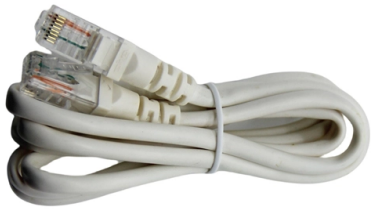
ZITHA TECH SPECIALTY CABLES (Pty) Ltd

Ethernet Switch with PoE Power Supply



Overview

A PoE switch is a network switch that provides both power and data transmission over a single Ethernet cable to connected devices.

Key Takeaways

A PoE (Power over Ethernet) switch delivers both data and electrical power over a single Ethernet cable to connected devices, simplifying network deployment and reducing the need for separate power sources.What is a PoE Switch

A PoE switch is a network switch that integrates Power over Ethernet functionality, allowing it to transmit both network data and DC power through the same RJ45 Ethernet cable to compatible devices such as IP cameras, VoIP phones, wireless access points, and IoT devices ( ). This eliminates the need for separate power adapters and reduces cable clutter, making it ideal for locations where electrical outlets are limited or difficult to install ( ).

How PoE Works

PoE switches operate by injecting electrical power into the Ethernet cable. The system uses a detection and classification handshake to ensure that only PoE-compatible devices receive power, protecting non-PoE devices from damage ( ). Power can be delivered using either spare wire pairs (Mode B) or overlaid on data pairs (Mode A), typically over Cat5e or higher cables, with a maximum reliable distance of 100 meters ( ).

PoE Standards and Power Levels

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PoE switches come in different standards depending on the power requirements of connected devices:

• IEEE 802.3af (PoE): Provides up to 15.4W per port ( ).

• IEEE 802.3at (PoE+): Provides up to 30W per port ( ).

• IEEE 802.3bt (PoE++ or 4PPoE): Provides up to 60W or 100W per port, suitable for high-power devices like PTZ cameras or LED lighting ( ).

Benefits of PoE Switches

• Simplified Installation: One cable provides both power and data, reducing wiring complexity ( ).

• Cost Efficiency: Eliminates the need for additional electrical wiring and outlets ( ).

• Flexibility: Devices can be installed in hard-to-reach or remote locations ( ).

• Centralized Power Management: Managed PoE switches allow monitoring and controlling power distribution to connected devices ( ).

• Scalability: Easy to expand networks without worrying about power outlet availability ( ).

Deployment Scenarios

PoE switches are widely used in:

• Corporate environments: Powering VoIP phones, wireless access points, and security cameras ( ).

• Smart buildings: Supporting IoT devices, smart lighting, and sensors ( ).

• Industrial applications: Supplying power to networked sensors and cameras in factories or warehouses ( ). In summary, a PoE switch is a versatile networking device that combines data connectivity and power delivery, supporting a wide range of devices while simplifying installation and network management ( ).

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