

T30 AC-Voltage Series Sensor Quick Start Guide



Features

For complete technical information about this product, including installation instructions, application requirements and guidelines, technical specifications, and accessories, go to www.bannerengineering.com and search 121523.



WARNING:

- Do not use this device for personnel protection
- Using this device for personnel protection could result in serious injury or death.
- This device does not include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A device failure or malfunction can cause either an energized (on) or de-energized (off) output condition.

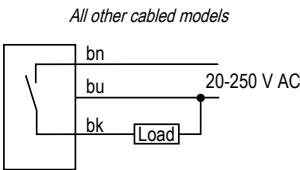
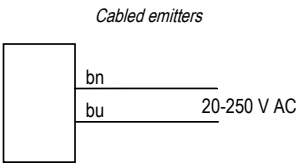
Models

| Sensing Mode | Model | Output | Range | LED |
|-----------------|-------------|--------|-----------------------|---------------------|
| OPPOSED | T303E | - | 60 m (200 ft) | Infrared, 950 nm |
| | T30AW3R | LO | | |
| | T30RW3R | DO | | |
| POLAR RETRO | T30AW3LP | LO | 6 m (20 ft) | Visible red, 680 nm |
| | T30RW3LP | DO | | |
| FIXED-FIELD | T30AW3FF200 | LO | 200 mm (8 in) cutoff | Infrared, 880 nm |
| | T30RW3FF200 | DO | | |
| | T30AW3FF400 | LO | 400 mm (16 in) cutoff | |
| | T30RW3FF400 | DO | | |
| | T30AW3FF600 | LO | 600 mm (24 in) cutoff | |
| | T30RW3FF600 | DO | | |

Standard 2 m (6.5 ft) cable models are listed.

- To order the 9 m (30 ft) cable model: add suffix "W/30" (for example, T303E W/30).
- To order the 4-pin Micro-style integral QD model: add suffix "Q1" (for example, T303EQ1).
- A model with a QD connector requires a mating cable.

Wiring Diagrams



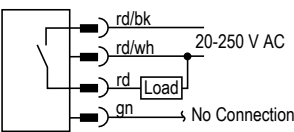
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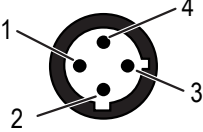
4-pin 1/2 in-20UNF (1/2-in Dual Key) quick disconnect emitters



All other 4-pin 1/2 in-20UNF (1/2-in Dual Key) quick disconnect models



4-pin 1/2 in-20UNF (1/2-in Dual Key) male pinout



Key:

- 1 - Red/black
- 2 - Red/white
- 3 - Red
- 4 - Green

Specifications

Supply Voltage and Current

- 20 V AC to 250 V AC (50 Hz to 60 Hz)
- Average current: 20 mA
- Peak current:
 - 200 mA at 20 V AC
 - 500 mA at 120 V AC
 - 750 mA at 250 V AC

Supply Protection Circuitry

Protected against transient voltages

Output Protection Circuitry

Protected against false pulse on power-up

Output Configuration

- SPST solid-state AC switch; three-wire hookup; light operate or dark operate, depending on model
- Light Operate: Output conducts when sensor sees its own (or the emitter's) modulated light
- Dark Operate: Output conducts when the sensor sees dark

Output Rating

- 300 mA maximum (continuous)
- Fixed-Field models: derate 5 mA/°C above +50° C (+122° F)
- Inrush capability: 1 amp for 20 ms, non-repetitive
- OFF-state leakage current: < 100 mA
- ON-state saturation voltage: 3 V at 300 mAAC; 2 V at 15 mAAC

Output Response

- Time Opposed mode: 16 ms ON, 8 ms OFF
- Other models: 16 ms ON and OFF

NOTE: 100 ms delay on power-up; outputs do not conduct during this time.

Repeatability

- Opposed mode: 2 ms
- Other models: 4 ms
- Repeatability and response are independent of signal strength

Indicators

- Two LEDs (Green and Amber)
- Green ON steady: power to sensor is ON
- Amber ON steady: sensor sees light
- Amber flashing: excess gain marginal (1 to 1.5 times) in light condition

Construction

PBT polyester housing; polycarbonate (opposed-mode) or acrylic lens

Environmental Rating

Leakproof design rated IP69K per ISO 20653

Connections

2 m (6.5 ft) integral PVC-jacketed cable, or Integral 4-pin 1/2 in. 20UNF quick-disconnect connector

Operating Conditions

- Temperature: -40 °C to +70 °C (-40 °F to +158 °F)
- Humidity: 90% at +50 °C maximum relative humidity (non-condensing)

Vibration and Mechanical Shock

All models meet MIL-STD-202F, Method 201A (Vibration: 10 Hz to 60 Hz maximum, 0.06 inch (1.52 mm) double amplitude, 10G acceleration) requirements. Method 213B conditions H&I. (Shock: 75G with device operating; 100G for non-operation)

Certifications




Banner Engineering BV
Park Lane, Culliganlaan 2F bus 3
1831 Diegem, BELGIUM



Turck Banner LTD Blenheim House
Blenheim Court
Wickford, Essex SS11 8YT
GREAT BRITAIN



Required Overcurrent Protection



WARNING: Electrical connections must be made by qualified personnel in accordance with local and national electrical codes and regulations.

Overcurrent protection is required to be provided by end product application per the supplied table.
Overcurrent protection may be provided with external fusing or via Current Limiting, Class 2 Power Supply.
Supply wiring leads < 24 AWG shall not be spliced.
For additional product support, go to www.bannerengineering.com.

| Supply Wiring (AWG) | Required Overcurrent Protection (A) | Supply Wiring (AWG) | Required Overcurrent Protection (A) |
|---------------------|-------------------------------------|---------------------|-------------------------------------|
| 20 | 5.0 | 26 | 1.0 |
| 22 | 3.0 | 28 | 0.8 |
| 24 | 2.0 | 30 | 0.5 |

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