JOCCOS FU-59U

JOCCOS FU-59U Fiber Optic Sensor Penetration Opposing Probe Amplifier User Manual

Model: FU-59U

1. Introduction

This manual provides essential information for the safe and effective use of the JOCCOS FU-59U Fiber Optic Sensor Penetration Opposing Probe Amplifier. Please read this manual thoroughly before installation, operation, or maintenance to ensure proper functionality and to prevent damage to the device or injury to personnel. The FU-59U is designed for precise object detection in industrial automation applications.

2. Safety Information

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

- **Power Supply:** Ensure the power supply voltage matches the specifications of the amplifier. Incorrect voltage can cause damage.
- **Wiring:** All wiring should be performed by qualified personnel in accordance with local electrical codes. Ensure power is disconnected before wiring.
- **Environment:** Do not install the sensor in environments with excessive dust, moisture, corrosive gases, or extreme temperatures beyond its specified operating range.
- **Handling:** Handle the fiber optic cables and sensor head with care. Bending or pulling the fiber excessively can cause damage.
- **Modifications:** Do not attempt to modify or disassemble the unit. Unauthorized modifications can lead to malfunction and void the warranty.

3. Product Overview

The JOCCOS FU-59U is a fiber optic sensor amplifier designed for use with opposing probe fiber units. It provides reliable detection capabilities for various industrial applications. The system typically consists of the amplifier unit and a compatible fiber optic cable set.



Figure 3.1: The FU-59U amplifier unit shown with its packaging and initial documentation. This image displays the compact design of the sensor amplifier.



Figure 3.2: Unpacked components of the FU-59U system, including the fiber optic cable and the amplifier unit. The small screw for mounting is also visible.



Figure 3.3: Multiple FU-59U product boxes. Note the product identification numbers such as **00959U** and **#0D00290497** visible on the packaging, which can be used for product tracking and verification.

4. Setup and Installation

Follow these steps for proper installation of the FU-59U amplifier and fiber optic probe.

1. **Mounting the Amplifier:** Securely mount the FU-59U amplifier in a stable location using appropriate fasteners. Ensure adequate ventilation around the unit.

2. **Connecting Fiber Optic Cables:** Carefully insert the fiber optic cables into the designated ports on the amplifier. Ensure the fiber ends are clean and free from dust or debris. Do not force the fibers.
3. **Positioning the Probes:** For opposing mode detection, position the transmitter and receiver fiber probes directly opposite each other, ensuring the object to be detected will pass between them. Maintain the recommended sensing distance for optimal performance.
4. **Wiring the Power Supply:** Connect the power supply wires to the amplifier's power terminals according to the wiring diagram provided with the product. Double-check polarity.
5. **Connecting Output:** Connect the output signal wires to your control system (e.g., PLC, relay) as required by your application.

5. Operating Instructions

Once installed, the FU-59U amplifier can be configured and operated as follows:

- **Power On:** Apply power to the amplifier. Observe the indicator lights for proper power-up.
- **Sensitivity Adjustment:** Use the sensitivity adjustment control (if present) on the amplifier to set the detection threshold. This typically involves placing the target object in the sensing area and adjusting until the output indicator reliably switches.
- **Test Detection:** Pass various objects through the sensing area to verify consistent and accurate detection.
- **Monitoring:** Continuously monitor the sensor's performance during operation.

6. Maintenance

Regular maintenance ensures the longevity and reliable operation of your FU-59U sensor system.

- **Cleaning:** Periodically clean the fiber optic probe tips and the amplifier unit. Use a soft, dry cloth. For probe tips, ensure no residue is left that could obstruct the light path.
- **Inspection:** Regularly inspect fiber optic cables for damage, kinks, or excessive bending. Check all electrical connections for tightness and corrosion.
- **Environmental Check:** Ensure the operating environment remains within specified limits (temperature, humidity, dust).
- **Recalibration:** If environmental conditions change significantly or if detection performance degrades, recalibrate the sensitivity.

7. Troubleshooting

If you encounter issues with your FU-59U sensor, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No power indicator light	No power supply; incorrect wiring; faulty unit	Check power connections; verify voltage; inspect wiring; contact support if unit is faulty.

Problem	Possible Cause	Solution
Sensor not detecting objects	Incorrect sensitivity setting; obstructed light path; damaged fiber; misaligned probes	Adjust sensitivity; clean probe tips; check fiber for damage; realign probes.
Intermittent detection	Unstable mounting; vibration; environmental interference; loose connections	Securely mount unit; reduce vibration; shield from interference; check all connections.
Output always ON/OFF	Sensitivity too high/low; constant obstruction/no obstruction	Adjust sensitivity; ensure sensing area is clear when no object is present, or blocked when object is present.

8. Specifications

The following specifications apply to the JOCCOS FU-59U Fiber Optic Sensor Penetration Opposing Probe Amplifier:

- **Model:** FU-59U
- **ASIN:** B0CQG4NX78
- **Package Dimensions:** 1.18 x 0.79 x 0.39 inches
- **Item Weight:** 1.76 ounces
- **Manufacturer:** JOCCOS
- **Assembly Required:** No
- **Number of Pieces:** 1 (amplifier unit)

9. Warranty and Support

For warranty information and technical support, please refer to the documentation included with your purchase or contact JOCCOS customer service. Keep your purchase receipt and product serial numbers (e.g., 00959U #0D00290497) for warranty claims.

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