

# Power infrastructure solutions & products



**EATON**

*Powering Business Worldwide*

# Energizing a world that demands more.

Discover today's Eaton.

## Powering business worldwide

As a global power management company, we help customers worldwide manage the power needed for buildings, aircraft, trucks, cars, machinery and businesses.

Eaton's innovative technologies help customers manage electrical, hydraulic and mechanical power more reliably, efficiently, safely and sustainably.



*Powering Business Worldwide*





## We deliver:

- **Electrical solutions** that use less energy, improve power reliability and make the places we live and work safer and more comfortable
- **Hydraulic and electrical solutions** that enable machines to deliver more productivity without wasting power
- **Aerospace solutions** that make aircraft lighter, safer and less costly to operate, and help airports operate more efficiently
- **Vehicle drivetrain and powertrain solutions** that deliver more power to cars, trucks and buses, while reducing fuel consumption and emissions

We provide integrated solutions that help make energy, in all its forms, more practical and accessible.

With 2017 sales of \$20.4 Billion, Eaton has approximately 96,000 employees around the world and sells products in more than 175 countries.



## Eaton's electrical business

### Eaton is a global leader with expertise in:

- Power distribution and circuit protection
- Backup power protection
- Solutions for harsh and hazardous environments
- Lighting and security
- Structural solutions and wiring devices
- Control and automation
- Engineering services

Eaton is positioned through its global solutions to answer today's most critical electrical power management challenges. With 100 years of electrical experience behind us, we're energized by the challenge of powering up a world that demands twice as much energy as today. We're anticipating needs, engineering products and creating solutions to energize our markets today and in the future.

We are dedicated to ensuring that reliable, efficient and safe power is available when it's needed most.

**Eaton.com**



## Eaton's heritage in industry -leading UPS design and production

For more than 50 years, Eaton has been safeguarding the critical systems of businesses across the globe. Whether protecting a single desktop or a large data centre, Eaton solutions provide clean, uninterrupted power to keep mission-critical applications working. We offer a comprehensive range of environmentally sensitive, efficient, reliable UPSs, surge protective devices, power distribution units (PDUs), remote monitoring solutions, meters, software, connectivity solutions, enclosures, airflow management and professional services. We work with IT and facilities managers to effectively manage power in virtually every business segment, including data centres, retail outlets, healthcare organisations, governmental agencies, manufacturing firms, broadcasting companies, financial institutions, and a wide variety of other areas. Our solutions provide the power to make a difference, helping you achieve your business goals while maintaining an environmentally sustainable enterprise.

[www.eaton.eu/powerquality](http://www.eaton.eu/powerquality)





We make what matters work.\*



At Eaton, we believe that power is a fundamental part of just about everything people do. That's why we're dedicated to helping our customers find new ways to manage electrical, hydraulic and mechanical power more efficiently, safely and sustainably. To improve people's lives, the communities where we live and work, and the planet our future generations depend upon. Because this is what really matters. And we're here to make sure it works.

To learn more go to: [Eaton.com/whatmatters](https://Eaton.com/whatmatters)



*Powering Business Worldwide*

**We make what matters work.**



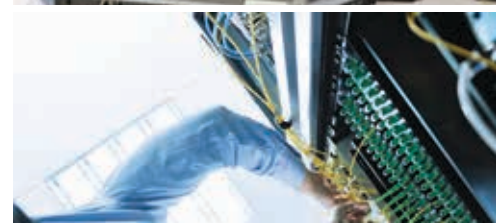
# Contents

|                                        |           |
|----------------------------------------|-----------|
| <b>UPS Basics</b>                      |           |
| Why use UPS?                           | <b>8</b>  |
| <b>PC, Workstation and Home AV UPS</b> |           |
| Eaton Protection Box                   | <b>10</b> |
| Eaton Protection Station               | <b>12</b> |
| Eaton 3S UPS                           | <b>14</b> |
| Eaton Ellipse ECO UPS                  | <b>16</b> |
| Eaton 5S UPS                           | <b>18</b> |
| Eaton Ellipse PRO UPS                  | <b>20</b> |
| <b>Network and Server</b>              |           |
| Eaton 5SC UPS                          | <b>22</b> |
| Eaton 5P UPS                           | <b>24</b> |
| Eaton 5PX UPS                          | <b>26</b> |
| Eaton 9130 UPS                         | <b>28</b> |
| Eaton EX UPS                           | <b>30</b> |
| Eaton 9SX UPS                          | <b>32</b> |
| Eaton 9PX UPS 1000–3000W               | <b>34</b> |
| Eaton 9PX UPS 5/6/8/11 kVA             | <b>36</b> |
| Eaton 9155 UPS 8-15 kVA                | <b>38</b> |
| Eaton 9155 UPS 20-30 kVA               | <b>40</b> |
| <b>Data Centre and Facility UPS</b>    |           |
| Eaton BladeUPS                         | <b>42</b> |
| Eaton 93E UPS 15-80 kVA                | <b>44</b> |
| Eaton 93E UPS 100-200 kVA              | <b>46</b> |
| Eaton 93PS UPS 8-10 kW                 | <b>48</b> |
| Eaton 93PS UPS 8-40 kW                 | <b>50</b> |
| Eaton 93PM UPS                         | <b>52</b> |
| Power Xpert 9395P UPS                  | <b>54</b> |
| Eaton Connected                        | <b>56</b> |
| Eaton 93 STS                           | <b>58</b> |



# Contents

|                                                            |     |
|------------------------------------------------------------|-----|
| <b>Marine and Industrial UPS</b>                           |     |
| Eaton 9130M UPS                                            | 60  |
| Eaton 9PX Marine UPS                                       | 62  |
| Eaton 9155M/9355M UPS 8 - 15 kVA                           | 64  |
| Eaton 9155M/9355M UPS 20-40 kVA                            | 66  |
| Eaton 93PS Marine UPS                                      | 68  |
| Eaton 9PHD Marine UPS                                      | 70  |
| Eaton 9PHD Industrial UPS                                  | 72  |
| <b>IT Racks and Power Distribution Units</b>               |     |
| Eaton REC Series IT Rack                                   | 74  |
| Eaton Aisle Containment System                             | 76  |
| Eaton RE Series IT Rack                                    | 78  |
| Eaton RE Series 2 Post Rack                                | 80  |
| Eaton ATS                                                  | 84  |
| Eaton FlexPDU & Eaton HotSwap MBP                          | 86  |
| Eaton ePDUs G3                                             | 88  |
| <b>Power Management Software &amp; Connectivity</b>        |     |
| Power management for IT equipment                          | 92  |
| Operating Systems Compatibility list                       | 94  |
| Connectivity Options                                       | 95  |
| Intelligent Power Manager Infrastructure                   | 97  |
| <b>Services</b>                                            |     |
| Maintenance contracts                                      | 100 |
| Remote monitoring with Eaton SmartQmmunicator              | 102 |
| Distributed services for UPSs of up to 200 kVA power range | 104 |
| <b>Green Life Cycle</b>                                    |     |
| Green by design                                            | 108 |
| <b>Technology</b>                                          |     |
| Hot Sync Technology                                        | 109 |
| ABM Technology                                             | 111 |
| Energy Saver System                                        | 113 |
| Variable Module Management System                          | 115 |

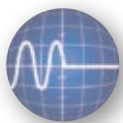


# Why use UPS?

An uninterruptible power supply (UPS) protects IT equipment and other electrical loads from problems that can affect the public electricity supply. It performs the following three basic functions:

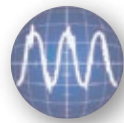
1. Prevents hardware damage typically caused by surges and spikes. Many UPS models continually condition incoming power as well.
2. Prevents data loss and corruption. Without a UPS, data stored on devices that are subjected to a hard system shutdown may become corrupted or even lost completely. In conjunction with power management software, a UPS can facilitate a graceful system shutdown.
3. Provides availability for networks and other applications while preventing downtime. UPSs can also be paired with generators in order to give the generators sufficient time to power up in the event of a power cut.

Eaton UPSs address all of the nine common power problems below:



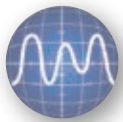
## 1. Power failure

typically caused by lightning strike or fault with the power company's equipment. Without a UPS, this will cause a hard shutdown, putting data at risk.



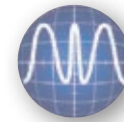
## 6. Electrical noise

"Interference"; typically from radio transmitters, welding equipment etc. Noise can cause hard-to-find intermittent problems.



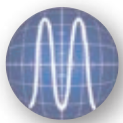
## 2. Power sag

Short-term voltage reduction, often caused by start-up of nearby large loads. Power sags can cause equipment crashes and hardware damage.



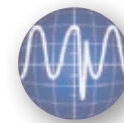
## 7. Frequency variation

Changes in supply frequency, usually only found on supplies from generators.



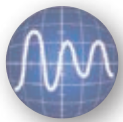
## 3. Power surge

Short-term high voltage, usually caused by lightning strike nearby. Spikes almost always lead to data loss and/or hardware damage.



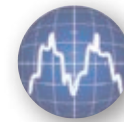
## 8. Switching transient

Instantaneous undervoltage, typically lasting a few nanoseconds.



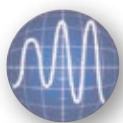
## 4. Undervoltage

Reduced supply voltage lasting from minutes to days. Typically occurs when supply network is overloaded. Can lead to computers behaving unpredictably.



## 9. Harmonic distortion

Disortion of the normal smooth supply waveform. Can be caused by variable speed drivers and even photocopiers. Can cause communication errors, overheating and hardware damage.



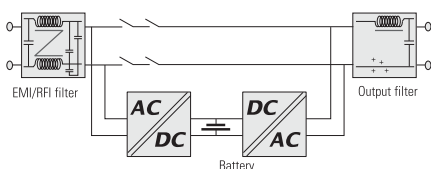
## 5. Overvoltage

Increased supply voltage lasting from minutes to days. Often triggered by rapid reductions in power demands, overvoltage can damage hardware.

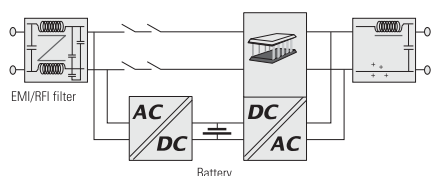


# UPS topologies for different needs

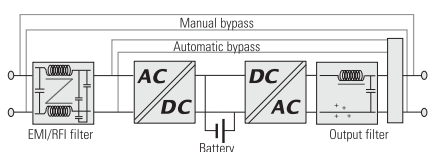
Three common UPS topologies described below provide varying degrees of protection for your equipment.



**Passive standby topology (off-line)** is the most frequently used UPS topology for protecting PCs against power failure, power sag and power surge. In normal mode, the UPS supplies power to the application directly from the mains, filtered but without active conversion. The battery is charged from the mains. In the event of a power cut or fluctuation, the UPS delivers stable power from the battery. The advantages of this topology are low cost and adequacy for office environments. Passive standby topology is not suitable if the power supply is of low quality (industrial sites) or subject to frequent disruptions.



**Line interactive topology** is used for protecting enterprise networks and IT applications against power failure, power sag, power surge, undervoltage and overvoltage. In normal mode, the device is controlled by a microprocessor that monitors the quality of the supply and reacts to fluctuations. A voltage compensation circuit is enabled to boost or reduce the supply voltage to compensate for the fluctuations. The main advantage of this topology is that it enables compensation of under and overvoltage without using the batteries.



**Double conversion topology (on-line)** is a basis for UPSs designed for continuous power protection of critical equipment against all nine power problems: power failure, power sag, power surge, undervoltage, overvoltage, switching transient, line noise, frequency variation and harmonic distortion. It ensures a consistent quality of power supply regardless of disturbances in the incoming mains. The output voltage is entirely regenerated by a sequence of AC to DC conversion followed by DC to AC conversion in order to create power supply without any electrical interference. Double conversion UPSs can be used with any type of equipment as there are no transients when changing over to battery power.

# Eaton Protection Box



Eaton Protection Box 8



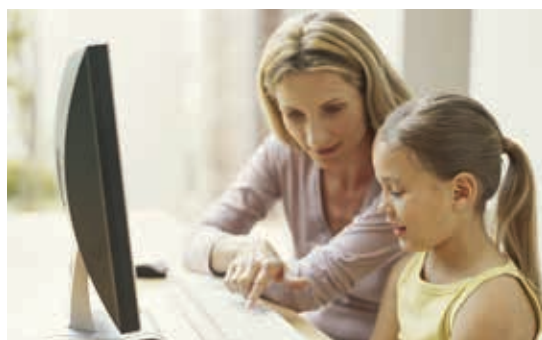
Eaton Protection Box 5



Eaton Protection Box 1

## Advanced protection for:

- Computers, peripherals and multimedia
- TV, Video and Hi-Fi equipment: Home cinema, DVD writers, digital decoders, etc.
- Broadband modems (Internet and TV)
- IP telephony
- Household goods, etc.



## Surge protection

The Eaton Protection Box multi-way block with high performance surge protection is a simple solution for protecting delicate equipment.

## Effective surge protection

The Protection Box is designed to filter the power supply for delicate equipment to protect it against surges, interference and the indirect effects of lightning.

The high performance of the Protection Box is based on an advanced design with surge protection in compliance with IEC 61643-1.

## Complete protection

The Protection Box range has models with 1, 5 or 8 sockets. Some models also provide protection for telephone connections that can carry surges to the equipment.

- Tel@ models: with telephone/broadband Internet access protection
- Tel@ + TV models: with telephone/broadband Internet access protection + Audio/Video protection module (surge protection for television and FM radio with TV and F-Type connectors)

## Practical and economical: replaceable surge protection module

(Protection Box 5 Tel@, 5 Tel@ + TV and 8 Tel@ + TV)

The surge protective components for these models are grouped into a pluggable module for:

- Easy replacement if the surge protective devices are destroyed by a major surge (no need to disconnect the equipment and the pluggable unit is an Eaton standard replacement part)
- Can be updated (adding functions, changing connectors, etc.)

## Warranty for connected equipment

Eaton offers free warranty for the equipment connected (applicable for EU countries and Norway only). This insurance is included in the purchase price of the Protection Box and covers up to 50 000 € for an 8 socket model to cover damage caused by a failure of the surge protection.

## And lots of features to simplify life

- Power ON and active protection indicators
- PowerLine Communications compatibility (Protection Box 5/8) for connecting PLC adapters
- Cable ties and cable markers supplied (5 and 8 socket models)
- Sockets arranged to allow blocks to be plugged side by side





# Eaton Protection Box

- 1 Power ON indicator
- 2 Active protection indicator
- 3 Telephone / broadband protection
- 4 Replaceable surge protection module



Eaton Protection Box 8



Eaton Protection Box 5

- 5 Widely spaced sockets for transformer units, 1 PLC-ready outlet (for Protection Box 5 and 8)
- 6 All outlets with safety shutters



Audio/Video protection module  
available (for Protection Box 5 Tel@ +  
TV and 8 Tel@ + TV only)

## TECHNICAL SPECIFICATIONS

|                                                         | 1                                                                              | 1 Tel@           | 5                 | 5 Tel@            | 5 Tel@+TV         | 8 Tel@+TV         |
|---------------------------------------------------------|--------------------------------------------------------------------------------|------------------|-------------------|-------------------|-------------------|-------------------|
| Rating (A/W)*                                           | 16 A / 3 680 W                                                                 | 16 A / 3 680 W   | 10 A / 2 300 W    | 10 A / 2 300 W    | 10 A / 2 300 W    | 10 A / 2 300 W    |
| Voltage/frequency                                       | 220 V – 250 V / 50/60 Hz                                                       |                  |                   |                   |                   |                   |
| IEC 61643-1 tested                                      | Yes                                                                            | Yes              | Yes               | Yes               | Yes               | Yes               |
| PowerLine compatibility                                 | /                                                                              | /                | Yes               | Yes               | Yes               | Yes               |
| <b>Surge test conditions</b>                            |                                                                                |                  |                   |                   |                   |                   |
| Surge test conditions for IEC 61643-1 with 8/20µs pulse | Uoc = 6.6 kV - Up = 1.5 kV - In = 2.5 kA - Imax = 8 kA                         |                  |                   |                   |                   |                   |
| <b>Protective devices</b>                               |                                                                                |                  |                   |                   |                   |                   |
| Total rating                                            | 30 000 A, 3 x MOV 10 000 A                                                     |                  |                   |                   |                   |                   |
| Response time                                           | <1ns                                                                           |                  |                   |                   |                   |                   |
| Total power absorbed                                    | 1110 Joules                                                                    |                  |                   |                   |                   |                   |
| <b>EMI/RFI filter</b>                                   |                                                                                |                  |                   |                   |                   |                   |
| 52 dB from 100kHz to 100MHz                             | /                                                                              | Yes              | /                 | Yes               | Yes               | Yes               |
| <b>Telephone and audio/video line protection</b>        |                                                                                |                  |                   |                   |                   |                   |
| RJ11/RJ45 telephone including broadband                 | /                                                                              | 10 000 A         | /                 | 10 000 A          | 10 000 A          | 10 000 A          |
| Audio/Video line                                        | /                                                                              | /                | /                 | /                 | 10 000 A          | 10 000 A          |
| <b>Marking and standards</b>                            |                                                                                |                  |                   |                   |                   |                   |
| Safety                                                  | IEC 60-950, NFC 61-303                                                         |                  |                   |                   |                   |                   |
| EMC                                                     | EN 55082-2, EN 55022 class B, EN 61000-4-4 level 4 IEC 61000-4-5, level X=10kV |                  |                   |                   |                   |                   |
| Surge protection                                        | IEC 61 643-1                                                                   |                  |                   |                   |                   |                   |
| <b>Dimensions and weight</b>                            |                                                                                |                  |                   |                   |                   |                   |
| Dimensions H x W x D                                    | 67 x 70 x 105 mm                                                               | 67 x 70 x 105 mm | 65 x 120 x 255 mm | 65 x 120 x 260 mm | 65 x 120 x 260 mm | 65 x 150 x 315 mm |
| Weight                                                  | 0.160 kg                                                                       | 0.210 kg         | 0.610 kg          | 0.770 kg          | 0.840 kg          | 0.850 kg          |
| <b>Customer Service &amp; Support</b>                   |                                                                                |                  |                   |                   |                   |                   |
| 2 years warranty                                        | Standard product exchange ; warranty for connected equipment up to 50 000 €    |                  |                   |                   |                   |                   |
| Replaceable surge protection module                     | Standard exchange free of charge from Eaton aftersales services                |                  |                   |                   |                   |                   |

\*: Calculated for a nominal voltage at 230 V

| Part Numbers                      | 1      | 1 Tel@ | 5      | 5 Tel@ | 5 Tel@+TV | 8 Tel@+TV |
|-----------------------------------|--------|--------|--------|--------|-----------|-----------|
| French sockets (FR)               | 66 706 | 66 707 | 66 710 | 66 711 | 66 934    | 66 935    |
| "Schuko" sockets (DIN)            | 66 708 | 66 709 | 66 712 | 66 713 | 66 936    | 66 937    |
| French sockets (FR-B) for Belgium | /      | /      | 66 932 | 66 933 | 66 938    | /         |



FR



DIN

# Eaton Protection Station

500/650/800 VA



Eaton Protection Station 800



Multi-position

#### Advanced protection for:

- Home computing
- Digital leisure equipment



#### Combined UPS/surge protection/ multiple socket device

Innovative solutions offering total protection for home computers and digital leisure devices.

#### Connect all your equipment and protect them against power failures and voltage fluctuations...

Eaton Protection Station can do this, offering in a single device:

- Up to 8 standard outlets
- A high performance surge suppressor
- A UPS with 20 to 30 minutes battery back-up for a typical PC

#### The first UPS in this class with energy saving features

Eaton Protection Station boasts an efficient electrical design with **EcoControl function** that **automatically disables peripherals** when the master device (Computer, HD TV, Home network storage, etc...) is turned off. This will help you **save up to 30% energy** compared to previous generation UPSs.

#### One model suitable for each application

3 versions (500 VA/250 W, 650 VA/400 W or 800 VA/500 W backup power), to protect an internet PC, a multimedia computer with peripherals or a hardcore gamer configuration. Thanks to its multi-position format Eaton Protection Station can fit anywhere.

#### Guarantees total peace of mind

- Surge suppressor compatible with IEC 61 643-1 standard (+ status indicator)
- USB port and power management software as standard (650 & 800 models)
- Data line protection to ensure that the internet line (including xDSL) is protected against surges
- Unlimited warranty for the connected computer equipment (EU countries and Norway)
- Periodic test and battery replacement indicator





# Eaton Protection Station

- 1 Surge protection status indicator
- 2 Line protection for telephone/Internet ADSL
- 3 Spaced outlets, compatible with local standards
- 4a Outlets with surge protection
- 4b Outlets with surge protection and back-up power
- 4c 2 EcoControl outlets (650 & 800)



- 4d 1 PLC-ready outlet
- 5 Replaceable battery
- 6 Reset button (circuit breaker)
- 7 USB port (650 & 800) with Windows/Linux/Mac software
- 8 Indicator for mains/battery operation, overload, fault + audible alarms

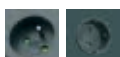
Eaton Protection Station 650 & 800

## TECHNICAL SPECIFICATIONS

|                                        | 500                                                                                                                                         | 650                                                                                                                                                                    | 800                                                      |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| Technology                             | High frequency UPS with surge protection                                                                                                    |                                                                                                                                                                        |                                                          |
| Application                            |                                                                                                                                             |                                                                                                                                                                        |                                                          |
| Outlets                                | 6 standard outlets (3 with back-up power and surge protection + 3 with surge protection)                                                    | 8 standard outlets (4 with back-up power and surge protection + 4 with surge protection)                                                                               |                                                          |
| Performance                            |                                                                                                                                             |                                                                                                                                                                        |                                                          |
| Output power capacity (backup outlets) | 500 VA - 250 W                                                                                                                              | 650 VA - 400 W                                                                                                                                                         | 800 VA - 500 W                                           |
| Output power capacity (all outlets)    | 5 A - 1150 VA                                                                                                                               | 10 A - 2300 VA                                                                                                                                                         | 10 A - 2300 VA                                           |
| Input voltage range                    | 184 V - 264 V                                                                                                                               | Up to 160 V - 284 V (adjustable)                                                                                                                                       | Up to 160 V - 284 V (adjustable)                         |
| Output voltage and frequency           | 230 V - 50 / 60 Hz auto-selection                                                                                                           |                                                                                                                                                                        |                                                          |
| Protection                             | Resettable circuit breaker                                                                                                                  |                                                                                                                                                                        |                                                          |
| Batteries                              |                                                                                                                                             |                                                                                                                                                                        |                                                          |
| Battery type                           | Replaceable sealed lead-acid batteries                                                                                                      |                                                                                                                                                                        |                                                          |
| Battery monitoring                     | Automatic battery test, battery replacement indicator, protection against deep discharges (4-hour limit)                                    |                                                                                                                                                                        |                                                          |
| Battery operation                      | Cold-start capable (mobile power source), battery charging even in OFF position                                                             |                                                                                                                                                                        |                                                          |
| Typical application                    | 1 internet computer                                                                                                                         | 1 multimedia computer + peripherals                                                                                                                                    | 1 computer high graphics power                           |
| Backup time with typical application   | 20 min                                                                                                                                      | 30 min                                                                                                                                                                 | 30 min                                                   |
| Features                               |                                                                                                                                             |                                                                                                                                                                        |                                                          |
| User interface                         | Operation with mains/battery power, surge suppressor status, overload, battery replacement, fault, audible alarms                           |                                                                                                                                                                        |                                                          |
| EcoControl                             | /                                                                                                                                           | Save up to 30% energy* (efficient electrical design and automatic deactivation of idle peripherals)                                                                    |                                                          |
| Surge protection                       | Complete common and differential mode protection - 3 MOV – Total power: 525 Joules, compatible with IEC 61643-1 standard                    |                                                                                                                                                                        |                                                          |
| Performance on 8/20 wave               | Uoc = 6 kV<br>Up = 1.5 kV<br>In = 2.5 kA<br>I max = 8 kA                                                                                    | Uoc = 6 kV<br>Up = 1.7 kV<br>In = 2.8 kA<br>I max = 8 kA                                                                                                               | Uoc = 6 kV<br>Up = 1.7 kV<br>In = 2.8 kA<br>I max = 8 kA |
| PowerLine compatibility                | /                                                                                                                                           | 1 PLC-ready outlet                                                                                                                                                     | 1 PLC-ready outlet                                       |
| Data line protection                   | Protection for telephone/fax/modem/Internet ADSL line + Ethernet network                                                                    |                                                                                                                                                                        |                                                          |
| Installation                           | Requires earth connection                                                                                                                   |                                                                                                                                                                        |                                                          |
| Standards                              |                                                                                                                                             |                                                                                                                                                                        |                                                          |
| Standards                              | IEC 62040-1, IEC 62040-2, IEC 61643-1                                                                                                       |                                                                                                                                                                        |                                                          |
| Quality and environment                | ISO 9001, ISO 14001                                                                                                                         |                                                                                                                                                                        |                                                          |
| Dimensions and weight                  |                                                                                                                                             |                                                                                                                                                                        |                                                          |
| Dimensions W x H x D                   | 155 x 304 x 137 mm                                                                                                                          | 185 x 327 x 149 mm                                                                                                                                                     | 185 x 327 x 149 mm                                       |
| Weight                                 | 2.9 kg                                                                                                                                      | 3.8 kg                                                                                                                                                                 | 4 kg                                                     |
| Power Management                       |                                                                                                                                             |                                                                                                                                                                        |                                                          |
| Com port                               | /                                                                                                                                           | USB port                                                                                                                                                               | USB port                                                 |
| Software                               | /                                                                                                                                           | Eaton UPS Companion software on CD, compatible with Windows 7/Windows Vista/XP/Mac/Linux (power management, Automatic system shutdown, Alarm notification, Events log) |                                                          |
| Customer service & support             |                                                                                                                                             |                                                                                                                                                                        |                                                          |
| 2 years guarantee                      | Standard product exchange, including the battery ; warranty for the connected computing equipment for an unlimited amount (EU countries)    |                                                                                                                                                                        |                                                          |
| Warranty+                              | Optional 3 years warranty (depending on the country please visit <a href="http://www.eaton.eu/powerquality">www.eaton.eu/powerquality</a> ) |                                                                                                                                                                        |                                                          |

\*compared to UPS from the previous generations

| Part Numbers | 500    | 650    | 800    |
|--------------|--------|--------|--------|
| FR outlets   | 66 942 | 61 061 | 61 081 |
| DIN outlets  | 66 943 | 61 062 | 61 082 |



FR DIN

# Eaton 3S UPS

550 – 700 VA



## Ideal for protecting:

- Computers and peripherals
- Broadband modems (internet and TV)
- IP telephony equipment
- POS equipment



## Power protection for office and home computer equipment

### Protection against power problems

- The Eaton 3S UPS helps to protect your computer equipment in case of everyday events such as lightning strikes, storms, over-demand on the utility grid, accidents, and natural disasters knocking out power without warning.
- In the event of a total blackout, the unit provides sufficient battery backup time to last through most power outages.
- The 3S also protects telephone, broadband and Ethernet line from "back door" power surges.
- The shutdown software makes it possible to automatically save your work and shut down your application without losing any data. Once the power is restored, you can continue working exactly where you left off.

### Easy integration and installation

- Attractive design and glossy finish make the 3S a perfect fit for the modern office environment.
- The 3S comes with either 6 Schuko (DIN) or 6 French (FR) outlets for easy connection of typical computer configurations with peripherals (IEC model also available with 8 outlets).
- The 3S features a HID-compliant USB port (cable supplied), for automatic integration with common operating systems (Windows/Mac OS/Linux).
- Compact unit fits on or under your desk or can be mounted on a wall.
- Easy-to-replace battery helps to extend UPS service life.

# Eaton 3S UPS

- 1 3 Schuko or FR outlets with surge protection
- 2 3 Schuko or FR outlets with battery backup and surge protection
- 3 On / Off button + LED interface
- 4 USB port
- 5 Dataline protection
- 6 Replaceable battery
- 7 Reset button (circuit breaker)
- 8 Wall-mounting system



Eaton 3S 700 DIN



Eaton 3S 700 IEC

- 1 4 IEC outlets with surge protection
- 2 4 IEC outlets with battery backup and surge protection
- 3 On / Off button + LED interface
- 4 USB port
- 5 Dataline protection
- 6 Replaceable battery
- 7 Reset button (circuit breaker)
- 8 Wall-mounting system

## TECHNICAL SPECIFICATIONS

| TECHNICAL SPECIFICATIONS              |  | Eaton 3S 550                                                                                                                                   | Eaton 3S 700      |
|---------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| Rating (VA/W)                         |  | 550 VA / 330 W                                                                                                                                 | 700 VA / 420 W    |
| <b>Application</b>                    |  |                                                                                                                                                |                   |
| Output connection (FR/DIN models)     |  | 3 outlets with battery backup and surge protection + 3 outlets with surge protection                                                           |                   |
| Output connection (IEC models)        |  | 4 outlets with battery backup and surge protection + 4 outlets with surge protection                                                           |                   |
| <b>Characteristics</b>                |  |                                                                                                                                                |                   |
| Input voltage                         |  | Up to 161-284 V (adjustable)                                                                                                                   |                   |
| Output voltage                        |  | 230 V (settable to 220 V, 230 V or 240 V)                                                                                                      |                   |
| Frequency                             |  | 50-60 Hz autoselect                                                                                                                            |                   |
| Input protection                      |  | Resettable circuit breaker                                                                                                                     |                   |
| <b>Battery</b>                        |  |                                                                                                                                                |                   |
| Battery type                          |  | Compact, sealed lead-acid (replaceable)                                                                                                        |                   |
| Battery test                          |  | Yes                                                                                                                                            | Yes               |
| Cold start (no mains power)           |  | Yes                                                                                                                                            | Yes               |
| Deep-discharge protection             |  | Yes                                                                                                                                            | Yes               |
| Battery replacement indicators        |  | LED                                                                                                                                            | LED               |
| 50% load backup                       |  | 10 min                                                                                                                                         | 9 min             |
| 70% load backup                       |  | 6 min                                                                                                                                          | 6 min             |
| <b>Communication</b>                  |  |                                                                                                                                                |                   |
| Communications port                   |  | HID-compliant USB port for automatic integration with most common operating systems (Windows XP, Vista and 7, Linux, Mac OS X), cable supplied |                   |
| Line protection                       |  | Tel/fax/modem/internet/Ethernet                                                                                                                |                   |
| <b>Standards compliance</b>           |  |                                                                                                                                                |                   |
| Safety                                |  | IEC/EN 62040-1, CE mark                                                                                                                        |                   |
| EMC                                   |  | IEC 62040-2                                                                                                                                    |                   |
| <b>Dimensions, weight and colour</b>  |  |                                                                                                                                                |                   |
| Dimensions H x W x D                  |  | 86 x 140 x 335 mm                                                                                                                              | 86 x 170 x 335 mm |
| Weight                                |  | 2.9 kg                                                                                                                                         | 3.8 kg            |
| Colour                                |  | Black                                                                                                                                          | Black             |
| <b>Customer service &amp; support</b> |  |                                                                                                                                                |                   |
| 2-year warranty                       |  | Standard product exchange, including battery                                                                                                   |                   |
| Warranty+                             |  | Optional 3-year warranty (depending on the country please visit <a href="http://www.eaton.eu/powerquality">www.eaton.eu/powerquality</a> )     |                   |

| Part numbers         | 550      | 700      |
|----------------------|----------|----------|
| French sockets (FR)  | 3S550FR  | 3S700FR  |
| Schuko sockets (DIN) | 3S550DIN | 3S700DIN |
| IEC sockets          | 3S550IEC | 3S700IEC |



FR DIN IEC



# Eaton Ellipse ECO

500/650/800/1200/1600 VA



Eaton Ellipse ECO range



Eaton Ellipse ECO easy integration



## Energy-efficient power protection for business computers

- With an efficient electrical design and the EcoControl function (USB models), which automatically disables peripherals when the master device is turned off, the Eaton Ellipse ECO helps you make energy savings of up to 25% compared to previous-generation UPSs.
- As well as providing a power supply backed up by a battery to keep equipment operating during a power failure, the Ellipse ECO also provides effective protection against damaging surges.
- The Ellipse ECO includes a high performance surge-protection device that complies with IEC 61643-1; this device also protects data connections such as Ethernet, internet and telephone lines.

## Easy integration and installation

- The Ellipse ECO comes with either four (500/650/800 models) or eight outlets (1200/1600 models) with Schuko (DIN) or French (FR) format for easy connection to typical computer configurations with peripherals. IEC models are also available.
- The Ellipse ECO's extra-flat design makes it easy to install in any office environment: installation options include vertical box format, below the desk, horizontally under a monitor, 19" rack-mounted (optional 2U kit) and wall-mounted (optional kit).
- The USB models are designed to be compatible with a wide variety of different computer models. Eaton UPS companion is delivered as standard (CD and USB cable supplied) and is compatible with all major operating systems (Windows 7, Vista, XP, Linux and Mac OS).

## Complete peace of mind

- Unlimited warranty for the connected computer equipment (EU countries and Norway)
- Periodic battery self-test ensures early detection of a battery that needs to be replaced.
- Easy-to-replace battery helps to extend UPS service life.
- Push-button circuit breaker enables easy recovery from an overload or short circuit.



# Eaton Ellipse ECO

- 1 3 outlets with surge protection and backup,  
1 socket with surge protection only
- 1a 1 EcoControl outlet (USB models)
- 2 Tel/Internet and Ethernet protection
- 3 USB port (USB models)
- 4 Replaceable batteries
- 5 Circuit breaker reset button



Eaton Ellipse ECO 500/650/800



Eaton Ellipse ECO 1200/1600

- 1 4 outlets with surge protection and backup
- 2 4 outlets with surge protection
- 2a 2 EcoControl outlets (1200 & 1600)
- 3 Tel/Internet and Ethernet protection
- 4 USB port
- 5 Replaceable batteries
- 6 Circuit breaker reset button

## TECHNICAL SPECIFICATIONS

|                                                                             | 500                                                                                                                                         | 650               | 650 USB                                                                                             | 800 USB                      | 1200 USB                     | 1600 USB                     |
|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------|------------------------------|------------------------------|------------------------------|
| Rating (VA/W)                                                               | 500 VA / 300 W                                                                                                                              | 650 VA / 400 W    | 650 VA / 400 W                                                                                      | 800 VA / 500 W               | 1200 VA / 750 W              | 1600 VA / 1000 W             |
| <b>Application</b>                                                          |                                                                                                                                             |                   |                                                                                                     |                              |                              |                              |
| Number of outlets                                                           | 4                                                                                                                                           | 4                 | 4                                                                                                   | 4                            | 8                            | 8                            |
| Outlets with surge protection and backup /<br>Outlets with surge protection | 3/1                                                                                                                                         | 3/1               | 3/1                                                                                                 | 3/1                          | 4/4                          | 4/4                          |
| <b>Characteristics</b>                                                      |                                                                                                                                             |                   |                                                                                                     |                              |                              |                              |
| Nominal input voltage                                                       | 230 V                                                                                                                                       |                   |                                                                                                     |                              |                              |                              |
| Input voltage                                                               | 184 V - 264 V (adjustable to 161 V - 284 V)                                                                                                 |                   |                                                                                                     |                              |                              |                              |
| Output voltage                                                              | 230 V (adjustable to 220 V, 230 V, 240 V)                                                                                                   |                   |                                                                                                     |                              |                              |                              |
| Frequency                                                                   | 50-60 Hz autoselect                                                                                                                         |                   |                                                                                                     |                              |                              |                              |
| Input protection                                                            | Resettable circuit breaker                                                                                                                  |                   |                                                                                                     |                              |                              |                              |
| <b>Features</b>                                                             |                                                                                                                                             |                   |                                                                                                     |                              |                              |                              |
| Energy efficient design                                                     | Yes                                                                                                                                         | Yes               | Yes                                                                                                 | Yes                          | Yes                          | Yes                          |
| EcoControl function                                                         | -                                                                                                                                           | -                 | Yes up to 20% energy saving*<br>(automatic deactivation of idle peripherals)                        |                              | Yes up to 25% energy saving* |                              |
| Surge protection                                                            | Surge protection device compliant with IEC 61643-1                                                                                          |                   |                                                                                                     |                              |                              |                              |
| PowerLine compatibility                                                     | -                                                                                                                                           | -                 | 1 PLC-ready outlet                                                                                  | 1 PLC-ready outlet           | 1 PLC-ready outlet           | 1 PLC-ready outlet           |
| <b>Battery</b>                                                              |                                                                                                                                             |                   |                                                                                                     |                              |                              |                              |
| Battery type                                                                | Replaceable sealed lead acid                                                                                                                |                   |                                                                                                     |                              |                              |                              |
| Automatic battery test                                                      | Yes                                                                                                                                         | Yes               | Yes                                                                                                 | Yes                          | Yes                          | Yes                          |
| Cold start (start without mains)                                            | Yes                                                                                                                                         | Yes               | Yes                                                                                                 | Yes                          | Yes                          | Yes                          |
| Deep discharge protection                                                   | 4 hours                                                                                                                                     | 4 hours           | 4 hours                                                                                             | 4 hours                      | 4 hours                      | 4 hours                      |
| Battery replacement indicators                                              | LED + audible alarm                                                                                                                         |                   |                                                                                                     |                              |                              |                              |
| Battery runtime at 50% load                                                 | 9 min                                                                                                                                       | 9 min             | 9 min                                                                                               | 11 min                       | 10 min                       | 11 min                       |
| Battery runtime at 70% load                                                 | 5 min                                                                                                                                       | 6 min             | 6 min                                                                                               | 6 min                        | 6 min                        | 6 min                        |
| <b>Communication</b>                                                        |                                                                                                                                             |                   |                                                                                                     |                              |                              |                              |
| Communication port                                                          | -                                                                                                                                           | -                 | USB port<br>(cable supplied)                                                                        | USB port<br>(cable supplied) | USB port<br>(cable supplied) | USB port<br>(cable supplied) |
| Software                                                                    | -                                                                                                                                           | -                 | Eaton UPS companion delivered as standard<br>(compatible with: Windows 7/Vista/XP, Mac OS X, Linux) |                              |                              |                              |
| Line protection                                                             | Tel/Fax/Modem/Internet and Ethernet                                                                                                         |                   |                                                                                                     |                              |                              |                              |
| <b>Standards</b>                                                            |                                                                                                                                             |                   |                                                                                                     |                              |                              |                              |
| Safety / EMC                                                                | IEC 62040-1, IEC 60950-1, IEC 62040-2, CB Report, CE mark                                                                                   |                   |                                                                                                     |                              |                              |                              |
| Surge protection                                                            | IEC 61643-1                                                                                                                                 |                   |                                                                                                     |                              |                              |                              |
| <b>Dimensions and weight</b>                                                |                                                                                                                                             |                   |                                                                                                     |                              |                              |                              |
| Dimensions H x W x D                                                        | 263 x 81 x 235 mm                                                                                                                           | 263 x 81 x 235 mm | 263 x 81 x 235 mm                                                                                   | 263 x 81 x 235 mm            | 305 x 81 x 312 mm            | 305 x 81 x 312 mm            |
| Weight                                                                      | 2.9 kg                                                                                                                                      | 3.6 kg            | 3.6 kg                                                                                              | 4.1 kg                       | 6.7 kg                       | 7.8 kg                       |
| <b>Customer Service &amp; Support</b>                                       |                                                                                                                                             |                   |                                                                                                     |                              |                              |                              |
| 2 years warranty                                                            | Standard product exchange, including the battery; warranty for the connected computing equipment for an unlimited amount (EU countries)     |                   |                                                                                                     |                              |                              |                              |
| Warranty+                                                                   | Optional 3-years warranty (depending on the country please visit <a href="http://www.eaton.eu/powerquality">www.eaton.eu/powerquality</a> ) |                   |                                                                                                     |                              |                              |                              |

\* compared to previous generation UPS.

| Part Numbers               | 500      | 650      | 650 USB     | 800 USB     | 1200 USB     | 1600 USB     |
|----------------------------|----------|----------|-------------|-------------|--------------|--------------|
| French outlets (FR)        | EL500FR  | EL650FR  | EL650USBFR  | EL800USBFR  | EL1200USBFR  | EL1600USBFR  |
| Schuko outlets (DIN)       | EL500DIN | EL650DIN | EL650USBDIN | EL800USBDIN | EL1200USBDIN | EL1600USBDIN |
| IEC outlets                | EL500IEC | EL650IEC | EL650USBIEC | EL800USBIEC | EL1200USBIEC | EL1600USBIEC |
| <b>Accessories</b>         |          |          |             |             |              |              |
| 19" rack mounting kit (2U) | ELRACK   | ELRACK   | ELRACK      | ELRACK      | ELRACK       | ELRACK       |
| Wall mounting kit          | ELWALL   | ELWALL   | ELWALL      | ELWALL      | ELWALL       | ELWALL       |



FR DIN IEC

# Eaton 5S UPS

550/700/1000/1500 VA



Eaton 5S UPS product range



Eaton 5S versatility

## **Ideal for protecting:**

- Workstations
- Business Telephony
- Network devices
- Point-of-sale equipment



## **Affordable power protection for workstations**

### **Performance**

- The Eaton 5S UPS provides effective power protection, even in disturbed electrical environments. Voltage fluctuations are automatically corrected using an AVR device (booster/fader), without needing the batteries.
- The 5S not only provides a supply with battery backup to keep equipment operating during power cuts, but also provides effective protection against damaging surges.

### **Reliability**

- The 5S protects networked equipment from “back door” power surges coming through Ethernet, internet or telephone lines.
- The 5S’s periodic automatic battery testing ensures early detection if a battery needs to be replaced.
- The easy-to-replace battery helps to extend the UPS service life.

### **Versatility**

- The 5S can be installed vertically over or under a desk, or horizontally under a screen. Its compact, slimline form factor even allows it to be easily integrated into environments with space constraints.
- The 5S features an HID-compliant USB port, for automatic integration with common operating systems (Windows/ Mac OS/Linux). The 5S is also compatible with Eaton UPS Companion power management software.
- All models come bundled with a USB cable and two IEC-IEC load cables.



# Eaton 5S UPS

- 1 LED user interface
- 2 Battery replacement panel
- 3 USB port



- 4 Data line protection
- 5 4 IEC 10 A and 4 surge only IEC 10 A
- 6 Circuit breaker reset button

Eaton 5S 1000i UPS

## TECHNICAL SPECIFICATIONS

|                                                                             | 550                                                                                                                                         | 700               | 1000              | 1500              |
|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------|-------------------|
| Rating (VA/W)                                                               | 550 VA / 330 W                                                                                                                              | 700 VA / 420 W    | 1000 VA / 600 W   | 1500 VA / 900 W   |
| <b>Electrical Characteristics</b>                                           |                                                                                                                                             |                   |                   |                   |
| Technology                                                                  | Line-Interactive (AVR with Booster + Fader)                                                                                                 |                   |                   |                   |
| Input voltage range                                                         | 175 V-275 V                                                                                                                                 |                   |                   |                   |
| Output voltage                                                              | 230 V                                                                                                                                       |                   |                   |                   |
| Frequency                                                                   | 50-60 Hz autoselect                                                                                                                         |                   |                   |                   |
| <b>Connections</b>                                                          |                                                                                                                                             |                   |                   |                   |
| Number of IEC outlets                                                       | 4                                                                                                                                           | 6                 | 8                 | 8                 |
| Outlets with surge protection and backup /<br>Outlets with surge protection | 3/1                                                                                                                                         | 3/3               | 4/4               | 4/4               |
| <b>Batteries</b>                                                            |                                                                                                                                             |                   |                   |                   |
| Typical backup times at 50 and 70% load*                                    | 10/6 mn                                                                                                                                     | 9/5 mn            | 14/8 mn           | 11/8 mn           |
| Battery management                                                          | Automatic battery test, deep-discharge protection, cold-start capable, replaceable batteries                                                |                   |                   |                   |
| <b>Communication</b>                                                        |                                                                                                                                             |                   |                   |                   |
| Communication Port                                                          | HID-compliant USB port for automatic integration with most common operating systems (Windows Vista, 7 & 8, Linux, Mac OS X), cable supplied |                   |                   |                   |
| Data line protection                                                        | Tel/Fax/Modem/Internet and Ethernet                                                                                                         |                   |                   |                   |
| <b>Standards</b>                                                            |                                                                                                                                             |                   |                   |                   |
| Safety & EMC                                                                | IEC/EN 62040-1, IEC/EN 62040 -2, CB Report, CE mark                                                                                         |                   |                   |                   |
| <b>Dimensions &amp; Weight</b>                                              |                                                                                                                                             |                   |                   |                   |
| Dimensions H x W x D                                                        | 250 x 87 x 260 mm                                                                                                                           | 250 x 87 x 260 mm | 250 x 87 x 382 mm | 250 x 87 x 382 mm |
| Weight                                                                      | 4.96 kg                                                                                                                                     | 5.98 kg           | 9.48 kg           | 11.08 kg          |
| <b>Customer Service &amp; Support</b>                                       |                                                                                                                                             |                   |                   |                   |
| Warranty                                                                    | 2 years warranty including batteries                                                                                                        |                   |                   |                   |

\* Backup times are approximate and may vary with equipment, configuration, battery age, temperature, etc.

| Part Numbers | 550    | 700    | 1000    | 1500    |
|--------------|--------|--------|---------|---------|
| 5S           | 5S550i | 5S700i | 5S1000i | 5S1500i |

# Eaton Ellipse PRO UPS

## 650/850/1200/1600 VA



Ellipse Pro range



LCD screen

### Advanced protection for:

- Workstations
- Network devices
- Peripherals



### Energy-saving power protection for workstations

- The LCD screen on the Eaton Ellipse PRO UPS provides clear information on its status and measurements. It also allows easy configuration of UPS settings.
- The EcoControl function, which automatically disables peripherals when the master device is turned off, can cut energy consumption by as much as 20%.
- Automatic Voltage Regulation (AVR) instantly corrects voltage fluctuations, meaning you can continue working through brownouts and overvoltages without using the batteries.
- The Ellipse PRO includes a high performance surge-protection device that complies with IEC 61643-1. This device also protects data connections such as Ethernet, internet and telephone lines.

### Easy integration and installation

- The Ellipse PRO comes with either four (650/850 models) or eight (1200/1600 models) Schuko (DIN) or French (FR) sockets for easy connection to most common computer configurations with peripherals. IEC models are also available.
- The Ellipse PRO's extra-flat design makes it easy to install in any office environment: installation options include vertical box format, below the desk, horizontally under a monitor, 19" rack-mounted (optional 2U kit) and wall-mounted (optional kit).
- The Ellipse PRO is equipped with a USB port and comes complete with a USB cable and Eaton UPS Companion software that enables safe system shutdown, energy usage metering and easy configuration of UPS settings.

### Complete peace of mind

- Three-year warranty including batteries.
- Unlimited warranty for connected computer equipment (EU countries and Norway only).
- Battery tests itself automatically at regular intervals, ensuring early detection when it's time for replacement.
- Easy-to-replace battery helps to extend UPS service life.

