

45LSP and 45LST Optical Fork Sensors



The Reliability of Transmitted-Beam Sensing
in an Easy-to-Apply, Self-Contained Package

By eliminating the alignment and adjustment issues associated with other transmitted beam sensing solutions, optical fork sensors are the most easy-to-apply and cost-effective method for small part detection and counting in a wide range of industries. Rockwell Automation® has expanded its photoelectric fork sensor offering to include new plastic housing models that are the ideal general purpose complement to the existing line of Allen-Bradley metal-bodied fork sensors.



Transmitted beam photoelectric sensors are the most accurate and reliable solution for a wide range of applications based on the fact that they are the most tolerant of variations in target characteristics (color, texture, reflectivity) while maintaining optimal performance in dusty, dirty environments. And when it comes to small parts detection, transmitted beam fiber optic sensors are the most commonly used – but alignment of the emitter and receiver heads is often difficult and time consuming. As a result, photoelectric fork sensors that combine the emitter and receiver in a single housing while maintaining the transmitted beam sensing mode have become the preferred solution.

Plastic and Metal Housings to Suit a Range of Applications

Ideal for small object detection (as small as 0.2 mm) in the pharmaceutical/life sciences, food and beverage, as well as Home,

Health & Beauty industries, the new Allen-Bradley 45LSP plastic fork sensors offer the reliability of a transmitted beam sensing mode in a single IP67 enclosure. The visible red light beam and teach-in sensitivity adjustment – via push-button or remotely through wiring – significantly reduce setup time. Sensitivity adjustments can also be locked on remote teach models to prevent tampering in the field.

Output status of the 45LSP is clearly visible from all angles thanks to multiple LEDs along both sides of the fork. PNP or NPN output models are available with a fast 250 μ s response time and selectable light operate/dark operate switching. Plus, the range of gap sizes (30, 50, 80, 120 mm), 3-pin pico M8 connectivity (4-pin pico M8 for remote teach models) and multiple mounting options (via side thru-holes, rear threaded inserts, or dovetail brackets)



make the 45LSP an economical, easy to use solution for a broad range of applications. In addition to small object detection, these include but are not limited to edge detection, parts counting, gear tooth detection and dimension verification.

The 45LST is a metal-bodied fork sensor, designed for similar applications in more demanding environments such as those in the automotive, material handling and paper industries. With available gap sizes from 2 to 225 mm, these sensors feature a sensitivity adjustment potentiometer and selectable PNP/ NPN output with light operate/ dark operate switching. The 2 mm model offers fast 30 μ s response time for high speed applications; other models offer 1 ms response time. The IP65 enclosure rating, 4-pin pico M8 connector and side thru-hole mounting make the 45LST a rugged yet easy to apply solution.

Both the 45LSP and 45LST sensors are cULus listed and CE marked for all applicable directives.

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45LSP Plastic Fork Sensor – General Ordering Information



- 10...30V DC operation
- Detection of objects as small as 0.2 mm (0.0078 in).
- Fast 250 µs response time
- Power and output status LED indicators
- Multiple LEDs along both sides of the fork make output status highly visible from every angle
- Remote teach and teach button lock on 4-pin models via wiring.
- Selectable L.O./D.O.
- Dynamic teach capability
- Multiple mounting options: thru-holes, threaded-holes and dovetail
- IP67 polycarbonate housing
- 3 and 4-pin pico (M8) QD models
- cULus Listed and CE Marked for all applicable directives

Sensing Gap mm (in.)	Gap Depth mm (in.)	Output Type	Connection Type	Catalog Number
30 (1.18)	34 (1.34)	PNP	3-pin Pico QD	45LSP-2LPA1-P3
30 (1.18)	34 (1.34)	NPN	3-pin Pico QD	45LSP-2LNA1-P3
30 (1.18)	34 (1.34)	PNP	4-pin Pico QD	45LSP-2LPA1-P4
30 (1.18)	34 (1.34)	NPN	4-pin Pico QD	45LSP-2LNA1-P4
50 (1.96)	54 (2.13)	PNP	3-pin Pico QD	45LSP-2LPA2-P3
50 (1.96)	54 (2.13)	NPN	3-pin Pico QD	45LSP-2LNA2-P3
50 (1.96)	54 (2.13)	PNP	4-pin Pico QD	45LSP-2LPA2-P4
50 (1.96)	54 (2.13)	NPN	4-pin Pico QD	45LSP-2LNA2-P4
80 (3.15)	54 (2.13)	PNP	3-pin Pico QD	45LSP-2LPA3-P3
80 (3.15)	54 (2.13)	NPN	3-pin Pico QD	45LSP-2LNA3-P3
80 (3.15)	54 (2.13)	PNP	4-pin Pico QD	45LSP-2LPA3-P4
80 (3.15)	54 (2.13)	NPN	4-pin Pico QD	45LSP-2LNA3-P4
120 (4.72)	54 (2.13)	PNP	3-pin Pico QD	45LSP-2LPA4-P3
120 (4.72)	54 (2.13)	NPN	3-pin Pico QD	45LSP-2LNA4-P3
120 (4.72)	54 (2.13)	PNP	4-pin Pico QD	45LSP-2LPA4-P4
120 (4.72)	54 (2.13)	NPN	4-pin Pico QD	45LSP-2LNA4-P4

45LST Metal Fork Sensor – General Ordering Information



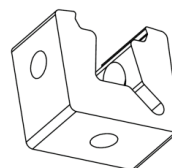
- 10...30V DC operation
- Power and output status LED indicators
- Sensitivity adjustment potentiometer
- Selectable PNP/NPN output
- Selectable L.O./D.O.
- 4-pin pico (M8) QD connector
- Industrial anodized aluminum housing, IP65
- cULus Listed and CE Marked for all applicable directives

Sensing Gap mm (in.)	Gap Depth mm (in.)	Response Time	Catalog Number
2 (0.08)	40 (1.57)	30 µs	45LST-1LEA1-P4
15 (0.59)	40 (1.57)	1 ms	45LST-1LEA2-P4
30 (1.18)	40 (1.57)	1 ms	45LST-1LEA3-P4
50 (1.96)	57 (2.24)	1 ms	45LST-1LEA4-P4
80 (3.15)	57 (2.24)	1 ms	45LST-1LEA5-P4
120 (4.72)	57 (2.24)	1 ms	45LST-1LEA6-P4
225 (8.86)	60 (2.36)	1 ms	45LST-1LEA7-P4

Cordsets and Accessories

Description	Catalog Number
2 m (6.5 ft) 3-pin DC pico QD	889P-F3AB-2
2 m (6.5 ft) 4-pin DC pico QD	889P-F4AB-2
Dovetail mounting bracket	44B-BKT

Dovetail Mounting Bracket



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