

Features of Rail-Modified Industrial Switches



Article Overview

Rail-modified industrial switches are designed for high reliability, robust performance, and compliance with railway standards, ensuring uninterrupted, secure, and time-sensitive data transmission in harsh rail environments.

Key Features

1. **Compliance with Railway Standards** Rail-modified switches are typically EN50155-compliant, ensuring suitability for onboard and trackside applications where vibration, shock, electromagnetic interference, and temperature fluctuations are common. They also consider cybersecurity directives like NIS2 and the Cyber Resilience Act (CRA), supporting secure configuration, updates, and predictable operation under critical conditions .
2. **High Reliability and Redundancy** These switches support redundancy protocols such as ERPS and MRP, enabling millisecond-level fault self-healing. This ensures continuous operation of train control, signaling systems, and passenger information networks even during power or network failures .
3. **Robust Mechanical Design** Rail-modified switches feature fanless, vibration-resistant, and shock-proof designs with extended operating temperature ranges (e.g., -40°C to +70°C, with short-term tolerance up to +85°C). M12 push-pull connectors provide secure, interference-free connections suitable for rolling stock and trackside environments .
4. **Modular and Scalable Architecture** Switches like the Kontron KSwitch R20 offer a modular design with 16-28 Ethernet ports, supporting Fast Ethernet to 10GbE. This allows flexible port configuration, scalable bandwidth up to 6Gbps, and integration of Power over Ethernet (PoE) for devices such as cameras,...

Article Content

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FS Industrial Switches Overview

Discover the features of FS industrial switches, including unmanaged din rail industrial switches, managed din rail

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RSP/RSPS/RSPE Series

The RSP Series features hardened, compact managed industrial DIN rail switches with Fast Ethernet and Gigabit speed options.

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Industrial Ethernet Switches | Phoenix Contact

Our Industrial Ethernet Switch portfolio comprises Managed and Unmanaged Switches with Gigabit, PoE,

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Industrial Ethernet Switches | Industrial Network Switch | Perle

Rugged, yet easy to use, Perle has over 734 models of Ethernet switches that feature Industrial Protocol Management support,

Aug 19, 2025

Industrial Switches (ISW) | Extreme Networks

Extreme Industrial Switches are an excellent choice for industrial environments, including intelligent transportation systems, utilities,

Nov 26, 2025

Different Types of Rail Switches And Their Features

Rail switch can be divided into different types as the most important steering system in railway system. In

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DIN Rail & Compact

Layer 2 and Layer 3 options or built-in Single Pair Ethernet (SPE) technology, supporting the transition to future-ready networks. The

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Cisco Industrial Ethernet Switches Demos

DIN-rail switches Understand the capabilities of the versatile Cisco Catalyst IE3100, Catalyst IE3200, Catalyst IE3300, Catalyst

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Cisco DIN Rail Industrial Switches At-a-Glance

Cisco DIN Rail Industrial Switches Build an AI-ready infrastructure With robust, reliable, secure networking and low-latency, high

Jun 10, 2026

Industrial Ethernet Switches | WAGO

Integrated safety features such as short-circuit and overload protection plus galvanic isolation guarantee maximum operational

Nov 17, 2025

How to Select and Use Industrial Ethernet Switches

Compared with traditional commercial Ethernet switches, industrial Ethernet switches need

May 24, 2026

FS Industrial Switches Overview

FS industrial switches can be installed via DIN rail, rack mounted, or wall mounted to suit the needs of fixed industrial

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Managed DIN-Rail Mounted Switches

The IPC2U Group is an international supplier of Managed DIN-Rail Mounted Switches for various industries, when severe operational

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Ethernet Switches

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

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Kontron KSwitch R20

Designed and manufactured in Europe, the KSwitch R20 with robust push-pull M-12

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Hirschmann BOBCAT Next-Generation Managed

Need to secure your growing industrial network and its rising bandwidth needs? Learn more about

Oct 17, 2025

Industrial Ethernet Switches – Simple and effective

Even the quickest technician will be amazed at how cleverly, easily and quickly the Industrial Ethernet switches can be installed in

Nov 08, 2025

Industrial Ethernet Switches: Features, Types, and Selection Guide

Conclusion Industrial Ethernet switches are indispensable in creating robust, efficient, and scalable industrial

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How to Select and Use Industrial Ethernet Switches

Industrial Ethernet switches play a vital role in modern industrial automation and control

Jul 13, 2026

Top 5 Features of Industrial Switches for Industry 4.0

Discover 5 key features of high-performance industrial switches for Industry 4.0—boosting reliability, security, and real

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EN 50155 | Railway Industrial Ethernet Switches | Antaira

Antaira's EN 50155 certified industrial switches are designed to meet the rigorous demands of railway and onboard train applications.

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Features of Rail-Modified Industrial Switches

In this comprehensive guide, we'll delve into the technical features, benefits, and use cases of DIN Rail Ethernet Switches, focusing

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Industrial DIN-Rail Ethernet Switches | WoMaster

WoMaster''s Industrial DIN-Rail Ethernet Switches support Gigabit and fast Ethernet options with copper and fiber connectors. ERPS

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FS DIN Rail Mount Industrial Switches

FS DIN rail-mounted industrial switches feature IP41 dust and waterproof protection. These industrial Ethernet switches ensure

May 16, 2026

Cisco DIN Rail Industrial Switches At-a-Glance

With robust, reliable, secure networking and low-latency, high-bandwidth communications, Cisco® DIN rail industrial switches help

Jan 12, 2026

Types of Rail Switches and Their Functions

Rail switches, also known as railroad switches or points, are crucial components of railway infrastructure

Feb 01, 2026

Rail Insider-C& S: Switch machine technology. Information For Rail ...

The Switchguard products are designed to help railroads address turnout reliability. The Switchguard in-tie machine features

Aug 21, 2025

Hirschmann BXS Switches

Hirschmann BXS Switches Industrial engineers and train builders need a reliable, secure and cost-effective way to provide

May 14, 2026

Cisco DIN Rail Industrial Switches At-a-Glance

Purpose-built for harsh conditions and critical industrial applications, these switches feature industrial-strength

Dec 22, 2025

Cisco Industrial Ethernet 1000 Series Switches

Cisco IE 1000 Series Switches are compact, easy-to-manage DIN-rail switches that deliver secure PoE connectivity in industrial

Contact Us

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