# Eaton Ellipse PRO UPS

- 1 3 sockets with surge protection and backup, one socket with surge protection only
- 2 1 EcoControl socket
- 3 Telephone, internet and Ethernet protection
- 4 USB port
- 5 Replaceable batteries
- 6 Circuit breaker reset button



Eaton Ellipse PRO 650



Eaton Ellipse PRO 1600

- 1 4 sockets with surge protection and backup
- 2 4 sockets with surge protection
- 3 2 EcoControl sockets (1200/1600 models)
- 4 Telephone, internet and Ethernet protection
- 5 USB port
- 6 Replaceable batteries
- 7 Circuit breaker reset button

## TECHNICAL SPECIFICATIONS

|                                                                             | 650                                                                                                                       | 850                          | 1200                         | 1600                         |
|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------|------------------------------|------------------------------|
| Rating (kVA/kW)                                                             | 650 VA / 400 W                                                                                                            | 850 VA / 510 W               | 1200 VA / 750 W              | 1600 VA / 1000 W             |
| Electrical characteristics                                                  |                                                                                                                           |                              |                              |                              |
| Technology                                                                  | Line-interactive (AVR with booster + fader)                                                                               |                              |                              |                              |
| Input voltage range                                                         | 165 V - 285 V (adjustable to 150 V - 285 V)                                                                               |                              |                              |                              |
| Output voltage                                                              | 230 V (adjustable to 220 V - 230 V - 240 V)                                                                               |                              |                              |                              |
| Frequency                                                                   | 50-60 Hz autoselect                                                                                                       |                              |                              |                              |
| Connections                                                                 |                                                                                                                           |                              |                              |                              |
| Number of sockets                                                           | 4                                                                                                                         | 4                            | 8                            | 8                            |
| Sockets with surge protection and backup /<br>Sockets with surge protection | 3 / 1                                                                                                                     | 3 / 1                        | 4 / 4                        | 4 / 4                        |
| Features                                                                    |                                                                                                                           |                              |                              |                              |
| User interface                                                              | LCD (UPS status and measurements, configuration of UPS settings)                                                          |                              |                              |                              |
| EcoControl<br>(automatic deactivation of idle peripherals)                  | Yes, up to 15% energy saving                                                                                              | Yes, up to 15% energy saving | Yes, up to 20% energy saving | Yes, up to 20% energy saving |
| Surge protection                                                            | Surge protection device compliant with IEC 61643-1                                                                        |                              |                              |                              |
| Batteries                                                                   |                                                                                                                           |                              |                              |                              |
| Typical backup times at 50 and 70% load*                                    | 9 / 5 mn                                                                                                                  | 9 / 5 mn                     | 9 / 5 mn                     | 9 / 5 mn                     |
| Battery management                                                          | Automatic battery test, deep-discharge protection, cold-start capable, replaceable batteries                              |                              |                              |                              |
| Communication                                                               |                                                                                                                           |                              |                              |                              |
| Communication port                                                          | USB port (cable supplied)                                                                                                 | USB port (cable supplied)    | USB port (cable supplied)    | USB port (cable supplied)    |
| Software                                                                    | Eaton UPS Companion CD ROM (enables safe system shutdown, energy usage metering and configuration of UPS settings)        |                              |                              |                              |
| Data line protection                                                        | Tel/fax/modem/internet and Ethernet                                                                                       |                              |                              |                              |
| Standards                                                                   |                                                                                                                           |                              |                              |                              |
| Safety and EMC                                                              | IEC/EN 62040-1, IEC/EN 62040 -2, CB report, CE mark                                                                       |                              |                              |                              |
| Surge protection                                                            | IEC 61643-1                                                                                                               |                              |                              |                              |
| Dimensions H x W x D and weight                                             |                                                                                                                           |                              |                              |                              |
| Dimensions H x W x D                                                        | 260 x 82 x 285 mm                                                                                                         | 260 x 82 x 285 mm            | 275 x 82 x 390 mm            | 275 x 82 x 390 mm            |
| Weight                                                                      | 6.6 kg                                                                                                                    | 7.3 kg                       | 9.9 kg                       | 11.3 kg                      |
| Customer service and support                                                |                                                                                                                           |                              |                              |                              |
| Warranty                                                                    | 3 years warranty including batteries. Unlimited warranty for connected computer equipment (EU countries and Norway only). |                              |                              |                              |

\* Backup times are approximate and may vary with equipment, configuration, battery age, temperature, etc.

| Parts Numbers              | 650       | 850       | 1200       | 1600       |
|----------------------------|-----------|-----------|------------|------------|
| French sockets (FR)        | ELP650FR  | ELP850FR  | ELP1200FR  | ELP1600FR  |
| Schuko sockets (DIN)       | ELP650DIN | ELP850DIN | ELP1200DIN | ELP1600DIN |
| IEC outlets                | ELP650IEC | ELP850IEC | ELP1200IEC | ELP1600IEC |
| <b>Accessories</b>         |           |           |            |            |
| 19" rack-mounting kit (2U) | ELRACK    | ELRACK    | ELRACK     | ELRACK     |
| Wall-mounting kit          | ELWALL    | ELWALL    | ELWALL     | ELWALL     |



# Eaton 5SC UPS

500/750/1000/1500/2200/3000VA



5SC is available in convenient compact form factors



Short depth format for easy integration in small cabinets

## **Ideal for protecting:**

- Rack or Tower servers
- NAS, Network equipments
- ATMs, Ticket machines, Kiosks



## **Affordable protection for servers and networking systems**

### **Manageability**

The LCD interface provides clear status of the UPS key parameters such as input and output voltage, load and battery level, and estimated runtime. Essential configuration capabilities are also offered for output voltage, audible alarm and sensitivity.

The 5SC offers USB and serial connectivity. USB port is HID compliant for automatic integration into Windows, Mac OS and Linux.

A slot for an optional communication card (including SNMP/ Web card or relay contact card) is available on rack and R/T models. Eaton's Intelligent Power® Software Suite insures compatibility with all major OS including virtualization software.

### **Reliability**

Pure sinewave output: When operating in battery mode the 5SC provides a high quality output signal for any sensitive equipment connected, such as active PFC (power factor corrected) servers.

Buck and Boost operation corrects a wide range of input voltage variations through continuous regulation, without the use of batteries.

Stronger, longer battery life: Eaton ABM® battery management technology uses an innovative three-stage charging system that extends battery life by up to 50%.

### **Flexibility**

Rack models are designed to fit into short depth wall enclosures down to 500mm, 2 post racks or to be wall mounted.

R/T models authorizes either tower or rack installation - pedestals and rail kits are included with all models at no extra charge.

Tower models small size for easy integration even with space constraints (kiosks, cash machines, ticket machines etc.) and up to nine outlets for better flexibility!

Easy battery replacement from front panel to extend UPS life.

# Eaton 5SC UPS

- 1 LCD interface
- 2 Panel for batteries replacement
- 3 USB port + Serial port



5SC 1500 Rack

- 4 8 IEC 10A (+1 IEC 16A Socket for 2200/3000VA models)
- 5 Communication card slot (Rack and R/T models only)
- 6 ROO/RPO terminal (Rack and R/T models only)

## TECHNICAL SPECIFICATIONS

|                                               | 500                                                                                                                                                            | 750                | 1000                | 1500                              | 2200                | 3000                |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------|-----------------------------------|---------------------|---------------------|
| Rating (VA/W)                                 | 500VA/350W                                                                                                                                                     | 750VA/525W         | 1000VA/700W         | 1500VA/1050W                      | 2200VA/1980W        | 3000VA/2700W        |
| Format                                        | Tower                                                                                                                                                          | Tower              | Tower or Rack 2U    | Tower or Rack 2U                  | R/T 2U              | R/T 2U              |
| Electrical characteristics                    |                                                                                                                                                                |                    |                     |                                   |                     |                     |
| Technology                                    | Line interactive High Frequency (Sinewave, Booster, Fader)                                                                                                     |                    |                     |                                   |                     |                     |
| Input voltage range without using batteries   | 184 to 276 V                                                                                                                                                   |                    |                     |                                   |                     |                     |
| Output voltage and frequency                  | 230V (-10/+6 %) (Adjustable to 220/230/240 V), 50/60 Hz ± 1Hz (Autosensing)                                                                                    |                    |                     |                                   |                     |                     |
| Connections                                   |                                                                                                                                                                |                    |                     |                                   |                     |                     |
| Input                                         | 1 IEC C14 (10A)                                                                                                                                                |                    |                     |                                   | 1 IEC C20 (16A)     |                     |
| Outputs for Tower models                      | 4 IEC C13 (10A)                                                                                                                                                | 6 IEC C13 (10A)    | 8 IEC C13 (10A)     |                                   |                     |                     |
| Outputs for Rack or R/T models                |                                                                                                                                                                |                    |                     | 8 IEC C13 (10A) + 1 IEC C19 (16A) |                     |                     |
| Batteries                                     |                                                                                                                                                                |                    |                     |                                   |                     |                     |
| Typical backup times @50 and 70% load*        | 13/9                                                                                                                                                           | 13/9               | 12/8                | 13/8                              | 7/4                 | 10/6                |
| Battery management                            | ABM, automatic battery test, deep discharge protection                                                                                                         |                    |                     |                                   |                     |                     |
| Communication                                 |                                                                                                                                                                |                    |                     |                                   |                     |                     |
| Communication ports                           | 1 USB port + RS232 serial port (USB and RS232 cannot be used simultaneously)<br>ROO/RPO + card slot (Rack and R/T models) for Network-MS card or Relay-MS card |                    |                     |                                   |                     |                     |
| Operating conditions, standards and approvals |                                                                                                                                                                |                    |                     |                                   |                     |                     |
| Operating temperature                         | 0 to 35°C (tower models), 0 to 40°C (Rack and R/T models)                                                                                                      |                    |                     |                                   |                     |                     |
| Noise level                                   | <40dB (tower models), <45dB (Rack and R/T models)                                                                                                              |                    |                     |                                   |                     |                     |
| Safety                                        | IEC/EN 62040-1, UL1778                                                                                                                                         |                    |                     |                                   |                     |                     |
| EMC                                           | IEC/EN 62040-2                                                                                                                                                 |                    |                     |                                   |                     |                     |
| Approvals                                     | CE /CB report (TUV), cTUVus                                                                                                                                    |                    |                     |                                   |                     |                     |
| Dimensions H x W x D in mm/ Weight            |                                                                                                                                                                |                    |                     |                                   |                     |                     |
| Dimensions for Tower models                   | 210 x 150 x 240 mm                                                                                                                                             | 210 x 150 x 340 mm | 210 x 150 x 340 mm  | 210 x 150 x 410 mm                |                     |                     |
| Dimensions for Rack and R/T models            |                                                                                                                                                                |                    | 86.2 x 440 x 405 mm | 86.2 x 440 x 405 mm               | 86.2 x 441 x 522 mm | 86.2 x 441 x 647 mm |
| Weight for Tower models                       | 6.6kg                                                                                                                                                          | 10.4kg             | 11.1kg              | 15.2kg                            |                     |                     |
| Weight for Rack and R/T models                |                                                                                                                                                                |                    | 15kg                | 17.8kg                            | 26.5kg              | 35.3kg              |
| Customer service and support                  |                                                                                                                                                                |                    |                     |                                   |                     |                     |
| Warranty                                      | 2 years                                                                                                                                                        |                    |                     |                                   |                     |                     |

\* Runtimes are shown @ 0.7 power factor. Backup duration is approximate and may vary with equipment, configuration, battery age, temperature, etc.

| Parts numbers*          | 500     | 750     | 1000      | 1500      | 2200       | 3000       |
|-------------------------|---------|---------|-----------|-----------|------------|------------|
| 5SC Tower models        | 5SC500i | 5SC750i | 5SC1000i  | 5SC1500i  |            |            |
| 5SC Rack and R/T models |         |         | 5SC1000IR | 5SC1500IR | 5SC2200IRT | 5SC3000IRT |

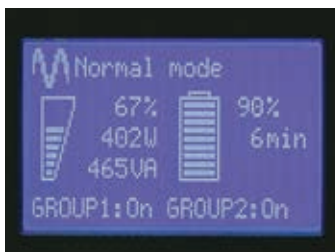
In the interests of continuous product improvement all specifications are subject to change without notice.

# Eaton 5P UPS

650/850/1150/1550 VA



Available in tower and rack 1U format



Intuitive LCD

## Ideal for protecting:

- Servers
- Networking
- Storage devices



**Eaton 5P is an energy efficient line-interactive UPS with advanced LCD and energy metering features.**

## Manageability

- The new graphical LCD display provides clear information on the UPS's status and measurements on a single screen (in seven languages). Enhanced configuration capabilities are also available with easy-to-use navigation keys.
- The 5P can meter energy consumption providing kWh values through the LCD and Eaton's power management software.
- Load segment control enables prioritised shutdowns of non-essential equipment during outages in order to maximise battery runtime for critical devices. Load segment control can also be used to remotely reboot locked-up network equipment or to manage scheduled shutdowns and sequential start-ups.
- The 5P offers Serial and USB connectivity, plus an extra slot for an optional communication card (including SNMP/Web card or relay contact card). Eaton's Intelligent Power Software Suite compatible with all major OS including virtualisation software such as VMware and Hyper-V is included with each UPS.

## Performance and efficiency

- Energy efficient UPS: With an optimised electrical design, the 5P provides up to 98% efficiency, reducing cooling and utility costs.
- Pure sinewave output: When operating in battery mode the 5P provides a high quality output signal for any sensitive equipment connected, such as active PFC (power factor corrected) servers.
- Adjustable tolerance and sensitivity: Users can maximise useful battery life by widening the input voltage window or adjustable input waveform sensitivity (via the LCD or software) to adapt the UPS to a specific environment (like Genset).

## Availability and Flexibility

- The 5P is available in tower or Rack 1U format, providing unmatched energy density with up to 1.1 kW in only 1U.
- Stronger, longer battery life: Eaton ABM® battery management technology uses an innovative three-stage charging technique that extends batteries by up to 50%.
- Batteries can be hot-swapped without ever having to shut down connected equipment. With an optional, hot-swap maintenance bypass module, you can even replace the entire UPS.

# Eaton 5P UPS

- 1 Graphical LCD:
  - Clear information on UPS status and measurements
  - Energy metering
  - Enhanced configuration capabilities
  - Available in seven languages
- 2 Panel for batteries replacement (Hot-swappable)



Eaton 5P 1550i UPS

- 3 One USB port + one serial port + remote ON/OFF and remote power OFF connector
- 4 8 IEC 10 A sockets (including two groups of controlled sockets)
- 5 Communication card slot

## TECHNICAL SPECIFICATIONS

|                                                            | 650                                                                                                                                                                   | 850                         | 1150                        | 1550                        |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------------|-----------------------------|
| Rating (VA/W)                                              | 650 VA/420 W                                                                                                                                                          | 850 VA/600 W                | 1150 VA/770 W               | 1550 VA/1100 W              |
| Technology                                                 | Tower or Rack 1U                                                                                                                                                      | Tower or Rack 1U            | Tower or Rack 1U            | Tower or Rack 1U            |
| Electrical Characteristics                                 |                                                                                                                                                                       |                             |                             |                             |
| Technology                                                 | Line-Interactive High Frequency (Pure Sinewave, Booster + Fader)                                                                                                      |                             |                             |                             |
| Input voltage and frequency ranges without using batteries | 160 V-294 V (adjustable to 150 V-294 V) 47 to 70 Hz (50 Hz system), 56.5 to 70 Hz (60 Hz system), 40 Hz in low-sensitivity mode                                       |                             |                             |                             |
| Output voltage and frequency                               | 230 V Adjustable to 200V / 208V / 220V / 230V / 240V), 50/60 Hz +/- 0.1 % (autosensing)                                                                               |                             |                             |                             |
| Connections                                                |                                                                                                                                                                       |                             |                             |                             |
| Input                                                      | 1 IEC C14 (10 A)                                                                                                                                                      |                             |                             |                             |
| Outputs Tower model                                        | 4 IEC C13 (10 A)                                                                                                                                                      | 6 IEC C13 (10 A)            | 8 IEC C13 (10 A)            | 8 IEC C13 (10 A)            |
| Outputs Rack 1U model                                      | 4 IEC C13 (10 A)                                                                                                                                                      | 4 IEC C13 (10 A)            | 6 IEC C13 (10 A)            | 6 IEC C13 (10 A)            |
| Switched Outlet Group                                      | 2 outlet groups                                                                                                                                                       |                             |                             |                             |
| Battery                                                    |                                                                                                                                                                       |                             |                             |                             |
| Typical backup times at 50 and 70% load*                   | 9/6 mn                                                                                                                                                                | 12/7 mn                     | 12/7 mn                     | 13/8 mn                     |
| Battery management                                         | ABM or constant voltage charging method (user selectable), automatic battery test, deep discharger protection.                                                        |                             |                             |                             |
| Communication                                              |                                                                                                                                                                       |                             |                             |                             |
| Communication Ports                                        | 1 USB port + 1 RS232 serial port and relay contacts (USB and RS232 ports cannot be used simultaneously), 1 mini terminal block for remote ON/OFF and Remote Power Off |                             |                             |                             |
| Communication Slot                                         | 1 slot for Network-MS card , ModBus-MS or Relay-MS cards                                                                                                              |                             |                             |                             |
| Operating conditions, standards and approvals              |                                                                                                                                                                       |                             |                             |                             |
| Operating temepature                                       | 0 to 35°C                                                                                                                                                             | 0 to 35°C                   | 0 to 35°C                   | 0 to 40°C                   |
| Noise level                                                | <40 dB                                                                                                                                                                | <40 dB                      | <40 dB                      | <40 dB                      |
| Safety                                                     | IEC/EN 62040-1, UL 1778                                                                                                                                               |                             |                             |                             |
| EMC, Performance                                           | IEC/EN 62040 -2 , IEC/EN 62040-3 (Performance)                                                                                                                        |                             |                             |                             |
| Approvals                                                  | CE, CB report (TUV)                                                                                                                                                   |                             |                             |                             |
| Dimensions H x W x D / Weight                              |                                                                                                                                                                       |                             |                             |                             |
| Tower models                                               | 230*150*345 mm/7.8 kg                                                                                                                                                 | 230*150*345 mm/10.4 kg      | 230*150*345 mm/11.1 kg      | 230*150*445 mm/15.6 kg      |
| Rack 1U models                                             | 43.2(1U)*438*364 mm/8.6 kg                                                                                                                                            | 43.2(1U)*438*509 mm/13.8 kg | 43.2(1U)*438*509 mm/14.6 kg | 43.2(1U)*438*554 mm/19.4 kg |
| Customer Service & Support                                 |                                                                                                                                                                       |                             |                             |                             |
| Warranty                                                   | 3 years on electronics, 2 years on batteries                                                                                                                          |                             |                             |                             |

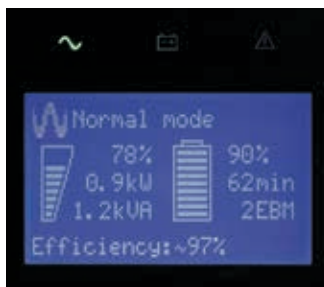
\* Runtimes are shown at 0.7 power factor. Backup times are approximate and may vary with equipment, configuration, battery age, temperature, etc.

| Part Numbers | 650     | 850     | 1150     | 1550     |
|--------------|---------|---------|----------|----------|
| Tower        | 5P650i  | 5P850i  | 5P1150i  | 5P1550i  |
| Rack 1U      | 5P650iR | 5P850iR | 5P1150iR | 5P1550iR |



# Eaton 5PX UPS

1500/2200/3000 VA



Intuitive LCD display for ease of configuration and management

## Advanced protection for:

- Servers
- Switches
- Routers
- Storage devices



## Exceptional efficiency, manageability and energy metering capabilities for IT managers

### Manageability

- The new graphical LCD display provides clear information on the UPS's status and measurements on a single screen (in seven languages). Enhanced configuration capabilities are also available with easy-to-use navigation keys.
- For the first time in the industry the 5PX can meter energy consumption right down to the managed outlet groups. kWh values can be monitored using the LCD or Eaton's Intelligent Power Software Suite.
- Load segment control enables prioritised shutdowns of nonessential equipment to maximise battery runtime for critical devices. Load segment **control** can also be used to remotely reboot locked-up network equipment or to manage scheduled shutdowns and sequential start-ups.
- The 5PX offers Serial and USB connectivity, plus an extra slot for an optional communication card (including SNMP/Web card or relay contact card). Eaton's Intelligent Power Software compatible with all major OS including virtualization software such as VMware and Hyper-V is included with each UPS.

### Performance and Efficiency

- With an optimised electrical design, the 5PX can provide up to 99% efficiency, reducing cooling and utility costs.
- With a power factor of 0.9, the 5PX delivers more real output power. It powers more servers than other UPSs with equivalent VA ratings and lower power factors. The 5PX is compatible with all modern IT equipment.
- When operating in battery mode the 5PX provides a high quality output signal for any sensitive equipment connected, such as active PFC (power factor corrected) servers.

### Availability and Flexibility

- The 5PX is available in a rack/tower convertible version - pedestal and rail kits are included with all models at no extra charge.
- Stronger, longer battery life: Eaton ABM® battery management technology uses an innovative three-stage charging technique that only recharges the battery when necessary, so the battery experiences less corrosion and service life is prolonged by up to 50%.
- Batteries can be hot-swapped without ever having to shut down connected equipment. With an optional, hot-swap maintenance bypass module, you can even replace the entire UPS.
- There is also the possibility to add more runtime with up to four external hot-swappable battery modules, able to run systems for hours if necessary. The additional battery modules are automatically recognised by the UPS.

# Eaton 5PX UPS

- 1 Graphical LCD display :
  - Clear information on UPS status and measurements
  - Enhanced configuration capabilities
  - Available in 7 languages
- 2 Panel for batteries replacement (Hot-swappable)



Eaton 5PX 3000i RT2U

- 3 1 USB port + 1 serial port + remote ON/OFF and remote power OFF inputs
- 4 External battery (EBM) connector
- 5 8 IEC 10 A + 1 IEC 16 A sockets with energy metering (including 4 programmable sockets)
- 6 Communication card slot

## TECHNICAL SPECIFICATIONS

|                                                            | 1500                                                                                                                                                                    | 2200                                                | 3000                                                      |
|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------|
| Rating (VA/W)                                              | 1500 VA / 1350 W                                                                                                                                                        | 2200 VA / 1980 W                                    | 3000 VA / 2700 W                                          |
| Format                                                     | RT2U (tower / rack 2U)                                                                                                                                                  | RT2U (tower / rack 2U)                              | RT2U & RT3U                                               |
| Electrical characteristics                                 |                                                                                                                                                                         |                                                     |                                                           |
| Technology                                                 | Line-Interactive High Frequency (Pure Sinewave, Booster + Fader)                                                                                                        |                                                     |                                                           |
| Input voltage and frequency ranges without using batteries | 160 V-294 V (adjustable to 150 V-294 V) 47 to 70 Hz (50 Hz system), 56.5 to 70 Hz (60 Hz system), 40 Hz in low-sensitivity mode                                         |                                                     |                                                           |
| Output voltage and frequency                               | 230 V (+6/-10%) (Adjustable to 200 V / 208 V / 220 V / 230 V / 240 V), 50/60 Hz +/- 0.1% (autosensing)                                                                  |                                                     |                                                           |
| Connections                                                |                                                                                                                                                                         |                                                     |                                                           |
| Input                                                      | 1 IEC C14 (10 A) socket                                                                                                                                                 | 1 IEC C20 (16 A) socket                             | 1 IEC C20 (16 A) socket                                   |
| Outputs                                                    | 8 IEC C13 (10 A)                                                                                                                                                        | 8 IEC C13 (10 A) sockets<br>1 IEC C19 (16 A) socket | 8 IEC C13 (10 A) sockets<br>1 IEC C19 (16 A) socket       |
| Remotely controlled sockets                                | 2 groups of 2 x IEC C13 (10 A)                                                                                                                                          |                                                     |                                                           |
| Additional outputs with HS MBP                             | 4 FR/Schuko sockets or 3 BS sockets or 6 IEC 10 A sockets or terminal blocks (HW version)                                                                               |                                                     |                                                           |
| Additional outputs with FlexPDU                            | 8 FR/Schuko sockets or 6 BS sockets or 12 IEC 10 A sockets                                                                                                              |                                                     |                                                           |
| Batteries                                                  |                                                                                                                                                                         |                                                     |                                                           |
| Typical backup times for 50 and 70% load*                  |                                                                                                                                                                         |                                                     |                                                           |
| 5PX                                                        | 19/11 mn                                                                                                                                                                | 15/8 mn                                             | 14/9 mn                                                   |
| 5PX + 1 EBM                                                | 90/54 mn                                                                                                                                                                | 60/35 mn                                            | 66/38 mn                                                  |
| 5PX + 4 EBM                                                | 285/180 mn                                                                                                                                                              | 210/125 mn                                          | 213/121 mn                                                |
| Battery management                                         | ABM® and temperature compensated charging method (user selectable), automatic battery test, deep discharge protection, automatic recognition of external battery units. |                                                     |                                                           |
| Interfaces                                                 |                                                                                                                                                                         |                                                     |                                                           |
| Communication ports                                        | 1 USB port + 1 RS232 serial port and relay contacts (USB and RS232 ports cannot be used simultaneously) + 1 mini terminal block for remote ON/OFF and Remote Power Off  |                                                     |                                                           |
| Communications card slots                                  | 1 slot for NMC Minislot card (included in Netpack versions) or NMC ModBus/JBus or MC Contacts/Serial                                                                    |                                                     |                                                           |
| Operating conditions, standards and approvals              |                                                                                                                                                                         |                                                     |                                                           |
| Operating temperature                                      | 0 to 40°C                                                                                                                                                               |                                                     |                                                           |
| Noise Level                                                | < 45 dBA                                                                                                                                                                | < 45 dBA                                            | < 50 dBA                                                  |
| Performance - Safety - EMC                                 | IEC/EN 62040-1 (Safety), IEC/EN 62040-2 (EMC), IEC/EN 62040-3 (Performance),                                                                                            |                                                     |                                                           |
| Approvals                                                  | CE, CB report, TÜV                                                                                                                                                      |                                                     |                                                           |
| Dimensions W x D x H / Weight                              |                                                                                                                                                                         |                                                     |                                                           |
| UPS Dimensions                                             | 441 x 522 x 86.2 (2U) mm                                                                                                                                                | 441 x 522 x 86.2 (2U) mm                            | 441 x 647 x 86.2 (RT2U) mm<br>441 x 497 x 130.7 (RT3U) mm |
| UPS Weight                                                 | 27.6 kg                                                                                                                                                                 | 28.5 kg                                             | 38.08 (RT2U) - 37.33 (RT3U)                               |
| Dimensions of EBM                                          | same as UPS                                                                                                                                                             |                                                     |                                                           |
| Weight of the EBM                                          | 32.8 kg                                                                                                                                                                 | 32.8 kg                                             | 46.39 (RT2U) - 44.26 (RT3U)                               |
| Customer Service & Support                                 |                                                                                                                                                                         |                                                     |                                                           |
| Warranty                                                   | 3 years on electronics, 2 years on batteries                                                                                                                            |                                                     |                                                           |

\* Runtimes are shown at 0.7 power factor. Backup times are approximate and may vary with equipment, configuration, battery age, temperature, etc.

| Part Numbers | 1500       | 1500 Netpack* | 2200       | 2200 Netpack* | 3000 (RT3U)  | 3000 Netpack* (RT2U) |
|--------------|------------|---------------|------------|---------------|--------------|----------------------|
| UPS          | 5PX1500iRT | 5PX1500iRTN   | 5PX2200iRT | 5PX2200iRTN   | 5PX3000iRT3U | 5PX3000iRTN          |
| EBM          | 5PXEBM48RT | 5PXEBM48RT    | 5PXEBM48RT | 5PXEBM48RT    | 5PXEBM72RT3U | 5PXEBM72RT2U         |

\* Network Management Card included as standard in Netpack versions

# Eaton 9130 UPS

700/1000/1500/2000/3000/5000/6000 VA



Multilingual LCD

## Advanced power protection for:

- IT and networking environments
- Servers, networking gear
- Telecommunications, VoIP, security systems
- Medical systems
- Diagnostics and medical screening
- Patient record archives
- Manufacturing systems
- Chip fabrication
- Pharmaceutical production
- Chemical processing



## Double-conversion UPS

### Highest power performance

- Double-conversion topology. The 9130 constantly monitors power conditions and regulates voltage and frequency. Even when presented with the most severe power problems, UPS's output remains within 3% of nominal voltage.
- More real power. High 0.9 output power factor enables the 9130 to provide its full power capability to modern IT equipment.
- Highest efficiency to reduce utility and cooling spending. The 9130 can provide up to 95% efficiency in online double-conversion mode and up to 98% in high-efficiency mode.

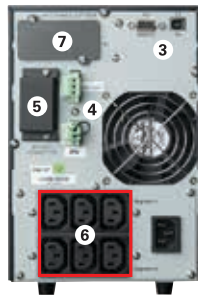
### Unmatched reliability

- The internal bypass allows service continuity in case of internal fault, a maintenance bypass is also available (as option) for easy replacement of the UPS without powering down critical systems.
- Stronger, longer battery life. Eaton ABM® battery management technology uses an innovative three-stage charging technique, that only recharges the battery when necessary, so the battery experiences less corrosion and service life is prolonged by up to 50%.
- Batteries can be hot-swapped without ever having to shut down connected equipment.
- Possibility to add more runtime at any time with up to four external hot-swappable battery modules to run systems for hours if necessary.
- Enables prolonged runtime of essential equipment during power outages by allowing for orderly, remote shutdown of non-critical systems and processes thanks to a capability to control load segments (available up to 3 kVA).

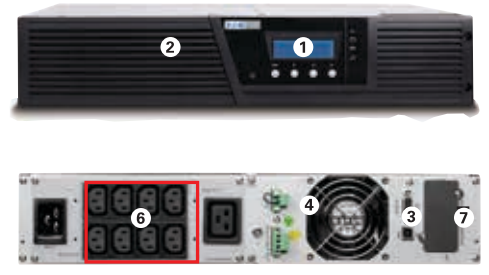
### Outstanding versatility

- One platform, two factors, dozens of choices. Up to 3000 VA of UPS power is packed into only 2U of rack space. The tower option is about the size of a modern, compact PC.
- Enhanced configuration capability through easily navigated multilingual graphical display.
- Remote monitoring. The 9130 comes complete with the Eaton Intelligent Power Software CD including SNMP-compatible power management software providing control and visibility over all your UPS systems.
- Connectivity options are available for almost any network environment.

# Eaton 9130 UPS



- 1 Multilingual graphical LCD display
- 2 Panel for replacing batteries
- 3 1 USB port + 1 serial port
- 4 1 Relay Output + 1 EPO connector
- 5 EBM battery unit connector
- 6 Load segments
- 7 Communication card slot



## TECHNICAL SPECIFICATIONS

### General

|                |                                                                                            |
|----------------|--------------------------------------------------------------------------------------------|
| User interface | Graphical LCD with blue backlight and text in English, French, German, Russian and Spanish |
| LEDs           | Four status-indicating LEDs                                                                |
| Topology       | True online, double-conversion                                                             |
| Diagnostics    | Full system self-test                                                                      |
| UPS bypass     | Automatic bypass                                                                           |
| Rail kit       | Included with all rackmount units                                                          |

### Electrical Input

|                 |                                             |
|-----------------|---------------------------------------------|
| Nominal voltage | 220–240 V                                   |
| Voltage range   | up to 120–276 VAC (depending on load level) |
| Frequency range | 40–70 Hz (50/60 Hz)                         |

### Electrical Output

|                      |                                                    |
|----------------------|----------------------------------------------------|
| Power factor         | 0.9                                                |
| Voltage              | ±3% of nominal regulation (on utility and battery) |
| Frequency regulation | ±3 Hz online                                       |
| Load crest factor    | 3 to 1                                             |

### Communications

|                                           |                                                                                                                                                              |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ports                                     | RS-232 and USB HID port as standard                                                                                                                          |
| Relay output                              | Common alarm standard                                                                                                                                        |
| Optional communication cards (BD/MS Slot) | SNMP/Web card for monitoring in SNMP-based networks. Relay card for remote shutdown of IBM AS/400 systems. MODBUS for integration to industrial environment. |

### Environmental

|                         |                                                                       |
|-------------------------|-----------------------------------------------------------------------|
| Safety and EMC markings | IEC/EN 62040-1, IEC/EN 62040-2, CE marking                            |
| Audible noise           | <50 dB                                                                |
| Ambient operating       | 0°C to +40°C                                                          |
| Storage temperature     | -20°C to +40°C with batteries and<br>-25°C to +55°C without batteries |
| Relative humidity       | 5–90% non-condensing                                                  |

| Description                           | Part number    | Rating (VA/Watts) | Input connection | Output receptacles | Dimensions H x W x D, mm | Weight, kg |
|---------------------------------------|----------------|-------------------|------------------|--------------------|--------------------------|------------|
| <b>Tower Models</b>                   |                |                   |                  |                    |                          |            |
| PW9130i700T                           | 103006433-6591 | 700/630           | C14              | (6) C13            | 230 x 160 x 350          | 12.2       |
| PW9130i1000T-XL                       | 103006434-6591 | 1000/900          | C14              | (6) C13            | 230 x 160 x 380          | 14.5       |
| PW9130i1500T-XL                       | 103006435-6591 | 1500/1350         | C14              | (6) C13            | 230 x 160 x 430          | 19.0       |
| PW9130i2000T-XL                       | 103006436-6591 | 2000/1800         | C14              | (8) C13, (1) C19   | 325 x 214 x 410          | 34.5       |
| PW9130i3000T-XL                       | 103006437-6591 | 3000/2700         | C20              | (8) C13, (1) C19   | 325 x 214 x 410          | 34.5       |
| PW9130i5000T-XL                       | 103007841-6591 | 5000/4500         | Hardwire         | Hardwire           | 574 x 244 x 542          | 75.5       |
| PW9130i6000T-XL                       | 103007842-6591 | 6000/5400         | Hardwire         | Hardwire           | 574 x 244 x 542          | 75.5       |
| <b>Tower Extended Battery Modules</b> |                |                   |                  |                    |                          |            |
| PW9130N1000T-EBM                      | 103006438-6591 | NA                | NA               | NA                 | 230 x 160 x 380          | 18.5       |
| PW9130N1500T-EBM                      | 103006439-6591 | NA                | NA               | NA                 | 230 x 160 x 430          | 24.3       |
| PW9130N3000T-EBM                      | 103006440-6591 | NA                | NA               | NA                 | 325 x 214 x 410          | 50.0       |
| PW9130N6000T-EBM                      | 103007843-6591 | NA                | NA               | NA                 | 574 x 244 x 542          | 111        |
| <b>Rack Models</b>                    |                |                   |                  |                    |                          |            |
| PW9130i1000R-XL2U                     | 103006455-6591 | 1000/900          | C14              | (6) C13            | 86.5 x 438 x 450         | 16         |
| PW9130i1500R-XL2U                     | 103006456-6591 | 1500/1350         | C14              | (6) C13            | 86.5 x 438 x 450         | 19         |
| PW9130i2000R-XL2U                     | 103006457-6591 | 2000/1800         | C14              | (8) C13, (1) C19   | 86.5 x 438 x 600         | 29         |
| PW9130i3000R-XL2U                     | 103006463-6591 | 3000/2700         | C20              | (8) C13, (1) C19   | 86.5 x 438 x 600         | 29.5       |
| <b>Rack Extended Battery Modules</b>  |                |                   |                  |                    |                          |            |
| PW9130N1000R-EBM2U                    | 103006458-6591 | NA                | NA               | NA                 | 86.5 x 438 x 450         | 22.1       |
| PW9130N1500R-EBM2U                    | 103006459-6591 | NA                | NA               | NA                 | 86.5 x 438 x 450         | 28.1       |
| PW9130N3000R-EBM2U                    | 103006460-6591 | NA                | NA               | NA                 | 86.5 x 438 x 600         | 41.1       |

| BATTERY RUNTIMES*   | Internal batteries |          | +1 EBM   |          | +2 EBMs  |          | +3 EBMs  |          | +4 EBMs  |          |
|---------------------|--------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|                     | 75% Load           | 50% Load | 75% Load | 50% Load | 75% Load | 50% Load | 75% Load | 50% Load | 75% Load | 50% Load |
| <b>Rack models</b>  |                    |          |          |          |          |          |          |          |          |          |
| PW9130i1000R-XL2U   | 13                 | 22       | 55       | 82       | 103      | 186      | 151      | 250      | 223      | 312      |
| PW9130i1500R-XL2U   | 11                 | 18       | 47       | 81       | 83       | 143      | 126      | 208      | 195      | 262      |
| PW9130i2000R-XL2U   | 13                 | 24       | 63       | 95       | 118      | 190      | 170      | 242      | 221      | 345      |
| PW9130i3000R-XL2U   | 8                  | 14       | 34       | 62       | 70       | 92       | 96       | 156      | 130      | 211      |
| <b>Tower models</b> |                    |          |          |          |          |          |          |          |          |          |
| PW9130i700T-XL      | 12                 | 19       | N/A      | N/A      | N/A      | N/A      | N/A      | N/A      | N/A      | N/A      |
| PW9130i1000T-XL     | 13                 | 22       | 55       | 82       | 103      | 186      | 151      | 250      | 223      | 312      |
| PW9130i1500T-XL     | 11                 | 18       | 47       | 81       | 83       | 143      | 126      | 208      | 195      | 262      |
| PW9130i2000T-XL     | 21                 | 34       | 81       | 130      | 145      | 198      | 184      | 293      | 248      | 431      |
| PW9130i3000T-XL     | 12                 | 20       | 49       | 79       | 90       | 143      | 134      | 180      | 165      | 240      |
| PW9130i5000T-XL     | 20                 | 34       | 81       | 136      | 153      | 232      | 217      | 328      | 273      | 477      |
| PW9130i6000T-XL     | 16                 | 27       | 66       | 107      | 120      | 194      | 178      | 267      | 231      | 372      |

\* Runtimes are shown at a 0.7 power factor. Backup times are approximate and may vary with equipment, configuration, battery age, temperature, etc.



# Eaton EX

700/1000/1500 VA



#### Ideal protection for:

- Servers, data storage and network equipment
- Telephony - VoIP
- Medical equipment - Industrial processes



#### Double-conversion (on-line)

##### Maximum availability

- **Topology:** double-conversion on-line UPS with automatic by-pass and power factor correction
- **Powershare:** the Eaton EX output sockets are individually controlled to provide load-shedding to maximise the backup time and provide remote reboot and sequential start-up as standard
- **Continuous power supply:** Hot-swappable batteries. The HotSwap MBP (Maintenance By-Pass) module allows the UPS to be replaced without interrupting the power supply
- **Long backup times:** 1 to 4 EXB battery units can be added to the Eaton EX.

##### Minimum total cost of ownership

- **Easy operation:** the LCD gives you access to a wide range of measurements and set-up menus
- **Remote supervision:** the Eaton Intelligent Power Software offers a wide range of communication option including: SNMP and HTML, ModBus/JBus and relay outputs

##### Total flexibility

Eaton EX has unmatched Flexibility.

- **Compatible with high power factor loads:** Eaton EX is rated for 0.9 power factor (700 VA/630 W, 1000 VA/900 W, 1500 VA/1350 W).
- **Communication:** the EX includes both serial and USB ports, plus remote On/Off connector and an extra slot for optional communication cards. The UPS comes with a complete Eaton Intelligent Power Software.

# Eaton EX UPS

- 1 LCD Multilingual display
  - 6 languages,
  - displays measurements,
  - displays alarms,
  - access to control and set-up menus.
- 2 Panel for batteries replacement (Hot-swappable)



- 3 1 USB port + 1 serial port + remote ON/OFF and emergency stop inputs.
- 4 EXB battery unit connector.
- 5 6 IEC 10 A sockets, including 4 Powershare programmable sockets.
- 6 Communication card slot.

## TECHNICAL SPECIFICATIONS

|                                                            | 700                                                                                                                                                                                                        | 1000                       | 1500                       |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------------|
| Rating (VA/W)                                              | 700 VA / 630 W                                                                                                                                                                                             | 1000 VA / 900 W(1)         | 1500 VA / 1350 W(1)        |
| Format                                                     | Mini tower                                                                                                                                                                                                 |                            |                            |
| Electrical characteristics                                 |                                                                                                                                                                                                            |                            |                            |
| Architecture                                               | On-line double-conversion with automatic by-pass and power factor correction                                                                                                                               |                            |                            |
| Input voltage and frequency ranges without using batteries | 100/120/140/160 V to 284 V - 40 to 70 Hz<br>for load level <20% / <33% / <66% / >=66% of rated output                                                                                                      |                            |                            |
| Output voltage and frequency                               | 230 V (adjustable to 200/208/220/240/250 V), 50/60 Hz auto-select or frequency converter mode(2)                                                                                                           |                            |                            |
| Connections                                                |                                                                                                                                                                                                            |                            |                            |
| Input                                                      | 1 IEC C14 (10 A) socket                                                                                                                                                                                    |                            |                            |
| Outputs                                                    | 6 IEC C13 (10 A) sockets                                                                                                                                                                                   |                            |                            |
| Remotely controlled Powershare sockets                     | 2 independent groups: 2 + 1 IEC C13 (10 A) sockets                                                                                                                                                         |                            |                            |
| Battery                                                    |                                                                                                                                                                                                            |                            |                            |
| Typical backup times for 50 and 70% load(4)                |                                                                                                                                                                                                            |                            |                            |
| EX                                                         | 16 min / 10 min                                                                                                                                                                                            | 18 min / 12 min            | 13 min / 9 min             |
| EX + 1 EXB                                                 | /                                                                                                                                                                                                          | 75 min / 50 min            | 50 min / 35 min            |
| EX + 4 EXB                                                 | /                                                                                                                                                                                                          | 250 min / 200 min          | 180 min / 120 min          |
| Battery management                                         | Automatic weekly test (period adjustable using LCD display or in software supplied), automatic recognition of external battery units => continuous maximisation of backup time + deep discharge protection |                            |                            |
| Interfaces                                                 |                                                                                                                                                                                                            |                            |                            |
| Indicators and display                                     | 3 LEDS + adjustable multilingual display: display of measurements, access to control and set-up menus                                                                                                      |                            |                            |
| Communication ports                                        | 1 USB port + 1 RS232 serial port and relay contacts(3) + 1 mini terminal block for remote ON/OFF and emergency stop                                                                                        |                            |                            |
| Communications card slots                                  | 1 slot for NMC Minislot card (included in Netpack version) or NMC ModBus/JBus or MC Contacts/Serial                                                                                                        |                            |                            |
| Operating conditions, standards and approvals              |                                                                                                                                                                                                            |                            |                            |
| Operating temperature noise level                          | 0°C to 40°C continuous, 45 dBA                                                                                                                                                                             |                            |                            |
| Performance - Safety - EMC                                 | IEC/EN 62 040-1, IEC/EN 62 040-2, IEC/EN 62 040-3 (VFI-SS-113), IEC/EN 60 950-1 (RD)                                                                                                                       |                            |                            |
| Approvals                                                  | CE, TÜV GS, CB report, cTÜV-US                                                                                                                                                                             |                            |                            |
| Dimensions (H x W x D) / Weight                            |                                                                                                                                                                                                            |                            |                            |
| EX                                                         | 242 x 153 x 440 mm / 12.5 kg                                                                                                                                                                               | 242 x 153 x 440 mm / 15 kg | 242 x 153 x 490 mm / 18 kg |
| EX EXB                                                     | /                                                                                                                                                                                                          | 242 x 153 x 440 mm / 21 kg |                            |
| Customer Service & Support                                 |                                                                                                                                                                                                            |                            |                            |
| 2 years warranty                                           | Standard product exchange, including the battery                                                                                                                                                           |                            |                            |
| Warranty+                                                  | Optional 3-years warranty (depending on the country please visit <a href="http://www.eaton.eu/powerquality">www.eaton.eu/powerquality</a> )                                                                |                            |                            |

1: Maximum rating with EXB battery units: Eaton EX 1000 = 800 W, Eaton EX 1500 = 1200 W. 2: Derated by 15% when used as a frequency converter. 3: USB and RS232 serial ports cannot be used simultaneously. 4: Runtimes are shown at 0.7 power factor. Backup times are approximate and may vary with equipment, configuration, battery age, temperature, etc.

| Part Numbers | 700    | 1000   | 1500   |
|--------------|--------|--------|--------|
| EX           | 68 180 | 68 181 | 68 183 |
| EX EXB       | /      | 68 185 | 68 185 |

# Eaton 9SX UPS

5/6/8/11 kVA



9SX 11 kVA



9SX LCD tilts 45° for ease-of-viewing

## Advanced protection for:

- Infrastructure, Industrial and Medical
- IT, Networking, Storage and Telecom



## High performance Online double-conversion UPS

### Performance and Efficiency

- Double-conversion topology. The Eaton 9SX constantly monitors power conditions and regulates voltage and frequency.
- With up to 95% efficiency in online double-conversion mode the 9SX provides the highest efficiency level in its class to reduce energy & cooling costs.
- With a 0.9 power factor the 9SX delivers 28% more power than UPS in its class. It powers more servers than other UPSs with equivalent VA ratings and lower power factors.

### Availability and Flexibility

- The internal bypass allows service continuity in case of internal fault. Batteries are hot-swappable from the front panel without powering down critical systems.
- With its rack/tower versatile form factor the 9SX can be installed in any environment (rack kit provided as standard on RT versions).
- Stronger, longer battery life: Eaton ABM® battery management technology uses an innovative three-stage charging technique that extends battery life by up to 50%.
- More runtime can be added with up to 12 external hot-swappable battery modules, able to run systems for hours if necessary. The additional battery modules are automatically recognized by the UPS.

### Manageability

- The new graphical LCD provides clear information on the UPS's status and measurements on a single screen (in seven languages). LCD display position can be adjusted to offer the best viewable angle for tower and rack usage.
- The 9SX can meter energy consumption. kWh values can be monitored using the LCD or Eaton's Intelligent Power Software Suite.
- Load segment control enables prioritised shutdowns of nonessential equipment to maximise battery runtime for critical devices. It can also be used to remotely reboot locked-up equipment or to manage scheduled shutdowns and sequential start-ups.
- The 9SX offers Serial, USB and relay (4 dry contacts) connectivity, plus an extra slot for an optional card (Modbus, Network or Relay). 9SX also provides Remote Power off function. Eaton's Intelligent Power Software is included with each UPS.

