



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.

General Specifications

Approvals	UL, cULus and CE marked for all applicable directives
Sensing Beam	Pulsed (modulated) or nonpulsed (continuous) IR
Sensing Gap	2mm (0.08in) to 225mm (8.86in)
Supply Voltage	10–30V DC
Current Consumption	30mA maximum (45LST-1LEB1-P4 = 40mA)
Circuitry Protection	Reverse polarity, transient, overload, short circuit protection
Output Configuration	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
Output Rating	100mA (NPN or PNP)
Response Time	30 microseconds or 1 millisecond
Adjustments	Sensitivity (25 turn adjustable screw)
Housing Material	Anodized aluminum
Environmental Ratings	IP65
Connections	4-pin DC pico (M8) connector
Operating Temperature	-20°C to +60°C (-4°F to 140°F)
Leakage Current	12V Supply: 0.78mA @ 10mA load, 6.9mA @ 100mA load 24V Supply: 0.30mA @ 10mA load, 3.0mA @ 100mA load
Power-on Delay	129ms

Features

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

General Information

- Typical Wiring Diagrams . . . page 1–158
- Dimensions page 1–158
- Product Selection page 1–159

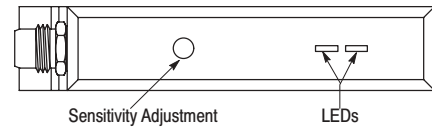
45LST

Optical Fork Sensor

User Interface

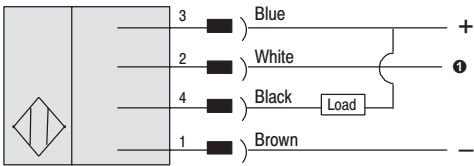
Green LED = Power ON /
Unblocked light path

Red & Green LED blink =
Short circuit mode
Red LED = Output energized

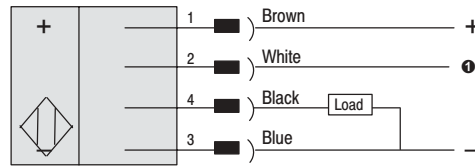


Wiring Diagrams

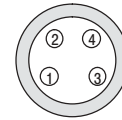
NPN (Light Operate)



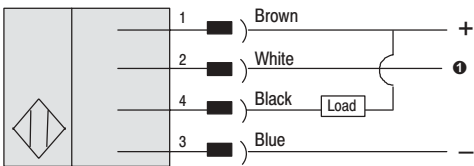
PNP (Light Operate)



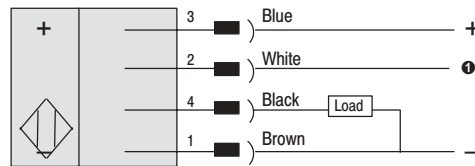
Pico



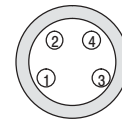
NPN (Dark Operate)



PNP (Dark Operate)

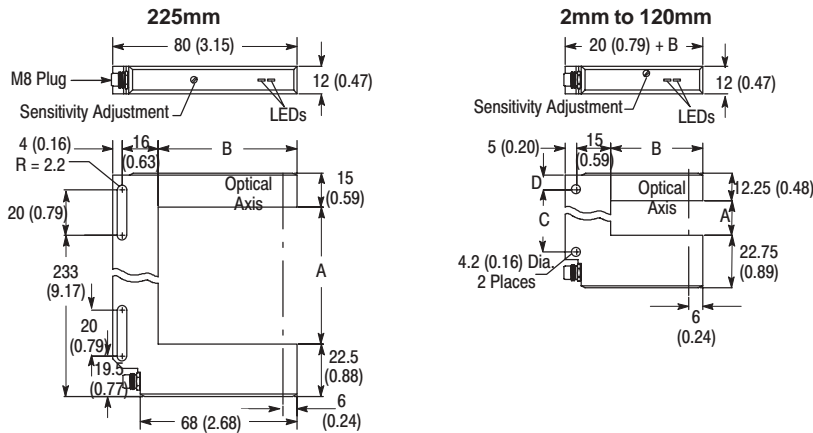


Pico



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)	—	—

Product Selection

Operating Voltage	Sensing Gap— mm (inches)	Output Energized	Output Type	Light Source Emission	Response Time	Connection Type	Catalog Number
10-30 DC	2 (0.08)	LO/DO Selectable	NPN or PNP Selectable	Continuous	30μsec	4-Pin Pico	45LST-1LEA1-P4
	15 (0.59)			Modulated	1msec		45LST-1LEA2-P4
	30 (1.18)						45LST-1LEA3-P4
	50 (1.96)						45LST-1LEA4-P4
	80 (3.15)						45LST-1LEA5-P4
	120 (4.72)						45LST-1LEA6-P4
	225 (8.86)						45LST-1LEA7-P4
2m (6.5ft) pico QD Cordset							889P-F4AB-2

Allen-Bradley Drives