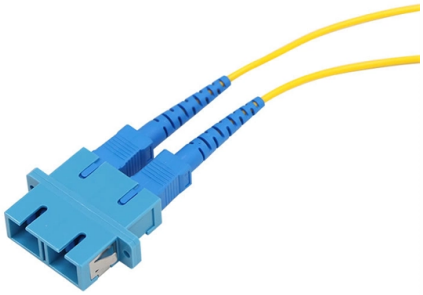
The switch uses PoE power supply



Overview

If the replacement power supply supports less power, the switch may not have enough power for all powered devices.

Key Takeaways

A PoE switch delivers both data and electrical power over a single Ethernet cable to connected devices, following IEEE PoE standards.How a PoE Switch Works

A PoE (Power over Ethernet) switch functions as both a network switch and a power source. It injects DC power into Ethernet cables, allowing connected devices such as IP cameras, VoIP phones, wireless access points, and IoT devices to receive both data and power through the same cable . When a device is connected, the switch detects whether it supports PoE. If compatible, the switch supplies power along with data; if not, it only transmits data .

Components and Standards

PoE systems consist of:

• PSE (Power Sourcing Equipment): The switch itself or a dedicated PoE injector that provides power.

• PD (Powered Device): Devices that receive power, like cameras or phones.

• Ethernet Cable: Typically Cat5, Cat5e, or Cat6, which carries both power and data . PoE switches follow IEEE standards:

• IEEE 802.3af (PoE/Type 1): Up to 15.4 W per port.

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• IEEE 802.3at (PoE+/Type 2): Up to 25.5 W per port.

• IEEE 802.3bt (PoE++/Type 3 & 4): Up to 60–100 W per port, optionally using all four cable pairs for higher power delivery .
Types of PoE Switches
• End-Span (Wire Power Supply Mode): Supplies power directly through the switch ports.

• Mid-Span (Trunk Power Supply Mode): Requires a PoE injector or repeater to add power to the cable .

• Managed vs. Unmanaged: Managed PoE switches allow centralized monitoring, power control, and advanced network management, while unmanaged switches provide basic plug-and-play functionality .
Benefits

Using a PoE switch simplifies network deployment by eliminating separate power adapters, reducing cable clutter, and enabling devices to be installed in locations without nearby electrical outlets. It also allows centralized power management, scalability, and easier troubleshooting . In summary, a PoE switch combines network connectivity and power delivery in one device, adhering to IEEE standards to safely and efficiently power compatible devices over Ethernet cables.

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Industrial Ethernet Switches

You must use the power supply rated for the PoE power you need from the switch. Table 5 lists the available DIN-rail

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PoE (Power over Ethernet) is a technology that lets Ethernet cables carry both power and data to network devices.

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PoE Switch A PoE switch is a network switch with the ability to provide power over Ethernet from each interface while

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