# Eaton 9SX UPS

- 1 Remote Off/On and Remote Power Off connectors
- 2 Slot for Network-MS, ModBus-MS or Relay-MS cards
- 3 External battery module (EBM) connector with automatic detection (RJ11)



Eaton 9SX 11 kVA

- 4 DB 9 with output contacts
- 5 USB and serial ports
- 6 Input/Output connections

## TECHNICAL SPECIFICATIONS

|                                               | 5 kVA                                                                                                                                                                          | 6 kVA                          | 8 kVA                                                           | 11 kVA                         |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------------------|--------------------------------|
| Rating (kVA/kW)                               | 5 kVA/4.5 kW                                                                                                                                                                   | 6 kVA/5.4 kW                   | 8 kVA/7.2 kW                                                    | 11 kVA/10 kW                   |
| Electrical Characteristics                    |                                                                                                                                                                                |                                |                                                                 |                                |
| Technology                                    | On-line double-conversion with Power Factor Correction (PFC) system                                                                                                            |                                |                                                                 |                                |
| Nominal voltage                               | 200/208/220/230/240 V                                                                                                                                                          |                                | 200/208/220/230/240 V/250 V                                     |                                |
| Input voltage range                           | 176-276 V without derating (up to 100–276 V with derating)                                                                                                                     |                                |                                                                 |                                |
| Output voltage/THDU                           | 200/208/220/230/240 V +/- 1%; THDU <2%                                                                                                                                         |                                | 200/208/220/230/240/250 V +/- 1%; THDU <2%                      |                                |
| Input frequency range/THDI                    | 40-70 Hz, 50/60 Hz autoselection, frequency converter as standard, THDI < 5%                                                                                                   |                                |                                                                 |                                |
| Efficiency                                    | Up to 94% in Online mode, 98% in Hi-Efficiency mode                                                                                                                            |                                | Up to 95% in Online mode, 98% in Hi-Efficiency mode             |                                |
| Crest factor/short circuit current            | 3:1/90 A                                                                                                                                                                       | 3:1/90 A                       | 3:1/120 A                                                       | 3:1/150 A                      |
| Overload capacity                             | 102–110% : 120 s, 110–125%: 60 s, 125–150%: 10 s, >150%: 500 ms                                                                                                                |                                | 102–110% : 120 s, 110–125%: 60 s, 125–150%: 10 s, >150%: 900 ms |                                |
| Connections                                   |                                                                                                                                                                                |                                |                                                                 |                                |
| Input                                         | Terminal block (up to 10 mm²)                                                                                                                                                  |                                | Terminal block (up to 16 mm²)                                   |                                |
| Outputs                                       | Terminal block + 2 controlled groups of 4 IEC C13 (10 A) + 2 IEC C19 (16 A)                                                                                                    |                                | Terminal block                                                  |                                |
| Batteries                                     |                                                                                                                                                                                |                                |                                                                 |                                |
| Typical backup times at 50 and 70% load*      |                                                                                                                                                                                |                                |                                                                 |                                |
| 9SX                                           | 13/10 min                                                                                                                                                                      | 11/8 min                       | 15/10 min                                                       | 9/5 min                        |
| 9SX + 1 EBM                                   | 60/40 min                                                                                                                                                                      | 48/34 min                      | 38/25 min                                                       | 22/15 min                      |
| 9SX + 4 EBM                                   | 220/150 min                                                                                                                                                                    | 170/120 min                    | 120/82 min                                                      | 80/55 min                      |
| Battery management                            | ABM™ and Temperature compensated charging method (user selectable), automatic battery test, deep discharge protection, automatic recognition of external battery units.        |                                |                                                                 |                                |
| Communication                                 |                                                                                                                                                                                |                                |                                                                 |                                |
| Communication ports                           | 1 USB port, 1 RS232 serial port (USB and RS232 ports cannot be used simultaneously), 4 dry contacts (DB9), 1 mini terminal block for remote On/Off and 1 for remote power Off. |                                |                                                                 |                                |
| Communication slot                            | 1 slot for Network-MS card, ModBus-MS or Relay-MS cards.                                                                                                                       |                                |                                                                 |                                |
| Operating conditions, standards and approvals |                                                                                                                                                                                |                                |                                                                 |                                |
| Operating temperature                         | 0 to 40°C continuous                                                                                                                                                           |                                |                                                                 |                                |
| Noise level                                   | <45 dB                                                                                                                                                                         | <45 dB                         | <48 dB                                                          | <50 dB                         |
| Safety                                        | IEC/EN 62040-1, UL 1778, CSA 22.2                                                                                                                                              |                                |                                                                 |                                |
| EMC, performance                              | IEC/EN 62040 -2 , FCC Class A, IEC/EN 62040-3 (Performance)                                                                                                                    |                                |                                                                 |                                |
| Approvals                                     | CE, CB report (TUV), UL (5 & 6kVA only)                                                                                                                                        |                                |                                                                 |                                |
| Dimensions H x W x D/Weight                   |                                                                                                                                                                                |                                |                                                                 |                                |
| UPS                                           | 440(19 ")*130(3U)*685 mm/48 kg                                                                                                                                                 | 440(19 ")*130(3U)*685 mm/48 kg | 440(19 ")*260(6U)*700 mm/84 kg                                  | 440(19 ")*260(6U)*700 mm/86 kg |
| EBM                                           | 440(19 ")*130(3U)*645 mm/68 kg                                                                                                                                                 | 440(19 ")*130(3U)*645 mm/68 kg | 440(19 ")*130(3U)*680 mm/65 kg                                  | 440(19 ")*130(3U)*680 mm/65 kg |
| Power module                                  | –                                                                                                                                                                              | –                              | 440(19 ")*130(3U)*700 mm/19 kg                                  | 440(19 ")*130(3U)*700 mm/21 kg |
| Customer Service and Support                  |                                                                                                                                                                                |                                |                                                                 |                                |
| Warranty                                      | 2 years warranty                                                                                                                                                               |                                |                                                                 |                                |

\* Runtimes are shown at 0.7 power factor. Backup times are approximate and may vary with equipment, configuration, battery age, temperature, etc

| Parts Numbers                 | 9SX 5 kVA   | 9SX 6 kVA   | 9SX 8 kVA | 9SX 11 kVA |
|-------------------------------|-------------|-------------|-----------|------------|
| UPS*                          | —           | —           | 9SX8Ki    | 9SX11Ki    |
| UPS with Rack Kit*            | 9SX5KiRT    | 9SX6KiRT    | 9SX8KiRT  | 9SX11KiRT  |
| EBM                           | —           | —           | 9SXEBM240 | 9SXEBM240  |
| EBM with Rack Kit             | 9SXEBM180RT | 9SXEBM180RT | —         | —          |
| Power Module                  | —           | —           | 9SX8KiPM  | 9SX11KiPM  |
| HotSwap Maintenance Bypass    | MBP6Ki      | MBP6Ki      | MBP11Ki   | MBP11Ki    |
| Transformer Module            | TFMR11Ki    | TFMR11Ki    | TFMR11Ki  | TFMR11Ki   |
| Supercharger with Rack Kit    | —           | —           | SC240RT   | SC240RT    |
| 1.8m Battery Connection Cable | EBMCBL180   | EBMCBL180   | EBMCBL240 | EBMCBL240  |
| Battery Integration System    | BINTSYS     | BINTSYS     | BINTSYS   | BINTSYS    |
| Rack Kit                      | 9RK         | 9RK         | 9RK       | 9RK        |

\* For 8 & 11 kVA UPS: Power Module + EBM





# Eaton 9PX UPS

## 1000–3000W



3000W in only 2U!



VA =  
Watt

### Advanced protection for:

- Small and Medium Datacentre
- IT, Networking, Storage and Telecom
- Infrastructure, Industrial and Medical



### Energy efficient power protection

#### Performance and efficiency

- 9PX is the first UPS in its class to provide Unity power factor (VA=W). It delivers 11% more power than any other UPS as well as powering more servers with equivalent VA ratings and lower power factors.
- Energy Star qualified, the 9PX provides the highest efficiency level to reduce energy and cooling costs.
- Double conversion topology. The Eaton 9PX constantly monitors power conditions and regulates voltage and frequency.
- With a versatile Rack/Tower form factor, the 9PX is the most compact solution delivering up to 3000W in only 2U.

#### Manageability

- The graphical LCD display provides clear information on the UPS's status and measurements on a single screen. Enhanced configuration capabilities are also available.
- 9PX can meter energy consumption right down to the managed outlet groups. kWh values can be monitored using the LCD or Eaton's Intelligent Power™ Software.
- Load segment control enables prioritised shutdowns of non-essential equipment to maximize battery runtime for critical devices.
- 9PX offers Serial and USB connectivity, plus an extra slot for an optional communication card. Eaton's Intelligent Power Software seamlessly integrates with leading virtualisation environments and cloud orchestrations tools.

#### Availability and flexibility

- 9PX UPS is available in RT2U format (optimised for rack mounting) or RT3U (for tower or short-depth racks), pedestal and rail kits are included with all models.
- The internal bypass allows service continuity in case of internal fault, a maintenance bypass is also available (as standard on HotSwap version) for easy replacement of the UPS.
- Stronger, longer battery life: Eaton ABM® battery management technology uses an innovative three-stage charging technique that extends battery life by up to 50%.
- More runtime can be added with up to 4 external hot-swappable battery modules, able to run systems for hours if necessary.

# Eaton 9PX UPS technical specifications

- Graphical LCD display :
  - Clear information on UPS status and measurements
  - Enhanced configuration capabilities
- Panel for batteries replacement (Hot swappable)
- Slot for Management card (Network card delivered as standard on netpack version)



Eaton 9PX 3000VA

- Outputs: 8 x IEC 10A + 2 x IEC 16A with energy metering (including 2 programmable groups)
- USB port, 1 serial port, Remote ON/OFF, Remote power OFF and Relay output
- External battery (EBM) connector

## TECHNICAL SPECIFICATIONS

|                                               | 1000                                                                                                                                                                 | 1500                                                              | 2200                                                              | 3000VA                                                            |        |       |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------|--------|-------|
| Rating (VA/W)                                 | 1000VA/1000W                                                                                                                                                         | 1500VA/1500W                                                      | 2200VA/2200W                                                      | 3000VA/3000W                                                      |        |       |
| Format                                        | RT2U (tower/rack 2U)                                                                                                                                                 |                                                                   | RT2U (tower/rack 2U) and RT3U (tower/rack 3U)                     |                                                                   |        |       |
| Electrical characteristics                    |                                                                                                                                                                      |                                                                   |                                                                   |                                                                   |        |       |
| Technology                                    | On-line double conversion with Power Factor Correction (PFC) system                                                                                                  |                                                                   |                                                                   |                                                                   |        |       |
| Nominal voltage                               | 200/208/220/230/240V                                                                                                                                                 |                                                                   |                                                                   |                                                                   |        |       |
| Input voltage range                           | 176-276V without derating (up to 100-276V with derating)                                                                                                             |                                                                   |                                                                   |                                                                   |        |       |
| Input frequency range                         | 40-70Hz, 50/60Hz autoselection, frequency converter mode                                                                                                             |                                                                   |                                                                   |                                                                   |        |       |
| Efficiency                                    | up to 91.5% in online mode<br>(up to 97.5% in Hi-efficiency mode)                                                                                                    | up to 92.5% in online mode<br>(up to 97.5% in Hi-efficiency mode) | up to 93.5% in online mode<br>(up to 98% in Hi-efficiency mode)   | up to 94% in online mode<br>(up to 98% in Hi-efficiency mode)     |        |       |
| Connections                                   |                                                                                                                                                                      |                                                                   |                                                                   |                                                                   |        |       |
| Input                                         | 1 IEC C14 (10A)                                                                                                                                                      |                                                                   | 1 IEC C20 (16A) or terminal block on HotSwap MBP HW (Hard-Wired)  |                                                                   |        |       |
| Outputs                                       | 8 IEC C13 (10A) sockets                                                                                                                                              |                                                                   | 8 IEC C13 (10A) sockets + 2 IEC C19 (16A) sockets                 |                                                                   |        |       |
| Outputs on HotSwap models                     | 4 FR/Schuko sockets or 3 BS sockets or 6 IEC 10A sockets or terminal blocks (HW version)                                                                             |                                                                   |                                                                   |                                                                   |        |       |
| Switched outlet group                         | 2 outlet groups                                                                                                                                                      |                                                                   |                                                                   |                                                                   |        |       |
| Batteries                                     |                                                                                                                                                                      |                                                                   |                                                                   |                                                                   |        |       |
| Typical backup times*                         | 300W                                                                                                                                                                 | 500W                                                              | 800W                                                              | 1200W                                                             | 1800W  | 2500W |
| 9PX 1000                                      | 28                                                                                                                                                                   | 16                                                                | 9                                                                 |                                                                   |        |       |
| 9PX 1000 + 1 EBM/+4 EBM                       | 134/530                                                                                                                                                              | 79/316                                                            | 47/188                                                            |                                                                   |        |       |
| 9PX 1500                                      | 38                                                                                                                                                                   | 23                                                                | 13                                                                | 7                                                                 |        |       |
| 9PX 1500 + 1 EBM/+4 EBM                       | 143/536                                                                                                                                                              | 86/319                                                            | 52/192                                                            | 32/120                                                            |        |       |
| 9PX 2200                                      | 43                                                                                                                                                                   | 25                                                                | 15                                                                | 9                                                                 | 5      |       |
| 9PX 2200 + 1 EBM/+4 EBM                       | 206/818                                                                                                                                                              | 123/491                                                           | 74/297                                                            | 47/189                                                            | 29/118 |       |
| 9PX 3000                                      | 60                                                                                                                                                                   | 36                                                                | 22                                                                | 13                                                                | 7      | 4     |
| 9PX 3000 + 1 EBM/+4 EBM                       | 221/824                                                                                                                                                              | 135/504                                                           | 83/307                                                            | 52/194                                                            | 33/122 | 22/82 |
| Battery management                            | ABM® & temperature compensated charging method (user selectable), automatic battery test, deep discharge protection, automatic recognition of external battery units |                                                                   |                                                                   |                                                                   |        |       |
| Communication                                 |                                                                                                                                                                      |                                                                   |                                                                   |                                                                   |        |       |
| Communication ports                           | 1 USB port + 1 serial RS232 port + 1 mini-terminal block for remote ON/OFF + 1 mini-terminal block for remote power off + 1 mini-terminal block for output relay     |                                                                   |                                                                   |                                                                   |        |       |
| Communication slot                            | 1 slot for Network-MS card (included in netpack versions), ModBus-MS or Relay-MS cards                                                                               |                                                                   |                                                                   |                                                                   |        |       |
| Operating conditions, standards and approvals |                                                                                                                                                                      |                                                                   |                                                                   |                                                                   |        |       |
| Operating temepreature                        | 0 to 40°C                                                                                                                                                            |                                                                   |                                                                   |                                                                   |        |       |
| Typical noise level                           | 35dB                                                                                                                                                                 |                                                                   | 40dB                                                              |                                                                   |        |       |
| Safety                                        | IEC/EN 62040-1, UL 1778, CSA 22.2                                                                                                                                    |                                                                   |                                                                   |                                                                   |        |       |
| EMC                                           | IEC/EN 62040 -2, FCC Class B, CISPR22 Class B                                                                                                                        |                                                                   |                                                                   |                                                                   |        |       |
| Approvals & markings                          | CE /CB report (TUV) / cULus / EAC /RCM / KC / Energy Star                                                                                                            |                                                                   |                                                                   |                                                                   |        |       |
| Dimensions H x W x D in mm/ Weight            |                                                                                                                                                                      |                                                                   |                                                                   |                                                                   |        |       |
| UPS                                           | 86.5*440*450/17.4kg                                                                                                                                                  | 86.5*440*450/18.9kg                                               | 2U version: 86.5*440*605/25kg<br>3U version: 130*440*485/24.5kg   | 2U version: 86.5*440*605/27.6kg<br>3U version: 130*440*485/27.4kg |        |       |
| EBM                                           | 86.5*440*450/29.8kg                                                                                                                                                  |                                                                   | 2U version: 86.5*440*605/39.2kg<br>3U version: 130*440*485/38.2kg |                                                                   |        |       |
| Customer service and support                  |                                                                                                                                                                      |                                                                   |                                                                   |                                                                   |        |       |
| Warranty                                      | 3 years on electronics, 2 years on batteries                                                                                                                         |                                                                   |                                                                   |                                                                   |        |       |

\* Backup times are approximate and may vary with equipment, configuration, battery age, temperature, etc.

| Parts numbers*              | 9PX 1kVA     | 9PX 1.5kVA   | 9PX 2.2kVA                                                                                        | 9PX 3kVA                                                                                          |
|-----------------------------|--------------|--------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| UPS RT3U                    |              |              | 9PX2200IRT3U                                                                                      | 9PX3000IRT3U                                                                                      |
| UPS RT2U                    | 9PX1000IRT2U | 9PX1500IRT2U | 9PX2200IRT2U                                                                                      | 9PX3000IRT2U                                                                                      |
| UPS RT3U with HotSwap MBP   |              |              | IEC: 9PX2200IRTBPH HW: 9PX2200IRTBPH<br>FR: 9PX2200IRTBPF DIN: 9PX2200IRTBPD<br>BS: 9PX2200IRTBPB | IEC: 9PX3000IRTBPH HW: 9PX3000IRTBPH<br>FR: 9PX3000IRTBPF DIN: 9PX3000IRTBPD<br>BS: 9PX3000IRTBPB |
| UPS RT2U with Network card  | 9PX1000IRTN  | 9PX1500IRTN  | 9PX2200IRTN                                                                                       | 9PX3000IRTN                                                                                       |
| EBM                         | 9PXEBM48RT2U |              | 2U: 9PXEBM72RT2U<br>3U: 9PXEBM72RT3U                                                              |                                                                                                   |
| 2m battery connection cable | EBMCL48      |              | EBMCL72                                                                                           |                                                                                                   |
| Battery integration system  | BINTSYS      |              |                                                                                                   |                                                                                                   |

\* All 9PX UPS and EBM are delivered with rack kit



# Eaton 9PX UPS

5/6/8/11 kVA



Rack/Tower versatile



9PX 1:1 is an Energy Star® qualified UPS



9PX 11 kVA with maintenance bypass

#### Advanced protection for:

- Small and Medium Datacentre
- IT, Networking, Storage and Telecom
- Infrastructure, Industrial and Medical



Watch 9PX's video

#### Energy efficient power protection

##### Performance and Efficiency

- Double-conversion topology. The Eaton 9PX constantly monitors power conditions and regulates voltage and frequency.
- With up to 95% efficiency in online double-conversion mode and 98% in high-efficiency mode the 9PX provides the highest efficiency level in its class to reduce energy and cooling costs.
- With a 0.9 power factor the 9PX delivers 28% more power than any UPS in its class. It powers more servers than other UPSs with equivalent VA ratings and lower power factors.
- With a RT (Rack/tower) versatile form factor the 9PX is the most compact solution in its class delivering up to 5400 W in only 3U and 10 kW in only 6U.

##### Manageability

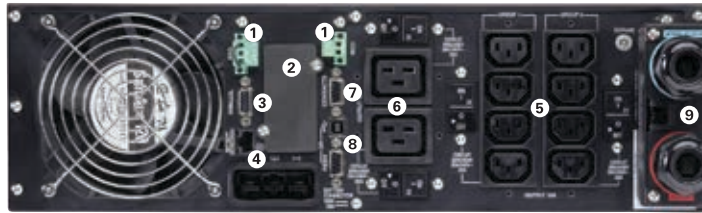
- The new graphical LCD provides clear information on the UPS's status and measurements on a single screen (in seven languages). LCD display position can be adjusted to offer the best viewable angle for tower and rack usage.
- The 9PX can meter energy consumption. kWh values can be monitored using the LCD or Eaton's Intelligent Power Software.
- Load segment control enables prioritised shutdowns of nonessential equipment to maximise battery runtime for critical devices. It can also be used to remotely reboot locked-up network equipment or to manage scheduled shutdowns and sequential start-ups.
- The 9PX offers Serial, USB and relay connectivity, plus an extra slot for an optional card (Network card delivered as standard on Netpack version). Eaton's Intelligent Power Software is compatible with all major OS including virtualisation software such as VMware and Hyper-V is included with each UPS.

##### Availability and Flexibility

- The internal bypass allows service continuity in case of internal fault, a maintenance bypass is also available (as standard on HotSwap version) for easy replacement of the UPS without powering down critical systems.
- The 9PX can be paralleled to achieve twice the power of unitary product using HotSync technology, without extra cost on the initial purchase.
- Stronger, longer battery life: Eaton ABM® battery management technology uses an innovative three-stage charging technique that extends battery life by up to 50%.
- More runtime can be added with up to 12 external hot-swappable battery modules, able to run systems for hours if necessary. The additional battery modules are automatically recognised by the UPS.

# Eaton 9PX UPS

- 1 Remote Off/On and Remote Power Off connectors
- 2 Slot for Network-MS, ModBus-MS or Relay-MS cards
- 3 Parallel operation port (DB15)
- 4 External battery module (EBM) connector with automatic detection (RJ11)



Eaton 9PX 6 kVA 1:1

- 5 8 IEC 10 A sockets (2 groups of 4 manageable sockets) with cable retention system
- 6 2 IEC 16 A sockets with cable retention system
- 7 DB 9 with output contacts
- 8 USB and serial ports
- 9 Input/Output connection

## TECHNICAL SPECIFICATIONS

|                                               | 5 kVA 1:1                                                                                                                                                                                                     | 6 kVA 1:1                | 6 kVA 3:1                                                       | 8 kVA 1:1 or 3:1                                    | 11 kVA 1:1 or 3:1           |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------|-----------------------------------------------------|-----------------------------|
| Rating (kVA/kW)                               | 5 kVA/4.5 kW                                                                                                                                                                                                  | 6 kVA/5.4 kW             | 6 kVA/5.4 kW                                                    | 8 kVA/7.2 kW                                        | 11 kVA/10 kW                |
| Electrical Characteristics                    |                                                                                                                                                                                                               |                          |                                                                 |                                                     |                             |
| Technology                                    | On-line double-conversion with Power Factor Correction (PFC) system                                                                                                                                           |                          |                                                                 |                                                     |                             |
| Input voltage                                 | 200/208/220/230/240 V 1:1                                                                                                                                                                                     |                          | 200/208/220/230/240 V/250 V 1:1, 380/400/415 3:1                |                                                     |                             |
| Input voltage range                           | 176-276 V without derating (up to 100-276 V with derating) 1:1, 305 V-480 V without derating (up to 175 V-480 V with derating) 3:1                                                                            |                          |                                                                 |                                                     |                             |
| Output voltage/THDU                           | 200/208/220/230/240 V +/- 1%; THDU <2%                                                                                                                                                                        |                          |                                                                 |                                                     |                             |
| Input frequency range/THDI                    | 40-70 Hz, 50/60 Hz autoselection, frequency converter as standard, THDI < 5%                                                                                                                                  |                          |                                                                 |                                                     |                             |
| Efficiency                                    | Up to 94% in Online mode, 98% in Hi-Efficiency mode                                                                                                                                                           |                          |                                                                 | Up to 95% in Online mode, 98% in Hi-Efficiency mode |                             |
| Short circuit current                         | 90 A                                                                                                                                                                                                          | 90 A                     | 90 A                                                            | 120 A                                               | 150 A                       |
| Overload capacity                             | 102–110% : 120 s, 110–125%: 60 s, 125–150%: 10 s, >150%: 500 ms                                                                                                                                               |                          | 102–110% : 120 s, 110–125%: 60 s, 125–150%: 10 s, >150%: 900 ms |                                                     |                             |
| Connections                                   |                                                                                                                                                                                                               |                          |                                                                 |                                                     |                             |
| Input                                         | Terminal block (up to 10 mm²)                                                                                                                                                                                 |                          | Terminal block (up to 16 mm²)                                   |                                                     |                             |
| Outputs                                       | Terminal block +<br>2 controlled groups of 4 IEC C13 (10 A) + 2 IEC C19 (16 A)                                                                                                                                |                          | Terminal block                                                  |                                                     |                             |
| Outputs with HotSwap Maintenance Bypass       | Terminal block + 3 IEC C13 (10 A) + 2 IEC C19 (16 A)                                                                                                                                                          |                          | Terminal block + 4 IEC C19 (16 A)                               |                                                     |                             |
| Batteries                                     |                                                                                                                                                                                                               |                          |                                                                 |                                                     |                             |
| Typical backup times at 50 and 70% load*      |                                                                                                                                                                                                               |                          |                                                                 |                                                     |                             |
| 9PX                                           | 13/10 min                                                                                                                                                                                                     | 11/8 min                 | 30/20 min                                                       | 20/15 min                                           | 13/9 min                    |
| 9PX + 1 EBM                                   | 60/40 min                                                                                                                                                                                                     | 48/34 min                | 70/45 min                                                       | 48/32 min                                           | 32/21 min                   |
| 9PX + 4 EBM                                   | 220/150 min                                                                                                                                                                                                   | 170/120 min              | 210/140 min                                                     | 140/100 min                                         | 100/70 min                  |
| Battery management                            | ABM® and Temperature compensated charging method (user selectable), automatic battery test, deep discharge protection, automatic recognition of external battery units.                                       |                          |                                                                 |                                                     |                             |
| Communication                                 |                                                                                                                                                                                                               |                          |                                                                 |                                                     |                             |
| Communication ports                           | 1 USB port, 1 RS232 serial port (USB and RS232 ports cannot be used simultaneously), 4 dry contacts (DB9), 1 mini terminal block for remote On/Off and 1 for remote power Off, 1 DB15 for parallel operation. |                          |                                                                 |                                                     |                             |
| Communication slot                            | 1 slot for Network-MS card (included in Netpack versions), ModBus-MS or Relay-MS cards.                                                                                                                       |                          |                                                                 |                                                     |                             |
| Operating conditions, standards and approvals |                                                                                                                                                                                                               |                          |                                                                 |                                                     |                             |
| Operating temperature                         | 0 to 40°C continuous                                                                                                                                                                                          |                          |                                                                 |                                                     |                             |
| Noise level                                   | <45 dB                                                                                                                                                                                                        | <45 dB                   | <48 dB                                                          | <48 dB                                              | <50 dB                      |
| Safety                                        | IEC/EN 62040-1, UL 1778 (1:1 version)                                                                                                                                                                         |                          |                                                                 |                                                     |                             |
| EMC, performance                              | IEC/EN 62040 -2, FCC Class A (1:1 version), IEC/EN 62040-3 (Performance)                                                                                                                                      |                          |                                                                 |                                                     |                             |
| Approvals                                     | CE, CB report (TUV), UL (1:1 version, 5 & 6kVA only)                                                                                                                                                          |                          |                                                                 |                                                     |                             |
| Dimensions H x W x D/Weight                   |                                                                                                                                                                                                               |                          |                                                                 |                                                     |                             |
| UPS dimensions                                | 440(19 ")*130(3U)*685 mm                                                                                                                                                                                      | 440(19 ")*130(3U)*685 mm | 440(19 ")*260(3U+3U)*700 mm                                     | 440(19 ")*260(3U+3U)*700 mm                         | 440(19 ")*260(3U+3U)*700 mm |
| UPS weight                                    | 48 kg                                                                                                                                                                                                         | 48 kg                    | 88 kg                                                           | 84 kg (1:1), 88 kg (3:1)                            | 86 kg (1:1), 88 kg (3:1)    |
| EBM dimensions                                | 440(19 ")*130(3U)*645 mm                                                                                                                                                                                      | 440(19 ")*130(3U)*645 mm | 440(19 ")*130(3U)*680 mm                                        | 440(19 ")*130(3U)*680 mm                            | 440(19 ")*130(3U)*680 mm    |
| EBM weight                                    | 68 kg                                                                                                                                                                                                         | 68 kg                    | 65 kg                                                           | 65 kg                                               | 65 kg                       |
| Power module dimensions                       | -                                                                                                                                                                                                             | -                        | 440(19 ")*130(3U)*700 mm                                        | 440(19 ")*130(3U)*700 mm                            | 440(19 ")*130(3U)*700 mm    |
| Power module weight                           | -                                                                                                                                                                                                             | -                        | 23 kg                                                           | 19 kg (1:1), 23 kg (3:1)                            | 21 kg (1:1), 23 kg (3:1)    |
| Customer Service and Support                  |                                                                                                                                                                                                               |                          |                                                                 |                                                     |                             |
| Warranty                                      | 2 years warranty                                                                                                                                                                                              |                          |                                                                 |                                                     |                             |

\* Runtimes are shown at 0.7 power factor. Backup times are approximate and may vary with equipment, configuration, battery age, temperature, etc

| Parts Numbers                                    | 9PX 5 kVA 1:1 | 9PX 6 kVA 1:1 | 9PX 8 kVA 1:1 | 9PX 11 kVA 1:1 | 9PX 6 kVA 3:1 | 9PX 8 kVA 3:1 | 9PX 11 kVA 3:1 |
|--------------------------------------------------|---------------|---------------|---------------|----------------|---------------|---------------|----------------|
| UPS with HotSwap Maintenance Bypass              | 9PX5KiBP      | 9PX6KiBP      | 9PX8KiBP      | 9PX11KiBP      | 9PX6KiBP31    | 9PX8KiBP31    | 9PX11KiBP31    |
| UPS with Network Card and Rack Kit               | 9PX5KiRTN     | 9PX6KiRTN     | —             | —              | —             | —             | —              |
| UPS with HotSwap MBP, Network Card and Rack Kits | —             | —             | 9PX8KiRTNBP   | 9PX11KiRTNBP   | 9PX6KiRTNBP31 | 9PX8KiRTNBP31 | 9PX11KiRTNBP31 |
| EBM                                              | 9PXEBM180     | 9PXEBM180     | 9PXEBM240     | 9PXEBM240      | 9PXEBM240     | 9PXEBM240     | 9PXEBM240      |
| Power Module                                     | —             | —             | 9PX8KiPM      | 9PX11KiPM      | 9PX6KiPM31    | 9PX8KiPM31    | 9PX11KiPM31    |
| HotSwap Maintenance Bypass                       | MBP6Ki        | MBP6Ki        | MBP11Ki       | MBP11Ki        | MBP11Ki31     | MBP11Ki31     | MBP11Ki31      |
| 9PX ModularEasy (paralleling kit)                | 9PXMEZ6Ki     | 9PXMEZ6Ki     | 9PXMEZ11Ki    | 9PXMEZ11Ki     | —             | —             | —              |
| Supercharger with Rack Kit                       | —             | —             | SC240RT       | SC240RT        | SC240RT       | SC240RT       | SC240RT        |
| 1.8m Battery Connection Cable                    | EBMCBL180     | EBMCBL180     | EBMCBL240     | EBMCBL240      | EBMCBL240     | EBMCBL240     | EBMCBL240      |

Accessories Rack kit: 9RK, Transformer (Single Phase): TFMR11Ki, Battery Integration System: BINTSYS

| 9PX Parallel* | 9PX 10 kVA 1:1<br>(5 kVA redundant) | 9PX 12 kVA 1:1<br>(6 kVA redundant) | 9PX 16 kVA 1:1<br>(8 kVA redundant) | 9PX 22 kVA 1:1<br>(11 kVA redundant) |
|---------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------------------|
|               | 9PXM10KiRTN                         | 9PXM12KiRTN                         | 9PXM16KiRTN                         | 9PXM22KiRTN                          |

\*9PX Parallel system includes 2 x 9PX, ModularEasy (Parallel kit), rail kits and network cards





# Eaton 9155 UPS

8 - 15 kVA



## Advanced power protection for:

- Banking
- Small server and computer rooms
- Healthcare
- Network communications
- Security systems
- Automation systems



## Double conversion UPS

### Premium power performance

- Double conversion topology provides the highest level of protection available by isolating the output power from all input anomalies.
- With a transformer-free design and sophisticated sensing and control circuitry the 9155 delivers an efficiency of up to 92%.
- Active power factor correction (PFC) provides unbeatable 0,99 input power factor and less than 4,5% ITHD, thus eliminating interference with other critical equipment in the same electrical network and enhancing compatibility with generators.
- With 0.9 output power factor, UPS is optimized to protect modern IT equipment without need to oversize.

### True reliability

- Patented Powerware HotSync® technology enables paralleling of two or more UPS modules to increase availability or add capacity. The technology enables load sharing without any communication line, thus eliminating single point of failure.
- ABM® technology charges batteries only when necessary, reducing batteries corrosion and prolonging batteries service life by up to 50%.
- Internal batteries in all standard configurations provide an extended runtime with the smallest footprint.

### Extensive configurability

- Further runtime extension is possible with external battery cabinets.
- A multilingual graphical LCD display makes possible to monitor the UPS status easily.
- The 9155 can also be integrated into network management, industrial automation and building management systems.
- Bundled Eaton Software Suite provides an orderly network shutdown in an event of extended power outage.

### Cost savings and sustainability

- The 9155 features high up to 92% efficiency, thus reducing utility costs, extending battery runtimes and producing cooler operating conditions.
- Compact space efficient tower design offers smaller footprint enabling easy data centre space-planning and preserving valuable raised-floor real estate.
- Included internal batteries eliminate the need for costly and space-consuming external battery cabinets.
- A single technical platform used in Eaton's three-phase UPS products guarantee easy upgrades and similarity in service, thus lowering total cost of ownership.
- A range of service agreement options can be easily customized for customers' needs and budget.
- Eaton uses sustainable materials and highly efficient manufacturing technology, thus generating dramatic savings in carbon footprint as compared to competitive UPS systems.

# Eaton 9155 UPS 8-15 kVA

## TECHNICAL SPECIFICATIONS

| UPS output power rating (0,9 p.f.)                |                                                                                       |    |      |      |
|---------------------------------------------------|---------------------------------------------------------------------------------------|----|------|------|
| kVA                                               | 8                                                                                     | 10 | 12   | 15   |
| kW                                                | 7,2                                                                                   | 9  | 10,8 | 13,5 |
| General                                           |                                                                                       |    |      |      |
| Efficiency in double conversion mode (full load)  | 91%                                                                                   |    |      |      |
| Efficiency in double conversion mode (half load)  | 90%                                                                                   |    |      |      |
| Efficiency in high efficiency mode                | up to 98%                                                                             |    |      |      |
| Distributed parallelling with Hot Sync technology | 4                                                                                     |    |      |      |
| Field upgradeable                                 | yes                                                                                   |    |      |      |
| Inverter/rectifier topology                       | transformer-free IGBT with PWM                                                        |    |      |      |
| Audible noise                                     | <50 dB                                                                                |    |      |      |
| Altitude (max)                                    | 1000 m without derating (max 2000 m)                                                  |    |      |      |
| Input                                             |                                                                                       |    |      |      |
| Input wiring                                      | 1 ph or 3 ph + N + PE                                                                 |    |      |      |
| Nominal voltage rating (configurable)             | 220/380, 230/400, 240/415 V 50/60 Hz                                                  |    |      |      |
| Input voltage range                               | Low -20% at 100% load/-50% at 50% load without battery discharge; High +10% /max +20% |    |      |      |
| Input frequency range                             | 45-65 Hz                                                                              |    |      |      |
| Input power factor                                | 0,99                                                                                  |    |      |      |
| Input ITHD                                        | less than 4,5%                                                                        |    |      |      |
| Soft start capability                             | Yes                                                                                   |    |      |      |
| Internal backfeed protection                      | Yes                                                                                   |    |      |      |
| Output                                            |                                                                                       |    |      |      |
| Output wiring                                     | 1 ph                                                                                  |    |      |      |
| Nominal voltage rating (configurable)             | 220, 230, 240 V 50/60 Hz                                                              |    |      |      |

| Output UTHD                                                                                                                                                                                                                                                                                          | <3% (100% linear load); <5% (reference non linear load)          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| Output power factor                                                                                                                                                                                                                                                                                  | 0,9 (e.g. 9 kW at 10 kVA)                                        |
| Permitted load power factor                                                                                                                                                                                                                                                                          | 0,7 lagging - 0,8 leading                                        |
| Overload on inverter                                                                                                                                                                                                                                                                                 | 10 min 100-110%; 1 min 110-125%;<br>5 sec 125-150%; 300 ms >150% |
| Overload when bypass available                                                                                                                                                                                                                                                                       | 60 min 100-110%, 10 min 110-125%;<br>1 min >125-150%             |
| Battery                                                                                                                                                                                                                                                                                              |                                                                  |
| Type                                                                                                                                                                                                                                                                                                 | Maintenance free VRLA batteries, NiCd                            |
| Charging method                                                                                                                                                                                                                                                                                      | ABM technology or Float                                          |
| Temperature compensation                                                                                                                                                                                                                                                                             | Optional                                                         |
| Battery nominal voltage (lead-acid)                                                                                                                                                                                                                                                                  | 384 V (32x12 V, 192 cells)                                       |
| Charging current / Model                                                                                                                                                                                                                                                                             | Default 3 A<br>*Max 30 A                                         |
| *May be limited by maximum UPS input current rating                                                                                                                                                                                                                                                  |                                                                  |
| Accessories                                                                                                                                                                                                                                                                                          |                                                                  |
| Isolation transformer, long-life batteries, external battery cabinets, UPS Center (input, bypass, distribution), X-Slot connectivity (Web/SNMP, ModBus/Jbus, Relay, Hot Sync, ViewUPS-X remote display), Hot Sync parallel tie cabinet, integrated manual bypass, external maintenance bypass switch |                                                                  |
| Communications                                                                                                                                                                                                                                                                                       |                                                                  |
| X-Slot                                                                                                                                                                                                                                                                                               | 2 communication bays                                             |
| Serial ports                                                                                                                                                                                                                                                                                         | 1 available                                                      |
| Relay inputs/outputs                                                                                                                                                                                                                                                                                 | 2/1 programmable                                                 |
| Compliance with standards                                                                                                                                                                                                                                                                            |                                                                  |
| Safety (CB certified)                                                                                                                                                                                                                                                                                | IEC 62040-1, IEC 60950-1                                         |
| EMC                                                                                                                                                                                                                                                                                                  | IEC 62040-2                                                      |
| Performance                                                                                                                                                                                                                                                                                          | IEC 62040-3                                                      |

### Stand-alone UPS with 1-phase input

| Part number | Description         | Rating         | Back-up (pf. 0.7) | Dimensions (HxWxD) | Weight |
|-------------|---------------------|----------------|-------------------|--------------------|--------|
| 1022532     | 9155-8-S-10-32x7Ah  | 8 kVA / 7.2 kW | 10 min            | 817x305x702 mm     | 155 kg |
| 1022533     | 9155-8-S-15-32x9Ah  | 8 kVA / 7.2 kW | 15 min            | 817x305x702 mm     | 160 kg |
| 1022534     | 9155-8-S-28-64x7Ah  | 8 kVA / 7.2 kW | 28 min            | 1214x305x702 mm    | 250 kg |
| 1022535     | 9155-8-S-33-64x9Ah  | 8 kVA / 7.2 kW | 33 min            | 1214x305x702 mm    | 275 kg |
| 1022536     | 9155-10-S-10-32x9Ah | 10 kVA / 9 kW  | 10 min            | 817x305x702 mm     | 160 kg |
| 1022537     | 9155-10-S-20-64x7Ah | 10 kVA / 9 kW  | 20 min            | 1214x305x702 mm    | 250 kg |
| 1022538     | 9155-10-S-25-64x9Ah | 10 kVA / 9 kW  | 25 min            | 1214x305x702 mm    | 275 kg |

### Stand-alone UPS with 3-phase input

| Part number 9155 | Description         | Rating           | Back-up (pf. 0.7) | Dimensions (HxWxD) | Weight |
|------------------|---------------------|------------------|-------------------|--------------------|--------|
| 1022480          | 9155-8-N-10-32x7Ah  | 8 kVA / 7.2 kW   | 10 min            | 817x305x702 mm     | 155 kg |
| 1022481          | 9155-8-N-15-32x9Ah  | 8 kVA / 7.2 kW   | 15 min            | 817x305x702 mm     | 160 kg |
| 1022482          | 9155-8-N-28-64x7Ah  | 8 kVA / 7.2 kW   | 28 min            | 1214x305x702 mm    | 250 kg |
| 1022483          | 9155-8-N-33-64x9Ah  | 8 kVA / 7.2 kW   | 33 min            | 1214x305x702 mm    | 275 kg |
| 1022484          | 9155-10-N-10-32x9Ah | 10 kVA / 9 kW    | 10 min            | 817x305x702 mm     | 160 kg |
| 1022485          | 9155-10-N-20-64x7Ah | 10 kVA / 9 kW    | 20 min            | 1214x305x702 mm    | 250 kg |
| 1022486          | 9155-10-N-25-64x9Ah | 10 kVA / 9 kW    | 25 min            | 1214x305x702 mm    | 275 kg |
| 1022487          | 9155-12-N-8-32x9Ah  | 12 kVA / 10.8 kW | 8 min             | 817x305x702 mm     | 160 kg |
| 1022488          | 9155-12-N-15-64x7Ah | 12 kVA / 10.8 kW | 15 min            | 1214x305x702 mm    | 250 kg |
| 1022489          | 9155-12-N-20-64x9Ah | 12 kVA / 10.8 kW | 20 min            | 1214x305x702 mm    | 275 kg |
| 1022490          | 9155-15-N-5-32x9Ah  | 15 kVA / 13.5 kW | 5 min             | 817x305x702 mm     | 160 kg |
| 1022491          | 9155-15-N-10-64x7Ah | 15 kVA / 13.5 kW | 10 min            | 1214x305x702 mm    | 250 kg |
| 1022492          | 9155-15-N-15-64x9Ah | 15 kVA / 13.5 kW | 15 min            | 1214x305x702 mm    | 275 kg |

### External battery cabinets

| Part number | Description      | Rating    | Back-up (pf. 0.7)              | Dimensions (HxWxD) | Weight |
|-------------|------------------|-----------|--------------------------------|--------------------|--------|
| 1022561     | 9X55-BAT5-64x7Ah | 2x32x7 Ah | Check technical specifications | 817x305x699 mm     | 195 kg |
| 1022562     | 9X55-BAT5-96x7Ah | 3x32x7 Ah |                                | 1214x305x699 mm    | 310 kg |

# Eaton 9155 UPS

20 - 30 kVA



#### Advanced power protection for:

- Financial services
- Medium size servers and computer
- ICT
- Critical building infrastructure
- Industrial applications



#### Double conversion UPS

##### Premium power performance

- Double conversion topology provides the highest level of protection available by isolating the output power from all input anomalies.
- With a transformer-free design and sophisticated sensing and control circuitry the 9155 delivers an efficiency of up to 93%.
- Active power factor correction (PFC) provides unbeatable 0,99 input power factor and less than 4,5% ITHD, thus eliminating interference with other critical equipment in the same electrical network.
- The UPS enables optimal power protection for modern 0,9 p.f. rated IT equipment without the need to oversize.

##### True reliability

- Patented Powerware HotSync® technology makes possible to parallel two or more UPSs to increase availability or add capacity. The technology enables load sharing without any communication line, thus eliminating single point of failure.
- ABM® technology charges batteries only when necessary, preventing batteries corrosion and prolonging batteries service life by up to 50%.
- Internal batteries in all standard configurations support more runtime than comparable UPS.

##### Extensive configurability

- Configurable and multilingual LCD control panel with back light and graphical mimic screen monitors the UPS status easily.
- Connectivity options guarantee a smooth integration with various application systems requirements.
- Bundled with Eaton Software Suite the 9155 provides an orderly network shutdown in an event of extended power outage. If required, the 9155 can also be integrated to network management, industrial automation and building management systems.

##### Cost savings and sustainability

- The 9155 features high up to 93% efficiency, thus reducing utility costs, extending battery runtimes and producing cooler operating conditions.
- Compact space efficient tower design offers smaller footprint enabling easy data centre space-planning and preserving valuable raised-floor real estate.
- Internal batteries often eliminate the need for costly and space-consuming external battery cabinets.
- A single technical platform used in Eaton's UPS products guarantee easy upgrades and similarity in service, thus lowering total cost of ownership.
- A range of service agreement options can be easily customized for customers needs and budget.
- Eaton uses sustainable materials and highly efficient manufacturing technology, thus generating dramatic savings in carbon footprint as compared to competitive UPS systems.

# Eaton 9155 UPS 20-30 kVA

## TECHNICAL SPECIFICATIONS

| UPS output power rating (0,9 p.f.)                |                                                                                       |    |
|---------------------------------------------------|---------------------------------------------------------------------------------------|----|
| kVA                                               | 20                                                                                    | 30 |
| kW                                                | 18                                                                                    | 27 |
| General                                           |                                                                                       |    |
| Efficiency in double conversion mode (full load)  | 93%                                                                                   |    |
| Efficiency in double conversion mode (half load)  | 91%                                                                                   |    |
| Distributed parallelling with Hot Sync technology | 4                                                                                     |    |
| Field upgradeable                                 | yes                                                                                   |    |
| Inverter/rectifier topology                       | transformer-free IGBT with PWM                                                        |    |
| Audible noise                                     | <50 dB                                                                                |    |
| Altitude (max)                                    | 1000 m without derating (max 2000 m)                                                  |    |
| Input                                             |                                                                                       |    |
| Input wiring                                      | 3 ph + N + PE                                                                         |    |
| Nominal voltage rating (configurable)             | 220/380, 230/400, 240/415 V 50/60 Hz                                                  |    |
| Input voltage range                               | Low -20% at 100% load/-50% at 50% load without battery discharge; High +10% /max +20% |    |
| Input frequency range                             | 45-65 Hz                                                                              |    |
| Input power factor                                | 0,99                                                                                  |    |
| Input ITHD                                        | less than 4,5%                                                                        |    |
| Soft start capability                             | Yes                                                                                   |    |
| Internal backfeed protection                      | Yes                                                                                   |    |
| Output                                            |                                                                                       |    |
| Output wiring                                     | 1 ph or 3 ph + N + PE                                                                 |    |
| Nominal voltage rating (configurable)             | 220, 230, 240 V 50/60 Hz                                                              |    |
| Output UTHD                                       | <3% (100% linear load); <5% (reference non linear load)                               |    |

|                                |                                                                  |
|--------------------------------|------------------------------------------------------------------|
| Output power factor            | 0,9 (e.g. 27 kW at 30 kVA)                                       |
| Permitted load power factor    | 0,7 lagging - 0,8 leading                                        |
| Overload on inverter           | 10 min 100-110%; 1 min 110-125%;<br>5 sec 125-150%; 300 ms >150% |
| Overload when bypass available | 60 min 100-110%, 10 min 110-125%;<br>1 min >125-150%             |

| Battery                             |                                       |
|-------------------------------------|---------------------------------------|
| Type                                | Maintenance free VRLA batteries, NiCd |
| Charging method                     | ABM technology or Float               |
| Temperature compensation            | Optional                              |
| Battery nominal voltage (lead-acid) | 432 V (32x12 V, 216 cells)            |
| Charging current / Model            | Default 3 A<br>*Max 30 A              |

\*May be limited by maximum UPS input current rating

| Accessories |                                                                                                                                                                                                                                                            |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | Isolation transformer, long-life batteries, external battery cabinets, X-Slot connectivity (Web/SNMP, ModBus/Jbus, Relay, Hot Sync, ViewUPS-X remote display), Hot Sync parallel tie cabinet, integrated manual bypass, external maintenance bypass switch |

| Communications       |                      |
|----------------------|----------------------|
| X-Slot               | 2 communication bays |
| Serial ports         | 1 available          |
| Relay inputs/outputs | 2/1 programmable     |

| Compliance with standards |                          |
|---------------------------|--------------------------|
| Safety (CB certified)     | IEC 62040-1, IEC 60950-1 |
| EMC                       | IEC 62040-2              |
| Performance               | IEC 62040-3              |

## Stand-alone UPS with 3-phase input

| Part number | Description            | Rating         | Back-up (pf. 0.7) | Dimensions (HxWxD) | Weight |
|-------------|------------------------|----------------|-------------------|--------------------|--------|
| 1026598     | 9155-20-N-5-1x9Ah-MBS  | 20 kVA / 18 kW | 5 min             | 1684x494x762 mm    | 300 kg |
| 1026599     | 9155-20-N-13-2x9Ah-MBS | 20 kVA / 18 kW | 13 min            | 1684x494x762 mm    | 400 kg |
| 1026600     | 9155-20-N-22-3x9Ah-MBS | 20 kVA / 18 kW | 22 min            | 1684x494x762 mm    | 500 kg |
| 1026601     | 9155-20-N-31-4x9Ah-MBS | 20 kVA / 18 kW | 31 min            | 1684x494x762 mm    | 600 kg |
| 1026602     | 9155-30-N-7-2x9Ah-MBS  | 30 kVA / 27 kW | 7 min             | 1684x494x762 mm    | 400 kg |
| 1026603     | 9155-30-N-13-3x9Ah-MBS | 30 kVA / 27 kW | 12 min            | 1684x494x762 mm    | 500 kg |
| 1026604     | 9155-30-N-20-4x9Ah-MBS | 30 kVA / 27 kW | 20 min            | 1684x494x762 mm    | 600 kg |

## 9155 20-30 kVA runtimes

| Runtimes for UPS with internal batteries ...p.f. 0.7 (typical IT server/computer load) |        |     |    |    |    |    |    |    |    |     |
|----------------------------------------------------------------------------------------|--------|-----|----|----|----|----|----|----|----|-----|
| Battery                                                                                | Qty    | 5   | 10 | 15 | 20 | 25 | 30 | 35 | 40 | kVA |
| 7 Ah 12 V                                                                              | 1 x 36 | 24  | 8  | 5  | -  | -  | -  | -  | -  | min |
| 9 Ah 12 V                                                                              | 1 x 36 | 30  | 12 | 7  | 5  | -  | -  | -  | -  | min |
| 7 Ah 12 V                                                                              | 2 x 36 | 60  | 24 | 14 | 10 | 6  | -  | -  | -  | min |
| 9 Ah 12 V                                                                              | 2 x 36 | 70  | 28 | 18 | 13 | 10 | 7  | 5  | -  | min |
| 7 Ah 12 V                                                                              | 3 x 36 | 103 | 41 | 26 | 17 | 12 | 10 | 7  | 5  | min |
| 9 Ah 12 V                                                                              | 3 x 36 | 115 | 46 | 31 | 22 | 16 | 13 | 10 | 8  | min |
| 7 Ah 12 V                                                                              | 4 x 36 | 152 | 55 | 40 | 26 | 18 | 15 | 11 | 9  | min |
| 9 Ah 12 V                                                                              | 4 x 36 | 158 | 63 | 42 | 31 | 23 | 20 | 15 | 12 | min |



# Eaton BladeUPS

12/24/36/48/60 kW



## Advanced power protection for:

- Small, medium and large data centres
- Blade servers
- Network environments
- Telephony and VoIP equipment
- Networking applications such as IPTV, security
- Storage devices: RAID, SAN



## Designed for data centres – to ensure maximum uptime and efficiency

### Simply scalable

- Eaton BladeUPS provides scalable double-conversion backup power
- BladeUPS is designed for the data centre -to work in harmony with your servers and IT equipment to ensure maximum uptime and maximum efficiency
- Scalable architecture enables you to design, scale and grow your data centre as your demand grows.
- BladeUPS provides from 12 kW to 60 kW N+1 mounted in a single IT rack enclosure, with multiple power distribution options
- BladeUPS delivers an industry-leading 98% efficiency across the operating range, resulting in cooler operating conditions and less heat dissipation

### Highly flexible

- BladeUPS is extremely flexible and supports multiple configurations including power protection in each rack, centralised protection, zone protection or hybrid as required
- If your needs change or need to move your IT equipment, simply redeploy and reuse BladeUPS as single of parallel units elsewhere
- Multiple external batteries can be added to increase runtime
- BladeUPS has multiple power distribution options including the Rack Power Module (RPM), ePDUs or hardwired. The 3U RPM delivers single-phase power and can be deployed in the same rack as the UPS and IT equipment.

