Industrial-grade network switches and gateways



Overview

Advantech provides complete industrial communication products from industrial switches, fiber and PoE media converters, to industrial gateways, 5G, LTE and LAN cellular routers.

Key Takeaways

Industrial-grade network switches and gateways are rugged, high-performance devices designed for reliable connectivity in harsh environments, supporting Layer 2/3 switching, PoE, protocol conversion, and secure remote access.

Key Features

Rugged Design and Environmental Tolerance Industrial switches and gateways are built to withstand extreme temperatures (often -40°C to +75°C), vibration, shock, and humidity. Many models feature DIN-rail or rackmount installation and M12 connectors for secure cabling in industrial settings. Layer 2/3 Switching and Routing These devices provide both Layer 2 (switching) and Layer 3 (routing) capabilities, enabling efficient traffic management, VLAN segmentation, and inter-network routing.

Managed switches allow configuration, monitoring, and redundancy protocols like RSTP for high availability. Power over Ethernet (PoE) Industrial switches often support PoE standards (IEEE 802. 3af, 802.

3at, and 802. 3bt), delivering up to 90W per port. This allows powering devices such as IP cameras, wireless access points, and IoT sensors without separate power lines.

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Protocol Support and Integration Industrial gateways and switches support multiple industrial protocols, including Modbus, PROFINET, EtherCAT, and IEC standards (EN50155, IEC61850-3). Gateways provide protocol conversion and edge computing capabilities for IIoT integration. Wireless and Cellular Connectivity Industrial routers and gateways often include 4G/5G cellular, WiFi 6, and VPN support for secure remote access.

They enable fleet management, GPS tracking, and connectivity for mobile or remote sites. Security and Reliability Firewalls, VPNs, and secure management interfaces protect against unauthorized access. Redundant ring topologies and Fabric Attach features ensure continuous uptime and fault-tolerant networks.

Leading Manufacturers and Solutions

Westermo: Offers industrial routers and Layer 3 switches with cellular and DSL connectivity, robust firewalls, and secure remote access for applications like railways and water treatment. Advantech: Provides managed/unmanaged switches, PoE switches, and protocol converters with EN50155 and IEC61850-3 certifications, suitable for mission-critical environments. Maisvch: Supplies Layer 2/3 managed/unmanaged switches, PoE, 10G switches, serial-to-Ethernet converters, and intelligent IoT gateways with edge computing and cloud integration.

Moxa: Offers industrial Ethernet switches with network redundancy, PoE, and EN50155 compliance for rail and transportation applications. Extreme Networks: Delivers rugged Layer 2 switches with PoE, redundant ring technology, and Fabric Attach for automated network provisioning in smart city and industrial IoT deployments. ApplicationsIndustrial-grade switches and gateways are widely used in: Manufacturing and factory automationEnergy and utilities (power grids, substations)Transportation (rail, tunnels, intelligent traffic systems)Oil, gas, and mining operationsSmart cities and IIoT deployments These devices ensure high reliability, secure connectivity, and seamless integration of legacy and modern industrial networks, supporting real-time data exchange and operational efficiency.

Article Content

Industrial Network Routers and Gateways | Westermo

Offering remote access solutions using wireless cellular 2G/3G/4G LTE/5G or DSL broadband technologies and industrial-grade layer 3 routing switches, Westermo

Industrial Networking Products & Communication

Maisvch is a leading manufacturer of industrial networking products, including rugged Ethernet switches, gateways, routers, media converters, serial/fieldbus

Industrial Ethernet Switches

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Our managed Ethernet switches, fiber switches, and router switches provide fast Ethernet and gigabit combo ports as well as numerous network protocols, such

Advantech Industrial Intelligent Connectivity Solutions

Advantech provides complete industrial communication products from industrial switches, fiber and PoE media converters, to industrial gateways, 5G, LTE and LAN cellular routers. We

Ethernet Switches

Ethernet Switches Moxa provides a wide range of industrial Ethernet switches that feature industrial-grade reliability, network redundancy, strengthened security, easy management, and competitive

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.

Industrial Switches (ISW) | Extreme Networks

Extreme Industrial Switches are an excellent choice for industrial environments, including intelligent transportation systems, utilities, and smart cities. Full redundant ring technology creates fault-

Industrial Ethernet Switches

Elevate your industrial operations with an AI-ready, rugged network that offers peak performance, high resilience, advanced security—and that smoothly integrates IT proficiencies into OT environments.

Industrial Ethernet Switches | Gigabit, PoE, Fast Ethernet

Whether you are upgrading factory automation systems, integrating IIoT (Industrial Internet of Things) devices, or connecting remote

Industrial Networking Devices | TE Connectivity

Power your Industrial IoT with TE Connectivity''s leading industrial networking devices. Discover our robust solutions, including industrial switches, routers, and IIoT gateways.

Cisco Networking for Service Providers

Find the scalable network infrastructure and software solutions to address your challenges with Cisco Networking for service providers.

Industrial IoT Networking

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Build a secure industrial IoT network foundation with market-leading Cisco industrial switches, industrial routers, industrial wireless, and industrial compute.

Industrial Ethernet Switches | Gigabit, PoE, Fast Ethernet

Brainboxes offers a comprehensive range of rugged Industrial Ethernet Switches designed to deliver reliable, uninterrupted data connectivity in the most

Industrial Ethernet Switches

Westermo industrial Ethernet switches are designed to deliver reliable and secure communication in harsh and demanding environments. Our industrial Ethernet switches enable the creation of cost

Industrial Ethernet

EN50155 Ethernet Switches L3 Ring Managed Gigabit Ethernet Switch L2+ Ring Managed Gigabit Ethernet Switch Unmanaged Fast Ethernet Switch Industrial Wireless and Cellular Gateway Access

SCALANCE

SCALANCE network components form the basis of communication networks in manufacturing and process automation. Specially designed for use in industrial applications, they fulfill all requirements

ITPro Today, Network Computing, IoT World Today combine

ITPro Today, Network Computing and IoT World Today have combined with TechTarget . The page you are looking for may no longer exist.

Guide to implementing Industrial Grade Switches

Guide to implementing Industrial Grade Switches by Sunil Shinde, Solution Consulting May 26, 2023 We live in an increasingly connected world

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