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	Туре	Range	Output Type	Beam Pattern			
SB12E1	Emitter		—	150 mm 6"			
SB12ANR	Receiver	1.5 m (59 inches)	NPN/LO	150 mm Upposed Mode 6" 100 mm 4"			
SB12RNR			NPN/DO	50 mm 2"			
SB12APR			PNP/LO	0 50 mm 2"			
SB12RPR			PNP/DO	100 mm 150 mm 0 0.4 m 0.8 m 1.2 m 1.6 m 2.0 m 16" 32" 48" 64" 80" DISTANCE			

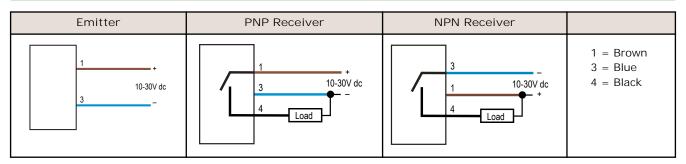
Standard 2 m (6.5 ft) cable models are listed. QD Models: For 3-Pin 150 mm (6 inch) pigtail with threaded Pico-style M8 connector, add suffix "Q3" to the model number (e.g. SB12E1Q3).



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

Sensing Beam 880 nm invisible infrared beam Sensing Range **Output Rating** 1.5 m (59 inches) 100 mA 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): Repeatability ON indicates power on; 350 µs Flashing indicates output short circuited (receiver only) 235 Hz Amber Output LED (receiver only): ON indicates light sensed; • Flashing indicates marginal excess gain IP65 (1.0 to 1.5x excess gain) Construction Housing: ABS Certifications Lens: Polycarbonate; epoxy encapsulant CE PVC-jacketed cable

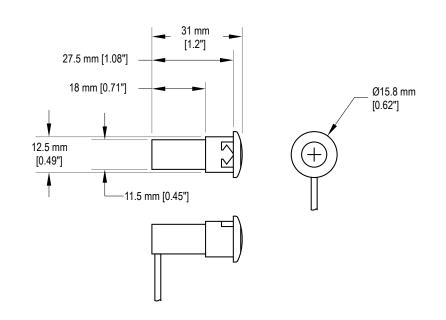
Connections

 $2\mbox{ m}$ (6.5 ft) cable or 150 mm (6 inch) pigtail with M8 threaded connection

Specifications are subject to change without notice

Output Configuration One solid state output, NPN (sinking) or PNP (sourcing), depending on model
Output Rating 100 mA OFF-state leakage current: < 10 μA 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 μs
Switching Frequency 235 Hz
Environmental Rating IP65
Operating Conditions Temperature: -20° to +50° 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	→ 35 Typ. →	4 3 1 = Brown 3 = Blue 4 = Black		
PKG3M-5	5 m (16.40 ft)					
PKG3M-7	7 m (22.97 ft)		ø9.5			
PKG3M-9	9 m (29.53 ft)					
PKG3M-10	10 m (32.81 ft)		└─ M8 x 1			
PKW3M-2	2 m (6.56 ft)	Right-Angle				
PKW3M-5	5 m (16.40 ft)		28 Typ			
PKW3M-9	9 m (29.53 ft)		20 Typ. 20 Typ. ₩8 x 1 Ø 9.5 →			

Banner Engineering Corp Limited Warranty

Banner Engineering Corp. warrants its products to be free from defects in material and workmanship for one year following the date of shipment. Banner Engineering Corp. will repair or replace, free of charge, any product of its manufacture which, at the time it is returned to the factory, is found to have been defective during the warranty period. This warranty does not cover damage or liability for misuse, abuse, or the improper application or installation of the Banner product.

THIS LIMITED WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER EXPRESS OR IMPLIED (INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE), AND WHETHER ARISING UNDER COURSE OF PERFORMANCE, COURSE OF DEALING OR TRADE USAGE.

This Warranty is exclusive and limited to repair or, at the discretion of Banner Engineering Corp., replacement. IN NO EVENT SHALL BANNER ENGINEERING CORP. BE LIABLE TO BUYER OR ANY OTHER PERSON OR ENTITY FOR ANY EXTRA COSTS, EXPENSES, LOSSES, LOSS OF PROFITS, OR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES RESULTING FROM ANY PRODUCT DEFECT OR FROM THE USE OR INABILITY TO USE THE PRODUCT, WHETHER ARISING IN CONTRACT OR WARRANTY, STATUTE, TORT, STRICT LIABILITY, NEGLIGENCE, OR OTHERWISE.

Banner Engineering Corp. reserves the right to change, modify or improve the design of the product without assuming any obligations or liabilities relating to any product previously manufactured by Banner Engineering Corp.



more sensors, more solutions