

Omron E3X-HD11

OMRON E3X-HD11 Fibre Optic Sensor Amplifier Instruction Manual

Model: E3X-HD11

1. INTRODUCTION

This manual provides essential information for the safe and correct installation, operation, and maintenance of the OMRON E3X-HD11 Fibre Optic Sensor Amplifier. Please read this manual thoroughly before using the product to ensure optimal performance and prevent potential hazards. Keep this manual in a safe place for future reference.

2. SAFETY INFORMATION

Observe the following safety precautions to prevent electric shock, fire, or damage to the product.

- **Power Supply:** Ensure the power supply voltage is within the specified range (12 to 24 VDC). Incorrect voltage can damage the unit.
- **Wiring:** Perform wiring correctly according to the instructions. Incorrect wiring may cause malfunction or damage.
- **Environment:** Do not use the product in environments with flammable or explosive gases, excessive dust, or corrosive substances.
- **Maintenance:** Do not attempt to disassemble or modify the unit. Refer all servicing to qualified personnel.

3. PRODUCT OVERVIEW

The OMRON E3X-HD11 is an NPN output fibre optic sensor amplifier designed for reliable detection in various industrial applications. It is compatible with a range of fibre optic cables (sold separately) to suit specific sensing requirements.



This image displays the OMRON E3X-HD11 fibre optic sensor amplifier. It shows the main unit with the model number 'E3X-HD11' and wiring instructions printed on its side: 'Brown: 12 to 24VDC', 'Blue: 0V', 'Black: OUT'. A coiled black cable extends from the unit, terminating in three stripped wires (brown, blue, black) for connection.

4. SETUP AND INSTALLATION

4.1 Mounting

Mount the E3X-HD11 amplifier securely in a location free from excessive vibration, shock, and direct sunlight. Ensure adequate space for wiring and heat dissipation. The unit can typically be mounted on a DIN rail or using screws through designated mounting holes.

4.2 Wiring

Connect the power supply and output wires according to the following scheme, as indicated on the unit:

Brown Wire: Connect to +12 to +24 VDC power supply.

Blue Wire: Connect to 0V (GND) of the power supply.

Black Wire: Connect to the NPN output (signal output).

Ensure all connections are firm and insulated to prevent short circuits.

4.3 Fibre Optic Cable Connection

Insert the fibre optic cable ends into the designated ports on the amplifier. Ensure the cables are fully inserted and secured. Refer to the specific fibre optic cable manual for proper cutting and insertion techniques if required.

5. OPERATING INSTRUCTIONS

5.1 Power On

After completing all wiring and connections, apply power to the unit. The power indicator (if present) should illuminate.

5.2 Sensitivity Adjustment

The E3X-HD11 typically features a sensitivity adjustment mechanism (e.g., a potentiometer or teach button). Adjust the sensitivity to reliably detect the target object while avoiding false detections from background objects or environmental factors. Refer to the specific model's detailed operation guide for precise adjustment procedures.

5.3 Output Verification

Test the sensor by presenting and removing the target object. Verify that the NPN output (black wire) switches correctly according to the presence or absence of the target. An output indicator LED (if present) will typically show the output status.

6. MAINTENANCE

6.1 Cleaning

Keep the sensor amplifier and fibre optic cable ends clean. Dust or dirt on the fibre optic ends can significantly reduce sensing performance. Use a soft, dry cloth for cleaning the amplifier body. For fibre optic cable ends, use specialized cleaning tools or methods recommended by the fibre optic cable manufacturer.

6.2 Periodic Inspection

Periodically inspect the wiring for damage or loose connections. Check the mounting for stability. Ensure the fibre optic cables are not bent sharply or damaged, as this can impair light transmission.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
Sensor does not power on	No power supply; Incorrect wiring (Brown/Blue); Faulty unit	Check power supply connections and voltage; Verify wiring; Replace unit if faulty
No output change when target is present	Incorrect sensitivity setting; Dirty fibre optic ends; Damaged fibre optic cable; Incorrect wiring (Black); Target too far/small	Adjust sensitivity; Clean fibre optic ends; Inspect/replace cable; Verify black wire connection; Adjust sensing distance/target
Sensor outputs continuously (false detection)	Over-sensitivity; Background interference; Dirty fibre optic ends	Reduce sensitivity; Shield from interference; Clean fibre optic ends

8. SPECIFICATIONS

- **Brand:** Omron
- **Model:** E3X-HD11
- **Sensor Type:** Fibre Optic Sensor Amplifier
- **Output Type:** NPN
- **Power Supply:** 12 to 24 VDC
- **Connector Type:** Optical
- **Cable Type:** Fiber Optic (for connection to sensor head)

- **Compatible Devices:** Amplifier (refers to the unit itself being an amplifier for a fiber optic sensor head)
- **Special Feature:** High Speed
- **Color:** Red (unit housing)
- **Product Dimensions:** Approximately 3 x 6 x 3 inches
- **Item Weight:** Approximately 3.52 ounces
- **Indoor/Outdoor Usage:** Indoor, Outdoor
- **Compliance:** ROHS Compliant, IEC Specification Met

9. WARRANTY AND SUPPORT

OMRON products are manufactured under strict quality control. For warranty information, please refer to the warranty card included with your product or contact your local OMRON representative. For technical support or inquiries, please visit the official OMRON website or contact their customer service department.

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