

3.12 Inductive Proximity Sensors

Nonmetallic Tubular Sensors

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3

Nonmetallic Tubular Sensors

Product Description

E55 Tubular Inductive Proximity Sensors by Eaton's Electrical Sector are constructed of corrosion resistant PBT plastic. They are ideally suited for wash down applications such as those found in food processing plants. They are available in 12 mm, 18 mm and 30 mm diameters, shielded or unshielded. Shielded units can be embedded in metallic surfaces.

Features

- Models available that operate on two-wire AC or three-wire DC power
- Threaded tubular housings in three diameters allow easy integration into new and existing applications
- Nonmetallic construction offers excellent resistance to corrosion
- Output indicator LED is standard on all models

Contents

Description

	<i>Page</i>
Nonmetallic Tubular Sensors	
Product Selection	V8-T3-77
Technical Data and Specifications	V8-T3-78
Wiring Diagrams	V8-T3-78
Dimensions	V8-T3-78

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

Nonmetallic Tubular Sensors

Two-Wire Sensors ^①

	Operating Voltage	Sensing Range (Sn)	Shielding	Connection Type	NO Output Catalog Number	NC Output Catalog Number
12 mm 	12 mm Diameter					
	20–250 Vac 50/60 Hz	2 mm	Shielded	2-meter cable	E55CAL12A2	E55CBL12A2
4 mm		Unshielded	2-meter cable	E55CAL12A2E	E55CBL12A2E	
18 mm 	18 mm Diameter					
	20–250 Vac 50/60 Hz	5 mm	Shielded	2-meter cable	E55CAL18A2	E55CBL18A2
8 mm		Unshielded	2-meter cable	E55CAL18A2E	E55CBL18A2E	
30 mm 	30 mm Diameter					
	20–250 Vac 50/60 Hz	10 mm	Shielded	2-meter cable	E55CAL30A2	E55CBL30A2
15 mm		Unshielded	2-meter cable	E55CAL30A2E	E55CBL30A2E	

Three-Wire Sensors ^①

	Operating Voltage	Sensing Range (Sn)	Shielding	Connection Type	NO Output Catalog Number	NC Output Catalog Number
12 mm 	12 mm Diameter					
	10–30 Vdc	2 mm	Shielded (NPN)	2-meter cable	E55CAL12T110	E55CBL12T110
			Shielded (PNP)	2-meter cable	E55CAL12T111	E55CBL12T111
		4 mm	Unshielded (NPN)	2-meter cable	E55CAL12T110E	E55CBL12T110E
Unshielded (PNP)			2-meter cable	E55CAL12T111E	E55CBL12T111E	
18 mm 	18 mm Diameter					
	10–30 Vdc	5 mm	Shielded (NPN)	2-meter cable	E55CAL18T110	E55CBL18T110
			Shielded (PNP)	2-meter cable	E55CAL18T111	E55CBL18T111
		8 mm	Unshielded (NPN)	2-meter cable	E55CAL18T110E	E55CBL18T110E
Unshielded (PNP)			2-meter cable	E55CAL18T111E	E55CBL18T111E	
30 mm 	30 mm Diameter					
	10–30 Vdc	10 mm	Shielded (NPN)	2-meter cable	E55CAL30T110	E55CBL30T110
			Shielded (PNP)	2-meter cable	E55CAL30T111	E55CBL30T111
		15 mm	Unshielded (NPN)	2-meter cable	E55CAL30T110E	E55CBL30T110E
Unshielded (PNP)			2-meter cable	E55CAL30T111E	E55CBL30T111E	

Note

^① For a selection of mounting brackets and other accessories for use with these sensors, see **Tab 8, section 8.2**.

3.12

Inductive Proximity Sensors

Nonmetallic Tubular Sensors

3

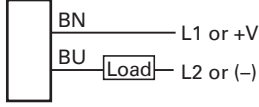
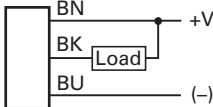
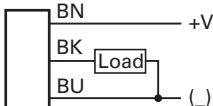
Technical Data and Specifications

Nonmetallic Tubular Sensors

Description	Two-Wire AC Models	Three-Wire DC Models
Operating voltage	20–250 Vac, 50/60 Hz	10–30 Vdc
Maximum load current	150 mA	200 mA
Switching frequency		
12 mm	25 Hz	2000 Hz (shielded); 1000 Hz (unshielded)
18 mm	25 Hz	1000 Hz (shielded); 500 Hz (unshielded)
30 mm	25 Hz	300 Hz (shielded); 150 Hz (unshielded)
Protection	—	Short circuit and reverse polarity
Temperature range	–13 to 158 °F (–25 to 70 °C)	–13 to 158 °F (–25 to 70 °C)
Enclosure material	Polybutylene Teraphtalate (PBT)	Polybutylene Teraphtalate (PBT)
Enclosure rating	NEMA 3, 3S, 4, 4X, 13 (IP66)	NEMA 3, 3S, 4, 4X, 13 (IP66)
Indicator LED	Lights when output is ON	Lights when output is ON

Wiring Diagrams

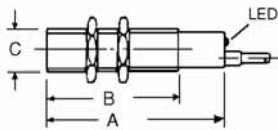
Nonmetallic Tubular Sensors

Operating Voltage	Output	Cable Models	Operating Voltage	Output	Cable Models
Two-Wire Sensors			Three-Wire Sensors		
20–250 Vac 50/60 Hz	All		10–30 Vdc	NPN	
				PNP	

Dimensions

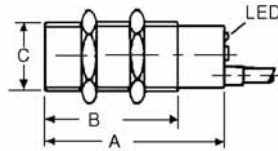
Approximate Dimensions in Inches (mm)

12 and 18 mm



A	B	Thread Size C
12 mm		
2.17 (55)	1.77 (45)	M12 x 1
18 mm		
2.17 (55)	1.77 (45)	M18 x 1

30 mm



A	B	Thread Size C
3.15 (80)	2.36 (60)	M30 x 1.5