

Threaded Body Sensors

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Threaded Body Sensors

Product Description

Type E53 Capacitive Proximity Sensors from Eaton’s electrical sector are self-contained devices designed to detect both metallic and nonmetallic targets. They are ideally suited for liquid level control and for sensing powdered or granulated material. For best operation, they should be used in an environment having relatively constant temperature and humidity.

Features

- Detect liquids, powders and other materials that are difficult or impossible to detect with other sensor types
- Plastic body is corrosion resistant
- Sensitivity adjustment
- Output indicator LED

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

E53 Threaded Body Sensors

Two-Wire Sensors

	Operating Voltage	Sensing Range (Sn)	Shielding	Connection Type	NO Output Catalog Number	NC Output Catalog Number
18 mm Diameter 	20–250 Vac	0.31 in (8 mm)	Shielded	2-meter cable	E53KAL18A2	E53KBL18A2
				3-pin micro AC connector	E53KAL18A2SA ☹️	E53KBL18A2SA ☹️
		0.59 in (15 mm)	Unshielded	2-meter cable	E53KAL18A2E	E53KBL18A2E
				3-pin micro AC connector	E53KAL18A2EA ☹️	E53KBL18A2EA ☹️
30 mm Diameter 	20–250 Vac	0.79 in (20 mm)	Shielded	2-meter cable	E53KAL30A2	E53KBL30A2
				3-pin micro AC connector	E53KAL30A2SA ☹️	E53KBL30A2SA ☹️
		0.98 in (25 mm)	Unshielded	2-meter cable	E53KAL30A2E	E53KBL30A2E
				3-pin micro AC connector	E53KAL30A2EA ☹️	E53KBL30A2EA ☹️

Three-Wire Sensors

	Operating Voltage	Sensing Range (Sn)	Shielding	Connection Type	NO Output Catalog Number	NC Output Catalog Number
18 mm Diameter 	10–30 Vdc	0.31 in (8 mm)	Shielded (NPN)	2-meter cable	E53KAL18T110	E53KBL18T110
				4-pin micro DC connector	E53KAL18T110SD ☹️	E53KBL18T110SD ☹️
			Shielded (PNP)	2-meter cable	E53KAL18T111	E53KBL18T111
				4-pin micro DC connector	E53KAL18T111SD ☹️	E53KBL18T111SD ☹️
		0.59 in (15 mm)	Unshielded (NPN)	2-meter cable	E53KAL18T110E	E53KBL18T110E
				4-pin micro DC connector	E53KAL18T110ED ☹️	E53KBL18T110ED ☹️
			Unshielded (PNP)	2-meter cable	E53KAL18T111E	E53KBL18T111E
				4-pin micro DC connector	E53KAL18T111ED ☹️	E53KBL18T111ED ☹️
30 mm Diameter 	10–30 Vdc	0.79 in (20 mm)	Shielded (NPN)	2-meter cable	E53KAL30T110	E53KBL30T110
				4-pin micro DC connector	E53KAL30T110SD ☹️	E53KBL30T110SD ☹️
			Shielded (PNP)	2-meter cable	E53KAL30T111	E53KBL30T111
				4-pin micro DC connector	E53KAL30T111SD ☹️	E53KBL30T111SD ☹️
		0.98 in (30 mm)	Unshielded (NPN)	2-meter cable	E53KAL30T110E	E53KBL30T110E
				4-pin micro DC connector	E53KAL30T110ED ☹️	E53KBL30T110ED ☹️
			Unshielded (PNP)	2-meter cable	E53KAL30T111E	E53KBL30T111E
				4-pin micro DC connector	E53KAL30T111ED ☹️	E53KBL30T111ED ☹️

Note

☹️☹️ See listing of compatible connector cables on Page V8-T4-8.

4.1

Capacitive Proximity Sensors




Threaded Body Sensors

Compatible Connector Cables

Micro-Style
Straight Female



Standard Cables ^{①②}

Current Rating at 600V	Voltage Style	Number of Pins	Gauge	Length	Pin Configuration/Wire Colors (Face View Female Shown)	Catalog Number
Micro-Style, Straight Female						
13A	Vac	3-pin, 3-wire	22 AWG	6 ft (2m)	 1-Green 2-Red/Black 3-Red/White	CSAS3F3CY2202
10A	Vdc	4-pin, 3-wire	22 AWG	6 ft (2m)	 1-Brown 2-No Wire 3-Blue 4-Black	CSDS4A3CY2202
		4-pin, 4-wire	22 AWG	6 ft (2m)	 1-Brown 2-White 3-Blue 4-Black	CSDS4A4CY2202

Technical Data and Specifications

Threaded Body Sensors

Description	AC Models	DC Models
AC residual	2.5 mA maximum	—
Maximum load current	300 mA	300 mA
Switching rate	15 operations per second	250 operations per second
Circuit protection	—	Short circuit and reverse polarity
Output indicator LED	Lights when output is ON	Lights when output is ON
Ambient temperature range	-13° to 158°F (-25° to 70°C)	-13° to 158°F (-25° to 70°C)
Enclosure ratings	NEMA 1, 2, 3, 3S, 4, 12, 13 (IEC IP65)	NEMA 1, 2, 3, 3S, 4, 12, 13 (IEC IP65)
Sensitivity adjustment	Included	Included
Housing material	Polyoxymethylene (POM) plastic mounting nuts molded of nylon 66 (PA66)	Polyoxymethylene (POM) Plastic mounting nuts molded of nylon 66 (PA66)

Notes

- ① For a full selection of connector cables, see **Tab 10, section 10.1**.
- ② Use four-wire connector cable on NC output versions.

Wiring Diagrams

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

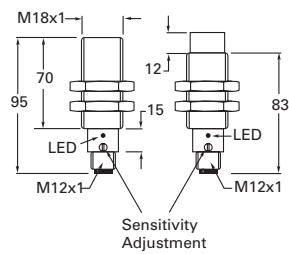
Threaded Body Sensors

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

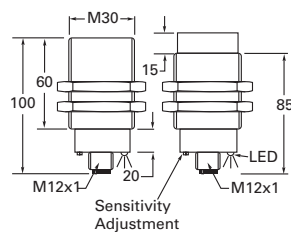
Dimensions

Approximate Dimensions in mm

18 mm Diameter Threaded Body Sensor



30 mm Diameter Threaded Body Sensor



18 and 30 mm Cable

