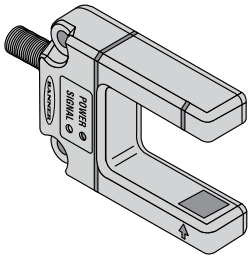
SL30 Series Slot Sensor

Features



- An easy-to-use self-contained opposed-mode sensor pair in a rugged U-shaped housing
- Easy and economical to mount
- Molded-in beam guides simplify mounting and beam placement
- 30 mm slot width for a wide variety of sensing applications
- Applications include label detection, hole detection, gear tooth detection, edge guiding, and counting
- 10 V DC to 30 V DC operation
- Bipolar PNP/NPN outputs
- Visible red beam
- Choose 1 millisecond or 300 microsecond response
- 4-turn potentiometer sensitivity adjustment
- 2 mm effective beam
- Dark or light operate
- Choose integral, unterminated cable, or QD models

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

Models	Cable	Output Type	Response	Repeatability
SL30VB6V	5-wire 2 m (6.5 ft) cable	Bipolar NPN and PNP	1 ms	250 µs
SL30VB6V W/30	5-wire 9 m cable			
SL30VB6VQ	5-pin M12 QD			
SL30VB6VY	5-wire 2 m (6.5 ft) cable		300 µs	75 µs
SL30VB6VYQ	5-pin M12 QD			

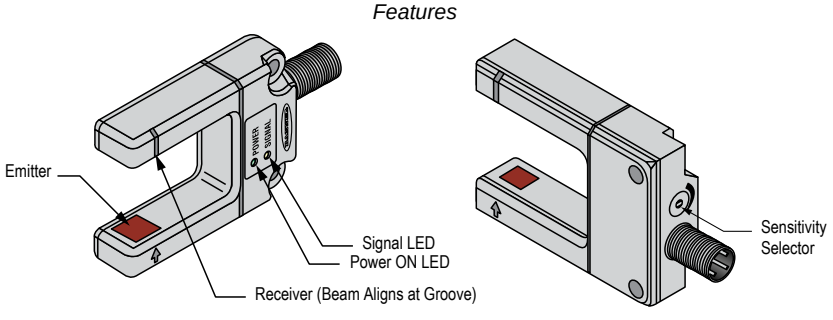
Models with a quick disconnect require a mating cordset.

The following models are no longer available for order but are still covered by the information in this document.

- SL30VB6VY W/30

Overview

Features



The SL30 Slot Sensor (sometimes called a “Fork Sensor”) comprises an opposed-mode emitter and its receiver inside a single convenient housing.

Opposed-mode sensing is very reliable, and the single self-contained housing provides easy installation, with no sensor alignment required. In addition, the molded-in arrow on the emitter portion of the housing and the slotted design on the receiver portion of the housing show at a glance the position of the beam, simplifying installation placement.

Original Instructions
28-Jul-26

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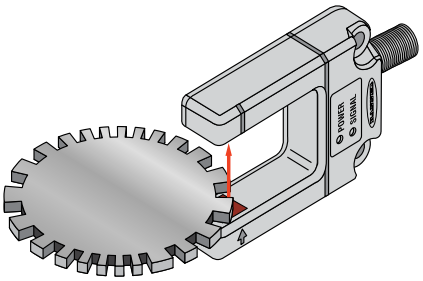
56407
p/n: 56407 Rev E

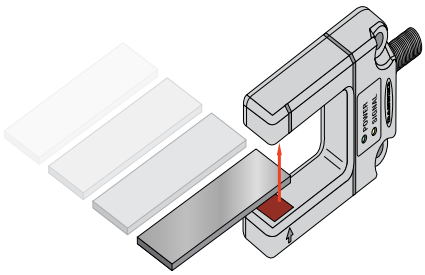
ПРОМЭЛЕКТРОНИКА/ sales@prom-elec.com

Example applications include:

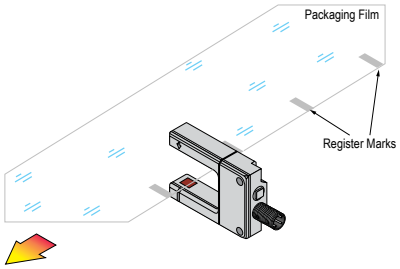
Gear tooth detection



Edge detection



Register mark detection on clear film



LED Indicators

The Slot Sensor features two LED indicators: Power (green) and Signal (amber). They indicate the following:

