

# Intelligent Power Distribution

Maximise and manage your rack power



**EATON**

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Ideals that Endure

# Maximise and manage your rack power

Two key trends have emerged in the data centre: the demand from today's IT equipment for more power, and the increasing cost of that power. Couple these with the worldwide growth in demand for data centres and IT servers, and it is clear that data centre managers are facing growing pressure to manage and optimise their available power for growth, at the same time as managing the increasing associated costs.

To help them achieve this, they need an accurate view of the power and energy being consumed in the data centre – from row to rack, and right down to the individual server level. Only then can they truly understand the power usage and optimise the available power.



## Intelligent Power with Eaton ePDUs

### Enclosure Power Distribution Units

Eaton® ePDUs are enclosure-based Power Distribution Units, designed to provide reliable, cost-effective power distribution together with highly accurate monitoring and control for IT equipment in the data centre.

Eaton ePDUs enable the data centre manager to:

- Optimise and utilise all available power
- Control the operational expenditure involved in running a data centre
- Effectively manage and plan for new and existing infrastructure

## Intelligent Power Distribution

### Maximise and manage available power

Choose your required level of monitoring and control – with true V, W, A and kWhr consumption to enable you to track, trend, analyse and utilise all your available power. Then choose your level of control, you can remotely switch outlets for full control and remote reboot, or combine outlet monitoring with switching to fully manage the rack power.

## Intelligent Power Monitoring

### Manage your power consumption

Eaton ePDUs provide a true picture of your V, W, A and kWhr consumption (1% accuracy over 2A) to enable you to utilise all your available power. This is achieved through Intelligent Power Monitoring: accurately monitoring the level of power being drawn by the rack to the breaker branch or outlet group, right down to the individual server level.

Intelligent Power distribution and monitoring through Eaton ePDUs help to ensure you have the power you need, where you need it.

Easy analysis and tracking enables you to see what your servers are doing, where the power is being used and how much excess power is available.

With Intelligent Power Monitoring and Management providing key knowledge and understanding of the power available, you not only know if you are reaching your capacity, but can plan for growth – knowing whether you are able to add more servers or capacity and, if so, where.





## Intelligent Power Control

### Complete control of your power distribution

Eaton ePDUs give you complete control of your power distribution and consumption.

Remote and secure individual outlet switching allows for control over individual outlets as well as branch circuits, together with sequencing outlets with programmable delays. It is also possible to reboot outlets for remote restart of servers and related equipment.

Administrators can enable or disable switching, and allow users to control outlet groups – giving complete confidence and security in the system.

Full integration with Intelligent Power® Manager software enables viewing of all ePDUs and UPSs through a single interface, as well as providing access to alerts and warning thresholds through a simple and easy-to-use interface.

## Intelligent Power for the Data Centre

### Maximum availability

Eaton ePDUs are designed and built specifically for the data centre environment – where reliability is the primary concern – with very high quality components and state-of-the-art technology and circuitry.

With a rugged aluminium or steel chassis (depending on model), they fit any standard 42U IT rack and include Eaton's patented mounting system, for complete flexibility in fitting. Optional cable retention is also available for complete security. Eaton ePDUs are available in 0U vertical and 1U or 2U horizontal mounting.

A single Eaton ePDU will deliver up to 22kW into your rack, from 10A single phase to 32A 3-phase. The full range of ePDU technologies is also covered: Managed, Advanced Monitored, Switched, In-Line Monitored, Monitored, Metered and Basic.

Eaton ePDUs are designed to be easy to set up and monitor either directly, through your current SNMP management software, or through the Intelligent Power Manager software.

# Eaton ePDUs



## Managed ePDUs

Managed ePDUs offer data centre managers maximum functionality and flexibility, with complete understanding and control of data centre power distribution. Capabilities include:

### Monitoring

Highly accurate individual outlet, branch circuit, and full ePDU monitoring for V, W, A and kWhrs (1% accuracy above 2A). Also temperature and humidity monitoring in the rack via optional sensors.

### Switching

Individual outlet, sequencing of outlets with delays or cycling, enables remote reboot of equipment.

### Control

Monitor and control remotely over Ethernet or via Advanced LCD screen on the unit. Communication protocols include HTTP/HTTPS, DHCP, SNMP v1 and v3, SMTP, Telnet, IPv4 and IPv6.

