



Gigabit Fiber Optic Transceiver Single-Mode Industrial Grade

Article Overview

Industrial single-mode Gigabit SFP transceivers provide reliable, long-distance fiber connectivity with hot-pluggable modules capable of operating in extreme temperatures from -40°C to 85°C.

Key Features

Industrial-grade durability: These transceivers are designed with rugged metal housings to withstand vibration, shock, and harsh environmental conditions, making them suitable for factory automation, rail systems, marine, oil and gas, and mining applications (Intellinet, Eaton, Lanshack) . **Single-mode fiber support:** They operate over single-mode fiber (SMF) with typical wavelengths of 1310 nm or 1550 nm, supporting distances from 10 km up to 110 km depending on the model and wavelength used . **Gigabit performance:** These modules support 1000Base-LX/LH or 1000Base-EX standards, providing data rates up to 1.25 Gbps, ensuring high-speed connectivity for industrial networks . **Hot-pluggable SFP form factor:** The Small Form-Factor Pluggable (SFP) design allows installation or removal without powering down the network device, enabling flexible network upgrades and maintenance . **Digital diagnostics monitoring (DDM/DOM):** Many industrial SFPs include real-time monitoring of optical output/input power, temperature, laser bias current, and supply voltage, which helps maintain network reliability and performance . **Wide temperature and humidity tolerance:** Industrial SFPs operate reliably in extreme temperatures from -40°C to 85°C (-40°F to 185°F) and high-humidity environments, ensuring consistent performance in challenging conditions .

Compatibility

These transceivers are Multi-Source Agreement (MSA) compliant, making them compatible with a wide range of network switches and routers from vendors such as Cisco, Intellinet, ZyXEL, TP-Link, Ubiquiti, D-Link, HP, Dell, and more . Industrial variants like Cisco GLC-BX-D-I or GLC-BX40-D-I are specifically rated for harsh environments and extended temperature ranges .

Applications

- o Industrial automation and control networks
- o Rail and intelligent transportation systems (ITS)
- o Marine and offshore communication networks
- o Oil, gas, and mining operations
- o Long-distance enterprise fiber links

Summary



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Industrial single-mode Gigabit SFP transceivers combine high-speed fiber connectivity, rugged durability, hot-pluggable convenience, and real-time diagnostics. They are ideal for environments requiring long-distance, reliable, and flexible fiber optic connections, capable of operating under extreme temperatures and harsh conditions while maintaining compatibility with a wide range of network equipment .

OREI 1G SFP Optical Transceiver Module - 1000BASE Single Mode Fiber SFP, 1310nm, Up to 40km, LC Duplex Connector, Gigabit

Compatibility in your network is everything, and this industrial SFP Transceiver Module delivers. Use it with any Intellinet SFP

A gigabit SFP module is a hot-pluggable transceiver designed to deliver 1Gbps Ethernet connectivity over fiber or copper, and it

CTC Union's industrial SFP Transceivers are highly reliable, for serial optical data communications

From the brand H!Fiber offers one-stop Datacenter solution and products, including SFP Transceivers,

For high-level immunity to interference and long transmission ranges in industrial applications, media

SFP Modules Industrial-Grade SFP Modules for Seamless Connectivity Small Form Factor Pluggable (SFP) transceiver modules

Perle SFP Optical Transceivers are hot-swappable, compact media connectors that provide instant fiber connectivity for your

This guide dives deep into the SFP-1G-SX transceiver, the industry-standard solution for 1 Gigabit short-range fiber

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This industrial SFP module works with standard SFP slots found on industrial switches and fiber media

1 Gigabit Singlemode SFP Transceivers Our 1 Gigabit Singlemode SFP Transceivers offer high

SFP-25G-SR-S Transceivers SFP-25G-SR-S transceiver are an ideal solution for those same data center applications that require



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Buy HANUTECH 1.25G Gigabit Ethernet Fiber Media Converters with SFP LC Single Core Transceiver

This transceiver module is fully hot-pluggable, so you can install it without a potentially costly network shutdown or device reboot.

Single 3.3V Power supply and TTL Logic Interface 2XBi-directional transceivers in 1 SFP+ transceiver package Class 1 FDA and

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