485 Single-Mode Fiber Optic Converter

Overview

Rugged industrial-grade RS232 / RS485 / RS422 to fiber optic converter. Transmits serial data (RS232, RS485 or RS422) over long distances through fiber links (single-mode: 25 miles or 40 km).

Key Takeaways

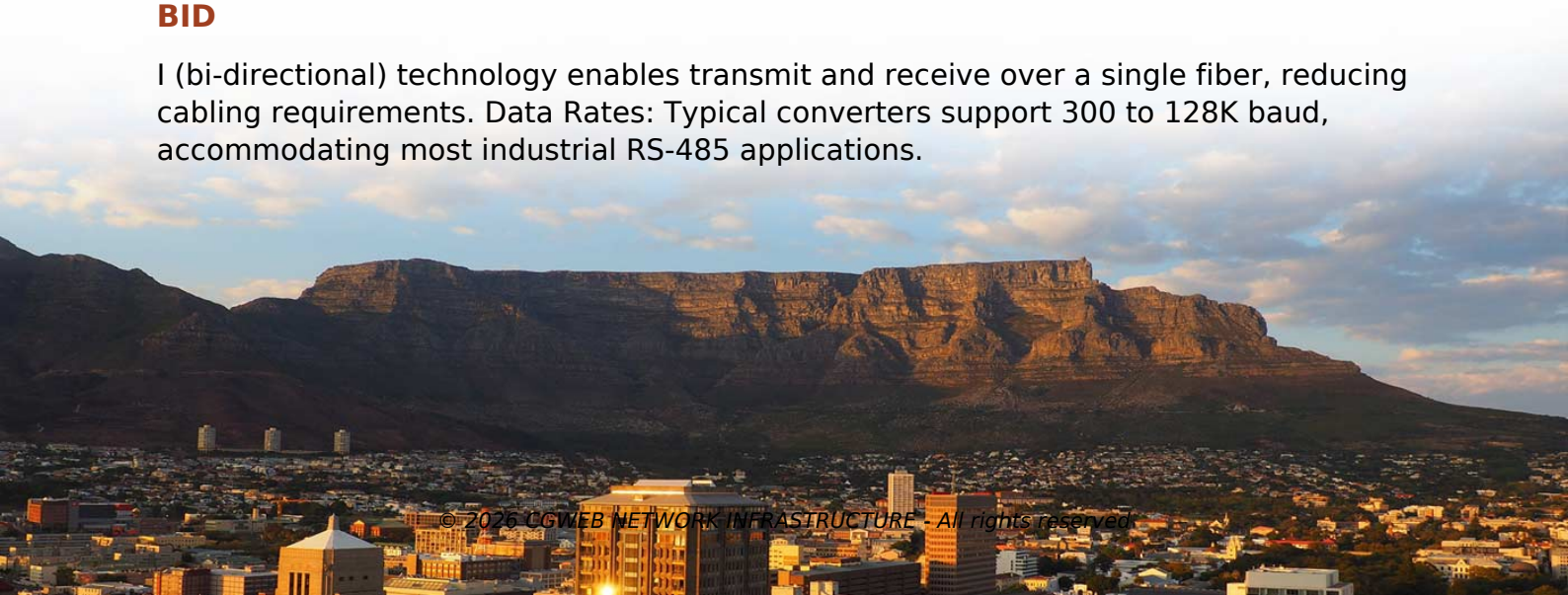
RS-485 to single-mode fiber optic converters allow long-distance, reliable serial communication by converting RS-485 signals into optical signals over single-mode fiber. OverviewRS-485 to single-mode fiber optic converters are industrial-grade devices designed to extend the communication range of RS-485 networks beyond the limitations of copper cabling. They convert half-duplex RS-485 signals into optical signals transmitted over single-mode fiber, providing electrical isolation, EMI/RFI immunity, and long-distance connectivity.

Key Features

Distance Extension: Single-mode fiber allows RS-485 signals to travel up to 20 km (12. 4 miles) or more, depending on the model. Connector Types: Common fiber connectors include SC, ST, and SC-BIDI.

BID

I (bi-directional) technology enables transmit and receive over a single fiber, reducing cabling requirements. Data Rates: Typical converters support 300 to 128K baud, accommodating most industrial RS-485 applications.



