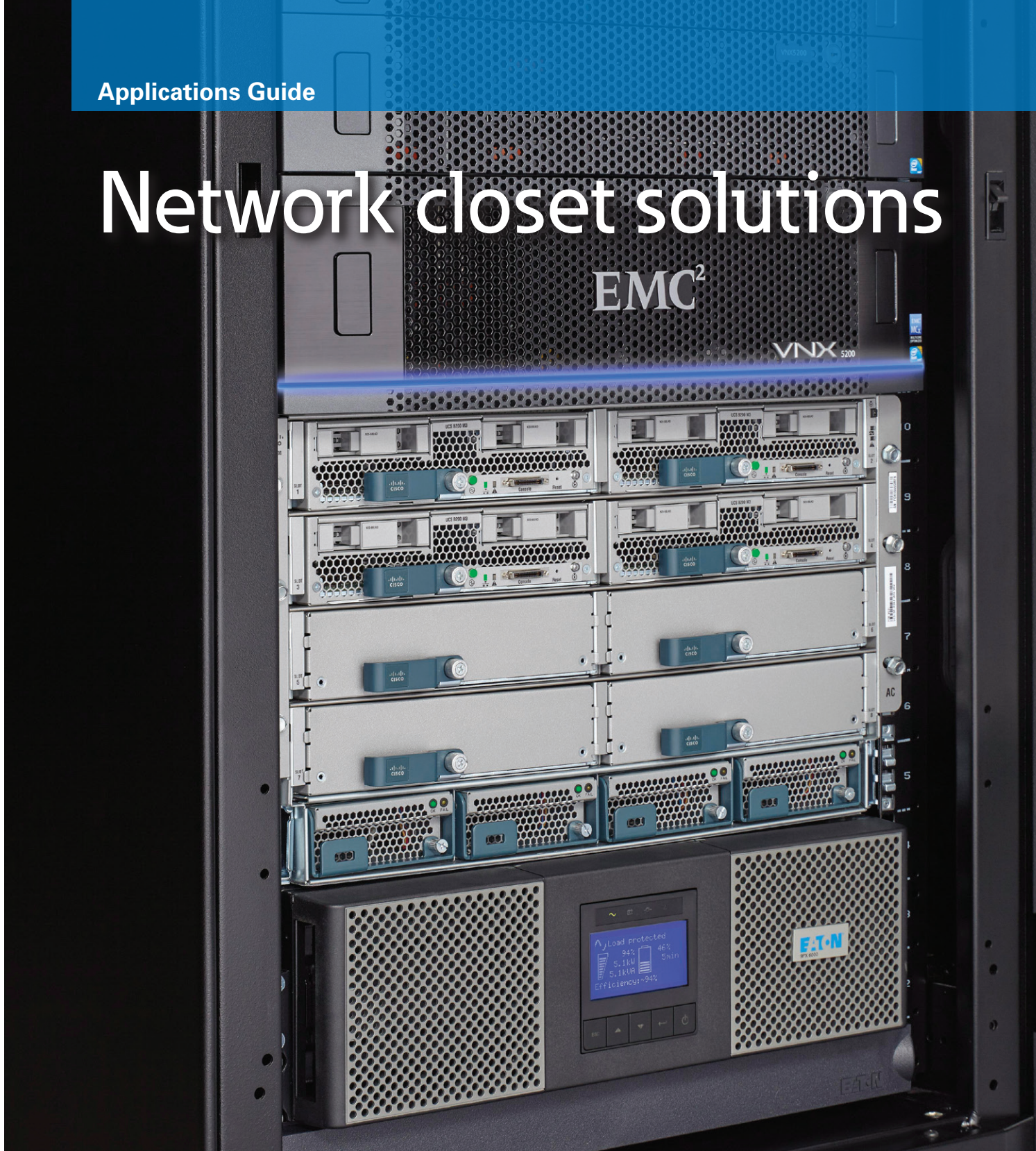


# Network closet solutions



Powering Business Worldwide

Switch  to Eaton.