Green ON: Power ON
Amber ON: Sensor sees light
Amber flashing: Excess gain is marginal (1 to 1.5×) in light conditions

Select Light Operate/Dark Operate

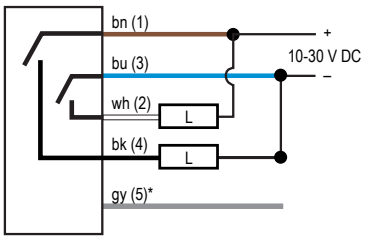
Connect the gray wire to +V (10 V DC to 30 V DC) for dark operate. Connect the gray wire to DC common (or open) for light operate.

In light operate (LO) mode, the output is ON when the target returns the same or more light to the sensor and OFF when the sensor detects less light than the configured/taught target.

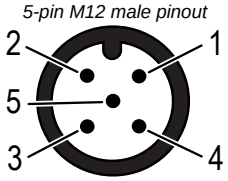
In dark operate (DO) mode, the output is ON when the target returns less light to the sensor than the configured target and OFF when the sensor detects more light than the configured/taught target.

For more information, see Wiring.

Wiring



5-pin M12 male pinout



Wiring Key

1. Brown
2. White
3. Blue
4. Black
5. Gray*

*For dark operate, connect the gray wire to + (brown). For light operate, connect the gray wire to - (blue).

Adjust the Sensitivity

Adjust the sensitivity by turning the 4-turn clutched Sensitivity potentiometer with a small slotted screwdriver.

1. Apply power to the sensor.
2. Turn the potentiometer fully counter-clockwise, four full turns or more to set the sensor to the minimum sensitivity.
3. Present the light condition.
   If the amber Signal Condition indicator is on, that is the light condition sensitivity position. If not, proceed to the next step.
4. Turn the potentiometer clockwise, just until the amber Signal Condition indicator turns on and note the position of the potentiometer.
5. Present the dark condition.
6. Turn the potentiometer clockwise, just until the amber Signal Condition indicator turns on, and note the position of the potentiometer.
7. For maximum reliability, the difference between these two positions should be at least one full turn. Set the sensitivity midway between the two positions for the best sensing results.

If the object to be sensed is very thin and non-metallic, the sensor may emit too much light energy for the object to completely block the beam. To test this, place the object in the sensing position, and decrease the sensitivity until the amber LED goes OFF. Remove the object and verify that the indicator comes on. If this does not occur, investigate other sensing alternatives.

Specifications

Supply Voltage and Current	10-30 V DC, 30 mA	**Supply Protection Circuitry**

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Protected against reverse polarity and transient voltages

Sensing Beam

Visible red, 680 nm

Slot Width

30 mm (1.2 in)

Output Configuration

Bipolar: NPN and PNP

Output Rating

150 mA, each output

Output Protection Circuitry

Protected against output short-circuit and false pulse on power-up

Output Response Time

1 millisecond or 300 microseconds, depending on model

Repeatability

250 microseconds or 75 microseconds, depending on model

Adjustments

4-turn clutched potentiometer sensitivity adjustment

Slot Opening

30 mm (1.2 in) wide x 45 mm (1.8 in) deep overall; beam set in 10 mm from the outer edge

Indicators

Green: Power on/off indicator
Amber: Signal condition indicator

Construction

Housing: ABS/polycarbonate blend
Optic windows: acrylic

Connections

2 m (6.5 ft) or 9 m (30 ft) 5-conductor PVC-jacketed attached cable or 5-pin M12 quick-disconnect (QD) connector, depending on the model ordered

Environmental Rating

IP67

Operating Conditions

–40 °C to +70 °C (–40 °F to +158 °F)
90% at +50 °C maximum relative humidity (non-condensing)

Required Overcurrent Protection

WARNING: Electrical connections must be made by qualified personnel in accordance with local and national electrical codes and regulations.