Includes Eaton's patented flexible mounting system, which ensures ePDUs will fit in any standard 42U IT rack. Eaton Managed ePDUs provide reliable, consistent power distribution at temperatures of up to 50°C.





## Advanced Monitored Switched ePDUs ePDUs

Advanced Monitored ePDUs give the data centre manager the detailed accurate information and understanding needed to run the data centre efficiently and effectively.

### Monitoring

Highly accurate individual outlet, branch circuit and full ePDU monitoring for V, W, A and kWhrs (1% accuracy above 2A). Also temperature and humidity monitoring in the rack via optional sensors.

### Control

Monitor and measure key properties and alerts remotely over Ethernet or via Advanced LCD screen on the unit. Communication protocols include HTTP/HTTPS, DHCP, SNMP v1 and v3, SNTP, SMTP, Telnet, IPv4 and IPv6.

Includes Eaton's patented flexible mounting system, which ensures ePDUs will fit in any standard 42U IT rack, Eaton Advanced Monitored ePDUs provide reliable, consistent power distribution at temperatures of up to 50°C.

Switched ePDUs give control to the data centre manager. They provide the ability to remotely shut off or restart equipment ensuring that it starts up in the correct sequence with the correct delays – together with overall monitoring for load balancing.

### Monitoring

Highly accurate monitoring of the ePDU as a whole for V, W, A and kWhr (1% accuracy above 2A). Also temperature and humidity monitoring in the rack via optional sensors. Monitor over Ethernet or via Advanced LCD screen on the unit.

### Switching

On, off and reboot control of individual outlets, together with cycling and sequencing of outlets and branch circuits.

### Control

Control via Ethernet, with communication protocols including HTTP / HTTPS, DHCP, SNMP v1 and v3, SNTP, SMTP, Telnet, IPv4 and IPv6.

Includes Eaton's patented flexible mounting system, which ensures ePDUs will fit in any standard 42U IT rack, Eaton switched ePDUs provide reliable, consistent power distribution at temperatures of up to 50°C.

## Monitored ePDUs

Monitored ePDUs accurately monitor the current draw of the ePDU and branch circuit, to allow for provisioning and load balancing of servers, and to ensure current draw is not approaching breaker limits.

### Monitoring

Monitor current on input and each branch circuit to ensure accurate load balancing.

### Control

Monitor and measure remotely over Ethernet or via the LED interface on the unit, which can automatically scroll through branch circuits.

Includes Eaton's patented flexible mounting system, which ensures ePDUs will fit in any standard 42U IT rack.





## In-Line Monitored ePDUs

In-line Monitored ePDUs are designed for new data centres, or for retrofitting to upgrade an existing infrastructure which lacks power monitoring. In-line Monitored ePDUs provide accurate remote monitoring solutions for both A and B feeds, with single and dual-feed capability

### Monitoring

A fuseless and breakerless design allows current monitoring in-line, with no break to upgrade existing basic infrastructure.

### Control

Monitor and measure remotely over Ethernet or via the LED interface on the unit.

Includes Eaton's patented flexible mounting system, which ensures ePDUs will fit in any standard 42U IT rack.

Retro-fit to existing equipment with A and B feed, while live and without downtime.



## Metered ePDUs

Metered ePDUs are part of Eaton's Custom offering, allowing you to tailor a solution to fit your exact needs. They offer a large digital ammeter for easy start-up and provisioning of servers.

### Monitoring

Locally monitor current at the input of the ePDU, via an LED interface, to enable load balancing and segmentation.

Includes Eaton's patented flexible mounting system, which ensures ePDUs will fit in any standard 42U IT rack.



