



EZ-BEAM S12 Series Opposed-Mode Sensor Pairs

DC self-contained sensors in a 12 mm barrel housing

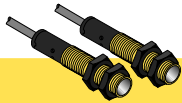
EZ-BEAM S12 Series Features



- Economical opposed-mode (beam-break) sensor pairs in 12-millimeter diameter barrel-style housings
- Sensing range of 15 meters (50 feet)
- Totally self-contained; 10 to 30V dc operation
- Complementary outputs: one normally open, one normally closed; choice of NPN (sinking) or PNP (sourcing) configuration, 100 mA max. (continuous)
- One output may be used as a marginal signal alarm
- LED indications for Power On, Output Overload, Object Sensed, and Low Gain conditions



Visible red, 680 nm



EZ-BEAM S12 Series Opposed-Mode Sensors

Models	Range	Cable	Supply Voltage	Output Type	Excess Gain	Beam Pattern
S126E S126EQP	15 m (50 ft)	2 m (6.5 ft) 4-Pin Pico QD	10-30V dc	—		
S12SN6R S12SN6RQP		2 m (6.5 ft) 4-Pin Pico QD		NPN		
S12SP6R S12SP6RQP		2 m (6.5 ft) 4-Pin Pico QD		PNP		

NOTES:

- 9 m (30') cables are available by adding suffix "W/30" to the model number of any cabled sensor (e.g. - S12SN6R W/30)
- A model with a QD connector requires an accessory mating cable. See page 4.




WARNING . . . Not To Be Used for Personnel Protection

Never use these products as sensing devices for personnel protection. Doing so could lead to serious injury or death.

These sensors do NOT include the self-checking redundant circuitry necessary to allow their use in personnel safety applications. A sensor failure or malfunction can cause either an energized or de-energized sensor output condition. Consult your current Banner Safety Products catalog for safety products which meet OSHA, ANSI and IEC standards for personnel protection.

EZ-BEAM S12 Series Opposed-Mode Sensors

EZ-BEAM S12 Series Specifications

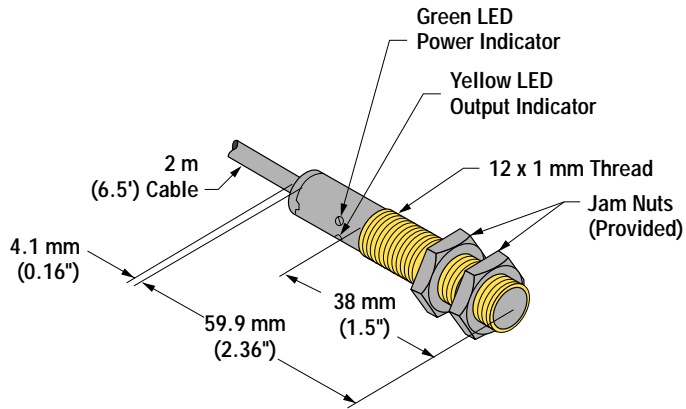
Supply Voltage and Current	10 to 30V dc (10% maximum ripple); Supply current (exclusive of load current): Opposed Mode Emitters: 25 mA Opposed Mode Receivers: 20 mA
Supply Protection Circuitry	Protected against reverse polarity and transient voltages
Output Configuration	SPDT (complementary) solid-state dc switch; choose NPN (current sinking) or PNP (current sourcing) models. <i>Light operate:</i> N.O. output conducts when the sensor sees the emitter's modulated light <i>Dark operate:</i> N.C. output conducts when the sensor sees dark; The N.C. (normally closed) output may be wired as a normally open marginal signal alarm output, depending upon hookup to the power supply (U.S. patent 5087838)
Output Rating	100 mA maximum (each) in standard hookup; when wired for alarm output, the total load may not exceed 100 mA. Off-state leakage current <1 microamp at 30V dc; On-state saturation voltage <1V at 10 mA dc; <1.5V at 150 mA dc
Output Protection Circuitry	Protected against false pulse on power-up and continuous overload or short circuit of outputs
Output Response Time	3 milliseconds ON, 1.5 milliseconds OFF NOTE: 100 millisecond delay on power-up; outputs are non-conducting during this time
Repeatability	375 microseconds; repeatability and response are independent of signal strength
Indicators	Receivers have two LEDs: Green and Yellow GREEN glowing steadily = power to sensor is "on" GREEN flashing = output is overloaded (dc models only) YELLOW glowing steadily = normally open output is conducting YELLOW flashing = excess gain marginal (1-1.5x) in light condition
Construction	Housings are reinforced thermoplastic polyester; lenses are Lexan®; Polyurethane end cap
Environmental Rating	Leakproof design rated NEMA 6P (IEC IP67)
Connections	2 m (6.5') or 9 m (30') attached PVC-covered 4-wire cable, or a 4-pin Pico-style QD
Operating Conditions	Temperature: -40° to +70°C (-40° to 158°F) Maximum relative humidity: 90% at 50°C (non-condensing)
Vibration and Mechanical Shock	Meets Mil. Std. 202F requirements. Method 201A (Vibration: frequency 10 to 60 Hz, max., double amplitude 0.06-inch acceleration 10G). Method 213B conditions H&I (Shock: 75G with unit operating; 100G for non-operation).
Certifications	

Lexan® is a registered trademark of General Electric Co.

