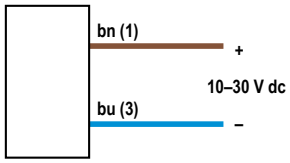
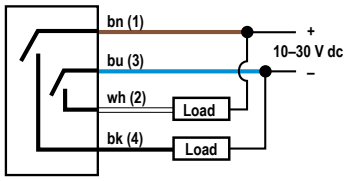
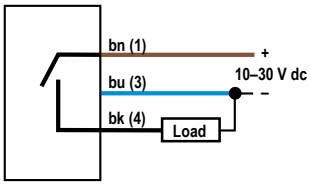
Emitters



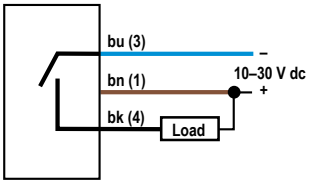
Bipolar Models, Light Operate



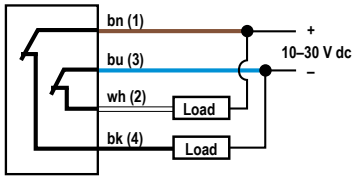
PNP Models, Light Operate



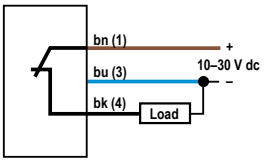
NPN Models, Light Operate



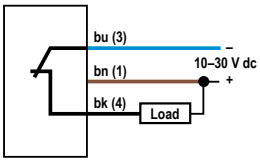
Bipolar Models, Dark Operate



PNP Models, Dark Operate



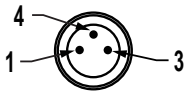
NPN Models, Dark Operate



Key

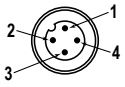
1 = Brown
2 = White
3 = Blue
4 = Black

3-pin M8/Pico-style Male QD



4-pin M8/Pico-style Male QD

4-pin M12/Euro-style Male QD



Specifications

Supply Voltage and Current
10 to 30 V dc (10% maximum ripple) at 20 mA maximum current

Sensing Beam
Visible red, 645 nm

Supply Protection Circuitry
Protected against reverse polarity and transient voltages

Output Protection Circuitry
Protected against false pulse on power-up, short-circuit protected

Output Response Time
Opposed Mode: 1.3 ms ON; 900 µs OFF
All Other Modes: 850 µs ON/OFF
120 ms delay on power-up; outputs do not conduct during this time

Construction
Polarized Retro Models: Polyamide housing with glass lens
All Other Models: Polyamide housing with polycarbonate lens

Output Configuration
Bipolar (1 NPN and 1 PNP) solid-state output or single output (PNP or NPN), light operate (LO) or dark operate (DO), depending on model

Repeatability
125 microseconds

Switching Frequency
Opposed Mode: 385 Hz
All Other Modes: 590 Hz

Output Ratings
OFF-state leakage current:
NPN: 10 µA
PNP: 10 µA
ON-state saturation voltage:
NPN: 2 V at 50 mA
PNP: 2 V at 50 mA

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.

Connections

Standard Models: 2 m (6.5 ft) or 9 m (30 ft) attached PVC cable, or 150 mm (6 in) cable with M8 or M12 threaded connection, depending on the model ordered

Environmental Rating

Standard Models: IEC IP67

Conditions

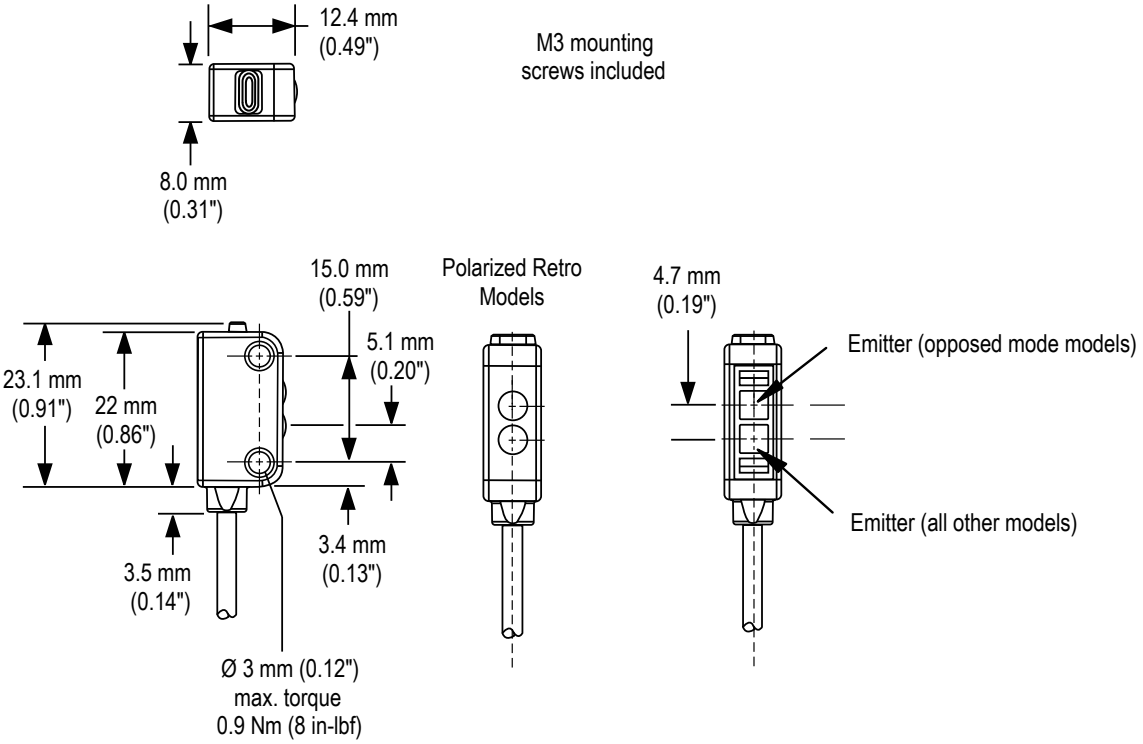
Operating Temperature: –20 °C to +55 °C (–4 °F to +131°F)
Storage Temperature: –30 °C to +75 °C (–22 °F to +167 °F)
95% at +50 °C maximum relative humidity (non-condensing)

Certifications

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

Dimensions