

WORLD-BEAM® QS30 Series Sensor (DC Voltage)



Datasheet



To view or download the latest technical information about this product, including specifications, dimensions, accessories, and wiring, see www.bannerengineering.com. Search for Instruction Manual p/n 119165.



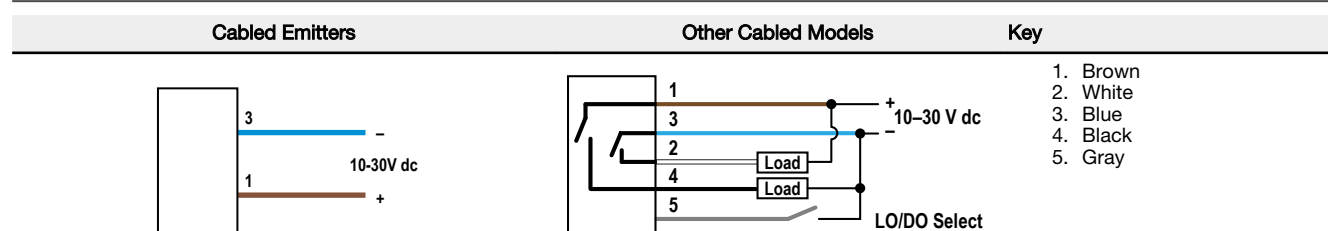
WARNING: Not To Be Used for Personnel Protection

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

| Model ¹ | Sensing Mode | Beam | Range ² | Output |
|--------------------|---------------------------|--------------------------------|--------------------|-----------------|
| QS30E (emitter) | Opposed | 875 nm Infrared | 60 m (200 ft) | N/A |
| QS30R (receiver) | | Effective Beam: 18 mm (0.7 in) | | |
| QS30LP | Polarized Retroreflective | 630 nm Visible Red | 8 m (26 ft) | Bipolar NPN/PNP |
| QS30LV | Retroreflective | | 12 m (40 ft) | |
| QS30D | Diffuse | 940 nm Infrared | 1 m (3.3 ft) | |
| QS30FF200 | Fixed Field | 680 nm Visible Red | 200 mm (8 in) | |
| QS30FF400 | | | 400 mm (16 in) | |
| QS30FF600 | | | 600 mm (24 in) | |

Wiring Diagrams



Cabled wiring diagrams are shown. Quick disconnect (QD) wiring diagrams are functionally identical.

¹ Only standard 2 m (6.5 ft) cabled models are listed.

- To order the 9 m (30 ft) integral cable model, add suffix "W/30" to the model number (for example, QS30E W/30).
- To order the 5-pin integral M12/Euro-style quick disconnect (QD), add suffix "Q" (for example, QS30EQ).

² Polarized Retroreflective and Retroreflective ranges are specified using a model BRT-84 retroreflector.



Specifications

Supply Voltage

10 V dc to 30 V dc (10% max. ripple) at less than 40 mA, exclusive of load
Protected against reverse polarity and transient voltages

Output Response

Opposed Mode: 5 milliseconds ON and OFF

All others: 2 milliseconds

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

Repeatability

Opposed Mode: not applicable

All others: 500 microseconds

Output Configuration

Bipolar: One current sourcing and one current sinking

Rating: 100 mA maximum each output at 25 °C

Off-state leakage current:

NPN: less than 200 µA

PNP: less than 10 µA

ON-state saturation voltage:

NPN: less than 1.6 V at 100 mA

PNP: less than 2.0 V at 100 mA

Protected against false pulse on power-up and continuous overload or short circuit of outputs

Indicators

2 LEDs on sensor top:

| | Green | Yellow |
|----------|--------------------------------------|---|
| On | Power on | Light sensed |
| Flashing | Output overloaded (except receivers) | Marginal excess gain (1–1.5x excess gain) |

Large oval LED on sensor back (except emitters): Yellow on indicates the output is conducting

Cutoff Point Tolerance

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

Construction and Mounting

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

3 mm mounting hardware included

Connections

2 m (6.5 ft) unterminated 5-wire PVC cable; 9 m (30 ft) unterminated 5-wire PVC cable; or Integral 5-pin M12/Euro-style male quick disconnect (QD)

Application Tip for the QS30LV Model

For best sensing reliability, targets should be a minimum of 0.5m from the sensor

Adjustments

Selectable Light/Dark Operate is achieved via the gray wire.

Opposed, Retroreflective, and Polarized Retroreflective models:

Light Operate - Low (0 to 3 V)*

Dark Operate - High (open or 5 to 30 V)*

Diffuse and Fixed-Field models:

Light Operate - High (open or 5 to 30 V)*

Dark Operate - Low (0 to 3 V)*

Diffuse, Retroreflective, and Polarized Retroreflective mode models (only):

Single-turn Sensitivity (Gain) adjustment potentiometer

* Input impedance 10 k Ω

Operating Conditions

-20 °C to +70 °C (-4 °F to +158 °F)

95% at +50 °C maximum relative humidity (non-condensing)

Vibration and Mechanical Shock

All models meet Mil Std. 202F requirements. Method 201A (vibration: 10 Hz to 60 Hz