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Plug-and-

Play Operation: Many converters feature auto data direction control, eliminating the need for software drivers and simplifying installation. Rugged Design: Converters are often housed in steel or ABS enclosures, capable of withstanding harsh industrial environments and wide temperature ranges (-40°C to 85°C),. Fault Detection: Some models include LED indicators and potential-free contacts to signal errors or system status, similar to a traffic light system.

ApplicationsRS-485 to single-mode fiber converters are widely used in: Industrial automation and control systemsFieldbus networks such as MODBUS, MODNET-1/SFB, BIT-BUS, and SAIA-S-BUSLong-distance serial communication where copper cabling is impracticalEnvironments with high electrical noise, where fiber optics provide immunity to interference. Example ModelsSER-FIBER-SM: Supports RS-485, RS-422, and RS-232, extends signals up to 20 km, with SC or ST connectors, and auto data direction control. FOSTCDRi-Sx (Advantech): Isolated converter supporting multi-drop mode, up to 15 km, SC or ST connectors, and EMI/RFI immunity.

DL485 (EKS): RS-485 2-wire to single-mode fiber, supports BIDI technology, fault detection, and various fieldbus protocols. SummaryRS-485 to single-mode fiber optic converters are essential for extending serial communication over long distances, providing reliable, interference-free data transfer, and supporting industrial automation and fieldbus systems. They offer flexibility in connector types, robust industrial design, and features like plug-and-play operation and fault monitoring, making them suitable for demanding environments.

Article Content

TCF-142-S-SC

Moxa''s industrial-grade serial-to-fiber optic converters can convert RS-232/422/485 to optical fiber, which provides users with an easy and reliable way to

Serial-to-Fiber Converters

Moxa''s industrial-grade serial-to-fiber optic converters can convert RS-232/422/485 to optical fiber, which provides users with an easy and reliable way to

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 (single-mode: 25 miles or 40 km).

RS-485 to Fiber Optic Converter Datasheet

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It supports transmission of one bi-directional data channel over one multimode or single mode optical fiber. RS232, RS422 and RS485 standards are fully supported.

RS485 2-wire to singlemode converter, DL485

The DL485 is a RS485 2-wire to singlemode fiber optic converter for point-to-point connections. For adapter you can make the choice between ST, SC or SC-BIDI.

MODEL277S

MODEL277S converts RS-232/485/422 signal to singlemode fiber, that allows 20km communication through fiber, 9-36VDC, SC/ST optional.

RS-485 to Singlemode Fiber Optic Converter | rdc485SFO

Our RS-485 to Singlemode Fiber Optic Converter (rdc485SFO) robustly connects your panel mounted RS-485 devices to fiber optic cables up to 20km long, providing the ultimate in isolation, surge, and

RS-485/Modbus Fiber Optic Converter

It supports transmission of one bi-directional data channel over one multimode or singlemode optical fiber. RS232, RS422 and RS485 (2 wire & 4 wire) standards

RS232/RS485/RS422 to SM/SC Fiber Optic Converter (Industrial ...

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OOBM Console Servers, 5G & LTE Routers, Fiber Media Converters, Ethernet Extenders, Serial to Ethernet Terminal Servers, Device Servers, and Industrial Switches

SEL-2829 Single-Mode Fiber-Optic Transceiver/Modem

Single-Mode Fiber-Optic Transceiver/Modem Improve safety, signal integrity, and reliability by using two optical fibers instead of wire to transfer bidirectional serial data using single-mode optical fiber. Apply

Industrial and Building Automation solutions

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Our Fiber Optics converter can communicate on protocols/physical layers like Lonworks CANBus / Device net RS- 232 RS - 485 We supports single mode or multi mode converter and point to point or

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Small Form-factor Pluggable

Small Form-factor Pluggable Small Form-factor Pluggable connected to a pair of fiber-optic cables Small Form-factor Pluggable (SFP) is a compact, hot-pluggable network interface module format used for

What is RS-485? Wiring, Communication and Difference

For extremely long distances, optical fiber can be used as the transmission medium with photoelectric converters at the transmitter and receiver. Multimode fiber typically supports 5~10

RS-485 to Singlemode Fiber Optic Converter | rdc485SFO

Our fiber optic converter connects your RS-485 devices to fiber optic cables up to 20km long. Multiple build options. 3 years warranty.

Moxa TCF-142-S-ST RS-232/422/485 to Fiber Optic Converter, ST Single ...

Moxa''s industrial-grade serial-to-fiber optic converters can convert RS-232/422/485 to optical fiber, which provides users with an easy and reliable way to communicate with their serial devices.

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