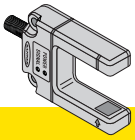
SL Series Slot Sensor

Self-contained opposed-mode sensor pair



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 to 30V 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





Visible red, 680 nm

Models

Model	Slot Width	Cable*	Supply Voltage	Output Type	Response	Repeatability
SL30VB6V	30 mm (1.2")	2 m (6.5') 5-wire cable	10 to 30V dc	Bipolar NPN (sinking) and PNP (sourcing)	1 millisecond	250 microseconds
SL30VB6VQ		5-Pin Euro-style QD				
SL30VB6VY		2 m (6.5') 5-wire cable			300 microseconds	75 microseconds
SL30VB6VYQ		5-Pin Euro-style QD				

* 9 m (30') cables are available by adding suffix "**W/30**" to the model number of the cabled version (e.g., **SL30VB6V W/30**).
A model with a QD connector requires an accessory mating cable. See page 5.

⚠ 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.

Printed in USA 03/09 P/N 56407E9B

SL Series Slot Sensor

Overview

The SL Series 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.

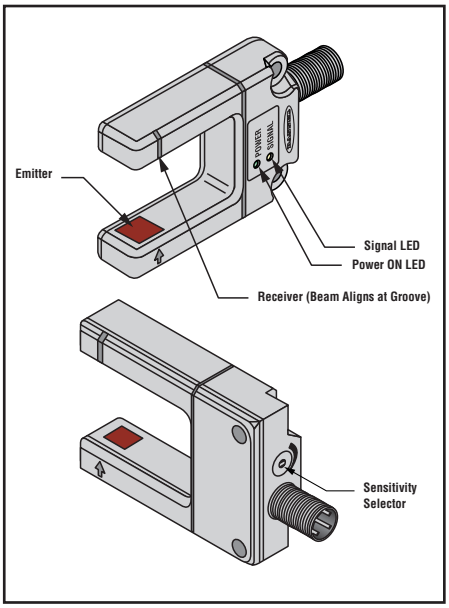


Figure 1. SL Series features

Sensitivity Adjustment

The sensor’s sensitivity is adjusted by turning the 4-turn clutched Sensitivity potentiometer with a small slotted screwdriver. Apply power to the sensor and:

1. Set the potentiometer to minimum sensitivity (fully counter-clockwise) and present the Light condition. If the yellow Signal Condition indicator is ON, that is your Light condition sensitivity position. If not, proceed to step 2.
2. Turn the potentiometer clockwise, just until the yellow Signal Condition indicator comes ON; note its position.
3. Present the Dark condition and turn the potentiometer clockwise, just until the yellow Signal Condition indicator comes ON; note its position.
4. For maximum reliability, the difference between these two positions should be at least one full turn. Set your sensitivity midway between the two positions for 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 yellow LED goes OFF. Remove the object; verify that the indicator comes ON solidly. If this does not occur, investigate other sensing alternatives.

