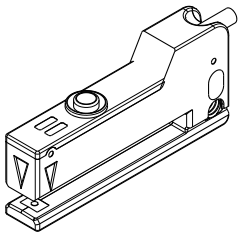
SLE5 Label Sensor

Datasheet



- Single-layer and multilayer label detection with 5 mm slot width and 50 mm slot depth
- Sensor can be configured to detect the label or the backing paper
- Infrared LED can detect a label on translucent backing paper
- 0.5 mm minimum label size or gap width for a wide variety of products
- LED Indicators display output or TEACH status for visual monitoring and troubleshooting
- Push button or remote TEACH for easy configuration
- 40µs response speed (12.5 kHz switching frequency) for increased position accuracy
- Rugged IP65 housing for use in harsh environments

WARNING:

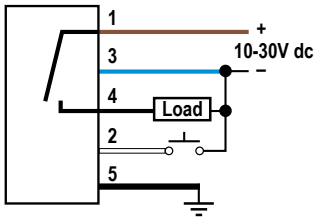
- **Do not use this device for personnel protection**
- Using this device for personnel protection could result in serious injury or death.
- This device does not include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A device failure or malfunction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

Models

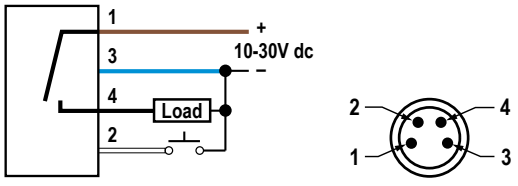
Model Number	Supply Voltage	Output	Connections
SLE5-PIR-2M	10 V DC to 30 V DC	PNP	2 m (6.5 ft) unterminated 5-wire PVC cable
SLE5-PIR-Q7		PNP	Integral 4-pin M8 male quick disconnect
SLE5-NIR-2M		NPN	2 m (6.5 ft) unterminated 5-wire PVC cable
SLE5-NIR-Q7		NPN	Integral 4-pin M8 male quick disconnect

Wiring

Cabled Models

5-wire unterminated cable	Pin	Wire Color	Description
	1	Brown (bn)	10 V DC to 30 V DC
	2	White (wh)	SET Remote Input
	3	Blue (bu)	0 V DC
	4	Black (bk)	Output
	5	Thick black (bk)	Shield wire

Quick Disconnect Models

4-pin M8/Pico-style (male) quick disconnect	Pin	Wire Color	Description
	1	Brown (bn)	10 V DC to 30 V DC
	2	White (wh)	SET Remote Input
	3	Blue (bu)	0 V DC
	4	Black (bk)	Output

Note: The shield wire is tied to the connector in sensors with a quick disconnect.

Configuring the Sensor

Use the button or the remote input to set the detection threshold between the backing paper and the label, perform a factory reset, and lock out the button to prevent erroneous changes to the sensor settings.

Perform a Static TEACH

Follow these steps to manually perform a static TEACH.

1. Place the object to detect (the backing paper or the label) into the sensor slot. If necessary, remove one or more labels to help position the labels.
2. Press SET for 3 seconds until the amber LED (Out) blinks.

   When you press SET, if the amber LED is on, it will turn off in 1 second. At this stage, the switching output holds the last valid status before the TEACH procedure began.
3. Release SET.
   The sensor acquires the target and the amber LED blinks slowly.
4. Place the object to ignore (the backing paper or the label) into the sensor slot.
5. Press and release SET.
   The sensor acquires the target. The green LED blinks three times to indicate the correct TEACH.

If a TEACH procedure was unsuccessful, the green LED blinks quickly. Press and release SET to return to the beginning of the TEACH mode and repeat the process. If the error continues, the label-to-background contrast might be insufficient to obtain a correct TEACH result.

Perform a Dynamic TEACH

Follow these steps to perform a dynamic TEACH procedure, which can be performed with the machine running.

