Sick DT50-P1113

Sick DT50-P1113 Mid Range Distance Sensor

Instruction Manual

1. Product Overview

The Sick DT50-P1113 is a robust mid-range distance sensor designed for industrial applications. It operates within a 10-30Vdc power supply range and provides both Q Out (≤ 100mA) and Qa Out (4mA...20mA) signals for precise distance measurement. This sensor is engineered for reliability and accuracy in demanding environments.

Key Features:

- Weight: 1.00lb
- Compact Product Dimensions: 0.31 x 0.31 x 0.28 inches
- Operating Voltage: 10-30Vdc
- Output Signals: Q Out (≤ 100mA), Qa Out (4mA...20mA)

Figure 1: The Sick DT50-P1113 Mid Range Distance Sensor in its original packaging.

2. Safety Information

Always read and understand this manual before installing, operating, or maintaining the DT50-P1113 sensor. Failure to follow these instructions may result in equipment damage, personal injury, or death.

- Ensure power is disconnected before any installation or maintenance work.
- Only qualified personnel should perform installation and wiring.
- Do not exceed the specified operating voltage (10-30Vdc).
- Protect the sensor from extreme temperatures, moisture, and corrosive substances.
- Verify all connections are secure before applying power.

3. Setup and Installation

3.1 Unpacking and Inspection

Carefully remove the sensor from its packaging. Inspect the sensor for any visible damage. If damage is found, do not proceed with installation and contact your supplier.

Figure 2: Close-up of the product label on the packaging, indicating model DT50-P1113 and manufacturing details (Made in Germany).

3.2 Mounting

The DT50-P1113 sensor should be mounted securely on a stable surface, ensuring it is free from vibrations. Choose a location where the sensor's field of view is unobstructed and where it can accurately detect the target object within its specified range.

1. Identify suitable mounting points on the sensor body.
2. Use appropriate fasteners (not included) to secure the sensor.
3. Ensure the sensor is aligned correctly with the target detection area.

3.3 Electrical Connection

The sensor requires a 10-30Vdc power supply. Refer to the sensor's wiring diagram (typically found on the sensor itself or in a separate wiring guide) for correct pin assignments. Ensure proper polarity when connecting the power supply and output signals.

Figure 3: Rear view of the sensor, displaying the product label with model DT50-P1113, serial number 1 044 369, and manufacturing date (October 2013).

1. Connect the positive (+) terminal of the 10-30Vdc power supply to the sensor's power input.
2. Connect the negative (-) terminal (GND) of the power supply to the sensor's ground input.
3. Connect the Q Out and Qa Out terminals to your control system's input according to your application's requirements.
4. Verify all connections are secure and insulated.

4. Operating Instructions

Once properly installed and powered, the DT50-P1113 sensor will begin to operate. The sensor continuously measures the distance to the target within its specified range and provides corresponding output signals.

4.1 Power-Up and Self-Test

Upon applying power, the sensor performs a brief self-test. Observe any indicator lights (if present) for proper operation. Consult the sensor's specific data sheet for detailed information on indicator light behavior.

4.2 Output Signal Interpretation

- **Q Out:** This is a digital switching output, typically used for presence detection or threshold monitoring. Refer to the sensor's data sheet for specific switching points and logic.
- **Qa Out:** This is an analog current output (4mA...20mA), directly proportional to the measured distance. A 4mA signal usually corresponds to the minimum distance, and 20mA to the maximum distance, or vice-versa, depending on configuration.

Calibrate your control system to correctly interpret the 4-20mA analog signal to obtain accurate distance readings.

5. Maintenance

The Sick DT50-P1113 sensor is designed for low maintenance. Regular inspection and cleaning will ensure optimal performance and longevity.

5.1 Cleaning

- Periodically clean the sensor's optical surfaces with a soft, lint-free cloth.
- Use a mild, non-abrasive cleaning solution if necessary. Avoid harsh chemicals that could damage the sensor housing or optics.
- Ensure no dust, dirt, or debris accumulates on the sensor's detection window.

5.2 Inspection

- Regularly check all electrical connections for tightness and signs of corrosion.
- Inspect the sensor housing for any physical damage, cracks, or signs of wear.
- Verify the mounting remains secure and the sensor is not vibrating excessively.

6. Troubleshooting

This section provides solutions to common issues encountered with the DT50-P1113 sensor. For problems not listed here, contact technical support.

Problem	Possible Cause	Solution
No Output Signal	No power; Incorrect wiring; Damaged sensor.	Check power supply (10-30Vdc); Verify wiring connections; Inspect sensor for damage.
Inaccurate Readings	Dirty optical surface; Obstruction in field of view; Incorrect mounting.	Clean sensor lens; Remove obstructions; Re-align sensor.
Intermittent Operation	Loose connections; Unstable power supply; Excessive vibration.	Secure all connections; Ensure stable power; Reduce vibrations or re-mount.

7. Specifications

Attribute	Value
Model Number	DT50-P1113
Manufacturer	SICK
Product Dimensions	0.31 x 0.31 x 0.28 inches
Weight	7.58 ounces (0.47 lbs)
Operating Voltage	10-30Vdc
Output Signals	Q Out (≤ 100mA), Qa Out (4mA...20mA)
Date First Available	December 10, 2018

8. Warranty and Support

8.1 Warranty Information

This Sick DT50-P1113 sensor comes with a standard manufacturer's warranty. Please refer to the warranty documentation provided with your purchase or visit the official Sick website for detailed terms and conditions regarding warranty coverage and duration.

8.2 Technical Support

For technical assistance, troubleshooting beyond this manual, or spare parts inquiries, please contact Sick customer support or your authorized distributor. Have your product model number (DT50-P1113) and serial number (found on the sensor label, e.g., 1 044 369) ready when contacting support.

Relevant Link: Sick DT50-P1113 Product Page