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What is the typical amperage rating of a PDU used in a network server rack



Overview

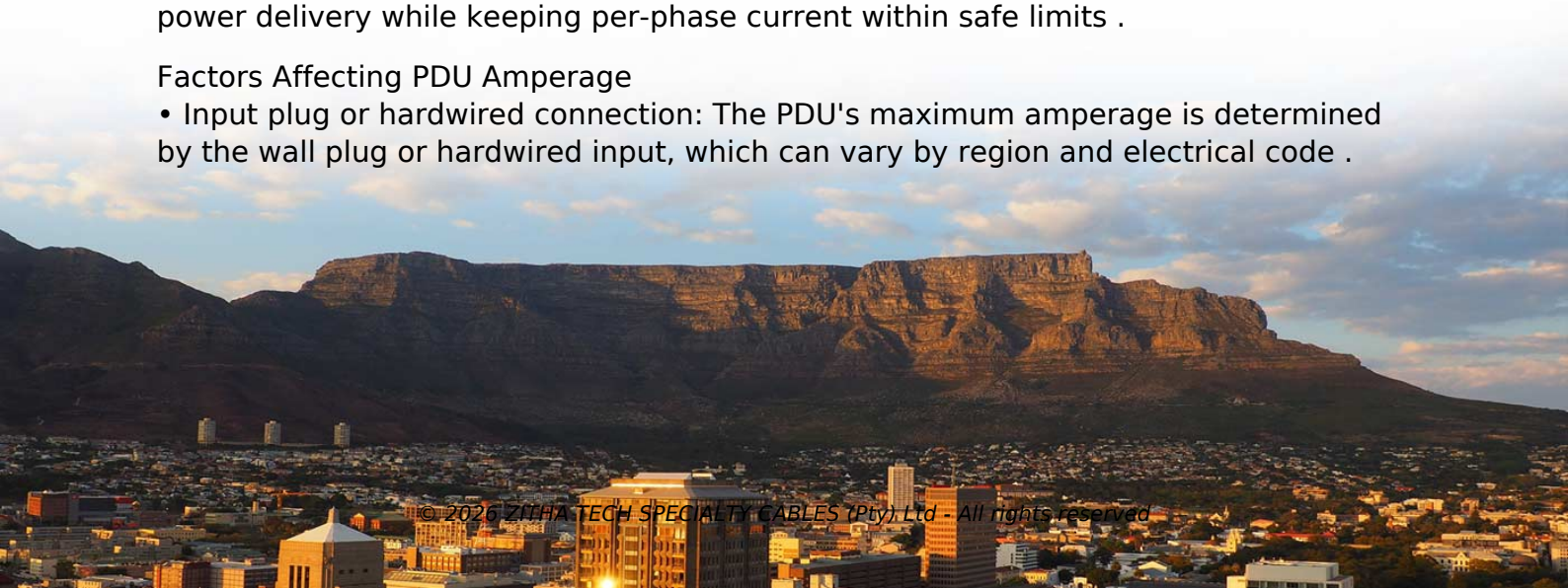
The full amperage rating for the PDU (derated) is 16 amps, 24 amps or 48 amps, depending on the line cord.

Key Takeaways

Rack PDUs commonly have amperage ratings of 15A, 20A, 30A, or higher, depending on single-phase or three-phase configurations and load requirements.Standard Amperage Ratings

In North America, typical single-phase PDUs are rated at 15A, 20A, or 30A, with the recommended continuous load limited to 80% of the rated amperage to comply with electrical codes and prevent overloading. For example, a 20A PDU should not carry more than 16A continuously, and a 30A PDU should not exceed 24A under normal operation . For three-phase PDUs, amperage ratings are often higher, such as 30A, 50A, or more, depending on the rack's power requirements and the PDU design. Three-phase PDUs distribute the load across multiple phases, allowing higher total power delivery while keeping per-phase current within safe limits .

Factors Affecting PDU Amperage
• Input plug or hardwired connection: The PDU's maximum amperage is determined by the wall plug or hardwired input, which can vary by region and electrical code .



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• Internal circuit breakers: Many PDUs have internal breakers rated for 16A–20A per bank, which may limit the usable amperage even if the input cord supports higher current .

