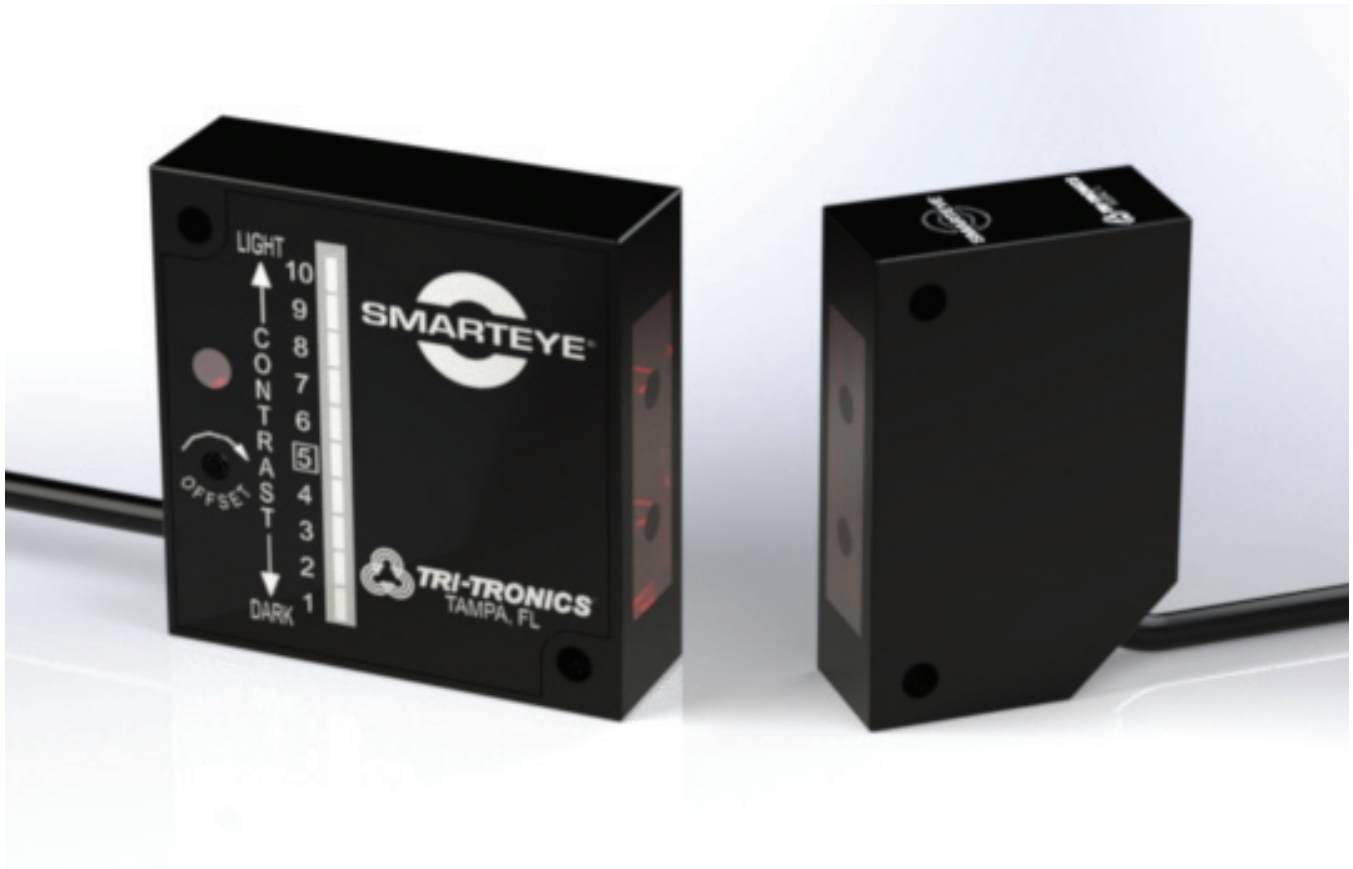




Smart Sensing Solutions Since 1954

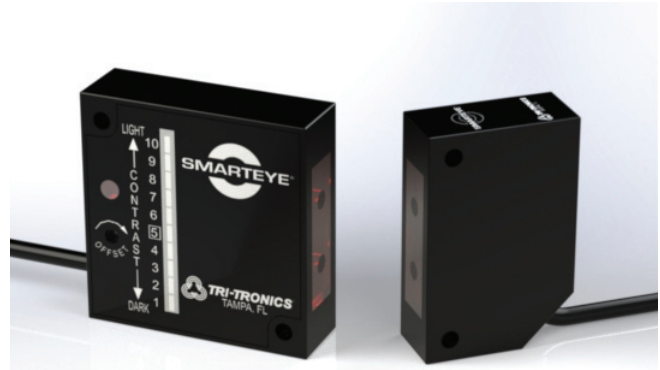


Super Bright IR Through-Beam



High Intensity Through Beam Sensor

The **SMARTEYE**® light sources and receivers have been designed to perform Beam Break or thru-beam sensing tasks where the material or container is dense, the lens is subject to contamination buildup, or for long range sensing in harsh environments. A complete system includes a Dual LED High- Intensity Light Source and a Complementary Receiver.



Features

- Two or ten LED infrared light source
- 10-LED contrast indicator
- Screwdriver adjustable offset
- Fiber optic or lensed models
- Asynchronous light source

Benefits

- Penetrates through many opaque objects and cartons.
- Easy to align and adjust.
- Flexible available configurations.
- Uses standard fiber optic mounting and tip configurations.

Applications

- Paper box contents verification/inspection
- Opaque liquid level detection
- Paper insert/instruction verification/inspection
- Paper box contents orientation

Applications



FIBEROPTIC BEAM BREAK DETECTION

Dual LED light source model SLS-2F1 and dual detector receiver model SR-2F1.

The F1 block allows the use of fiber optic light guides. Utilizing a bifurcated light guide, the light energy available from the two LED light sources is used to create a very high intensity light beam. The dual detector receiver can be used with one bifurcated light guide and one or two straight light guides.



CONTAINER CONTENTS DETECTION

Dual LED light source model SLS-1 and dual detector receiver model SR-1.

This basic system is used without optical blocks. Designed for closeup through-beam sensing through dense containers and materials. Applications include: detecting the presence or absence of contents in plastic containers or cardboard boxes; detecting overlap splices in dense materials, etc.