### Highly efficient

- Optimize your operational expenditure - Latest high efficiency technologies provide 98% efficiency, with 65% less heat dissipation to minimise your operational costs and reduce your carbon footprint
- A 60 kW N+1 solution could save over 20,000 in 5 years in energy costs alone
- The small footprint of BladeUPS allows extra space for IT equipment in the rack and data centre.
- Due to the low heat dissipation, air conditioning requirements are reduced by up to a third and BladeUPS can be located close to IT equipment.
- Utilises Eaton's Advanced Battery Management system to prolong battery life by up to 50%

## TECHNICAL SPECIFICATIONS

| General                                                     |                                                                                                       |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Power Rating                                                | 12 kW per UPS module                                                                                  |
| Efficiency                                                  | Up to 98.6%                                                                                           |
| Heat Dissipation                                            | 371 W/1266 BTU/hr at 100% rated load                                                                  |
| Cooling                                                     | Fan cooled, temperature microprocessor monitored; front air entry, rear exhaust                       |
| Audible Noise, Normal Operation                             | <60 dBA at 1 meter                                                                                    |
| Altitude Before Derating                                    | 1000 m (3300 ft ASL)                                                                                  |
| Input                                                       |                                                                                                       |
| Input Voltage                                               | 400 Vac                                                                                               |
| Voltage Range                                               | 400 V: 311 to 519 Vac, phase to phase                                                                 |
| Frequency Range                                             | 50 or 60 Hz, $\pm 5$ Hz                                                                               |
| Input Current Distortion                                    | <5% with IT loads (PFC power supplies)                                                                |
| Input Power Factor                                          | >0.99 with IT loads (PFC power supplies)                                                              |
| Inrush Current                                              | Load dependent                                                                                        |
| Input Requirements                                          | Three-phase, four-wire + ground                                                                       |
| Bypass Source                                               | Same as input (single feed)                                                                           |
| Generator Compatibility                                     | Fast sync slew rate for generator synchronisation                                                     |
| Output                                                      |                                                                                                       |
| Rated Output Voltage                                        | 400 V: 180 to 240 Vac, Ph to N                                                                        |
| Output Configuration                                        | Three-phase, four-wire + ground                                                                       |
| Output Frequency (nominal)                                  | 50 or 60 Hz auto-detection on startup                                                                 |
| Frequency Regulation                                        | 0.1 Hz free running                                                                                   |
| Load Power Factor Range                                     | Lagging: 0.7<br>Leading: 0.9                                                                          |
| Total Output Voltage Distortion                             | <3% with IT loads (PFC power supplies)<br><5% non-linear or non-PFC power supplies                    |
| Battery                                                     |                                                                                                       |
| Battery Type                                                | VRLA - AGM                                                                                            |
| Battery Runtime (Internal)                                  | 13 minutes at 50% load<br>4.7 minutes at 100% load                                                    |
| Battery String Voltage                                      | 240 Vdc                                                                                               |
| Battery Test                                                | Automatic battery test standard (remote scheduling capable)<br>Manual battery test from front display |
| Battery Recharge Profile                                    | ABM three-stage charging technology                                                                   |
| Battery Cut-off Voltage                                     | Variable from 1.67 VPC at <5 min. runtime                                                             |
| Battery Low Condition                                       | Announced with alarm                                                                                  |
| Extended Battery Capability                                 | Yes, add up to four additional 3U battery enclosures (~34 min at 100% load, >1 hour at 50% load)      |
| Physical                                                    |                                                                                                       |
| Dimensions (HxWxD) UPS                                      | 261 (6U) x 442 x 660 mm                                                                               |
| Note: Total Chassis Weight without batteries or electronics | 46 kg                                                                                                 |
| Total Chassis Weight with batteries or electronics          | 140 kg                                                                                                |
| Total UPS Weight without Batteries                          | 61 kg                                                                                                 |
| Total UPS Weight with Batteries                             | 140 kg                                                                                                |
| EBM Weight                                                  | 77 kg                                                                                                 |

| Communications and User Interface                   |                                                                                                                                                               |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Software Compatibility                              | UPS ships with Software Suite CD                                                                                                                              |
| X-Slot Bays                                         | Two available for the cards listed below                                                                                                                      |
| Control Panel LCD                                   | Two lines by 20 characters<br>Four menu-driven interface buttons<br>Four status at a glance LEDs                                                              |
| Multi-language                                      | English standard; 20 languages available                                                                                                                      |
| Configuration Changes                               | User capable, firmware auto configures                                                                                                                        |
| Dry Contact Inputs                                  | Two, user-configurable                                                                                                                                        |
| Dry Contact Outputs                                 | One, user-configurable                                                                                                                                        |
| Service                                             |                                                                                                                                                               |
| Installation                                        | User capable, located in the IT racks                                                                                                                         |
| Preventative Maintenance                            | User capable, optional factory service available                                                                                                              |
| Corrective Maintenance                              | User capable, optional factory service available                                                                                                              |
| Serviceability Features                             | Hot-swappable batteries<br>Hot-swappable electronics module<br>Automated internal maintenance bypass<br>Auto-configure firmware<br>Flash firmware upgradeable |
| Certifications                                      |                                                                                                                                                               |
| EMI                                                 | IEC 62040                                                                                                                                                     |
| Surge Protection                                    | ANSI C62.41, Cat B-3                                                                                                                                          |
| Hazardous Materials (RoHS)                          | EU Directive 2002/95/EC Category 3 (4 of 5)                                                                                                                   |
| Warranty                                            |                                                                                                                                                               |
| Standard                                            | 12 months                                                                                                                                                     |
| Warranty Repair                                     | Factory depot repair or replace                                                                                                                               |
| Options and Accessories                             |                                                                                                                                                               |
| Detachable input cord                               |                                                                                                                                                               |
| Detachable input/output cord assembly               |                                                                                                                                                               |
| Detachable paralleling cord assembly                |                                                                                                                                                               |
| Extended Battery Modules (EBMs)                     |                                                                                                                                                               |
| 3U output sub-distribution module                   |                                                                                                                                                               |
| 0U to 3U rack power strips                          |                                                                                                                                                               |
| 60 kW BladeUPS Parallel Bar                         |                                                                                                                                                               |
| Four-post rail kit                                  |                                                                                                                                                               |
| Optional X-Slot Communication Cards                 |                                                                                                                                                               |
| Application                                         | Card                                                                                                                                                          |
| Web SNMP                                            | ConnectUPS-X Web/SNMP Card                                                                                                                                    |
| Environment Monitoring                              | EMP Environmental Monitoring Probe (requires Web/SNMP card)                                                                                                   |
| IBM eServer™ (i5™, iSeries™, or AS/400), industrial | Relay Interface Card                                                                                                                                          |
| Parallel                                            | Hot Sync Card                                                                                                                                                 |
| Remote LCD Display                                  | ViewUPS-X                                                                                                                                                     |
| Recommended ePDU:                                   |                                                                                                                                                               |
| Y032440CD100000                                     | RPM - Rack Power Module (BladeUPS in, 12xC13 + 6xC19 out) 20 ft lead                                                                                          |
| EMAB22                                              | ePDU G3 - Managed (0U (C20 16A 1P) 20xC13 4xC19) use in addition to RPM                                                                                       |
| EMOB22                                              | ePDU G3 - Metered Outlet (0U(C20 16A 1P) 20xC13 4xC19) use in addition to RPM                                                                                 |

# Eaton 93E UPS

15/20/30/40/60/80 kVA



Eaton 93E 15-80 kVA

#### Advanced power protection for:

- Financial services
- Building management
- Telecommunications
- Industrial automation equipment
- Healthcare
- Government
- Data centres



#### Double conversion UPS

##### Simply effective power protection

- Double conversion provides the highest level of protection available by isolating the output power from all input anomalies.
- With a transformer-free design and sophisticated sensing and control circuitry the 93E UPS delivers an efficiency of up to 98%.
- Active power factor correction (PFC) provides unbeatable 0,99 input power and <5% ITHD, thus eliminating interference with other critical equipment in the same network and enhancing compatibility with generators.
- The UPS is optimized for protecting modern 0,9 p.f. rated IT equipment without the need to oversize.

##### True reliability

- Eaton's patented HotSync technology makes it possible to parallel up to 4 UPSs in capacity or in redundancy.
- ABM testing and charging cycle helps you to prevent battery problems and in addition lessens corrosion prolonging battery servicelife up to 50%.
- Equipped with a backfeed contactor – no need for additional installments

##### Extensive configurability

- The 93E offers up to 30% smaller footprint compared to competitive UPS offerings.
- A multilingual graphical LCD display makes possible to monitor the UPS status easily.
- Wide software and connectivity options provide monitoring, management and shutdown capabilities over the network.
- Connectivity options are available to suit nearly any communication requirements, from standard serial communications to secure remote monitoring over the Web.

##### Cost savings and sustainability

- A new technical platform used in Eaton's three-phase UPS products guarantee easy upgrades, low MTTR, similarity on service trainings and documentation, thus lowering total cost of ownership.
- Equipped with internal maintenance bypass for safe and easy serviceability.
- A range of service agreement options can be easily customized for customers' needs and budget.

# Eaton 93E UPS 15-80 kVA

## TECHNICAL SPECIFICATIONS

| Power                                               |                                                                                                                                                                                       |                                              |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| UPS output power rating (0.9 p.f)                   | 15 kVA/13.5 kW<br>30 kVA/27 kW<br>60 kVA/54 kW                                                                                                                                        | 20 kVA/18 kW<br>40 kVA/36 kW<br>80 kVA/72 kW |
| Topology                                            | Double-conversion online UPS                                                                                                                                                          |                                              |
| Operating frequency                                 | 50/60 Hz (40 to 72 Hz)                                                                                                                                                                |                                              |
| Input power factor                                  | >0.99 typical                                                                                                                                                                         |                                              |
| Input current distortion                            | ≤5% THD                                                                                                                                                                               |                                              |
| Electrical input                                    |                                                                                                                                                                                       |                                              |
| Input wiring                                        | 3 ph + neutral                                                                                                                                                                        |                                              |
| Nominal input volatage                              | 220/380, 230/400, 240/415 V 50/60 Hz                                                                                                                                                  |                                              |
| Input voltage range                                 | -15%, +20% from nominal (400 V) at 100% load                                                                                                                                          |                                              |
| Power walk-in                                       | Yes                                                                                                                                                                                   |                                              |
| Internal backfeed protection                        | Yes                                                                                                                                                                                   |                                              |
| Electrical output                                   |                                                                                                                                                                                       |                                              |
| Internal maintenance bypass                         | Yes                                                                                                                                                                                   |                                              |
| Output wiring                                       | 3 ph + neutral                                                                                                                                                                        |                                              |
| Nominal voltage rating (configurable)               | 220/380, 230/400, 240/415 V 50/60 Hz                                                                                                                                                  |                                              |
| Output voltage regulation                           | ±1% Static; <5% dynamic at 100% resistive load change, <20 ms response time                                                                                                           |                                              |
| Overload on inverter                                | 10 min 102-125% load<br>1 min 126-150% load<br>500 ms >151% load                                                                                                                      |                                              |
| Overload when bypass available                      | Continuous <115% load, 20 ms 1000% peak current. <b>Note!</b> External bypass fuses may limit the overload capability                                                                 |                                              |
| Battery                                             |                                                                                                                                                                                       |                                              |
| Battery                                             | 384 V (32 x 12 V, 192 cells) for 15-40 kVA with internal batteries<br>384 V - 480 V for 15-80 kVA with external batteries                                                             |                                              |
| Charging method                                     | ABM Cyclic Charging                                                                                                                                                                   |                                              |
| Charging current/Model                              | 15 20 30 40 60 80 kVA                                                                                                                                                                 |                                              |
| Default                                             | 3.5 3.5 5.2 7 10.4 15.6 A                                                                                                                                                             |                                              |
| Max*                                                | 5.3 5.3 8 10.6 16 24 A                                                                                                                                                                |                                              |
| *May be limited by maximum UPS input current rating |                                                                                                                                                                                       |                                              |
| General                                             |                                                                                                                                                                                       |                                              |
| Efficiency                                          | Up to 98% High-efficiency mode<br>Up to 94% Double-conversion mode                                                                                                                    |                                              |
| Parallel technology                                 | Powerware Hot Sync® Technology                                                                                                                                                        |                                              |
| Dimensions W x D x H (mm)                           | 500 x 710 x 960 15-20 kVA (with internal battery)<br>500 x 710 x 1230 30 kVA (with internal battery)<br>500 x 710 x 1500 40 kVA (with internal battery)<br>600 x 800 x 1876 60-80 kVA |                                              |
| Cabinet rating                                      | IP20 with standard washable dust filters                                                                                                                                              |                                              |
| Weights without internal battery                    | 72 kg 15/20 kVA<br>88 kg 30 kVA<br>120 kg 40 kVA<br>202 kg 60 kVA<br>245 kg 80 kVA                                                                                                    |                                              |
| Weights with internal battery                       | 272 kg 15/20 kVA<br>376 kg 30 kVA<br>490 kg 40 kVA                                                                                                                                    |                                              |

| Communications                                       |                                                                                                       |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Display                                              | Graphical LCD with blue backlight                                                                     |
| LEDs                                                 | (4) LEDs for notice and alarm                                                                         |
| Audible alarms                                       | Yes                                                                                                   |
| Communication ports                                  | (1) RS-232, (1) USB, (1) EPO                                                                          |
| Communication slots                                  | (2) Mini-slot communication bays                                                                      |
| Relay inputs/outputs                                 | Three Signal inputs                                                                                   |
| Environmental                                        |                                                                                                       |
| Operating temperature                                | 0 °C to +40 °C                                                                                        |
| Storage temperature                                  | -25 °C to +55 °C without batteries<br>+15 °C to +25 °C with batteries                                 |
| Relative humidity                                    | 5-95%, non-condensing                                                                                 |
| Audible noise                                        | 15-20 kVA ≤55 dBA at 1m typical<br>30-40 kVA ≤62 dBA at 1m typical<br>60-80 kVA ≤65 dBA at 1m typical |
| Altitude                                             | 1000 m without derating (max 2000 m)                                                                  |
| Compliance with standards                            |                                                                                                       |
| Safety (CB certified)                                | IEC 62040-1                                                                                           |
| EMC                                                  | IEC 62040-2, EMC Category C3                                                                          |
| Performance                                          | IEC 62040-3                                                                                           |
| Quality                                              | ISO 9001: 2000 and ISO 14001:1996                                                                     |
| Accessories                                          |                                                                                                       |
| External battery cabinets                            |                                                                                                       |
| External maintenance bypass switch                   |                                                                                                       |
| MiniSlot connectivity (Web/SNMP, ModBus/Jbus, Relay) |                                                                                                       |
| Environmental monitoring probe                       |                                                                                                       |

Due to continuous product improvement programs, specifications are subject to change without notice.



# Eaton 93E UPS

100/120/160/200 kVA



Eaton 93E 100-200 kVA

## Advanced power protection for:

- Financial services
- Building management
- Telecommunications
- Industrial automation equipment
- Healthcare
- Government
- Data centres



## Double conversion UPS

### Simply effective power protection

- Double conversion provides the highest level of protection available by isolating the output power from all input anomalies.
- With a transformer-free design and sophisticated sensing and control circuitry the 93E UPS delivers an efficiency of up to 98,5%.
- Active power factor correction (PFC) provides unbeatable 0,99 input power and <5% ITHD, thus eliminating interference with other critical equipment in the same network and enhancing compatibility with generators.
- The UPS is optimized for protecting modern 0,9 p.f. rated IT equipment without the need to oversize.

### True reliability

- Patented Powerware Hot Sync® technology makes possible to parallel up to 4 UPSs in capacity or redundancy. The technology enables load sharing without any communication line, thus eliminating single point of failure and increasing power availability.
- ABM testing and charging cycle helps you to prevent battery problems and in addition lessens corrosion prolonging battery service life up to 50%.

### Extensive configurability

- The 93E offers over 20% smaller footprint compared to competitive UPS offerings.
- A multilingual graphical LCD display makes possible to monitor the UPS status easily.
- Wide software and connectivity options provide monitoring, management and shutdown capabilities over the network.
- Connectivity options are available to suit nearly any communication requirements, from standard serial communications to secure remote monitoring over the Web.
- Equipped with a backfeed contactor – no need for additional installments

### Cost savings and sustainability

- A new technical platform used in Eaton's three-phase UPS products guarantee easy upgrades, low MTTR, similarity on service trainings and documentation, thus lowering total cost of ownership.
- A range of service agreement options can be easily customized for customers' needs and budget.

# Eaton 93E UPS 100-200 kVA

## TECHNICAL SPECIFICATIONS

| General                                          |                                          |
|--------------------------------------------------|------------------------------------------|
| UPS output power rating (0.9 p.f.)               | 100 120 160 200 kVA<br>90 108 144 180 kW |
| Efficiency in double conversion mode (full load) | 94%                                      |
| Distributed paralleling with Hot Sync technology | 4                                        |
| Inverter/rectifier topology                      | Transformer-free IGBT with PWM           |
| Audible noise                                    | ≤70dB at 1 m, 75% load                   |
| Altitude (max)                                   | 1000 m without derating (max 2000 m)     |
| Dimensions W x D x H                             | 600 x 800 x 1876 (mm)                    |
| UPS ambient service temperature                  | 0°C to +40°C                             |

| Input                                 |                                                     |
|---------------------------------------|-----------------------------------------------------|
| Input wiring                          | 3 ph + neutral                                      |
| Nominal voltage rating (configurable) | 220/380, 230/400, 240/415 V 50/60 Hz                |
| Input voltage range                   | +20% / -15% at 100% load<br>+20% / -50% at 50% load |
| Input frequency range                 | 42-70 Hz                                            |
| Input Power Factor                    | 0,99                                                |
| Input ITHD                            | < 5%                                                |
| Soft start capability                 | Yes                                                 |

| Battery                             |                              |
|-------------------------------------|------------------------------|
| Battery type                        | VRLA                         |
| Charging method                     | ABM technology or Float      |
| Battery nominal voltage (lead-acid) | 432 V (36 x 12 V, 216 cells) |
|                                     | 456 V (38 x 12 V, 228 cells) |
|                                     | 480 V (40 x 12 V, 240 cells) |
| Charging current / Model            | 100 120 160 200 kVA          |
| Default                             | 20 20 20 20 A                |
| Max*                                | 40 40 80 80 A                |

\*May be limited by maximum UPS input current rating

| Output                                |                                                                                                                        |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Output wiring                         | 3 ph + neutral                                                                                                         |
| Nominal voltage rating (configurable) | 220/380, 230/400 (default),<br>240/415 V 50/60 Hz                                                                      |
| Output UTHD                           | <2% (100% linear load)                                                                                                 |
| Output power factor                   | 0.9                                                                                                                    |
| Permitted load power factor           | 0.7 lagging – 0.9 leading                                                                                              |
| Overload on inverter                  | 10 min 102-125% load                                                                                                   |
|                                       | 1 min 126-150% load                                                                                                    |
|                                       | 500 ms >151% load                                                                                                      |
| Overload when bypass available        | Continuous <115% load, 20 ms 1000% peak current. <b>Note!</b> External bypass fuses may limit the overload capability. |
| Internal backfeed protection          | Yes                                                                                                                    |

| Accessories                                                                                                                                                      |                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| External battery cabinets, internal manual bypass switch up to 120 kVA, external maintenance bypass switch, MiniSlot connectivity (Web/SNMP, ModBus/Jbus, Relay) |                              |
| Communications                                                                                                                                                   |                              |
| MiniSlot                                                                                                                                                         | 2 communication bays         |
| Serial ports                                                                                                                                                     | USB, RS232                   |
| Relay inputs/outputs                                                                                                                                             | Three Signal inputs          |
| Compliance with standards                                                                                                                                        |                              |
| Safety (CB certified)                                                                                                                                            | IEC 62040-1                  |
| EMC                                                                                                                                                              | IEC 62040-2, EMC Category C3 |
| Performance                                                                                                                                                      | IEC 62040-3                  |

Due to continuous product improvement programs, specifications are subject to change without notice.

# Eaton 93PS UPS

8-10 kW



## Lowest total cost of ownership (TCO)

- Highest efficiency in its power range with above 96% efficiency in double conversion mode and up to 99% efficiency in Energy Saver System mode
- Scalable by paralleling up to 4 units
- Smallest footprint on the market, footprint only 0.25 m<sup>2</sup>
- Unity power factor (1.0), providing more real power than many of its rivals

## Maximum availability

- HotSync® patented load-sharing technology enables parallel operation of units without communication or loadshare signals. Eliminating the communication link eliminates the risk of single point of failure
- Equipped with ultra-rapid fuses in the Static Switch
  - ensuring safety in all scenarios
- Equipped with backfeed protection
  - no need for additional installments
- Advanced Battery Management – Intelligent battery charging to keep your batteries safe and in good condition
- The 93PS and Eaton's Intelligent Power Manager® software suite takes the resiliency of the system to the next level by bridging the electrical and IT infrastructure

## Key applications

- IT applications:
  - Server rooms
  - Localised Data centres
- Mission critical applications:
  - Manufacturing/Industrial facilities
  - Transportation
  - Retail Buildings
  - Healthcare
  - Telecommunication
  - Government



## TECHNICAL SPECIFICATIONS

| General                                             |                                                                                                             |                                               |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Model rating (1.0 p.f.)                             | 8 kW                                                                                                        | 10 kW                                         |
| Model catalogue reference                           | 93PS-8(10)-0-MBS or<br>93PS-8(10)-1x9Ah-MBS                                                                 | 93PS-10(10)-0-MBS or<br>93PS-10(10)-1x9Ah-MBS |
| Number of internal batteries                        | 0 or 1 x 32 blocks                                                                                          | 0 or 1 x 32 blocks                            |
| Upgradability                                       | Yes, to 10 kW                                                                                               | No                                            |
| External paralleling                                | Up to 4 units with HotSync technology                                                                       |                                               |
| UPS topology                                        | Double conversion                                                                                           |                                               |
| Efficiency in double-conversion mode                | >96%                                                                                                        |                                               |
| Efficiency in Energy Saver System (ESS) mode        | Up to 99%                                                                                                   |                                               |
| UPS dimensions (width x depth x height)             | 335 x 750 x 950 mm                                                                                          |                                               |
| UPS Degree of protection                            | IP 20                                                                                                       |                                               |
| Acoustic noise at 1 m, in 25 °C ambient temperature | < 54 dBA in double conversion<br>< 47 dBA in ESS                                                            |                                               |
| Maximum service altitude                            | 1000 m (3300 ft) above sea level at 40 °C<br>Maximum 2000 m (6600 ft) with 1 % derating per each add. 100 m |                                               |
| RoHS/WEEE compliance                                | Yes                                                                                                         |                                               |
| Input                                               |                                                                                                             |                                               |
| Model rating (1.0 p.f.)                             | 8 kW                                                                                                        | 10 kW                                         |
| Rated input voltage                                 | 220/380 V; 230/400 V; 240/415 V                                                                             |                                               |
| <b>Voltage tolerance:</b>                           |                                                                                                             |                                               |
| Rectifier input                                     | 187 to 276 V                                                                                                |                                               |
| Bypass input                                        | rated voltage -15% / +10%                                                                                   |                                               |
| Rated input frequency                               | 50 or 60 Hz, user configurable                                                                              |                                               |
| Frequency tolerance                                 | 40 to 72 Hz                                                                                                 |                                               |
| Input wiring                                        | 3 phases + neutral                                                                                          |                                               |
| Input power factor                                  | 0.99                                                                                                        |                                               |
| Rated input r.m.s. current:                         |                                                                                                             |                                               |
| 380V                                                | 13 A                                                                                                        | 16 A                                          |
| 400V                                                | 12 A                                                                                                        | 15 A                                          |
| 415V                                                | 12 A                                                                                                        | 15 A                                          |
| Soft start capability                               | Yes                                                                                                         |                                               |
| Back feed protection                                | Yes, for rectifier and bypass lines                                                                         |                                               |
| Output                                              |                                                                                                             |                                               |
| Model rating (1.0 p.f.)                             | 8 kW                                                                                                        | 10 kW                                         |
| Output wiring                                       | 3 phases + neutral                                                                                          |                                               |
| Rated output voltage                                | 220/380 V; 230/400 V; 240/415 V, configurable                                                               |                                               |
| <b>Total voltage harmonic distortion:</b>           |                                                                                                             |                                               |
| 100% linear load                                    | < 1.5%                                                                                                      |                                               |
| 100% non-linear load                                | < 3.5%                                                                                                      |                                               |
| Rated output power                                  | 8 kW / 8 kVA                                                                                                | 10 kW / 10 kVA                                |
| <b>Overload capability:</b>                         |                                                                                                             |                                               |
| On inverter                                         | 10 min 102-110% load<br>60 sec 111-125% load<br>10 sec 126-150% load<br>300 ms >150% load                   |                                               |
| On bypass                                           | Continuous < 125% load<br>20 ms 1000% load                                                                  |                                               |
| Rated input r.m.s. current:                         |                                                                                                             |                                               |
| 380V                                                | 13 A                                                                                                        | 16 A                                          |
| 400V                                                | 12 A                                                                                                        | 15 A                                          |
| 415V                                                | 12 A                                                                                                        | 15 A                                          |
| <b>Load power factor:</b>                           |                                                                                                             |                                               |
| Rated                                               | 1.0                                                                                                         |                                               |
| Permitted range                                     | 0.8 lagging to 0.8 leading                                                                                  |                                               |

| Battery                     |                                                                                                                                                                |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Model rating (1.0 p.f.)     |                                                                                                                                                                |
| Battery technology          | 12 V, VRLA                                                                                                                                                     |
| Battery design life         | 5 years                                                                                                                                                        |
| <b>Battery quantity:</b>    |                                                                                                                                                                |
| Internal                    | 32 blocks, 192 cells per battery string                                                                                                                        |
| External                    | 28-40 blocks per string                                                                                                                                        |
| <b>Battery voltage:</b>     |                                                                                                                                                                |
| Internal                    | 384 V                                                                                                                                                          |
| External                    | 336V – 480V                                                                                                                                                    |
| Nominal Ah capacity (C10)   | 9Ah                                                                                                                                                            |
| Charge current limit        | Default 5A, configurable<br>Maximum 12.5A                                                                                                                      |
| Battery start option        | Yes                                                                                                                                                            |
| Communication circuits      |                                                                                                                                                                |
| Model rating (1.0 p.f.)     |                                                                                                                                                                |
| MiniSlots                   | 2 communication bays                                                                                                                                           |
| Network/SNMP interface      | Yes, standard                                                                                                                                                  |
| Standard connectivity ports | Mini-slot ports for optional cards, Device USB and Host USB, RS-232 service port, relay output, 5 building alarm inputs and a dedicated EPO, Web and SNMP card |
| Compliance with standards   |                                                                                                                                                                |
| Model rating (1.0 p.f.)     |                                                                                                                                                                |
| Safety (CB certified)       | IEC 62040-1                                                                                                                                                    |
| EMC                         | IEC 62040-2                                                                                                                                                    |
| Performance                 | IEC 62040-3                                                                                                                                                    |
| RoHS                        | EU directive 2011/65/EU                                                                                                                                        |
| WEEE                        | EU directive 2012/19/EU                                                                                                                                        |



# Eaton 93PS UPS

8-40 kW



## Advanced power protection for:

- IT applications:
  - Server rooms
  - Localised Data centres
- Mission critical applications:
  - Manufacturing/Industrial facilities
  - Transportation
  - Retail Buildings
  - Healthcare
  - Telecomm
  - Government



## Lowest Total Cost of Ownership (TCO)

### Efficiency

- Above 96% efficiency in double conversion mode
- Up to 99% efficiency with Energy Saver System

### Scalability

- Scalable architecture and 'Pay as you grow' capability to minimise Capital Expenditure
- Paralleling of up to 4 units

### Inherent redundancy

- Modular design allows internal redundancy (separate battery configuration also available)

### Smallest footprint in the market

- The 93PS provides significantly more in a smaller package, with a footprint of only 0.25 m<sup>2</sup> for the smaller frame (8-20 kW) and 0.36 m<sup>2</sup> for the large frame (8-40 kW)

### Unity power factor (1.0)

## Maximum Availability

### Hot Swap and Hot Scalable

- A module can be replaced while the other continues protecting the load (concurrent maintenance)
- A module can be added while the other continues protecting the load (hot scalable)
- Individual battery strings can be serviced while other strings are supporting the load

### Super-sized static switch

- Optional super-sized Static Switch to enhance the selectivity of the overall electrical installation

### Safety

- Equipped with an ultra-rapid fuse in the Static Switch – ensuring safety in all scenarios
- Equipped with a backfeed contactor – no need for additional installations

### Cloud & Virtualisation ready

- The 93PS and Eaton's Intelligent Power Manager software suite takes the resiliency of the system to the next level by bridging the electrical and IT infrastructure
- IT and electrical infrastructure management from a "Single pane of glass"
- Load shedding – 50% drop in load equates to 250% more runtime!

# Eaton 93PS UPS

## TECHNICAL SPECIFICATIONS

| General                                             | 8-20 kW                                                                                                                             | 8-40 kW                                         |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| UPS output power rating (1.0 p.f.)                  | 8, 10, 15, 20                                                                                                                       | 8, 10, 15, 20, 30, 40, 8+8, 10+10, 15+15, 20+20 |
| Model catalogue reference                           | 93PS-XX(20)-YY-                                                                                                                     | 93PS-XX(40)-YY-                                 |
| Number of internal batteries                        | 0 to 2 x 32 blocks                                                                                                                  | 0 to 4 x 32 blocks                              |
| UPS options                                         | Long life batteries (LL)<br>Internal maintenance bypass switch (MBS)External maintenance bypass switch<br>External battery cabinets |                                                 |
| Upgradability                                       | Yes, up to 20 kW                                                                                                                    | Yes, up to 40 kW                                |
| External paralleling                                | Up to 4 units with HotSync technology                                                                                               |                                                 |
| UPS topology                                        | Double conversion                                                                                                                   |                                                 |
| Efficiency in Double conversion mode                | >96%                                                                                                                                |                                                 |
| Efficiency in Energy Saver System (ESS)             | Up to 99%                                                                                                                           |                                                 |
| UPS dimensions (width x depth x height)             | 335 x 750 x 1300 mm                                                                                                                 | 480 x 750 x 1750 mm                             |
| UPS Degree of protection                            | IP 20                                                                                                                               |                                                 |
| Acoustic noise at 1 m, in 25 °C ambient temperature | < 60 dBA in double conversion<br>< 47 dBA in ESS                                                                                    |                                                 |
| Maximum service altitude                            | 1000 m (3300 ft) above sea level at 40 °C<br>Maximum 2000 m (6600 ft) with 1% derating per each add. 100 m                          |                                                 |
| Input                                               |                                                                                                                                     |                                                 |
| Rated input voltage                                 | 220/380 V; 230/400 V; 240/415 V                                                                                                     |                                                 |
| Voltage tolerance:                                  |                                                                                                                                     |                                                 |
| Rectifier input                                     | 187 to 276 V                                                                                                                        |                                                 |
| Bypass input                                        | rated voltage -15% / +10%                                                                                                           |                                                 |
| Rated input frequency                               | 50 or 60 Hz, user configurable                                                                                                      |                                                 |
| Frequency tolerance                                 | 40 to 72 Hz                                                                                                                         |                                                 |
| Input wiring                                        | 3 phases + neutral                                                                                                                  |                                                 |
| Input power factor                                  | 0.99                                                                                                                                |                                                 |
| Input ITHD                                          | 8 kW<br>< 5%                                                                                                                        | 10 kW<br>< 4%                                   |
|                                                     |                                                                                                                                     | 15-40 kW<br>< 3%                                |
| Rated input r.m.s. current                          | 8 kW<br>13 A                                                                                                                        | 10 kW<br>16 A                                   |
| 380V                                                | 15 kW<br>24 A                                                                                                                       | 20 kW<br>32 A                                   |
| 400V                                                | 30 kW<br>48 A                                                                                                                       | 40 kW<br>63 A                                   |
| 415V                                                | 12 A<br>15 A                                                                                                                        | 23 A<br>30 A                                    |
|                                                     | 22 A<br>29 A                                                                                                                        | 44 A<br>58 A                                    |
| Soft start capability                               | Yes                                                                                                                                 |                                                 |
| Back feed protection                                | Yes, for rectifier and bypass lines                                                                                                 |                                                 |

| Output                            |                                                                                                                                                                |                                            |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Output wiring                     | 3 phases + neutral                                                                                                                                             |                                            |
| Rated output voltage              | 220/380 V; 230/400 V; 240/415 V, configurable                                                                                                                  |                                            |
| Total voltage harmonic distortion |                                                                                                                                                                |                                            |
| 100% linear load                  | < 1%                                                                                                                                                           |                                            |
| 100% non-linear load              | < 5%                                                                                                                                                           |                                            |
| Overload capability               |                                                                                                                                                                |                                            |
| On inverter                       | 10 min 102-110% load<br>60 sec 111-125% load<br>10 sec 126-150% load<br>300 ms >150% load                                                                      |                                            |
| On bypass                         | Continuous < 125% load<br>20 ms 1000% load                                                                                                                     |                                            |
| Load power factor                 |                                                                                                                                                                |                                            |
| Rated                             | 1.0                                                                                                                                                            |                                            |
| Permitted range                   | 0.8 lagging to 0.8 leading                                                                                                                                     |                                            |
| Battery                           | 8-20 kW                                                                                                                                                        | 8-40 kW                                    |
| Battery technology                | 12 V, VRLA                                                                                                                                                     |                                            |
| Battery design life               | 5 or 10 years                                                                                                                                                  |                                            |
| Battery quantity                  | 32 blocks, 192 cells per battery string                                                                                                                        |                                            |
| Battery voltage                   | 384 V                                                                                                                                                          |                                            |
| Nominal Ah capacity (C10)         | 9 Ah or 7 Ah Long life                                                                                                                                         |                                            |
| Charge current limit              | Default 5 A, configurable<br>Maximum 25 A                                                                                                                      | Default 10 A, configurable<br>Maximum 50 A |
| Battery start option              | Yes                                                                                                                                                            |                                            |
| Communication Circuits            |                                                                                                                                                                |                                            |
| MiniSlot                          | 2 communication bays                                                                                                                                           |                                            |
| Network/SNMP interface            | Yes, standard                                                                                                                                                  |                                            |
| Standard connectivity ports       | Mini-slot ports for optional cards, Device USB and Host USB, RS-232 service port, relay output, 5 building alarm inputs and a dedicated EPO, Web and SNMP card |                                            |
| Compliance with Standards         |                                                                                                                                                                |                                            |
| Safety (CB certified)             | IEC 62040-1                                                                                                                                                    |                                            |
| EMC                               | IEC 62040-2                                                                                                                                                    |                                            |
| Performance                       | IEC 62040-3                                                                                                                                                    |                                            |

# Eaton 93PM UPS

30-500 kVA



## Key applications

- Small, medium and large data centers
- Finance and banking critical infrastructure
- Commercial buildings and industrial complexes
- Healthcare
- Telecommunications installations
- Process control equipment

## Highest availability, at the lowest total cost of ownership

### Lowest total cost of ownership (TCO)

- The 93PM UPS sets new standards, with an operating level of up to 96,7% in double conversion mode resulting in significant savings in operational costs.
- > 99% superior efficiency is delivered in Energy Saver System mode (ESS).
- High efficiency even when UPS load levels are low, optimized by Variable Module Management System (VMMS).
- Maximal power and energy density ensures a compact footprint.

### Ultimate resiliency

- HotSync® patented load-sharing technology enables parallel operating of static converters without communication or loadshare signals. Eliminating the communication link eliminates risk of single point of failure.
- One static switch per UPS enables the full bypass capacity to be achieved from day one. Power modules can be added as loads increase.
- Equipped with an ultra-rapid fuse in the Static Switch – ensuring safety in all scenarios.
- Equipped with a backfeed contactor – no need for additional installments
- Wide power factor range meets rapidly changing load power factor without de-rating.
- Intelligent battery charging through Advanced Battery Management prevents unnecessary charging and significantly retards battery wear rate.

### Highly scalable and easy deployment

- Scalable, modular architecture and 'Pay as you grow' capability minimises CapEx.
- Thermal management support allows for flexible installation against the wall, in rows and in hot/cold aisle configurations.
- Easy access allows fast MTTR (mean time to repair).

### Easy management

- Wide range of connectivity options (Web/SNMP, Modbus/Jbus, relay contacts)
- Intelligent Power software integrates with leading virtualisation management systems for monitoring and managing.
- The intuitive touchscreen LCD user interface and visual data logging provides clear information on the UPS status.

# Eaton 93PM UPS 30-500 kVA

## TECHNICAL SPECIFICATIONS

| General                                                    |                                                                                        |
|------------------------------------------------------------|----------------------------------------------------------------------------------------|
| UPS output power rating                                    | 30-500 kVA                                                                             |
| Efficiency in double conversion mode                       | Up to 97%                                                                              |
| Variable Module Management System (VMMS) double conversion | Significantly increased efficiency at low loading                                      |
| Efficiency in Energy Saver System (ESS) <sup>1</sup>       | > 99%                                                                                  |
| Paralleling capability                                     | 30-200 kVA: Up to 8 units<br>250-500 kVA: Up to 4 units                                |
| Rectifier and inverter topology                            | Transformer-free 3-level IGBT-converter                                                |
| Audible noise                                              | 30-60kVA: <60 dBA<br>80-200kVA: < 65 dBA<br>250-500kVA: < 69 dBA<br>ESS mode: < 47 dBA |
| Altitude (max)                                             | 1000 m without derating (max 2000 m)                                                   |

| Input                        |                                        |
|------------------------------|----------------------------------------|
| Input wiring                 | 3ph + N + PE                           |
| Nominal voltage rating       | 220/380V; 230/400V; 240/415V 50Hz/60Hz |
| Input frequency range        | 40 to 72 Hz                            |
| Input power factor           | 0.99                                   |
| Input iTHD                   | 30kVA, 60kVA: < 4.5%<br>40-500kVA: <3% |
| Soft start capability        | Yes                                    |
| Internal backfeed protection | Yes                                    |

| Output                  |                                        |
|-------------------------|----------------------------------------|
| Output wiring           | 3ph + N +PE                            |
| Nominal voltage rating  | 220/380V; 230/400V; 240/415V 50Hz/60Hz |
| Load power factor range | 0.8 lagging – 0.8 leading              |

| Battery                                  |                                                                             |
|------------------------------------------|-----------------------------------------------------------------------------|
| Battery type                             | VRLA                                                                        |
| Charging mode                            | Advanced Battery Management or Float                                        |
| Temperature compensated battery charging | Option                                                                      |
| Battery start capability                 | Yes                                                                         |
| Alternative backup power technologies    | Wet cell batteries<br>NiCd batteries<br>Li-Ion batteries<br>Supercapacitors |

| Accessories                                                         |  |
|---------------------------------------------------------------------|--|
| Long life batteries                                                 |  |
| External battery cabinets and supercapacitor cabinets               |  |
| External maintenance bypass switch panels, Integrated manual bypass |  |
| Battery breaker enclosures for rack batteries                       |  |

| Connectivity                  |                                                                                                                                      |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Native Relay inputs / outputs | 5 relay inputs and dedicated EPO<br>1 relay output<br>More relay contacts available as option                                        |
| Software                      | Eaton Intelligent Power Manager<br>Eaton Intelligent Power Protector                                                                 |
| PXGMS –card                   | Web/SNMP/Modbus RTU and TCP/BACnet IP<br>Temperature, humidity and two status inputs through Environmental Monitoring Probe (option) |
| Network-MS card               | Web/SNMP<br>Temperature, humidity and two status inputs through Environmental Monitoring Probe (option)                              |
| INDRELAY-MS card              | 5 output relays, 1 digital input                                                                                                     |

| Compliance with standards |                           |
|---------------------------|---------------------------|
| Safety                    | IEC 62040-1; CB certified |
| EMC                       | IEC 62040-2               |
| Performance               | IEC 62040-3               |
| RoHS                      | EU directive 2011/65/EU   |
| WEEE                      | EU directive 2012/19/EU   |

<sup>1</sup> Additional information on ESS performance, refer to 93PM UPS Technical Specification.

Due to continuous product improvement programmes, specifications are subject to change without notice.



# Power Xpert 9395P UPS

250 - 1200 kVA



Power Xpert 9395P UPS with optional power module status lights

## Advanced power protection for:

- Large data centres, infrastructure projects, industrial complexes and other buildings
- Process control equipment
- Healthcare
- Finance and banking infrastructure
- Transportation systems
- Security operations
- Telecommunications installations

Compatible with Lithium-ion batteries and Supercapacitors!

## Double conversion UPS

### 10% more power

- 96.3% double conversion efficiency, delivers 10% more power than the previous 9395 UPS.
- Complete isolation of output power from all input power anomalies, to deliver 100% conditioned, perfect sine-wave output – even during severe power disturbance.
- High efficiency even when UPS load levels are low, optimised by Variable Module Management System (VMMS).
- Energy Saver System (ESS) improves efficiency levels to 99% by suspending power modules when double conversion is not required. Switches to double conversion mode in less than 2 milliseconds in event of pre-set input limits being exceeded. Filtering against fast low-energy transients provided by ESS.
- Producing 18% less heat helps reduce the need for cooling. Designed for continuous operation at ambient temperatures up to 40°C without de-rating. Can also deliver safe power in higher temperatures without shutting down.

### Ultimate resiliency

- HotSync® patented load-sharing technology enables parallel operating of static converters without communication or load-share signals. Eliminating the communication link eliminates risk of single point of failure.
- One static switch per UPS enables the full bypass capacity to be achieved from day one. Power modules can be added as loads increase.
- Wide power factor range meets rapidly changing load power factor without de-rating.
- Intelligent battery charging through Advanced Battery Management prevents unnecessary charging and significantly retards battery wear rate.

### Scalability and flexibility

- Number of power modules per UPS can be specified.
- Layout can be chosen to suit installation: back-to-back, L-shaped etc. Front-accessible design minimises installation costs and saves valuable data centre space.
- Preferred bypass topology can be specified. Additional modules can be added as power load increases.
- Centralised multi-module paralleled 9395P systems are supported by the Eaton System Bypass Module (SBM). Available in ratings from 2000 A to 5000 A as standard, the SBM includes a continuous-duty centralised static switch, backfeed protection device and centralised bypass systems.
- Service disconnect in each power module allows easy maintenance while the UPS is supporting the load in double conversion mode.
- More than 90% of materials used can be recycled, decreasing end-of-life impact.