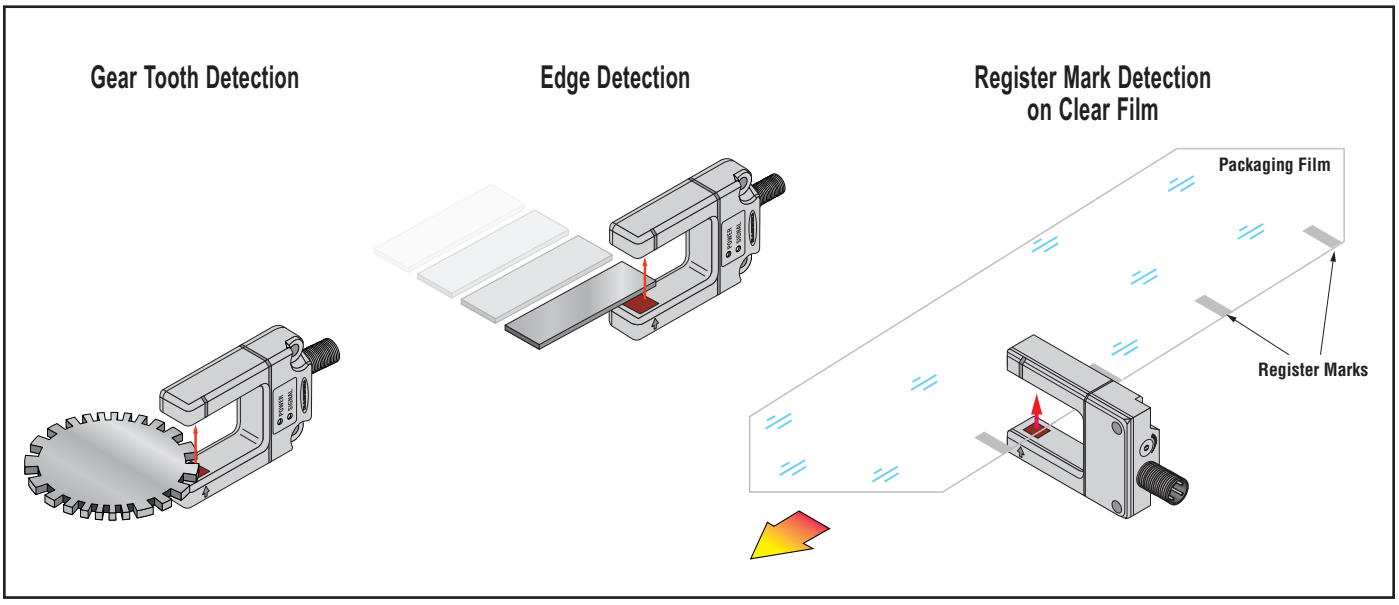


Figure 2. SL Series typical applications

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Light/Dark Operate Select

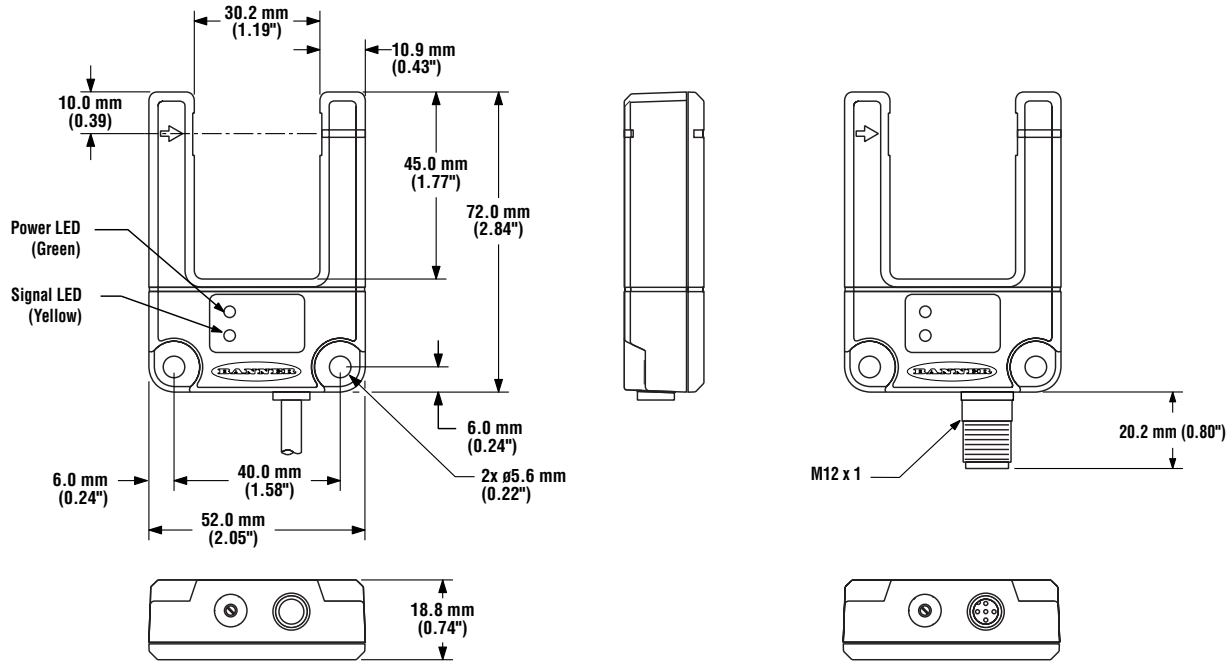
Selecting Light or Dark Operate is a simple procedure: connect the gray wire (see hookups, page 4), to +V (10-30V dc) for Dark Operate, and to dc common (or open) for Light Operate.

