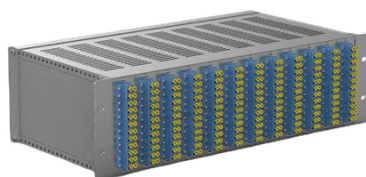


What is the power supply voltage for industrial switches



Overview

How to Choose the Right Power Supply for an Industrial Switch Learn how to choose the right power supply for an industrial switch. Understand input voltage.

Key Takeaways

Industrial switches typically operate at 24V DC for control systems and 48V DC for PoE switches, while industrial switchgear can handle AC voltages up to 1 kV for low-voltage applications. Standard DC Voltages

- 24V DC is the most common voltage for industrial automation and control devices, including programmable logic controllers (PLCs), relays, sensors, and actuators. This voltage is preferred for its balance of safety, efficiency, and compatibility with most industrial sensors and actuators, reducing the risk of electric shock and simplifying maintenance .
- 48V DC is widely used for industrial PoE switches, following IEEE 802.3af and 802.3at standards. This voltage ensures stable operation over long cable runs, provides strong anti-interference capability, and is compatible with most industrial cameras, access points, and control terminals . Some PoE switches can accept 24V DC input and internally boost it to 48V for output, allowing flexibility in environments where standard 48V sources are unavailable .

- Other DC voltages such as 5V and 12V are used for low-power devices like sensors, microcontrollers, and LED lighting, but these are less common for industrial switches themselves .

AC Voltages for Industrial Switchgear

- Low Voltage (LV) switchgear operates up to 1 kV AC and is used for controlling and protecting industrial circuits, machinery, and equipment .
- Medium Voltage (MV) ranges from 1 kV to 35 kV, typically for larger industrial plants or utility systems.
- High Voltage (HV) exceeds 35 kV and is used in power generation and transmission systems .

Summary

For most industrial control and automation switches, 24V DC is standard due to safety and compatibility with sensors and actuators. For PoE-enabled industrial switches, 48V DC is standard to meet IEEE specifications and ensure reliable power delivery over network cables. When dealing with switchgear, AC voltages up to 1 kV are common for low-voltage industrial applications, with higher voltages used in medium and high-voltage systems .

Article Content

A Guide to Selecting Industrial Ethernet Switches with Wide Voltage

The power supply systems in industrial settings are far more complex than those in commercial environments: Voltage Fluctuations:

Industrial Ethernet Switches

Provides an overview of deploying PoE in an industrial environment, exploring how this sector can benefit from PoE

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