# Power Xpert 9395P UPS

## TECHNICAL SPECIFICATIONS

| UPS output power rating                           |     |     |                                                                                    |     |     |     |      |      |
|---------------------------------------------------|-----|-----|------------------------------------------------------------------------------------|-----|-----|-----|------|------|
| kVA                                               | 250 | 300 | 500                                                                                | 600 | 750 | 900 | 1000 | 1200 |
| kW                                                | 250 | 275 | 500                                                                                | 550 | 750 | 825 | 1000 | 1100 |
| General                                           |     |     |                                                                                    |     |     |     |      |      |
| Efficiency in double conversion mode (full load)  |     |     | 95.6%                                                                              |     |     |     |      |      |
| Efficiency in double conversion mode (half load)  |     |     | 96.3%                                                                              |     |     |     |      |      |
| VMMS (double conversion)                          |     |     | Significantly increased efficiency at low loads                                    |     |     |     |      |      |
| Efficiency in Energy Saver System (ESS)           |     |     | Up to 99.3%                                                                        |     |     |     |      |      |
| Distributed parallelling with Hot Sync technology |     |     | Up to 5 units with Distributed bypass<br>Up to 7 units with Centralized bypass     |     |     |     |      |      |
| Internal N+1 redundance capable                   |     |     | Yes                                                                                |     |     |     |      |      |
| Field upgradable                                  |     |     | Yes                                                                                |     |     |     |      |      |
| Inverter/rectifier topology                       |     |     | Transformer-free IGBT with PWM                                                     |     |     |     |      |      |
| Audible noise                                     |     |     | 78 dB (300 kVA); <81 dB (600 kVA);<br><83 dB (900 kVA); <85 dB (1200 kVA)          |     |     |     |      |      |
| Altitude (max)                                    |     |     | 1000 m without derating (max 2000 m)                                               |     |     |     |      |      |
| Input                                             |     |     |                                                                                    |     |     |     |      |      |
| Input wiring                                      |     |     | 3 ph + N + PE                                                                      |     |     |     |      |      |
| Nominal voltage rating (configurable)             |     |     | 220/380, 230/400, 240/415 V 50/60 Hz                                               |     |     |     |      |      |
| Input voltage range                               |     |     | +15% / -15% for 400 V or 415 V<br>+15% / -10% for 380 V<br>+10% / -10% for bypass  |     |     |     |      |      |
| Input frequency range                             |     |     | 45-65 Hz                                                                           |     |     |     |      |      |
| Input power factor                                |     |     | 0.99                                                                               |     |     |     |      |      |
| Input ITHD                                        |     |     | <3% on nominal load in double conversion mode                                      |     |     |     |      |      |
| Soft start capability                             |     |     | Yes                                                                                |     |     |     |      |      |
| Internal backfeed protection                      |     |     | Yes, standard                                                                      |     |     |     |      |      |
| Output                                            |     |     |                                                                                    |     |     |     |      |      |
| Output wiring                                     |     |     | 3 ph + N + PE                                                                      |     |     |     |      |      |
| Nominal voltage rating (configurable)             |     |     | 220/380, 230/400, 240/415 V 50/60 Hz                                               |     |     |     |      |      |
| Output UTHD                                       |     |     | <2% (100% linear load), <5% (non linear load)                                      |     |     |     |      |      |
| Output power factor                               |     |     | 0.9 (300, 600, 900 and 1200 kVA models)<br>1.0 (250, 500, 750 and 1000 kVA models) |     |     |     |      |      |
| Permitted load power factor                       |     |     | 0.7 lagging - 0.8 leading                                                          |     |     |     |      |      |
| Overload on inverter                              |     |     | 10 min 100-110%; 30 sec 110-125%;<br>10 sec 125-150%; 300 ms >150%                 |     |     |     |      |      |
| Overload when bypass available                    |     |     | Continuous <115%, 20 ms 1000% Note! Bypass fuses may limit the overload capability |     |     |     |      |      |

| Battery                             |                                                                                       |            |            |             |
|-------------------------------------|---------------------------------------------------------------------------------------|------------|------------|-------------|
| Type                                | VRLA                                                                                  |            |            |             |
| Charging method                     | Current limited constant voltage charging, or Eaton Advanced Battery Management (ABM) |            |            |             |
| Temperature compensation            | Optional                                                                              |            |            |             |
| Battery nominal voltage (lead-acid) | 480 V (40 x 12 V, 240 cells)                                                          |            |            |             |
| Charging current / Model Max* A     | 300<br>120                                                                            | 600<br>240 | 900<br>360 | 1200<br>480 |

\*Limited by maximum UPS input current rating

|                                       |                                                                                  |
|---------------------------------------|----------------------------------------------------------------------------------|
| Alternative backup power technologies | Wet cell batteries<br>NiCd batteries<br>Lithium-ion batteries<br>Supercapacitors |
|---------------------------------------|----------------------------------------------------------------------------------|

| Dimensions and weights |                               |         |
|------------------------|-------------------------------|---------|
| 300 kVA                | 1350 x 880 x 1880 mm (wx dxh) | 830 kg  |
| 600 kVA                | 1890 x 880 x 1880 mm          | 1440 kg |
| 900 kVA                | 3710 x 880 x 1880 mm          | 2680 kg |
| 1200 kVA               | 4450 x 880 x 1880 mm          | 3120 kg |

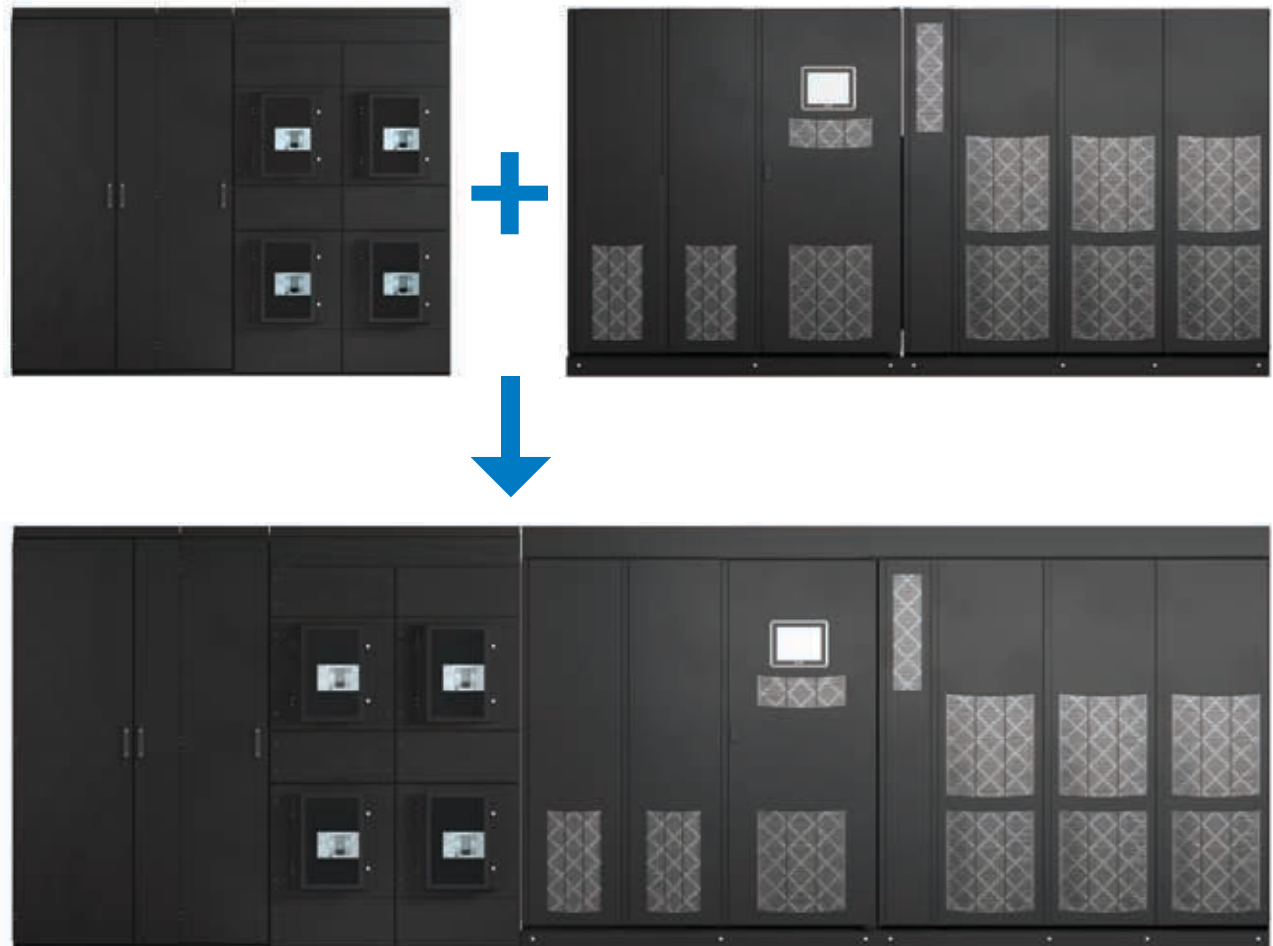
| Accessories and options |                                                                                                                                                                                                                     |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | External battery cabinets with long-life batteries, X-Slot connectivity (Web/SNMP, ModBus/Jbus, Relay, Hot Sync, ViewUPS-X remote display), integrated manual bypass for 300 kVA model, Power Module status LED kit |

| Communications       |                      |
|----------------------|----------------------|
| X-Slot               | 4 communication bays |
| Relay inputs/outputs | 5/1 programmable     |

| Compliance with standards |             |
|---------------------------|-------------|
| Safety (CB certified)     | IEC 62040-1 |
| EMC                       | IEC 62040-2 |
| Performance               | IEC 62040-3 |

# Eaton Connected

**The all-in-one solution for power distribution and UPS backup power**



Choosing the Eaton Connected solution offers opportunity to save time and to have results delivered on time and budget. Eaton Connected combines two highly reliable, safe and efficient Eaton products, UPS and low voltage switchgear integrate to a market-leading backup power solution.

Power Xpert CX Switchgear can be combined with either Power Xpert 9395P UPS or Eaton 93PM UPS, to provide in one solution:

- Incoming feeder
- Maintenance bypass
- UPS solution
- Outgoing feeders

The result is combined power distribution and UPS backup power solution, that is safe, fast, flexible, reliable – and all-in-one.

## **The all-in-one solution for power distribution and UPS backup power**

High-quality Eaton components have been carefully selected to ensure reliability and safety. They have been tested against UPS and switchgear standards, as applicable, to validate their safe and reliable operation and their resilience in challenging short-circuit conditions. In addition to separate testing of the UPS and switchgear, the complete Eaton Connected solution is tested and verified as one.

## **Get faster to market with optimized design**

With pre-designed solutions, Eaton Connected makes it quicker and easier to plan and install a system, compared with a conventional component-based system. The modular construction of the Eaton Connected solution allows the optimized design around the project-specific requirements. The result is a solution perfectly tailored to current needs, with a minimum upfront investment. But also it can quickly be scaled to meet changing requirements, easily, efficiently and affordably.

### Power to choose

There are two backup power options, Eaton 93PM and Power Xpert 9395P UPSs, available for direct pre-connection to Power Xpert CX switchgear. With power ratings from 30-900 kVA power rating and with a static switch section up to 1200 kVA to meet challenging short-circuit currents.



### Low voltage. High reliability

Whatever your commercial or industrial application, the Power Xpert CX® IEC low voltage power assembly will provide reliable power distribution and motor control functionality, for ratings up to 6300A.

#### The reliable system

Built to a design which has been fully verified by independent third party testing in accordance with IEC 61439-2, Power Xpert CX switchgear is manufactured to the latest international standards.

Its 4B form of internal separation ensure exceptionally reliable operation at all times.

#### The safe system

For 300 kVA and below, the Power Xpert CX features not only fixed but also plug-in compartments, which allow modification without requiring a complete system shutdown.

Breakers are automatically tripped in case of removal and there are lock-out options too – ensuring safety at all times.

#### The flexible system

Modular design and construction means that the CX can be expanded as and when required, to meet your changing power distribution needs.

This capability is enhanced by the solution's small footprint, resulting from the switchgear's compact design. In addition, cable connections can be made at the top or the bottom, which means the CX can be located in a range of positions and can accommodate a range of electrical designs.



To find out more, visit [eaton.eu/cx](http://eaton.eu/cx)

# Eaton 93 STS

100/250/400/630/800/1000/1250A



93 STS

#### Meeting absolute uptime requirements for:

- Data centres
- Internet providers
- Industrial facilities
- Utilities
- Telecommunications
- Government
- Financial services



#### Static Transfer Switch

##### Seamless power transfer

- 3-phase Static Transfer Switch, for automatic transfer of critical AC loads to and from one power source to another, without interruption.
- Rated from 100A to 1250A.
- Available in 3- and 4-pole versions.

##### Reliable performance

- Continuous monitoring of sources ensures automatic and instantaneous power transfer, without cross-connecting the sources.
- Retransfer is also automatic, and there is the capability for manual transfer if required.
- All the system control boards feature redundant internal power distribution.
- A dual manual bypass is built in, to enable safe maintenance with no disruption of the power supply.
- A global installed base reflects the widespread acceptance and popularity of the Eaton 93 STS.

##### Connectivity and easy management

- The 93 STS has RS232 and RS485 interfaces, with Modbus protocol. It also features output relay contacts.
- There is a built-in HMI and system mimic panel. The LCD screen and block diagram of the STS – with integrated LEDs – allows a quick check of the switch's operating status.
- Metering, alarms and event logs are also provided.
- The 93 STS range is supplied in a free-standing cabinet.



# Eaton 93 STS 100-1250A

## TECHNICAL SPECIFICATIONS

### General

| Rating                        | 100A             | 250A             | 400A             | 630A              | 800A              | 1000A             | 1250A              |
|-------------------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|--------------------|
| Dimension (mm)<br>(W x H x D) | 820 x 1475 x 835 | 820 x 1475 x 835 | 820 x 1475 x 835 | 1220 x 1900 x 860 | 1220 x 1900 x 860 | 1220 x 1900 x 860 | 2000 x 2100 x 1000 |
| Weight (kg)                   | 265              | 290              | 305              | 615               | 660               | 710               | 800                |

### Operational

|                              |                                                                                                                 |
|------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Input / Output connection    | Hardwired                                                                                                       |
| Nominal input voltage (Vac)  | 208/380/400/415/441/480 Vac three phase                                                                         |
| Source voltage range         | Up to +/- 20%, +/- 10% factory adjusted                                                                         |
| Frequency                    | 50/60 Hz                                                                                                        |
| Transfer time and mode       | <=4ms, break before make<br>(avoid fault propagation)                                                           |
| Efficiency                   | >=99%                                                                                                           |
| Load power factor            | 1 to 0,3                                                                                                        |
| THD current f.back from load | Unlimited                                                                                                       |
| Standard options             | 3-phase 4-pole configuration, plug-in circuit<br>breakers, operation without neutral, Panel<br>Builder versions |
| Options on request           | Output distribution panels, isolation trans-<br>former, special IP rating, paint finish                         |

### User interface

|                                |                                                                                                                  |
|--------------------------------|------------------------------------------------------------------------------------------------------------------|
| Front display                  | Graphical LCD display showing status,<br>meters, alarms and event log, mimic with<br>LED                         |
| Communication ports (optional) | RS232, RS485, Modbus, 9 programmable<br>inputs, 5 (+9 optional) programmable output<br>relays, additional relays |
| Operational temperature        | 0°C - +40°C                                                                                                      |
| Relative humidity              | 0,95% non-condensing                                                                                             |
| Altitude                       | <1000m                                                                                                           |
| Audible noise at 1m (dBA)      | <65 dBA (according ISO 3747)                                                                                     |

### Certification

|                          |                                   |
|--------------------------|-----------------------------------|
| Markings                 | CE                                |
| Safety                   | EN 50178                          |
| EMC                      | EN61000-6-4, EN61000-6-2          |
| Low voltage assemblies   | IEC 60436-1, 60439-2, 60439-3     |
| Semiconductor converters | IEC 60146-1-1, 60146-1-3, 60146-2 |
| Degree of protection     | IEC 60529                         |



93 STS

# Eaton 9130M UPS

1000/2000/3000 VA



Multilingual LCD

## Advanced vessel or rig power protection for:

- Bridge systems
- Navigation systems
- Communication systems
- Small computer and automation systems

## Double conversion UPS

### Qualified design for marine and offshore environment

- DNV and ABS type approved UPS
- Hardened mechanical design
- Easy to install, mounting rails can be bolted or welded to the deck/bulk head or shelf
- Vibration absorbers under the cabinet

### Maximum availability

- Double conversion on-line UPS with automatic by-pass and power factor correction
- Possibility to add more runtime at any time with up to four external hot-swappable battery modules to run systems for hours if necessary.
- Enables prolonged runtime of essential equipment during power outages by allowing for orderly, remote shutdown of non-critical systems and processes thanks to a capability to control load segments.
- Continuous power supply: Batteries can be swapped without ever having to shut down connected equipment.
- Internal automatic static bypass switch
- ABM technology charges batteries only when necessary, preventing batteries corrosion and prolonging batteries service life by up to 50%.

### Outstanding versatility

- Format: Compact tower format design allows installation on the deck or on shelf
- Enhanced configuration capability through easily navigated multilingual graphical display.
- Adapted for use in the ungrounded electrical distribution systems (IT mains)
- Compatible with high power factor loads: Eaton 9130M is rated for 0.9 power factor (1000 VA/900 W, 2000 VA/1800 W and 3000 VA/2700 W)
- Configurable to frequency converter operation (50 → 60Hz and 60 → 50Hz)
- Connectivity options are available for almost any network environment.

# Eaton 9130M UPS

## TECHNICAL SPECIFICATIONS

| General        |                                                                                            |
|----------------|--------------------------------------------------------------------------------------------|
| User interface | Graphical LCD with blue backlight and text in English, French, German, Russian and Spanish |
| LEDs           | Four status-indicating LEDs                                                                |
| Topology       | True online, double-conversion                                                             |
| Diagnostics    | Full system self-test                                                                      |
| UPS bypass     | Automatic bypass                                                                           |

| Electrical input |                                             |
|------------------|---------------------------------------------|
| Nominal voltage  | 220–240 V                                   |
| Voltage range    | up to 120-276 VAC (depending on load level) |
| Frequency range  | 40-70 Hz (50/60 Hz)                         |

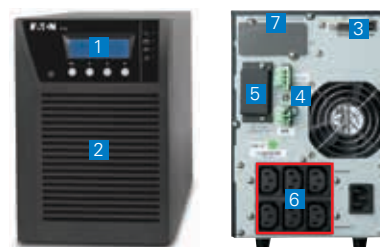
| Electrical output    |                                                     |
|----------------------|-----------------------------------------------------|
| Power factor         | 0.9                                                 |
| Voltage              | ±3 % of nominal regulation (on utility and battery) |
| Frequency regulation | ±3 Hz online                                        |
| Load crest factor    | 3 to 1                                              |

| Communications                         |                                                                                                                                                                                                     |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ports                                  | RS-232 and USB HID port as standard                                                                                                                                                                 |
| Relay output                           | Common alarm standard                                                                                                                                                                               |
| Optional communication cards (BD Slot) | SNMP/Web card for monitoring in SNMP-based networks, monitoring through Web browser interface. Relay card for integration to industrial environment and BMS, remote shutdown for IBM AS/400 systems |

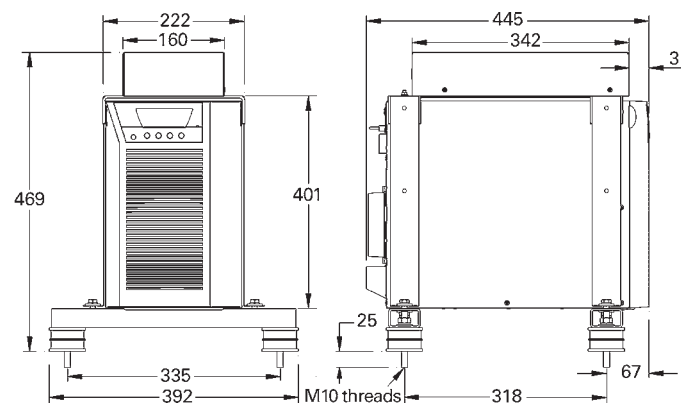
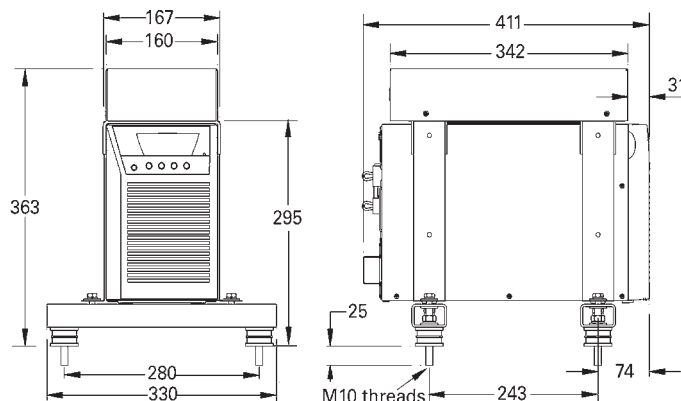
| Environmental       |                                                                       |
|---------------------|-----------------------------------------------------------------------|
| Audible noise       | <50 dB                                                                |
| Ambient operating   | 0°C to +40°C                                                          |
| Storage temperature | -20°C to +40°C with batteries and<br>-25°C to +55°C without batteries |
| Relative humidity   | 5–90% non-condensing                                                  |

| Compliance with standards |                                                                              |
|---------------------------|------------------------------------------------------------------------------|
| Safety                    | IEC/EN 62 040-1-1                                                            |
| Performance               | IEC/EN 62 040-3                                                              |
| EMC                       | IEC/EN62040-2, (Emissions, Category C1; Immunity, Category C2), IEC/EN 60945 |
| Approvals                 | CE, GS, DNV, ABS                                                             |

| Options                                                                                                           | Part number    |
|-------------------------------------------------------------------------------------------------------------------|----------------|
| 9130-1 kVA Marine filter                                                                                          | 1029424        |
| 9130-2 kVA Marine filter                                                                                          | 1031246        |
| 9130-3 kVA Marine filter                                                                                          | 1029425        |
| 9130-1 kVA Installation kit                                                                                       | 1029426        |
| 9130-3 kVA Installation kit                                                                                       | 1029427        |
| PW9130N1000T-EBM                                                                                                  | 103006438-6591 |
| PW9130N3000T-EBM                                                                                                  | 103006440-6591 |
| 2m EBM Cable for 1 kVA                                                                                            | 152602868-001  |
| 2m EBM Cable for 2-3 kVA                                                                                          | 152602870-001  |
| Marine UPS requires Installation kit for DNV and ABS approval and Marine filter (EMC) for IEC/EN 60945 compliance |                |



1. Multilingual graphical LCD display
2. Panel for replacing batteries
3. USB port + 1 serial port
4. Relay Output + 1 EPO connector
5. EBM battery unit connector
6. Load segments
7. Communication card slot



| Description             | Part number    | Dimensions HxWxD* | Weight* |
|-------------------------|----------------|-------------------|---------|
| Eaton 9130 1 kVA Marine | 103007846-6591 | 363x330x411 mm    | 20 kg   |
| Eaton 9130 2 kVA Marine | 103007847-6591 | 469x392x445 mm    | 33 kg   |
| Eaton 9130 3 kVA Marine | 103007848-6591 | 469x392x445 mm    | 33 kg   |

\* with Installation kit and filter assembled

| Battery runtimes*      | Internal batteries |          | +1 EBM    |          | +2 EBM    |          | +3 EBM    |          | +4 EBM    |          |
|------------------------|--------------------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|
|                        | 100% Load          | 50% Load | 100% Load | 50% Load | 100% Load | 50% Load | 100% Load | 50% Load | 100% Load | 50% Load |
| Eaton 9130 1000 Marine | 6                  | 19       | 31        | 68       | 51        | 111      | 82        | 192      | 100       | 246      |
| Eaton 9130 2000 Marine | 11                 | 27       | 44        | 95       | 79        | 168      | 115       | 258      | 161       | 336      |
| Eaton 9130 3000 Marine | 6                  | 15       | 21        | 60       | 51        | 100      | 66        | 169      | 93        | 215      |

\* Runtimes are shown at a 0.9 power factor. Backup times are approximate and may vary with equipment, configuration, battery age, temperature, etc.

# Eaton 9PX Marine UPS

1500–3000 W



9PX Marine UPS

#### Advanced protection for:

- Bridge systems
- Navigation systems
- Communication systems
- Small computer and automation systems



#### Energy-efficient double conversion UPS

##### Reliability

Double conversion topology constantly monitors power conditions and regulates voltage and frequency.

The internal bypass allows service continuity in case of internal fault, a maintenance bypass is also available for easy replacement of the UPS.

With coated boards and hi-temperature environment compatibility, 9PX Marine is designed for Marine & Offshore environments.

Stronger, longer battery life: Eaton ABM battery management technology uses an innovative three-stage charging technique that extends battery life by up to 50%.

DNV-GL type approved UPS.

##### Performance and efficiency

9PX Marine is the first UPS in its class to provide Unity power factor (VA=W). It delivers 11% more power than any other UPS as well as powering more servers with equivalent VA ratings and lower power factors.

9PX can meter energy consumption right down to the managed outlet groups. kWh values can be monitored using the LCD or Eaton's Intelligent Power™ Software.

Energy Star qualified, the 9PX Marine provides the highest efficiency level to reduce energy and cooling costs.

##### Manageability & Flexibility

The graphical LCD display provides clear information on the UPS's status and measurements on a single screen. Enhanced configuration capabilities are also available.

9PX offers Serial and USB connectivity, plus an extra slot for an optional communication card. Eaton's Intelligent Power Software seamlessly integrates with leading virtualisation environments and cloud orchestrations tools.

More runtime can be added with up to 4 external hot-swappable battery modules, able to run systems for hours if necessary.



VA =  
Watt

# Eaton 9PX UPS technical specifications

- 1 Graphical LCD display :
  - Clear information on UPS status and measurements
  - Enhanced configuration capabilities
- 2 Panel for batteries replacement (Hot swappable)
- 3 Slot for Management card



Eaton 9PX 3000 Marine

- 4 Outputs: 8 x IEC 10A + 2 x IEC 16A with energy metering (including 2 programmable groups)
- 5 USB port, 1 serial port, Remote ON/OFF, Remote power OFF and Relay output
- 6 External battery (EBM) connector

## TECHNICAL SPECIFICATIONS

|                                               | 1500                                                                                                                                                                |         | 3000VA                                            |                                                            |        |        |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------|------------------------------------------------------------|--------|--------|
| Rating (VA/W)                                 | 1500 VA/1500 W                                                                                                                                                      |         | 3000 VA/3000 W                                    |                                                            |        |        |
| Format                                        | RT2U (tower/rack 2U)                                                                                                                                                |         | RT3U (tower/rack 3U)                              |                                                            |        |        |
| Electrical characteristics                    |                                                                                                                                                                     |         |                                                   |                                                            |        |        |
| Technology                                    | On-line double conversion with Power Factor Correction (PFC) system                                                                                                 |         |                                                   |                                                            |        |        |
| Nominal voltage                               | 200/208/220/230/240 V                                                                                                                                               |         |                                                   |                                                            |        |        |
| Input voltage range                           | 176-276 V without derating (up to 100-276 V with derating)                                                                                                          |         |                                                   |                                                            |        |        |
| Input frequency range                         | 40-70Hz, 50/60Hz autoselection, frequency converter mode                                                                                                            |         |                                                   |                                                            |        |        |
| Efficiency                                    | up to 92.5% in online mode (up to 97.5% in Hi-efficiency mode)                                                                                                      |         |                                                   | up to 94% in online mode (up to 98% in Hi-efficiency mode) |        |        |
| Connections                                   |                                                                                                                                                                     |         |                                                   |                                                            |        |        |
| Input                                         | 1 IEC C14 (10A)                                                                                                                                                     |         | 1 IEC C20 (16A)                                   |                                                            |        |        |
| Outputs                                       | 8 IEC C13 (10A) sockets                                                                                                                                             |         | 8 IEC C13 (10A) sockets + 2 IEC C19 (16A) sockets |                                                            |        |        |
| Batteries                                     |                                                                                                                                                                     |         |                                                   |                                                            |        |        |
| Typical backup times*                         | 300 W                                                                                                                                                               | 500 W   | 800 W                                             | 1200 W                                                     | 1800 W | 2500 W |
| 9PX 1500                                      | 38                                                                                                                                                                  | 23      | 13                                                | 7                                                          |        |        |
| 9PX 1500 + 1 EBM/+4 EBM                       | 143/536                                                                                                                                                             | 86/319  | 52/192                                            | 32/120                                                     |        |        |
| 9PX 3000                                      | 60                                                                                                                                                                  | 36      | 22                                                | 13                                                         | 7      | 4      |
| 9PX 3000 + 1 EBM/+4 EBM                       | 221/824                                                                                                                                                             | 135/504 | 83/307                                            | 52/194                                                     | 33/122 | 22/82  |
| Battery management                            | ABM & temperature compensated charging method (user selectable), automatic battery test, deep discharge protection, automatic recognition of external battery units |         |                                                   |                                                            |        |        |
| Communication                                 |                                                                                                                                                                     |         |                                                   |                                                            |        |        |
| Communication ports                           | 1 USB port + 1 serial RS232 port + 1 mini-terminal block for remote ON/OFF + 1 mini-terminal block for remote power off + 1 mini-terminal block for output relay    |         |                                                   |                                                            |        |        |
| Communication slot                            | 1 slot for Network-MS card, ModBus-MS or Relay-MS cards                                                                                                             |         |                                                   |                                                            |        |        |
| Operating conditions, standards and approvals |                                                                                                                                                                     |         |                                                   |                                                            |        |        |
| Operating temeprature                         | 0 to 40°C                                                                                                                                                           |         |                                                   |                                                            |        |        |
| Typical noise level                           | 35dB                                                                                                                                                                |         | 40dB                                              |                                                            |        |        |
| Safety                                        | IEC/EN 62040-1, UL 1778, CSA 22.2                                                                                                                                   |         |                                                   |                                                            |        |        |
| EMC                                           | IEC/EN 62040 -2, FCC Class B, CISPR22 Class B                                                                                                                       |         |                                                   |                                                            |        |        |
| Approvals & markings                          | DNV-GL Type approved /CE /CB report (TUV) / cULus / EAC /RCM / KC / Energy Star                                                                                     |         |                                                   |                                                            |        |        |
| Dimensions H x W x D in mm/ Weight            |                                                                                                                                                                     |         |                                                   |                                                            |        |        |
| UPS                                           | 86.5*440*450/18.9kg                                                                                                                                                 |         | 130*440*485/27.4kg                                |                                                            |        |        |
| EBM                                           | 86.5*440*450/29.8kg                                                                                                                                                 |         | 130*440*485/38.2kg                                |                                                            |        |        |
| Customer service and support                  |                                                                                                                                                                     |         |                                                   |                                                            |        |        |
| Warranty                                      | 3 years on electronics, 2 years on batteries                                                                                                                        |         |                                                   |                                                            |        |        |

\* Backup times are approximate and may vary with equipment, configuration, battery age, temperature, etc.

| Parts numbers*              | 9PX 1.5 kVA  | 9PX 3 kVA    |
|-----------------------------|--------------|--------------|
| UPS                         | 9PX1500IRTM  | 9PX3000IRTM  |
| EBM                         | 9PXEBM48RT2U | 9PXEBM72RT3U |
| 2m battery connection cable | EBMCBL48     | EBMCBL72     |
| Marine Filter**             | 9PXMf3KI     |              |

\*All 9PX UPS and EBM are delivered with rack kit

\*\*Marine UPS requires Marine filter (EMC) for IEC/EN 60945 compliance

In the interests of continuous product improvement all specifications are subject to change without notice.



# Eaton 9155M and 9355M UPS

8 - 15 kVA



## Advanced vessel or rig power protection for:

- Navigation systems
- Communication systems
- Ship automation
- Computer systems
- Integrated bridge

## Double conversion UPS

### Qualified design for marine and offshore environment

- DNV type approved UPS
- BV type approved UPS
- ABS design assessed
- Compact design for saving space
- Easy to install, mounting rails can be bolted or welded to the deck/bulk head
- IP22 protection class
- Vibration absorbers under and at the back of the cabinet
- Maintenance from the front

### Premium power performance

- Double conversion provides the highest level of protection available by isolating the output power from all input anomalies.
- Active power factor correction (PFC) provides 0,99 input power factor and less than 4,5% ITHD, thus eliminating interference with other critical equipment in the same network and enhancing compatibility with generators.
- The UPS is optimized for protecting modern 0,9 p.f. rated IT equipment without the need to oversize.

### True reliability

- Patented Powerware HotSync® technology makes it possible to parallel up to four UPSs to increase availability or add capacity. The technology enables load sharing without any communication line, thus eliminating single point of failure.
- ABM technology charges batteries only when necessary, preventing batteries corrosion and prolonging batteries service life by up to 50%.
- Internal automatic static bypass switch
- Internal mechanical bypass switch

### Extensive configurability

- Configurable to frequency converter operation (50 → 60Hz and 60 → 50Hz)
- A multilingual graphical LCD display makes possible to monitor the UPS status easily.
- Wide software and connectivity options provide monitoring, management and shutdown capabilities over network.

### Cost savings and sustainability

- Small footprint saves valuable space in ship and rig installations.
- Possibility for internal transformer or batteries eliminate the need for costly and space-consuming external cabinets.
- A single technical platform used in Eaton's UPS products guarantee easy upgrades and similarity in service, thus lowering total cost of ownership.
- A range of service agreement options can be easily customized for customers' needs and budget.
- Eaton uses sustainable materials and highly efficient manufacturing technology, thus generating dramatic savings in carbon footprint as compared to competitive UPS systems.

# Eaton 9155M/9355M UPS 8-15 kVA

## TECHNICAL SPECIFICATIONS

| UPS output power rating (0,9 p.f.)                |                                                                                       |    |      |      |
|---------------------------------------------------|---------------------------------------------------------------------------------------|----|------|------|
| kVA                                               | 8                                                                                     | 10 | 12   | 15   |
| kW                                                | 7,2                                                                                   | 9  | 10,8 | 13,5 |
| General                                           |                                                                                       |    |      |      |
| Efficiency in double conversion mode (full load)  | 92% (without transformer)                                                             |    |      |      |
| Efficiency in double conversion mode (half load)  | 90% (without transformer)                                                             |    |      |      |
| Distributed parallelling with Hot Sync technology | 4                                                                                     |    |      |      |
| Field upgradeable                                 | yes                                                                                   |    |      |      |
| Inverter/rectifier topology                       | transformer-free IGBT with PWM                                                        |    |      |      |
| Audible noise                                     | <50 dB                                                                                |    |      |      |
| Colour                                            | RAL 7035                                                                              |    |      |      |
| Input                                             |                                                                                       |    |      |      |
| Nominal voltage rating (configurable)             | 380, 400, 415 V 50/60 Hz                                                              |    |      |      |
| With internal transformer                         | (9155): e.g. 230, 400, 440, 480, 690V                                                 |    |      |      |
| With external transformer                         | (9355): e.g. 230, 400, 440, 480, 690V                                                 |    |      |      |
| Input voltage range                               | Low -20% at 100% load/-50% at 50% load without battery discharge; High +10% /max +20% |    |      |      |
| Input frequency range                             | 45-65 Hz                                                                              |    |      |      |
| Input power factor                                | 0,99                                                                                  |    |      |      |
| Input ITHD                                        | less than 4,5%                                                                        |    |      |      |
| Soft start capability                             | Yes                                                                                   |    |      |      |
| Internal backfeed protection                      | Yes                                                                                   |    |      |      |
| Output                                            |                                                                                       |    |      |      |
| Nominal voltage rating (configurable)             | 380, 400, 415 V 50/60 Hz                                                              |    |      |      |
| With external transformer                         | (9155): e.g. 230, 400, 440, 480, 690V                                                 |    |      |      |
| With internal transformer                         | (9355): e.g. 230, 400, 440, 480, 690V                                                 |    |      |      |

|                             |                                                         |
|-----------------------------|---------------------------------------------------------|
| Output UTHD                 | <3% (100% linear load); <5% (reference non linear load) |
| Output power factor         | 0,9 (e.g. 9 kW at 10 kVA)                               |
| Permitted load power factor | 0,7 lagging - 0,8 leading                               |

| Battery                             |                                       |
|-------------------------------------|---------------------------------------|
| Type                                | Maintenance free VRLA batteries, NiCd |
| Charging method                     | ABM technology or Float               |
| Temperature compensation            | Optional                              |
| Battery nominal voltage (lead-acid) | 384 V (32x12 V, 192 cells)            |
| Charging current / Model            | Default 3 A<br>*Max 30 A              |

\*May be limited by maximum UPS input current rating

| Accessories |                                                                                                                                                                                                                                                                                                      |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | Isolation transformer, long-life batteries, external battery cabinets, UPS Center (input, bypass, distribution), X-Slot connectivity (Web/SNMP, ModBus/Jbus, Relay, Hot Sync, ViewUPS-X remote display), Hot Sync parallel tie cabinet, integrated manual bypass, external maintenance bypass switch |

| Communications       |                      |
|----------------------|----------------------|
| X-Slot               | 2 communication bays |
| Serial ports         | 1 available          |
| Relay inputs/outputs | 2/1 programmable     |

| Compliance with standards           |                                                     |
|-------------------------------------|-----------------------------------------------------|
| Safety                              | IEC 62040-1, IEC 60950-1                            |
| EMC                                 | IEC 62040-2, IEC 60945                              |
| Performance                         | IEC 62040-3                                         |
| Approvals                           | CE, DNV Type Approval, BV Type Approval and ABS PDA |
| Other classification survey reports | On request                                          |

## Stand-alone UPS with 1-phase input

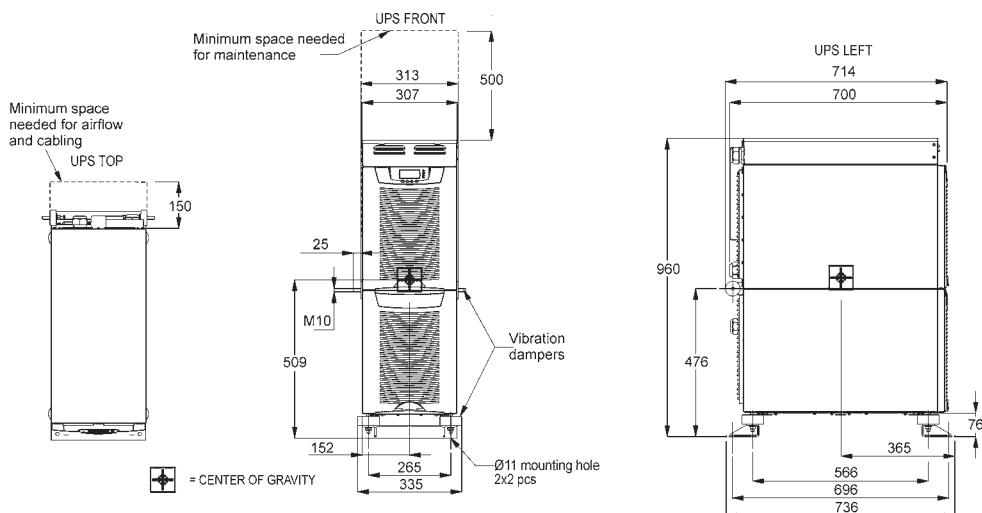
| Description  | Rating         | Dimensions (HxWxD)    | Weight with input transformer (net/gross) |
|--------------|----------------|-----------------------|-------------------------------------------|
| 9155-8-ST-M  | 8 kVA / 7.2 kW | 960x313x714 (+150 mm) | 170/190 kg                                |
| 9155-10-ST-M | 10 kVA / 9 kW  | 960x313x714 (+150 mm) | 170/190 kg                                |

## Stand-alone UPS with 3-phase input

| Description  | Rating           | Dimensions (HxWxD)    | Weight with input transformer (net/gross) |
|--------------|------------------|-----------------------|-------------------------------------------|
| 9155-8-NT-M  | 8 kVA / 7.2 kW   | 960x313x714 (+150 mm) | 170/190 kg                                |
| 9155-10-NT-M | 10 kVA / 9 kW    | 960x313x714 (+150 mm) | 170/190 kg                                |
| 9155-12-NT-M | 12 kVA / 10.8 kW | 960x313x714 (+150 mm) | 170/190 kg                                |
| 9155-15-NT-M | 15 kVA / 13.5 kW | 960x313x714 (+150 mm) | 170/190 kg                                |

## External battery cabinets

| Description       | Rating    | Back-up           | Dimensions (HxWxD)     | Weight (net/gross) |
|-------------------|-----------|-------------------|------------------------|--------------------|
| 9X55-BAT-M-64x7Ah | 2x32x7 Ah | See runtime spec. | 880x347x718 (+150 mm)  | 217/237 kg         |
| 9X55-BAT-M-96x7Ah | 3x32x7 Ah | See runtime spec. | 1278x347x718 (+150 mm) | 323/348 kg         |



# Eaton 9155M and 9355M UPS

1ph: 20 - 30 kVA

3ph: 20 - 40 kVA



## Advanced vessel or rig power protection for:

- Navigation systems
- Communication systems
- Ship automation
- Computer systems
- Integrated bridge

## Double conversion UPS

### Qualified design for marine and offshore environment

- Compact design for saving space
- Easy to install, mounting rails can be bolted or welded to the deck/bulk head
- IP22 protection class
- Vibration absorbers under and at the back of the cabinet
- Maintenance from the front

### Premium power performance

- Double conversion provides the highest level of protection available by isolating the output power from all input anomalies.
- Active power factor correction (PFC) provides 0,99 input power factor and less than 4,5% ITHD, thus eliminating interference with other critical equipment in the same network and enhancing compatibility with generators.
- The UPS is optimized for protecting modern 0,9 p.f. rated IT equipment without the need to oversize.

### True reliability

- Patented Powerware HotSync® technology makes possible to parallel up to four UPSs to increase availability or add capacity. The technology enables load sharing without any communication line, thus eliminating single point of failure.
- ABM technology charges batteries only when necessary, preventing batteries corrosion and prolonging batteries service life by up to 50%.
- Internal automatic static bypass switch
- Internal mechanical bypass switch

### Extensive configurability

- Configurable to frequency converter operation (50  $\leftrightarrow$  60Hz and 60  $\leftrightarrow$  50Hz)
- A multilingual graphical LCD display makes possible to monitor the UPS status easily.
- Wide software and connectivity options provide monitoring, management and shutdown capabilities over network
- Internal space for 1 - 2 optional input/output transformers

### Cost savings and sustainability

- Compact space efficient tower design offers smaller footprint enabling easy data centre space-planning and preserving valuable raised-floor real estate.
- Possibility for internal transformer eliminate the need for costly and space-consuming external cabinets.
- A single technical platform used in Eaton's UPS products guarantee easy upgrades and similarity in service, thus lowering total cost of ownership.
- A range of service agreement options can be easily customized for customers' needs and budget.
- Eaton uses sustainable materials and highly efficient manufacturing technology, thus generating dramatic savings in carbon footprint as compared to competitive UPS systems.

# Eaton 9155M/9355M UPS 20 - 40 kVA

## TECHNICAL SPECIFICATIONS

| UPS output power rating (0,9 p.f.)                |                                                                                      |    |    |
|---------------------------------------------------|--------------------------------------------------------------------------------------|----|----|
| kVA                                               | 20                                                                                   | 30 | 40 |
| kW                                                | 18                                                                                   | 27 | 36 |
| General                                           |                                                                                      |    |    |
| Efficiency in double conversion mode (full load)  | 93% (without transformer)                                                            |    |    |
| Efficiency in double conversion mode (half load)  | 91% (without transformer)                                                            |    |    |
| Distributed parallelling with Hot Sync technology | 4                                                                                    |    |    |
| Field upgradeable                                 | yes                                                                                  |    |    |
| Inverter/rectifier topology                       | transformer-free IGBT with PWM                                                       |    |    |
| Audible noise                                     | <50 dB                                                                               |    |    |
| Colour                                            | RAL 7035                                                                             |    |    |
| Input                                             |                                                                                      |    |    |
| Nominal voltage rating (configurable)             | 380, 400, 415 V 50/60 Hz                                                             |    |    |
| With external transformer                         | e.g. 230, 440, 480, 690 V                                                            |    |    |
| Input voltage range                               | Low -20% at 100% load/-50% at 50% load without battery discharge; High +10%/max +20% |    |    |
| Input frequency range                             | 45-65 Hz                                                                             |    |    |
| Input power factor                                | 0,99                                                                                 |    |    |
| Input ITHD                                        | less than 4,5%                                                                       |    |    |
| Soft start capability                             | Yes                                                                                  |    |    |
| Internal backfeed protection                      | Yes                                                                                  |    |    |
| Output                                            |                                                                                      |    |    |
| Nominal voltage rating (configurable)             | 220/380, 230/400, 240/415 V 50/60 Hz                                                 |    |    |

| Output                      |                                                         |
|-----------------------------|---------------------------------------------------------|
| With transformer            | e.g. 230, 440, 480, 690 V                               |
| Output UTHD                 | <3% (100% linear load); <5% (reference non linear load) |
| Output power factor         | 0,9 (e.g. 27 kW at 30 kVA)                              |
| Permitted load power factor | 0,7 lagging - 0,8 leading                               |

| Battery                             |                                       |
|-------------------------------------|---------------------------------------|
| Type                                | Maintenance free VRLA batteries, NiCd |
| Charging method                     | ABM technology or Float               |
| Temperature compensation            | Optional                              |
| Battery nominal voltage (lead-acid) | 432 V (36x12 V, 216 cells)            |
| Charging current / Model            | Default 3 A<br>*Max 60 A              |

\*May be limited by maximum UPS input current rating

| Accessories |                                                                                                                                                                                                                                                            |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | Isolation transformer, long-life batteries, external battery cabinets, X-Slot connectivity (Web/SNMP, ModBus/Jbus, Relay, Hot Sync, ViewUPS-X remote display), Hot Sync parallel tie cabinet, integrated manual bypass, external maintenance bypass switch |

| Communications       |                      |
|----------------------|----------------------|
| X-Slot               | 2 communication bays |
| Serial ports         | 1 available          |
| Relay inputs/outputs | 2/1 programmable     |

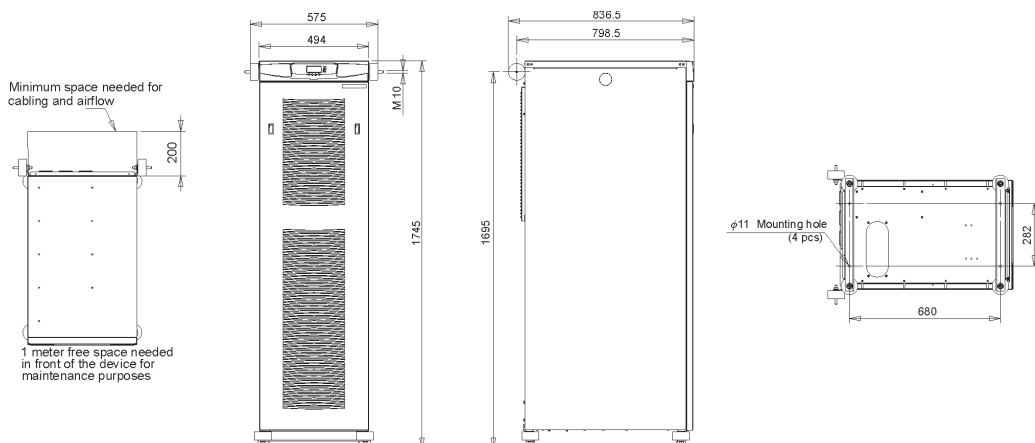
| Compliance with standards    |            |
|------------------------------|------------|
| Classification survey report | On request |

## Standard UPS with 3-phase input

| Description  | Rating         | Dimensions (HxWxD)     | Weight                         |
|--------------|----------------|------------------------|--------------------------------|
| 9155-20-NT-M | 20 kVA / 18 kW | 1745x575x762 (+200) mm | 450 kg with input transformer  |
| 9155-30-NT-M | 30 kVA / 27 kW | 1745x575x762 (+200) mm | 450 kg with input transformer  |
| 9355-20-NT-M | 20 kVA / 18 kW | 1745x575x762 (+200) mm | 425 kg with I/O transformers   |
| 9355-30-NT-M | 30 kVA / 27 kW | 1745x575x762 (+200) mm | 455 kg with I/O transformers   |
| 9355-40-NT-M | 40 kVA / 36 kW | 1745x575x762 (+200) mm | 355 kg with Output transformer |

## External battery cabinets

| Description                | Rating     | Runtime          | Dimensions (HxWxD)     | Weight |
|----------------------------|------------|------------------|------------------------|--------|
| 9X55-BAT-M-1x24Ah (30 kVA) | 1x36x24 Ah | See runtime spec | 1745x575x762 (+200) mm | 550 kg |
| 9X55-BAT-M-2x24Ah (30 kVA) | 2x36x24 Ah | See runtime spec | 1745x575x762 (+200) mm | 970 kg |



# Eaton 93PS Marine UPS

8-40 kW



## Key applications:

- Navigation
- Communication
- Automation and monitoring systems
- Auxiliary power systems
- Safety systems
- Distributed UPS systems
- Peak shaving
- EPOS

## Ease of deployment

- Spacious power cabling area at the bottom of the unit
- Factory installed and tested internal transformers reduce footprint and cabling at site by 50%
- Best in class footprint and power density for easier floor planning and space saving
- Possibility to design inherently redundant systems in one frame
- Back feed protection and bypass fuses included by default for easier planning and secured safety
- Ships with any classification society certificate as requested
- Engineering package to help planning in 3D or 2D environment
- Pre- and after-sales support assisting you from quoting to decommissioning

## Ease of maintenance

- Hot Swap power modules means typical MTTR=0h
- Training + pre-defined spare part kits for basic UPS service
- Fully front serviceable
- Mini Slot extension cards for remote monitoring and management
- No replacement of DC caps during the product design life
- Easy Capacity Test to do full load test without the need for load bank
- Eaton Advanced Battery Management (ABM) maximizes the battery life while providing automatic diagnostics of battery health
- Worldwide coverage of Eaton service at your service 24/7

## Economical to operate

- Minimal losses and associated costs due to market leading efficiency reaching above 96%
- Cuts down operational costs by up to 50% compared to a legacy UPS
- Saves up to 650 barrels of marine diesel per UPS
- Flat efficiency curve means high efficiency regardless of the load level
- Compatibility with VRLA, Ni-Cd, Li-Ion or super capacitors allows for choosing the optimal energy or power reserve for your application



# Eaton 93PS Marine 8-40 kW

## TECHNICAL SPECIFICATIONS

| General                                                                   |                                                          |
|---------------------------------------------------------------------------|----------------------------------------------------------|
| Output power rating (PF 1.0)                                              | 8, 10, 15, 20, 30, 40 kW                                 |
| External paralleling                                                      | Up to 4 units with HotSync technology                    |
| Inherent redundancy                                                       | Up to 20 kW with HotSync technology                      |
| Efficiency in double-conversion mode                                      | Up to 96.0%                                              |
| Efficiency in Energy Saver System mode                                    | Up to 98.8%                                              |
| UPS topology                                                              | Double conversion                                        |
| UPS performance classification                                            | VFI-SS-111                                               |
| Degree of ingress protection                                              | IP23                                                     |
| Standard UPS color                                                        | Industrial grey; RAL 7035                                |
| Ambient service temperature range                                         | 0°C to 45°C                                              |
| Maximum service altitude                                                  | 1000 m (3300 ft) above sea level at 40 °C                |
| Acoustic noise at 1 m, in 25 °C ambient temperature, without transformers | < 60 dBA in double conversion<br>< 47 dBA in ESS         |
| Mean Time To Repair (MTTR)                                                | < 8 minutes (UPM) / < 15 minutes (UPS)                   |
| RoHS/WEEE compliancy                                                      | Yes                                                      |
| Input                                                                     |                                                          |
| Nominal voltage rating                                                    | 380 V, 400 V, 415 V                                      |
| Input voltage with internal transformers                                  | 208 V - 690 V                                            |
| Input frequency range                                                     | 40 - 72 Hz                                               |
| Input wiring                                                              | 3ph+N+PE<br>(3ph+PE with input transformer)              |
| Input power factor                                                        | 0.99                                                     |
| Input THDi 100% linear load                                               | < 3%                                                     |
| Soft start for generators                                                 | Yes                                                      |
| Internal back feed protection                                             | Yes, for rectifier and bypass lines                      |
| Output                                                                    |                                                          |
| Output wiring                                                             | 3ph+N+PE / 3ph+PE                                        |
| Rated output voltage                                                      | 380 V, 400 V, 415 V                                      |
| Output voltage with internal transformers                                 | 208 V - 690 V                                            |
| Output frequency                                                          | 50 Hz / 60Hz configurable                                |
| Output UTHD                                                               | < 1.5% (100% linear load), < 3.5% (100% non-linear load) |
| Inverter overload capacity                                                | 10 min 102 – 110% load                                   |
|                                                                           | 60 s 111 – 125% load                                     |
|                                                                           | 10 s 126 – 150% load                                     |
|                                                                           | 300 ms > 150% load                                       |
| Static bypass capacity                                                    | Continuous < 125% load,<br>20 ms 1000% load              |
| Short-circuit capability at rated voltage                                 | Up to 144 A / 300 ms                                     |
| Rated output power factor                                                 | 1.0                                                      |
| Load power factor range                                                   | 0.8 lagging to 0.8 leading                               |

| Battery                                            |                                                                                                                                                  |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Battery technology                                 | VRLA, Li-Ion, NiCd, Eaton Super Capacitors                                                                                                       |
| Nominal battery voltage                            | 336 V - 480 V                                                                                                                                    |
| Charge current limit                               |                                                                                                                                                  |
| Load ≤80%                                          | Up to 50 A, configurable                                                                                                                         |
| Load >80%                                          | Up to 30 A, configurable                                                                                                                         |
| Charging method                                    | Eaton ABM technology or float                                                                                                                    |
| Boost charge function                              | Yes                                                                                                                                              |
| Temperature compensation                           | Yes                                                                                                                                              |
| Battery start option                               | Yes                                                                                                                                              |
| Communications                                     |                                                                                                                                                  |
| MiniSlots                                          | 2 communication bays for Web/SNMP, ModBus/Jbus & Industrial realy                                                                                |
| Standard connectivity ports                        | Device USB and Host USB, RS-232 service port, relay output, 5 building alarm inputs, 1 relay output and a dedicated EPO                          |
| Accessories                                        |                                                                                                                                                  |
| Accessories for UPS                                | Internal transformers; Single feed kit; Earth fault monitoring; 24V Emergency Power Off (EPO); Custom system and battery voltages; Custom colors |
| Compliance with standards                          |                                                                                                                                                  |
| Safety (CB certified)                              | IEC 62040-1                                                                                                                                      |
| EMC                                                | IEC 62040-2                                                                                                                                      |
| Performance                                        | IEC 62040-3                                                                                                                                      |
| RoHS                                               | EU directive 2011/65/EU                                                                                                                          |
| WEEE                                               | EU directive 2012/19/EU                                                                                                                          |
| Environmental Aspects - Requirements and Reporting | IEC 62040-4, EN 50581                                                                                                                            |

Due to continuous product improvement programmes, specifications are subject to change without notice. For product specific specifications, contact Eaton sales representatives.