# Solutions for your network closet



Protecting your IT equipment is vital to the success of your business. Installing the right backup power, power distribution and other power accessories determines how long your equipment will run during a power outage and how efficiently your equipment will run during a normal business day.

Eaton® provides efficient power solutions to distribute power to and within the rack, as well as cable management solutions to ensure your closet is organized and your footprint is being used effectively. Better yet, we also offer remote monitoring and management capabilities so you don't have to run to the closet every time there's an issue with power. You can even view and manage a single network closet or multiple closets remotely on your PC with an Internet connection.

To ensure a reliable, efficient and safe networking environment, you must do three key things: organize, protect and manage.

## Eaton products to support your network closet

Network closets are a critical link for IT networks and infrastructure. Whether a single network closet is your entire IT setup or you have thousands of them scattered across the globe, Eaton has a variety of products and services to help keep your IT systems running efficiently.

### Organize with:

- 1 Two-post rack
- 2 Rack shelf
- 3 Cable managers (vertical and horizontal)
- 4 Overhead cable tray

### Protect with:

- 5 Rackmount PDU
- 6 Automatic transfer switch
- 7 Rackmount UPS
- 8 Extended battery module
- 9 Maintenance bypass module

### Manage with:

- 10 Environmental rack monitor and probe
- 11 Water sensor
- 12 Power management software

### Organize

- Keep servers, switches and storage equipment safe and secure
- Clear the rack area of cluttered network cables
- Improve airflow and reduce cooling costs
- Secure equipment from unauthorized access

### Protect

- Distribute and provide safe and clean power to IT equipment during power outages, surges and voltage problems
- Provide reliable and redundant power solutions for critical systems
- Maintain service level agreements
- Protect server workloads with Eaton software, whether you're moving to available internal servers or a cloud-based backup recovery site

### Manage

- View your power network and all equipment attached to it from your remote/virtual machine console
- Aggregate multiple UPS/power instances
- Monitor your environment's temperature and humidity
- Receive instant access to alerts and monitor your environment remotely
- Initiate a virtual machine move or graceful shutdown in the event of an extended outage

# Organize

Choosing the rack to place your equipment in is vital to the overall health and function of your infrastructure. Eaton racks enable you to store, power, manage, secure and cool your critical IT equipment. Additionally, they add an extra layer of security for environments that may store critical information such as credit card, banking or human resource data. Depending upon square footage of your environment and the amount of equipment you need to support, there are a few different options to choose from.



## Eaton four-post racks

These racks offer an open, accessible and unrestricted architecture for cable-dense networking equipment. The labeled U-spaces assist with hardware deployment, while the open design provides unobstructed airflow into and out of equipment. You should also consider cable management accessories and provisions for rack power distribution units.



## S-Series enclosures

Eaton S-Series enclosures support a broad range of accessories, as well as power distribution, management and protection products, to provide a proven platform that you can depend on to support your critical IT operations. Split rear doors provide easy access to your equipment and maneuverability within your environment.



## Eaton two-post racks

These durable network equipment racks are available in 19" and 23" panel mounts with a variety of widths and sizes. Our seismic version has enhanced frame strength and rigidity and is tested to GR-63-Core shock. All two-post racks conform to EIA/ECA-310-E.

## Cable management

Depending on the type of rack you have, there are multiple options for you to manage your cables efficiently and increase your airflow. By implementing these simple management tools, you can be ready for any moves, adds or changes you are making to your rack and you can prevent accidental failure from cable strain or human error.

## Four-post rack options



Vertical cable management channel



Side cable management channel



## Eaton wall mount cabinets and racks

Our wall mount equipment is a cost effective, secure way to mount communications cabling, networking gear and related equipment to conserve floor space. Wall mount cabinets provide a secure enclosure with protection from tampering and other hazards, while open-frame swing gate wall mount racks offer easy access to and unrestricted airflow around mounted equipment.

