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› LR-TB5000 Laser Sensor Optoelectronic Switch Cable Type Displacement Rangefinder User Manual

CKSEKD LR-TB5000

LR-TB5000 Laser Sensor Optoelectronic Switch Cable Type Displacement Rangefinder User Manual

Brand: CKSEKD | Model: LR-TB5000

1. INTRODUCTION

This manual provides essential information for the safe and effective use of the CKSEKD LR-TB5000 Laser Sensor Optoelectronic Switch Cable Type Displacement Rangefinder. The LR-TB5000 is a high-precision photoelectric sensor designed for accurate displacement measurement and object detection.

Please read this manual thoroughly before operating the device and keep it for future reference.



Figure 1: Front view of the LR-TB5000 Laser Sensor. This image shows the main body of the sensor, featuring a digital display screen and two control buttons labeled "SET" and "MODE/DISP". The sensor's compact design and integrated display allow for direct monitoring and configuration.

2. SETUP AND INSTALLATION

2.1 Unpacking and Inspection

Carefully remove the LR-TB5000 sensor from its packaging. Inspect the device for any signs of damage during transit. If any damage is found, do not proceed with installation and contact your supplier.

2.2 Mounting the Sensor

The LR-TB5000 can be mounted using appropriate fasteners through the designated mounting holes. Ensure the sensor is securely fixed in a stable position, free from excessive vibration. Position the sensor so that its optical path is clear and unobstructed towards the target object.



Figure 2: Side view of the LR-TB5000 Laser Sensor. This image highlights the red optical sensing element, which emits and receives the laser beam for displacement measurement and object detection. Proper alignment of this element is crucial for accurate operation.

2.3 Wiring Connections

Connect the LR-TB5000 sensor to your power supply and control system according to the wiring diagram provided on the back of the unit. Ensure all connections are secure and correctly polarized to prevent damage to the sensor or connected equipment.

- **Brown Wire (1):** 20-30V DC (Class 2 or LPS / 150mA) - Power Supply Positive
- **White Wire (2):** OUT (50mA) / ANALOG OUT (4-20mA / 0-10V) - Output Signal
- **Blue Wire (3):** 0V - Power Supply Negative / Ground
- **Black Wire (4):** OUT (50mA) / EXTERNAL INPUT - Output Signal / External Control Input

Refer to the diagram below for visual guidance on wiring.



Figure 3: Back view of the LR-TB5000 Laser Sensor. This image displays the detailed wiring instructions, indicating the function of each colored wire (Brown, White, Blue, Black) for power, output, and input. It also shows compliance markings (CE, UKCA, cCSAus) and manufacturing details.

It is recommended to use shielded cables for signal integrity, especially in environments with electromagnetic interference.

3. OPERATING INSTRUCTIONS

3.1 Powering On

Once wired correctly, apply power to the sensor. The display will illuminate, indicating the sensor is active. The sensor will typically enter its default measurement mode.

3.2 Basic Operation

The LR-TB5000 functions as both a displacement rangefinder and an optoelectronic switch. The digital display shows the measured distance to the target. The switch output activates when the target is within a set range.

3.3 Setting Parameters

Use the **SET** button to enter the parameter setting mode. Navigate through the menu options using the **MODE/DISP** button. Parameters typically include:

- **Measurement Mode:** Select between displacement measurement or switching mode.
- **Thresholds:** Set the upper and lower limits for the switch output.

- **Analog Output Scaling:** Configure the 4-20mA or 0-10V analog output range to correspond with specific displacement values.
- **Response Time:** Adjust the sensor's response speed.

Consult the on-screen menu and the full product datasheet (available from the manufacturer's website) for detailed parameter descriptions and configuration steps.

4. MAINTENANCE

4.1 Cleaning

Keep the optical sensing element clean and free from dust, dirt, or smudges. Use a soft, lint-free cloth and, if necessary, a mild, non-abrasive cleaning solution. Avoid scratching the lens surface.

4.2 Environmental Considerations

Ensure the sensor operates within its specified environmental conditions (temperature, humidity, IP rating). Avoid exposing the sensor to corrosive chemicals or excessive mechanical stress.

5. TROUBLESHOOTING

This section provides solutions to common issues encountered with the LR-TB5000 sensor.

Problem	Possible Cause	Solution
Sensor not powering on.	Incorrect wiring, no power supply, faulty cable.	Check power connections (Brown to 20-30V DC, Blue to 0V). Verify power supply is active. Inspect cable for damage.
Inaccurate measurements or erratic readings.	Dirty optical lens, improper mounting, target surface issues, ambient light interference.	Clean the optical lens. Ensure sensor is securely mounted and aligned. Check target surface reflectivity. Minimize strong ambient light.
Switch output not activating.	Incorrect threshold settings, target out of range, wiring issue.	Verify threshold settings in the sensor's menu. Ensure target is within the detection range. Check White/Black wire connections for output.
Analog output incorrect.	Incorrect scaling, wiring issue, load impedance mismatch.	Check analog output scaling settings. Verify White wire connection. Ensure the receiving device's input impedance is compatible.

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

6. SPECIFICATIONS

Key technical specifications for the LR-TB5000 Laser Sensor:

Feature	Detail
Model Name	LR-TB5000
Brand	CKSEKD

Feature	Detail
Type	Laser Sensor Optoelectronic Switch Cable Type Displacement Rangefinder
Power Supply	20-30V DC (Class 2 or LPS / 150mA)
Outputs	OUT (50mA), Analog Out (4-20mA / 0-10V)
Inputs	External Input
Material	Copper (internal components)
Item Weight	50 Grams
Package Weight	50 Grams
Item Dimensions (L x W x H)	1.18 x 0.79 x 0.39 inches
International Protection Rating	IP54
Date First Available	January 26, 2024

7. WARRANTY INFORMATION

Specific warranty terms and conditions for the LR-TB5000 sensor are provided by the manufacturer, CKSEKD. Please refer to the warranty documentation included with your purchase or visit the official CKSEKD website for detailed information regarding warranty coverage, duration, and claims procedures. Keep your proof of purchase for warranty purposes.

8. CUSTOMER SUPPORT

For technical assistance, troubleshooting beyond this manual, or inquiries regarding your LR-TB5000 sensor, please contact CKSEKD customer support or your authorized distributor. When contacting support, please have the following information ready:

- Product Model: LR-TB5000
- Date of Purchase
- Description of the issue