

Nonmetallic Tubular Sensors



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

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Description

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⚠ 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




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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 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 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 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**.

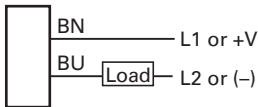
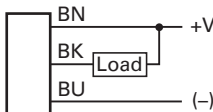
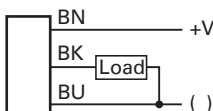
Technical Data and Specifications

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

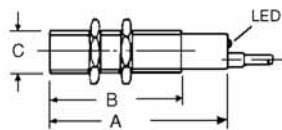
Nonmetallic Tubular Sensors

| 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

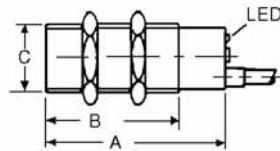
Approximate Dimensions in Inches (mm)

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 |
|--------------|-----------|------------------|
| 30 mm | | |
| 3.15 (80) | 2.36 (60) | M30 x 1.5 |