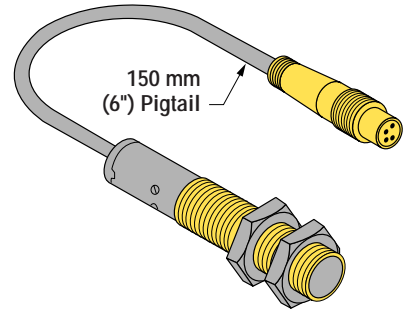
EZ-BEAM S12 Series Opposed-Mode Sensors

EZ-BEAM S12 Series Dimension Information

Cabled Models

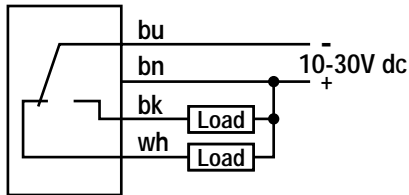


Pig-Tail Quick-Disconnect Models

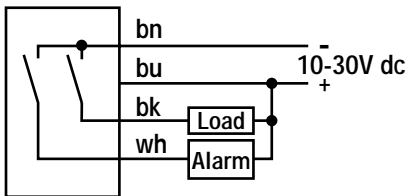


EZ-BEAM S12 Series DC Hookups

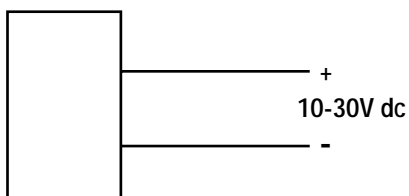
Receivers with NPN (Sinking) Outputs Standard Hookup



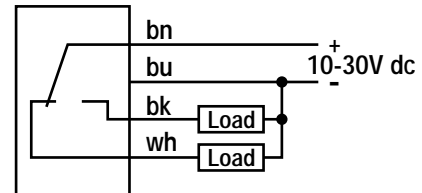
Alarm Hookup



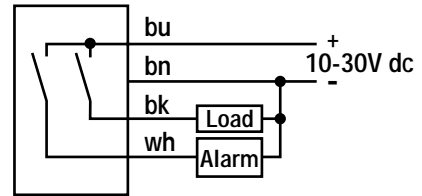
Emitters with Attached Cable



Receivers with PNP (Sourcing) Outputs Standard Hookup

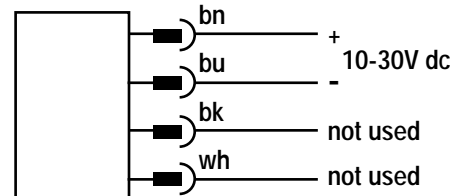


Alarm Hookup



Emitters with Quick-Disconnect

Note: No connection to bk and wh wires of QD cable.



EZ-BEAM S12 Series Opposed-Mode Sensors

Accessories

Brackets

Model	Description	Dimensions
SMB12MM	<ul style="list-style-type: none"> 12-gauge, stainless steel, right-angle mounting bracket for barrel-style sensors with 12 mm threads Curved mounting slot allows the bracket $\pm 10^\circ$ of lateral movement Mounting holes accommodate #8 hardware 	

Apertures

SP12 sensors may be fitted with apertures which narrow or shape the effective beam of the sensor and protect the sensor's lens. These apertures are rectangular or circular thread-on water-tight parts. Use of apertures with SP12 high-gain sensors makes it possible to create very narrow, concentrated sensing beams for precision sensing applications. Both kits include lens, o-rings and thread-on housing.

Model	Description	
AP12SC	Includes 3 circular apertures with openings of: 0.5 mm (0.02") diameter 1.0 mm (0.04") diameter 2.5 mm (0.10") diameter	
AP12SR	Includes 3 rectangular apertures with openings of: 0.5 mm (0.02") wide 1.0 mm (0.04") wide 2.5 mm (0.10") wide	

Quick-Disconnect Cables

Cable: PUR jacket, polyurethane connector body, POM snap-lock coupling

Conductors: 26 or 24 AWG high-flex stranded, gold-plated contacts

Temperature: -40° to $+90^\circ\text{C}$ (-40° to $+194^\circ\text{F}$)

Voltage Rating: 30V ac/36V dc

Style	Model	Length	Dimensions	Pin-out
4-Pin Straight	PKG4-2	2 m (6.5')		
4-Pin Right-angle	PKW4-2	2 m (6.5')		