• Derating for continuous load: UL and other standards often require PDUs to operate at 80% of their maximum rating for continuous loads, providing headroom for transient spikes .
Common PDU Examples
• APC AP8861: 20A, suitable for standard server racks .

• APC AP8941: 30A, often used for network equipment or higher-density racks .

• High-density three-phase PDUs: Can support 50A or more, distributing power across three phases for enterprise data centers .
Summary

The typical amperage rating of a rack PDU depends on the voltage, phase configuration, and intended load. For most North American server racks, single-phase PDUs range from 15A to 30A, while three-phase PDUs can range from 30A to 50A or higher. Always consider derating for continuous load and verify internal breaker limits to ensure safe and reliable operation .

Article Content

PDU Load Calculator for Server Racks

Use this PDU load calculator to size rack voltage, phase, breaker amps, derating, redundancy, surge load, safety

PDU Calculator: 3-Phase Rack Amps (208V Examples)

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Rack PDU Power Rating vs. Load Capacity

For example, for a single-phase rack PDU with a nominal voltage of 208V and maximum line current of 30A, the rated

Understand the electrical design of the rack PDU

The total rack PDU amps is the maximum (not to exceed) value for the rack PDU. Exceeding this value can have an impact on the

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Calculate expected PDU per rack

This article will outline how phase current ratings and load calculations are determined as well as how load

Rack-mounted UPS and PDU: Power Calculation

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General PDU planning considerations

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Top 10 APC Rack PDUs for Data Centers (2026 Guide)

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Switched Power distribution Unit (PDU) for Networking Rack.

The rated current (not a maximum current) of 24A is for example used to determine the load capacity (5,0 kVA) for a single-phase

Eaton Rack PDU G4

The Rack PDU G4 includes a user-configurable firewall. Managed, metered input and metered outlet models offer market-leading

Single-Phase or Three-Phase Input Power for Rack

Single-Phase or Three-Phase Input Power for Rack PDUs Greg More February 3, 2015 Over

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Today, among the many important decisions when it comes to data center efficiency, is which rack mount power distribution unit

Server Rack PDU Guide | Rack Power Distribution

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Understanding Power Supplies for Power Systems

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What are Power Distribution Units (PDUs)?

Power Distribution Units (PDUs) do more than power your server rack—they monitor, manage, and protect it. Learn

Calculating PDU Power Draw : r/networking

A server technician is procuring and installing a single-phase rack PDU that will meet the following requirements: - Maximum line

Rack PDU Components-Power Cord Types,Plugs, Connectors | AZE

This can be done at an individual outlet level or collectively. “Smart” PDUs (also known as “intelligent” PDUs) connect

Server Technology Rack Power Distribution Units | Legrand

Server Technology rack PDUs range from Smart to Switched and Monitored Per Outlet. Input power options include AC and DC, with

Quick Guide to Power Distribution Unit (PDU)

This is a brief guide of the Power Distribution Unit (PDU), which may help to resolve your problems with the rack

Optimizing rack power distribution

The process of selecting a rack PDU should begin with the power rating of the PDU and the technologies the data center needs.

Top 8 Considerations for Choosing the Right PDU to Fit Your

One of the basic decisions in data center design is which rack power distribution units (PDU) to use and where to use them. The rack

Powering the Data Center Efficiently

Server specifications designate the amount of inrush current that can be tolerated by the server. For example, the specification for

How much power do your racks typically support? : r/datacenter

An answer that covers this at super high level, a lot of racks have single phase 208v pdus deployed. Typically 24amps is the most

Data Center Power Cords Guide: Types, Standards & Voltage Ratings

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A data center power cord is a cable that connects IT equipment or rack PDUs to the power source. It delivers

Identify the IT equipment to be connected to the rack PDU and ...

The easiest way to do rack PDU planning is to use the phase amperage limit based on a balanced three-phase load as shown in

Understanding Basic PDUs: A Comprehensive Guide to Rack Power

Whether you choose a basic PDU, a rack-mounted power distribution unit, or the best power strip for flexibility, understanding your

A Cheat Sheet for Buying Your Next PDU

PDUs are designed for installation in equipment racks, keeping power within reach of rack mounted devices such as

Seven Steps to Selecting a Rack PDU for Your Data Center

Here, we''ll discuss seven basic steps you should follow to help you to select and deploy the appropriate rack PDUs

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