# Protect

Equipment protection and environment design are critical to uptime and efficiency. Eaton offers products that protect your power infrastructure, ensuring the design addresses the specific needs of your network and during a power event, doesn't leave you in the dark.

There are a number of reliable and redundant solutions you can install easily to ensure the uptime and efficiency of your rack.



A UPS paired with an extended battery module helps extend runtime to meet service level agreements.

## Meet service level agreements

In a rack environment where you require more runtime during a power outage, an extended battery module (EBM) is your best solution to meet service level agreements. You can add anywhere from one to four EBMs to your UPS (depending on rating) to extend your runtime from minutes to hours for VoIP and telephony services. Eaton's EBMs are designed to pair specifically with our UPSs, ensuring a smooth installation and reliable backup solution.



Ideal for two-post rack applications, the Eaton 5P UPS features space-saving 1U models.

## Maximize reliability

A 2N or redundant UPS solution is one of the most reliable designs, since all equipment is supported by two UPSs. Eaton provides smart software, so in the event one UPS fails, the equipment knows it is supported by another UPS and will not shut down, giving you continual protection and time to fix the problem. Once the primary UPS is back online, the equipment switches back to relying on it.

The life of your UPS is dependent on how good its batteries are. Eaton's ABM<sup>®</sup> technology extends the life of our batteries by up to 50 percent. To back it up, we offer three-year warranties on our UPS batteries (series 3 and 5 UPS models). The predictive analysis built into ABM tests the batteries of the UPS every 30 days and the UPS alerts you if there are issues. No one else in the industry offers this level of advanced predictive diagnosis.



The Eaton 5P and 5PX are ENERGY STAR<sup>®</sup> qualified UPS models. ENERGY STAR is intended to help consumers save money and protect the environment through energy efficient products and practices.

## Outlet-level control

UPS load segments are groups of receptacles that can be controlled independently. They can be used to cycle hung servers remotely to save time and possibly eliminate the need to dispatch personnel. Load segments also extend runtime for critical equipment. In the event of a power outage, non-essential equipment can be powered down to preserve battery power for critical devices.

Eaton's Managed rack power distribution units (ePDUs) allow you to control power at the outlet level for individual power cycling of a device. For further flexibility, you can configure outlets into groups while time and date event scheduling allow you to perform unattended control of individual outlets. Managed ePDUs also measure current, voltage and power usage at the outlet (device) level to enable you to make the right decisions when it comes to energy consumption.

By integrating our UPSs and ePDUs with management software, such as Eaton's Intelligent Power Manager (IPM), you can view and control your environment from any computer on the network server.



Two individually controlled groups of outlets on a UPS

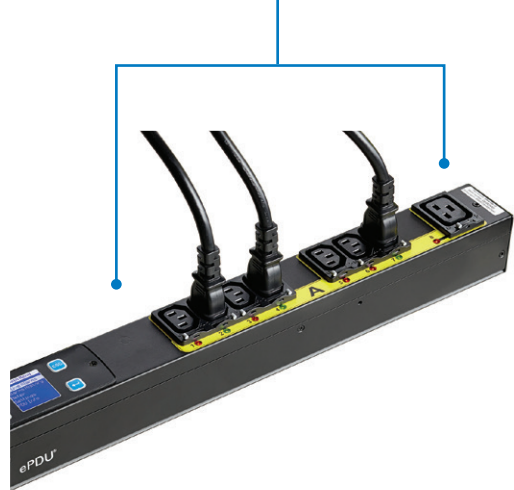
### Rack power protection and control

You can leverage rack power distribution units to protect and manage equipment. You can also distribute power efficiently and safely while taking advantage of advanced outlet-level control and measurement capabilities.

Other benefits include:

- Avoiding accidental plug disconnects with IEC outlet grip plug retention
- Increasing uptime by hot-swapping network module
- Eliminating off-site visits by remotely managing equipment
- Acquiring accurate data by measuring power at outlet level

Control individual outlets to remotely reboot devices or prevent unauthorized use



### Design for reliability

In most traditional power designs, you have one UPS supporting your servers, switches and storage devices. In this type of environment you are prone to having to shut down your equipment during a power failure or if the UPS needs maintenance or replacement.

