



Server Technology
Quality Rack Power Solutions

-48VDC Rack & Cabinet Power Distribution Units

Rack Mounted CDUs

If you manage a datacenter, CLEC,
or ISP, we have a solution for you.

How do I...

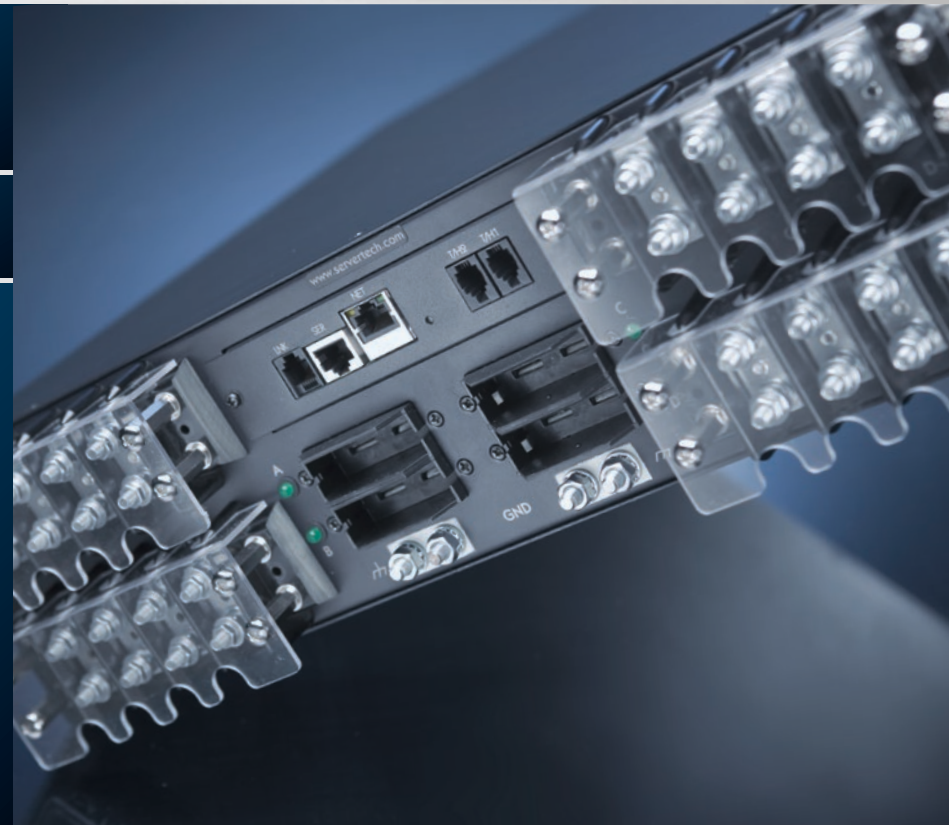
Distribute -48VDC power to all the equipment in the rack?

Measure power loads in amps at each DC power output block?

Know when the rack temperature is too high?

Verify power exists at each DC power outlet?

Reboot remote switches, servers and network devices?



-48VDC Switched CDU®

Flagship CDU with remote monitoring and management, including reboot commands to connected servers, switches and network equipment plus Temperature & Humidity Monitoring.

Sentry Power Manager (SPM)

SPM is a powerful tool which allows monitoring, control capabilities, and management of multiple CDUs in single or multiple locations. Features include alarm management, reporting and trending of kW & kW-h information that can be used for energy efficiency calculations, device monitoring & billing.

-48VDC CDU® Product Family

Quality Rack Power Solutions

The World Leader in Power Management Products & Solutions

Cabinet power distribution units and power monitoring and measurement solutions for data centers and telecommunications.



Server Technology's power strategy experts produce the highest quality rack mount power distribution and monitoring solutions that help manage power capacity, reduce downtime and improve energy efficiency.

