

Quick Start Guide

Self-Contained, Photoelectric Sensors in Universal-Style Housing

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 and search 119166.



WARNING: Not To Be Used for Personnel Protection

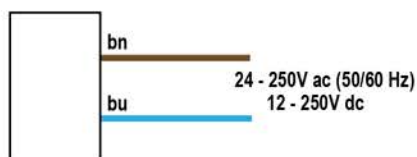
Never use this device as a sensing device for personnel protection. Doing so could lead to serious injury or death. This device does not include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A sensor failure or malfunction can cause either an energized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

Models

Sensing Mode	Model	Range	LED	Output
 OPPOSED	QS303E Emitter	60 m (200 ft)	Infrared, 875 nm Effective Beam: 18 mm (0.7 in)	-
	QS30VR3R Receiver	60 m (200 ft)	-	SPDT
 POLAR RETRO	QS30VR3LP	8 m (26 ft) ²	Visible red, 630 nm	

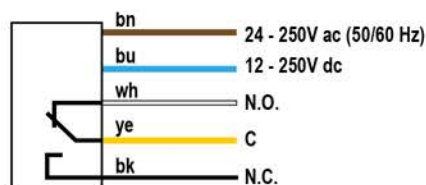
Wiring Diagrams

Cabled Emitters



Other Cabled Models

Cable and QPMA hookups are functionally identical.



- ¹ Standard 2 m (6.5 ft) cable models are listed.
 - For 9 m (30 ft) integral cable: add suffix "W/30" (for example, QS303E W/30).
 - 5-pin Micro-style 152 mm (6 in) cable: add "QPMA" (for example, QS303EQPMA).
- ² Range is measured using a model BRT-84 retroreflector.



Specifications

Supply Voltage

Universal Voltage: 24 V to 250 V ac (50 Hz/60 Hz) or 12 V to 250 V dc (1.0 watt maximum)

Supply Protection Circuitry

Protected against transient voltages

Output Configuration

SPDT (Single-Pole Double-Throw) electromechanical relay output (all models except emitters)

Output Rating

Max. Switching Power (resistive load): 150 W, 1250 VA

Max. Switching Voltage (resistive load): 250 V ac; 125 V dc

Max. Switching Current (resistive load): 5 A at 250 V ac; 5 A at 30 V dc derated to 200 mA at 125 V dc

Min. Voltage and Current: 5 V dc, 10 mA

Mechanical life of relay: 50 million operations

Electrical life of relay at full resistive load: 100,000 operations

Output Response

15 milliseconds ON and OFF



NOTE: 100 millisecond delay on power-up; output does not conduct during this time.

Cutoff Point Tolerance

Fixed-Field Only: $\pm 5\%$ of nominal cutoff distance

Indicators

Two LEDs (Green and Amber) on top of sensor

Green ON: power to sensors is ON

Amber ON: light sensed

Amber flashing: excess gain marginal (1 to 1.5 times) in light condition

Large, oval LED indicator on sensor back (except emitters)

Amber ON: normally open output is conducting

Construction

ABS housing, rated IEC IP67, NEMA 6; acrylic lens cover

Connections

2 m (6.5 in) or 9 m (30 in) 5-wire PVC cable

Operating Conditions

$-20\text{ }^{\circ}\text{C}$ to $+70\text{ }^{\circ}\text{C}$ ($-4\text{ }^{\circ}\text{F}$ to $+158\text{ }^{\circ}\text{F}$)

95% at $+50\text{ }^{\circ}\text{C}$ maximum relative humidity (non-condensing)

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.

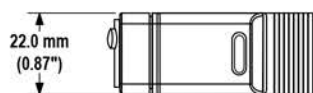
For additional product support, go to www.bannerengineering.com.

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

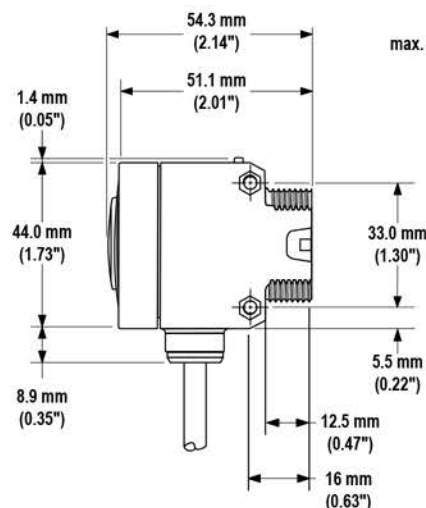
Certifications



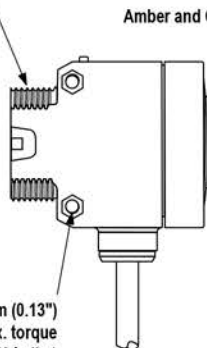
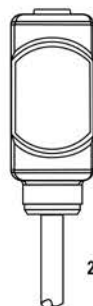
Dimensions



Hardware included:
(2) M3 x 0.5 x 28 stainless steel
machine screws, nuts and washers

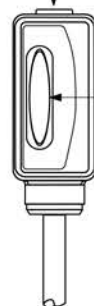


M30 x 1.5 Thread
max. torque 6 Nm (53 in lbs)
with included
30 mm mounting nut



2 x $\phi 3.3$ mm (0.13")
max. torque
0.7 Nm (6 in lbs)

Amber and Green LEDs



Amber LED
Output
Indicator

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