1. Insert the labels into the sensor slot.
2. Press SET for 1 second until the green LED (Ready) turns off.

   If the amber LED (Out) is on, it turns off when the green LED turns off.
3. Release SET.
   The switching output holds on the last valid status before the TEACH procedure began.
4. The green LED blinks slowly, indicating a TEACH procedure is in progress.
5. Slide the labels through the sensor, at a maximum speed of 20 m/min (30 cm/s) until at least 3 to 8 labels moves through the sensor.
6. Press and release SET to end the TEACH stage.
   The green LED blinks three times to indicate the correct TEACH.

If a TEACH procedure was unsuccessful, the green LED blinks quickly. Press and release SET to return to the beginning of the TEACH mode and repeat the process. If the error continues, the label-to-background contrast might be insufficient to obtain a correct TEACH result.

Perform a Factory Reset

Follow these steps to perform a factory reset of the settings.

1. Press SET for 12 seconds until both the green (Ready) and amber (Out) LEDs blink quickly.
2. Release SET.
   The device factory settings are now restored.

Configure the Sensor for Light (LO) or Dark Operate (DO)

To change the sensor from light operate (LO) to dark operate (DO), follow these steps.

By factory default, the output is active on the backing paper (light operate). The label detection procedure can be performed statically or dynamically.

1. Press and hold SET (about 7 seconds) until both the green and amber LEDs blink at the same time.
2. Release SET.
   The output LO/DO state now reversed compared to previous conditions.

Lock the SET Button

Use the remote wire to prevent the sensor's SET button from being used.

1. To lock out the sensor's SET button, connect the remote wire to +VDC and apply power on to the sensor.
   After applying power to the sensor, the SET button is inactive and configuring the sensor can only be done with the remote input wire.
2. To unlock SET button, disconnect the remote wire and cycle power to the sensor.

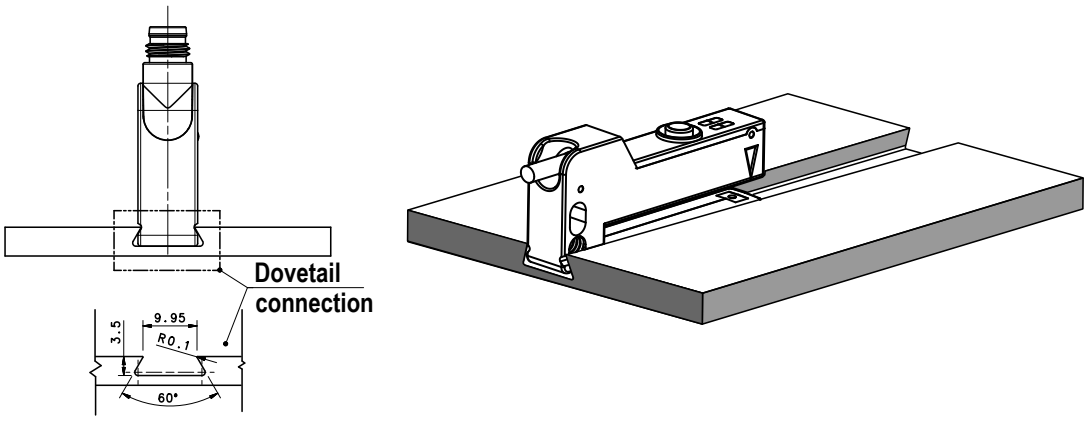
Remote Input

It is possible to perform the same Set check from outside the sensor using the Remote input.

When the Remote input wire is connected to +V DC, the sensor acts the same as if the Set button was pressed. After a SET button lock, the remote input wire can still be used to program the sensor.

Installing the Sensor

The SLE5 sensor was designed for dovetail mounting or standard mounting using threaded holes or clearance holes.



Dimensions

All measurements are listed in millimeters [inches], unless noted otherwise.