# Eaton 9PHD Marine UPS

30–200 kW



**Designed, Manufactured  
and Tested in Finland**

## **Strong and Smart Power Protection Designed and Certified for Marine and Offshore**

### **Designed for marine and offshore environments**

- Marine certificate from any marine classification society
- Marine vibration tested units
- Halogen free cables
- IP23 protection
- Conformally coated PCB boards
- Cable area designed to support marine cabling practices
- Vibration dampers and installation brackets for floor and wall
- Door handle, stopper and triangle key included

### **Strong design for demanding environments**

- Protection against dirt, dust, water and moisture with cover options up to IP54
- 1.5mm cover plates for robust use
- Protection for touch screen display

### **Smart technology for maximizing reliability**

- Large touch screen display for easy operation and reduced risk of human error
- Modular design allows building fault tolerant N+1 units
- Redundant monitored cooling fans in each power module
- Battery start feature
- Eaton's unique Hot Sync wireless paralleling for building n+1 systems with several UPS units

### **Smart technology for minimizing operating costs**

- The 9PHD UPS sets new standards with an operating efficiency level up to 97% in double conversion mode
- > 99% superior efficiency is delivered in Energy Saver System mode (ESS)
- Power factor 1 increases unit power by 10-20% compared to average UPS

### **Easy deployment for optimizing installation costs**

- Front access for installation and service
- Cabinet supports use of halogen free cables, double cables and large cables for installation
- Lifting lugs included for easier unit handling during installation
- Suitable for 3-wire and 4-wire networks and voltage range 380V-480 V without transformers
- Small footprint due compact power electronics and internal transformer options

# Eaton 9PHD Marine UPS 30–200 kW

## TECHNICAL SPECIFICATIONS

| General                                 |                                                                                                                                                        |          |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| UPS output power rating (1.0 p.f.)      | 30, 40, 50, 80, 100, 120, 150,160, 200 kW                                                                                                              |          |
| Efficiency in double conversion mode    | Up to 97%                                                                                                                                              |          |
| Efficiency in Energy Saver System (ESS) | > 99%                                                                                                                                                  |          |
| Inverter/rectifier topology             | Transformer-free IGBT with PWM                                                                                                                         |          |
| Audible noise                           | 30–50 kW:                                                                                                                                              | < 60 dBA |
|                                         | 80–200 kW:                                                                                                                                             | < 65 dBA |
|                                         | ESS operation:                                                                                                                                         | < 47 dBA |
| Ambient temperature                     | 0°C to 45°C at sea level, higher temperatures are optional                                                                                             |          |
| Ingress protection                      | IP23, Optional: IP33;IP54                                                                                                                              |          |
| Input                                   |                                                                                                                                                        |          |
| Input wiring                            | 3ph + N + PE / 3ph + PE                                                                                                                                |          |
| Nominal voltage rating (configurable)   | 380 V-480 V, 50/60 Hz                                                                                                                                  |          |
| With optional transformer               | 208 V- 690 V, 50/60 Hz                                                                                                                                 |          |
| Input voltage range                     | Rectifier input + 20%, if voltage > 440 V +10%<br><b>Low</b> -15% at 100% load, -40% at 50% load without battery discharge<br>Bypass +10% - (-15%)     |          |
| Input frequency range                   | 40-72 Hz                                                                                                                                               |          |
| Input Power Factor                      | 0.99                                                                                                                                                   |          |
| Input ITHD                              | 30 kW:                                                                                                                                                 | < 4.5%   |
|                                         | 40-200 kW:                                                                                                                                             | < 3%     |
| Soft start capability                   | Yes                                                                                                                                                    |          |
| Internal backfeed protection            | Yes                                                                                                                                                    |          |
| Battery                                 |                                                                                                                                                        |          |
| Battery type                            | VRLA, Ni-Cd                                                                                                                                            |          |
| Charging method                         | ABM technology or Float                                                                                                                                |          |
| Temperature compensation                | Optional                                                                                                                                               |          |
| Battery nominal voltage (VRLA)          | <b>From</b> 432 V (36 x 12 V, 216 cells) to 480 V (40 x 12 V, 240 cells)<br><b>Note:</b> Strings with different battery voltage may not be paralleled! |          |
| Charging current maximum*               | 30–50 kW                                                                                                                                               | 29.3 A   |
|                                         | 80–100 kW                                                                                                                                              | 58.6 A   |
|                                         | 120–150 kW                                                                                                                                             | 87.9 A   |
|                                         | 160–200 kW                                                                                                                                             | 117.2 A  |
| Battery start capability                | Yes                                                                                                                                                    |          |

\* when load level ≤ 40 kW/UPM

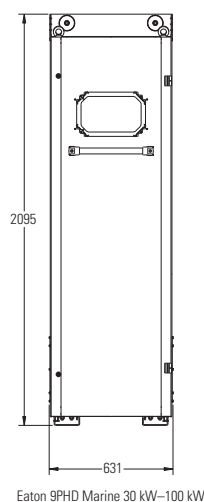
| Output                                |                                                                                                |
|---------------------------------------|------------------------------------------------------------------------------------------------|
| Output wiring                         | 3ph + N + PE/ 3ph + PE                                                                         |
| Nominal voltage rating (configurable) | 380 V-480 V, 50/60 Hz                                                                          |
| With optional transformer             | 208 V- 690 V, 50/60 Hz                                                                         |
| Output UTHD                           | < 1% (100% linear load)                                                                        |
|                                       | < 5% (reference non-linear load)                                                               |
| Rated output power factor             | 1.0                                                                                            |
| Permitted load power factor           | 0.8 lagging - 0.8 leading                                                                      |
| Overload on inverter                  | 10 min 102-110%;                                                                               |
|                                       | 60 sec 111-125%;                                                                               |
|                                       | 10 sec 126-150%                                                                                |
|                                       | 300 ms > 150%.                                                                                 |
| Overload when bypass available        | On battery mode 300 ms > 126%                                                                  |
|                                       | Continuous < 125%, 10 ms 1000%<br><b>Note:</b> Bypass fuses may limit the overload capability! |

| Accessories                                                                                                                                                                          |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Accessories for UPS:                                                                                                                                                                 |  |
| Internal transformers; Cabinet protection IP33, IP54; ATS automatic transfer switch; Single feed kit; Earth fault monitoring; 24V Emergency Power Off (EPO); Special system voltages |  |
| Accessory cabinets:                                                                                                                                                                  |  |
| Marine battery cabinets with long-life batteries; Matching transformer cabinet for one or two transformers; External maintenance bypass switch.                                      |  |
| Communication options:                                                                                                                                                               |  |
| Web/SNMP; ModBus/Jbus; Industrial Relay                                                                                                                                              |  |

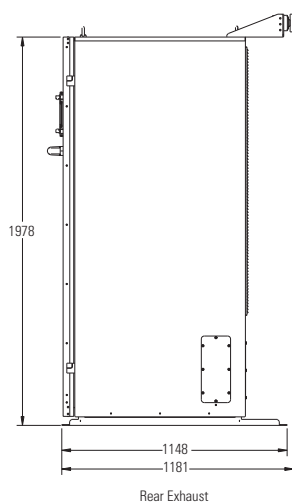
| Communications       |                                  |
|----------------------|----------------------------------|
| MiniSlot             | 4 communication bays             |
| Serial ports         | Built-in host and device USB     |
| Relay inputs/outputs | 5 relay inputs and dedicated EPO |
|                      | 1 relay output                   |

| Compliance with standards                                                                                    |             |
|--------------------------------------------------------------------------------------------------------------|-------------|
| Safety (CB certified)                                                                                        | IEC 62040-1 |
| EMC                                                                                                          | IEC 62040-2 |
| Performance                                                                                                  | IEC 62040-3 |
| Marine class certificates are available from any class example: DNV, ABS, Lloyds Register Bueray Veritas etc |             |

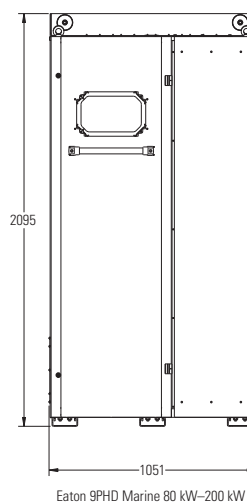
Due to continuous product improvement programmes, specifications are subject to change without notice.



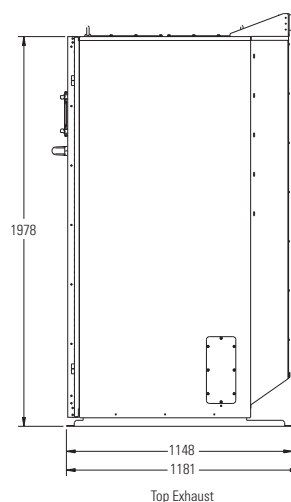
Eaton 9PHD Marine 30 kW–100 kW



Rear Exhaust



Eaton 9PHD Marine 80 kW–200 kW



Top Exhaust

# Eaton 9PHD Heavy Duty UPS

30–200 kW



**Designed, Manufactured  
and Tested in Finland**

## **Strong and Smart Power Protection**

**Reliable, Safe and Cost Efficient**

### **Strong design for demanding industrial environments**

- Protection against dirt, dust, water and moist with cover options from IP23 to IP54
- Conformally coated PCB boards
- Strong cabinet for vibration and seismic environments
- 1.5mm cover plates for robust use

### **Smart technology for maximizing reliability**

- Touch screen display for easier operation
- Modular design allows building fault tolerant N+1 units
- Redundant monitored cooling fans in each power module
- Battery start feature
- Eaton's unique Hot Sync wireless paralleling for building n+1 systems with several UPS units

### **Smart technology for minimizing operating cost**

- The 9PHD UPS sets new standards, with an operating efficiency level up to 97% in double conversion mode
- > 99% superior efficiency is delivered in Energy Saver System mode (ESS)
- Power factor 1 increases unit power by 10-20% compared to average UPS

### **Easy deployment for optimizing installation costs**

- Front access for installation and service
- Lifting lugs for easier unit handling during installation
- Suitable for 3-wire and 4-wire networks and voltage range of 380 V-480 V without transformers
- Small footprint due compact power electronics and internal transformer options
- Cabinet supports use of halogen free cables, double cables or large cables for installation

### **Safe installation and operation**

- Unit has halogen free cables
- Connectors in battery strings to increase safety during battery replacement
- Battery breaker inside battery cabinet isolated from hydrogen gases
- Internal maintenance bypass switch and rectifier input switch up to 150 kW

# Eaton 9PHD Industrial UPS 30–200 kW

## TECHNICAL SPECIFICATIONS

| General                                 |                                                                                                                                                    |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| UPS output power rating (1.0 p.f.)      | 30, 40, 50, 80, 100, 120, 150, 160, 200 kW                                                                                                         |
| Efficiency in double conversion mode    | Up to 97%                                                                                                                                          |
| Efficiency in Energy Saver System (ESS) | > 99%                                                                                                                                              |
| Inverter/rectifier topology             | Transformer-free IGBT with PWM                                                                                                                     |
| Audible noise                           | 30–50 kW: < 60 dBA                                                                                                                                 |
|                                         | 80–200 kW: < 65 dBA                                                                                                                                |
|                                         | ESS operation: < 47 dBA                                                                                                                            |
| Ambient temperature                     | 0°C to 40°C at 1000m altitude, higher temperatures are optional                                                                                    |
| Ingress protection                      | IP23, Optional: IP33; IP54                                                                                                                         |
| Input                                   |                                                                                                                                                    |
| Input wiring                            | 3ph + N + PE / 3ph + PE                                                                                                                            |
| Nominal voltage rating (configurable)   | 380 V-480 V, 50/60 Hz                                                                                                                              |
| With optional transformer               | 208 V- 690 V, 50/60 Hz                                                                                                                             |
| Input voltage range                     | Rectifier input + 20%, if voltage > 440 V +10%<br><b>Low</b> -15% at 100% load, -40% at 50% load without battery discharge<br>Bypass +10% - (-15%) |
| Input frequency range                   | 40-72 Hz                                                                                                                                           |
| Input Power Factor                      | 0.99                                                                                                                                               |
| Input ITHD                              | 30 kW: < 4.5%<br>40-200 kW: < 3%                                                                                                                   |
| Soft start capability                   | Yes                                                                                                                                                |
| Internal backfeed protection            | Yes                                                                                                                                                |
| Battery                                 |                                                                                                                                                    |
| Battery type                            | VRLA, Ni-Cd                                                                                                                                        |
| Charging method                         | ABM technology or Float                                                                                                                            |
| Temperature compensation                | Optional                                                                                                                                           |
| Battery nominal voltage (VRLA)          | From 432 V (36 x 12 V, 216 cells) to 480 V (40 x 12 V, 240 cells)<br><b>Note:</b> Strings with different battery voltage may not be paralleled!    |
| Charging current maximum*               | 30–50 kW 29.3 A<br>80–100 kW 58.6 A<br>120–150 kW 87.9 A<br>160–200 kW 117.2 A                                                                     |
| Battery start capability                | Yes                                                                                                                                                |

\* when load level ≤ 40 kW/UPM

| Output                                |                                                                                                           |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Output wiring                         | 3ph + N + PE/ 3ph + PE                                                                                    |
| Nominal voltage rating (configurable) | 380 V-480 V, 50/60 Hz                                                                                     |
| With optional transformer             | 208 V- 690 V, 50/60 Hz                                                                                    |
| Output UTHD                           | < 1% (100% linear load)<br>< 5% (reference non-linear load)                                               |
| Rated output power factor             | 1.0                                                                                                       |
| Permitted load power factor           | 0.8 lagging - 0.8 leading                                                                                 |
| Overload on inverter                  | 10 min 102-110%;<br>60 sec 111-125%;<br>10 sec 126-150%<br>300 ms > 150%<br>On battery mode 300 ms > 126% |
| Overload when bypass available        | Continuous < 125%, 10 ms 1000%<br><b>Note:</b> Bypass fuses may limit the overload capability             |

## Accessories

Accessories for UPS:

Internal transformers; Cabinet protection IP33, IP54; Vibration dampers with mounting brackets; Seismic kit; ATS automatic transfer switch; Single feed kit; Earth fault monitoring; 24V Emergency Power Off (EPO); Special system voltages

Accessory cabinets:

Industrial battery cabinets with long-life batteries; Matching transformer cabinet for one or two transformers; External maintenance bypass switch.

Communication options:

Web/SNMP; ModBus/Jbus; Industrial Relay

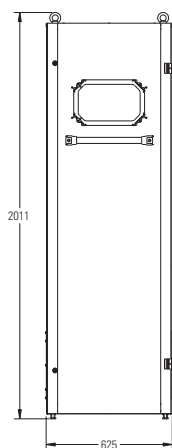
## Communications

|                      |                                                    |
|----------------------|----------------------------------------------------|
| MiniSlot             | 4 communication bays                               |
| Serial ports         | Built-in host and device USB                       |
| Relay inputs/outputs | 5 relay inputs and dedicated EPO<br>1 relay output |

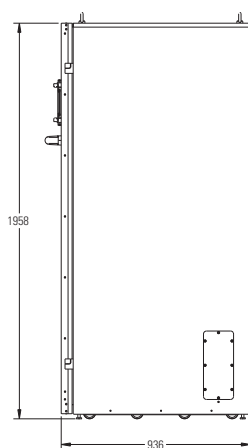
## Compliance with standards

|                       |                         |
|-----------------------|-------------------------|
| Safety (CB certified) | IEC 62040-1             |
| EMC                   | IEC 62040-2             |
| Performance           | IEC 62040-3             |
| Seismic testing       | NEBS GR-63-CORE, Zone 4 |

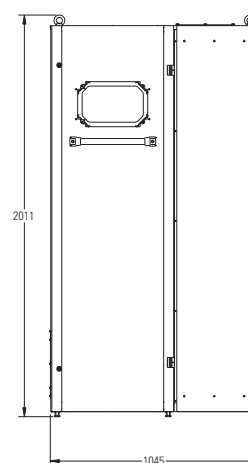
Due to continuous product improvement programmes, specifications are subject to change without notice.



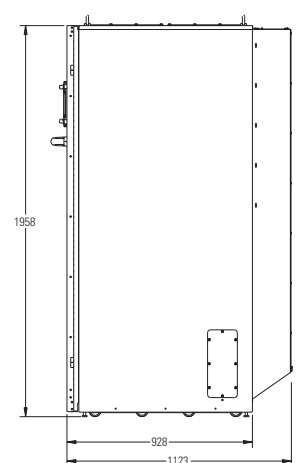
Eaton 9PHD Industrial 30 kW–100 kW



Rear Exhaust



Eaton 9PHD Industrial 80 kW–200 kW



Top Exhaust



## Eaton REC Series IT Rack

42U & 47U



**Eaton's REC Series IT racks deliver essential storage and protection for critical IT equipment in small, medium and large data center applications.**

Designed for fast and easy set-up, the REC Series is provided with features IT specialists need in an affordable, ready-to-go enclosure including casters, lockable side panels, truly step-less rail positioning, U-markings and a grounding kit. A full range of easy-to-use cable management, airflow management and storage accessories are also available.

The REC Series can also easily be assembled into aisle containment configurations with pre-fabricated end-of-row doors and horizontal roofs which are simple, fast and easy to install.

Importantly, the REC series provides a foundation for larger variations of Eaton's new Intelligent Power Pod™ platform, which includes UPSs, rack PDUs, power management software, services and IT racks. With this full suite of products, integrators can simply install their preferred IT equipment and software and deliver a fully integrated system to their customer.

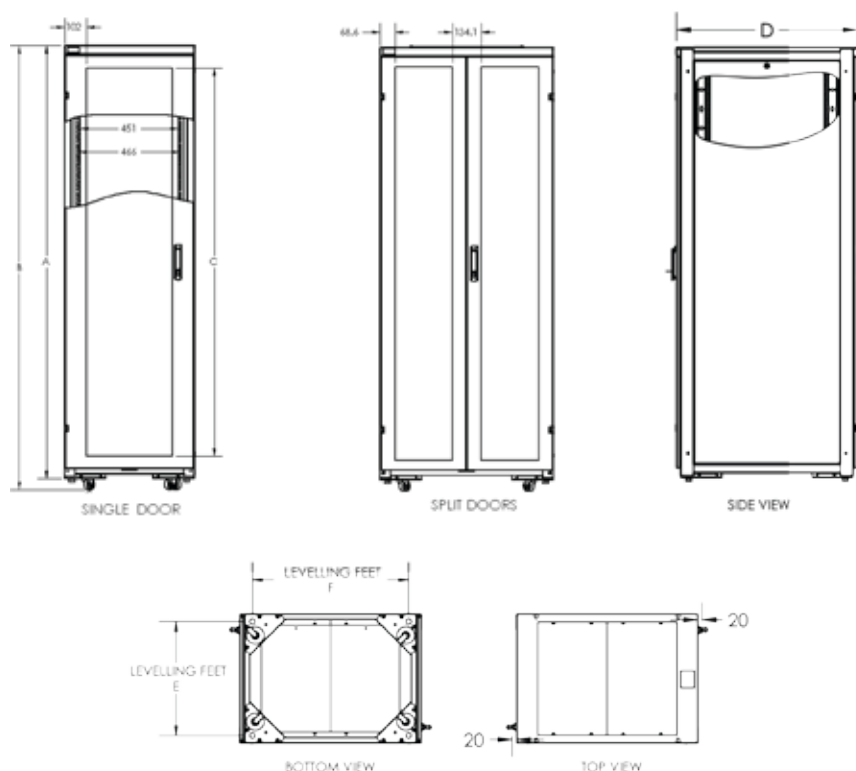
### Standard racks include:

- Fully assembled sturdy rack frame
- Four infinitely adjustable 19" mounting rails, painted steel with U-markings
- Top panel with three large central cover plates for cable and air management, plus 2 additional front-to-back side openings for cable management brush inserts on 800 mm models.
- Split rear doors (800 mm wide models) or single rear door (600 mm wide models)
- Swing handles with key lock
- Lockable sides, no-sides version also available
- Casters and levelling feet
- Grounding kit
- 2 year standard warranty

### TECHNICAL SPECIFICATIONS

| Equipment mounting height<br>Width x Depth (mm) | 42U<br>600x1000                                                                                                                                 | 42U<br>600x1200 | 42U<br>800x1000 | 42U<br>800x1200 | 47U<br>600x1000 | 47U<br>600x1200 | 47U<br>800x1000 | 47U<br>800x1200 |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| <b>Physical</b>                                 |                                                                                                                                                 |                 |                 |                 |                 |                 |                 |                 |
| Equipment mounting height                       | 42U                                                                                                                                             | 42U             | 42U             | 42U             | 47U             | 47U             | 47U             | 47U             |
| Height (casters fitted)                         | 2048 mm                                                                                                                                         | 2048 mm         | 2048 mm         | 2048 mm         | 2270 mm         | 2270 mm         | 2270 mm         | 2270 mm         |
| Width                                           | 600 mm                                                                                                                                          | 600 mm          | 800 mm          | 800 mm          | 600 mm          | 600 mm          | 800 mm          | 800 mm          |
| Depth (door-to-door)                            | 1040 mm                                                                                                                                         | 1240 mm         | 1040 mm         | 1240 mm         | 1040 mm         | 1240 mm         | 1040 mm         | 1240 mm         |
| Load capacity (static)                          | 1100 kg                                                                                                                                         | 1100 kg         | 1100 kg         | 1100 kg         | 1100 kg         | 1100 kg         | 1100 kg         | 1100 kg         |
| Load capacity (dynamic)                         | 200 kg                                                                                                                                          | 200 kg          | 200 kg          | 200 kg          | 200 kg          | 200 kg          | 200 kg          | 200 kg          |
| Weight of assembled rack (with sides)           | 114 kg                                                                                                                                          | 116 kg          | 128 kg          | 132 kg          | 116 kg          | 127 kg          | 132 kg          | 143 kg          |
| Front Door - Perforated                         | Single                                                                                                                                          | Single          | Single          | Single          | Single          | Single          | Single          | Single          |
| Rear Door - perforated (perforated model)       | Single                                                                                                                                          | Single          | Split           | Split           | Single          | Single          | Split           | Split           |
| Door opening angle, hinges                      | 180° angle with non-bayed installations, left-hand hinged, field reversible (140° for bayed racks). Doors attached with 3 quick release hinges. |                 |                 |                 |                 |                 |                 |                 |
| Door perforation                                | 80%                                                                                                                                             |                 |                 |                 |                 |                 |                 |                 |
| Rail mounting width                             | 482.6 mm (19 inch) fully compliant with EIA-310-E. Can be set at 23 inch width or offset to one side on 800 mm models.                          |                 |                 |                 |                 |                 |                 |                 |
| Rail mounting holes                             | 9.5 mm square holes                                                                                                                             |                 |                 |                 |                 |                 |                 |                 |
| Rail mounting depth (maximum)                   | 850 mm                                                                                                                                          | 1048 mm         | 850 mm          | 1048 mm         | 850 mm          | 1048 mm         | 850 mm          | 1048 mm         |
| Rail mounting depth - with PDU bracket          | 725 mm                                                                                                                                          | 925 mm          | 725 mm          | 925 mm          | 725 mm          | 925 mm          | 725 mm          | 925 mm          |
| Rail offset                                     | Rails can be offset to either side by 50 mm on 800 mm wide racks.                                                                               |                 |                 |                 |                 |                 |                 |                 |
| Sides                                           | Removable, lockable side panels (2 locks per side on 1200 mm deep models) - on models with sides.                                               |                 |                 |                 |                 |                 |                 |                 |
| Colour                                          | Black, RAL 9005                                                                                                                                 |                 |                 |                 |                 |                 |                 |                 |
| Regulatory Approvals & Standards                | EIA-310-E, IEC / EN 60950, IEC / EN 60297, IEC 529                                                                                              |                 |                 |                 |                 |                 |                 |                 |
| Protection Class                                | IP20 - when configured with doors and side panels                                                                                               |                 |                 |                 |                 |                 |                 |                 |
| ePDU maximum length*                            | 42U: 1865 mm, 47U: 2085 mm Note: PDU bracket allows the mounting of 2 rack PDUs side-by-side at the rear of the rack.                           |                 |                 |                 |                 |                 |                 |                 |

# Eaton REC Series IT Rack



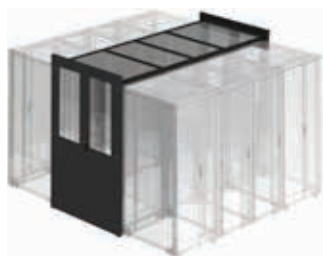
| Models       | Height | Width (mm) | Dimensions (mm) |      |        |      |       |      |
|--------------|--------|------------|-----------------|------|--------|------|-------|------|
|              |        |            | A               | B    | C      | D    | E     | F    |
| RCA42610SPBE | 42 U   | 600        | 1998            | 2049 | 1816   | 1040 | 529.5 | 925  |
| RCA42610NPBE | 42 U   | 600        | 1998            | 2049 | 1816   | 1040 | 529.5 | 925  |
| RCA42612SPBE | 42 U   | 600        | 1998            | 2049 | 1816   | 1240 | 529.5 | 1125 |
| RCA42612NPBE | 42 U   | 600        | 1998            | 2049 | 1816   | 1240 | 529.5 | 1125 |
| RCA42810SPBE | 42 U   | 800        | 1998            | 2049 | 1816   | 1040 | 729.5 | 925  |
| RCA42810NPBE | 42 U   | 800        | 1998            | 2049 | 1816   | 1040 | 729.5 | 925  |
| RCA42812SPBE | 42 U   | 800        | 1998            | 2049 | 1816   | 1240 | 729.5 | 1125 |
| RCA42812NPBE | 42 U   | 800        | 1998            | 2049 | 1816   | 1240 | 729.5 | 1125 |
| RCA47610SPBE | 47 U   | 600        | 2219            | 2270 | 2033.5 | 1040 | 529.5 | 925  |
| RCA47610NPBE | 47 U   | 600        | 2219            | 2270 | 2033.5 | 1040 | 529.5 | 925  |
| RCA47612SPBE | 47 U   | 600        | 2219            | 2270 | 2033.5 | 1240 | 529.5 | 1125 |
| RCA47612NPBE | 47 U   | 600        | 2219            | 2270 | 2033.5 | 1240 | 529.5 | 1125 |
| RCA47810SPBE | 47 U   | 800        | 2219            | 2270 | 2033.5 | 1040 | 729.5 | 925  |
| RCA47810NPBE | 47 U   | 800        | 2219            | 2270 | 2033.5 | 1040 | 729.5 | 925  |
| RCA47812SPBE | 47 U   | 800        | 2219            | 2270 | 2033.5 | 1240 | 729.5 | 1125 |
| RCA47812NPBE | 47 U   | 800        | 2219            | 2270 | 2033.5 | 1240 | 729.5 | 1125 |

## Part numbers

| Equipment mounting height<br>Width x Depth (mm) | 42U<br>600x1000 | 42U<br>600x1200 | 42U<br>800x1000 | 42U<br>800x1200 | 47U<br>600x1000 | 47U<br>600x1200 | 47U<br>800x1000 | 47U<br>800x1200 |
|-------------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Perforated doors, with sides                    | RCA42610SPBE    | RCA42612SPBE    | RCA42810SPBE    | RCA42812SPBE    | RCA47610SPBE    | RCA47612SPBE    | RCA47810SPBE    | RCA47812SPBE    |
| Perforated doors, no sides                      | RCA42610NPBE    | RCA42612NPBE    | RCA42810NPBE    | RCA42812NPBE    | RCA47610NPBE    | RCA47612NPBE    | RCA47810NPBE    | RCA47812NPBE    |

# Eaton Aisle Containment System

## REC Series IT Racks



**Eaton's Aisle Containment System for the REC Series IT racks delivers energy saving airflow management for small, medium and large data center applications.**

Designed for fast and easy installation, the REC aisle containment system provides an affordable solution for energy saving cold aisle containment installations. This completely modular system allows extensions or reconfigurations as a pod changes or expands.

The system attaches to 42U or 47U high Eaton REC Series racks, and spans 1200 mm wide aisles. Roof panels connect to equal-width racks on either side of the aisle, and can be cut to install fire suppression systems.

Importantly, the REC aisle containment system provides an energy saving envelope for Eaton's new Intelligent Power Pod™ platform, which includes UPSs, rack PDUs, power management software, services and IT racks. With this full suite of products, integrators can simply install their preferred IT equipment and software and deliver a fully integrated system to their customer.

### End-of-Row door kits include:

- Split, swing-style door pre-assembled with toughened glass window
- Door frame
- All hardware to attach doors to IT racks and floor

### Roof panel kits include:

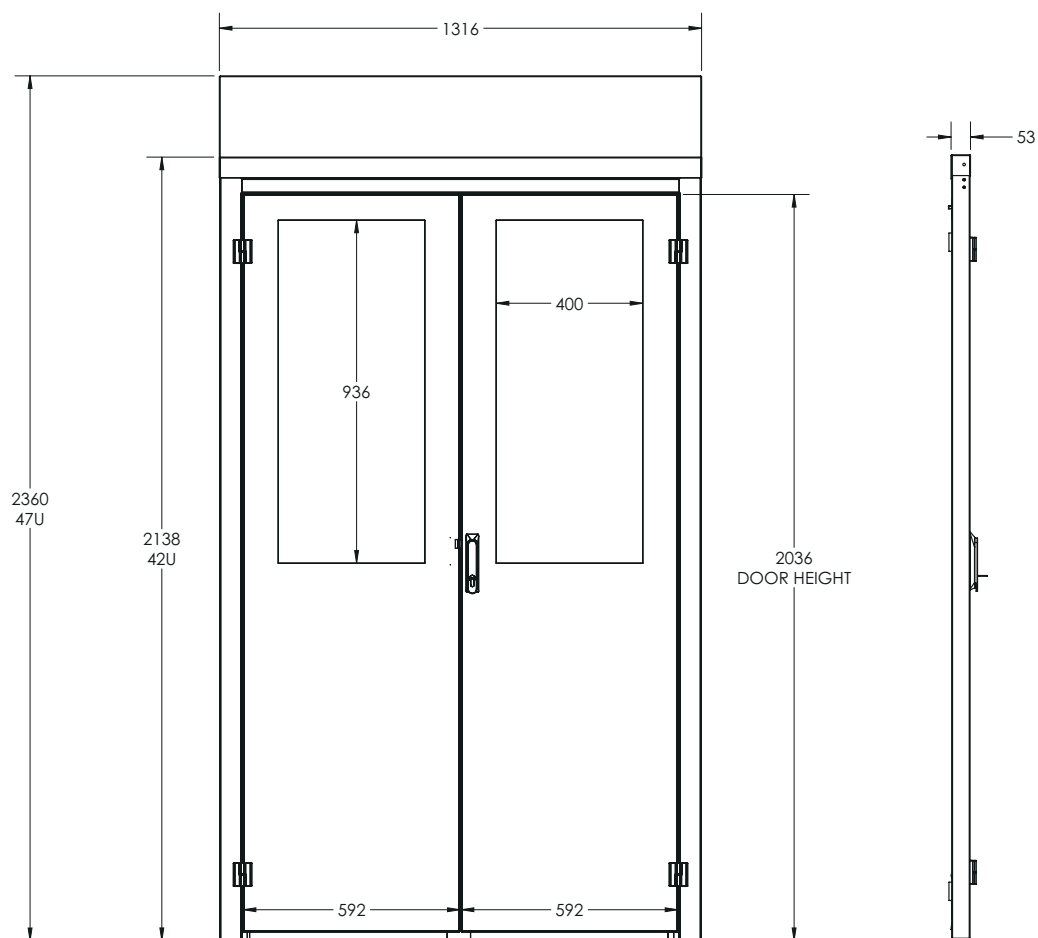
- Acrylic panel
- Panel frame with Velcro™ seal
- All hardware to attach panels to racks and adjacent roof panels

### TECHNICAL SPECIFICATIONS

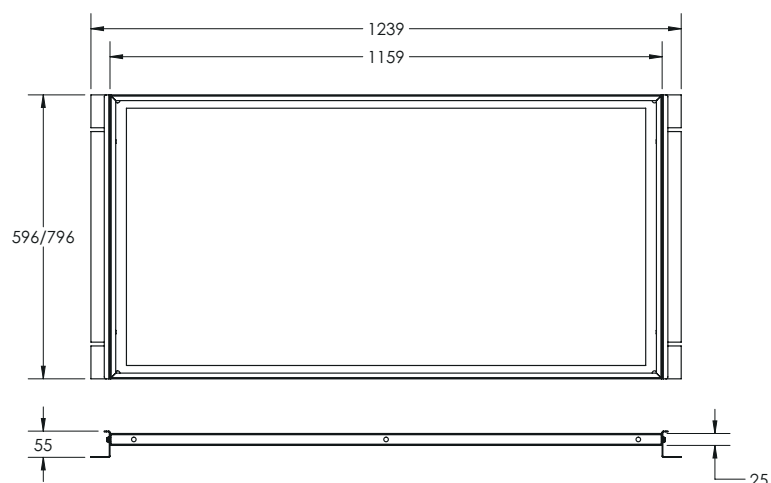
| Rack Height,<br>Width x Depth (mm)        | End-of-Row Doors<br>42U                                      | 47U              | Roof Panels<br>600x1200 | 800x1200        |
|-------------------------------------------|--------------------------------------------------------------|------------------|-------------------------|-----------------|
| Height                                    | 2138 mm                                                      | 2367 mm          | 50 mm                   | 50 mm           |
| Width                                     | 1316 mm                                                      | 1316 mm          | 600 mm                  | 800 mm          |
| Depth                                     | 53 mm                                                        | 53 mm            | 1200 mm                 | 1200 mm         |
| Aisle Width                               | 1200 mm                                                      | 1200 mm          | 1200 mm                 | 1200 mm         |
| Door style                                | Split swing door                                             | Split swing door |                         |                 |
| Door opening angle, hinges                | 180°, 2 lift-style hinges                                    |                  |                         |                 |
| Door window material                      | Toughened glass, 4 mm                                        |                  |                         |                 |
| Roof panels - material                    | Thickness: 3 mm, Perpex Cast Acrylic, attached with Velcro™  |                  |                         |                 |
| Roof panels - Standards & Classifications | UL94 HB, NFP 92-307 (dripleless), BS 476 Part 7 Class 3      |                  |                         |                 |
| Rack types                                | Doors and roof panels designed for Eaton REC series IT racks |                  |                         |                 |
| Colour - Door & Frame                     | Black, RAL 9005                                              |                  |                         |                 |
| Estimated installation time               | 4 hours each                                                 | 4 hours each     | 10 minutes each         | 10 minutes each |
| Weight                                    | 56 kg                                                        | 62 kg            | 8.8 kg                  | 11.2 kg         |
| Part Numbers                              | RCACUHD12KB                                                  | RCACUHD12KB      | RCACRP0612KB            | RCACRP0812KB    |

# Eaton Aisle Containment System

## End-of-row door dimensions



## Roof panel dimensions



# Eaton RE Series IT Rack

## 27U & 42U



**Eaton RE series IT racks deliver essential protection for critical IT equipment in network closet and small server room applications.**

Designed for fast and easy set-up, the RE Series is provided with features IT specialists need in an affordable, ready-to-go enclosure including casters, lockable side panels, step-less rail positioning, U-markings and a grounding kit. A full range of easy-to-use cable management, airflow management and storage accessories are available. Importantly, the RE series provides a foundation for Eaton's new Intelligent Power Pod™ platform, which includes UPSs, rack PDUs, power management software, service and the IT rack. With this full suite of products, integrators can simply install their preferred IT equipment and software and deliver a fully integrated system to their customer.

### Standard racks include:

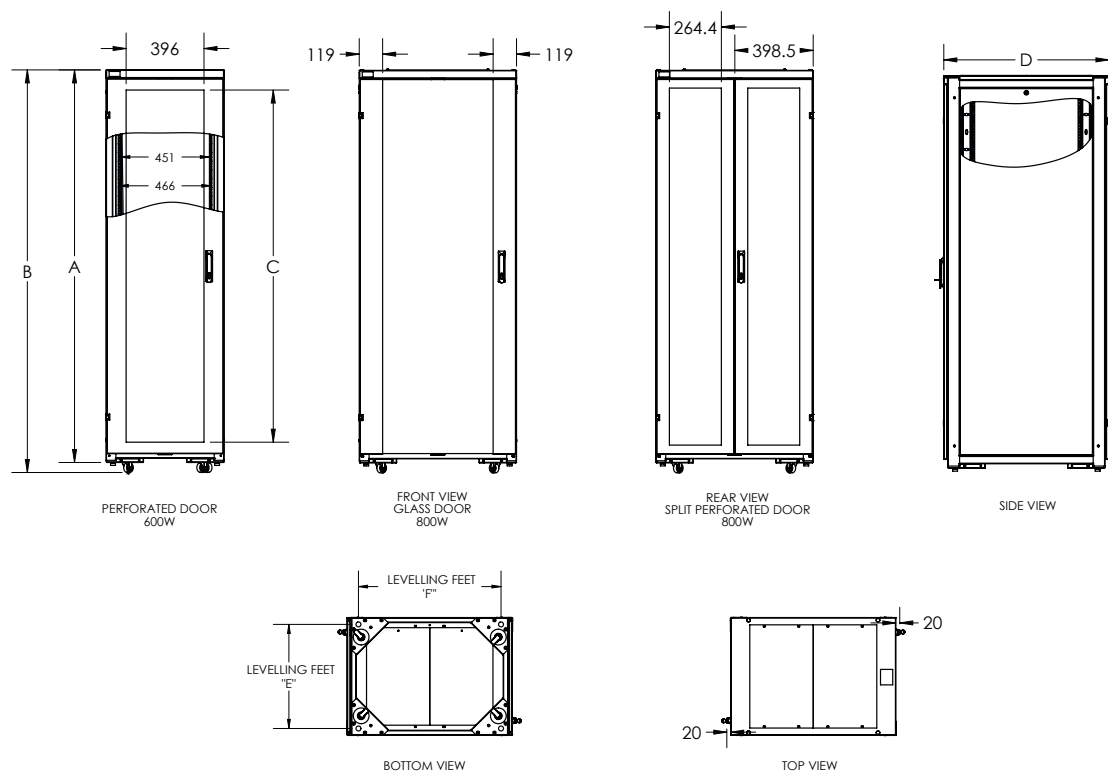
- Fully assembled sturdy rack frame
- Four infinitely adjustable 19" mounting rails with U-markings
- Plain top panel with two cover plates for optional airflow or cable management brush inserts
- Perforated steel or glass front door
- Split rear doors (800 mm wide models) or single rear door (600 mm wide models)
- Swing handles with key lock
- Lockable sides, no-sides version also available
- Casters and levelling feet
- Grounding kit
- 2 years standard warranty

### TECHNICAL SPECIFICATIONS

| Equipment mounting height<br>Width & depth (mm) | 27U<br>600x800                                                                                                         | 27U<br>600x1000 | 27U<br>800x800 | 27U<br>800x1000 | 42U<br>600x800 | 42U<br>600x1000 | 42U<br>800x800 | 42U<br>800x1000 |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|-----------------|----------------|-----------------|----------------|-----------------|
| Physical                                        |                                                                                                                        |                 |                |                 |                |                 |                |                 |
| Height (casters fitted)                         | 1382 mm                                                                                                                | 1382 mm         | 1382 mm        | 1382 mm         | 2048 mm        | 2048 mm         | 2048 mm        | 2048 mm         |
| Width                                           | 600 mm                                                                                                                 | 600 mm          | 800 mm         | 800 mm          | 600 mm         | 600 mm          | 800 mm         | 800 mm          |
| Depth                                           | 840 mm                                                                                                                 | 1040 mm         | 840 mm         | 1040 mm         | 840 mm         | 1040 mm         | 840 mm         | 1040 mm         |
| Load capacity (static)                          | 800 kg                                                                                                                 | 800 kg          | 800 kg         | 800 kg          | 800 kg         | 800 kg          | 800 kg         | 800 kg          |
| Load capacity (dynamic)                         | 200 kg                                                                                                                 | 200 kg          | 200 kg         | 200 kg          | 200 kg         | 200 kg          | 200 kg         | 200 kg          |
| Weight of assembled rack (with sides)           | 76 kg                                                                                                                  | 82 kg           | 80 kg          | 84.5 kg         | 102 kg         | 114 kg          | 117 kg         | 128 kg          |
| Front door - perforated                         | single                                                                                                                 | single          | single         | single          | single         | single          | single         | single          |
| Front door - glass door model                   | single                                                                                                                 |                 | single         |                 | single         |                 | single         |                 |
| Glass door specification                        | 4 mm clear toughened glass, conforms with EN 12150                                                                     |                 |                |                 |                |                 |                |                 |
| Rear door - perforated (perforated model)       | single                                                                                                                 | single          | split          | split           | single         | single          | split          | split           |
| Rear door - solid metal (glass door model)      | single                                                                                                                 |                 | single         |                 | single         |                 | single         |                 |
| Door opening angle                              | 180° angle with non-bayed installations, left-hand hinged, field reversible (140° for bayed racks)                     |                 |                |                 |                |                 |                |                 |
| Door perforation                                | 80%                                                                                                                    |                 |                |                 |                |                 |                |                 |
| Rail mounting width                             | 482.6 mm (19 inch) fully compliant with EIA-310-E. Can be set at 23 inch width or offset to one side on 800 mm models  |                 |                |                 |                |                 |                |                 |
| Rail mounting holes                             | 9.5 mm square holes                                                                                                    |                 |                |                 |                |                 |                |                 |
| Rail mounting depth (maximum)                   | 650 mm                                                                                                                 | 850 mm          | 650 mm         | 850 mm          | 650 mm         | 850 mm          | 650 mm         | 850 mm          |
| Rail mounting depth - with PDU bracket          | 525 mm                                                                                                                 | 725 mm          | 525 mm         | 725 mm          | 525 mm         | 725 mm          | 525 mm         | 725 mm          |
| Rail offset                                     | Rails can be offset to either side by 50 mm on 800 mm wide racks.                                                      |                 |                |                 |                |                 |                |                 |
| Sides                                           | Removeable, lockable side panels - on models with sides.                                                               |                 |                |                 |                |                 |                |                 |
| Colour                                          | Black, RAL 9005                                                                                                        |                 |                |                 |                |                 |                |                 |
| Heat load suitability - glass door model        | < 1.5 kW                                                                                                               |                 | < 1.5 kW       |                 | < 1.5 kW       |                 | < 1.5 kW       |                 |
| Regulatory approvals & standards                | EIA-310-E, IEC / EN 60950, IEC / EN 60297, IEC 529                                                                     |                 |                |                 |                |                 |                |                 |
| Protection class                                | IP20 - when configured with doors and side panels                                                                      |                 |                |                 |                |                 |                |                 |
| ePDU maximum length                             | 27U: 1200 mm, 42U: 1865 mm. Note: PDU bracket allows the mounting of 2 rack PDUs side-by-side at the rear of the rack. |                 |                |                 |                |                 |                |                 |



# Eaton RE Series IT Rack



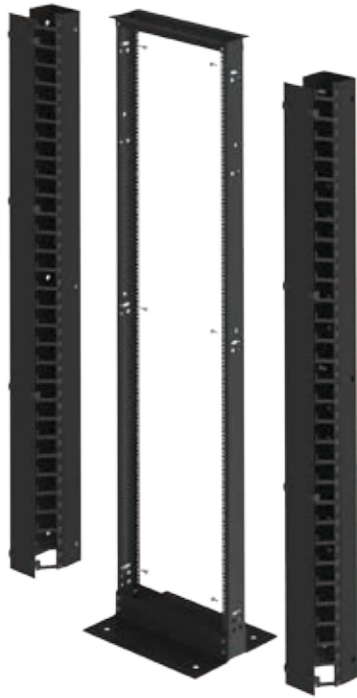
| Models       | Height | Width (mm) | Dimensions (mm) |      |        |      |       |     |
|--------------|--------|------------|-----------------|------|--------|------|-------|-----|
|              |        |            | A               | B    | C      | D    | E     | F   |
| REA27608SPBE | 27 U   | 600        | 1332            | 1383 | 1034.4 | 840  | 529.5 | 725 |
| REB27608SPBE | 27 U   | 600        | 1332            | 1383 | n/a    | 840  | 529.5 | 725 |
| REA27610SPBE | 27 U   | 600        | 1332            | 1383 | 1034.4 | 1040 | 529.5 | 925 |
| REA27808SPBE | 27 U   | 800        | 1332            | 1383 | 1034.4 | 840  | 729.5 | 725 |
| REB27808SPBE | 27 U   | 800        | 1332            | 1383 | n/a    | 840  | 729.5 | 725 |
| REA27810SPBE | 27U    | 800        | 1332            | 1383 | 1034.4 | 1040 | 729.5 | 925 |
| REA42608SPBE | 42 U   | 600        | 1998            | 2049 | 1791   | 840  | 529.5 | 725 |
| REA42608NPBE | 42 U   | 600        | 1998            | 2049 | 1791   | 840  | 529.5 | 725 |
| REB42608SPBE | 42 U   | 600        | 1998            | 2049 | n/a    | 840  | 529.5 | 725 |
| REA42610SPBE | 42 U   | 600        | 1998            | 2049 | 1791   | 1040 | 529.5 | 925 |
| REA42610NPBE | 42 U   | 600        | 1998            | 2049 | 1791   | 1040 | 529.5 | 925 |
| REA42808SPBE | 42 U   | 800        | 1998            | 2049 | 1791   | 840  | 729.5 | 725 |
| REA42808NPBE | 42 U   | 800        | 1998            | 2049 | 1791   | 840  | 729.5 | 725 |
| REB42808SPBE | 42 U   | 800        | 1998            | 2049 | n/a    | 840  | 729.5 | 725 |
| REB42808NPBE | 42 U   | 800        | 1998            | 2049 | n/a    | 840  | 729.5 | 725 |
| REA42810SPBE | 42 U   | 800        | 1998            | 2049 | 1791   | 1040 | 729.5 | 925 |
| REA42810NPBE | 42 U   | 800        | 1998            | 2049 | 1791   | 1040 | 729.5 | 925 |

Note: n/a indicates 'not applicable' due to glass door model.