LED Indicators

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

Green ON steady:	Power ON
Yellow ON steady:	Sensor sees light
Yellow flashing:	Excess gain is marginal (1 to 1.5x) in light condition

Dimensions



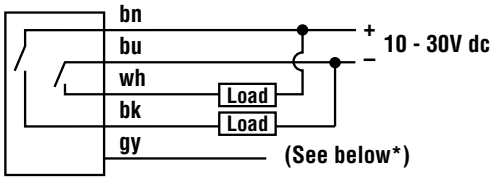
SL Series Slot Sensor

Specifications

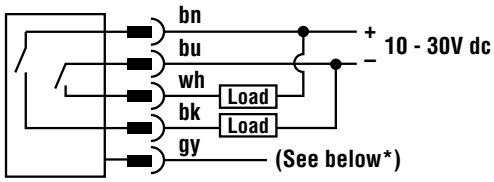
Slot Opening	30 mm (1.2") wide x 45 mm (1.8") deep overall; beam set in 10 mm (0.4") from outer edge
Supply Voltage and Current	10 to 30V dc, 30 mA
Supply Protection Circuitry	Protected against reverse polarity and transient voltages
Output Configuration	Bipolar: NPN (current sinking) and PNP (current sourcing)
Output Rating	150mA, each output
Output Protection Circuitry	Protected against false pulse on power-up and short-circuit of outputs
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
Indicators	**Green:** Power ON/OFF indicator **Yellow:** Signal Condition indicator
Construction	**Housing:** ABS/polycarbonate blend **Lenses:** Acrylic
Connections	IP67, NEMA 6
Environmental Rating	2 m (6.5') or 9 m (30') 5-conductor PVC-jacketed attached cable or 5-pin Euro-style quick-disconnect (QD) connector. QD cables are ordered separately; see page 5.
Operating Conditions	**Operating Temperature:** -40° to +70°C (-40° to +158°F) **Maximum relative humidity:** 90% @ 50°C (non-condensing)

Hookups

Cabled models



Quick-disconnect models

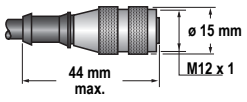
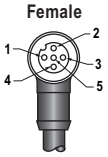
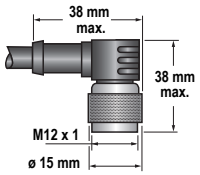


* For Dark Operate, connect gray wire to + (brown).
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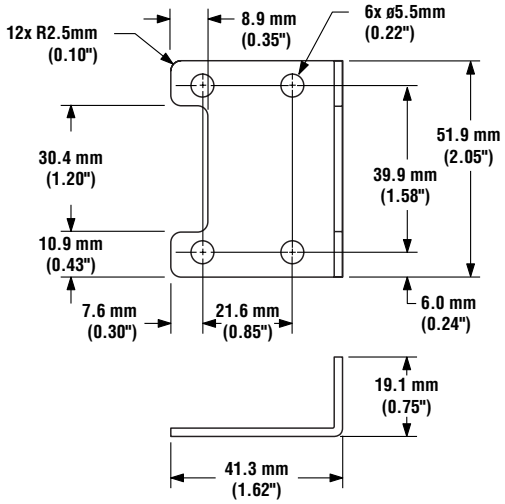
Accessories

