Telemecanique XUB9APANM12

Telemecanique Sensors XUB9APANM12 Polarized Reflex Photoelectric Sensor Instruction Manual

Model: XUB9APANM12

1. Product Overview

The Telemecanique XUB9APANM12 is a polarized retroreflective photoelectric sensor designed for non-contact object detection in various industrial applications such as packaging, conveying, and assembly lines. This sensor integrates both the transmitter and receiver into a single unit and requires a separate reflector for operation.

Figure 1: Telemecanique XUB9APANM12 Polarized Reflex Photoelectric Sensor. A close-up view of the Telemecanique XUB9APANM12 polarized retroreflective photoelectric sensor. It features an 18-mm plastic barrel body with a clear section showing internal components and a red lens at the detection end. Two black hexagonal nuts are visible for mounting.

Key Features:

- Detects objects without physical contact.
- Polarized retroreflective detection system for reliable sensing, even with reflective targets.
- Emits a visible laser through a polarized filter for precise detection.
- Plastic 18-mm barrel body for robust industrial environments.
- DC input power supply.
- 3-wire PNP output wiring with normally open (NO) contacts.

- M12 micro-connector for easy and secure electrical connection.

2. Setup and Installation

2.1 Safety Precautions

- Always disconnect power before installation, wiring, or maintenance.
- Ensure proper grounding to prevent electrical hazards.
- Do not exceed the specified voltage and current ratings.
- Avoid direct exposure to the sensor's light beam, although it is a low-power visible laser.
- Installation should be performed by qualified personnel in accordance with local electrical codes and regulations.

2.2 Mounting

The XUB9APANM12 sensor features an 18-mm threaded barrel for easy mounting. Use the provided hexagonal nuts to secure the sensor in place. Ensure the sensor is mounted rigidly to prevent vibration, which could affect detection accuracy. Position the sensor and the reflector (sold separately) so that the sensor's detection face is perpendicular to the reflector's surface for optimal performance.

2.3 Wiring

This sensor uses a 3-wire PNP output configuration with an M12 micro-connector. Refer to the following general wiring guide:

- **Pin 1 (Brown):** +DC Power Supply (e.g., +24V DC)
- **Pin 3 (Blue):** 0V DC / Ground
- **Pin 4 (Black):** PNP Output (Normally Open)

Connect the M12 micro-connector securely to the sensor. Ensure all connections are tight and properly insulated to prevent short circuits.

3. Operation

3.1 Detection Principle

The XUB9APANM12 operates on the polarized retroreflective principle. The sensor emits a polarized light beam towards a reflector. When an object passes between the sensor and the reflector, it interrupts the light beam, causing the sensor's output to change state. The polarization filter helps to prevent false detections from highly reflective objects or shiny backgrounds, ensuring reliable operation.

3.2 Alignment and Adjustment

After mounting and wiring, ensure proper alignment between the sensor and the reflector. The sensor typically has an indicator LED (often green or yellow) that illuminates when a stable detection is achieved (i.e., when the light beam is successfully returned by the reflector). Adjust the sensor's position until this indicator is stable. If the sensor has a sensitivity adjustment potentiometer, fine-tune it to ensure reliable detection of the target object while avoiding interference from background elements.

4. Maintenance

4.1 Cleaning

Regularly clean the sensor's lens and the reflector's surface to ensure optimal performance. Use a soft, lint-free cloth and a mild, non-abrasive cleaning solution. Avoid using harsh chemicals or abrasive materials that could scratch the lens or reflector.

4.2 Inspection

Periodically inspect the sensor, wiring, and mounting for any signs of damage, wear, or loose connections. Ensure the sensor is securely mounted and that cables are not pinched or frayed. Replace any damaged components immediately.

5. Troubleshooting

Problem	Possible Cause	Solution
Sensor not detecting objects.	Misalignment between sensor and reflector; dirty lens/reflector; incorrect wiring; power supply issue; reflector not present.	Check and adjust alignment; clean lens and reflector; verify wiring connections; confirm power supply; ensure reflector is in place.
Intermittent detection.	Vibration; unstable power supply; ambient light interference; highly reflective background objects.	Secure mounting to reduce vibration; check power supply stability; shield sensor from strong ambient light; adjust sensor position or use a different reflector.
Output always ON/OFF.	Sensor damaged; wiring error; short circuit in output.	Verify wiring according to diagram; check for short circuits; if problem persists, sensor may be faulty and require replacement.

6. Technical Specifications

Parameter	Value
Product Dimensions	3 x 1 x 2 inches
Item Model Number	XUB9APANM12
Weight	1 Pounds
Manufacturer	Telemecanique Sensors
Detection Type	Polarized Retroreflective
Output Type	3-wire PNP, Normally Open (NO)
Connection	M12 Micro-Connector
Body Material	Plastic
Barrel Diameter	18-mm

7. Warranty and Support

7.1 Warranty Information

Telemecanique Sensors products are manufactured to high-quality standards and are typically covered by a manufacturer's warranty against defects in materials and workmanship. For specific warranty terms and conditions, please refer to the documentation provided with your purchase or contact Telemecanique Sensors directly.

7.2 Technical Support

For technical assistance, product inquiries, or support regarding the XUB9APANM12 sensor, please contact Telemecanique Sensors customer support. You can find contact information and additional resources on the official Telemecanique Sensors website or through their authorized distributors. Visit the Telemecanique Store on Amazon for more information.