T30 AC-Voltage Series Sensor Quick Start Guide

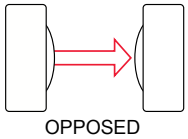
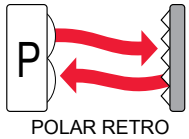
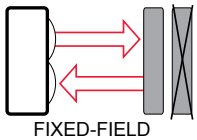
Features

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	Connection
 OPPOSED	T303E	-	60 m (200 ft)	2 m (6.5 ft) cable
	T303E W/30	-		9 m cable
	T303EQ1	-		4-pin 1/2 in-20UNF (1/2-in Dual Key) quick disconnect (QD)
	T30AW3R	LO		2 m (6.5 ft) cable
	T30AW3RQ1	LO		4-pin 1/2 in-20UNF (1/2-in Dual Key) quick disconnect (QD)
	T30RW3R	DO		2 m (6.5 ft) cable
	T30RW3R W/30	DO		9 m cable
	T30RW3RQ1	DO		4-pin 1/2 in-20UNF (1/2-in Dual Key) quick disconnect (QD)
 POLAR RETRO	T30AW3LP	LO	6 m (20 ft)	2 m (6.5 ft) cable
	T30AW3LPQ1	LO		4-pin 1/2 in-20UNF (1/2-in Dual Key) quick disconnect (QD)
	T30RW3LP	DO		2 m (6.5 ft) cable
	T30RW3LPQ1	DO		4-pin 1/2 in-20UNF (1/2-in Dual Key) quick disconnect (QD)
 FIXED-FIELD	T30AW3FF200	LO	200 mm (8 in) cutoff	2 m (6.5 ft) cable
	T30AW3FF200Q1	LO		4-pin 1/2 in-20UNF (1/2-in Dual Key) quick disconnect (QD)
	T30RW3FF200	DO		2 m (6.5 ft) cable
	T30RW3FF200Q1	DO		4-pin 1/2 in-20UNF (1/2-in Dual Key) quick disconnect (QD)
	T30AW3FF400	LO	400 mm (16 in) cutoff	2 m (6.5 ft) cable
	T30AW3FF400Q1	LO		
	T30RW3FF400	DO		2 m (6.5 ft) cable
	T30RW3FF400Q1	DO		4-pin 1/2 in-20UNF (1/2-in Dual Key) quick disconnect (QD)
	T30AW3FF600	LO	600 mm (24 in) cutoff	2 m (6.5 ft) cable
	T30AW3FF600Q1	LO		4-pin 1/2 in-20UNF (1/2-in Dual Key) quick disconnect (QD)
	T30RW3FF600Q1	DO		4-pin 1/2 in-20UNF (1/2-in Dual Key) quick disconnect (QD)

Standard 2 m (6.5 ft) cable models are listed. A model with a QD connector requires a mating cable.

The following models are no longer available for order but are still covered by the information in this document.

- T30AW3R W/30
- T30AW3LP W/30
- T30RW3LP W/30
- T30AW3FF200 W/30
- T30RW3FF200 W/30
- T30AW3FF400 W/30
- T30RW3FF400 W/30
- T30AW3FF600 W/30
- T30RW3FF600 and T30RW3FF600 W/30

Original Instructions
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p/n: 116162 Rev. E

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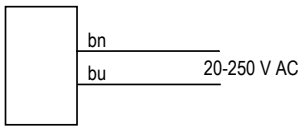
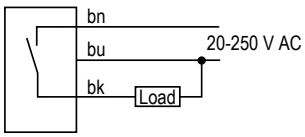
Wiring Diagrams

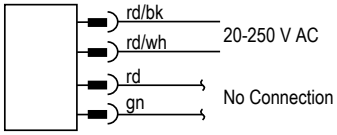
Cabled emitters



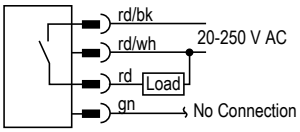
All other cabled models



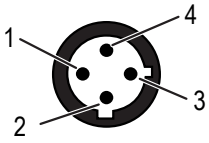
4-pin 1/2 in-20UNF (1/2-in Dual Key) quick disconnect emitters



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

LED

Opposed mode models: Infrared, 950 nm

Polarized retroreflective mode models: Visible red, 680 nm

Fixed-field mode models: Infrared, 880 nm

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

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

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GREAT BRITAIN

c UL us LISTED

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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