

Q26 Series Sensors



Coaxial Polarized Retro-Reflective Sensor for Clear Object Detection



- Reliable detection of clear, translucent, or opaque objects—including PET and glass containers, transparent films, and mirror-like surfaces
- Coaxial optics enable reliable detection of targets to the face of the sensor
- Simple set-up and adjustment with a single turn sensitivity adjuster potentiometer
- Light Operate and Dark Operate selection by rotary switch
- Compact sensor housing size of 14 x 25 x 42 mm



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	Mode	Range	Output	Connector
Q26PXLQ7	 Coaxial polarized retro-reflective	5 to 800 mm sensor to reflector distance on BRT-60x40C	PNP	4-pin Threaded/Snap M8/Pico-Style QD connector
Q26PXLQ5				4-pin 150 mm (6 in) Euro-style pigtail QD with PVC cable jacket
Q26NXLQ7			NPN	4-pin Threaded/Snap M8/Pico-Style QD connector
Q26NXLQ5				4-pin 150 mm (6 in) Euro-style pigtail QD with PVC cable jacket

Overview

The Banner Q26 sensor is a high performance clear object sensor. The polarized coaxial optical design ensures reliable detection of transparent, opaque, or reflective targets at any distance between the sensor and the reflector. Sensitivity adjustment of the sensor is done with a single turn potentiometer. Light Operate and Dark Operate selection is made by a sealed rotary switch.

Set-Up Procedure for Maximum Sensitivity

1. Mount and align the Q26 sensor and the reflector.
2. Turn the sensitivity adjustment potentiometer (C) fully clockwise.
3. Select light operate (LO) or dark operate (DO).
 - If an output is desired when the reflector is blocked, turn the LO / DO rotary switch (D) fully clockwise to select dark operate (DO).
 - If an output is desired when the reflector is **not** blocked, turn the LO / DO rotary switch (D) fully counterclockwise to select light operate (LO).
4. With no target present, turn the sensitivity adjustment potentiometer counterclockwise until the yellow output LED (B) changes state.
5. With no target present, slowly turn the sensitivity adjustment potentiometer clockwise until the output changes state again.
6. Place the transparent target between the sensor and the reflector.
7. Adjust the potentiometer as necessary to achieve reliable detection of the transparent target.

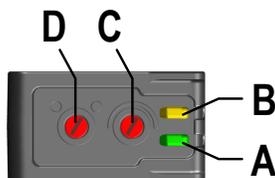
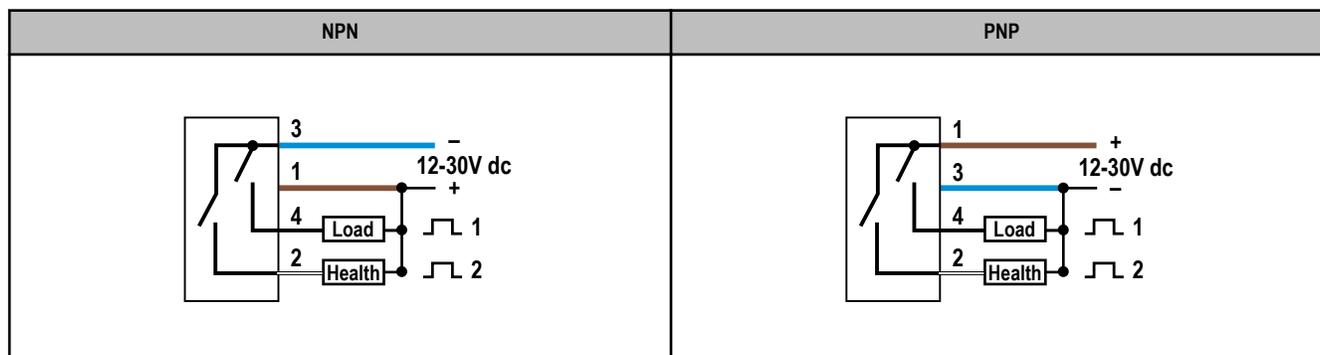


Figure 1. Sensor Top View

- A. Green LED Power ON
- B. Yellow LED Output Conducting
- C. Sensitivity Adjustment Potentiometer
- D. LO / DO Rotary Selection Switch (DO = fully clockwise, LO = fully counter clockwise)



Wiring



Health Mode Output Overview

Health Mode communicates to the user that there is adequate or inadequate excess gain for reliable sensor operation. It provides a continuous signal that the sensor is operating normally and is connected properly. When the Q26 sensor is set-up for maximum sensitivity, the excess gain will often be between 1.0 and 1.5 excess gain with no target present and the Health output will be OFF. This is normal operation for clear object sensing.

