

Function of e3x Fiber Optic Sensor

Article Overview

The E3X series fiber optic sensors from Omron are high-performance, easy-to-use sensors designed for precise object detection with advanced stabilization and maintenance-free operation.

Overview

The E3X series includes models such as E3X-HD, E3X-DA-S, and E3X-NA41, offering a range of fiber optic sensing solutions for industrial automation. These sensors are designed to detect objects with high accuracy, including low-reflective or large workpieces, and are suitable for applications requiring fast response times and reliable operation in challenging environments .

Key Features

- o Smart Power Control: Automatically compensates for light reduction due to LED aging or dirt on the fiber, ensuring stable detection without manual adjustment .
- o GIGA RAY II Technology: Provides high detection power for large or low-reflective objects, improving reliability over conventional sensors .
- o Smart Tuning: Simplifies setup by automatically adjusting incident light levels and thresholds with minimal operator skill required .
- o Flexible Fiber Options: Some models use multi-core flexible fibers that can bend without reducing light intensity, allowing versatile installation .
- o Maintenance-Free Operation: Designed to withstand environmental changes such as temperature fluctuations and dust, reducing downtime .
- o Open Network Support: Certain models allow connection of multiple units (up to 16-30) and remote configuration, reducing wiring and setup time .

Technical Specifications

- o Power Supply: 12-24 VDC $\pm 10\%$, with low ripple .
- o Output Types: PNP or NPN, with options for Dark-ON or Light-ON operation .
- o Response Time: As fast as 0.2 ms for certain models, suitable for high-speed detection .
- o Protection Rating: IP50 to IP66 depending on the model, ensuring durability in industrial environments .
- o Display and Adjustment: Large, easy-to-read displays for incident light levels, with visual indicators for alignment and stable operation .
- o Timer and Counter Functions: Some amplifiers include ON/OFF delay, one-shot timers, and up/down counters for advanced automation tasks .

Applications

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The E3X series is ideal for:

- o Object detection in assembly lines
- o Monitoring low-reflective materials like black rubber
- o High-speed counting and positioning tasks
- o Environments with dust, temperature changes, or other challenging conditions

Installation and Operation

- o Mounting: Rail or panel mounting depending on the model
- o Fiber Connection: Compatible with E32-series fiber cables
- o Setup: Simple one-touch or automatic tuning for optimal detection
- o Indicators: Light reception and stable operation indicators provide real-time feedback on sensor performance

Summary

The Omron E3X series fiber optic sensors combine high detection accuracy, smart stabilization, and flexible installation options. They are particularly suited for industrial automation applications requiring reliable, maintenance-free operation and fast response times. Advanced features like Smart Power Control, Smart Tuning, and multi-unit network support make them a versatile choice for modern manufacturing environments .

Mutual interference prevention on the E3X-HD Series does function among the E3X-DA-S and E3X-MDA Fiber Amplifier Units. The

The flashing function of the E3X-Nj will be activated. Therefore, ---adjust the optical axes so that the tip of the emitting fiber will be lit.

The E3X-DA-N is smart, too, with built-in auto-teach functions for faster setup and self-diagnostics that automatically correct for LED

The communications function and mutual interference prevention function are disabled when the detection mode is

Fiber-Optic Photoelectric Sensor E3X High Performance Amplifier Has Fast Response Time, Longer Sensing Distance and Self

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Indicates a potentially hazardous situation which, if not avoided, May result in minor or moderate injury or in property damage. Do not

With this function, the E3X checks changes in environment conditions (especially a change in the ambient temperature) and self

Download the instruction sheet for the Omron E3X-HD -2 Series Smart Fiber Sensor. Learn about features, specifications, and how

Smart Fiber Sensor Surprisingly Stable Detection with Your Finger tip. Exceptionally easy operation and stabilizing technology

APC can be used always on for E3X-HD. The GIGA RAY, which is described below, widely reduces the load with a low-power

Set the mode selector of the E3X-N to TEACH. The flashing function of E3X-N will be activated when the optical axis of the fiber

E3X-NL Utilization lightwave technology has inno-vated glossiness detection. OMRON's glossy object sensor can discriminate a

The E3X-HD -2 Series Smart Fiber Sensor is a versatile device designed to detect the presence or absence of objects. The sensor

Page 10 E3X-N E3X-N J OPTICAL AXIS ADJUSTMENT (FLASHING FUNCTION) This function can be

Our E3X-ZV is equipped with functions for reliable use in a wide range of equipment. Microscopic object's

Introduction to the E3XHD Fiber-optic Amplifier, providing an overview and guidance for

Web: <https://www.morwarreconst.co.za>