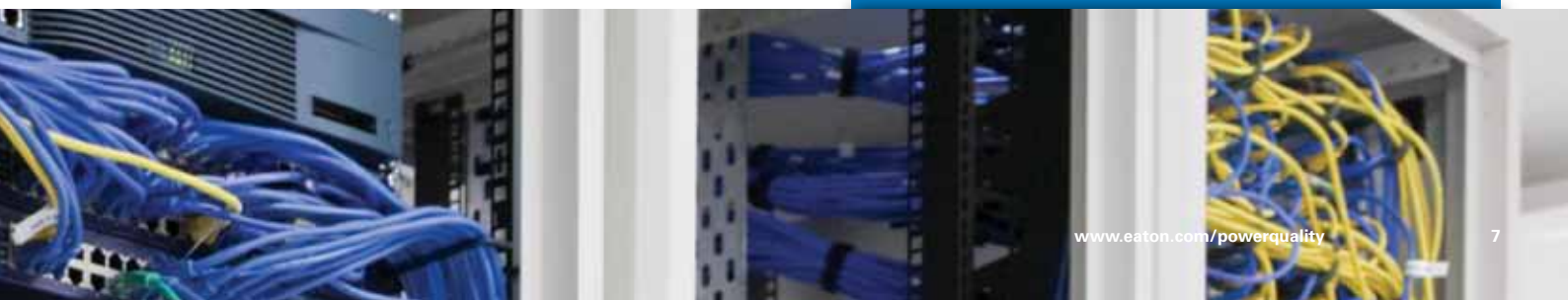
## Basic ePDUs

Basic ePDUs are designed for reliable and cost-effective power distribution. They have the reliability, form factor and outlet choices to meet your needs.

Includes Eaton's patented flexible mounting system, which ensures ePDUs will fit in any standard 42U IT rack.

## Designed for the Data Centre

All ePDUs are made of rugged aluminium or steel chassis and incorporate fully shrouded circuit breakers and switches. Eaton ePDUs are designed for the Data Centre – to be highly reliable, to consistently provide power and designed to last.



# Supervise your data centre power distribution with Intelligent Power Manager

Eaton ePDUs are designed to be easy to set up and maintain, either through your existing SNMP software or through Eaton's Intelligent Power Manager software.

## Intelligent Power Manager

Intelligent Power Manager (IPM) software offers complete monitoring of UPSs and ePDUs over an IP network, from a single interface using a standard web browser. This simplifies the process of management of high volumes of information.

Intelligent Power Manager integrates seamlessly with VMware vCenter – the leading virtualisation management tool – and can even trigger vMotion to move virtual machines to other servers or sites if there is a fear of power loss, resulting in zero downtime.

Intelligent Power Manager also integrates with Eaton's Intelligent Power® Protector software, allowing for safe and co-ordinated shutdown of servers that need to be rebooted or removed. Intelligent Power Protector supports traditional server operating systems as well as VMware ESX, Microsoft Hyper-V, Xen and KVM virtual environments, and is free to download for up to 10 devices.

To download Intelligent Power Manager, visit [www.eaton.eu/intelligentpower](http://www.eaton.eu/intelligentpower)



# Standard and Custom ePDUs

Choose the solution that works for you, from either our Standard or Custom range of ePDUs. Both ranges are designed for the specific data centre application, with an emphasis on safety, quality and reliability.

## Standard ePDU Range

Eaton's Standard ePDU range features our top sellers, designed to meet the most common requirements of today's data centre. Standard units offer either IEC or national outlets for the most popular models.

The range includes:

- Managed units for individual outlet monitoring together with individual outlet switching and sequencing
- Advanced Monitored units for individual outlet and branch circuit level monitoring
- Switched units for individual outlet switching and sequencing, and monitoring of the unit as a whole
- Monitored units for branch circuit and rack-level monitoring
- In-Line Monitored units for retrofitting or upgrading existing basic power distribution
- Basic units to provide reliable and flexible basic power distribution

## Custom ePDU Range

A Custom ePDU opens up the broadest portfolio in the industry to you, across all power densities and technologies, to satisfy the needs of the most demanding data centre.

Custom ePDUs allow you to specify your power density and monitoring requirements, together with inputs and outputs, and are available in four different categories: Basic, Metered, Monitored and 1st Generation Managed (V, W, A monitoring securely via Ethernet, with a local LED display).

You can select from UK, Schuko, French and IEC (C13 and C19) output sockets, and local (UK or Schuko), EN 60309, IEC (C14 and C20) or unterminated cords, for termination directly to the output terminals of the UPS.

The ePDU portfolio includes an extensive range of vertical Zero U products that do not occupy server space in racks, as well as 1U and 2U formats. Environmental monitoring and cable retention options are also available.

