

Power supply for an 8-port industrial switch



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

An 8-port industrial PoE/PoE+ switch typically requires a DC input of 24–56V with dual/redundant power inputs and a PoE power budget ranging from 120W to 480W depending on the model and connected devices. Voltage and Current Requirements

Industrial 8-port switches generally operate on DC 24–56V or 48–57V input ranges, with some models supporting DC 12–57V for flexible deployment in solar, vehicle, or industrial power systems (TRENDnet TI-PG80B, LINOVISION POE-Switch1008-Solar, Hikvision DS-3T1512HP-SI-8P4F) . The recommended input voltage ensures stable operation and full PoE output. For example, the Hikvision switch recommends 52–57V DC to maintain a stable PoE supply .

PoE Power Budget

The PoE power budget determines how much power can be delivered to connected devices. Common configurations include:

- 120W total for standard PoE+ (IEEE 802.3af/at) switches .
- 200–240W total for higher-capacity PoE+ switches, supporting up to 30W per port .

- 480W total for PoE++ (IEEE 802.3bt) switches, allowing up to 90W per port for high-power devices like PTZ cameras or PoE lighting .

Redundant Power Inputs

Most industrial switches feature dual DC inputs for redundancy. This allows the switch to continue operating if one power source fails, ensuring non-stop operation in critical industrial environments . Redundant inputs often include overload, short-circuit, and reverse polarity protection.

Power Supply Options

- DIN-rail mounted industrial power supplies are commonly used, such as TI-S24048 (52V DC) or TI-S24052 (48V DC) for TRENDnet switches .
- Some switches include a UL-certified 120W adapter by default, with optional higher-capacity DIN-rail power supplies to increase the PoE budget to 240W or more .
- For flexible voltage applications, voltage boosters allow operation from DC12V, DC24V, or DC48V sources, suitable for solar or vehicle systems .

Key Considerations

- Match the input voltage to the switch's recommended range to ensure stable PoE output.
- Calculate total PoE power based on connected devices to avoid overloading the switch.
- Use redundant power inputs for critical industrial applications to prevent downtime.
- Select a compatible DIN-rail or industrial-grade power supply with sufficient current capacity for the switch and all PoE devices. By following these guidelines, you can ensure reliable operation of an 8-port industrial switch in harsh environments, with proper PoE delivery and power redundancy.

Article Content

How to Choose the Right Power Supply for an Industrial Switch

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