

Using industrial-grade switches



AI Overview

Industrial-grade switches require careful selection, installation, and maintenance to ensure reliable network performance in harsh environments.

Selection and Planning

- Choose the Right Type:** Decide between managed and unmanaged switches based on network complexity. Managed switches offer VLANs, QoS, and advanced monitoring, while unmanaged switches are plug-and-play for simpler setups.
- Assess Network Requirements:** Determine bandwidth, latency, and scalability needs, and plan for future expansion to avoid costly upgrades.
- Compliance and Standards:** Ensure switches meet industrial standards such as IEEE 1613, EN 50121, EN 50155, or IEC 61850 for reliability in industrial environments.
- Environmental Considerations**
 - Temperature and Humidity:** Select switches rated for extreme temperatures (-40°C to 75°C) and high humidity.
 - Protection Against EMI and Vibration:** Use ruggedized enclosures and secure mounting (DIN rails or shock-resistant brackets) to mitigate vibrations and electromagnetic interference.
 - Ingress Protection:** Consider IP-rated enclosures (IP40 or higher) to protect against dust and water ingress.

Installation Best Practices

- Secure Mounting:** Properly mount switches to prevent disconnections or port damage during operation.
- Cable Management:** Use shielded industrial-grade Ethernet cables (Cat6/Cat6a) and route them away from power lines or moving parts to maintain signal integrity.
- Redundant Power Supplies:** Utilize dual power inputs to ensure continuous operation in case of power failure.

Network Reliability and Security

- Redundancy Protocols:** Implement Spanning Tree Protocol (STP) or Ring protocols for failover support and fast recovery from network failures.

Article Content

How to Choose and Deploy the Right Industrial Ethernet Switch

Antaira Technologies, a global leader in industrial networking solutions, presents this engineering guide to help plant managers, systems integrators and OT engineers specify, deploy

How to pick the right Industrial Ethernet Switch for

Industrial Ethernet switches are comprised of managed and unmanaged switches with Gigabit, PoE, and various industry certifications. Featured industrial-grade

Every Switch Type You Need to Know for Industrial

7 Common Industrial Switch Types in Electronics Switches come in a variety of shapes, sizes, and current ratings. An industrial-grade switch can

How to Pick the Right Industrial Ethernet Switch:

When choosing a switch for an industrial environment, one of the most important decisions to make is whether to use a managed or unmanaged

Industrial Switch vs Normal Switch, What's the Difference

An industrial switch, also called a hardened switch, is a type of network switch designed for use in industrial settings, it still belongs to the network switch, but

Why industrial ethernet switches? Putting the “purpose”

The first blog in this series explains the use of industrial ethernet switches in industrial environments.

Industrial Unmanaged Switches Explained: Reliability, Scale, and ...

Unmanaged switches play a critical role in OT networks. Learn how they affect reliability, scalability, troubleshooting, and cybersecurity on the plant floor.

Industrial Switch: Understanding Industrial Ethernet

An industrial Ethernet switch is a type of network switch designed to operate in harsh industrial environments. Oil rigs, railways, manufacturing plants, and

Guide to implementing Industrial Grade Switches

In this blog post, we will walk you through the key steps and considerations involved in successfully implementing industrial grade switches to

Application differences between industrial-grade switches and ...

Industrial-grade switches effectively address various challenges by using special materials, strengthening heat dissipation design, integrating multiple industrial communication protocols, and

Distinguishing Industrial Switches from Regular Switches: An In

Distinguishing Industrial Switches from Regular Switches: An In-depth Analysis In the rapid development of Industrial Internet of Things (IIoT), the stability and security of the network

Five characteristics of highly capable industrial switches

Edge-compute capable Edge computing is highly useful in industrial switches as they are closest to connected assets and carry their communications

What Makes a Network Switch "Industrial Grade"?

In this article, we will explore the important factors that make a network switch "industrial grade," its benefits and why businesses increasingly prefer them for

Industrial vs Normal Switch: Key Differences Explained

Discover the key differences between industrial and normal switches. Learn which one suits your needs for efficiency and durability in various applications.

Types of Industrial Grade Network Switches

Learn about L2 and L3 Industrial Grade Network Switches, PoE vs non-PoE types, and how to choose the right rugged switch for your industrial setup.

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What is an industrial switch? And what are the differences between it ...

July 18, 2025 What is an industrial switch? And what are the differences between it and an ordinary switch? In modern factories, robotic arms precisely grasp components, AGV trolleys shuttle along

Industrial Ethernet Switches

Built to endure the demanding conditions of factories, transportation infrastructure, grid substations, and other harsh environments, Cisco Industrial Ethernet switches come in a wide range of form factors to

Understanding the Role of an Industrial Network Switch

Explore the essential role of industrial network switches in modern infrastructure. Discover unmanaged and managed Ethernet switch solutions,

The difference between industrial-grade switches and ordinary switches

December 9, 2024 The difference between industrial-grade switches and ordinary switches In the application of industrial IoT, network devices play a crucial role, and industrial switches, as the core

Industrial Grade Ethernet Switches -

In this article, we explore what industrial grade Ethernet switches are, unique benefits to their use, how they differ from regular industrial grade

Industrial Switches: Everything You Need to Know

Using an industrial switch in these conditions helps to reduce maintenance costs and unexpected downtime. Grid Connect has everything you need to stay

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A Complete Guide to Industrial Network Switches for Industries

This blog is your comprehensive guide to understanding how industrial switches work, the difference between managed and unmanaged switches, how Ethernet media converters fit into the

Comprehensive Analysis of Industrial Switches

The core value of industrial switches lies in their three key technical characteristics—environmental adaptability, reliability, and scalability—which directly determine their

Industrial switches demystified: Types, materials used and design ...

Industrial switches form a crucial backbone in modern manufacturing, automation, and large-scale industrial networks. These switches are engineered to operate reliably under harsh

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