

## LEUZE PRK-18/4-DL.4

# LEUZE PRK-18/4-DL.4 Photoelectric Sensor Instruction Manual

Model: PRK-18/4-DL.4 | Part Number: 50080153

## 1. INTRODUCTION

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This manual provides essential information for the safe and efficient installation, operation, and maintenance of the LEUZE PRK-18/4-DL.4 retroreflective photoelectric sensor. Please read this manual thoroughly before using the device.

## 2. SAFETY INSTRUCTIONS

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Observe all local and national safety regulations, as well as general technical rules, when installing and operating this device. Failure to follow these instructions may result in injury or equipment damage.

- Installation and maintenance should only be performed by qualified personnel.
- Disconnect power before performing any installation, wiring, or maintenance.
- Ensure proper grounding where required.
- Do not exceed the specified operating voltage and current ratings.
- Protect the device from mechanical shock, excessive vibration, and extreme temperatures.

## 3. PRODUCT DESCRIPTION

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The LEUZE PRK-18/4-DL.4 is a compact retroreflective photoelectric sensor designed for reliable object detection, particularly for transparent media. It operates by emitting a light beam and detecting its reflection from a separate reflector. The sensor features a PNP switching output with both normally open (LO) and normally closed (DO) functions, and an M12 connector for electrical connection.



**Figure 3.1:** General view of the LEUZE PRK-18/4-DL.4 retroreflective photoelectric sensor. This image shows the compact red housing and the M12 connector on one end.



**Figure 3.2:** Close-up of the sensor's identification label. The label clearly displays "Leuze electronic", "PRK 18/4 DL.4", and

the part number "50080153", along with CE marking and other regulatory information.

## 4. SETUP AND INSTALLATION

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### 4.1 Mounting

The sensor should be mounted securely using appropriate hardware. Ensure that the sensing face has a clear line of sight to the reflector. Avoid mounting in areas with excessive vibration or direct exposure to strong light sources that could interfere with operation.



**Figure 4.1:** View of the sensor's front face, showing the optical lens for light emission and reception. Proper alignment with a reflector is crucial for operation.

### 4.2 Electrical Connection

The PRK-18/4-DL.4 sensor uses an M12 connector for power supply and signal output. Refer to the wiring diagram below for correct pin assignments. The sensor requires a 10-30V DC power supply.



**Figure 4.2:** Wiring diagram for the LEUZE PRK-18/4-DL.4 sensor. It shows the M12 connector pinout: Pin 1 (Brown) for 10-30V DC+, Pin 3 (Blue) for GND, Pin 4 (Black) for PNP LO/DO output. Pin 2 (White) is NC (Not Connected).



**Figure 4.3:** Close-up view of the M12 electrical connector on the sensor. This connector provides a robust and reliable

### Pin Assignment:

- Pin 1 (Brown): +10-30V DC
- Pin 2 (White): NC (Not Connected)
- Pin 3 (Blue): GND
- Pin 4 (Black): PNP Switching Output (LO/DO)

## 5. OPERATING INSTRUCTIONS

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The PRK-18/4-DL.4 operates on the retroreflective principle. The sensor emits a light beam which is reflected by a dedicated reflector back to the sensor's receiver. An object passing between the sensor and the reflector interrupts this beam, triggering the output.

### 5.1 Transparent Media Detection

This sensor is specifically designed for detecting transparent objects such as glass or plastic bottles. Its advanced optics and electronics allow it to reliably differentiate between the presence and absence of transparent materials within its sensing range.

### 5.2 Output Function (PNP LO/DO)

The sensor provides a PNP switching output. The output can be configured as Light-On (LO) or Dark-On (DO). In a PNP configuration, the output switches to the positive supply voltage (+Vs) when activated.

- **Light-On (LO):** The output is active when the receiver detects light (i.e., no object is present between sensor and reflector).
- **Dark-On (DO):** The output is active when the receiver does not detect light (i.e., an object is present, interrupting the beam).

The specific configuration (LO or DO) is typically set via a switch or wiring option on the sensor or associated control unit, if available. Refer to the sensor's technical data sheet for detailed configuration options.

## 6. MAINTENANCE

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The LEUZE PRK-18/4-DL.4 sensor is designed for low maintenance. Regular inspection and cleaning are recommended to ensure optimal performance.

- **Cleaning:** Keep the optical surfaces (lens) of the sensor and the reflector clean. Use a soft, lint-free cloth and a mild cleaning solution if necessary. Avoid abrasive materials.
- **Inspection:** Periodically check the sensor's mounting for security and the cable for any signs of damage. Ensure the reflector is clean and properly aligned.
- **Environmental Conditions:** Ensure the operating environment remains within the specified temperature and humidity ranges.

## 7. TROUBLESHOOTING

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If the sensor is not functioning as expected, consider the following troubleshooting steps:

- **No Power:** Verify that the sensor is receiving the correct 10-30V DC power supply and that all connections are secure according to the wiring diagram.

- **No Detection / False Detection:**

- Check alignment between the sensor and the reflector.
- Clean the optical surfaces of both the sensor and the reflector.
- Ensure no foreign objects are obstructing the beam path.
- Verify the reflector is suitable for the sensor type.
- Check for strong ambient light interference.

- **Incorrect Output State:**

- Confirm the output configuration (LO/DO) matches the application requirements.
- Test the output signal with a multimeter to ensure it switches correctly.

- **Damaged Cable/Connector:** Inspect the M12 connector and cable for any physical damage.

If problems persist after performing these checks, contact LEUZE technical support.

## 8. SPECIFICATIONS

Parameter	Value
Model	PRK-18/4-DL.4
Part Number	50080153
Sensing Principle	Retroreflective
Special Feature	Transparent Media Detection
Output Type	PNP (Light-On / Dark-On)
Operating Voltage	10-30V DC
Connection	M12 Connector
Product Dimensions	1 x 3 x 3 inches (approx.)
Item Weight	2.56 ounces (approx.)
Manufacturer	Leuze Electronic

## 9. WARRANTY AND SUPPORT

This LEUZE product is covered by the manufacturer's standard warranty. For detailed warranty terms, technical support, or service inquiries, please refer to the official LEUZE website or contact your authorized LEUZE distributor. Please have your model number (PRK-18/4-DL.4) and part number (50080153) available when contacting support.

**LEUZE Official Website:** [www.leuze.com](http://www.leuze.com)