The leading innovator since 1984, Server Technology created the intelligent cabinet PDU market and holds the largest number of patents in that industry. Serving the Data Center and Carrier markets, Server Technology offers the most extensive selection of Sentry CDUs to manage power usage for servers, storage and network equipment. Based on the innovative Server Tech Quality Power Architecture (QPA), Sentry CDUs and Sentry Power Manager provide the industry's most accurate information to maximize rack density, reduce overloading and monitor energy efficiency.

All Sentry CDUs are engineered and manufactured to meet the highest quality standards and are 100% performance tested for reliability and accuracy. Server Tech QPA eliminates single points of failure, reducing downtime and costs. The modular architecture is flexible and enables quick delivery of solutions that meet customer-specific requirements. Server Technology gives IT and Infrastructure Professionals the control to make accurate capacity planning decisions, reduce risks, and meet energy efficiency goals.

* Consult Server Technology for further details on individual products

Feature Key

Sentry CDU product lines feature two or more of the following assets:



Fused Power Output Protection

Each low and high current output are individually protected by their own fuse. A variety of current capacities are available. Low current GMT fuses have a visual indicator when blown. The fuses are rated as disconnect switches therefore they may be hotswappable without removing power to input-feeds.



Dual 100-300A DC Power Input Feeds

Distribute 100-300 amps of power through low and high current outputs. Each output circuit is designed with their own over-current protection.



Environmental Monitoring

External probes, with 3-meter cable, capable of measuring temperature & humidity. Receive SNMP-based or email alerts when conditions exceed defined thresholds.



IP Access, Security & Communications

Web interface, SSL, SSH, Telnet, SNMP & RS-232 access, 10/100 Base T-Ethernet, SSLv3/TLSv1, SNMPv2c & v3, RADIUS, TACACS+, LDAP, LDAPS, DHCP, SMTP/Email, & Syslog.

Certifications, Compliance & Warranty

Products contained within this brochure carry the following:

Agency Approvals

Switched CDU

- > TUV-GS marked to EN 60950-1:2006 + A11
- > cTUVus marked to UL 60950-1:2007 and CSA C22.2 No. 60950-1-07



NEBS Level 3 Compliance / Switched CDU*

- > GR-1089-Core: Sections 1-4, 7, 9, & 10
- > GR-63-Core: Sections 4.1, 4.2, 4.3, 4.4, 4.5, & 4.7
- > ETSI EN 300 019-2-1 v2.1.2: 2000-09
- > ETSI EN 300 019-2-2 v2.1.2: 1999-09
- > ETSI EN 300 019-2-3 v2.2.2: 2003-04
- > ETSI EN 300 132-2 V2.2.2: 2007-10

-48VDC Switched CDU®

Overview and Applications



Remote Power Management for Your Telecommunications Network

Metro Ethernet. 3G. 4G. Telecommunication networks are evolving at a break-neck pace and it's only going to get faster. So, who do you trust for your mission critical reliability and remote power management solutions for your telecommunications operations?

How do you reduce your operational costs, "truck rolls" and customer network issues while improving network reliability, uptime and service? Trust Server Technology to provide the solutions to help you monitor, manage and remotely operate your network.

Fewer Truck Rolls Can Mean Big Savings

How many times a week are your field technicians sent to a site to deal with a simple switch power reboot to cure a "hung" or unresponsive Metro Ethernet Core or Edge switch? In these tough economic times, sending out fewer trucks to your remote sites can certainly cut costs.

Server Technology offers several -48VDC remote power management solutions which many Tier 1 carriers are deploying in their Metro Ethernet networks today. Our -48VDC solutions let you:

- > Distribute power to all equipment in the rack
- > Remotely reboot Core and Edge Ethernet switches
- > Measure power loads in Amps at each DC power output block

Improve your Service Level Agreements (SLAs)

Are customers contacting you before you are aware of a network problem to tell you that an issue exists in your Metro Ethernet network? What if you could resolve that Metro Ethernet issue before it affects your SLAs and the charges associated with downtime? Server Technology's solutions can help you save on resolution time and associated penalties as well as saving face with a dissatisfied customer.

Next Generation Wireless Network (4G)

Deploying the next generation of wireless networks (4G) is not as simple as it sounds. Everything is now packetized with Ethernet switches deployed closer to the edge for voice and data.