In Health Mode, the Health output is ON when the excess gain of the sensor is greater than 1.5X threshold or less than 1X threshold. The Health Mode output provides a signal to the customer's PLC that the sensor is operating with adequate excess gain, or the beam is blocked.

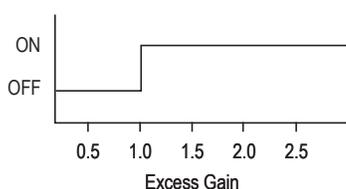


Figure 2. Primary Output (Light Operate)

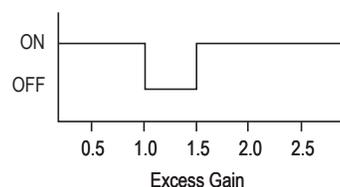


Figure 3. Secondary Health Output

Specifications

Supply Voltage and Current

12 to 30V dc (10% maximum ripple within specified limits)
Supply Current (exclusive of load current): 15 mA

Supply Protection Circuitry

Protected against reverse polarity and transient voltages

Output Configuration

Primary output (pin 4) NPN or PNP (current sinking or sourcing), depending on model; secondary output (pin 2) is a Health mode output.

Output Rating

100 mA max
OFF-state leakage current: less than 1 microamp at 30V dc
ON-state saturation voltage: less than 1V at 10 mA dc; less than 1.5V at 150 mA dc

Output Protection Circuitry

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

Emitter LED Wavelength

660 nm

Emitter Beam Diameter

See [Figure 6. Spot Diameter Diagram](#) on page 4

Output Response Time

250 μ S ON and OFF

Repeatability

50 microseconds

Construction

ABS plastic housing; glass window

Indicators

Green steady: Power ON
Yellow steady: Output conducting

Environmental Rating

Leakproof design rated IP67

Operating Conditions

Temperature: -10 °C to +55 °C (+14 °F to +131 °F)
Humidity: 90% at +50 °C maximum relative humidity (non-condensing)

Connection

4-pin Threaded/Snap M8/Pico-Style QD connector or 4-pin 150 mm (6 in) Euro-style pigtail QD with PVC cable jacket

Vibration and Shock

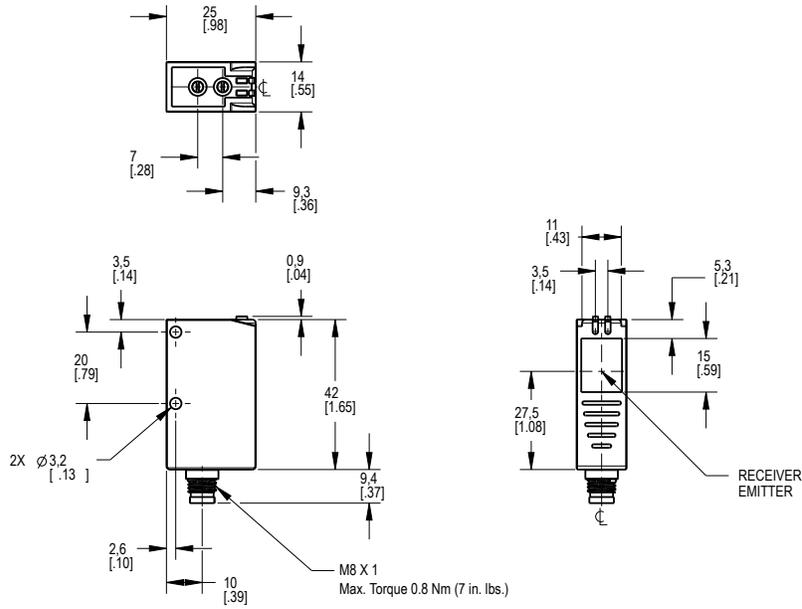
EN60068-2-6
EN60068-2-27

Certifications



Dimensions

All measurements are listed in millimeters (inches).



