Industrial Switches with Dual Fibers

Overview

Industrial Ethernet Switches Available in all-copper, all-fiber, or mixed-port configurations, these switches can be stacked and used for Industrial Switch.

Key Takeaways

Industrial Ethernet switches with dual fiber ports provide reliable, long-distance, and interference-resistant connectivity for harsh industrial environments.Overview

Industrial switches with dual fiber ports are designed to combine copper Ethernet connectivity with fiber-optic uplinks, enabling stable communication over long distances and in electrically noisy environments. These switches are suitable for factory automation, energy systems, transportation networks, surveillance backbones, and outdoor deployments .

Key Features
• Port Configuration: Typically include multiple RJ45 copper ports (10/100/1000 Mbps) for connecting PLCs, HMIs, industrial PCs, and gateways, along with dual fiber ports for uplinks or inter-cabinet links .

• Fiber Types: Support for single-mode or multi-mode fiber, with SC, LC, ST, or FC connectors. Dual fiber ports allow simultaneous transmission and reception over separate fibers, enhancing reliability .

• Management Options: Available in unmanaged, managed, or fully managed models, allowing flexibility from simple plug-and-play setups to advanced network routing and monitoring .

• Performance: Options range from Fast Ethernet (100 Mbps) to Gigabit (1000 Mbps) and even 10G for high-speed industrial networks .

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• Environmental Resilience: Designed for harsh conditions with IP40/IP67 enclosures, fanless operation, wide temperature ranges (-40℃ to 85℃), surge protection, and enhanced EMC performance .

• Power Supply: Many models support redundant DC power inputs (e.g., 9–52V) to ensure continuous operation in critical industrial applications .
Deployment Scenarios
• Edge Aggregation: Dual fiber ports simplify uplinks between cabinets or across noisy plant areas, supporting star or daisy-chain topologies .

• Long-Distance Connectivity: Single-mode dual fiber ports can achieve transmission distances up to 100 km, making them ideal for large industrial campuses or outdoor networks .

• Outdoor and Harsh Environments: Ruggedized switches with IP-rated enclosures and lightning protection are suitable for outdoor installations, intelligent traffic systems, and safe city applications .
Example Models
• NEU1042F: Unmanaged Fast Ethernet switch with 4 copper ports and 2 fiber ports, fanless IP40 metal housing, enhanced EMC, and wide-range DC input for 24/7 operation .

• NuFiber NF512G-SC20: Gigabit unmanaged switch with 2 RJ45 ports and 1 SC dual fiber port, 20 km single-mode transmission, IP40 protection, redundant DC power, and designed for harsh outdoor applications .
Conclusion

Industrial switches with dual fiber ports provide a robust solution for combining copper access with long-distance fiber connectivity, ensuring reliable network performance in harsh industrial and outdoor environments. They offer flexibility in management, fiber type, and deployment topology, making them suitable for a wide range of industrial automation, energy, and transportation applications .

Article Content

Industrial Ethernet Switches

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10/100M 2-port industrial Ethernet switch

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PoE Industrial Ethernet Switches Compact DIN Rail PoE Switches In addition to transmitting network data, a PoE Switch has a built

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Ethernet Switches

Moxa provides a wide range of industrial Ethernet switches that feature industrial-grade reliability, network redundancy, strengthened

A Complete Guide to Dual Fiber Ethernet Industrial Switch ...

Understanding the different types of dual fiber industrial switches is essential for selecting the right solution based on performance,

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