



Datasheet



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

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.

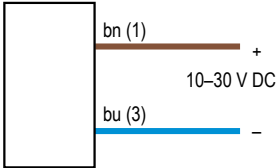
QS30 Standard (DC) Models

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)	

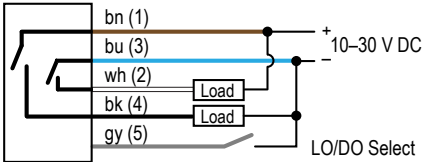
QS30 (DC) Wiring Diagrams

Cabled wiring diagrams are shown. Quick disconnect wiring diagrams are functionally identical.

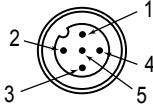
Cabled Emitters



Other Cabled Models



5-Pin Male M12 Quick Disconnect



QS30 Standard (DC) 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

Cutoff Point Tolerance

- Fixed-Field only: ± 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-jacketed cable; 9 m (30 ft) unterminated 5-wire PVC-jacketed cable ; or
- Integral 5-pin M12 male quick-disconnect connector

Application Tip for the QS30LV Model

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

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 50 µA
 - PNP: less than 40 µA
- ON-state saturation voltage:
 - NPN: less than 3 V at 100 mA
 - PNP: less than 3 V at 100 mA
- Protected against false pulse on power-up and continuous overload or short circuit of outputs

(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 quick disconnect (QD), add suffix "Q" (for example, QS30EQ).

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

Adjustments

- Selectable Light/Dark Operate is achieved via the gray wire.
- Opposed, Retroreflective, and Polarized Retroreflective models:
- Light Operate - Low (0 V to 3 V)*

Dark Operate - High (open or 5 V to 30 V)*
- Diffuse and Fixed-Field models:
- Light Operate - High (open or 5 V to 30 V)*

Dark Operate - Low (0 V to 3 V)*
- Diffuse, Retroreflective, and Polarized Retroreflective mode models (only):
- Single-turn Sensitivity (Gain) adjustment potentiometer

* Input impedance 10 kΩ

Indicators

- 2 LEDs on sensor top:
- Green on: Power on
- Green flashing: Output overloaded (except receivers)
- Amber on: Light sensed
- Amber flashing: Marginal excess gain (1–1.5× excess gain)
- Large oval LED on sensor back (except emitters): Yellow on indicates the output is conducting

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, Method 201A (Vibration: 10 Hz to 60 Hz maximum, 0.06 inch (1.52 mm) double amplitude, 10G maximum acceleration) requirements.
- Also meets IEC 60947-5-2 (Shock: 30G 11 ms duration, half sine wave) requirements.

Certifications



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



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.

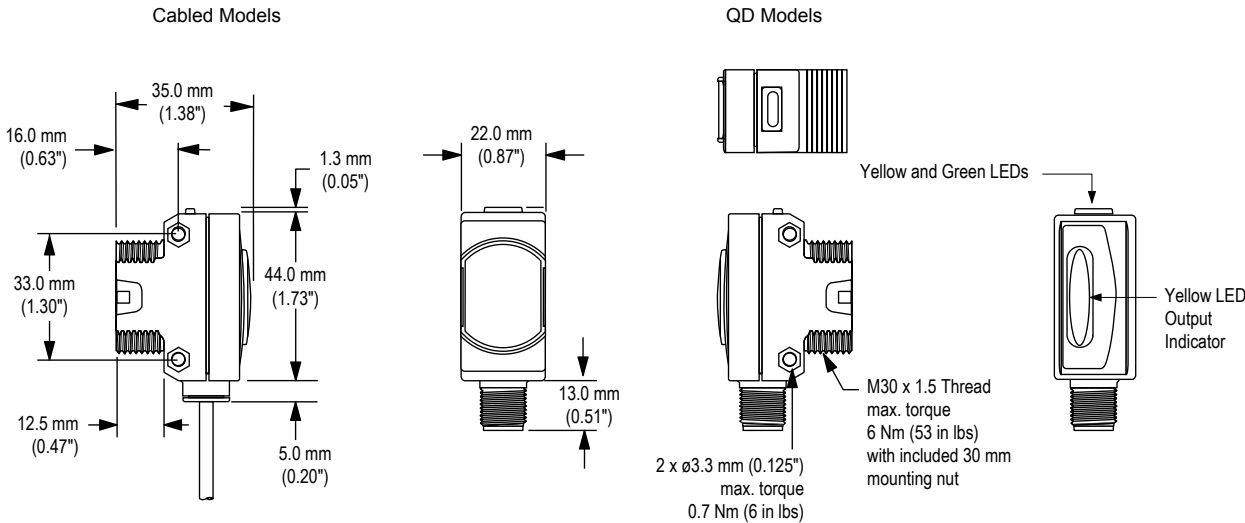
Overcurrent protection may be provided with external fusing or via Current Limiting, Class 2 Power Supply.

Supply wiring leads < 24 AWG shall not be spliced.

For additional product support, go to Key definition for "(keyrefName)" not found in the DITA map..

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	1.0	30	0.5

QS30 Standard (DC) Dimensions



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

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Document title: WORLD-BEAM® QS30 Standard Series Sensor (DC Voltage)

Part number: 119167

Revision: D

Original Instructions

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