

Through the Roller Sensor Family



Datasheet



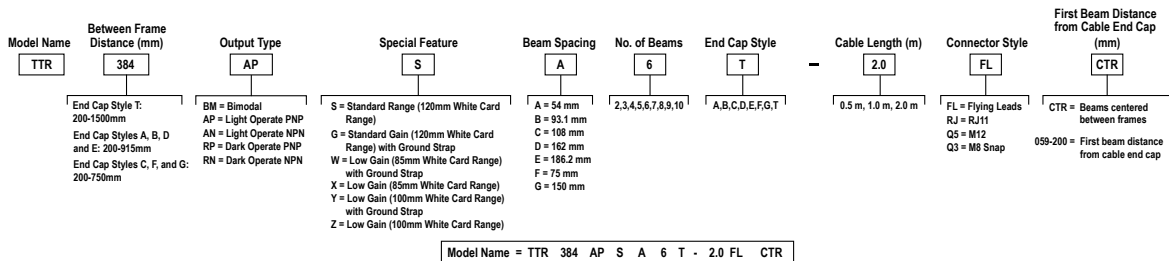
- Reliable leading edge detection of letters, thin packages, poly bags, totes, boxes or other product on roller conveyors
- Mounts between conveyor roller gap to standard hex or round side rail holes with no extra hardware required or on the T-Slot with customer supplied bracket and hardware
- Spring loaded end caps reduce installation and alignment time for reduced labor costs
- Built to order with specified length and beam spacing: 200 mm to up to 1500 mm (8 in to up to 59 in) depending on mounting configuration, with 2 to 10 sensors for maximum flexibility
- Robust aluminum housing, ambient light and ESD resistance for enhanced durability



WARNING:

- **Do not use this device for personnel protection**
- Using this device for personnel protection could result in serious injury or death.
- This device does not include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A device failure or malfunction can cause either an energized (on) or de-energized (off) output condition.

Models



Note: For definition of the End Cap Styles, see [Table 1](#) on page 2.



Note: Sensors with more than 7 beams have higher minimum supply voltage requirements, see [Specifications](#) on page 5.

