC	E57-08GE03-CDB	M8x1	71	26	36	0
	E57-08GE03-CNB	M8x1	61	19	42	0
	E57-08GE03-GDB	M8x1	71	26	36	0
	E57-08GE03-GNB	M8x1	61	19	42	0
	E57-08GS01-CD	M8x1	70	21	49	0
	E57-08GS01-CN	M8x1	60	20	40	0
	E57-08GS01-GD	M8x1	70	21	49	0
	E57-08GS01-GN	M8x1	60	20	40	0
	E57-08GU02-CD	M8x1	70	21	45	4
	E57-08GU02-CN	M8x1	60	20	36	4
	E57-08GU02-GD	M8x1	70	21	45	4
	E57-08GU02-GN	M8x1	60	20	36	4
	E57-12GE05-CDB	M12x1	69	24	45	0
	E57-12GE05-GDB	M12x1	69	24	45	0
	E57-12GE10-CDB	M12x1	68.5	10.3	36	7.8
	E57-12GE10-GDB	M12x1	68.5	10.3	36	7.8
	E57-12GS02-CDB	M12x1	68	16	52	0
	E57-12GS02-GDB	M12x1	68	16	52	0
	E57-12GU04-CDB	M12x1	68	20	31	8
	E57-12GU04-GDB	M12x1	68	20	31	8
	E57-18GS05-CDB	M18x1	76	15	61	0
	E57-18GS05-GDB	M18x1	76	15	61	0
	E57-18GU08-CDB	M18x1	76	15	49	12
	E57-18GU08-GDB	M18x1	80	15	49	12
	E57-30GS10-CDB	M30	79	15	60	0
	E57-30GS10-GDB	M30	75	15	60	0
	E57-30GU15-CDB	M30	75	15	45	15
	E57-30GU15-GDB	M30	75	15	45	15