How do you handle simple firmware and software downloads? Do you need to reboot Ethernet switches after downloads? What if you could remotely reboot Ethernet switches rather than send a field technician, saving you precious time and resources?

Linkable Expansion CDU

The -48VDC Switched CDU product family supports linking two units together thereby increasing the number of outlets that can be monitored and managed through one IP address or serial connection. When a Master is linked to an Expansion CDU, all the outlets are auto-discovered by the firmware and are available through the IP or the serial interfaces.

To simplify restarting a device, the user can create groups of outlets across the Master and Expansion units that are controlled by executing a single command. Additionally, outlets in groups retain their individual outlet control capability. This allows an operator to power down an individual set of terminals so that the power supply on the device can be accessed.

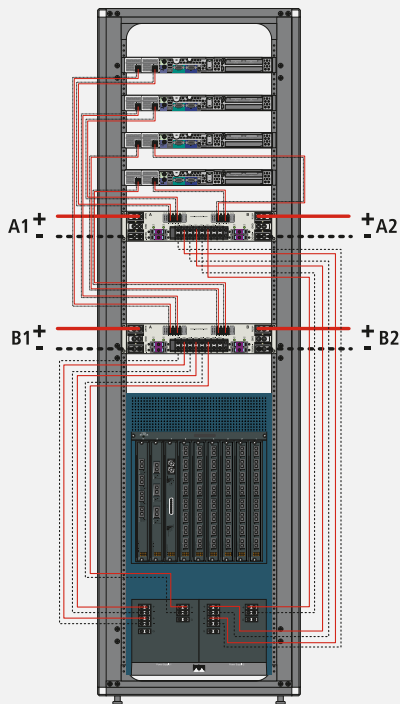
Sentry Power Manager

Power Management Architecture

Application Example

Master 48DCWB-12-2X100-A1NB and an expansion 48DCXB-12-2X100-A1NB connected to a Cisco router as well as several other low current -48VDC devices.

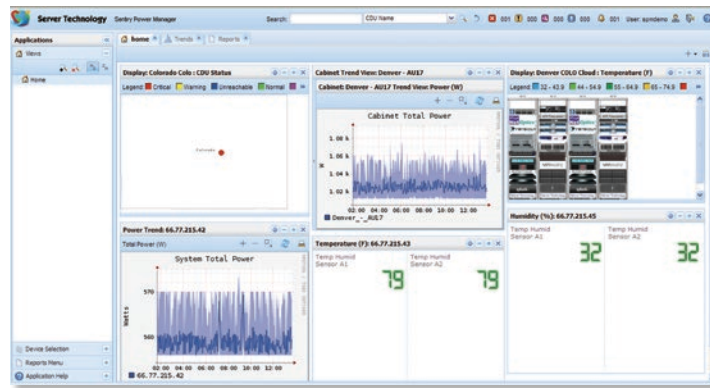
Dual power in-feeds ensure that a loss of either the A in-feed or the B in-feed will still allow the router and other devices to operate on a single supply until the problem is resolved. This provides redundancy and allows for system maintenance without service interruption.



Sentry Power Manager

Manage Multiple CDUs Across Multiple Locations

Do you have multiple Sentry CDUs in one or more locations that you would like to access from one central point? Would you like one central location where all alarms can be viewed and logged for reporting, e-mail or SNMP trap notifications? No problem! Our Sentry Power Manager (SPM) product is capable of monitoring and managing multiple Sentry devices in IP-based enterprise networks. SPM provides a global view of all Sentry CDUs with the ability to view devices based on their temperature, humidity, current and device status. Besides managing and monitoring all alarm conditions, this information can also be used to provide reporting and trending information for display within SPM or integrated with your existing Building Management System (BMS).



Web Based GUI: Quickly drill down from a global view to the rack level. Users can setup custom network operation center (NOC) views for whatever they want to display — from global dashboard views down to each CDU, cabinet or location.



