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IFM IF-2002-ABOW-IF0295

IFM IF-2002-ABOW-IF0295 Inductive Sensor Instruction Manual

Model: IF-2002-ABOW-IF0295

1. INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of the IFM IF-2002-ABOW-IF0295 Inductive Sensor. Please read this manual thoroughly before using the product and retain it for future reference.

2. PRODUCT OVERVIEW

The IFM IF-2002-ABOW-IF0295 is a robust inductive proximity sensor designed for reliable, non-contact detection of metallic objects. Its compact M12 design and flush mountable configuration make it suitable for various industrial automation applications.

Key Features:

- **Type:** Inductive Sensor
- **Housing:** M12 x 1 thread, Length 71.5 mm
- **Sensing Range:** 2 mm, flush mountable
- **Output Function:** Normally Open (NO)
- **Operating Voltage:** AC (20-250VAC, 45-65Hz)
- **Connection:** 2-meter PVC-cable, 2-wire
- **Protection Rating:** IP 67
- **Ambient Temperature:** -25 to 80 °C
- **Switching Frequency:** 25 Hz



Figure 1: The IFM IF-2002-ABOW-IF0295 inductive sensor. It features a cylindrical M12 threaded housing, typically orange or brass-colored, connected to a black 2-meter PVC cable. The sensor is designed for flush mounting and includes a label with product details.

3. SAFETY INSTRUCTIONS

Observe the following safety instructions to prevent personal injury and damage to the product or connected equipment.

- Installation and maintenance must be performed by qualified personnel only.
- Disconnect power before performing any installation, wiring, or maintenance tasks.
- Ensure that the operating voltage and current ratings match the sensor's specifications.
- Do not exceed the specified ambient temperature range.
- Protect the cable from mechanical stress and sharp edges.
- The sensor is not intended for safety-related applications unless explicitly stated and certified.

4. SETUP

4.1 Mounting

1. Select a mounting location where the sensor can detect the target object reliably within its 2 mm sensing range.
2. The sensor is flush mountable, meaning it can be installed with its active face level with the surrounding metal surface without affecting its performance.
3. Drill a hole of appropriate diameter (M12) in the mounting surface.
4. Insert the sensor into the hole and secure it using the provided nuts, ensuring it is firmly fixed.
5. Ensure there is no metallic material within the specified clearance distances around the active face to avoid interference.

4.2 Wiring

The IF-2002-ABOW-IF0295 is a 2-wire AC sensor. Connect it in series with the load to the AC power supply.

- Connect one wire of the sensor to one side of the AC power supply.

- Connect the other wire of the sensor to one terminal of the load (e.g., relay, PLC input).
- Connect the other terminal of the load to the other side of the AC power supply.
- Ensure all connections are secure and insulated.

Note: Refer to local electrical codes and standards for proper wiring practices.

5. OPERATING INSTRUCTIONS

Once properly installed and wired, the sensor operates automatically.

- **Power On:** Apply the specified AC voltage (20-250VAC) to the sensor circuit.
- **Detection:** When a metallic object enters the sensor's 2 mm sensing range, the sensor's output will switch to its ON state (closed circuit), allowing current to flow through the connected load.
- **Normally Open (NO):** This sensor has a Normally Open output. This means the output is OFF (open circuit) when no object is detected, and it switches ON (closed circuit) when an object is detected.
- **Switching Frequency:** The sensor can detect objects moving at a rate of up to 25 times per second (25 Hz).

6. MAINTENANCE

The IFM IF-2002-ABOW-IF0295 sensor is designed for minimal maintenance. Regular inspection can help ensure long-term reliable operation.

- **Cleaning:** Periodically clean the active face of the sensor to remove any accumulation of dust, dirt, or debris that could affect sensing performance. Use a soft, damp cloth. Do not use abrasive cleaners or solvents.
- **Cable Inspection:** Check the PVC cable for any signs of damage, such as cuts, abrasions, or kinks. Replace the sensor if the cable insulation is compromised.
- **Mounting Security:** Verify that the sensor remains securely mounted and that the nuts are tight.
- **Environmental Protection:** The IP67 rating ensures protection against dust ingress and temporary immersion in water. However, avoid prolonged exposure to harsh chemicals or extreme conditions beyond the specified operating range.

7. TROUBLESHOOTING

If the sensor is not functioning as expected, perform the following basic checks:

Problem	Possible Cause	Solution
Sensor does not detect objects	<ul style="list-style-type: none"> • No power supply • Incorrect wiring • Object outside sensing range • Damaged sensor • Excessive debris on active face 	<ul style="list-style-type: none"> • Check power supply voltage • Verify wiring according to diagram • Adjust object position or sensor mounting • Replace sensor if damaged • Clean sensor face

Problem	Possible Cause	Solution
Intermittent detection	<ul style="list-style-type: none"> Unstable mounting Vibrations Fluctuating power supply Object moving too fast 	<ul style="list-style-type: none"> Securely mount sensor Reduce vibrations Check power supply stability Ensure object speed is within switching frequency limits
Sensor always ON or OFF	<ul style="list-style-type: none"> Object permanently in sensing range Sensor damaged Incorrect wiring (e.g., short circuit) 	<ul style="list-style-type: none"> Remove object from sensing range Replace sensor Check wiring for shorts or open circuits

8. SPECIFICATIONS

Parameter	Value
Model Number	IF-2002-ABOW-IF0295
Sensing Range	2 mm
Mounting Type	Flush Mountable
Output Function	Normally Open (NO)
Operating Voltage	20-250 VAC, 45-65 Hz
Connection	2-wire, 2 m PVC-cable
Protection Rating	IP 67
Ambient Temperature	-25 to 80 °C
Switching Frequency	25 Hz
Product Dimensions	6 x 10 x 6 inches; 1 Pounds (shipping dimensions)
Manufacturer	EFECTOR (IFM)

9. WARRANTY AND SUPPORT

IFM products are manufactured to high quality standards. For specific warranty information, please refer to the terms and conditions provided at the time of purchase or contact your local IFM distributor.

Technical Support:

For technical assistance or inquiries regarding the IFM IF-2002-ABOW-IF0295 Inductive Sensor, please contact IFM customer support or your authorized IFM dealer. Contact details can typically be found on the official IFM website.

