AUTONICS CR30-15AO

AUTONICS CR30-15AO Capacitive Proximity Sensor User Manual

Model: CR30-15AO

1. INTRODUCTION

This manual provides essential information for the safe and effective operation of the AUTONICS CR30-15AO Capacitive Proximity Sensor. This sensor is designed for non-contact detection of various materials, including metals, non-metals, liquids, and powders, without direct physical contact. Please read this manual thoroughly before installation and operation to ensure proper use and to prevent potential hazards.

2. SAFETY INFORMATION

Adherence to the following safety precautions is crucial for preventing accidents and ensuring optimal performance of the sensor. Failure to follow these instructions may result in damage to the product, property, or personal injury.

- Ensure power is disconnected before performing any installation, wiring, or maintenance.
- Do not use the sensor in environments with flammable or explosive gases.
- Verify the power supply voltage matches the sensor's specifications (100 Vac to 240 Vac).
- Avoid applying excessive force or impact to the sensor.
- Do not disassemble or modify the sensor.
- Consult a qualified electrician for wiring and installation if you are unsure.

3. PRODUCT FEATURES

The AUTONICS CR30-15AO Capacitive Proximity Sensor offers robust performance for industrial applications. Key features include:

- **Sensing Range:** 0mm to 15mm, providing versatile detection capabilities.
- **Output Type:** Normally Open (NO) current output.
- **Supply Voltage:** Operates within a wide range of 100 Vac to 240 Vac.
- **Frequency Response:** Maximum 20Hz.
- **Sensor Input:** Capacitive, suitable for detecting various materials.

- **Design:** M30 threaded cylindrical housing, non-shielded.

Figure 3.1: The AUTONICS CR30-15AO Capacitive Proximity Sensor. This image shows the cylindrical sensor body, which is metallic and threaded, with a light green sensing face and a black cable extending from the rear. Two metallic nuts are visible near the sensing face, used for mounting.

4. Setup and Installation

Proper installation is critical for the sensor's performance and longevity. Follow these general guidelines:

1. **Mounting:** Securely mount the sensor using the provided nuts on a stable surface. Ensure the sensing face is clear of obstructions and positioned correctly relative to the target object.
2. **Wiring:** Connect the sensor according to the wiring diagram provided with the product packaging (not included in this general manual). Ensure correct polarity and voltage. The sensor operates on 100 Vac to 240 Vac.
3. **Sensing Distance Adjustment:** If applicable, adjust the sensing distance using the sensitivity adjuster (if present on your model) to optimize detection for your specific application and target material.
4. **Environmental Considerations:** Install the sensor in an environment free from excessive vibration, dust, moisture, and extreme temperatures outside its specified operating range.

5. Operating Instructions

Once installed and powered, the CR30-15AO sensor operates automatically. It detects the presence of objects within its sensing range based on changes in capacitance.

- **Detection Principle:** The sensor emits an electromagnetic field. When an object enters this field, it changes the capacitance, triggering the sensor's output.

- **Output Signal:** As a Normally Open (NO) sensor, its output will switch from OFF to ON when an object is detected within the sensing range.
- **Indicator:** Many models include an LED indicator that illuminates when an object is detected, providing visual confirmation of operation.

6. MAINTENANCE

The AUTONICS CR30-15AO sensor is designed for minimal maintenance. However, regular checks can help ensure its long-term reliability:

- **Cleaning:** Periodically clean the sensing face to remove dust, dirt, or debris that may interfere with detection. Use a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Cable Inspection:** Check the sensor cable for any signs of damage, such as cuts, abrasions, or kinks. Replace the sensor if the cable is compromised.
- **Mounting Security:** Ensure the sensor remains securely mounted and that mounting nuts are tight.
- **Environmental Monitoring:** Confirm that the operating environment continues to meet the sensor's specifications.

7. TROUBLESHOOTING

If the sensor is not functioning as expected, consider the following common issues and solutions:

Problem	Possible Cause	Solution
Sensor not detecting object	Incorrect sensing distance; Object too small/material not detectable; Wiring error; Power supply issue; Sensing face dirty.	Adjust sensing distance; Verify object material and size; Check wiring connections; Confirm power supply; Clean sensing face.
Sensor always ON/OFF	Interference from surrounding objects; Incorrect sensitivity setting; Sensor damaged.	Relocate sensor or target; Adjust sensitivity; Replace sensor if damaged.
Intermittent detection	Unstable power supply; Vibration; Loose connections.	Ensure stable power; Secure mounting; Check all connections.

If the problem persists after attempting these solutions, contact AUTONICS technical support or your local distributor.

8. SPECIFICATIONS

Detailed technical specifications for the AUTONICS CR30-15AO Capacitive Proximity Sensor:

Specification	Value
Model Number	CR30-15AO
Sensor Type	Capacitive Proximity Sensor
Sensing Range	0mm to 15mm
Output Type	Normally Open (NO)

Specification	Value
Supply Voltage	100 Vac to 240 Vac
Frequency Response Max	20Hz
Housing Diameter	M30
Shielding	Non-Shielded
Package Dimensions	4.3 x 3.3 x 2.8 inches
Item Weight	12.48 ounces
Manufacturer	AUTONICS

9. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please refer to the official AUTONICS website or contact your authorized distributor. Keep your purchase receipt for warranty claims.
AUTONICS Official Website: www.autonics.com