## Part numbers

| Equipment mounting height<br>Width x depth (mm) | 27U<br>600x800 | 27U<br>600x1000 | 27U<br>800x800 | 27U<br>800x1000 | 42U<br>600x800 | 42U<br>600x1000 | 42U<br>800x800 | 42U<br>800x1000 |
|-------------------------------------------------|----------------|-----------------|----------------|-----------------|----------------|-----------------|----------------|-----------------|
| Perforated doors, with sides                    | REA27608SPBE   | REA27610SPBE    | REA27808SPBE   | REA27810SPBE    | REA42608SPBE   | REA42610SPBE    | REA42808SPBE   | REA42810SPBE    |
| Perforated doors, no sides                      |                |                 |                |                 | REA42608NPBE   | REA42610NPBE    | REA42808NPBE   | REA42810NPBE    |
| Glass door, with sides                          | REB27608SPBE   |                 | REB27808SPBE   |                 | REB42608SPBE   |                 | REB42808SPBE   |                 |
| Glass door, no sides                            |                |                 |                |                 |                |                 | REB42808NPBE   |                 |

# Eaton RE Series 2 Post Rack



A simple mounting frame solution to house IT equipment whilst providing maximum cabling access and capacity. Eaton's RE Series 2 Post Rack platform is ideally suited to telecommunications rooms where volume copper or fibre cabling systems are usually deployed. The open access design enables easy installation of equipment and provides a secure connectivity solution for all internationally recognized cabling standards, including CAT 8.

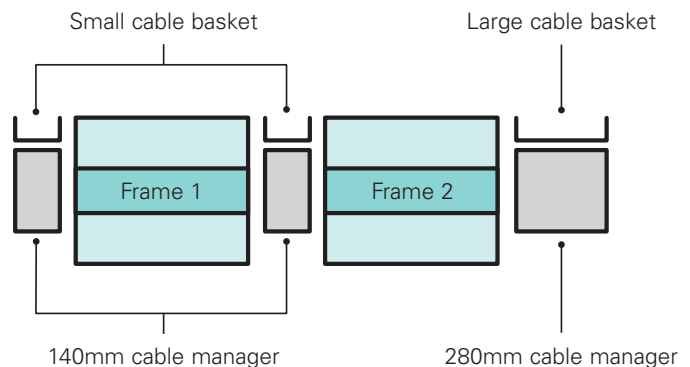
Designed to be easily assembled on site, each frame is shipped flat-packed for simple on-site installation.

Also available is a range of complementary horizontal and vertical cable management accessories. These provide users with the tools to configure the system to match individual applications.

## Main Features

- Easy bolt together construction
- 45U Standard height
- Range of vertical, horizontal and cable spool management options and configurations
- Robust pre-drilled floor mounting base (bolts not supplied)
- Black powder coat finish
- Supplied in simple kit form for easy on-site assembly

## RE Series 2 Post Rack—Example configuration



# RE Series 2 Post rack - Frame



## All RE 2 Post Racks Include

- 2 x vertical 19" members
- 2 x pre drilled base mounting angles (no bolts supplied)
- 2 x top support angles
- 1 x PDU Mounting Brackets (Pair)
- Black finish
- Supplied in simple kit form for easy on-site assembly

## RE 2 Post Rack – Example configurations

|                                                                                     |                                                                  |                                                                                      |                                                                                                                                          |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
|    | Frame with single cable manager                                  |    | Frame with single cable manager and internal double cable manager                                                                        |
|  | Frame with two single cable managers mounted front and rear      |  | Frame with two single cable managers to the side, mounted front and rear, and two internal double cable managers, mounted front and rear |
|  | Frame with single cable manager and cable basket manager to rear |  | Frame with single cable manager and internal double cable manager with cable basket managers to rear                                     |

## TECHNICAL SPECIFICATIONS

| 45U                                   |                                                                                                                                                                                                                  |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Order Code                            | RE2PRFK45UB                                                                                                                                                                                                      |
| <b>Physical</b>                       |                                                                                                                                                                                                                  |
| Equipment Mounting Height             | 45U                                                                                                                                                                                                              |
| Height                                | 2134mm                                                                                                                                                                                                           |
| Width                                 | 516mm                                                                                                                                                                                                            |
| Depth of Mounting Base                | 381mm                                                                                                                                                                                                            |
| Weight                                | 20.4kg                                                                                                                                                                                                           |
| Weight Capacity (Static)              | 750kg                                                                                                                                                                                                            |
| Rail Mounting Width                   | 482.6mm (19") fully compliant to EIA-310-E                                                                                                                                                                       |
| Colour                                | Black RAL 9005 powder coat                                                                                                                                                                                       |
| <b>Active Equipment Management</b>    |                                                                                                                                                                                                                  |
| Heat Load Suitability                 | By nature an open structure rack limits the opportunity to optimize the management of air to active equipment. Therefore equipment heat load densities will be governed by the provision of cooling in the room. |
| <b>Conformance</b>                    |                                                                                                                                                                                                                  |
| Regulatory Approvals                  | IEC/EN 60950, IEC/EN 60297, IEC 529                                                                                                                                                                              |
| Standards                             | EIA-310-E compliant                                                                                                                                                                                              |
| Shipping                              | Supplied flat packed                                                                                                                                                                                             |
| <b>Customer Service &amp; Support</b> |                                                                                                                                                                                                                  |
| Warranty                              | 2 Years                                                                                                                                                                                                          |

Due to continuous product improvement programs specifications are subject to change without notice.

# RE Series 2 Post rack - Vertical cable manager



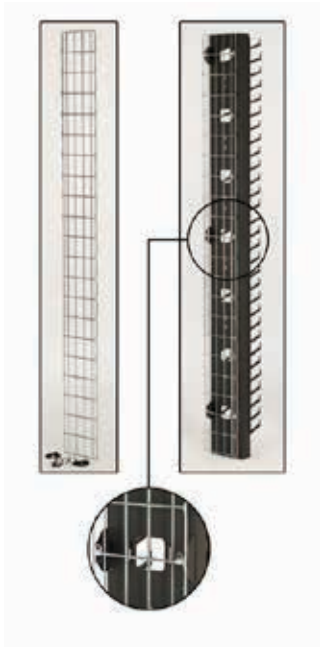
Eaton's open rack vertical cable managers are available in two standard widths. The managers are designed to bolt to the sides of the RE 2 post rack frame and can be configured either in single or double configurations. Units are supplied complete with dual hinged split covers for ease of operation and improved cable management.

### Features and options

- 2 width options; 140mm or 280mm
- 1 x vertical manager
- 2 x dual hinged covers
- Mounting instructions & fixings
- Black finish RAL9005
- Supplied in simple kit form for easy on-site assembly

| TECHNICAL SPECIFICATIONS | 45U            |
|--------------------------|----------------|
| Order Code (140mm width) | RE2PRMK45U140B |
| Order Code (280mm width) | RE2PRMK45U280B |
| Colour                   | Black RAL 9005 |

# RE Series 2 Post rack - Vertical cable manager basket



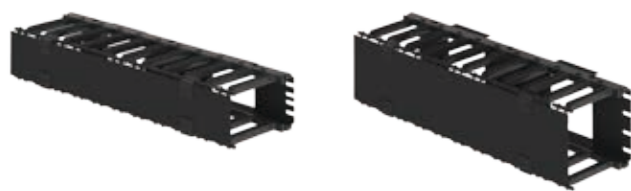
Designed to mount on the rear of the RE 2 Post Rack vertical cable managers or to the sides of the 2 Post Frame, these basic sections can be configured to offer rear, side or forward facing management options

### Features and options

- 1 x vertical basket manager
- 3 width options; 100mm, 200mm or 300mm
- Mounting hardware
- Mounting instructions & fixings
- Black finish brackets / silver basket
- Supplied in simple kit form for easy on-site assembly

| TECHNICAL SPECIFICATIONS | 45U                                     |
|--------------------------|-----------------------------------------|
| Order Code (100mm width) | RE2PRBK45U100B                          |
| Order Code (200mm width) | RE2PRBK45U200B                          |
| Order Code (300mm width) | RE2PRBK45U300B                          |
| Colour                   | Black RAL 9005 brackets, Silver baskets |

# RE Series 2 Post rack - Horizontal cable manager



Horizontal cable supports are available in heights of 1U, 2U & 3U which provide added cable routing options

| TECHNICAL SPECIFICATIONS | 1U             | 2U            | 3U            |
|--------------------------|----------------|---------------|---------------|
| Order Code               | RESB87019S1FB  | RESB87019S2FB | RESB87019S3FB |
| Colour                   | Black RAL 9005 |               |               |

Shipping: Supplied assembled.

# RE Series 2 Post rack - Adjustable cable spools



The adjustable cable spools provide support and anchor points for managing changes in cable direction

| TECHNICAL SPECIFICATIONS |                   |
|--------------------------|-------------------|
| Order Code               | ETN-SB860ACSF8    |
| Colour                   | Black (pack of 5) |

Shipping: Supplied assembled.

# Universal Rack 19" Earth Bar Kit



Universal Rack Earth Bar Kit ensures easy earth continuity.

| TECHNICAL SPECIFICATIONS   |            |
|----------------------------|------------|
| Order Code                 | ETN-U19EBK |
| Customer Service & Support |            |
| Warranty                   | 2 Years    |

Due to continuous product improvement programs specifications are subject to change without notice.



# Eaton ATS



Eaton ATS 16 Netpack



Eaton ATS 30



## Power Source Transfer Switch

### Seamless power transfer

Eaton ATS are designed to provide power supply redundancy for single connection equipment. With ATS, power from two independent sources can be supplied to IT equipment, which have only one input power supply.

### Redundancy

Only advanced servers are equipped with a dual electrical power supply. The majority of network devices and entry-level servers have a single connection with only one electrical power input. With the Eaton ATS, critical equipment can be connected to a redundant power supply.

Both sources (primary and secondary) are connected in a straightforward manner to the ATS in the base of the rack. The Eaton ATS then controls the redundancy of this electrical power supply. If the primary source fails, transfer to the secondary source is automatic and instantaneous.

### Simple and cost-effective

Considering the advanced design of the Eaton ATS, these are highly competitive in price compared with the 'dual power supply' options available from suppliers of networking equipment.

1U high, the unit can be installed easily within the rack. Metering and basic configuration capabilities are possible through ATS 16's LCD.

### Network connectivity

The ATS 16 Netpack and ATS 30 provide network connectivity. This allows users to access, configure and manage units from remote locations.

- 1 LCD with metering and basic configuration capabilities
- 2 RS232 serial port
- 3 Network NMC card (on netpack version)



ATS 16N, front view

- 1 User interface
  - Source status
  - STS status

- 2 Hardwired inputs and output
- 3 Network connection and web interface



ATS 30

- 4 Input connections (2 x IEC C20)
- 5 Outputs (8 x IEC C13 + 1 x IEC C19)



ATS 16N, rear view

## TECHNICAL SPECIFICATIONS

|                                         | ATS 16                           | ATS 16 Netpack                 | ATS 30                   |
|-----------------------------------------|----------------------------------|--------------------------------|--------------------------|
| Nominal current                         | 16 A                             | 16A                            | 30 A*                    |
| <b>Input/output</b>                     |                                  |                                |                          |
| Nominal voltage/input frequency         | 208/220/230/240 V ; 50/60 Hz     | 208/220/230/240 V ; 50/60 Hz   | 220/230/240 V ; 50/60 Hz |
| <b>Performance</b>                      |                                  |                                |                          |
| Typical transfer time                   | 8 ms                             |                                |                          |
| Safety                                  | IEC/EN 62310-1, IEC/EN 60950-1   | IEC/EN 62310-1, IEC/EN 60950-1 | IEC/EN 60950-1           |
| EMC                                     | IEC/EN 62310-2                   |                                |                          |
| Marking                                 | CE                               |                                |                          |
| <b>Connection</b>                       |                                  |                                |                          |
| Inputs                                  | 2 IEC C20 + 2 input cables       | 2 IEC C20 + 2 input cables     | Hardwired                |
| Outputs                                 | 8 IEC C13 + 1 IEC C19            | 8 IEC C13 + 1 IEC C19          | Hardwired                |
| <b>Communication and user interface</b> |                                  |                                |                          |
| User interface                          | LCD                              | LCD                            | LED                      |
| Network communication                   | No                               | Yes                            | Yes                      |
| <b>Dimensions and weight</b>            |                                  |                                |                          |
| Dimensions H x W x D                    | 43 x 430 x 250 mm                | 43 x 430 x 250 mm              | 43 x 440 x 390           |
| Weight                                  | 3,3 kg                           | 3,5 kg                         | 5 kg                     |
| <b>Customer Service &amp; Support</b>   |                                  |                                |                          |
| 2 years guarantee                       | Standard exchange of the product |                                |                          |

\* 30A up to 35°C, 25.6A up to 40°C.

| Part Numbers                                                                                  | ATS 16 | ATS 16 Netpack | ATS 30  |
|-----------------------------------------------------------------------------------------------|--------|----------------|---------|
| ATS                                                                                           | EATS16 | EATS16N        | EATS30N |
| Set of two 16 A connecting cables IEC female connector / USE-DIN male connector l ength 1.5 m | 66 397 |                |         |
| 1 cable / IEC 10 A male to IEC 16 A female                                                    | 66 029 |                |         |

In the interests of continuous product improvement all specifications are subject to change without notice.

# Eaton FlexPDU

## Eaton HotSwap MBP



FlexPDU range



HotSwap MBP range



Hotswap MBP6Ki & MBP11Ki

### Power distribution

The no hassle solution for improving availability and adding flexibility for single phase UPSs.

### Eaton FlexPDU

Having the right connectors just where you need them

- FlexPDUs (Power Distribution Units) are flexible mounting multiway socket blocks for easy connection of multiple loads either as free-standing or on rack-mounted UPSs
- FlexPDUs have a large number of sockets (8 French or Schuko sockets, 6 BS sockets or 12 IEC 10 A sockets) which fit into a very compact unit (1U - 19")
- FlexPDUs are easy to implement into any type of installation: they can be rack mounted horizontally (1U) or vertically or directly onto all Eaton RT format (rack/tower) UPSs

### Eaton HotSwap MBP

- High availability for all UPSs up to 11 kVA.
- HotSwap MBP provides a maintenance bypass for all UPSs. UPSs can be hot swapped or upgraded without interrupting the power supply.
- HotSwap MBP are available with multiple power ratings: 3000 VA, 6000 VA, 11000 VA, 11000 VA (3 ph Input).
- HotSwap MBP provides compatibility with any UPS now and in the future from Eaton or any other supplier
- The HotSwap MBP 3000 VA is available with different output connectors: French, Schuko, British, IEC or terminal blocks (Hard-Wired version).
- When used with a 9PX or 9SX the HotSwap MBP 6000 VA and above are providing information on the Bypass status through the UPS LCD screen.
- HotSwap MBP units can be installed as required; at the back, side, top of the UPSs, or rack-mounted.



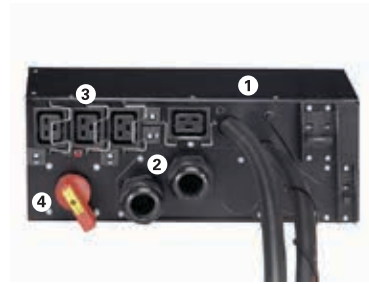
# Eaton FlexPDU

## Eaton HotSwap MBP

- 1 Flexible system for 19" rack-mounting or on Eaton RT UPSs
  - 2 French/Schuko/British/IEC 10 A sockets
  - 3 IEC 16 A output for cascading
  - 4 IEC 16 A input socket
  - 5 Retaining clip
  - 6 Rotary bypass switch
  - 7 Colour coded input and output sockets for connecting the UPS
- NB: hard-wired version available



HotSwap MBP 3000



HotSwap MBP 11000

- 1 Flexible system for 19" rack-mounting or on Eaton 9PX/SX UPSs
- 2 Input/Output
- 3 4 IEC 16 A sockets with Retaining clip
- 4 Rotary bypass switch

### TECHNICAL SPECIFICATIONS

|                                    | Eaton FlexPDU                                                                                                           | Eaton HotSwap MBP 3000                                                                                                       | Eaton HotSwap MBP 6000                          | Eaton HotSwap MBP 11000                     |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|---------------------------------------------|
| Maximum power                      | 3000 VA                                                                                                                 | 3000 VA                                                                                                                      | 6000 VA                                         | 11000 VA                                    |
| Nominal Voltage                    | 220 - 240 V                                                                                                             |                                                                                                                              |                                                 | 200-240 V<br>(350 - 430 V for 3 ph version) |
| Installation                       |                                                                                                                         |                                                                                                                              |                                                 |                                             |
| Format                             | 1U (except BS) 19" rack-mounting with multi-position mountings                                                          | >1U 19" rack-mounting with multi-position mountings                                                                          | 3U 19" rack                                     | 3U 19" rack                                 |
| Installation                       | 19" rack, wall mounting or on Eaton RT UPSs                                                                             |                                                                                                                              | 19" rack, wall mounting or on Eaton 9PX/SX UPSs |                                             |
| Dimensions H x W x D               | 44 x 483 x 80 mm<br>(BS: 52 x 483 x 120 mm)                                                                             | 52 x 483 x 120 mm                                                                                                            | 52 x 483 x 120 mm                               | 89 x 483 x 90 mm                            |
| Connection                         |                                                                                                                         |                                                                                                                              |                                                 |                                             |
| Inputs                             | 1 IEC C20 (16 A) connector and 2 cables (1 IEC 16 A - 16 A cable and 1 IEC 10 A - 16 A cable) for connection to any UPS | FR / DIN / BS / IEC models:<br>1 IEC C20 (16 A) connector and 1 IEC 16 A - 16 A cable (1)<br>HW (Hard-Wired): terminal block | Hardwired terminal block                        | Hardwired terminal block                    |
| Outputs                            | FR 8 French sockets + 1 IEC 16 A socket                                                                                 | 4 French sockets + 1 IEC 16 A socket                                                                                         | /                                               |                                             |
|                                    | DIN 8 Schuko sockets + 1 IEC 16 A socket                                                                                | 4 Schuko sockets + 1 IEC 16 A socket                                                                                         |                                                 |                                             |
|                                    | BS 6 British sockets + 1 IEC 16 A socket (with 2 circuit breakers)                                                      | 3 British sockets + 1 IEC 16 A socket (with 1 circuit breaker)                                                               |                                                 |                                             |
|                                    | IEC 12 IEC 10 A sockets + 1 IEC 16 A socket (with 2 circuit breakers)                                                   | 6 IEC sockets + 1 IEC 16 A sockets (with 1 circuit breaker)                                                                  |                                                 |                                             |
|                                    | HW NA                                                                                                                   | Terminal block                                                                                                               | Terminal blocks                                 |                                             |
| Cascading                          | Yes, IEC 16 A output socket                                                                                             |                                                                                                                              |                                                 |                                             |
| Retaining clips                    | Retaining clips on the IEC output sockets                                                                               |                                                                                                                              |                                                 |                                             |
| Operating conditions and approvals |                                                                                                                         |                                                                                                                              |                                                 |                                             |
| Operating temperature              | 0°C to 45°C continuous                                                                                                  |                                                                                                                              | 0°C to 40°C continuous                          |                                             |
| Approvals                          | CE                                                                                                                      |                                                                                                                              |                                                 |                                             |

1: Use cable kits P/N CBLMBP 10EU (FR/DIN) or CBLMBP 10BS (BS) for connecting a low power UPS <2.2 kVA (with IEC 10 A outputs) - see below.

| Part Numbers                           | Eaton FlexPDU           | Eaton HotSwap MBP 3000     | Eaton HotSwap MBP 6000 | Eaton HotSwap MBP 11000                                      |
|----------------------------------------|-------------------------|----------------------------|------------------------|--------------------------------------------------------------|
| FR                                     | FlexPDU 8 FR: EFLX8F    | HotSwap MBP 4 FR: MBP3KIF  | /                      |                                                              |
| DIN                                    | FlexPDU 8 DIN: EFLX8D   | HotSwap MBP 4 DIN: MBP3KID | /                      |                                                              |
| BS                                     | FlexPDU 6 BS: EFLX6B    | HotSwap MBP 3 BS: MBP3KIB  | /                      |                                                              |
| IEC                                    | FlexPDU 12 IEC: EFLX12I | HotSwap MBP 6 IEC: MBP3KI  | MBP6Ki                 | 1Phase In/Out : MBP11Ki,<br>3Phase In/1 Phase Out: MBP11Ki31 |
| HW (Hard-Wired)                        | /                       | HotSwap MBP HW: MBP3KIH    |                        |                                                              |
| 10A BS power cords for HotSwap MBP     | /                       | CBLMBP10BS                 |                        |                                                              |
| 10A FR/DIN power cords for HotSwap MBP | /                       | CBLMBP10EU                 |                        |                                                              |



FR DIN/ Schuko BS IEC C13 10 A IEC C19 16 A IEC C14 10 A IEC C20 16 A

# Eaton ePDUs G3



## This Industry-leading platform enables you to:

- Reliably distribute power to your IT equipment
- Accurately meter and control power consumption
- See where you have available power and are most efficient
- Choose the level of metering to provide the level of information that you require
- Choose equipment switching to allow remote data centre control



## Eaton's 3rd generation power distribution technology

The ePDU G3 platform is designed to provide reliable, cost effective power distribution together with highly accurate monitoring and control for IT equipment in the datacentre.

Eaton offers two types of ePDU:

### 1. Standard range

This range is produced in large quantities and is readily available.

The standard range consists of 6 technologies to meet the needs for IT equipment in the datacentre:

- **Basic ePDUs:** Basic Reliable Power Distribution with integrated plug retention
- **In Line Metered ePDUs:** Add Metering to upgrade existing basic PDUs
- **Metered Input ePDUs:** Meter the input and branch circuits
- **Metered Outlet ePDUs:** Meter the input, branch, individual outlets and IT equipment across A and B feed
- **Switched ePDUs:** Switch individual outlets and IT equipment across A and B feed, plus input and branch metering
- **Managed:** Both Switch and Meter individual outlets and IT equipment across A and B feed

### 2. Custom range. Need something special?

- Dedicated engineering teams in 3 centres of excellence are available to create your perfect ePDU
- Specific configurations or complete engineering projects
- Including national socket types, UK, French, Din/Schuko – including combinations of up to 3 types of outlet on an ePDU

### Options/Accessories:

List of compatible accessories available on page 91





# How do Eaton meet ePDU market needs?



**How do I ensure that my IT equipment is protected against IEC plugs being accidentally knocked out during maintenance or come lose through vibration?**

## Integrated Grip

IEC Plug Retention: Prevents accidental disconnect from being bumped or from vibration. Works with any IEC plug, no need to buy special cables or brackets.



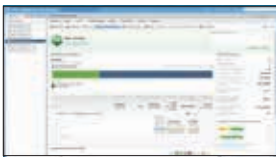
**How do I ensure that costs can be appropriately attributed or billed for department billing and colocation data centers?**

## IEC +/-1% Billing Grade Accuracy

Meter your energy consumption (kWh) plus V, W and A extremely accurately.

## Choose your level of Metering

From ePDU to branch circuit to individual pieces of equipment, including metering kWh for IT equipment over A and B feeds.



ePDU integration into vRealize Operations Manager\*  
\*coming in 2018

**How can I ensure business uptime if the power goes down?**

## Full integration into VMware and Citrix with Intelligent Power Manager

- Trigger VM migration or VMware Site Recovery Manager (SRM)
- User configurable alerts on the ePDU G3 work with Eaton's Intelligent Power Manager (IPM) software to trigger actions
- Trigger automatic migration of virtual servers in the event of a power failure via UPS, ePDU alarm or threshold, temperature/humidity or dry contact event
- User configurable: includes feed going down, branch circuit reaching a defined threshold etc.
- Full integration in VMware interface



**How do I ensure that my PDUs will fit in all my different racks?**

**How do I ensure that nothing interferes with my IT Equipment and hot-swap components?**

## Small with Flexible Mounting

- Easily access hot-swappable IT equipment and components.
- Ensure the ePDU, plugs and cables are completely out of the way of equipment with button mount on the rear and sides
- Unique patented variable mounting system can be mounted at any point on the ePDU and gives full flexibility

## Low profile chassis

- The ePDU doesn't protrude into the rack and is low profile even at the breakers
- 52 mm wide x 53 mm high and 58.7 mm at breakers on most models
- Hydraulic-Magnetic Circuit Breakers include accidental-tip protection by default



**How can I operate remotely with lights-out control, including remote re-booting, scheduled shut downs and restarts?**

## Equipment Switching

Switch individual outlets or group to switch equipment with multiple inputs, over multiple ePDUs for A and B feed, including sequencing and scheduled shut-down and restart.



**How do I avoid downtime if a rack PDU becomes faulty or I want to upgrade?**

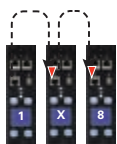
## No Downtime on Upgrades

ePDU G3 has Hot-Swap network components – update or change without changing the outlet state.



## Simplify load balancing

Colour coding and laser engraved chassis easily link breakers to outlet groups.



**How can I reduce the cost of networking for monitoring rack PDUs and reduce network traffic?**

## Daisy-Chain 8 ePDUs from one IP port and one IP address

This reduces the cost of networking, reduces IP addresses and data packets on the network. Daisy Chaining reduces network infrastructure costs by up to 87%.



# ePDU G3 Key features & technical specification

## Range extension 2017

Also available in **1U** **2U**

| Also available in       |                                                                                                                                 |                  |                | 1U                                                                                  | 2U                                                                                    |                                                                                       |                            |                          |                   |                          |            |            |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------|------------------|----------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------|--------------------------|-------------------|--------------------------|------------|------------|
|                         |                                                                                                                                 |                  |                |   |    |    |                            |                          |                   |                          |            |            |
| Basic features          | Built-in <b>IEC outlet eGrip retention</b> , retains all standard IEC plugs                                                     |                  |                | ✓                                                                                   | NA                                                                                    | ✓                                                                                     |                            |                          |                   |                          |            |            |
|                         | <b>Colour-coded outlet</b> and branch circuits for simple load balancing                                                        |                  |                | ✓                                                                                   | NA                                                                                    | ✓                                                                                     |                            |                          |                   |                          |            |            |
|                         | 60°C Operating temperature                                                                                                      |                  |                | ✓                                                                                   | ✓                                                                                     | ✓                                                                                     |                            |                          |                   |                          |            |            |
|                         | <b>Flexible mounting options:</b> Button mounting on rear & side + variable mounting system                                     |                  |                | ✓                                                                                   | ✓                                                                                     | ✓                                                                                     |                            |                          |                   |                          |            |            |
| Standard features       | <b>Hot-Swap Control module</b> with <b>Advanced LCD</b> + Optional <b>Temp/Humidity sensor</b>                                  |                  |                |                                                                                     | ✓                                                                                     | ✓                                                                                     |                            |                          |                   |                          |            |            |
|                         | ±1% <b>IEC Class 1 Billing Grade Accuracy</b> for V, W, A and kWh & Cisco <b>EnergyWise</b> compliant                           |                  |                |                                                                                     | ✓                                                                                     | ✓                                                                                     |                            |                          |                   |                          |            |            |
|                         | <b>Phase Metering</b> , <b>Circuit Breaker Current Metering</b> and <b>Input Metering</b>                                       |                  |                |                                                                                     | ✓                                                                                     | ✓                                                                                     |                            |                          |                   |                          |            |            |
|                         | <b>Daisy-Chain</b> up to 8 ePDUs, reduce network infrasturcture costs                                                           |                  |                |                                                                                     | ✓                                                                                     | ✓                                                                                     |                            |                          |                   |                          |            |            |
|                         | En <b>masse configuration</b> and advanced action on <b>virtual environnement</b> via <b>Eaton Intelligent Power Manager IT</b> |                  |                |                                                                                     | ✓                                                                                     | ✓                                                                                     |                            |                          |                   |                          |            |            |
| Advanced features       | Power chain monitoring & Real time Intelligence on your Data Center, via Eaton <b>Intelligent Power Manager Infrastructure</b>  |                  |                |                                                                                     | ✓                                                                                     | ✓                                                                                     |                            |                          |                   |                          |            |            |
|                         | HTTPS, SSL, Telnet, FTP, SNMP, SMTP, DHCP, LDAP, RADIUS, DHCP 66/67 for Mass Configuration                                      |                  |                |                                                                                     | ✓                                                                                     | ✓                                                                                     |                            |                          |                   |                          |            |            |
|                         | Circuit Breaker Status Monitoring                                                                                               |                  |                |                                                                                     |                                                                                       |                                                                                       |                            |                          |                   |                          |            |            |
|                         | Outlet and IT Equipment Metering across A and B feed                                                                            |                  |                |                                                                                     |                                                                                       |                                                                                       |                            |                          |                   |                          |            |            |
|                         | Level 3 PUE measurements                                                                                                        |                  |                |                                                                                     |                                                                                       |                                                                                       |                            |                          |                   |                          |            |            |
|                         | Turn off unused outlets to control commissioning                                                                                |                  |                |                                                                                     |                                                                                       |                                                                                       |                            |                          |                   |                          |            |            |
|                         | Outlet and IT Equipment <b>Switching/reboot/sequencing</b> across A and B feed                                                  |                  |                |                                                                                     |                                                                                       |                                                                                       |                            |                          |                   |                          |            |            |
|                         |                                                                                                                                 |                  |                |  |  |  |                            |                          |                   |                          |            |            |
| Input Type / Rating (A) |                                                                                                                                 | Outlet type: Qty | Breakers       | Nominal Power                                                                       | Basic p/n                                                                             | Dimensions L x W x D, mm                                                              | In-Line Metered & Dual p/n | Dimensions L x W x D, mm | Metered Input p/n | Dimensions L x W x D, mm |            |            |
| 1 Phase                 | C14 10A                                                                                                                         | 8xC13            |                | 2.3kW                                                                               | EBAB02                                                                                | 443x19"x53                                                                            |                            |                          | 1U                | EMIH02                   | 1Ux19"x203 |            |
|                         |                                                                                                                                 | 12xC13           |                | 2.3kW                                                                               | EBAB19                                                                                | 443x19"x53                                                                            |                            |                          |                   |                          |            |            |
|                         |                                                                                                                                 | 16xC13           |                | 2.3kW                                                                               | EBAB03                                                                                | 704x52x53                                                                             |                            |                          | EMIB03            | 1070x52x53               |            |            |
|                         | C20 16A                                                                                                                         | 8xFR: 1xC19      |                | 3.7kW                                                                               | 1U                                                                                    | EFLX8F*                                                                               | 1Ux19"x80                  |                          |                   |                          |            |            |
|                         |                                                                                                                                 | 8xGE: 1xC19      |                | 3.7kW                                                                               | 1U                                                                                    | EFLX8D*                                                                               | 1Ux19"x80                  |                          |                   |                          |            |            |
|                         |                                                                                                                                 | 6xUK: 1xC19      | 2 single pole  | 3.7kW                                                                               |                                                                                       | EFLX6B*                                                                               | 52x19"x120                 |                          |                   |                          |            |            |
|                         |                                                                                                                                 | 12xC13: 1xC19    | 2 single pole  | 3.7kW                                                                               | 1U                                                                                    | EFLX12I*                                                                              | 1Ux19"x80                  |                          |                   |                          |            |            |
|                         |                                                                                                                                 | 16xC13           |                | 3.7kW                                                                               |                                                                                       | EBAB21                                                                                | 704x52x53                  |                          |                   |                          |            |            |
|                         |                                                                                                                                 | 8xC13            |                | 3.7kW                                                                               |                                                                                       |                                                                                       |                            |                          | 1U                | EMIH28                   | 1Ux19"x203 |            |
|                         |                                                                                                                                 | 18xC13: 2xC19    |                | 3.7kW                                                                               |                                                                                       |                                                                                       |                            |                          | EMIB09            | 1070x52x53               |            |            |
|                         |                                                                                                                                 | 20xC13: 4xC19    |                | 3.7kW                                                                               |                                                                                       | EBAB22                                                                                | 1070x52x53                 |                          |                   | EMIB22                   | 1070x52x53 |            |
|                         | IEC60309 16A                                                                                                                    | 7xC13 : 1xC19    |                | 3.7kW                                                                               |                                                                                       |                                                                                       |                            |                          |                   |                          |            |            |
|                         |                                                                                                                                 | 18xC13 : 2xC19   |                | 3.7kW                                                                               |                                                                                       |                                                                                       |                            |                          | EMIB10            | 1070x52x53               |            |            |
|                         |                                                                                                                                 | 20xC13 : 4xC19   |                | 3.7kW                                                                               |                                                                                       | EBAB04                                                                                | 1070x52x53                 |                          |                   | EMIB04                   | 1070x52x53 |            |
|                         | 2 x IEC60309 16A                                                                                                                | 2xIEC60309       |                | 3.7kW                                                                               |                                                                                       |                                                                                       |                            | EILB13                   | 443x52x53         |                          |            |            |
|                         | IEC60309 32A                                                                                                                    | 12xC13 : 4xC19   | 2 single pole  | 7.4kW                                                                               |                                                                                       |                                                                                       |                            |                          |                   | 2U                       | EMIB06     | 1070x52x53 |
|                         |                                                                                                                                 | 16xC13           | 2 single pole  | 7.4kW                                                                               |                                                                                       |                                                                                       |                            |                          |                   | EMIH06                   | 2Ux19"x127 |            |
|                         |                                                                                                                                 | 20xC13 : 4xC19   | 2 single pole  | 7.4kW                                                                               |                                                                                       | EBAB05                                                                                | 1070x52x53                 |                          |                   | EMIB05                   | 1154x52x53 |            |
|                         |                                                                                                                                 | 28xC13 : 4xC19   | 2 single pole  | 7.4kW                                                                               |                                                                                       |                                                                                       |                            |                          |                   |                          |            |            |
|                         |                                                                                                                                 | 36xC13 : 6xC19   | 2 single pole  | 7.4kW                                                                               |                                                                                       | EBAB08                                                                                | 1604x52x53                 |                          |                   | EMIB08                   | 1604x52x53 |            |
|                         |                                                                                                                                 | IEC60309         |                | 7.4kW                                                                               |                                                                                       |                                                                                       |                            |                          | EILB14            | 443x52x53                |            |            |
|                         | 2 x IEC60309 32A                                                                                                                | 2xIEC60309       |                | 7.4kW                                                                               |                                                                                       |                                                                                       |                            | EILB25                   | 443x65x52         |                          |            |            |
|                         | 3 Phase                                                                                                                         | IEC60309 16A     | 21xC13 : 3xC19 |                                                                                     | 11kW                                                                                  |                                                                                       | EBAB20                     | 1070x52x53               |                   |                          | EMIB20     | 1070x52x53 |
| 36xC13 : 6xC19          |                                                                                                                                 |                  |                | 11kW                                                                                |                                                                                       | EBAB00                                                                                | 1604x52x53                 |                          |                   | EMIB00                   | 1829x52x53 |            |
| IEC60309 32A            |                                                                                                                                 | 6xC19            | 6 single pole  | 22kW                                                                                | 1U                                                                                    | EBAB11                                                                                | 704x52x53                  |                          |                   | EMIB11                   | 1070x52x53 |            |
|                         |                                                                                                                                 | 3xC13 : 6xC19    | 6 single pole  | 22kW                                                                                |                                                                                       | EBAB01                                                                                | 704x52x53                  |                          |                   |                          |            |            |
|                         |                                                                                                                                 | 6xC13 : 12xC19   | 6 single pole  | 22kW                                                                                |                                                                                       |                                                                                       |                            |                          |                   | EMIB07                   | 1604x52x53 |            |
|                         |                                                                                                                                 | 18xC13 : 6xC19   | 6 single pole  | 22kW                                                                                |                                                                                       |                                                                                       |                            |                          |                   |                          |            |            |
|                         |                                                                                                                                 | 12xC13 : 12xC19  | 6 single pole  | 22kW                                                                                |                                                                                       |                                                                                       |                            |                          |                   | EMIB12                   | 1604x52x53 |            |
|                         |                                                                                                                                 | 24xC13 : 6xC19   | 6 single pole  | 22kW                                                                                |                                                                                       | EBAB32                                                                                | 1154x52x53                 |                          |                   | EMIB32                   | 1604x52x53 |            |
|                         |                                                                                                                                 | 30xC13 : 12xC19  | 6 single pole  | 22kW                                                                                |                                                                                       |                                                                                       |                            |                          |                   | EMIB34                   | 1829x52x65 |            |
|                         |                                                                                                                                 | IEC60309         |                | 22kW                                                                                |                                                                                       |                                                                                       |                            |                          | EILB15            | 443x52x53                |            |            |
| 2 x IEC60309 33A        |                                                                                                                                 | 2xIEC60309       |                | 22kW                                                                                |                                                                                       |                                                                                       |                            | EILB26                   | 443x65x52         |                          |            |            |

\* Basic G3 features not applicable for the FlexPDU range  
All standard ePDUs come with 3m cable

Need Something Special? We make your custom ePDUs, please contact your local reseller.  
Standard models above are stocked in Europe.

# ePDU G3 Accessories

| Accessories                   | Part Number             | Benefits                                                                                  |
|-------------------------------|-------------------------|-------------------------------------------------------------------------------------------|
| Sensor                        | EMP001                  | Get live measurement on temperature, humidity, set threshold and be notified in real time |
| Adaptor Fast Ethernet Gigabit | GBCONV                  | Quick and easy way to upgrade your 10/100 Mb network interface G3 ePDU to Gigabit speed   |
| ePDU to UPS cables            | CBL0UT32<br>CBL2OUT32   | Connect an ePDU 32A input to the hardwire output UPS                                      |
| Water leak detector*          | WLD012                  | Detect floods and water leaks                                                             |
| Door contact sensor*          | DCS001                  | Monitor your rack access                                                                  |
| Intelligent Power Manager     | IPM Basic, Silver, Gold | Monitor and managed multiple ePDUs<br>Trigger actions from ePDUs & sensor events          |

\*Door contact sensor and water leak detector can be connected through EMP001 dry contacts



GBCONV



EMP001



DCS001\*



WLD012\*



CBL2OUT32

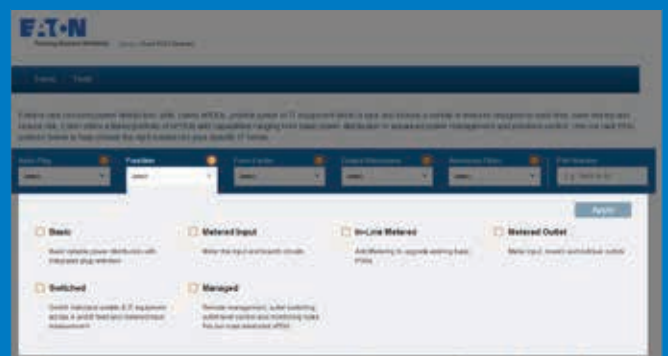


CBL0UT32

All ePDU G3 come with a 2 years warranty as standard.

Warranty extension up to 3 years (Warranty+) and 5 years (Warranty 5) available

## New Rack PDU Selector



[rackpduselector.eaton.com/gb](http://rackpduselector.eaton.com/gb)

From, input plugs to form factors and measurement features, Eaton's Rack PDU selector tool can help you find the right solution for your specific IT needs.



Eaton ePDU Basic G3 has a compliant environmental declaration

# Power management for IT equipment



## Intelligent Power Software

Eaton Intelligent Power Software integrates seamlessly with your power hardware **to provide unparalleled business continuity capabilities**. It manages all network connected power infrastructure, triggers virtual machine migration plans and shuts down non-essential devices in order to keep your business running during power events. Seamless integration with leading virtualisation environments enables simplified management from a single pane of glass.

Intelligent Power software suite consists in 3 parts:

- **UPS Companion:** provides safe system shutdown for SOHO, small business & Residential users looking for an easy way to enhance the protection capabilities of their Eaton UPS.
  - **Intelligent Power Protector (IPP):** helps you avoid data loss by gracefully shutting down computers and servers powered by an Eaton UPS during an extended power outage. Can be remotely managed, configured and updated with Eaton's Intelligent Power Manager.
  - **Intelligent Power Manager (IPM):** monitor and manage multiple UPS and ePDU devices across your network from a single interface — any device with a Web browser or virtual machine manager software dashboard.
- Instantly access critical information, such as UPS battery condition, load levels and battery runtime
  - Remotely and gracefully shut down servers and select storage devices during a power event
  - Prioritise and shed non-critical loads to extend runtime during an extended power outage
  - Integration with platforms like vCenter and XenCenter™ helps datacentre managers reduce infrastructure and operating costs while increasing uptime, productivity and operational responsiveness
  - View critical power information on devices including UPSs, ePDUs and environmental sensors from the vCenter or XenCenter dashboard
  - Trigger vMotion, XenMotion™ and other migration applications to transparently move virtual machines to an available server on the network

|                                             | Basic [Free]<br>Up to 10<br>Power Devices | Silver<br>Up to 100<br>Power Devices | Gold<br>More than 100<br>Power Devices | Benefits                                                                                |
|---------------------------------------------|-------------------------------------------|--------------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------|
| <b>Standard Power Management Features</b>   |                                           |                                      |                                        |                                                                                         |
| Protected Servers (IPP) and Virtual Servers | •                                         | •                                    | •                                      | Gracefully shutdown servers                                                             |
| Storage Shutdown Module                     | •                                         | •                                    | •                                      | Remotely shutdown select storage devices                                                |
| Generic Drivers and Third Party Devices     | •                                         | •                                    | •                                      | Monitor 3rd party devices via a generic SNMP driver                                     |
| Configuration Policy                        | •                                         | •                                    | •                                      | Create power & environmental event business continuity policies for groups of devices   |
| Control ePDU outlets                        | •                                         | •                                    | •                                      | Enable policy based control of ePDU outlets                                             |
| Advanced Event Action with Standard Events  | •                                         | •                                    | •                                      | Use standard power events in configuration policies                                     |
| Advanced Event Action with Custom Events    | -                                         | •                                    | •                                      | Use custom user defined events in configuration policies                                |
| Generic SSH action                          | -                                         | •                                    | •                                      | Easily configure custom actions on any SSH enabled device                               |
| 3rd party power device support              | -                                         | -                                    | •                                      | Create business continuity policies on events generated by supported 3rd party devices. |

|                                                                                                                                                                                                                                         | Basic [Free]<br>Up to 10<br>Power Devices | Silver<br>Up to 100<br>Power Devices | Gold<br>More than 100<br>Power Devices | Benefits                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Virtual Infrastructure Features</b>                                                                                                                                                                                                  |                                           |                                      |                                        |                                                                                                                                                                                                                                                                                                                                                                                        |
| Plugin for VMware vCenter                                                                                                                                                                                                               | •                                         | •                                    | •                                      | Integrate power management into your vCenter environment                                                                                                                                                                                                                                                                                                                               |
| Plugin for Citrix XenCenter                                                                                                                                                                                                             | •                                         | •                                    | •                                      | Integrate power management into your XenCenter environment                                                                                                                                                                                                                                                                                                                             |
| Basic Power Actions:<br>• Shutdown Storage Devices<br>• Shutdown Virtual Hosts<br>• Shutdown Virtual Machines<br>• Enter/Exit Maintenance Mode                                                                                          | •*                                        | •*                                   | •                                      | Perform basic graceful shutdown actions in business continuity policies by shutting down virtual machines, virtual hosts, shutting down select storage devices and/or by entering/exiting maintenance mode                                                                                                                                                                             |
| Advanced Power Actions:<br>For VM/Volume:<br>• Load shedding<br>• Shutdown Targeted Virtual Machines<br>• Migrate Virtual Machines to Targeted Hosts<br><br>For Hosts:<br>• Shutdown VMware vApp<br>• Automate VMware SRM Recovery Plan | -                                         | •*                                   | •                                      | Reduce power load by integrating policy driven VM load shedding into your business continuity policies<br>Target a specific VM or groups of VMs for shutdown and/or migration in load shedding policies<br>Target VMware vApps for shutdown in load shedding policies<br>Automatically trigger the execution of your VMware SRM Recovery Plan when runtime hits a predefined threshold |
| Virtual IT Infrastructure Level:<br>• Fully virtualized cluster shutdown                                                                                                                                                                | -                                         | •                                    | •                                      | Enable 100% safe shutdown and restore of VMs and host servers in high availability environments                                                                                                                                                                                                                                                                                        |

|                                         | Basic [Free]<br>Up to 10<br>Power Devices | Silver<br>Up to 100<br>Power Devices | Gold<br>More than 100<br>Power Devices | Benefits                                                                            |
|-----------------------------------------|-------------------------------------------|--------------------------------------|----------------------------------------|-------------------------------------------------------------------------------------|
| <b>3rd Party IT Solution Connectors</b> |                                           |                                      |                                        |                                                                                     |
| Cisco UCS Manager                       | •                                         | •                                    | •                                      | Dynamically power cap Cisco UCS devices in your business continuity policies        |
| NetApp Storage                          | •                                         | •                                    | •                                      | Trigger the shutdown of NetApp storage devices in your business continuity policies |
| CA Nimsoft                              | •                                         | •                                    | •                                      | Open IPM from directly within Nimsoft                                               |

|                                                                  | Basic [Free]<br>Up to 10<br>Power Devices | Silver<br>Up to 100<br>Power Devices | Gold<br>More than 100<br>Power Devices | Benefits                                                                   |
|------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------------------------------------|----------------------------------------------------------------------------|
| <b>Management Packs</b>                                          |                                           |                                      |                                        |                                                                            |
| Eaton IPM Management Pack for VMware vRealize Operations Manager | -                                         | •                                    | •                                      | Monitor and analyze power information directly from within VMware vRealize |

\* Not included for Eaton Essential UPS Models (9E and 93E) and all non Eaton UPS Models. Competitor UPS customers need to purchase Gold License to enable Basic and Advanced virtualization features.