Visit [www.eaton.com/ePDU](http://www.eaton.com/ePDU) for more information



# Eaton ePDU Technical Specifications

Technology	Part Number	Form	Rating (A)	Input Type	Outlet type: Qty	Breakers	Product Dimensions WxHxD (mm)	Weight (kg)
<b>Managed IEC</b>								
Managed IEC	eMAA10	OU	10	C14	C13, 16		55x1092.2x65 *	7,2
Managed IEC	eMAA11	OU	16	IEC60309 16A	C13, 20: C19,4		55x1727.2x65 *	6,64
Managed IEC	eMAA12	OU	16	C20	C13, 20: C19,4		55x1524x65 *	6,54
Managed IEC	eMAA13	OU	32	IEC60309 32A	C13, 20: C19,4	2 single pole	55x1524x65 *	8,17
Managed IEC	eMAA14	OU	16A 3P	IEC60309 16A 3P	C19, 21: C19,3		55x1524x65 *	7,01
<b>Advanced Monitored IEC</b>								
Adv. Monitored IEC	eAMA06	OU	10	C14	C13, 16		55x1092.2x65 *	4,84
Adv. Monitored IEC	eAMA07	OU	16	IEC60309 16A	C13, 20: C19,4		55x1524x65 *	9,5
Adv. Monitored IEC	eAMA08	OU	16	C20	C13, 20: C19,4		55x1524x65 *	6,24
Adv. Monitored IEC	eAMA09	OU	32	IEC60309 32A	C13, 20: C19,4	2 single pole	55x1727.2x65 *	7,83
<b>Switched IEC</b>								
Switched IEC	eSWA01	OU	10	C14	C13, 16		55x1092.2x65*	7,2
Switched IEC	eSWA02	OU	16	IEC 60309 16A	C13, 20: C19,4		55x1524x65 *	6,54
Switched IEC	eSWA03	OU	16	C20	C13, 20: C19,4		55x1524x65 *	6,49
Switched IEC	eSWA04	OU	32	IEC60309 32A	C13, 20: C19,4	2 single pole	55x1727.2x65 *	8,1
Switched IEC	eSWA05	OU	16A 3P	IEC60309 16A 3P	C19, 21: C19,3		55x1524x65 *	6,92
<b>Monitored IEC</b>								
Monitored IEC	PW102MI0UB95	OU	10	C14	C13, 16		57x837.5x52.3	7
Monitored IEC	PW104MI0UB96	OU	16	IEC60309 16A	C13, 20: C19, 4		57x1097x52.3	7
Monitored IEC	PW104MI0UB97	OU	16	C20	C13, 20: C19, 4		57x1097x52.3	7
Monitored IEC	PW107MI0UB88	OU	32	IEC60309 32A	C13, 20: C19, 4	2 single pole	57x1429x90.8	7
Monitored IEC	PW312MI0UC07	OU	16A 3P	IEC60309 16A 3P	C13, 36: C19, 6		57x1682x52.3	10
Monitored IEC	PW107MI0UC60	OU	32	IEC60309 32A	C13, 36: C19, 6	2 single pole	57x1800x52.3	9
Monitored IEC	PW104MI0UD02	OU	16	C20	C13, 18: C19, 2		57x970x52.3	7
Monitored IEC	PW104MI0UD03	OU	16	IEC60309 16A	C13, 18: C19, 2		57x970x52.3	7
<b>In-Line Monitored IEC</b>								
In-Line Monitored IEC	PW104IM0UC05	OU 19"	16	IEC 16A	IEC 16A		57x436x52.3	6,5
In-Line Monitored IEC	PW107IM0UC04	OU 19"	32	IEC 32A	IEC 32A		57x436x52.3	6,5
In-Line Monitored IEC	PW107IM0UB81	OU 19"	2x16	2x IEC 16A	2x IEC 16A		57x436x75	6,5
In-Line Monitored IEC	PW115MI0UB80	OU 19"	2x32	2x IEC 32A	2x IEC 32A		57x436x75	6,5
In-Line Monitored IEC	PW322IM0UC17	OU 19"	32 3P	IEC 32A 3P	IEC 32A 3P		57x436x75	6,5
In-Line Monitored IEC	PW344IM0UC18	OU	2x32A 3P	2x IEC 32A 3P	2x IEC 32A 3P		57x572.7x75	6,5
<b>Basic IEC</b>								
Basic IEC	ePBZ03	OU	16	C20	C13, 16		47.5x635x59.6	1,5
Basic IEC	ePBZ05	OU	10	C14	C13, 16		47.5x635x59.6	1,4
Basic IEC	ePBZ32	OU	16	IEC60309 16A	C13, 20: C19, 4		44.5x768.4x50	1,7
Basic IEC	ePBZ33	OU	16	C20	C13, 20: C19, 4		44.5x768.4x50	1,6
Basic IEC	ePBZ31	OU	32	IEC60309 32A	C13, 20: C19, 4	2 single pole	44.5x920.8x50	2,7
Basic IEC	PW312BA0UC07	OU	16A 3P	IEC60309 16A 3P	C13, 36: C19, 6		57x1400x52.3	10
Basic IEC	PW322BA0UC56	OU	32A 3P	IEC60309 32A 3P	C13, 3: C19, 6	6 single pole	57x1200x115.8	10
Basic IEC	PW322BA0UC57	OU	3A2 3P	IEC60309 32A 3P	C19, 6	6 single pole	57x1135x115.8	10
Basic IEC	ePBZ06	1U	16	C20	C13,10: C19,2		43.4x439x58.5	1,6
Basic IEC	ePBZ04	1U	16	C20	C13,12		43.4x439x58.5	1,6
Basic IEC	ePBZ01	OU	10	C14	C13, 8		43.4x439x58.5	1,4
Basic IEC	ePBZ02	OU	10	C14	C13, 12		43.4x439x58.5	1,4