Beam Pattern and Spot Diameter Diagram

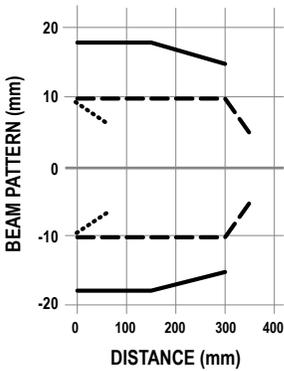


Figure 4. Beam Pattern

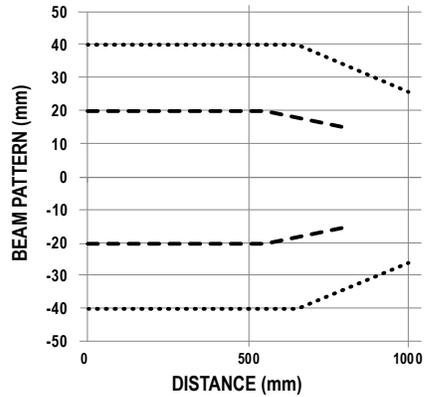


Figure 5. Beam Pattern

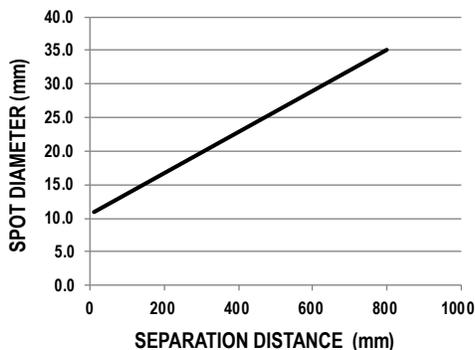


Figure 6. Spot Diameter Diagram

Accessories

Cordsets

4-Pin Threaded M8/Pico-Style Cordsets				
Model	Length	Style	Dimensions	Pinout
PKG4M-2	2.00 m (6.56 ft)	Straight		<p>1 = Brown 2 = White 3 = Blue 4 = Black</p>
PKG4M-5	5.00 m (16.4 ft)			
PKG4M-9	9.00 m (29.5 ft)			
PKW4M-2	2.00 m (6.56 ft)	Right Angle		
PKW4M-5	5.00 m (16.4 ft)			
PKW4M-9	9.00 m (29.5 ft)			

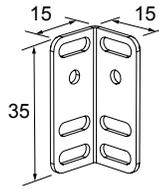
4-Pin Threaded M12/Euro-Style Cordsets				
Model	Length	Style	Dimensions	Pinout
MQDC-406	1.83 m (6 ft)	Straight		<p>1 = Brown 2 = White 3 = Blue 4 = Black</p>
MQDC-415	4.57 m (15 ft)			
MQDC-430	9.14 m (30 ft)			
MQDC-450	15.2 m (50 ft)			
MQDC-406RA	1.83 m (6 ft)	Right-Angle		
MQDC-415RA	4.57 m (15 ft)			
MQDC-430RA	9.14 m (30 ft)			
MQDC-450RA	15.2 m (50 ft)			

Brackets

All measurements are listed in millimeters.

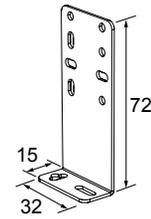
SMBLSTDLQ26

- Adjustable right-angle metal bracket
- 304 stainless steel



SMBLSTQ26

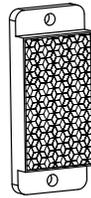
- Right-angle bracket
- 304 stainless steel



Reflectors

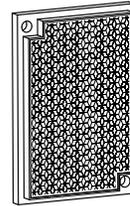
BRT-35X20A, BRT-35X20AB

- Rectangular, acrylic target
- Reflectivity Factor: 1.4
- Temperature: -20 °C to +60 °C (-4 °F to +140 °F)
- Approximate size: 23 mm x 40 mm
- Mounting base available in white (BRT-35X20A) or black (BRT-35X20AB)



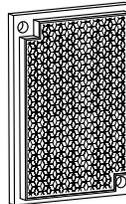
BRT-60X40C

- Rectangular, acrylic target
- Reflectivity Factor: 1.4
- Temperature: -20 °C to +60 °C (-4 °F to +140 °F)
- Optional brackets are available
- Approximate size: 40 mm x 60 mm



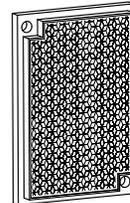
BRT-60X40AF

- Rectangular, acrylic target
- Reflectivity Factor: 1.4
- Temperature: -20 °C to +60 °C (-4 °F to +140 °F)
- Anti-fogging coating for use around steam
- Optional brackets are available
- Approximate size: 40 mm x 60 mm



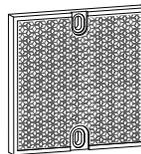
BRT-60X40IP69K

- Rectangular, acrylic target (color is amber)
- Reflectivity Factor: 0.7
- Temperature: -20 °C to +140 °C (-4 °F to +284 °F)
- Chemically resistant
- IP69K washdown rated
- Optional brackets are available
- Approximate size: 40 mm x 60 mm



BRT-84X84A

- Square, acrylic target
- Reflectivity Factor: 2.0
- Temperature: -20 °C to +60 °C (-4 °F to +140 °F)
- Approximate size: 84 mm x 84 mm



Reflective Tape

Model	Reflectivity Factor	Maximum Temperature	Size
BRT-THG-1-100	0.7	+60 °C (+140 °F)	25 mm (1 in) wide, 2.5 m (100 in) long

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