LONG RANGE HARSH ENVIRONMENT PENETRATION

Dual LED light source model SLS-2R1 and dual detector receiver model SR-2R1.

The R1 block allows the light source and receiver to be placed as far apart as 100 feet. This system is capable of penetrating severe contamination buildup on the lenses. Applications include detecting opaque objects under the most adverse conditions found in the lumber, paper, and steel industries.



Optical Block Selection



Dual Detector Receiver Model SR-1



Dual LED Light Source Model SLS-1



Dual Detector Receiver Model SR-2R1



Dual LED Light Source Model SLS-2R1



Dual Detector Receiver Model SR-2F1.



Dual LED Light Source Model SLS-2F1

Retroreflective Blocks



R1 Retroreflective
Narrow beam optics designed to sense reflectors or reflective materials.

Fiber Optic Blocks



F1 Fiber Optic Adapter
Fiber optic quick connect

Sensing Range Guidelines

1in = 25.4mm / 1ft = 0.3048 meters

Light Source Model #	Receiver NPN Model #	Receiver PNP Model #	Range Guidelines	Applications
High Intensity				
SLS-1	SR-1	PSR-1	Up to 1ft (0.30m)	Short range, high power opacity sensing. Use in shortest range possible for maximum penetration.
SLS-2R1	SR-2R1	PSR-2R1	Up to 100ft (30.5m)	Long range, Beam Break object sensing.
SLS-2F1 (with fiber optic light guide)	SR-2F1	PSR-2F1	Up to 3ft (0.9m) without lens	Short range fiber optic Beam Break sensing.
			Up to 18ft (5.5m) with lens	Long range fiber optic Beam Break sensing. Using 2 UAC-15 lenses.
Super High Intensity				
HSL-12	SR-1	PSR-1	35ft (10.7m)	10X Optical power. Verification of container contents, proper fill levels, or overlap splice detection of dense materials.



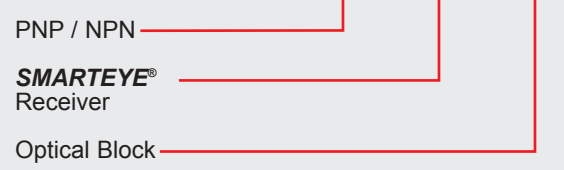
How to Specify

Light sources and receivers are not furnished in pairs, and they must be ordered separately.