\*max depth at com box 113

Technology	Part Number	Form	Rating (A)	Input Type	Outlet type: Qty	Breakers	Product Dimensions WxHxD (mm)	Weight (kg)
<b>UK Socket</b>								
Basic UK	ePBZ20	OU, 19"	13	UK	UK, 4		54.5x444.2x46.5	1,4
Basic UK	ePBZ21	OU, 19"	13	UK	UK, 6		54.5x444.2x46.5	1,5
Basic UK	ePBZ22	OU	13	UK	UK, 8		54.5x590.6x46.5	1,9
Basic UK	ePBZ23	OU	13	UK	UK, 10		54.5x717.6x46.5	2
Basic UK	ePBZ24	OU	13	UK	UK, 12		54.5x844.6x46.5	2,2
Monitored UK	PW103MI0UC62	OU	13	UK	UK, 16		57x1328x52.3	8
Monitored UK	PW102MI0UC63	OU	10	C14	UK, 16		57x1328x52.3	8
Monitored UK	PW104MI0UC64	OU	16	C20	UK, 20: C19, 4		57x1850x52.3	8
Monitored UK	PW107MI0UC65	OU	32	IEC60309 32A	UK, 20: C19, 4	2 single pole	57x1860x115.8	10
Monitored UK	PW104MI0UC66	OU	16	IEC60309 16A	UK, 20: C19, 4		57x1850x52.3	8
Managed 1st Gen UK	PW103MA0UC67	OU	13	UK	UK, 16		57x1425x75	10
Managed 1st Gen UK	PW102MA0UC68	OU	10	C14	UK, 16		57x1425x75	10
Managed 1st Gen UK	PW104MA0UC69	OU	16	C20	UK, 16: C19, 4		57x1695x75	10
Managed 1st Gen UK	PW107MA0UC70	OU	32	IEC60309 32A	UK, 16: C19, 4	2 single pole	57x1840x115.8	10
Managed 1st Gen UK	PW104MA0UC71	OU	16	IEC60309 16A	UK, 16: C19, 4		57x1695x75	10

**Not on the list? If you require something different, please contact your local Eaton sales office for a custom quote – we have thousands of ePDU designs already engineered and ready for production.**

Eaton is dedicated to ensuring that reliable, efficient and safe power is available when it's needed most. With unparalleled knowledge of electrical power management across industries, experts at Eaton deliver customised, integrated solutions to solve our customers' most critical challenges.

Our focus is on delivering the right solution for the application. But, decision makers demand more than just innovative products. They turn to Eaton for an unwavering commitment to personal support that makes customer success a top priority. For more information, visit [www.eaton.com/electrical](http://www.eaton.com/electrical).

In addition to the wide product portfolio Eaton has a comprehensive range of service packages to match different type of maintenance needs and budgets. For assistance with your power quality needs, contact your local Eaton service and sales representatives.

**[www.eaton.com/powerquality](http://www.eaton.com/powerquality)**



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