### Maintenance bypass

Eaton maintenance bypass units enhance power availability to your rack and provide an additional level of reliability to your power distribution design. Utility power runs through the maintenance bypass to the UPS, and then supports the rest of the equipment in the rack. Should the UPS need to be replaced, you can switch power directly from the maintenance bypass to the equipment, and replace or fix the UPS without having to shut down your equipment.

### Automatic transfer switch

Eaton automatic transfer switches (ATS) provide power redundancy to equipment with one or two power supplies. The ATS automatically transfers the power from a primary source to a secondary source if there is a problem with the primary. Once the primary source is restored, power transfers back through it. Leveraging an ATS is ideal for protection of single-corded equipment.



During maintenance, an easy flip of the switch routes power directly from the maintenance bypass to your equipment.

Front view



Rear view



ATSs maintain redundant power distribution to the rack.

# Manage

Management of your networking closet is a key factor when considering efficiency, reliability and uptime. Whether you need to manage at the rack level, or if you want to remotely manage, there are a number of options for you.

## UPS level monitoring/management

For in-rack monitoring, a UPS with an LCD screen is the way to go. You can limit the use of software and have access to multiple settings through the local UPS display. For example, Eaton 5P, 5PX and 9PX UPSs deliver real time stats, including battery level, runtime and the health of the machine. You can also access the UPS's load segments and see what equipment is pulling the most or least power to help you better equalize your power distribution. If you are unable to connect to your environment through a laptop or call tech support for alarms, the LCD allows you to manage everything locally at the touch of a button.

Additionally, think about using rack power distribution units that also have LCD screens. Eaton's Advanced Monitored and Managed ePDUs offer a sleek LCD screen that allows you to view power consumption at the outlet level and helps you calculate power usage effectiveness (PUE).

The 5PX LCD menu gives you vital UPS information at the touch of a button.

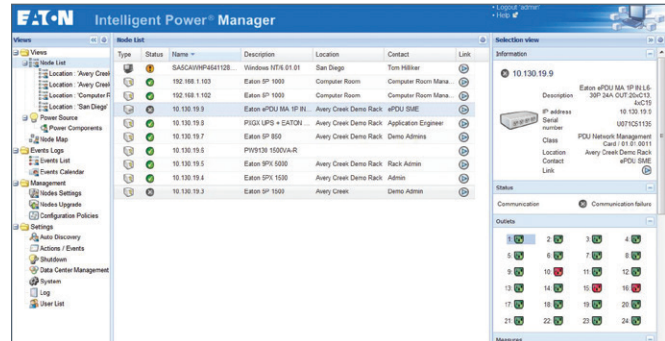


EMP and ERM for temperature and humidity monitoring.



## Remote monitoring/management

By leveraging software, you have the ability to monitor and manage your network closet remotely. This gives you more time to focus on higher priorities and gives you peace of mind when you are not near your equipment. Installing these solutions is fast, easy and affordable.



Eaton's IPM integrates seamlessly into VMware's Vcenter dashboard.

## Intelligent Power Manager

Eaton's IPM software provides all the tools you need to monitor and manage power devices in your physical or virtual environment. This innovative software ensures system uptime and data integrity by allowing you to:

- Remotely monitor and manage multiple devices across your network from a single interface; this can be integrated into an already existing platform, such as VMware, Microsoft or Citrix
- Suspend non-critical virtual machines, consolidate critical virtual machines and shut down unused servers to extend battery runtime
- Set server power consumption limits for extended battery runtime with UCS management software

## Hardware

### Outlet-level current and power metering

Eaton offers managed and advanced monitored technologies for our rackmount power distribution units. You can manage and monitor power at the individual outlet level and measure power consumption, helping you calculate PUE ratings. You can also switch the power on and off at the outlet level should you have servers or storage devices that need to be shut down for maintenance or replacement, enabling you to just shut down one piece of equipment without taking your whole rack offline.

