

Schneider Electric XS130B3PAL2

Schneider Electric Osisense XS130B3PAL2 Inductive Proximity Sensor Instruction Manual

Model: XS130B3PAL2

1. INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of the Schneider Electric Osisense XS130B3PAL2 Inductive Proximity Sensor. Please read this manual thoroughly before using the product.



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Figure 1: Schneider Electric Osisense XS130B3PAL2 Inductive Proximity Sensor. A detailed view of the cylindrical brass housing, M30 threading, and pre-wired cable connection.

2. GENERAL INFORMATION

The Schneider Electric Osisense XS130B3PAL2 is a cylindrical inductive proximity sensor designed for general-purpose industrial

applications. It features a robust nickel-plated brass housing and a PPS sensing face, ensuring durability and reliable performance in challenging environments.

Key Features:

- **Model:** XS130B3PAL2
- **Sensor Type:** Inductive Proximity Sensor
- **Housing:** Cylindrical, M30, L45mm, Nickel-plated Brass
- **Sensing Face:** PPS
- **Sensing Range (Sn):** 15 mm
- **Supply Voltage:** 12-24 V DC
- **Output Type:** 3-wire, NO (Normally Open), PNP
- **Connection:** Pre-wired cable (2 meters length)
- **Protection Ratings:** IP65, IP68, IP69K
- **Operating Temperature:** -25°C to +70°C
- **Indication:** Annular LED for status visualization
- **Certifications:** E2, CSA, UL

3. SAFETY INSTRUCTIONS

Always adhere to the following safety guidelines to prevent injury and damage to the equipment:

- Disconnect power before installation, wiring, or maintenance.
- Ensure proper grounding to prevent electrical shock.
- Do not exceed the specified supply voltage (12-24 V DC).
- Avoid exposing the sensor to corrosive substances or extreme mechanical stress beyond its ratings.
- Installation and wiring should be performed by qualified personnel only.
- Verify all connections are secure before applying power.
- This device features double insulation for enhanced protection against electric shocks.

4. INSTALLATION

The XS130B3PAL2 sensor is designed for flush mounting and can be installed directly onto a metallic surface or support.

Mounting Steps:

1. Identify the desired mounting location. Ensure sufficient clearance for the sensor body and cable.
2. Drill a hole of appropriate diameter (Ø 30 mm) for the M30 x 1.5 thread.
3. Insert the sensor into the drilled hole.
4. Secure the sensor using the two provided nuts on the external thread. Tighten firmly but do not overtighten to avoid damaging the housing.
5. Ensure the sensing face is flush with the mounting surface for optimal performance.

Note: For non-flush mounting applications, consult the product datasheet for specific mounting distances and considerations to prevent mutual interference between sensors or with metallic objects.

5. WIRING

The XS130B3PAL2 is a 3-wire, PNP, Normally Open (NO) sensor with a 2-meter pre-wired cable. Follow the wiring diagram below:

Brown Wire: Connect to +12-24 V DC (Power Supply Positive)

- Blue Wire:** Connect to 0 V DC (Power Supply Negative / Ground)
- Black Wire:** Connect to Load (Output Signal)

Ensure all connections are correct and secure before applying power. Incorrect wiring can damage the sensor or connected equipment.

6. OPERATION

Once properly installed and wired, the sensor is ready for operation. When a metallic object enters the sensing range (15 mm), the sensor's output will switch states.

Sensing Indication:

The sensor features an annular LED indicator. This LED illuminates when a target object is detected within the sensing range, providing visual confirmation of operation and aiding in configuration and troubleshooting.

Sensing Principle:

Inductive proximity sensors generate an electromagnetic field. When a metallic object enters this field, it causes a change in the field, which the sensor detects, triggering its output. The nickel-plated brass housing provides magnetic shielding, enhancing precision and immunity to external magnetic disturbances.

7. MAINTENANCE

The Schneider Electric Osisense XS130B3PAL2 sensor is designed for minimal maintenance. Regular inspection can help ensure long-term reliable operation.

- **Cleaning:** Periodically clean the sensing face to remove dust, dirt, or debris that may accumulate and affect performance. Use a soft, damp cloth. Do not use abrasive cleaners or solvents.
- **Cable Inspection:** Check the cable for any signs of damage, such as cuts, abrasions, or kinks. Replace the sensor if the cable is damaged.
- **Mounting Security:** Ensure the sensor remains securely mounted. Vibrations or impacts can loosen mounting nuts over time.
- **Environmental Conditions:** Verify that the operating environment remains within the specified temperature range (-25°C to +70°C) and that the IP protection ratings are not compromised.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
Sensor not detecting object	◦ Object not metallic or too small ◦ Object outside sensing range (15 mm) ◦ Incorrect wiring ◦ Power supply issue ◦ Damaged sensor	◦ Ensure target is metallic and of sufficient size. ◦ Adjust object position to be within 15 mm of sensing face. ◦ Check wiring against diagram (Brown: +V, Blue: 0V, Black: Load). ◦ Verify 12-24 V DC power supply is active. ◦ Replace sensor if damaged.

Problem	Possible Cause	Solution
LED not illuminating	- No power to sensor - No object detected - Damaged LED or sensor	- Check power supply and wiring. - Bring a metallic object into the sensing range. - If power is present and object is detected but LED remains off, sensor may be faulty.
Intermittent detection	- Object moving too fast - Vibrations or loose mounting - Electromagnetic interference	- Ensure object speed is within sensor's response time. - Tighten mounting nuts; ensure stable mounting. - Check for nearby sources of strong electromagnetic fields. The nickel-plated brass housing provides good immunity, but extreme fields can still affect it.

9. SPECIFICATIONS

Manufacturer	Schneider Electric
Model Number	XS130B3PAL2
Sensor Type	Inductive Proximity Sensor
Housing Dimensions (L x W x H)	13.1 x 9.5 x 4.2 cm
Weight	20 grams
Housing Material	Nickel-plated Brass
Sensing Face Material	PPS
Mounting Type	Flush, M30 x 1.5 thread, Pole mount
Nominal Sensing Distance (Sn)	15 mm
Supply Voltage	12-24 V DC
Output Type	3-wire, NO (Normally Open), PNP
Connection	Pre-wired cable (2 meters)
Protection Rating	IP65, IP68, IP69K
Operating Temperature Range	-25°C to +70°C
Certifications	E2, CSA, UL
Recommended Uses	Industrial automation and machine control
Compatible Devices	Security systems

10. WARRANTY AND SUPPORT

Information regarding specific warranty terms and conditions for the Schneider Electric Osisense XS130B3PAL2 Inductive Proximity Sensor is not provided in this document. For detailed warranty information and technical support, please refer to the official Schneider Electric website or contact their customer service directly.

Components included: Product and instructions (French not guaranteed). Spare parts availability: Information unavailable on spare parts.