Event Notification

- > Email notification via the CDU to multiple recipients when an event occurs
- > SNMP traps via the CDU when an event occurs
- > Auto-discovers each CDU for easy configuration
- > Easily create a user interface that mirrors the physical deployment of the data center
- > Quickly drill down from a global perspective to the rack's actual physical location if there is a problem (quickly identify the alarm and the physical location of the CDU)
- > Create outlet clusters to group outlets within a CDU, across linked CDUs or across enterprise locations

Multiple Reporting Options

- > Reports on critical management parameters such as temperature, humidity and current load
- > Reports on Current and Power providing the power consumption of each input, total for the rack and/or per square foot of the rack

On-Demand Accessibility

- > Real-time view of all active system alarms
- > Anytime, anywhere web-based views
- > Manage thousands of CDUs from a single console

Compatibility

- > Server Technology Sentry CDUs with firmware 5.3+

Web Browsers Supported

- > Internet Explorer 7.0+ > Firefox 3.0+
- > Chrome 6.0+ > Safari 5.0+

Sentry Power Manager

Power Management Architecture

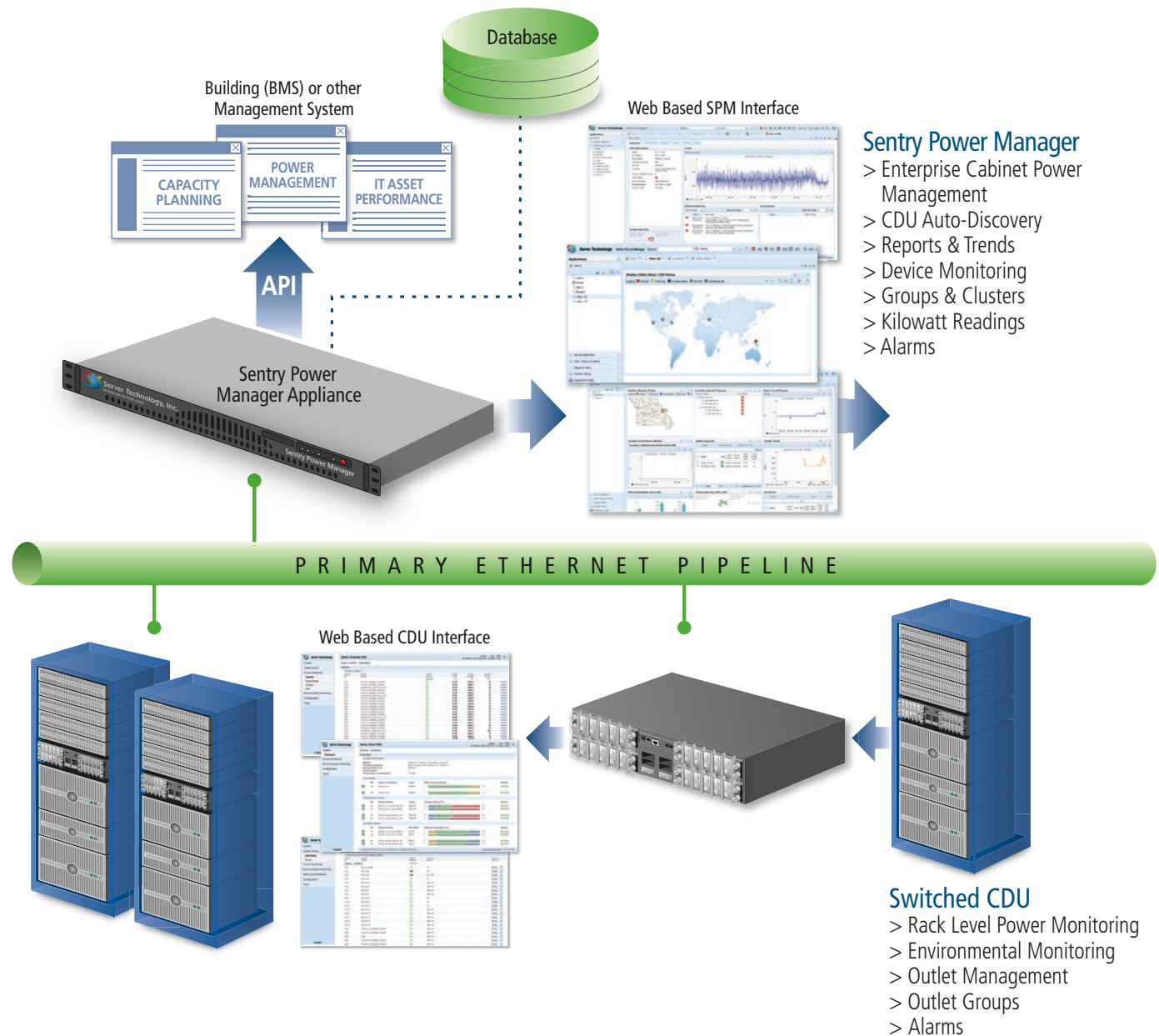
Power Information & Management

Sentry Power Manager

The Sentry Switched CDUs are capable of being monitored through the SPM (Sentry Power Manager) tool. Sentry intelligent CDUs, in conjunction with SPM, provide additional power information for consumption purposes and power monitoring as well as trending and power reports. An API allows power and other information to be communicated to a Building Management System (BMS) or other systems.

Sentry Power Manager (SPM) Solutions

- > SPM provides a global view of all Sentry CDUs with the ability to view devices based on their temperature, humidity, current and device status. Quickly drill down from global view to your facility maps to an individual CDU.
- > Manage and monitor all user-defined alarm conditions on your entire network.
- > Group and cluster outlets for remote reboot, power measurement information across a single CDU, a linked CDU, or across the entire network.
- > Allows measurement of power consumption and capacity planning.
- > Auto-discover all your CDUs connected to your IP network.
