EtherCAT Fiber Optic Switch



Overview

The EtherCAT-capable CU1521 for Industrial Fast Ethernet/100 Mbaud serves as media converter from optical fibre to copper and vice versa.

Key Takeaways

EtherCAT fiber optic switches and media converters enable high-speed, long-distance, and interference-resistant EtherCAT communication over optical fiber networks. OverviewEtherCAT fiber optic devices are used to extend EtherCAT networks beyond the limitations of copper cabling, providing long-distance communication, high immunity to electromagnetic interference (EMI), and support for complex topologies such as star or redundant networks. These devices include fiber-optic junctions, media converters, and couplers, which convert signals between copper and fiber or between different fiber types.

Key Devices and Features1. EK1521 1-Port EtherCAT Fiber-Optic Junction (Beckhoff)Supports multi-mode fiber with SC duplex connectors. Enables EtherCAT star topologies and modular star hubs.

Converts 100BASE-TX to 100BASE-FX in combination with an EtherCAT Coupler like EK1100. Supports distances up to 2 km with multi-mode fiber. Can be used in redundant optical fiber systems for high reliability.

2. CU1521 / CU1561 EtherCAT Media ConvertersCU1521: Converts between copper and multimode or single-mode fiber, supporting long-distance links. CU1561: Converts between copper and plastic optical fiber (POF), ideal for easy field installation.

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Operates bidirectionally and collision-free with constant delay. Supports fast link control and fault-tolerant EtherCAT strand closure. Configurable via a switch for Link Loss Forwarding and normal Ethernet operation.

3. ECAT-2511 Series (ICP DAS)Converts EtherCAT signals to single-mode fiber while reshaping signals to compensate for distortion. Provides bus isolation to prevent errors from wire shorts or disturbances.

Enables secure data transmission and reduces susceptibility to EMI/RFI interference. Allows cost-efficient fiber utilization, potentially doubling the use of existing fiber infrastructure. 4.

EK1501 EtherCAT CouplerWorks with multi-mode fiber and supports ID switching for network configuration. Often used in combination with fiber-optic junctions to extend EtherCAT networks.

Applications

Industrial automation: Connecting remote EtherCAT devices over long distances. High-EMC environments: Fiber optics reduce susceptibility to electrical noise. Redundant networks: Ensures continuous operation in critical systems.

Rotating machinery: Fiber-optic slip rings in wind turbines or motors. Flexible topologies: Star, line, or ring configurations for complex installations. AdvantagesLong-distance communication: Up to several kilometers depending on fiber type.

High immunity to interference: Ideal for industrial environments. Bidirectional and collision-free operation: Maintains EtherCAT real-time performance. Redundancy support: Enhances network reliability.

Flexible installation: Supports copper-to-fiber conversion and various fiber types. EtherCAT fiber optic switches and media converters are essential for extending EtherCAT networks in industrial settings, ensuring reliable, high-speed communication over long distances while maintaining real-time performance and network integrity.

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Article Content

EK1521 | 1-port EtherCAT fiber-optic junction | Beckhoff Worldwide

The EK1521 1-port EtherCAT junction with multi-mode fiber-optic connection can be used in an EtherCAT Terminal segment at any position between EtherCAT Terminals and enables configuration

EtherCAT Media Converter CU1521, CU1561

The EtherCAT-capable CU1521 for Industrial Fast Ethernet/100 Mbaud serves as media converter from optical fibre to copper and vice versa. The CU1521 is

EtherCAT Technology Group | EtherCAT Media Converter CU1521,

The EtherCAT-capable CU1521 for Industrial Fast Ethernet/100 Mbaud serves as media converter from optical fibre to copper and vice versa. The CU1521 is suitable for multimode, the CU1521-0010 for

Media converters for Ethernet networks

For high-level immunity to interference and long transmission ranges in industrial applications, media converters transparently convert Ethernet data to fiber optics.

EK1501 | BECKHOFF | EtherCAT Coupler with ID

EtherCAT Coupler with ID switch, multimode fiber optic Task within EtherCAT system : coupling of EtherCAT Terminals (ELxxxx) to 100BASE-FX EtherCAT

CU1521 | EtherCAT media converter fibre optic

The EtherCAT-capable CU1521 for Industrial Fast Ethernet/100 Mbaud serves as media converter from optical fibre to copper and vice versa. The CU1521 is suitable for multimode, the CU1521-0010 for

EK1501-0100 | BECKHOFF | EtherCAT Coupler, media

EtherCAT Coupler, media converter (multi-mode fiber optic, RJ45 OUT) with ID switch Task within EtherCAT system : media transition from multi-mode fiber

EK1501 | EtherCAT Coupler with ID switch, fibre optic

The EK1501 has three hexadecimal ID switches for assigning an ID to a group of EtherCAT components. This group can then be located at any position within the EtherCAT network. Variable

ECAT-2511-A

They are designed not only to convert EtherCAT signals to optical signals on a fiber optic cable, to reshape the EtherCAT signal to compensate for distortion, but to

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Structured Cabling Solutions

ICC is a structured cabling solutions manufacturer of copper & fiber optic connectivity products for commercial & residential applications.

Cabletron 6H123-50 Smart Switch 6000 Ethernet Module

Cabletron Smart Switch 6000 6H123-50 Ethernet Module FE-100FX Fiber Optic The Cabletron Systems 6H123-50 is a chassis-based Ethernet switching module designed for the Smart Switch 6000

Fiber 4K30 HDMI+USB KVM-Extender over IP (max.

Works Perfectly with Ethernet switch With the capability to support up to 16 pairs of transmitter (TX) and receiver (RX) devices via a single Gigabit Ethernet switch,

SFP+, XFP, QSFP+, DAC Twinax Cable 10Gtek Transceivers Co., Ltd

Transceivers SFP+ transceiver is a standardized form factor for fiber optic and is used in datacom and telecom optical links, offering a smaller footprint and lower power consumption than XFP

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What is Ethernet?

3. 10 - Gigabit Ethernet Speed: 10 Gbps Media: CAT6a, CAT7, and fiber optic cables Supports long distances (up to 10 km with fiber) Widely used in data centers and enterprise backbones 4. Switch

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