45LMS Laser Measurement Sensor

Allen-Bradley

Economical, Mid- to Long-range Laser with High Performance

Features and Benefits

- Embedded IO-Link communication protocol helps minimize downtime and increase productivity
- Eye Safe Class 1 or Class 2 laser (by model)
- Sensing ranges of 8 m (26 ft), 15 m (49 ft.) or 50 m (164 ft), dependent on model
- One discrete output (1 x NPN/PNP) and one analog output (1 x 4…20 mA)
- Accurate to ± 25 mm (± 0.98 in.)
- Fast response time of 10 ms
- Easy setup of switch points or analog scaling using programming buttons
- IP65 enclosure
- Self-contained sensor
- Operating temperature of -20…60 ˚C (-4…140 ˚F)

What is IO-Link?

IO-Link is a worldwide open-standard protocol that allows sensors to easily integrate into The Connected Enterprise. Benefits of IO-Link technology include:

- Reduced inventory and operating costs
- Increased uptime/productivity
- Simplified design, installation, setup and maintenance
- Enhanced flexibility and scalability

IO-Link enabled sensors offer advanced features and diagnostics that can only be accessed through an IO-Link master.

- Real-time diagnostics and sensor health
- Automatic device configuration (ADC)
- Multiple profiles and trending
- Descriptive tags
- Device specific parameters

1732 ArmorBlock® IO-Link Master

IO-Link

Rockwell Automation announces enhancements to the 45LMS Laser Measurement Sensor family to include embedded IO-Link functionality. IO-Link allows sensors to easily integrate into The Connected Enterprise, delivering data from the sensor directly into a control system in a very cost-efficient and easy-to-use manner via an IO-Link Master and EtherNet/IP™.

The Allen-Bradley® 45LMS sensor utilizes the Time of Flight (ToF) principle and has a relatively small beam spot – even at 50 m away. Available in three different ranges: 8 m (26.25 ft) diffuse, 15 m (49.21 ft) diffuse and 50 m (164.04 ft) retro-reflective, this self-contained sensor does not require any external control devices which add cost and require additional mounting space.

The 45LMS is easily set up by mounting the sensor such that the target is within the operating range of the sensor and teaching in the appropriate set-points required for the application. All sensors in this family have one discrete output with one analog output. The discrete output can be wired for either light operate (L.O.) or dark operate (D.O.) and the analog output is automatically scaled between the selected set-points with either a positive or negative slope.

The 45LMS is a great solution for long range detection/measurement for the following applications: distance measurement, verifying material position, stack level, thickness measurement, roll diameter, positioning fixtures, error proofing inspection, long standoff distance presence/absence, level monitoring, crane crash protection and other difficult applications that exceed the capabilities of standard diffuse or background suppression photosensors.

LISTEN. THINK. SOLVE.®

45LMS, IO-Link Version 1.0

- IO-Link is a worldwide open-standard peer-to-peer serial communication protocol (IEC 61131-9) that allows sensors and actuators to easily integrate into The Connected Enterprise.
- The IO-Link enabled 45LMS sensor—when connected to an IO-Link master—shares device identity, parameters, real-time diagnostics and process data with the control system to optimize machine setup, maintenance and troubleshooting.
- By combining simple implementation with powerful data and diagnostics, IO-Link sensors provide simplified integration and seamless visibility of your processes to increase uptime and productivity.

1734 POINT IO Master for POINT I/O™

45LMS IO-Link Benefits

- **Teaching the sensor** can be accomplished with IO-Link via the Add-On-Profile through Studio 5000® software or by using the teach button on the sensor.
- **Multiple Profiles** allows the sensor setup to be stored in Studio 5000 to support multiple machine configurations. Therefore, the sensor can be taught and programmed to detect multiple products/packages. Multiple profiles enable setting up the sensor one time and having the capabilities to change products instantly without intervention.
- **Location Indication** helps the user to identify the location of the sensor on the machine by temporarily increasing the LEDs to flash in a specific rhythm.
- **Locking** options are available to lock local settings when operating in IO-Link mode, and therefore any user changes will not change the settings of the sensor.
- **Trending** provides sensor specific data in Studio 5000 for monitoring, such as margin level which can indicate maintenance is required or dirt build up on the lens.

Product Selection

Description	Sensing Distance	Cat. No.
Diffuse	0.2…8 m (0.66…26.25 ft)	45LMS-D8LGC1-D4
Diffuse	0.2…15 m (0.66…49.21 ft)	45LMS-D8LGC2-D4
Retroreflective	0.2…50 m (0.66…164.04 ft)	45LMS-U8LGC3-D4

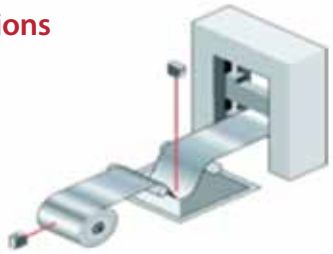
Note: IO-Link Master Module (Catalog No. 1734-4IO1 or 1732-8IOLM12R) is required for premier IO-Link integration experience.

IO-Link enabled.

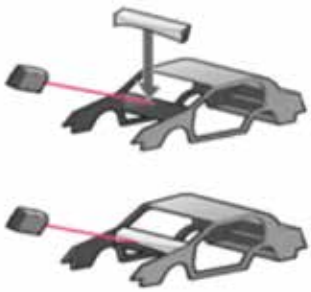
Cordsets and Accessories

Description	Cat. No.
IO-Link Master Module for POINT I/O	1734-4IOL
ArmorBlock IO-Link Master	1732E-8I0LM12R
2 m (6.5 ft) 4-pin, DC Micro QD Cordset, Straight	889D-F4AC-2
2 m (6.5 ft) 4-pin, DC Micro QD Cordset, Right Angle	889D-R4AC-2
Mounting Bracket	45LMS-BKT1
Mounting Bracket (L shape)	45LMS-BKT2
Weld Slag Cover	45LMS-BKT3

Applications



Diameter and Web Control



Part Position

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