### Remote monitoring of temperature and humidity

Eaton's Environmental Rack Monitor (ERM) and Environmental Monitoring Probe (EMP) enable you to remotely monitor the temperature, humidity and status of devices. This can be done via a standard web browser, providing greater management control and flexible monitoring. Installation is simple and you get email notification should temperatures change outside of normal range. You can also initiate alarm thresholds and system shutdown at critical levels.

# Recommended products

## Organize

Model	Part Number	Height U	Width, in	Depth, in	Approx. Unit Weight, lb	Weight Capacity, lb	Color	Casters
S-Series Enclosures - with Sides (42U) <sup>1</sup>	ETN-ENC422442SB	42	24	42	367	2,200	Black	Yes
S-Series Enclosures - with Sides (42U) <sup>1</sup>	ETN-ENC422442S	42	24	42	367	2,200	Black	No
S-Series Enclosures - Open (42U) <sup>1</sup>	ETN-ENC422442SE	42	24	42	171	2,200	Black	No
Two-Post 19-inch Rack	2PSB556084UXFB	45	21	19	30 (Three-inch uprights) <sup>2</sup>	1,200	Black	No
Two-Post 19-inch Rack	2PS5560841906FB	45	21	19	33 (Six-inch uprights) <sup>3</sup>	1,200	Black	No

Accessories	Part Number	Qty	Form Factor
Horizontal Ring Managers – 2U	ETN-CMPD19032U	1	2U, 17 inches wide
Cable Strain Relief Bars (six-inch depth)	ETN-CMRB19062U	2	1U, 17 inches wide
Standard Velcro Straps (11-inch)	ETN-BX45V11	50	
Side Cable Chase Take-up Spool	ETN-JCCCLSP1	1	
Vertical Manager-Side Cable Chase	ETN-JCCVM77a	1	0U, 40U tall
ePDU Mounting Bracket	ETN-PDUBRCKTW	1	
Two-Post Rack Anchor Kit (19-inch)	2PSSB588AZN	1	

1. Visit [Eaton.com/s-series](http://Eaton.com/s-series) for additional information. 2. Shelves, cable management, cable trays and seismic options available for Two-Post Racks.

## Protect

UPS Model <sup>2</sup>	Part Number	Rating (VA/Watts)	Input Connection	Output Receptacles	Dimensions (H x W x D, in)	Weight (lb)
5P 1500 VA	5P1500R	1440/1100	5-15P (6 ft)	(5) 5-15R	1.7 (1U) x 17.2 x 21.8	44
5PX 1500 VA w/ Network Card-MS <sup>4</sup>	5PX1500RTN	1440/1440	5-15P (8 ft)	(8) 5-15R	3.4 (2U) x 17.2 x 20.6	65
5PX 2000 VA w/ Network Card-MS <sup>4</sup>	5PX2000RTN	1950/1920	5-20P (8 ft)	(4) 5-20R, (4) 5-15R	3.4 (2U) x 17.2 x 20.6	65
5PX 3000 VA w/ Network Card-MS <sup>4</sup>	5PX3000RT2UN	3000/2700	L5-30P (10 ft)	(6) 5-20R, (1) L5-30R	3.4 (2U) x 17.2 x 20.6	65
9PX 5000 VA w/ Network Card-MS <sup>4</sup>	9PX5K	5000/4500	L6-30R (6 ft)	(2) L6-20R, (2) L6-30R, Hardwired	5.1 (3U) x 17.3 x 28.4	106
9PX 5000 VA w/ Network Card-MS <sup>4</sup>	9PX5KTF5	5000/4500	L6-30R (6 ft)	(18) 5-20R, (2) L6-20R, (1) L6-30R, Hardwired	5.1 (3U) x 17.3 x 28.4	201

3. See product pages for additional UPS and accessories including EBMs, two-post rail kits, and network cards. Visit [Eaton.com/5PPrm](http://Eaton.com/5PPrm), [Eaton.com/5PX](http://Eaton.com/5PX) and [Eaton.com/9PX](http://Eaton.com/9PX) for additional information.

