

# Installation Instructions

## PHOTOSWITCH® Bulletin 45LST Optical Fork Sensor

IMPORTANT: SAVE THESE INSTRUCTIONS FOR FUTURE USE.

### Description

The 45LST optical fork sensor is designed for small part detection on machines and conveyors. With available slot widths from 2mm to 225mm (0.08in to 8.86in), these sensors feature adjustable sensitivity and selectable NPN/PNP with LO/DO energized output in a heavy-duty IP65 aluminum housing. Applications include label detection on clear substrates, cap detection on bottles, and part sensing on conveyers for the packaging and material handling industries. The 45LST sensors are also ideal for the automotive, paper, and food industries.

The 45LST optical fork sensor maintains all ratings that are necessary for all applicable industries today: IP65, cULus and CE marked for all applicable directives.

### Features

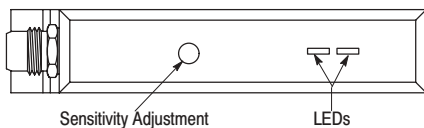
- 10 to 30V DC operation
- Fast 30μsec response time
- NPN/PNP output
- IP65 Housing
- Industrial aluminum housing
- cULus listed and CE marked for all applicable directives

### User Interface

Green LED = Power ON/  
Unblocked light path

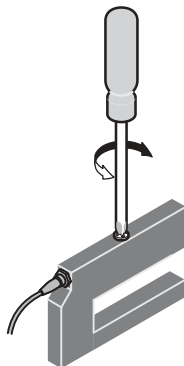
Red & Green LED blink =  
Short circuit mode

Red LED = Output energized



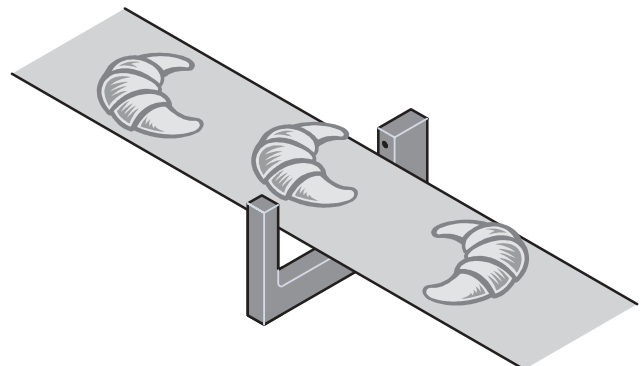
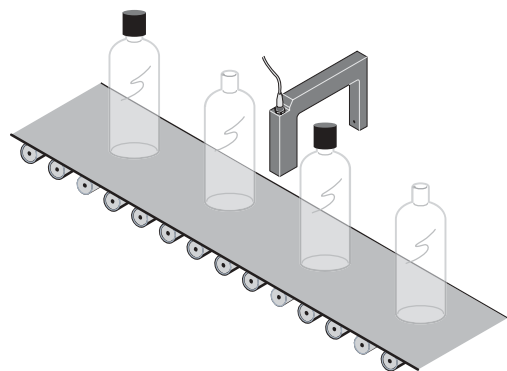
### Sensor Setup

Initial setup includes mounting the sensor securely and then providing power through a 4-pin pico cordset. The initial factory settings have the threshold on the sensor preset so that most opaque objects may be sensed. To adjust sensitivity turn adjustment screw clockwise to increase or counterclockwise to decrease.