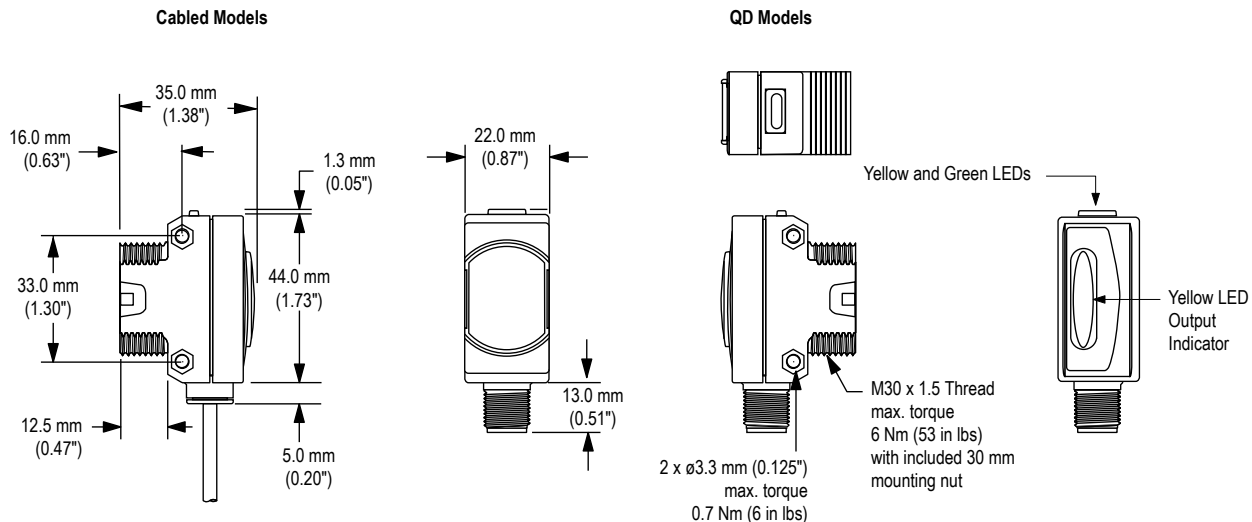
max., double amplitude 0.06 inch, maximum acceleration 10G). Also meets IEC

947-5-2 requirements: 30G 11 ms duration, half sine wave.

Certifications

Pending

Dimensions



All measurements are listed in millimeters [inches], unless noted otherwise.

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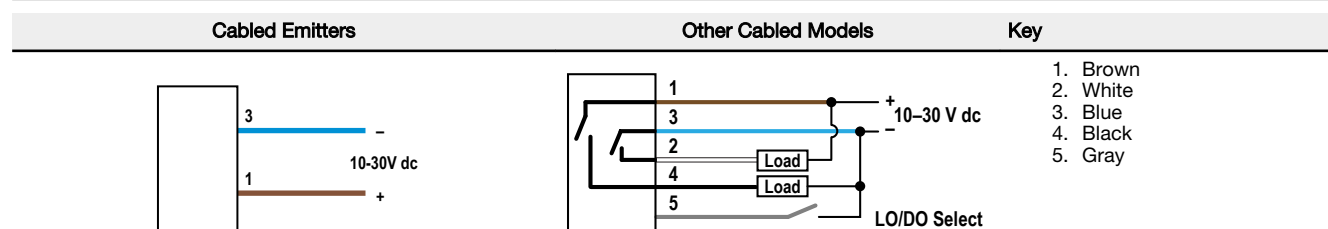
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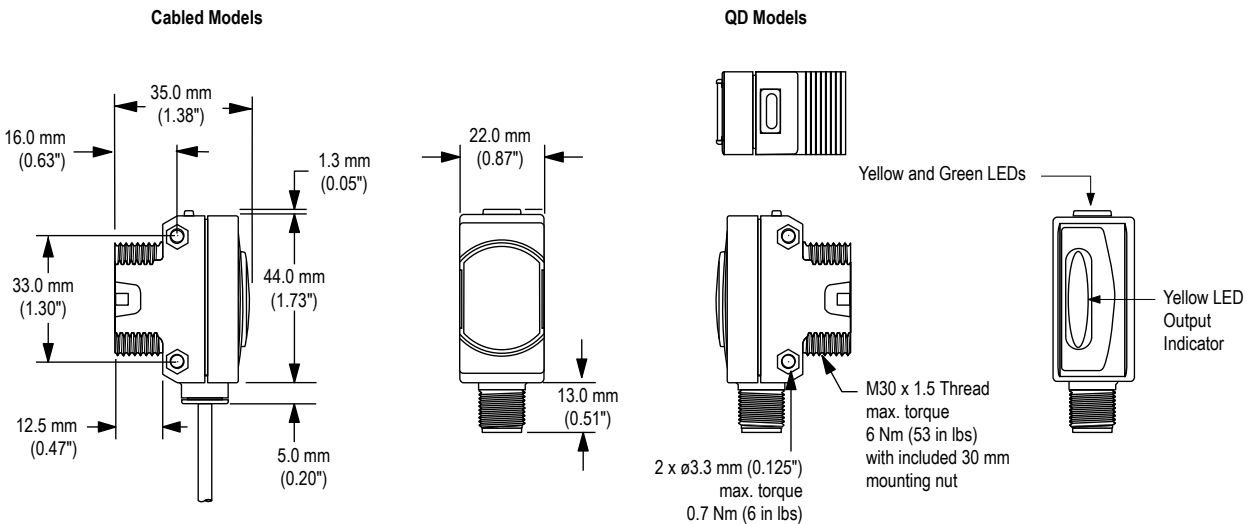
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