

SB12 Series Emitter/Receiver Photoelectric Sensors



Datasheet

The SB12 Emitter/Receiver pair is a cost effective sensor for large volume OEM applications. The unique snap-in mounting system works with any material with a thickness of 1.5 mm to 3 mm. Simply drill a 12.7 mm (0.5 inch) diameter hole, insert the cable, and press the sensor into place.



- Small 12.7 mm (0.5 inch) tubular E/R pair
- Easy-to-mount; no brackets required — simply press sensor into a 12.7 mm (0.5 inch) diameter hole with a panel thickness between 1.5 and 3 mm
- Narrow effective beam allows for multiple sensors in close proximity
- LED status indicators for Power ON, Output Overload, Signal Received and Marginal Signal
- 10–30V dc supply voltage with single NPN or PNP output, depending on model
- Light Operate (LO) or Dark Operate (DO), depending on model

Opposed Mode, 880 nm Infrared				
Models	Type	Range	Output Type	Beam Pattern
SB12E1	Emitter	1.5 m (59 inches)	—	
SB12ANR	Receiver		NPN/LO	
SB12RNR			NPN/DO	
SB12APR			PNP/LO	
SB12RPR			PNP/DO	

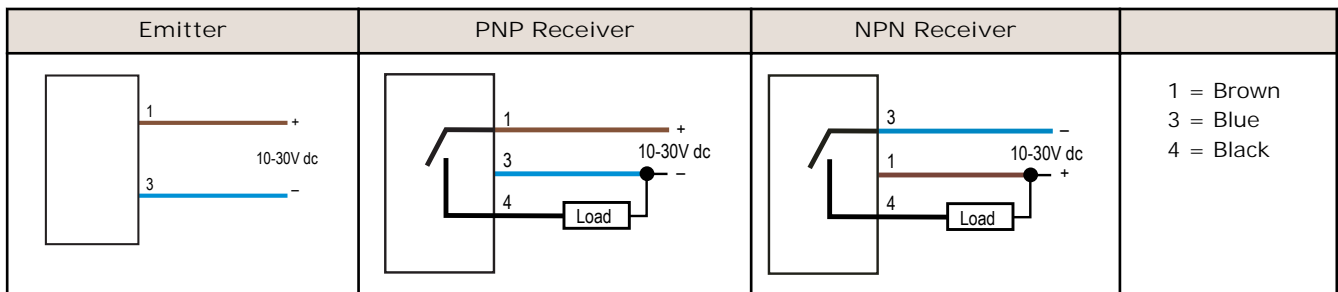
Standard 2 m (6.5 ft) cable models are listed. QD Models: For 3-Pin 150 mm (6 inch) pigtail with threaded Pico-style M8 connector, add suffix "Q3" to the model number (e.g. SB12E1Q3).



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.

Hookup Diagrams



Specifications

Specifications are subject to change without notice

Sensing Beam

880 nm invisible infrared beam

Sensing Range

1.5 m (59 inches)

Supply Voltage

10–30 V dc; less than 15 mA exclusive of load

Supply Protection Circuitry

Protected against reverse polarity and transient over voltages

Delay at Power-up

Less than 1 second

Indicators

Green Power LED (emitter and receiver):

- ON indicates power on;
- Flashing indicates output short circuited (receiver only)

Amber Output LED (receiver only):

- ON indicates light sensed;
- Flashing indicates marginal excess gain (1.0 to 1.5x excess gain)

Construction

Housing: ABS

Lens: Polycarbonate; epoxy encapsulant

PVC-jacketed cable

Connections

2 m (6.5 ft) cable or 150 mm (6 inch) pigtail with M8 threaded connection

Output Configuration

One solid state output, NPN (sinking) or PNP (sourcing), depending on model

Output Rating

100 mA

OFF-state leakage current: < 10 μ A

ON-state saturation voltage: < 0.2V @ 10 mA; < 0.6V @ 100 mA

Output Protection Circuitry

Protected against output short circuit, continuous overload and transient over voltages

Output Response Time

2.5 ms ON, 1.75 ms OFF

Repeatability

350 μ s

Switching Frequency

235 Hz

Environmental Rating

IP65

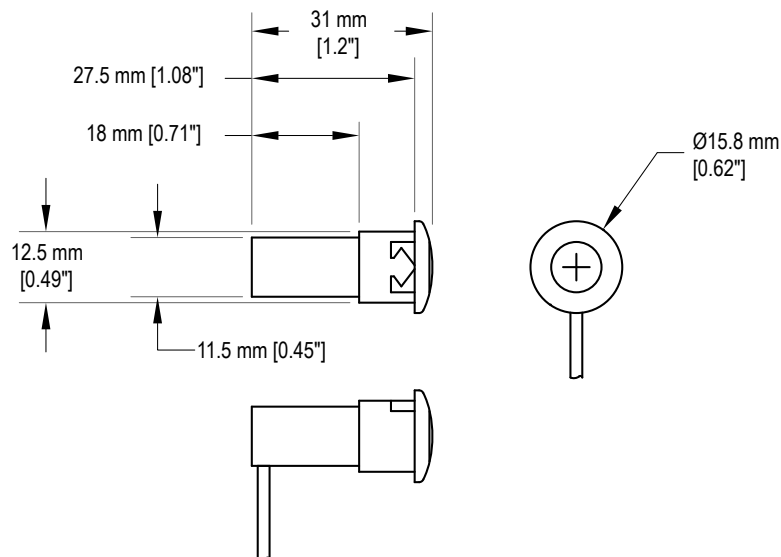
Operating Conditions

Temperature: -20° to $+50^{\circ}$ C (-4° to 122° F)

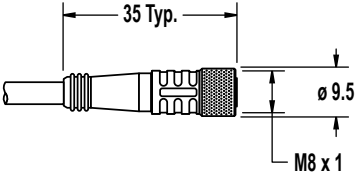
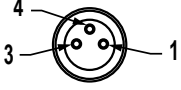
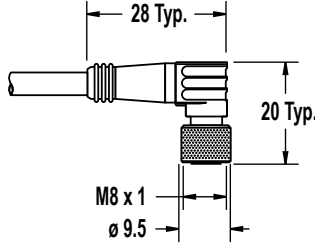
Certifications



Dimensions



Accessories

3-Pin Threaded M8/Pico-Style Cordsets				
Model	Length	Style	Dimensions	Pinout
PKG3M-2	2 m (6.56 ft)	Straight		 <p>1 = Brown 3 = Blue 4 = Black</p>
PKG3M-5	5 m (16.40 ft)			
PKG3M-7	7 m (22.97 ft)			
PKG3M-9	9 m (29.53 ft)			
PKG3M-10	10 m (32.81 ft)			
PKW3M-2	2 m (6.56 ft)	Right-Angle		
PKW3M-5	5 m (16.40 ft)			
PKW3M-9	9 m (29.53 ft)			

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