Sick LMS111-10100

LMS111-10100 2D Laser Scanner Instruction Manual

Model: **LMS111-10100** | Brand: **Sick**

1. Introduction and Overview

This manual provides essential information for the safe and effective operation, setup, and maintenance of the Sick LMS111-10100 2D Laser Scanner. The LMS111-10100 is an advanced infrared 2D laser scanner designed for indoor applications, offering precise distance measurement and object detection.

Key features include a scanning frequency of 25 Hz or 50 Hz, an 18-meter detection range, and the ability to define up to 10 configurable fields. Communication is facilitated via TCP/IP, and it supports OPC for industrial automation integration.

Figure 1: The Sick LMS111-10100 2D Laser Scanner. This image displays the main unit, highlighting its compact design, the rotating scanner head, and the integrated status indicators and control buttons on its side panel. The 'SICK' brand logo is prominently visible.

2. Safety Information

Adherence to safety guidelines is crucial for preventing injury and damage to the device. Please read and understand all safety instructions before installation, operation, or maintenance.

2.1 Laser Safety

The LMS111-10100 is a **Class 1 Laser Product** according to IEC 60825-1. This means that under normal operating conditions, the accessible laser radiation is not hazardous. However, never intentionally stare into the laser beam or view it directly with optical instruments.

2.2 Electrical Safety

- Ensure the power supply matches the specified operating voltage (18 Volts).
- Only connect the device to a stable power source.
- Do not operate the device with damaged cables or connectors.
- Disconnect power before performing any installation or maintenance.

2.3 Environmental Considerations

- This device is designed for **indoor use only**. Avoid exposure to moisture, extreme temperatures, or direct sunlight.
- Ensure adequate ventilation around the scanner to prevent overheating.

3. Setup

3.1 Unpacking and Inspection

Carefully remove the scanner from its packaging. Inspect the device for any signs of physical damage. Report any damage to the supplier immediately.

3.2 Mounting

Mount the LMS111-10100 securely on a stable, vibration-free surface. Ensure the scanner has an unobstructed view of the area to be monitored. Refer to the mounting template (if provided separately) for precise hole placement.

3.3 Electrical Connections

Connect the power supply cable to the designated power input port. The device operates on**18 Volts** and is designed to be **Battery Powered** or powered by a compatible DC source. Ensure correct polarity.

3.4 Network Configuration (TCP/IP)

Connect an Ethernet cable from the scanner's network port to your network switch or directly to a compatible device (Desktop, Laptop). The scanner uses TCP/IP for communication. Refer to the separate network configuration guide for details on setting IP addresses and subnet masks.

3.5 Software Integration (OPC)

For data acquisition and control, the LMS111-10100 supports OPC (Open Platform Communications). Install the necessary OPC client software on your control system (Desktop, Laptop) and configure it to communicate with the scanner. Consult the OPC integration manual for specific tag definitions and data structures.

4. Operating Instructions

4.1 Powering On/Off

To power on the device, connect the 18V power supply. The scanner will initiate a self-test sequence. To power off, disconnect the power supply.

4.2 Status Indicators

The control panel on the side of the scanner features several LED indicators (e.g., Q1, Q2, and others) that provide visual feedback on the device's status, errors, and operational modes. Refer to the detailed LED status table in the full technical manual for specific meanings.

4.3 Basic Operation

Once powered on and configured, the scanner will begin emitting laser pulses and collecting data. Data can be accessed via the configured TCP/IP connection and OPC interface. The scanner can operate at 25 Hz or 50 Hz, depending on configuration, providing real-time 2D scan data.

4.4 Field Definition

The LMS111-10100 allows for the definition of up to 10 distinct monitoring fields. These fields are configured via software and determine specific areas of interest for detection and measurement within the 18-meter range. Consult the software manual for detailed instructions on field configuration.

5. Maintenance

5.1 Cleaning

Regularly clean the optical window of the scanner using a soft, lint-free cloth and a mild, non-abrasive cleaning solution. Ensure no dust or debris accumulates on the scanning surface, as this can affect performance.

5.2 Inspection

Periodically inspect all cables and connectors for wear or damage. Check mounting hardware to ensure the scanner remains securely fastened. Do not attempt to open the device housing, as this will void the warranty and may expose you to hazardous components.

5.3 Firmware Updates

From time to time, SICK may release firmware updates to improve performance or add new features. Refer to the official SICK website for information on available updates and instructions for installation.

6. Troubleshooting

This section provides basic troubleshooting steps for common issues. For more complex problems, refer to the comprehensive troubleshooting guide available on the SICK support portal.

Problem	Possible Cause	Solution
Device not powering on	No power supply; incorrect voltage; faulty cable.	Check power connection; verify 18V supply; inspect cables.
No data output	Network configuration error; software issue; optical window obstructed.	Verify IP settings; check OPC client configuration; clean optical window.
Inaccurate measurements	Dirty optical window; device misalignment; environmental interference.	Clean optical window; re-align scanner; ensure indoor environment.
Status LED indicates error	Internal fault; specific error condition.	Consult the LED status table in the full manual for specific error codes and remedies. Power cycle the device.

If the problem persists after attempting these solutions, please contact SICK technical support.

7. Specifications

Attribute	Detail
Model Number	LMS111-10100
Brand	Sick
Technology	2D Laser Scanner, Infrared
Operating Environment	Indoor
Scanning Frequency	25 Hz / 50 Hz
Range	18 m
Configurable Fields	10 Fields
Communication Interface	TCP/IP
Industrial Protocol Support	OPC
Package Dimensions	7.08 x 3.96 x 3.96 inches
Item Weight	3.83 pounds
Power Source	Battery Powered
Operating Voltage	18 Volts
Compatible Devices	Desktop, Laptop

Attribute	Detail
Manufacturer	SICK
Date First Available	July 26, 2021
UPC	723707459291

8. Warranty and Support

8.1 Product Warranty

For detailed information regarding the warranty coverage for your LMS111-10100 2D Laser Scanner, please refer to the official warranty statement provided by SICK with your purchase or visit the SICK official website. Warranty terms typically cover manufacturing defects for a specified period from the date of purchase.

8.2 Technical Support

Should you encounter issues not covered in the troubleshooting section or require further technical assistance, please contact SICK technical support. Have your product model number (LMS111-10100) and serial number ready when contacting support.
You can typically find support contact information, FAQs, and additional resources on the official SICK website (www.sick.com).