

How to set the light sensing distance of a fiber optic sensor



AI Overview

The sensing distance of a fiber optic sensor is set by calibrating the light intensity threshold using the SET key and adjusting detection modes according to the environment.

Step-by-Step Procedure

Position the Object at Maximum Distance Place the object you want to detect at the farthest point within the desired sensing range. Observe the LED display on the sensor, which shows the received light intensity. Press the SET key to register this as the baseline intensity (typically 0 for the farthest point).

Position the Object at Minimum Distance Move the object closer to the sensor, ideally to the nearest point you want it to be detected. When the LED shows a light intensity approximately double the target trigger value, press the SET key again. The sensor will automatically calculate and store the trigger light intensity.

Adjust the Trigger Value Use the Δ and ∇ buttons to fine-tune the trigger light intensity if needed. This allows precise control over the detection threshold to match your application requirements.

Select Output Mode Choose between DARK-ON (output active when light is blocked) or LIGHT-ON (output active when light is received) using the output signal selection switch.

Set Detection Mode for Environmental Conditions Long press the MODE key for 3 seconds to enter power mode settings:

- FINE: Detects small differences at short distances.
- TURBO: Extends detection range if FINE mode is insufficient.
- SUPER: Optimized for harsh environments, such as dusty or high-vibration areas.

Optional Timer Settings Press the MODE key again to configure timer modes if your application requires delayed or timed detection.

Additional Tips

Sensor Type Consideration: Through-beam sensors generally allow longer distances, while reflective and retro-reflective sensors have shorter ranges and may require more precise calibration.

Environmental Factors: Surface color, reflectivity, and ambient li...

Article Content

List of sensors

Charge-coupled device CMOS sensor Angle-sensitive pixel Colorimeter Contact image sensor Electro-optical sensor Flame detector Infra-red sensor Kinetic inductance detector LED as light sensor Light

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Fiber Optic Sensors | KEYENCE America

A fiber optic sensor is an instrument that measures light from an LED (or other device) for detection purposes. These devices are most commonly used in factory automation environments.

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Fiber Optic Proximity Sensors Selection Guide: Types, Features ...

Sensing PerformanceOptical ConfigurationCable MaterialEmitted BeamMode of OperationBody TypeFeaturesChoices for optical configuration for fiber optic proximity sensors include through beam, retroreflective, polarized retroreflective, diffuse, divergent, convergent, fixed field, and adjustable field. Through beam(or opposed mode) sensors incorporate a transmitter and a receiver on opposite sides of the target and evaluate absence or presence based...See more on globalspec ATO

How to Setup Fiber Optic Sensor? - ATO

For example, we set when the light intensity becomes 55 the fiber optic sensor will send trigger signal. First, put the detected object in the farthest place, LED displays the received light intensity 0, press

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Fiber Sensors

The emitter and receiver are installed to receive only regular-reflection light, so only objects that are a specific distance (area where light emission and reception overlap) from the Sensor can be detected.

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How to Specify Fiber Optic Sensors |Library tomatonDirect

Sensing range for fiber optics is impacted by the amplifier, fiber cable length and type of optical head. Due to these many factors, it is usually difficult to determine an exact working range,

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Mouting of light barriers and diffuse sensors

For a correct function, the object must cover the reflector or at least have the size of the beam diameter on the distance. The emitter and receiver must be aimed at each other. The narrower the angle of

Optical Fiber Sensors Guide

The principle of operation of a fiber sensor is that the modulates some transducer parameter of the optical system (intensity, wavelength, polarization, phase, etc.) which gives rise to a change in the

Fiber Sensors

Polarization of Light Light can be represented as a wave that oscillates horizontally and vertically. Fiber Sensors almost always use LEDs as the light source. The

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What is the sensing range of a fiber optic sensor?

The sensing range of a fiber optic sensor varies depending on the specific sensor and its configuration, but it can reach up to 2000 mm in transmitted light operation and up to 1200 mm in one

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Physics and applications of Raman distributed optical fiber sensing ...

This paper review recent advances in Raman distributed optical fiber sensing in terms of temperature measurement accuracy, spatial resolution, dual-parameters and applications.

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Sensing distance of a fiber optic reflective cable when used with a ...

Yes, a fiber optic cable can effectively be used with a reflector. The 92-39 reflector is recommended (or other micro-cube reflectors). The sensing distance will increase and the operation

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Specifying Fiber Optic Sensors

Fiber optic sensors typically include two devices that must be specified, the amplifier and the fiber optic cable. The amplifier is sometimes referred to as the electronics or photoelectric amplifier.

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