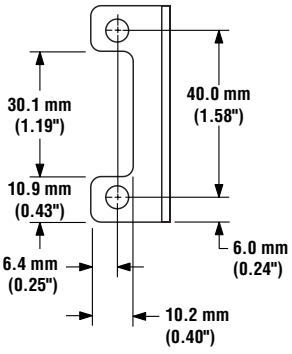
Quick-Disconnect Cables

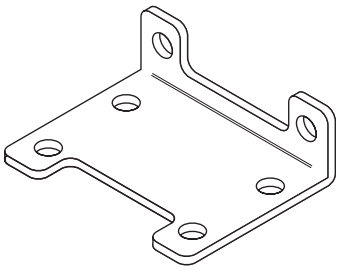
Style	Model	Length	Dimensions	Pinout
5-Pin Euro-style Straight	**MQDC1-506** **MQDC1-515** **MQDC1-530**	2 m (6.5') 5 m (15') 9 m (30')		 1 = Brown 2 = White 3 = Blue 4 = Black 5 = Gray
5-Pin Euro-style Right-Angle	**MQDC1-506RA** **MQDC1-515RA** **MQDC1-530RA**	2 m (6.5') 5 m (15') 9 m (30')		

Mounting Brackets

SMBSL	• Angled bracket • 304 stainless steel







SL Series Slot Sensor

more sensors, more solutions

WARRANTY: Banner Engineering Corp. warrants its products to be free from defects for one year. Banner Engineering Corp. will repair or replace, free of charge, any product of its manufacture found to be defective at the time it is returned to the factory during the warranty period. This warranty does not cover damage or liability for the improper application of Banner products. This warranty is in lieu of any other warranty either expressed or implied.

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Banner Engineering Corp., 9714 Tenth Ave. No., Minneapolis, MN USA 55441 • Phone: 763.544.3164 • www.bannerengineering.com • Email: sensors@bannerengineering.com

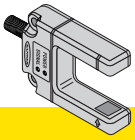
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* 9 m (30') cables are available by adding suffix "**W/30**" to the model number of the cabled version (e.g., **SL30VB6V W/30**).
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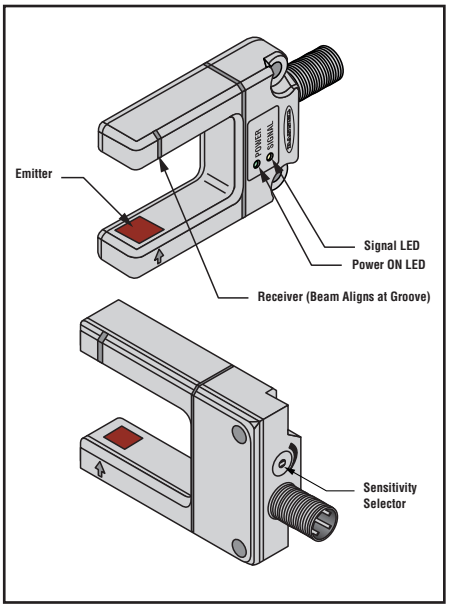