Figure 1. Cabled Models

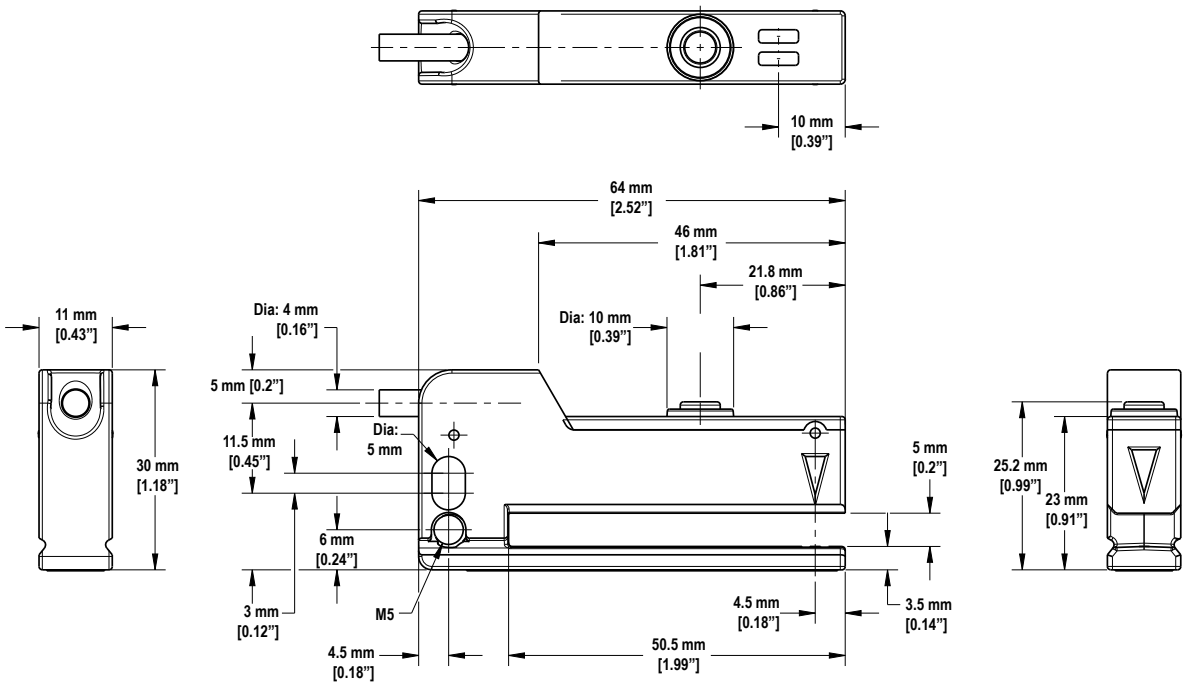
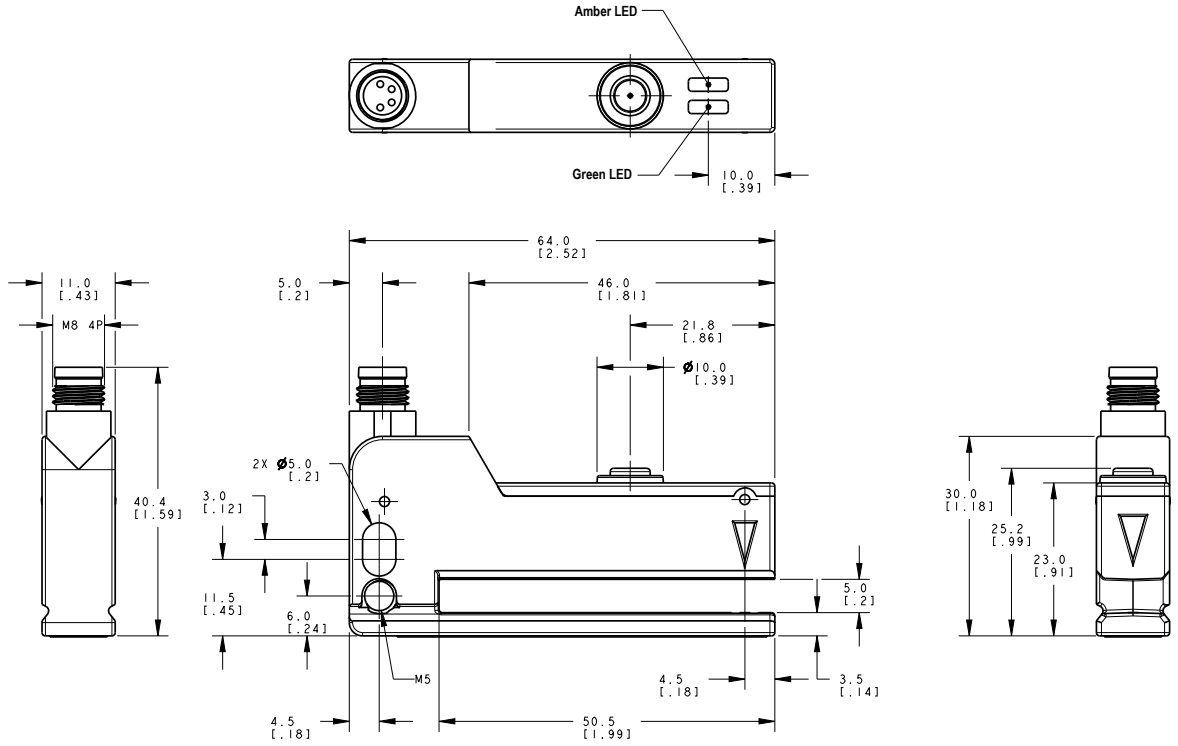