Configurations

Figure 1. Spring End Cap Configuration

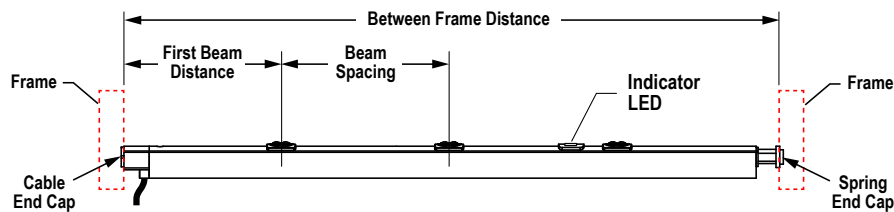


Figure 2. T-Slot Configuration

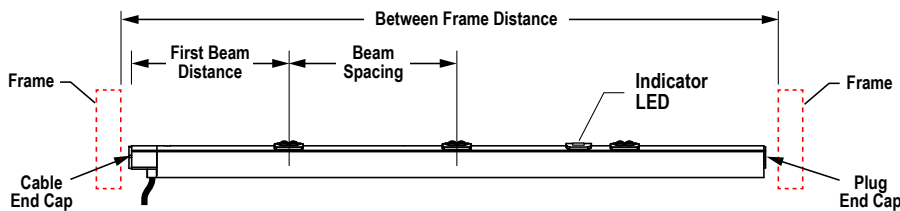


Figure 3. Adhesive End Cap Configuration

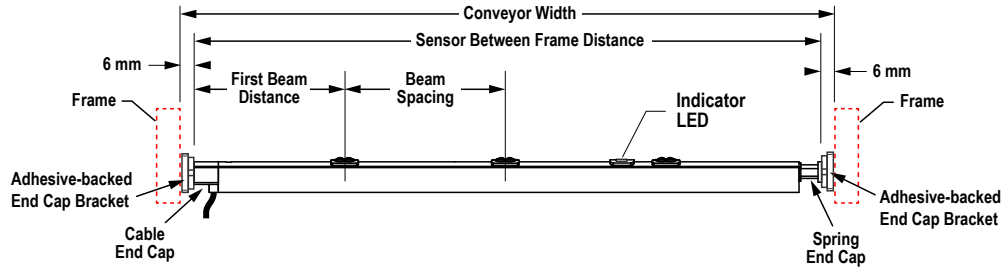


Table 1: End Cap Styles

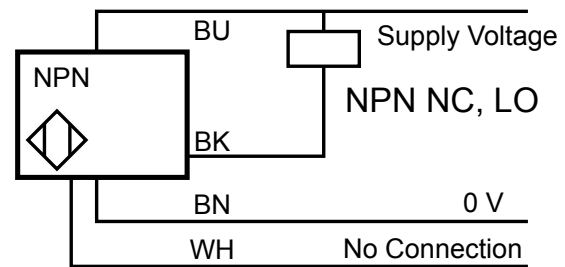
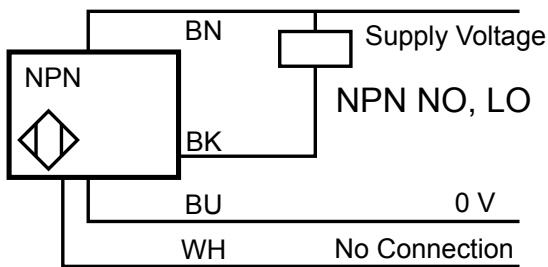
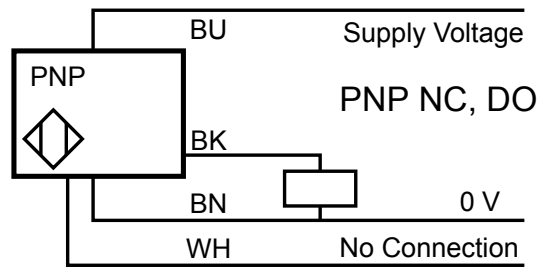
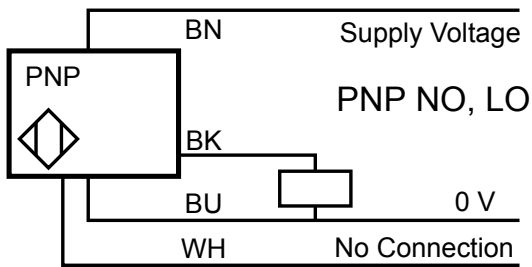
| End Cap Style | | End 1 | | End 2 |
|---------------|---|-------|---|-------|
| A | 11 mm Hex, flat side up | | Spring 11 mm hex / 8 mm round | |
| B | 11 mm Hex, point up | | Spring 11 mm hex / 8 mm round | |
| C | Adjustable 11 mm Hex, can be positioned in 10 degree increments | | Spring 11 mm hex / 8 mm round | |
| D | 11 mm Hex, flat side up | | Spring 8 mm round | |
| E | 11 mm Hex, point up | | Spring 8 mm round | |
| F | Adjustable 11 mm Hex, can be positioned in 10 degree increments | | Spring 8 mm round | |
| G | Adjustable 11 mm Hex, can be positioned in 10 degree increments / adhesive backed bracket | | Spring 11 mm hex / 8 mm round / adhesive backed bracket | |
| T | 11 mm Hex, flat side up | | Plug | |



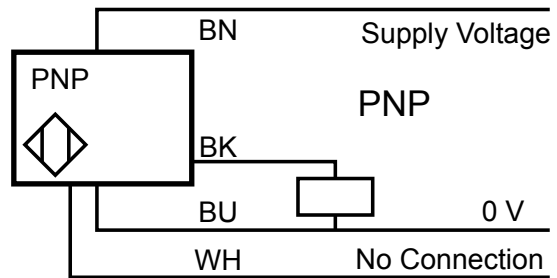
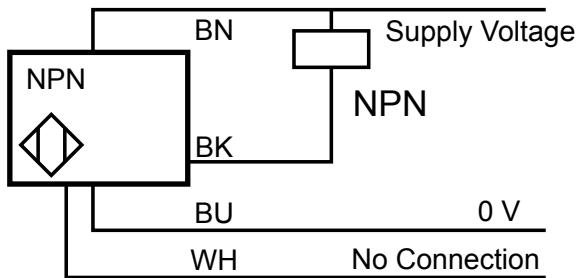
Note: T-Slot mounted sensors with the T End Cap Style are 6 mm shorter than the specified Between Frame Distance.

