

3.4

Inductive Proximity Sensors

Global Proximity Sensors

3

Global Proximity Sensors



Global Proximity Sensors

Product Description

The Global Proximity Sensor family was created by Eaton’s electrical sector 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 2000 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, two-wire or three-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.

Contents

Description

	<i>Page</i>
Global Proximity Sensors	
Product Selection	
Global Proximity Sensors	V8-T3-37
Compatible Connector Cables	V8-T3-40
Accessories	V8-T3-40
Technical Data and Specifications	V8-T3-41
Wiring Diagrams	V8-T3-42
Dimensions	V8-T3-43

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 10–30 Vdc in two-wire and three-wire (NPN or PNP) configurations
- AC sensors operate on 20–250 Vac in two-wire configuration
- Switching frequency of 2 kHz for DC models
- Shielded and unshielded versions available
- Terminations include:
 - 2-meter cable
 - Micro-connector
 - Nano-connector
- DC units include short circuit protection

Standards and Certifications

- CE (DC models only)
- cCSAus



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

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

Global Proximity Sensors

Two-Wire Sensors

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

Note

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

Technical Data and Specifications

Global Proximity Sensors

Description	Two-Wire AC Sensors	Two-Wire DC Sensors	Three-Wire DC Sensors
Operating voltage	20–250 Vac	10–30 Vdc	10–30 Vdc
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	<8 Vac at 400 mA	<6V	<1.5V
Switching frequency			
8 mm diameter	—	—	2 kHz (shielded and unshielded)
12 mm diameter	25 Hz	1 kHz (shielded); 1 kHz (unshielded)	2 kHz (shielded); 1 kHz (unshielded)
18 mm diameter	25 Hz	1 kHz (shielded); 500 Hz (unshielded)	1 kHz (shielded); 500 Hz (unshielded)
30 mm diameter	25 Hz	500 Hz (shielded); 200 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, 1 kohm	1kV, 0.1 ms, 1 kohm
Repeat accuracy	Shielded: <1.0%/Unshielded: <3.0% (Sr)	<2.0% (Sr)	<1.0% (Sr)
Switching hysteresis	<15%	<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)	–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)	<10% (Sr)
Protection	IP67, IP69K	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)	Nickel plated brass (stainless steel for 8 mm diameter, nano-connector models)
Cable	PVC jacket, 2-meter length	PVC jacket, 2-meter length	PVC jacket, 2-meter length

3.4

Inductive Proximity Sensors

Global Proximity Sensors

Wiring Diagrams

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

Global Proximity Sensors

3

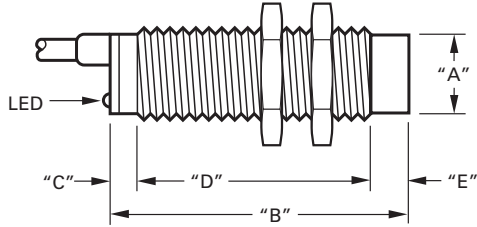
Operating Voltage	Output	Cable Models	Connector Models (Face View Male Shown)	
			Micro	Nano
Two-Wire Sensors				
20–250 Vac	NO			—
10–30 Vdc	NO (NPN)			—
	NO (PNP)			—
Three-Wire Sensors				
10–30 Vdc	NO (NPN)			
	NO (PNP)			
	NC (NPN)			
	NC (PNP)			

