

# T30 Sensors AC-Voltage Series



## Quick Start Guide

### Self-Contained, AC-Operated Sensors

For complete technical information about this product, including installation instructions, application requirements and guidelines, EU Declaration of Conformity, technical specifications, and accessories, see [www.bannerengineering.com](http://www.bannerengineering.com) and search 121523.



#### WARNING: Not To Be Used for Personnel Protection

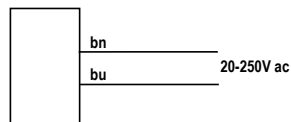
Never use this device as a sensing device for personnel protection. Doing so could lead to serious injury or death. This device does not include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A sensor failure or malfunction can cause either an energized or de-energized sensor output condition.

## Models

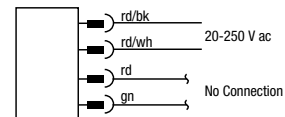
Sensing Mode	Model <sup>1</sup>	Output	Range	LED
 OPPOSED	T303E	-	60 m (200 ft)	Infrared, 950 nm
	T30AW3R	LO		
	T30RW3R	DO		
 POLAR RETRO	T30AW3LP	LO	6 m (20 ft)	Visible red, 680 nm
	T30RW3LP	DO		
 FIXED-FIELD	T30AW3FF200	LO	200 mm (8 in) cutoff	Infrared, 880 nm
	T30RW3FF200	DO		
	T30AW3FF400	LO	400 mm (16 in) cutoff	
	T30RW3FF400	DO		
	T30AW3FF600	LO	600 mm (24 in) cutoff	
	T30RW3FF600	DO		

## Wiring Diagrams

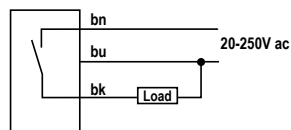
### Cabled Emitters



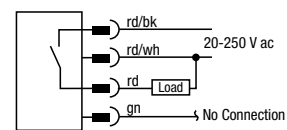
### Quick Disconnect Emitters (4-pin Micro-Style)



### All Other Cabled Models



### All Other Quick Disconnect Models (4-pin Micro-Style)



<sup>1</sup> Standard 2 m (6.5 ft) cable models are listed.

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



## 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 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 mA ac; 2 V at 15 mA ac

### 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](http://www.bannerengineering.com).

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

### Output Protection Circuitry

Protected against false pulse on power-up

### 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 NEMA 6P, DIN IP69K

### Connections

2 m (6.5 ft) integral PVC cable, or Integral 4-pin Micro-style quick disconnect

### 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 unit operating; 100G for non-operation)

### Certifications



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