Receiver

1. Select NPN or PNP Transistor Output:
Blank = NPN
P = PNP
2. Select sensor model number required:
SR-1 = Use with no optical block
SR-2 = Use with F1 or R1 optical block
3. Select Block:
Blank = No block
F1 = Fiber Optic
R1 = Long Range Lens

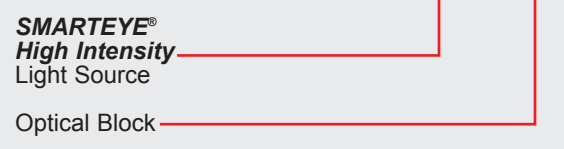
Example:



Light Source

1. Select sensor model:
SLS-1 = Use with no optical block
SLS-2 = Use with F1 or R1 optical block
HSL-12 = Use with no optical block
2. Select Block:
Blank = no block
F1 = Fiber Optic block
R1 = Long Range block

Example:



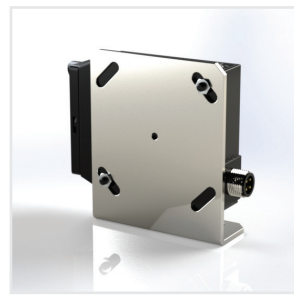
Accessories



F1
Fiber Optic Optical Block



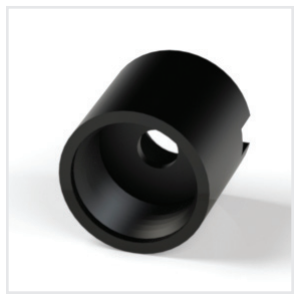
R1
Retroreflective Block



SEB-1
Receiver mounting bracket



DCB-1
Light Source mounting bracket



CA-1
Conduit adapter



FSR-1
Flexible strain relief



UAC-15
Threaded long range glass lens, 2in(51mm) focal point
Fits any standard threaded tip glass fiber optic.
Lg. 1 3/8in (35mm)



Receiver Features

OUTPUT STATUS INDICATOR
Illuminates when outputs are ON.

OFFSET ADJUSTMENT
Sets initial level in relation to switch point of 5 on contrast indicator- also functions as a sensitivity adjustment.

CONNECTION
4-wire 6ft cable (1.8m)

10 LED CONTRAST INDICATOR
Provides at-a-glance analysis of the sensor's response to Light State vs Dark State sensing conditions.

INTERCHANGEABLE OPTICAL BLOCKS (Not shown)
Choice of two Optical Blocks - R1, F1.

BLOCK MOUNT PEGS
Note: Block mounts are only on models with blocks.

Light Source Features

INTERCHANGEABLE OPTICAL BLOCKS (Not shown)
Choice of two Optical Blocks - R1, F1.

BLOCK MOUNT PEGS
Note: Block mounts are only on models with blocks.

CONNECTION
4-wire 6ft cable (1.8m)

Receiver Specifications



SUPPLY VOLTAGE

- 12 to 24VDC
- Polarity protected

CURRENT REQUIREMENTS

- 50mA (exclusive of load)

OUTPUTS

- Complementary NPN or PNP output transistors sink/source up to 100mA

RESPONSE TIME

- 800 microseconds – Beam Make or Beam Break

HYSTERESIS

- 400 millivolts – maximum sensitivity and resolution

LIGHT IMMUNITY

- Extremely high immunity to ambient light – sensor responds to pulse modulated light only.

LED INDICATOR

- When the light level reaching the photodetector exceeds 5 on the contrast indicator, the output switch, and the output LED indicator illuminates.

CONTRAST INDICATOR

- Displays the receiver's full and complete response to contrasting light levels (lightest state vs. darkest state) on the LED bargraph.