- > View Logs for user access, discovery, user actions, and alarms.
- > Multiple user levels and permissions including support for LDAP.
- > Control individual outlets on Switched CDUs.



-48VDC Switched CDU®

Rugged, Reliable Rack Power Distribution for -48VDC Applications



Key Features

Remote Power Management

Combines power distribution with network power management and monitoring

Dual DC Power Input Feeds (A & B-Feed)

Supports dual power supply routers and networking gear

Multiple DC Outlet Circuits

Protected by GMT or TPC fuses

Outlet Circuit Protection

Fast acting fuse with blown fuse visual indicator

Variable Amperage / Changeable Fuses

Match fuse values to the amp rating of each outlet circuit

IP Access

For Remote Power On, Off & Reboot

Communications and Security

10/100 BaseT Ethernet, HTTP/HTTPS, SSLv3/TLSv1, SNMPv2c & 3, SSHv2, Telnet, RADIUS, LDAPv3, TACACS+ & serial port access

Alerts

Provide automated SNMP-based alarms or email alerts for power and environmental conditions

Environmental Monitoring

Two optional Temperature & Humidity probes

Load & On Sense

Real time current draw reporting, in amps, for each outlet. Power verification at each DC input/output

Expansion Units

Link a Master to an Expansion unit to control both via a single IP address

-48VDC Switched CDU Overview

The Sentry Switched -48VDC Rack Power Distribution Unit (CDU) minimizes the impact of locked-up routers, servers and other network devices for mission critical networks. CLEC's, ILEC's and ISP's use Sentry -48VDC CDU's to manage equipment in remote sites, co-location facilities and network operations centers. Remote devices that are locked-up can be easily rebooted without the need to send a technician to the site. Key applications include power distribution and remote management for a cabinet with -48VDC powered switches and high-amp network equipment.

The Sentry -48VDC Switched products provide power distribution and remote power management in a compact 19" rack-mount enclosure. Other features include always-on technology for the highest level of fault tolerance, grouping of outputs to ensure that multiple supply devices come up at the same time across A and B power feeds, and linking for cost savings and doubling the number of outputs available on a single IP address.