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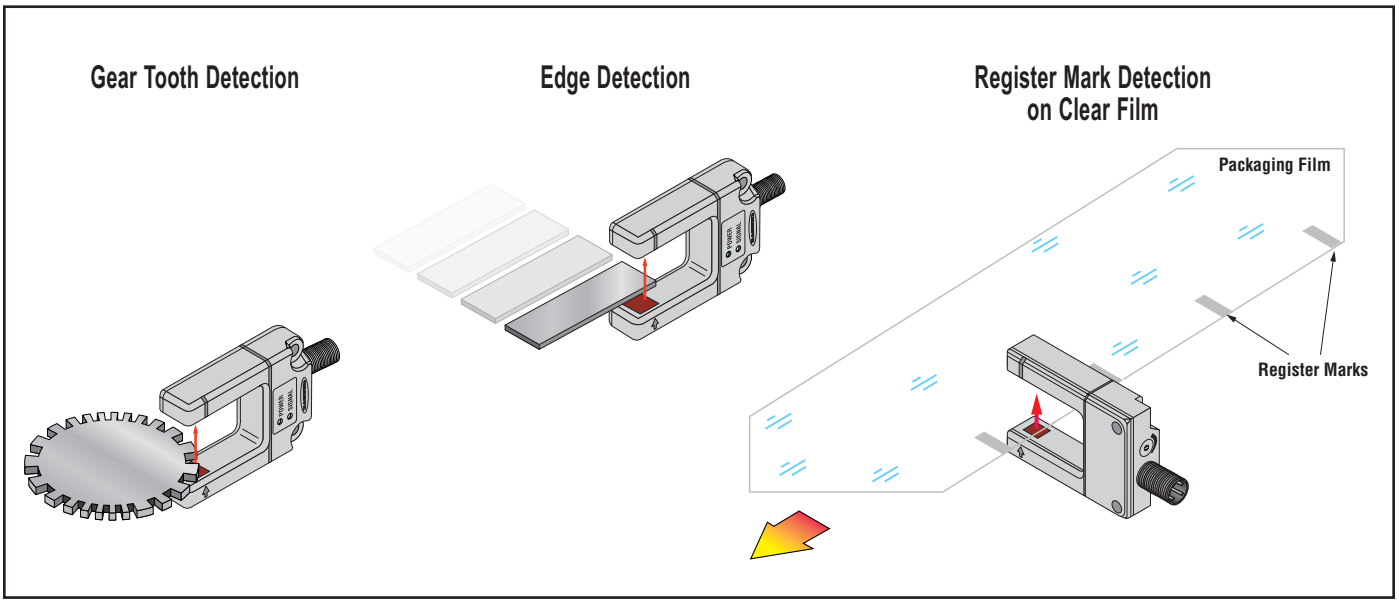


Figure 2. SL Series typical applications

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Light/Dark Operate Select

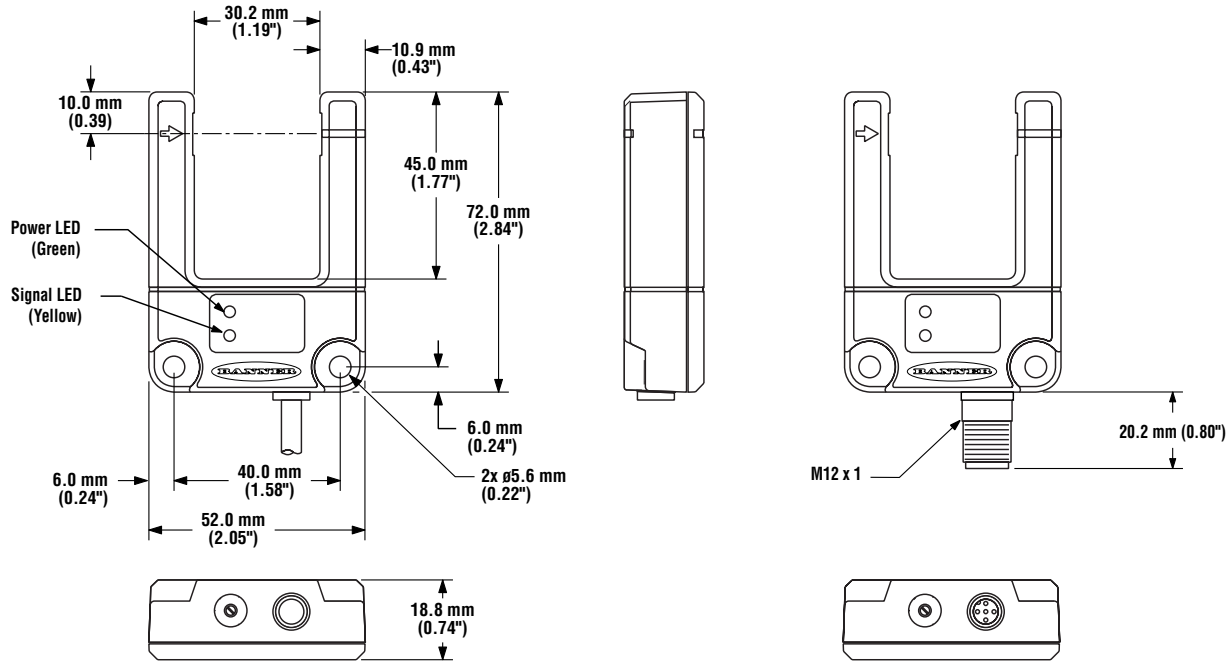
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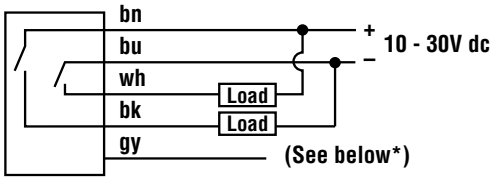
SL Series Slot Sensor