AMBIENT TEMPERATURE/RH

- -40°C to 70°C (-40°F to 158°F)
- 95% relative humidity

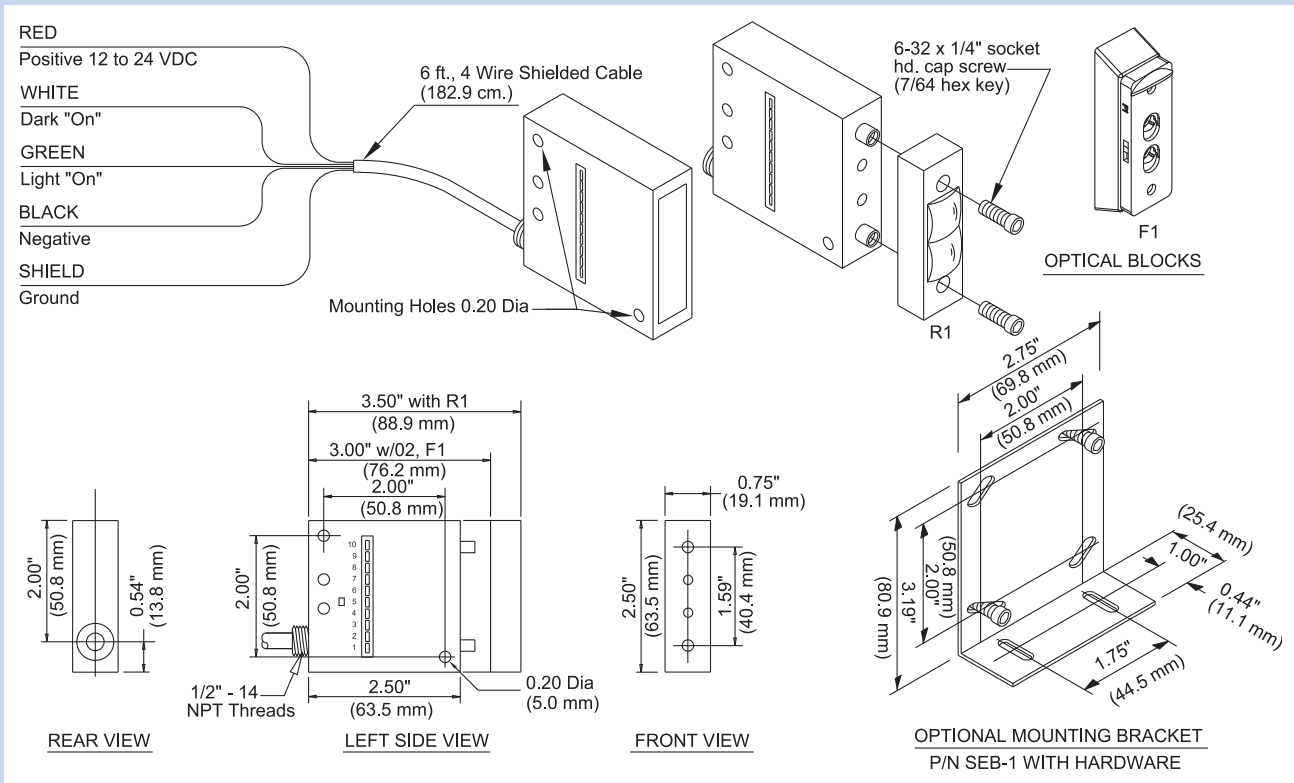
RUGGED CONSTRUCTION

- High-impact plastic case is dirt and moisture sealed.
- Epoxy encapsulated for mechanical stability



RoHS Compliant
Product subject to change without notice

Dual Detector Receivers



High Intensity Light Source Specifications



High Power Light Source Specifications

SUPPLY VOLTAGE

- 12 to 24VDC
- Polarity protected

CURRENT REQUIREMENTS

- Dual LED light source 65mA
- HSLS-12 light source 70mA

LED LIGHT SOURCE

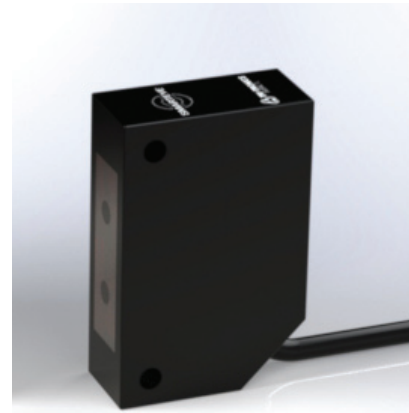
- Infrared = 880nm wavelength
- Model SLS, 2 LED's
- Model HSLS-12, 10 LED's

AMBIENT TEMPERATURE/RH

- -40°C to 70°C (-40°F to 158°F)
- 95% relative humidity

RUGGED CONSTRUCTION

- High-impact plastic case is dirt and moisture sealed
- Epoxy encapsulated for mechanical stability



RoHS Compliant
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High Intensity Light Source/Receiver Models

