Fiber optic cable 485



Overview

PSI-MOS Serial to Fiber Converters transparently connect RS232, RS422 and RS485 devices to fiber optic cable.

Key Takeaways

Fiber optic cables transmit data as light for long distances with high noise immunity, RS-485 wires carry serial electrical signals over shorter distances, and network cables (Ethernet) handle high-speed digital data in local networks. RS-485 WireRS-485 is a serial communication standard commonly used in industrial automation for protocols like Modbus, BACnet MS/TP, and CANopen. RS-485 cables are twisted-pair wires designed for differential signaling, which reduces noise and allows reliable communication over distances up to 1,200 meters (4,000 feet) at speeds up to 100 kbps.

High-quality RS-485 cables, such as those from Belden, feature low capacitance and enhanced noise protection, making them suitable for harsh industrial environments and improving safety in case of fire.

Fiber Optic Cable

Fiber optic cables transmit data as pulses of light, offering long-distance communication and immunity to electromagnetic interference (EMI) and radio-frequency interference (RFI). They are ideal for connecting devices in environments with high electrical noise or over distances that exceed the limits of copper cables. Fiber can be multimode (shorter distances, higher bandwidth) or singlemode (long distances, lower attenuation).

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Using fiber, RS-485 signals can be extended up to 27 km over multimode fiber or 45 km over singlemode fiber with converters.

Serial-to-

Fiber Converters

To bridge RS-485 devices with fiber optic networks, serial-to-fiber converters are used. These devices convert electrical RS-485 signals into optical signals, enabling long-distance, noise-immune communication. Examples include the PSI-MOS-RS485W2/FO and DL485 systems, which support various industrial protocols and network topologies such as linear, star, and tree structures.

Converters often include diagnostic LEDs and alarm contacts to monitor network health and ensure reliable operation.

Network Cable

Network cables, such as Ethernet (Cat5e, Cat6, Cat6a), are used for high-speed digital communication in local area networks (LANs). Unlike RS-485, which is typically half-duplex and slower, Ethernet supports full-duplex communication at speeds from 100 Mbps to 10 Gbps over copper twisted-pair cables. Fiber optic Ethernet cables are also available for longer distances and EMI-prone environments.

SummaryRS-485 wire: Short to medium distances, industrial serial communication, differential signaling, noise-resistant. Fiber optic cable: Long distances, immune to EMI/RFI, supports RS-485 via converters, suitable for industrial and high-noise environments. Network cable: High-speed LAN communication, full-duplex, supports Ethernet protocols, available in copper and fiber variants.

Using serial-to-fiber converters, RS-485 devices can communicate over fiber optic networks, combining the reliability of serial communication with the long-distance and noise immunity benefits of fiber optics.

Article Content

Serial to Fiber Media Converters | Perle

PSI-MOS Serial to Fiber Converters transparently connect RS232, RS422 and RS485 devices to fiber optic cable. By transmitting data over optical fiber, these

RS232 / RS485 / RS422 to Fiber Optic Converters

Rugged industrial-grade RS232 / RS485 / RS422 to fiber optic converter. Transmits serial data (RS232, RS485 or RS422) over long distances through fiber links (multi-mode: 3 miles or 5 km).

Siemens Simatic NET Profibus 6GK1503-2CB00 OLM/G11 V4.0

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6GK1503-2CB00 PROFIBUS OLM/G11 V4.0 optical link module with 1 RS 485 and 1 glass fiber optic cable interface (2 BFOC sockets), with signaling contact and test port

Datasheet Archive: FIBER OPTIC CABLE TWELVE-WIRE

View results and find fiber optic cable twelve-wire sequence datasheets and circuit and application notes in pdf format.

What Are the Main Types of Data Cables? A Practical Guide

Fiber Optic Cables: Speed, Distance, and Immunity Fiber optics use light instead of electricity, eliminating electromagnetic interference (EMI), ground loops, and distance-related signal

SEL Cables

Fiber-Optic Cable Replacements for Metallic Data Cables Fiber-optic cables that allow serial communications over distances greater than 100 feet without risk of electromagnetic interference

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Fiber Optic Converters: A Beginner''s Guide | RLH

Fiber optics are an efficient, reliable, low-energy way to transmit copper-based signals over long distances while providing immunity to electrically noisy

Comprehensive Guide on Selecting the Right Communication Cable

For medium distances (up to 100m) → Ethernet Cat6 or RS-485 is preferred. For long distances (>100m) → Fiber optic cables are recommended to eliminate EMI and maintain high data

Fiber Optic Cable Pulling Machine

Page 4 of fiber optic cable pulling machine products. Find quality fiber optic cable pulling machine at wholesale prices from verified manufacturers on Alibaba .

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WuT data sheet: Universal FO Interface RS232/RS422/RS485

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Serial RS232/422/485 interface for singlemode and multimode glass fiber optics. Industry version in DIN rail housing with 24V supply.

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3.28 ft Fiber Optic Network Cable for Network Device, Patch Panel, Hub, Switch, Media Converter, Router - First End: 2 x LC Network - Male - Second End: 2 x LC Network - Male - Patch Cable -

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