Specifications

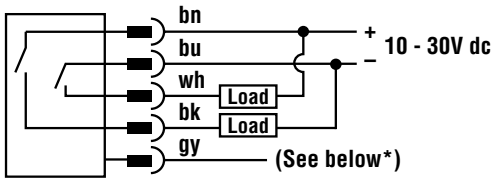
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Output Configuration	Bipolar: NPN (current sinking) and PNP (current sourcing)
Output Rating	150mA, each output
Output Protection Circuitry	Protected against false pulse on power-up and short-circuit of outputs
Output Response Time	1 millisecond or 300 microseconds, depending on model
Repeatability	250 microseconds or 75 microseconds, depending on model
Adjustments	4-turn clutched potentiometer sensitivity adjustment
Indicators	**Green:** Power ON/OFF indicator **Yellow:** Signal Condition indicator
Construction	**Housing:** ABS/polycarbonate blend **Lenses:** Acrylic
Connections	IP67, NEMA 6
Environmental Rating	2 m (6.5') or 9 m (30') 5-conductor PVC-jacketed attached cable or 5-pin Euro-style quick-disconnect (QD) connector. QD cables are ordered separately; see page 5.
Operating Conditions	**Operating Temperature:** -40° to +70°C (-40° to +158°F) **Maximum relative humidity:** 90% @ 50°C (non-condensing)

Hookups

Cabled models



Quick-disconnect models

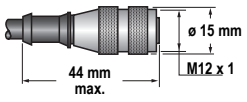
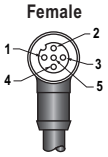
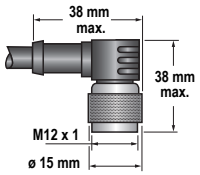


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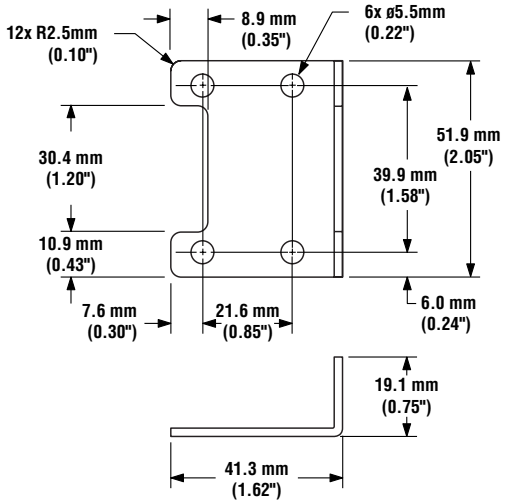
Accessories

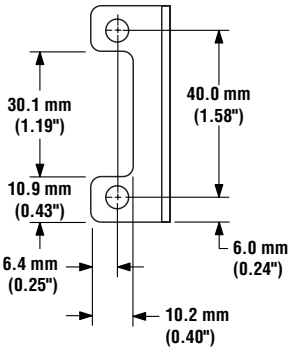
Quick-Disconnect Cables

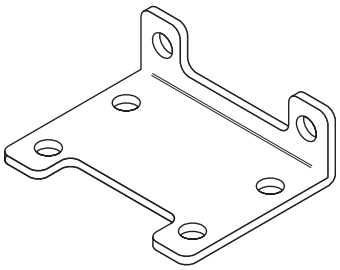
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SL Series Slot Sensor

more sensors, more solutions

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