

TB12 Through-Beam Sensor

Installation Manual



The **TB12 Through-Beam Sensor** has a 12mm housing with a front flange and plastic nut. This design is ultra-rugged and epoxy encapsulated IP67.

- Ultra-low-power design features a receiver current of 10mA and a transmitter current of 5mA for red light source models, and 15mA for infrared light source models. Ideal for battery powered automated vehicles.
- Small 12mm barrel is a great option in tight spaces.
- Crosstalk rejection between two beam pairs delivers no false triggers.
- Cost effective sensing solution for your needs.

Note: Optional fog-proofing down to 0°C (32°F) feature.

How to Specify

1. Select Sensor: TB12
Through-Beam 12mm Sensor

2. Select Type:

- R** = Receiver (Red Light)
- RI** = Receiver (Infrared Light)
- LS** = Light Source (Red Light)
- LSI** = Light Source (Infrared Light)

Note: Working pairs require matching LED type - a Red light source would require a Red receiver.

3. Select Channel Operation:

- Blank** = Channel A
- B** = Channel B

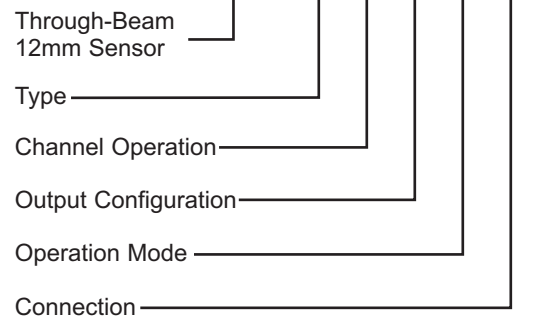
Note: Working pairs require matching Channel type - a B-Channel light source would require a B-Channel receiver.

4. Select Output Configuration
(applies only to receivers):
P = PNP
N = NPN

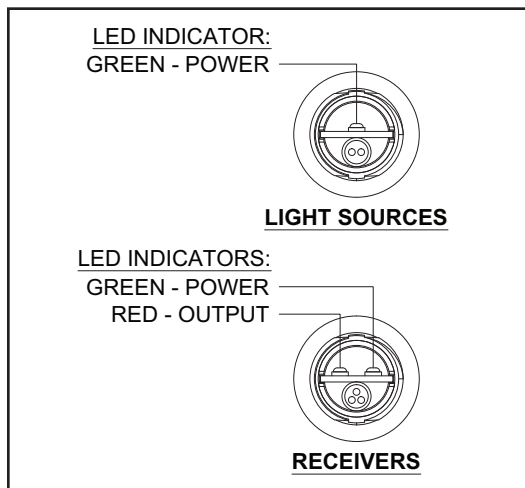
5. Select Operation Mode
(applies only to receivers):
Blank = Light On
D = Dark On

6. Select Connection:
Blank = 6ft (1.8m) Cable
C = 3-Pin M8 Male

Example: TB12 R B P D C



Features



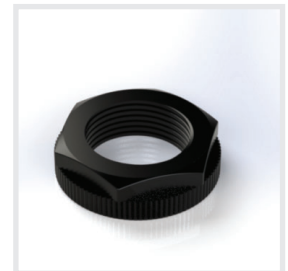
Accessories



GEC3-6
3-Pin 6ft (1.8m) Cable



MB-12
12mm Bracket



NUT-12
12mm Mounting Nut

Specifications

SUPPLY VOLTAGE & CURRENT

- 8-30 Vdc
- Receiver current 10mA;
- Red Transmitter current 5mA;
- Infrared Transmitter current 15mA
- Reverse polarity protected
- Transient spike protected

OUTPUT

- 150mA output current
- Short circuit & transient spike protected
- Saturation voltage: < 0.3Vdc @ 10mA
- < 2.0Vdc @ 150mA
- NPN or PNP based on model.
- Light-On or Dark-On based on model.

POWER-UP DELAY

- 300ms. No output pulse on power-up.

RESPONSE TIME

- A-Channel = 300µs on, 600µs off typical.
- B-Channel = 342µs on, 684µs off typical.

REPEATABILITY

- A-Channel = 100µs.
- B-Channel = 118µs.

RANGE

- Red: Range 2m
(Light spot 100mm @ 2m)
- Infrared: Range 20m

LIGHT IMMUNITY

- Responds to model's modulation frequency (A-Ch, B-Ch).
 - High immunity to most ambient light, including high efficiency lighting and high intensity strobes.
- Note: No false trigger between two sensor pairs on different channels.*

LED INDICATORS

- Transmitter: Green power LED.
- Receiver: Green power LED, red output LED. Illuminates when output is ON.

LED LIGHT SOURCE

- LED, Red = 660nm
- LED, Infrared = 850nm

CONNECTIONS

- M8, 3-pin, 6in (152mm) pigtail
- Attached cable:
Receiver: 3-wire 6ft (1.8m);
Light Source: 2-wire 6ft (1.8m)

OPERATING TEMPERATURE

- -20°C to 70°C (-4°F to 158°F) - Electrical.
- Optional fog-proof lens available.
- Optional fog-proof lens helps reduce condensation at freezing environments.
- Consult factory for specific application details.

HOUSING CONSTRUCTION

- 12mm barrel
- Chemical resistant, high-impact polycarbonate
- Lens: polycarbonate
- Encapsulated
- 12mm mounting nut included

RATINGS & CERTIFICATIONS

- IP67
- CE
- UL pending



RoHS Compliant
Product subject to change without notice

Connections and Dimensions

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