

PDU in the data center



AI Overview

A PDU (Power Distribution Unit) in a data center distributes electricity from upstream sources like UPS systems to servers, storage, and networking equipment, ensuring reliable, efficient, and manageable power delivery. Overview PDUs are critical components in data centers, acting as the final distribution point for electricity before it reaches IT equipment such as servers, switches, and storage devices. They ensure that each device receives stable and sufficient power, preventing downtime, equipment failure, and inefficiencies. Modern PDUs have evolved from simple power strips to intelligent systems that offer monitoring, remote management, and energy optimization.

Types of PDUs

- Basic PDUs:** Provide reliable power distribution without monitoring or management features. Suitable for small data centers or non-critical racks.
- Metered PDUs:** Include power meters to monitor real-time rack-level power usage, aiding in energy efficiency planning and capacity management.
- Monitored PDUs:** Offer outlet-level visibility and integration with management systems, allowing detailed tracking of power consumption and operational status.
- Switched/Intelligent PDUs:** Combine monitoring with remote control of individual outlets, enabling tasks like remote server reboot, scheduled power cycling, and precise load management.

Key Features

- Power Monitoring:** Tracks energy usage at rack or outlet level to optimize efficiency and plan capacity.
- Remote Management:** Allows operators to control outlets and manage power distribution without physical access.
- Load Balancing:** Distributes power evenly across circuits to prevent overloads and improve reliability.
- Environmental Sensors:** Some PDUs include temperature and humidity monitoring to protect equipment and enhance operational safety.

Benefits

- Reliability:** Ensures continuous power delivery to critical IT equipment.
- Efficiency:** Supports energy optimization and reduces operational costs by providing detailed power usage data.
- Scalability:** Facilitates future growth and high-density deployments with modu...

Article Content

Data Center Rack Power Distribution Unit (PDU)

The Data Center Rack PDU market offers opportunities driven by the rise of hyperscale data centers, demand for energy efficiency, and technological

Raritan PX3 Rack PDU

Intelligent Rack PDU (PX3) Raritan's power intelligence capabilities at the device level provide important insights on how to improve energy efficiency in data

Complete Guide for Power Distribution in Servers, Racks, and Data

A Power Distribution Unit (PDU) is a specialized electrical device designed to distribute power from a single input source to multiple output receptacles, specifically engineered for data center and IT

4 Types of PDU in Data Centers: Overview and Features

4 Types of PDU... In a data center, power availability is only the starting point. As facilities grow in size and complexity, operators need to understand where power is being consumed,

White Paper Power Distribution Units (PDUs) in Data Centers

In a typical Data Center power chain, PDUs follow UPS systems and generators, providing the final point of distribution before reaching Remote Power Panels (RPPs) or directly to equipment.

Reliance and Meta to Develop AI-Enabled Data Centre in Jamnagar,

RIL and Meta have agreed to develop an AI-enabled data centre in India. RIL will provide end-to-end services including design, construction, management of utilities, renewable power, network

Power Distribution Unit (PDU) Industry Business Report 2025: Rising ...

The PDU market is poised for growth due to increasing demand for efficient power management in data centers and industrial applications. Key opportunities stem from a focus on

DA 26-113 SPACE BUREAU ACCEPTS FOR FILING SPACEX'S

By this Public Notice, the Space Bureau (Bureau) accepts for filing and seeks comment on an application by Space Exploration Holdings, LLC (SpaceX) for a new non-geostationary orbit (NGSO)

Understanding PDUs in Data Centers

What Is a PDU? A Power Distribution Unit (PDU) is an electrical device that distributes power from a primary source to multiple downstream

PDU Types in Data Centers: Basic, Metered, Switched & Intelligent

Explore different PDU types used in data centers, including basic, metered, monitored, switched, and intelligent PDUs. Learn features, benefits, and top suppliers.

Latest Research on Data Center Type in the Data Center PDU Market

"Data Center PDU Market" The Data Center PDU Market is projected to reach USD 14.23 billion by 2032 from USD 4.89 billion in 2026, at a CAGR of 19.5% from 2026 to 2032. The report " by

What Is a PDU in Data Centers and Why Is It Important?

The main function of a PDU is to distribute power to various IT equipment in a data center, ensuring reliable and consistent power delivery. It helps optimize power usage and prevent issues

800G Client Optics in the Data Center

The vast data centers used by cloud service providers have thousands of identical racks of servers and networking equipment. When hyperscale data center operators start deploying a new generation of

The Basics of Electrical Data Center Design in 2025

Learn about the key components and best practices in electrical data center design with gbc engineers.

NVIDIA HGX Platform: Data Center Physical

Detailed specifications – such as rack dimensions, sensor placement, PDU circuit ratings, weight/load limits, environmental setpoints (ASHRAE guidelines), and

Data Centre PDU Market Trends Accelerate with Growing Demand for

Data Centre PDU Market Trends driven by high-density computing, AI workloads, cloud expansion, intelligent power distribution, remote monitoring, and energy-efficient infrastructure for

Data Center Power Solutions | Siemens Energy

Power up your data center with Siemens Energy! From boosting efficiency to hitting sustainability targets, we're here to help you navigate the digital world's energy

Data Center Rack Power Distribution Unit Market (2026

The data center rack power distribution unit (PDU) market is experiencing sustained growth as data centers proliferate globally and increasingly prioritize resilient,

Data Center Rack Power Distribution Unit (PDU) Market

Data Center Rack Power Distribution Unit (PDU) Market Analysis by Mordor Intelligence The data center rack power distribution unit (PDU) market

Data Center Server Rack Guide (2026): Types, Design,

Learn everything about data center server racks—definitions, rack types, airflow design, power integration, cable management, and a full buying guide for 2026.

Latest Research on Data Center Type in the Data Center PDU Market

Hyperscale segment captured the largest share of the Data Center PDU Market in 2025. The hyperscale segment accounted for the largest share of the data center PDU market in 2025 due

Latest Research on Data Center Type in the Data Center PDU Market

Latest Research on Data Center Type in the Data Center PDU Market by MarketsandMarkets™ 12 hrs ago 3 min to read

What is a power distribution unit (PDU)?

A power distribution unit (PDU) is a device for controlling data center electrical power. The most basic PDUs are large power strips without surge protection. They are designed to provide

Data Center Electrical Planning: Reliable Power Supply

1. The Importance of Electrical Distribution Systems in Data Centers The electrical distribution system in a data center is analogous to a utility grid

4 Types of PDU in Data Centers: Overview and Features

What Is a PDU in a Data Center? A Power Distribution Unit is responsible for delivering electrical power from an upstream source—such as a UPS or power panel—to IT equipment within data center racks.

Data center dissent is so high that construction delays this ...

Data center hate is snowballing, and construction setbacks in the first three months of 2026 have already exceeded last year's, report finds

PDU in Data Centers: Types, Features & How to Choose

Data center PDUs distribute power from UPS or utility-backed systems to rack equipment. This guide explains PDU types, key features,

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