

How to connect a rectangular fiber optic sensor



Overview

Fiber Optic Sensor Installation Methods This article provides an overview of fiber optic sensor installation ATO ATO-FIBER-RL Rectangular Fiber Optic Senso.

Key Takeaways

To connect a rectangular fiber optic sensor, you need to properly mount the sensor, align the fiber, and wire the power and signal lines according to the manufacturer's specifications.

Physical Installation

- Mount the Sensor: Rectangular fiber optic sensors can often be mounted directly on a DIN rail or using a separate bracket for stand-alone applications . Ensure the sensor is securely fixed to prevent movement that could affect detection accuracy.
- Prepare the Fiber: If using a free-cut fiber type, trim any excess fiber using a proper fiber cutter to ensure a clean end face, which is critical for accurate light transmission . Always insert the fiber from the side marked with writing to maintain correct orientation.
- Align the Optical Axis: Proper alignment of the transmitter and receiver is essential. The fiber should be positioned so that the light path is unobstructed and the sensor can detect the target object reliably .

Electrical Connection

- Power Supply: Connect the brown wire to a 24V DC power supply and the blue wire to 0V (ground), . Ensure the power source matches the sensor's voltage requirements.

- **Signal Output:** Connect the black wire to the relay or input device that will receive the sensor's output signal . Configure the sensor for DARK-ON or LIGHT-ON operation depending on your application.

- **LED Indicators:** Use the sensor's LED indicators to verify proper operation. The red LED typically indicates light detection, while the green LED shows stability of the sensing signal .

Calibration and Setup

- **Set Detection Range:** Place the target object at the farthest detection point and press the SET key. Move the object to the closest point and press SET again to allow the sensor to calculate the trigger light intensity .

- **Adjust Sensitivity:** Use the $\triangle$ and ∇ buttons to fine-tune the detection threshold. For precise detection in short distances, use FINE mode; for longer distances or harsh environments, use TURBO or SUPER modes .

- **Protect the Fiber:** Apply strain relief and protective coatings if the fiber is exposed to harsh environments. Adhesives like M-Bond 200 or AE-10, or RTV silicone, can protect the fiber and maintain accurate measurements .

Optional Installation Methods

- **Adhesive Mounting:** For permanent installations, bond the fiber to the surface using suitable adhesives after cleaning and conditioning the substrate .

- **Tape Mounting:** For temporary setups, double-sided tape can hold the fiber in place, though it is less reliable under temperature or humidity changes .

- **Embedment:** In concrete or structural applications, fibers can be embedded in grooves or cast into the material for long-term monitoring . Following these steps ensures that your rectangular fiber optic sensor is properly connected, aligned, and calibrated for accurate and reliable operation in industrial or automation systems.

Article Content

ODiSI Fiber Optic Sensor Installation Guide

This Application Note is intended to guide users of Luna's High Definition Fiber Optic Sensing (HD-FOS) system (the ODiSI) through

Fiber Sensors

What Is a Fiber Sensor? A Fiber Sensor is a type of Photoelectric Sensor that enables detection of objects in narrow locations by

CSM_FiberSensor_TG_E_2_1

Optical fiber is comprised of a central core with a high refractive index surrounded by cladding with a low refractive index. When light

Optical Fiber Sensors Guide

An optical fiber sensing system is basically composed of a light source, optical fiber; a sensing element or transducer and a detector

Fiber Optic Proximity Sensors Information

Fiber optic proximity sensors are used to detect the proximity of target objects using light. Light is supplied and returned via fiber

Digital Fiber Optic Sensor/Amplifier Wiring and Setting

working principle: Fiber optic sensors use the propagation characteristics of light to detect or measure various physical and chemical

Special Issue "Fiber Optic Sensors and Applications": An Overview

In "Hybrid Plasmonic Fiber-Optic Sensors" , the development of plasmonics-based fiber-optic sensors was reviewed to reveal and

Introduction to Fiber Optic Sensors and their Types

Article provides different types of Fiber optic sensors and applications is a sensor that uses optical fibers for sensing the element

ODISI Fiber Optic Sensor Installation Guide

This sensor installation kit is intended for the bonding down of 10 m of Luna's fiber optic sensor onto a relatively smooth metallic or

How to Specify Fiber-Optic Sensors | FleetOwner

Fiber-optic sensors work well in tight spots and in applications with a high degree of electrical noise, but care must be taken when

Fiber optic sensors and fiber optics | Baumer USA

A fiber optic sensor and two fiber optics made of plastic or glass fibers make up a fiber optic system. The sensor contains a light

Fiber-optic sensor

A fiber-optic sensor is a sensor that uses optical fiber either as the sensing element ("intrinsic sensors"), or as a means of relaying

What is a fibre optic sensor? | Sensor Basics: Principle ...

Outline The fibre optic sensor has an optical fibre connected to a light source to allow for detection in tight spaces or where a small

how to construct receiver circuit for optic fiber

I've recently built temperature monitoring (30degree-80degree) using plastic fiber-optic (pof) sensors with integration to

Fiber Optic Sensors: Fundamentals, Principles & Applications

Optical Fiber (Transmission Medium, Sensing Element) Light modulated due to interaction with parameter of interest (Measurand)

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