Wiring

Bimodal Output Wiring Diagrams

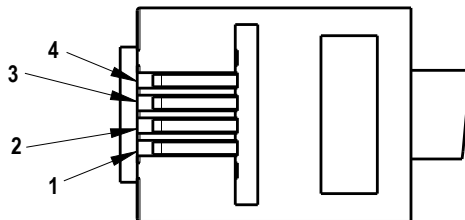


Fixed NPN and PNP Output Wiring Diagrams: Light and Dark Operate by Model Number



RJ-11 Pinout

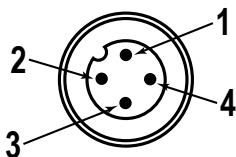
RJ-11 Key



1. Brown
2. Black
3. White
4. Blue

M12 Pinout

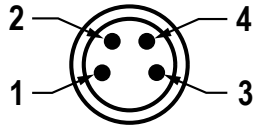
M12 Key



1. Brown
2. White
3. Blue
4. Black

M8 Snap Connector Pinout

M8 Key

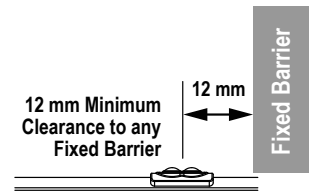
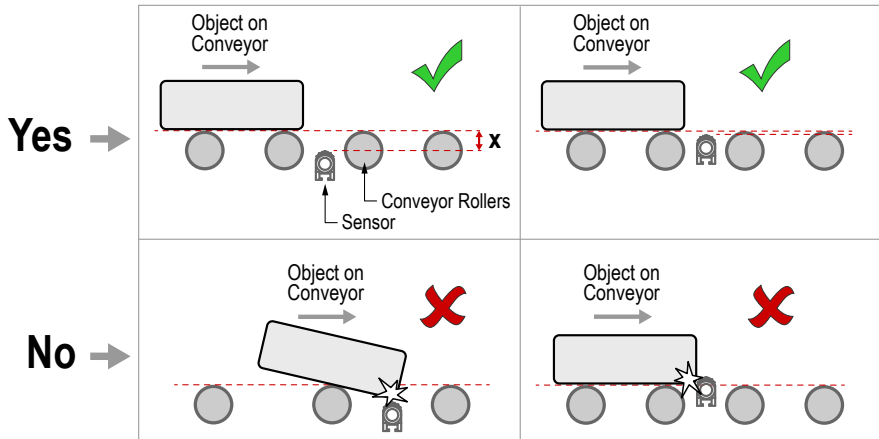


- 1. Brown
- 2. White
- 3. Blue
- 4. Black

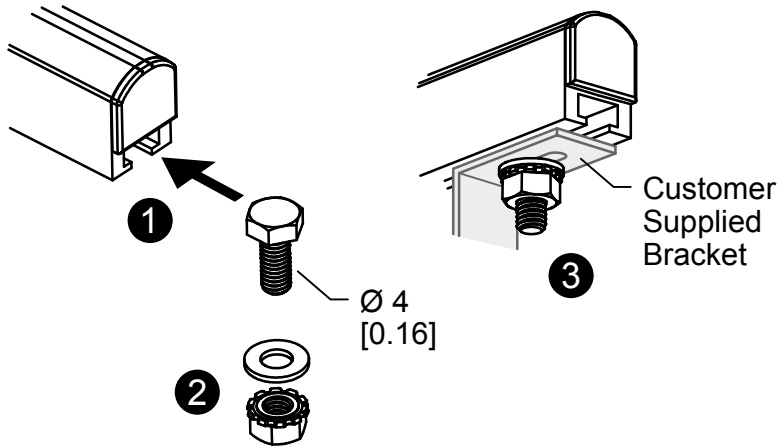
Installation

Mounting Considerations

Conveyor Side View



T-Slot Installation



Specifications

Supply Voltage

| Number of Sensing Beams | Supply Voltage with 10% Maximum Ripple |
|-------------------------|--|
| 2, 3, 4, 5, 6, 7 | 18 V DC to 30 V DC |
| 8 | 22 V DC to 30 V DC |
| 9 | 24 V DC to 30 V DC |
| 10 | 26 V DC to 30 V DC |

Use only with a suitable Class 2 power supply (UL) or SELV power supply (CE)

Supply Current

45 mA

Supply Protection Circuitry

Protected against reverse polarity and transient voltages

Wavelength

Infrared LED, 940 nm

Output Response

1 ms on/off

Output Configuration

Rating: 100 mA max output at 25 °C
 Output Voltage High: Greater than Vsupply – 2.5 V
 Output Voltage Low: Less than 2.5 V
 For loads less than 1 Meg Ohm
 Protected against false pulse on power-up and continuous overload or short-circuit of output

Indicators

Amber on: Light sensed

Sensing Mode

Diffuse, Infrared, 940 nm

Range

| Special Feature Type | Range | | |
|----------------------|----------------|---------------|----------------|
| | 90% White Card | 18% Gray Card | 6% Black Card |
| S and G | 0 to ≥ 120 mm | 0 to ≥ 50 mm | ≤ 3 to ≥ 30 mm |
| Y and Z | 0 to ≥ 100 mm | 0 to ≥ 40 mm | ≤ 4 to ≥ 25 mm |
| W and X | 0 to ≥ 85 mm | 0 to ≥ 35 mm | ≤ 6 to ≥ 20 mm |

Operating Conditions

-10 °C to +55 °C (+14 °F to +131 °F)

Environmental Rating

IP50

Vibration and Mechanical Shock

All models meet IEC 60068-2-6, IEC 60947-5-2, UL491 Section 40, MIL-STD-202F, Method 201A (Vibration: 10 Hz to 60 Hz, 0.5 mm peak-to-peak)
 Shock: 30G 11 ms duration, half sine wave per IEC 60068-2-27

Cable

Minimum static bend radius: 20 mm
 Flex life > 10,000 cycles at flexing bend radius > 40 mm

Certifications



Banner Engineering Europe Park Lane,
 Culliganlaan 2F bus 3, 1831 Diegem,
 BELGIUM



Turck Banner LTD Blenheim House,
 Blenheim Court, Wickford, Essex SS11
 8YT, Great Britain



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Performance Curves



Note: The Beam Pattern and Excess Gain performance curve diagrams represent the Standard Gain (Special Feature S and G) models.