Figure 2. Quick Disconnect Models



Specifications

Supply Voltage and Current
10 V DC to 30 V DC
Output current: 100 mA maximum
Consumption (not including output current): 30 mA maximum
Protected against transient voltages

Switching Frequency
12 kHz

Output
PNP or NPN, depending on the model
Protected against continuous overload

Response Time
40 µs maximum

Weights
Cable model: 85 g
4-pin M8/Pico-style model: 46 g

Indicators
Amber: Output
Green: Ready

Construction
Zinc alloy body; PBT cover

Slot
Width: 5 mm
Depth: 50 mm

Light Emissions
850 nm infrared LED
Frequency: 50 kHz modulated light

Connection
2 m 5-wire cable or 4-pin M8/Pico-style integrated into the housing, depending on the model

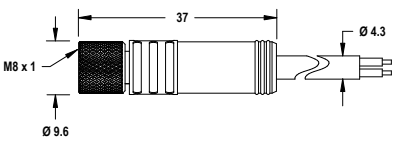
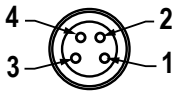
Temperature
Operating: –20 °C to +55 °C (–4 °F to +131°F)
Storage: –20 °C to +70 °C (–4 °F to +158 °F)

Environmental Rating
IEC IP65

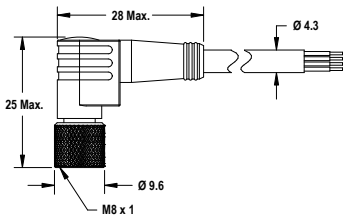
Application
Minimum label width and/or space between labels 0.5 mm to 2 mm
Conveyor speed during set-up: 20 m/min (300 mm/s) maximum

Accessories

Cordsets

4-Pin Threaded M8 Cordsets with Shield				
Model	**Length**	**Style**	**Dimensions**	**Pinout (Female)**
PKG4MS-2	2.04 m (6.68 ft)	Straight		
PKG4MS-5	5 m (16.4 ft)			
PKG4MS-9	9.04 m (29.6 ft)			

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

4-Pin Threaded M8 Cordsets with Shield				
Model	**Length**	**Style**	**Dimensions**	**Pinout (Female)**
PKW4MS-2	2 m (6.56 ft)	Right Angle		
PKW4MS-5	5 m (16.4 ft)			
PKW4MS-9	9 m (29.5 ft)			

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