Overcurrent protection is required to be provided by end product application per the supplied table.
Overcurrent protection may be provided with external fusing or via Current Limiting, Class 2 Power Supply.
Supply wiring leads < 24 AWG shall not be spliced.
For additional product support, go to www.bannerengineering.com.

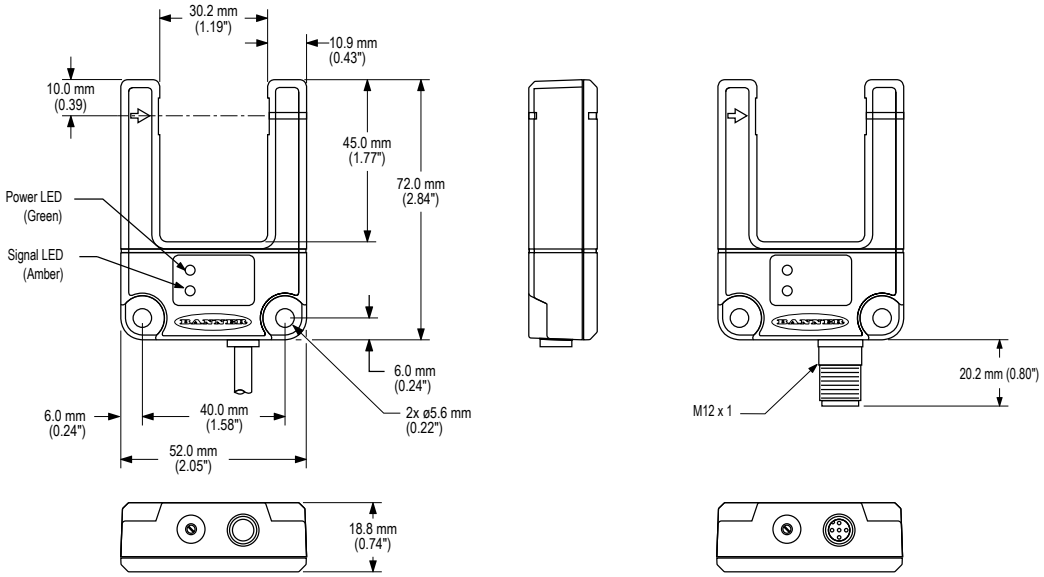
Supply Wiring (AWG)	Required Overcurrent Protection (A)	Supply Wiring (AWG)	Required Overcurrent Protection (A)
20	5.0	26	1.0
22	3.0	28	0.8
24	2.0	30	0.5

Certifications

IND. CONT. EQ.
E224071

Dimensions

All measurements are listed in millimeters [inches], unless noted otherwise. The measurements provided are subject to change.



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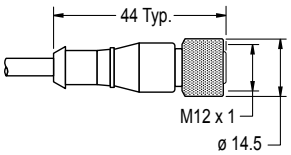
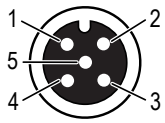
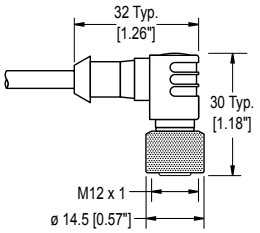
Accessories

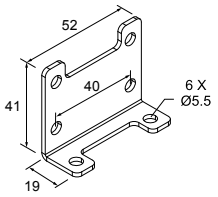
Cordsets

5-Pin Single-Ended M12 Female Cordsets				
Model	**Length**	**Style**	**Dimensions**	**Pinout (Female)**
MQDC1-501.5	0.5 m (1.5 ft)	Straight		 1 = Brown 2 = White 3 = Blue 4 = Black 5 = Gray
MQDC1-503	0.9 m (2.9 ft)			
MQDC1-506	2 m (6.5 ft)			
MQDC1-515	5 m (16.4 ft)			
MQDC1-530	9 m (29.5 ft)			
MQDC1-560	18 m (59 ft)			
MQDC1-5100	31 m (101.7 ft)			
MQDC1-506RA	2 m (6.5 ft)	Right-Angle		
MQDC1-515RA	5 m (16.4 ft)			
MQDC1-530RA	9 m (29.5 ft)			
MQDC1-560RA	19 m (62.3 ft)			

Brackets

SMBSL

- Angled bracket
- 304 stainless steel
- Hardware included



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