Each power output terminal is protected by a GMT fuse, TPC fuse or circuit breaker, available in a wide range of capacities. *



Fused Power Output Protection

Each low and high current output are individually protected by their own fuse. A variety of current capacities are available. Both the low current GMT and high current TPC fuses have a visual indicator when blown. The fuses are rated as disconnect switches therefore they may be hot-swappable without removing power to input-feeds or requiring special tools.



Dual 100-300A DC Power Input Feeds

Distribute 100-300A of DC power through low and high current outputs. Each output circuit is designed with their own over-current protection.



Environmental Monitoring

External probes, with 3-meter cable, capable of measuring temperature & humidity. Receive SNMP-based or email alert notifications when conditions exceed defined thresholds.



IP Access, Security & Communications

Web interface, SSL, SSH, Telnet, SNMP & RS-232 access, 10/100 Base T-Ethernet, SSLv3/TLSv1, SNMPv2c & v3, RADIUS, TACACS+, LDAP, LDAPS, DHCP, SMTP/Email, and Syslog.

Accessories

Standard 19" mounting brackets (included)
KIT-MB2U-6B (black) 2.5U: KIT-MB2.5U-9
3U: KIT-MB3U-1

Optional 2U, 23" mounting brackets
HDW-MBXT-2UB (2 required per CDU, black)

Temp & Humidity Probe
EMTH-1-1 Temperature & Humidity Probe, 10' (3m)

Replaceable Fuses

All fuses are sold separately. Fuses and their values must be specified at time of order.

GMT (Low Current)		TPC (High Current)	
.75A	P/N FUSE-GMT-3/4/G	10A	P/N FUSE-TPC-10
1A	P/N FUSE-GMT-1.0A/G	15A	P/N FUSE-TPC-15
1.5A	P/N FUSE-GMT-1.5A/G	20A	P/N FUSE-TPC-20
2A	P/N FUSE-GMT-2.0A/G	25A	P/N FUSE-TPC-25
3A	P/N FUSE-GMT-3.0A/G	30A	P/N FUSE-TPC-30
5A	P/N FUSE-GMT-5.0A/G	40A	P/N FUSE-TPC-40
7.5A	P/N FUSE-GMT-7.5A/G	50A	P/N FUSE-TPC-50
10A	P/N FUSE-GMT-100A/G	60A	P/N FUSE-TPC-60
15A	P/N FUSE-GMT-150A/G	75A	P/N FUSE-TPC-75
—		100A	P/N FUSE-TPC-100
—		125A	P/N FUSE-TPC-125

*Circuit breaker values for 48DCWB-10-2X300-E0: 60A or 100A

-48VDC Switched CDU®

Horizontal Rack Mounted Enclosures



Model	4805-XLS-16B	48DCWB-12-2X100-A1NB	48DCWB-04-2X100-DONB
Input Voltage (V)	(2) 100A (+/-/G), -48VDC	(2) 100A (+/-/G), -48VDC	(2) 100A (+/-/G), -48VDC
Max Amps (A)	200A	200A	200A
Typical Power (kW)	9.6kW	9.6kW	9.6kW
Outputs	Low Current: (16) 10A*	Low Current: (8) 10A	—
Outputs	—	High Current: (4) 70A	High Current: (4) 70A
Circuit Protection	GMT Fuses	GMT & TPC Fuses	TPC Fuses
Height & Depth	2U 16" (406mm) Depth	2U 16" (406mm) Depth	2U 16" (406mm) Depth



Model	48DCWB-08-2X100-B0NB	48DCWB-04-4X070-DONB	48DCWB-10-2X300-E0
Input Voltage (V)	(2) 100A (+/-/G), -48VDC	(4) 70A (+/-/G), -48VDC	(2) 300A (+/-/G), -48VDC
Max Amps (A)	200A	280A	600A
Typical Power (kW)	9.6kW	13.4kW	28.8 kW
Outputs	—	—	—
Outputs	High Current: (8) 25A	High Current: (4) 70A	High Current: (10) 125A
Circuit Protection	TPC Fuses	TPC Fuses	TPC Fuses or Circuit Breakers
Height & Depth	2U 10" (254mm) Depth	2.5U 16" (406mm) Depth	3U 20" (508mm) Depth





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