Dimensions

Approximate Dimensions in mm

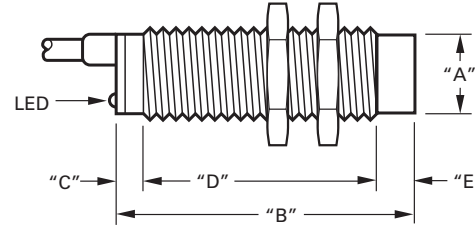
Cable Models

Two-Wire Sensors



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

Three-Wire Sensors



Catalog Number	Operating Voltage	A	B	C	D	E
E57-08GE03-C	10–30 Vdc	M8x1	46	6	40	—
E57-08GE03-G		M8x1	46	6	40	—
E57-08GE06-C		M8x1	45	—	41	4
E57-08GE06-G		M8x1	45	—	41	4
E57-08GS01-C		M8x1	45	—	45	—
E57-08GS01-G		M8x1	45	—	45	—
E57-08GU02-C		M8x1	45	—	41	4
E57-08GU02-G		M8x1	45	—	41	4
E57-12GE05-C		M12x1	51	2	49	—
E57-12GE05-G		M12x1	51	2	49	—
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	—	50	—
E57-12GS02-G		M12x1	50	—	50	—
E57-12GU04-C		M12x1	50	—	42	8
E57-12GU04-G		M12x1	50	—	42	8
E57-18GE08-C		M18x1	67.5	2.5	65	—
E57-18GE08-G		M18x1	65.5	2.5	65	—
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	—
E57-18GS05-G		M18x1	55	5	50	—
E57-18GU08-C		M18x1	55	5	38	12
E57-18GU08-G		M18x1	55	5	38	12
E57-30GE15-C		M30x1.5	69	5	64	—
E57-30GE15-G		M30x1.5	69	5	64	—
E57-30GE29-C		M30x1.5	83	5	64	15
E57-30GE29-G		M30x1.5	83	5	64	15
E57-30GS10-C		M30x1.5	55	5	50	—
E57-30GS10-G		M30x1.5	55	5	50	—
E57-30GU15-C		M30x1.5	55	5	35	15
E57-30GU15-G		M30x1.5	55	5	35	15

3.4

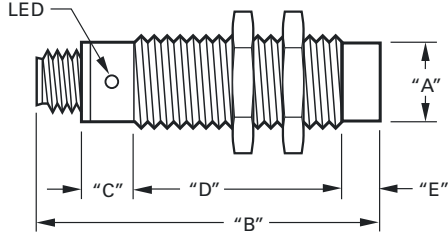
Inductive Proximity Sensors

Global Proximity Sensors

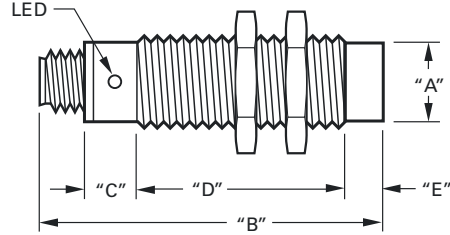
Approximate Dimensions in mm

Connector Models

Two-Wire Sensors



Three-Wire Sensors



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

Catalog Number ①	Operating Voltage	A	B	C	D	E
E57-08GE03-CDB	10–30 Vdc	M8x1	71	26	36	—
E57-08GE03-CNB		M8x1	61	19	42	—
E57-08GE03-GDB		M8x1	71	26	36	—
E57-08GE03-GNB		M8x1	61	19	42	—
E57-08GE06-CDB		M8x1	70	31	35	4
E57-08GE06-GDB		M8x1	70	31	35	4
E57-08GS01-CDB		M8x1	70	21	49	—
E57-08GS01-CNB		M8x1	60	20	40	—
E57-08GS01-GDB		M8x1	70	21	49	—
E57-08GS01-GNB		M8x1	60	20	40	—
E57-08GU02-CDB		M8x1	70	21	45	4
E57-08GU02-CNB		M8x1	60	20	36	4
E57-08GU02-GDB		M8x1	70	21	45	4
E57-08GU02-GNB		M8x1	60	20	36	4
E57-12GE05-CDB		M12x1	69	24	45	—
E57-12GE05-GDB		M12x1	69	24	45	—
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	—
E57-12GS02-GDB		M12x1	68	16	52	—
E57-12GU04-CDB		M12x1	68	20	31	8
E57-12GU04-GDB		M12x1	68	20	31	8
E57-18GE08-CDB		M18x1	79	30	49	—
E57-18GE08-GDB		M18x1	79	30	49	—
E57-18GE18-CDB		M18x1	79.2	15	37	11.5
E57-18GE18-GDB		M18x1	79.2	15	37	11.5
E57-18GS05-CDB		M18x1	76	15	61	—
E57-18GS05-GDB		M18x1	76	15	61	—
E57-18GU08-CDB		M18x1	76	15	49	12
E57-18GU08-GDB		M18x1	80	15	49	12
E57-30GE29-CDB		M30x1.5	79	30	34	15
E57-30GE29-GDB		M30x1.5	79	30	34	15
E57-30GS10-CDB		M30x1.5	79	15	60	—
E57-30GS10-GDB		M30x1.5	75	15	60	—
E57-30GU15-CDB		M30x1.5	75	15	45	15
E57-30GU15-GDB		M30x1.5	75	15	45	15

Note

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