4. UPS comes with four-post rail kit.

## ePDU Rackmount

Distribution Models	Part Number	For use with	Input Connection	Output Receptacles	Dimensions (H x W x D, in)
Basic, 1.44kW Vertical ePDU	ePBZ98	5PX 1.5 kVA UPS or UPS with 5-15R	5-15P (6 ft)	(18) 5-15R	47 x 1.5 x 1.5
Metered Input, 1.44kW Vertical ePDU	EMI100-10	5PX 1.5 kVA UPS or UPS with 5-15R	5-15P (10 ft)	(24) 5-15R	66.5 x 2.05 x 2.1
Managed, 1.44kW Vertical ePDU	EMA112-10	5PX 1.5 kVA UPS or UPS with 5-15R	5-15P (10 ft)	(16) 5-20R	66.5 X 2.05 X 2.56
Basic, 1.92kW Vertical ePDU	ePBZ97	5PX 2 kVA UPS or UPS with 5-20R	5-20P (6 ft)	(18) 5-20R	48 x 1.5 x 1.5
Metered Input, 1.92kW Vertical ePDU	EMI101-10	5PX 2 kVA UPS or UPS with 5-20R	5-20P/L5-20P (10 ft) <sup>5</sup>	(24) 5-20R	66.5 x 2.05 x 2.1
Managed, 1.92kW Vertical ePDU	EMA114-10	5PX 2 kVA UPS or UPS with 5-20R	5-20P/L5-20P (10 ft) <sup>5</sup>	(24) 5-20R	66.5 X 2.05 X 2.56
Basic, 2.88kW Horizontal ePDU	ePBZ78	5PX 3 kVA UPS or UPS with L5-30R	L5-30P (15 ft)	(20) 5-20R	1.7 x 17.0 x 3.5
Metered Input, 2.88kW Vertical ePDU	EMI102-10	5PX 3 kVA UPS or UPS with L5-30R	L5-30P (10 ft)	(30) 5-20R	66.5 x 2.05 x 2.1
Managed, 2.88kW Vertical ePDU	EMA108-10	5PX 3 kVA UPS or UPS with L5-30R	L5-30P (10 ft)	(24) 5-20R	66.5 x 2.05 x 2.1
Basic, 5.76kW Vertical ePDU	EPBZ80	9PX 5 kVA UPS or UPS with L6-30R	L6-30P (10 ft)	(30) C13, (6) C19	52.9 x 1.9 x 2.2
Metered Input, 5.76kW Vertical ePDU	EMI104-10	9PX 5 kVA UPS or UPS with L6-30R	L6-30P (10 ft)	(36) C13, (6) C19	66.5 x 2.05 x 2.1
Managed, 5.76kW Vertical ePDU	EMA107-10	9PX 5 kVA UPS or UPS with L6-30R	L6-30P (10 ft)	(20) C13, (4) C19	66.5 x 2.05 x 2.1

5. These units ship with an adapter allowing for 5-20P input plug. Visit [Eaton.com/epdu](http://Eaton.com/epdu) for additional information.