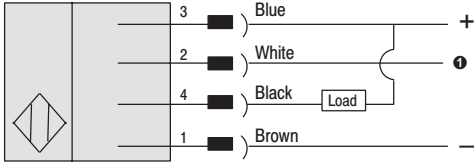
### Specifications

<b>Approvals</b>	UL, cULus and CE marked for all applicable directives
<b>Sensing Beam</b>	Pulsed (modulated) or nonpulsed (continuous) IR
<b>Sensing Gap</b>	2mm (0.08in) to 225mm (8.86in)
<b>Supply Voltage</b>	10–30V DC
<b>Current Consumption</b>	30mA maximum (45LST-1LEA1-P4 = 40mA)
<b>Circuitry Protection</b>	Reverse polarity, transient, overload, short circuit protection
<b>Output Configuration</b>	NPN (current sinking) or PNP (current sourcing) Light Operate: Normally open circuits that conduct with target present Dark Operate: Normally closed circuits that conduct with target absent
<b>Output Rating</b>	100mA (NPN or PNP)
<b>Response Time</b>	30 microseconds or 1 millisecond
<b>Adjustments</b>	Sensitivity (25 turn adjustable screw)
<b>Housing Material</b>	Anodized aluminum
<b>Environmental Ratings</b>	IP65
<b>Connections</b>	4-pin DC pico (M8) connector
<b>Operating Temperature</b>	-20°C to +60°C (-4°F to 140°F)
<b>Leakage Current</b>	12V Supply: 0.78mA @ 10mA load, 6.9mA @ 100mA load 24V Supply: 0.30mA @ 10mA load, 3.0mA @ 100mA load
<b>Power-on Delay</b>	129ms

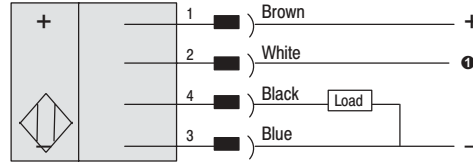


## Wiring Diagrams

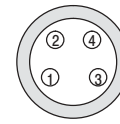
### NPN (Light Operate)



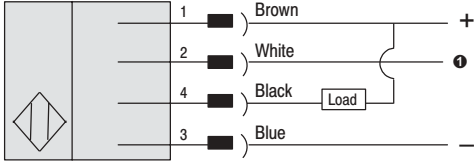
### PNP (Light Operate)



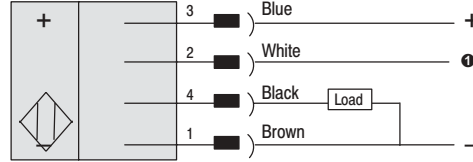
Pico



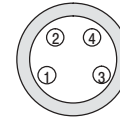
### NPN (Dark Operate)



### PNP (Dark Operate)

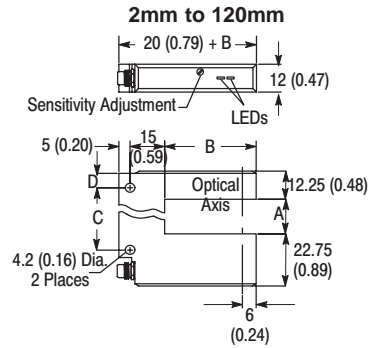
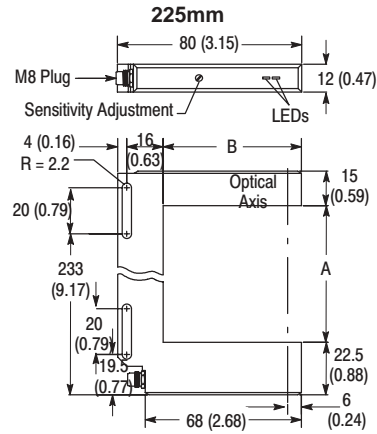


Pico



① White Wire not used.

## Dimensions—mm (inches)



Dimensions—mm (inches)

Fork Size	A	B	C	D
2 to 120 (0.08 to 4.72)	2 (0.08)	40 (1.57)	14 (0.55)	6.25 (0.25)
	15 (0.59)	40 (1.57)	27 (1.06)	6.25 (0.25)
	30 (1.18)	40 (1.57)	42 (1.65)	6.25 (0.25)
	50 (1.97)	57 (2.24)	40 (1.57)	17.25 (0.68)
	80 (3.15)	57 (2.24)	70 (2.75)	17.25 (0.68)
	120 (4.72)	57 (2.24)	110 (4.33)	17.25 (0.68)
225 (8.86)	225 (8.86)	60 (2.36)	—	—

## Accessories

Description	Catalog Number
	889P-F4AB-2