MBP or eATS Distribution	Part Number	For use with	Input Connection	Output Receptacles	Dimensions (H x W x D, in)
HotSwap MBP 1500 VA 120V	EHBPL1500R-PDU1U	1500VA and below UPS or UPS with 5-15P / 5-15R	5-15P (3 ft)	(6) 5-15R	2.1 (2U) x 3.8 x 17.3
HotSwap MBP 2000 VA 120V	EHBPL2000R-PDU1U	2000VA UPS or UPS with 5-20P / 5-20R	5-20P (3 ft)	(6) 5-15R	2.1 (2U) x 3.8 x 17.3
HotSwap MBP 3000 VA 120V	EHBPL3000R-PDU1U	3000VA UPS or UPS with L5-30P / L5-30R	L5-30P (3 ft)	(5) 5-20R	2.1 (2U) x 3.8 x 17.3
Eaton eATS 1500 VA 120V	PULSTS1400R-1U	1500VA and below UPS or UPS with 5-15P / 5-15R	5-15P (6 ft)	(8) 5-15R	1.7 (1U) x 19.0 x 9.8
Eaton eATS 2000 VA 120V	PWATSS520003	2000VA UPS or UPS with 5-20P / 5-20R	5-20P (6 ft)	(8) 5-20R	1.7 (1U) x 19.0 x 7.0
Eaton eATS 3000 VA 120V	PWATSL530005	3000VA UPS or UPS with L5-30P / L5-30R	L5-30P (6 ft)	(8) 5-20R	1.7 (1U) x 19.0 x 7.0
Eaton eATS 3000 VA 208/230V	PULSTS16AMP-1U	3000VA UPS and below with C20/C19	C20 (6 ft)	(1) C19, (6) C13	1.7 (1U) x 19.0 x 9.8

## Manage

### Intelligent Power Manager (IPM)

	Part Number
IPM for 1-10 nodes	Free download @ <a href="http://Eaton.com/IntelligentPower">Eaton.com/IntelligentPower</a>
IPM Silver Edition for 11-100 nodes	66925
IPM Gold Edition for unlimited nodes	66926
IPM installation service: One day onsite	SW06NXXX-001X
IPM installation service: Two day onsite	SW06NXXX-002X
Network Card-MS Web/SNMP	Add connectivity for UPS communications Network-MS
Environmental Monitoring Probe (EMP)	For use with Network-MS Card 116750224-001
Environmental Rack Monitor (ERM), 120V 5-15P input	1 Temperature/Humidity Module 103005775
Water Leak Detector	3 ft, works with EMP or ERM 103005780

# Eaton suggested configurations

## 1500 VA entry solution: Non-monitored, non-redundant, two-post rack

	Equipment Description	Part Number	Quantity
<b>Organize</b>	Two-Post Rack (six-inch uprights)	2PSB556084XUFB	1
	Anchor Kit	2PSSB588AZN	1
<b>Protect</b>	5P 1500 1U Rackmount UPS	5P1500R	1
<b>Manage</b>	Intelligent Power Manager Software	Free Download @ Eaton.com/IntelligentPower	
	Environmental Monitoring Probe	116750224-001	1

## 3 kVA value solution: Monitored, non-redundant, four-post rack

	Equipment Description	Part Number	Quantity
<b>Organize</b>	S-Series Open Enclosure	ETN-ENC422442SE	1
	Standard Velcro Straps	ETN-BX45V11	1
<b>Protect</b>	5PX 3000 Rack/Tower UPS	5PX3000RTN	1
	Monitored ePDU	EMI102-10	1
<b>Manage</b>	Intelligent Power Manager Software	Free Download @ Eaton.com/IntelligentPower	
	Environmental Monitoring Probe	116750224-001	1

## 9 kVA premium solution: Switched, redundant, four-post rack

	Equipment Description	Part Number	Quantity
<b>Organize</b>	S-Series Open Enclosure	ETN-ENC422442SE	1
	Standard Velcro Straps	ETN-BX45V11	1
	ePDU Mounting Brackets	ETN-PDUBRCKTW	1
	Verticle Manager Side Cable Chase	JCCVM771	1
<b>Protect</b>	9PX 5000 Rack/Tower UPS	9PX5K	2
	Managed ePDU	EMA107-10	2
<b>Manage</b>	Intelligent Power Manager Software	Free Download @ Eaton.com/IntelligentPower	
	Environmental Monitoring Probe	116750224-001	1

Learn more at  
[Eaton.com/networkcloset](http://Eaton.com/networkcloset)

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