## Eaton power management solutions for converged and hyper-converged infrastructures

Eaton collaborates with the leaders in converged and hyper-converged infrastructures and provide lab-validated power management solutions to ensure high uptime of IT systems and data integrity in case of power and environmental issues.

This results in increased efficiencies, lower costs and improved continuity and resiliency of customers' entire business.



|                                                                                          | VMware                            | Citrix | Microsoft | Red Hat |
|------------------------------------------------------------------------------------------|-----------------------------------|--------|-----------|---------|
| Create flexible business continuity policies triggered by power and environmental events | ★                                 | ★      | ★         | ★       |
| Shutdown virtual machines                                                                | ★                                 | ★      | ★         | ★       |
| Trigger live migration                                                                   | ★                                 | ★      | ★         |         |
| Manage virtual machines and power through a single pane of glass                         | ★                                 | ★      |           |         |
| Real-time notification of power outages                                                  | ★                                 | ★      | ★         |         |
| Virtual desktop infrastructure integration                                               | ★                                 | ★      |           |         |
| Shutdown a host in a cluster without installing software on each host                    | ★                                 | ★      |           |         |
| Virtual appliance                                                                        | ★                                 | *      | *         | *       |
| Disaster avoidance, recovery site backup                                                 | ★                                 |        |           |         |
| Cost                                                                                     | Free up to 10 nodes (UPS or ePDU) |        |           |         |

\* OVF compliant; fully tested on VMware



# Operating Systems Compatibility list

|                                                                                     |                               |                                                              | UPS companion | IPP Unix | IPP        | IPM        |
|-------------------------------------------------------------------------------------|-------------------------------|--------------------------------------------------------------|---------------|----------|------------|------------|
|                                                                                     |                               |                                                              | 1.04          | 1.40     | 1.53       | 1.55       |
|     | <b>Windows Server 2016</b>    | Standard, Enterprise, Essential                              | Not tested    | N/A      | ✓          | ✓          |
|                                                                                     | <b>Windows Server 2012 R2</b> | Standard, Enterprise, Essential                              | ✓             | N/A      | ✓          | ✓          |
|                                                                                     | <b>Windows Server 2012</b>    | Standard, Enterprise, Essential                              | ✓             | N/A      | ✓          | ✓          |
|                                                                                     | <b>Windows Server 2011</b>    | Small Business Server and Home Server                        | ✓             | N/A      | ✓          | ✓          |
|                                                                                     | <b>Windows Server 2008</b>    | R1 and R2 (Standard, Enterprise, Datacenter)                 | ✓             | N/A      | ✓          | ✓          |
|                                                                                     |                               | Small Business Server                                        | ✓             | N/A      | ✓          | ✓          |
|                                                                                     | <b>Windows Server 2003</b>    | R2 (Standard, Enterprise, Datacenter)                        | ✓             | N/A      | ✓          | ✓          |
|                                                                                     |                               | Small Business Server R2                                     | ✓             | N/A      | ✓          | ✓          |
|                                                                                     | <b>Windows 10</b>             | Standard, Pro and Enterprise                                 | ✓             | N/A      | ✓          | ✓          |
|                                                                                     | <b>Windows 8.1</b>            | Standard, Pro and Enterprise                                 | ✓             | N/A      | ✓          | ✓          |
|                                                                                     | <b>Windows 8</b>              | Standard, Pro and Enterprise                                 | ✓             | N/A      | ✓          | ✓          |
|                                                                                     | <b>Windows 7</b>              | Enterprise, Ultimate, Professional, Home Premium, Home Basic | ✓             | N/A      | ✓          | ✓          |
|   | <b>RedHat</b>                 | RHEL 7.3, 7.2                                                | N/A           | N/A      | ✓          | N/A        |
|                                                                                     |                               | RHEL 6.8, 6.7                                                | N/A           | N/A      | ✓          | N/A        |
|                                                                                     |                               | RHEL 5.11                                                    | N/A           | N/A      | ✓          | N/A        |
|                                                                                     |                               | Fedora Core 25                                               | N/A           | N/A      | ✓          | N/A        |
|                                                                                     | <b>SUSE</b>                   | SLES 12 SP2, SP1                                             | N/A           | N/A      | ✓          | N/A        |
|                                                                                     |                               | SLES 11 SP4                                                  | N/A           | N/A      | ✓          | N/A        |
|                                                                                     |                               | SLES 10 SP4                                                  | N/A           | N/A      | Not tested | N/A        |
|                                                                                     |                               | OpenSuse 13.2, 13.1 and 12.3                                 | N/A           | N/A      | ✓          | N/A        |
|                                                                                     | <b>Debian GNU Linux</b>       | Debian 8.7                                                   | N/A           | N/A      | ✓          | N/A        |
|                                                                                     | <b>Ubuntu</b>                 | 16.10                                                        | N/A           | N/A      | ✓          | N/A        |
|                                                                                     |                               | 16.04 LTS                                                    | N/A           | N/A      | ✓          | N/A        |
|  | <b>Oracle (Sun)</b>           | Solaris 10 and 11 for Sparc                                  | N/A           | ✓        | N/A        | N/A        |
|                                                                                     |                               | OpenSolaris 10 for Intel (x86 and x86_64)                    | N/A           | ✓        | N/A        | N/A        |
|                                                                                     | <b>HP</b>                     | HP-UX 11i v2 (11.21) for PA-RISC                             | N/A           | ✓        | N/A        | N/A        |
|                                                                                     |                               | HP-UX 11i v3 (11.31) for PA-RISC                             | N/A           | ✓        | N/A        | N/A        |
|                                                                                     |                               | HP-UX 11i v3 (11.31) for Itanium                             | N/A           | N/A      | ✓          | N/A        |
|                                                                                     | <b>IBM</b>                    | AIX 6.1 and 7.1 for PowerPC                                  | N/A           | ✓        | N/A        | N/A        |
|   | <b>VMWare</b>                 | ESXi 6.5, 6.0 (u2), 5.5 (u3)                                 | N/A           | N/A      | ✓          | N/A        |
|                                                                                     | <b>HyperV</b>                 | Server Core 2016                                             | N/A           | N/A      | ✓          | Not tested |
|                                                                                     |                               | Server Core 2012 R2, 2012                                    | N/A           | N/A      | ✓          | Not tested |
|                                                                                     |                               | Server Core 2008 R2                                          | N/A           | N/A      | ✓          | Not tested |
|                                                                                     | <b>Citrix</b>                 | XenServer 6.5                                                | N/A           | N/A      | Not tested | N/A        |
|                                                                                     |                               | XenServer 6.2                                                | N/A           | N/A      | Not tested | N/A        |
|                                                                                     | <b>Open Source XEN</b>        | Xen 2.6 over RHEL 5                                          | N/A           | N/A      | Not tested | N/A        |
|                                                                                     |                               | Xen 3.2 on Debian 5                                          | N/A           | N/A      | Not tested | N/A        |
|                                                                                     | <b>KVM</b>                    | KVM 0.12.1.2 on RHEL 6 and Debian 5                          | N/A           | N/A      | Not tested | N/A        |

✓ Valide N/A Not tested

# Connectivity Options

## Web/SNMP cards

are complete UPS monitoring, control and shutdown solutions in a networked IT environment. In case of alert the Web/SNMP card can notify users and administrators through e-mail and SNMP traps. In case of a prolonged power failure the protected computer systems can be shut down in a graceful manner with Intelligent Power Protector software.

## Network Card-MS

Web/SNMP adapter (P/N Network-MS) The Eaton Network Card-MS supports SNMP v1 and v3; IP v4 and v6; http, https and SMTP Works with: 5130, 5PX, 9130, EX, 5SC, 5P, 9PX, 9SX, 93E, 93PS and 93PM

## Network and MODBUS Card-MS

(P/N MODBUS-MS) offers ModBus RTU in addition to Web and SNMP for 5PX, 9130, EX, 5SC, 5P, 9PX, 9SX, 93E, 93PS and 93PM

**Power Xpert Gateway X-slot UPS card - PXGX UPS card** (P/N 103007974-5591) - offers ModBus TCP, BACnet IP as well as Web and SNMP interfaces for 9155, 9355, PowerXpert 9395P and BladeUPS.

## The Power Xpert Gateway Mini-slot Card

(PXGMS card) is the all-in-one communication solution for 93PM and 93PS UPS. Its web interface delivers a comprehensive view of UPS data even to the level of individual power modules. In addition to web UI function it also communicates with management systems through SNMP v1/v3, Modbus TCP and RTU as well as BACnet IP.

## Environmental Monitoring Probe – EMP

(P/N EMP001) - adds temperature, humidity and two contact closure monitoring capability to Web/SNMP cards and ePDUs. It is well suited for monitoring rack temperature and door status, as well as battery temperature. Operating system shutdown can be triggered if user defined thresholds are exceeded or contact closure status changes. EMP works with Network-MS, Network and Modbus – MS, PXGMS and PXGX cards as well as network enabled ePDUs.



Network Card-MS



Modbus MS card



PXGX UPS



PXGMS UPS



Environmental Monitoring Probe



BD relay card (for Eaton 9130 UPS)



X-Slot relay card

# Connectivity Options

## Relay/AS400 cards

are an easy connection to IBM AS/400 series computers as well as industrial and building management systems. P/N 1018460 for Eaton 9155, 9355, PowerXpert 9395P, BladeUPS. P/N 1014018 for Eaton 9130. C/N RELAY-MS for 5130, 5PX, EX, 5SC, 5P, 9PX, 9SX, 93E and 93PM



Relay MS



Industrial Relay Interface Card Mini Slot

## Industrial Relay Interface Card Mini Slot

Industrial relay card MiniSlot is the recommended choice when connecting MiniSlot UPSs to automation and facility management systems. Its 5 output relays are rated to 250 Vac/5A. Each relay has its own common connection and Normally Open/Normally Closed (NO/NC). The card also has one digital input.



X-Slot Modbus card

## X-Slot Modbus card

connects the UPS to industrial and building management systems using ModBus/JBUS RTU protocol. P/N 103005425-5591 for Eaton 9155, 9355, PowerXpert 9395P, BladeUPS.



ViewUPS-X

## ViewUPS-X remote display

is an LCD panel that lets users view the status of the UPS from as far as 100 m. ViewUPS-X has also four status LEDs and an alarm sound. The display is bundled with a dedicated X-Slot card that also powers the display through the communication cable. In addition to the remote display connection the card has also a SELV isolated relay port for connection to monitoring systems and AS/400 computers. P/N 1027020 for 9155, 9355, PowerXpert 9395P and BladeUPS.

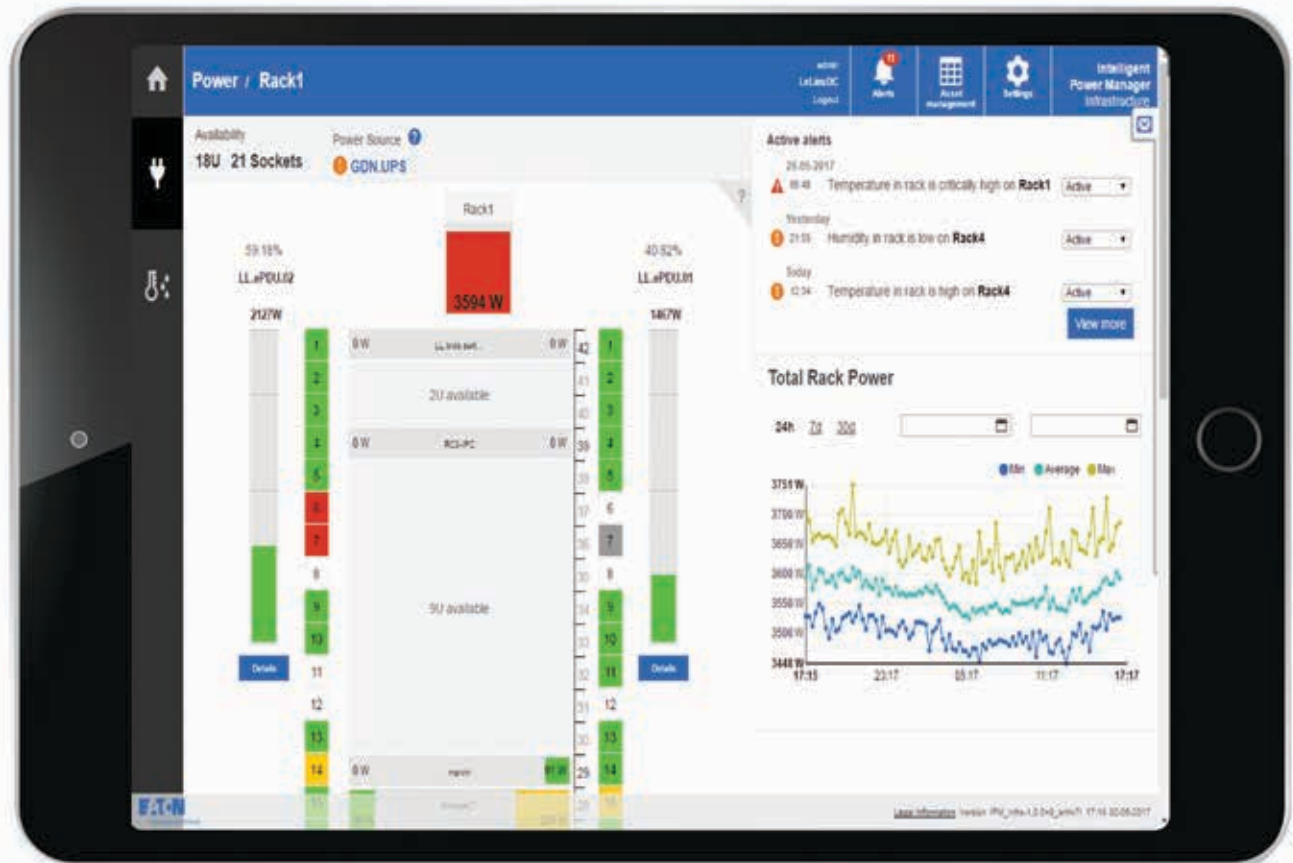
# IPM Infrastructure

**Environmental monitoring**  
including temperature and humidity  
with more functionality to follow

**Simple IT asset management**  
including business prioritization  
capabilities

**Power chain monitoring** including  
power kW, energy consumption  
(kWh), phase and circuit balancing

**Trending analysis** via an intuitive  
web interface with auditable logs  
and email alerts



## Understanding your infrastructure

IPM Infrastructure gives you a unique insight into what's happening in your data center.

Its power chain monitoring capabilities keep you informed about power usage (kW) and energy consumption (kWh), in addition to phase and circuit balancing. Environmental monitoring covers temperature and humidity while IT asset management helps you manage business prioritization.

All the information gathered from these inputs is reported via an intuitive web interface, with email alerts.

## Simple and centralized

IPM Infrastructure has been designed from the start to be easy to use. As a powerful monitoring solution, it has a number of valuable features which make comprehensive data center monitoring intuitive, simple and centralized.

Intuitive, drill-down interface Easily understand physical infrastructure constraints within the context of the IT infrastructure.

### Centralized management appliance

The Intelligent Power Controller acts as a local, centralized repository. It is accessible via the network through a powerful, intuitive and responsive HTML5 / AngularJS web interface or SSH.

### Simplified capacity management

See and understand the physical infrastructure's available capacity at a glance. Space, power and environmental metrics provide essential information for ensuring business continuity and maximizing IT device operating lifetimes.

# Intelligent Power Manager Infrastructure

## Real-time intelligence

By providing you with real-time information, IPM Infrastructure enables quick and effective responses to events, to reduce MTTR (Mean Time to Repair).

### Real-time monitoring and graphical trending analysis

Real-time device monitoring provides instantaneous visibility of the state of your physical infrastructure and its constraints.

### Alert notification

Email, and email to SMS gateway alerts, ensure you are informed of critical alerts in real time.

### Trends and evolution

Key power and environmental data is conveniently stored, and converted into easy to use in-application trend indicators and graphs. This means you can better understand how your data center capacity is evolving over time.

### Load balancing

By automatically tracking power draw from the UPS through the rack power distribution, IPM Infrastructure helps you to ensure the load is equally distributed across all phases at all times.

## Diversity, interoperability, support

You can rely on IPM Infrastructure to support whatever devices you currently operate.

### Multi-vendor device support

IPM Infrastructure supports Eaton power devices out of the box, but is based on the 42ITy™ open source project, enabling us to provide vendor-neutral data acquisition via the NUT open source engine ([www.networkupstools.org](http://www.networkupstools.org)). Multi-vendor device support is provided via the SNMP protocol.

### Extreme support

If we don't support your SNMP power device out of the box, we'll build a new driver configuration within 72 business hours of receiving your complete device profile information.

### Integration

Open RESTful API facilitates third-party application integration.

## Application highlights



### Data Center Dashboard:

Understand your data center. All the key KPIs you need for peace of mind.

- Total DC energy consumption
- Data Center Temperature
- Humidité du datacenter
- Data Center Humidity
- Power availability KPI
- Trends on all KPIs
- Alert summary



### Data Center Power Chain view:

Master your critical power consumption and extrapolate future usage trends.

- Simplified power chain
- UPS overview including phase detail
- Total power consumption per rack
- Total critical power consumption
- Historical power trend graph
- Alert summary



### Rack level :

Where IT and Power meet. Understand the intersection of power and physical capacity at a glance.

- Available capacity – outlet and U space
- Installed devices
- Total rack power consumption
- Power consumption per rack PDU
- Feed balance
- Outlet identification per device
- Historical power trend graph
- Alert summary



### Simplified asset management:

Manage the lifecycle of your IT devices.

- Installed devices
- Contact details per device
- Business priority per device
- Simple alert notification per device
- Warranty details per device with alert capability
- Import / Export to .csv



# Intelligent Power Manager Infrastructure

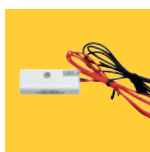
## TECHNICAL SPECIFICATIONS

### Intelligent Power Controller 3000

| Processing and storage characteristics       |                                                                                                                                                                                                                                                    |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU                                          | 1GHz Dual Core ARM processor                                                                                                                                                                                                                       |
| Boot Flash storage                           | 128 MB                                                                                                                                                                                                                                             |
| Mass storage                                 | 4 GB SD Card                                                                                                                                                                                                                                       |
| RAM                                          | 1 GB                                                                                                                                                                                                                                               |
| Power connections                            |                                                                                                                                                                                                                                                    |
| Input                                        | 2 x IEC C14 redundant power connectors                                                                                                                                                                                                             |
| Cables                                       | 2 x 2m C13 – C14 power cables included                                                                                                                                                                                                             |
| Communication connectors                     |                                                                                                                                                                                                                                                    |
| Ethernet ports                               | 2 x front facing RJ45 10/100/1000 Ethernet for redundant monitoring network connectivity<br>1 x rear facing RJ45 10/100/1000 Ethernet for rack PDU data aggregation                                                                                |
| USB ports                                    | 4 x USB ports, including 1 x powered 5V/2A                                                                                                                                                                                                         |
| RJ45 Serial ports                            | 4 x RS232 T&H ports with EMP001 auto configuration capability<br>8 x RS232 serial ports for future monitoring probe aggregation or device monitoring<br>4 x RS232 / RS485 software selectable serial ports for select 3rd party Modbus T&H sensors |
| Service console port                         | 1 x DB9 serial service port                                                                                                                                                                                                                        |
| Dry contact                                  | 10 x dry contact terminals for dry contact sensors                                                                                                                                                                                                 |
| Relays                                       | 5 x output relays, 12V                                                                                                                                                                                                                             |
| Indicators / Display                         |                                                                                                                                                                                                                                                    |
| LED indicators                               | 2 x Power Feed Status LEDs, 1 x Network Status LED,<br>1 x Device Power Status LED, 1 x Service Status LED, 1 x Heart Beat LED                                                                                                                     |
| Display                                      | 1 x Monochrome LCD                                                                                                                                                                                                                                 |
| Dimensions H x W x D / Weight                |                                                                                                                                                                                                                                                    |
| IPC3000 dimensions                           | 42 x 300 x 211 mm                                                                                                                                                                                                                                  |
| IPC3000 weight                               | 2.2 kg / 4 lbs                                                                                                                                                                                                                                     |
| Housing                                      | Rack mount; 1U, ½ width                                                                                                                                                                                                                            |
| Operating Conditions, standard and approvals |                                                                                                                                                                                                                                                    |
| Operating temperature                        | Maximum 45° C continuous, for indoor operation only                                                                                                                                                                                                |
| Operating humidity                           | Maximum 90%                                                                                                                                                                                                                                        |
| Noise level                                  | Fanless                                                                                                                                                                                                                                            |
| Safety Approvals                             | CE ; cTUVus                                                                                                                                                                                                                                        |
| Integration                                  |                                                                                                                                                                                                                                                    |
| Open REST API                                | HTTP/HTTPS RESTful API for integration with 3rd party applications                                                                                                                                                                                 |
| Protocols                                    |                                                                                                                                                                                                                                                    |
| Supported network protocols                  | TCP/IP, HTTP, HTTPS, SNMPv1, SNMPv2c, DHCP, DNS, SSH                                                                                                                                                                                               |
| Graphical User Interface                     |                                                                                                                                                                                                                                                    |
| Browser support                              | Desktop: Most recent versions of modern web browsers including MS Internet Explorer, Chrome, Firefox, and Safari<br>Mobile: Most recent versions of modern mobile web browsers                                                                     |
| Technology                                   | Fully responsive, HTML 5 & AngularJS client application                                                                                                                                                                                            |
| Customer Service and Support                 |                                                                                                                                                                                                                                                    |
| Hardware warranty                            | 2 Year                                                                                                                                                                                                                                             |
| Software                                     | Free 1 Year IPM Infrastructure Software Subscription included                                                                                                                                                                                      |

### Accessories

| Product Code | Description                     | Status    | Image                                                                                 |
|--------------|---------------------------------|-----------|---------------------------------------------------------------------------------------|
| EMP001       | Temperature and Humidity Sensor | Available |  |
| DCS001       | Door contact sensor             | Available |  |
| WLD012       | Water leak detector             | Available |  |
| VIB001       | Vibration detector              | Available |  |
| SMK001       | Smoke detector                  | Available |  |
| PIR001       | PIR motion detector             | Available |  |



## Why service matters

Eaton offers a comprehensive range of different service products, which help install, commission and maintain power devices during their life cycle, while meeting your financial constraints and technical requirements.



### **UPS placement**

We help you select the best operating environment for your UPS.

### **Installation**

Our service technicians will help with installing and programming your UPS system. We also provide the necessary connectivity to your own monitoring system or Eaton's remote monitoring.

### **Commissioning/User training**

Before your system is commissioned, we thoroughly check UPS connectivity and ensure the new UPS will reliably protect your IT or production system against all types of electrical disturbances. We start up the UPS system and provide user training.

### **Maintenance. Service contracts.**

An effective maintenance strategy for power infrastructure products can be one of the most cost-effective measures you can take to detect a wide range of ailments before they become serious issues, ensure the ongoing health of power devices, significantly reduce the probability of a load loss event and thus ensure continuity of your entire business. It includes, among other things, 24/7 telephone support, regular preventive service according to factory specifications, battery testing, reporting, recommendations as well as rapid-response repairs as needed and optional remote monitoring of UPS.

## Service contracts

At Eaton, we like to keep things simple. So, we have compiled three distinct service plans to match different types of maintenance needs and budgets -

### Safe, Advance and Power.

Whichever plan you choose, you can rest assured it will deliver power security and reliability that will keep your business running.

| Safe                                                                                                                                                                | Advance                                                                                                                                                                                                                                                          | Power                                                                                                                                                                                                                                                                                          |                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
|                                                                                                                                                                     |                                                                                                                                                                                                                                                                  | ✓                                                                                                                                                                                                                                                                                              | Availability    |
|                                                                                                                                                                     |                                                                                                                                                                                                                                                                  | ✓                                                                                                                                                                                                                                                                                              | Efficiency      |
|                                                                                                                                                                     | ✓                                                                                                                                                                                                                                                                | ✓                                                                                                                                                                                                                                                                                              | Performance     |
| ✓                                                                                                                                                                   | ✓                                                                                                                                                                                                                                                                | ✓                                                                                                                                                                                                                                                                                              | Value for money |
| ✓                                                                                                                                                                   | ✓                                                                                                                                                                                                                                                                | ✓                                                                                                                                                                                                                                                                                              | Reliability     |
| <b>Make sure you keep going</b><br>This maintenance contract includes all the essential services you need to keep your UPS system and your business running safely. | <b>Gives you more financial benefits</b><br>Advance contract gives you the same level of service as Safe, but with additional benefits. Because travel and labour are included in the package price, you can draw up your annual service budget more accurately. | <b>Allows you almost to forget about power</b><br>The flagship of Eaton service packages gives you complete peace of mind regarding power security. If you opt for a Power contract you will have the expert Eaton service team at your disposal at any time of the day every day of the year. |                 |

## What is included:

| Standard features                                                                | Safe | Advance | Power | Additional Options                                              | Safe | Advance | Power |
|----------------------------------------------------------------------------------|------|---------|-------|-----------------------------------------------------------------|------|---------|-------|
| One preventive maintenance visit per year (during normal working hours)          | ✓    | ✓       | ✓     | Additional preventive maintenance visits                        | ✓    | ✓       | ✓     |
| Technical Updates                                                                | ✓    | ✓       | ✓     | Remote monitoring                                               | ✓    | ✓       | ✓     |
| Hotline                                                                          | ✓    | ✓       | ✓     | Batteries replacement included                                  | ✓    | ✓       | ✓     |
| Repair Service (within working hours)                                            | ✓    | ✓       |       | Discount on Batteries                                           | ✓    | ✓       | ✓     |
| Repair Service 24/7                                                              |      |         | ✓     | Emergency Service response 2 hours 24/7                         | ✓    | ✓       | ✓     |
| Discount on Labour                                                               | ✓    |         |       | Emergency Service response 4 hours 24/7                         | ✓    | ✓       | ✓     |
| Travel & Labour included                                                         |      | ✓       | ✓     | Emergency Service response 6 hours 24/7                         | ✓    | ✓       | ✓     |
| Discount on Spares                                                               | ✓    | ✓       |       | Emergency Service response 8 hours 24/7                         | ✓    | ✓       |       |
| Spare Parts included (excludes batteries except under warranty)                  |      |         | ✓     | Spare Parts included (excludes batteries except under warranty) | ✓    | ✓       |       |
| Emergency Service response, travel to site within 8 hours (Normal working hours) | ✓    | ✓       |       | Emergency Service response 2 hours (within working hours)       | ✓    | ✓       |       |
| Emergency Service response, travel to site within 8 hours 24/7                   |      |         | ✓     | Emergency Service response 4 hours (within working hours)       | ✓    | ✓       |       |
|                                                                                  |      |         |       | Emergency Service response 6 hours (within working hours)       | ✓    | ✓       |       |

# Remote monitoring with Eaton SmartQmmunicator



**SmartQmmunicator** is a complementary remote monitoring service, supervised by trained Eaton product technicians overseeing the performance of customers' Eaton UPS and battery systems.

Eaton technicians can identify problems before they became load loss events, saving customers money while increasing power reliability and reducing downtime.

Available in either wireless and Ethernet models, the SmartQmmunicator is equipped with firewall-secure technology, enabling a secure and encrypted remote connection.

In the event of incorrect UPS performance, the SmartQmmunicator notifies customer's IT-department and an Eaton service technician, who will then take action according to customer's service level agreement.

## The SmartQmmunicator Network



# Remote monitoring with Eaton SmartQmmunicator

## Move to a 24/7 Remote Service

Thanks to SmartQmmunicator, we can offer a new service plan which is both faster and greener: GreenCare.



This plan is designed to provide the highest level of service to cover your needs and offers you the full peace of mind.

### GreenCare

GreenCare includes:

- 24/7 System Monitoring by an Eaton specialists
- 24/7 Repair service by an Eaton specialists
- 100% spare parts and labour coverage
- Intervention within 8 hours or less in case of emergency
- Monthly Eaton Health Index Report of the System
- 2 or more physical maintenances in 5 years

\*Availability of the GreenCare is country-dependent. Please contact your Eaton service office to check the local agreements.







## Extended Warranties for new UPS/ePDU

## Services for running UPS/ePDU

### Warranty+

This service extends the standard warranty of your Eaton UPS/ePDU for **3 years**. (Standard warranty is 12 or 24 months depending on the model):

- During this period, the product is covered by a **standard exchange**
- Shipping costs covered by Eaton
- **Professional helpline**
- This offer covers both electronic parts and batteries

### Warranty 5

This service extends the standard warranty to a total of **5 years**. (Standard warranty is 12 or 24 months depending on the model):

- During this period, the product is covered by a **standard exchange**
- Shipping costs covered by Eaton
- This offer **covers both electronic parts and batteries**
- **Professional helpline**

### Extend

This service gives peace of mind for **one additional year** after warranty period expiration:

- UPS/ePDU **standard exchange** on site
- **Professional helpline**
- Fast and efficient service wherever you are located
- Covers electronic parts and batteries

### Battery+

This service provides the correct batteries for your UPS:

- Up to 3 KVA
- **High-speed efficient service** regardless of site location
- Standard **replacement of old batteries**
- Installation instructions for new batteries
- Safety instructions concerning handling of the batteries

### Warranty Advance

This service provides customers with a higher service level compared to a standard warranty for 3 years:

- **1 on-site intervention** (in case of breakdown) during the first 2 years, simply by contacting the call centre in your country
- **1 maintenance visit** in the last year
- Technical updates
- A **professional, customised helpline** at your service
- **Emergency response** (travel to site within 8 hours)

**Eaton Extended Warranties can be bought only during standard warranty or extended warranty period.**

### Intervention

This distributed service provides an **Eaton technician** for UPS commissioning or a preventive maintenance visit:

- **Professional helpline** to offer support and book intervention dates
- Intervention service can be bought from Eaton resellers at any time during the life of your UPS
- This offer is not intended to be used as a repair service in case of UPS failure

### Easy Battery+

This is a service product which is offering Eaton final customers a complete batteries tray to exchange their batteries. The whole batteries exchange process will be therefore much **quicker and safer** than swapping batteries one by one.

**Register/activate your service product: [www.eaton.eu/registration](http://www.eaton.eu/registration)**

**[www.eaton.eu/upsservice](http://www.eaton.eu/upsservice)**

# Extended Warranties for new UPS/ePDU

| Current products                              | Warranty+ | Warranty5 | Warranty Advance |
|-----------------------------------------------|-----------|-----------|------------------|
| <b>Protection Station</b>                     |           |           |                  |
| 500/650/800                                   | 66811     | W5001     | -                |
| <b>3S</b>                                     |           |           |                  |
| 3S 550/700                                    | 66811     | W5001     | -                |
| <b>Ellipse ECO</b>                            |           |           |                  |
| Ellipse ECO 500/650/800                       | 66811     | W5001     | -                |
| Ellipse ECO 1200                              | 66812     | W5001     | -                |
| Ellipse ECO 1600                              | 66812     | W5002     | -                |
| <b>5E</b>                                     |           |           |                  |
| 5E 500/650/850                                | 66811     | -         | -                |
| 5E 1100/1500                                  | 66812     | -         | -                |
| 5E 2000                                       | 66813     | -         | -                |
| <b>5S</b>                                     |           |           |                  |
| 5S 550/700                                    | 66811     | W5001     | -                |
| 5S 1000                                       | 66812     | W5001     | -                |
| 5S 1500                                       | 66813     | W5002     | -                |
| <b>Ellipse PRO</b>                            |           |           |                  |
| Ellipse PRO 650/850                           | -         | W5001     | -                |
| Ellipse PRO 1200/1600                         | -         | W5002     | -                |
| <b>5SC</b>                                    |           |           |                  |
| 5SC 500/750                                   | 66812     | W5001     | -                |
| 5SC 1000                                      | 66813     | W5002     | -                |
| 5SC 1000 Rack/1500/1500 Rack                  | 66813     | W5003     | -                |
| 5SC 2200 RT                                   | 66818     | W5004     | -                |
| 5SC 3000 RT                                   | 66814     | W5005     | -                |
| <b>5P</b>                                     |           |           |                  |
| 5P 650/850/650 Rack 1U                        | 66812     | W5002     | -                |
| 5P 1150/1550/850 Rack 1U                      | 66813     | W5003     | -                |
| 5P 1150 Rack 1U/1550 Rack 1U                  | 66818     | W5004     | -                |
| <b>5PX</b>                                    |           |           |                  |
| 5PX 1500                                      | 66818     | W5004     | -                |
| 5PX 2200/3000                                 | 66814     | W5005     | -                |
| 5PX EBM                                       | 66813     | W5003     | -                |
| <b>9130</b>                                   |           |           |                  |
| 9130 700 VA/EBM 2000/3000/EBM 2000 RM/3000 RM | 66813     | W5003     | -                |
| 9130 1000 VA/1000 RM                          | 66818     | W5004     | -                |
| 9130 1500 VA                                  | 66814     | W5004     | -                |
| 9130 2000 VA/1500 RM/2000 RM/EBM 6000         | 66814     | W5005     | -                |
| 9130 3000 VA                                  | 66815     | W5005     | -                |
| 9130 5000/6000                                | 66816     | W5007     | WAD001           |
| 9130 3000 RM                                  | 66815     | W5006     | -                |
| 9130 EBM 1000                                 | 66812     | W5001     | -                |
| 9130 EBM 1500/EBM 1500 R                      | 66813     | W5002     | -                |
| 9130 EBM 1000 RM                              | 66812     | W5002     | -                |
| <b>Eaton EX</b>                               |           |           |                  |
| Eaton EX 700/1000                             | 66818     | W5004     | -                |
| Eaton EX 1500                                 | 66814     | W5005     | -                |
| Eaton EX EXB 1000/1500                        | 66813     | W5003     | -                |
| <b>9SX</b>                                    |           |           |                  |
| 9SX 5/6kVA                                    | 66816     | W5007     | WAD001           |
| 9SX 8000/11000                                | 66817     | W5008     | WAD001           |
| 9SX EBM 180/240                               | 66814     | W5004     | -                |
| <b>9PX</b>                                    |           |           |                  |
| 9PX 1000                                      | 66818     | W5004     | -                |
| 9PX 1500/2200                                 | 66814     | W5005     | -                |
| 9PX 3000                                      | 66815     | W5006     | -                |
| 9PX 5/6kVA                                    | 66816     | W5007     | WAD001           |
| 9PX 8/11kVA                                   | 66817     | W5008     | WAD001           |
| 9PX 10/12 kVA                                 | -         | -         | WAD001           |
| 9PX 16/22 kVA                                 | -         | -         | WAD003           |
| 9PX 3:1 6/8/11kVA                             | 66817     | W5008     | -                |
| 9PX EBM 48                                    | 66813     | W5003     | -                |
| 9PX EBM 180/240/72                            | 66814     | W5004     | -                |
| 9PX ModularEasy 6000i/11000i                  | 66814     | W5004     | -                |
| <b>9PX Marine</b>                             |           |           |                  |
| 9PX 1500 Marine                               | 66815     | W5006     | -                |
| 9PX 3000 Marine                               | 66816     | W5007     | -                |
| <b>9E</b>                                     |           |           |                  |
| 9E 15/20 KVA                                  | -         | -         | WAD001           |
| <b>9155</b>                                   |           |           |                  |
| 9155 8/10 kVA                                 | -         | -         | WAD001           |
| 9155 12/15 kVA                                | -         | -         | WAD002           |
| 9155 20/30 kVA                                | -         | -         | WAD003           |
| <b>Blade UPS</b>                              |           |           |                  |
| Blade UPS 24 KW                               | -         | -         | WAD004           |
| Blade UPS 36 KW                               | -         | -         | WAD005           |
| Blade UPS 48 KW                               | -         | -         | WAD006           |
| Blade UPS 60 KW                               | -         | -         | WAD007           |
| Blade UPS 60 KW N+1                           | -         | -         | WAD008           |

| Current products                                        | Warranty+ | Warranty5 | Warranty Advance |
|---------------------------------------------------------|-----------|-----------|------------------|
| <b>93 PS</b>                                            |           |           |                  |
| 93 PS (10+10) KVA/(8+8) KVA/ 30/40 KVA                  | -         | -         | WAD003           |
| 93 PS (15+15) KVA/(20+20) KVA                           | -         | -         | WAD004           |
| 93 PS 15/20 KVA                                         | -         | -         | WAD002           |
| 93 PS 8/10 KVA                                          | -         | -         | WAD001           |
| <b>93 PM</b>                                            |           |           |                  |
| 93 PM 30/40 KVA                                         | -         | -         | WAD004           |
| 93 PM 50/60/80 KVA                                      | -         | -         | WAD005           |
| 93 PM 100/120 KVA                                       | -         | -         | WAD006           |
| 93 PM 150/160 KVA                                       | -         | -         | WAD007           |
| 93 PM 200 KVA                                           | -         | -         | WAD008           |
| <b>93E</b>                                              |           |           |                  |
| 93E 15/20 KVA                                           | -         | -         | WAD001           |
| 93E 30KVA                                               | -         | -         | WAD002           |
| 93E 40/60/80 KVA                                        | -         | -         | WAD003           |
| 93E 100 KVA                                             | -         | -         | WAD004           |
| 93E 120 KVA                                             | -         | -         | WAD005           |
| 93E 160 KVA                                             | -         | -         | WAD006           |
| 93E 200 KVA                                             | -         | -         | WAD007           |
| <b>ePDU G3</b>                                          |           |           |                  |
| ePDU G3 Basic (BA)                                      | 66811     | W5001     | -                |
| ePDU G3 In-LineMetered (IL)/Metered Input (MI)          | 66813     | W5002     | -                |
| ePDU G3 Metered Outlet (MO), Switched (SW),Managed (MA) | 66814     | W5004     | -                |
| <b>FlexPDU &amp; HotSwapMBP</b>                         |           |           |                  |
| FlexPDU & HotSwapMBP                                    | 66811     | W5001     | -                |
| <b>ATS</b>                                              |           |           |                  |
| ATS 16 / ATS 16N                                        | 66813     | W5003     | -                |
| ATS 30A Netpack                                         | -         | W5004     | -                |
| <b>Intelligent Power Controller</b>                     |           |           |                  |
| Intelligent Power Controller 3000                       | -         | W5005     | -                |

| Legacy products                                                | Warranty+ | Warranty5 | Warranty Advance |
|----------------------------------------------------------------|-----------|-----------|------------------|
| <b>5130</b>                                                    |           |           |                  |
| 5130 1250 VA/EBM 3000 RT                                       | 66813     | W5003     | -                |
| 5130 1750 VA                                                   | 66818     | W5004     | -                |
| 5130 2500 VA/3000 2U/3000 3U                                   | 66814     | W5005     | -                |
| 5130 EBM 1250/1750 RT                                          | 66813     | W5002     | -                |
| 5130 EBM 2500/3000                                             | 66813     | W5003     | -                |
| <b>Eaton EX</b>                                                |           |           |                  |
| Eaton EX 1000 RT2U/EX EXB 1000/1500 RT2U/EX EXB 2200/3000 RT3U | 66818     | W5004     | -                |
| Eaton EX 1500 RT2U/2200 RT/2200 RT2U/2200 RT2U Netpack         | 66814     | W5005     | -                |
| Eaton EX 2200 RT3U HotSwap                                     | 66814     | W5005     | -                |
| Eaton EX 3000 RT/3000 RT2U/3000 RT2U Netpack                   | 66815     | W5006     | -                |
| Eaton EX 3000 RT3U HotSwap/3000 RT3U XL                        | 66815     | W5006     | -                |
| <b>Eaton EX Marine</b>                                         |           |           |                  |
| EX 1500 RT2U/2200 RT3U                                         | 66814     | W5005     | -                |
| EX 3000 RT3U                                                   | 66815     | W5006     | -                |
| <b>9355</b>                                                    |           |           |                  |
| 9355 8/10 kVA                                                  | -         | -         | WAD001           |
| 9355 12/15 kVA                                                 | -         | -         | WAD002           |
| 9355 20/30/40 kVA                                              | -         | -         | WAD003           |
| <b>ePDU G2</b>                                                 |           |           |                  |
| Basic                                                          | 66811     | W5001     | -                |
| Monitored / In-Line Monitored / Metered Input                  | 66813     | W5002     | -                |
| In-Line Metered                                                | 66813     | -         | -                |
| Advanced Monitored/Switched/Managed                            | 66814     | W5004     | -                |
| <b>STS</b>                                                     |           |           |                  |
| STS16                                                          | 66813     | W5003     | -                |

# Services for running UPS/ePDU

| Legacy products                | Battery + | Easy Battery+ | Extend | Intervention |
|--------------------------------|-----------|---------------|--------|--------------|
| <b>3105</b>                    |           |               |        |              |
| 3105 350/500                   | 68750     | -             | 68600  | -            |
| <b>Protection Center</b>       |           |               |        |              |
| Protection Center 420/500/600  | 68760     | -             | 68600  | -            |
| Protection Center 675/750      | 68765     | -             | 68600  | -            |
| <b>5110</b>                    |           |               |        |              |
| 5110 500 VA                    | 68750     | -             | 68600  | -            |
| 5110 700 VA                    | 68760     | -             | 68600  | -            |
| 5110 1000 VA                   | 68761     | -             | 68600  | -            |
| <b>5115</b>                    |           |               |        |              |
| 5115 RM 500                    | 68771     | -             | 68600  | -            |
| 5115 RM 750                    | 68770     | -             | 68600  | -            |
| 5115 RM 1000                   | 68772     | -             | 68600  | -            |
| 5115 RM 1500                   | 68773     | -             | 68601  | -            |
| 5115 TOWER 500                 | 68765     | -             | 68600  | -            |
| 5115 TOWER 750                 | 68761     | -             | 68600  | -            |
| 5115 TOWER 1000                | 68766     | -             | 68600  | -            |
| 5115 TOWER 1400                | 68767     | -             | 68601  | -            |
| <b>5125</b>                    |           |               |        |              |
| 5125 RM 1000/1500              | 68768     | -             | 68601  | -            |
| 5125 TOWER 1000                | 68766     | -             | 68601  | -            |
| 5125 TOWER 1500                | 68763     | -             | 68601  | -            |
| 5125 TOWER 2200 VA             | -         | -             | 68601  | -            |
| 5125 EBM 1000/1500             | 68780     | -             | 68601  | -            |
| <b>Pulsar</b>                  |           |               |        |              |
| Pulsar 700                     | 68761     | -             | -      | -            |
| Pulsar 1000                    | 68762     | -             | -      | -            |
| Pulsar 1500                    | 68767     | -             | -      | -            |
| <b>Pulsar ellipse</b>          |           |               |        |              |
| Pulsar ellipse 300/500         | 68751     | -             | -      | -            |
| Pulsar ellipse 650/800         | 68752     | -             | -      | -            |
| Pulsar ellipse 1200            | 68753     | -             | -      | -            |
| <b>Pulsar Ellipse ASR</b>      |           |               |        |              |
| Ellipse ASR 375/600            | 68760     | -             | 68600  | -            |
| Ellipse ASR 450                | 68750     | -             | 68600  | -            |
| Ellipse ASR 750                | 68765     | -             | 68600  | -            |
| Ellipse ASR 1000               | 68761     | -             | 68600  | -            |
| Ellipse ASR 1500               | 68762     | -             | 68600  | -            |
| <b>Pulsar Ellipse MAX</b>      |           |               |        |              |
| Ellipse MAX 600                | 68760     | -             | 68600  | -            |
| Ellipse MAX 850/1100           | 68761     | -             | 68600  | -            |
| Ellipse MAX 1500               | 68766     | -             | 68600  | -            |
| <b>Pulsar ellipse premium</b>  |           |               |        |              |
| Pulsar ellipse premium 500     | 68751     | -             | -      | -            |
| Pulsar ellipse premium 650/800 | 68752     | -             | -      | -            |
| Pulsar ellipse premium 1200    | 68753     | -             | -      | -            |
| <b>5130</b>                    |           |               |        |              |
| 5130 1250 VA                   | 68763     | EB004         | 68601  | -            |
| 5130 1750 VA                   | 68768     | EB004         | 68601  | -            |
| 5130 2500 VA                   | 68764     | EB001         | 68602  | -            |
| 5130 3000 2U                   | 68769     | EB001         | 68602  | -            |
| 5130 3000 3U                   | 68769     | EB002         | 68602  | -            |
| 5130 EBM 1250/1750             | 68780     | -             | 68601  | -            |
| 5130 EBM 1750 RT               | 68780     | -             | 68601  | -            |
| 5130 EBM 2500/3000             | 68781     | -             | 68601  | -            |
| 5130 EBM 3000 RT               | 68781     | -             | 68601  | -            |
| <b>Pulsar EXtreme</b>          |           |               |        |              |
| Pulsar EXtreme 1500/2000       | 68755     | -             | -      | -            |
| Pulsar EXtreme 2500/3000       | 68756     | -             | -      | -            |
| Pulsar EXtreme EXB 1500/2000   | 68784     | -             | -      | -            |
| Pulsar EXtreme EXB 2500/3000   | 68785     | -             | -      | -            |
| <b>Pulsar EXtreme C</b>        |           |               |        |              |
| Pulsar EXtreme C 700           | 68752     | -             | -      | -            |
| Pulsar EXtreme C 1000          | 68753     | -             | -      | -            |
| Pulsar EXtreme C 1500/EBM 700  | 68754     | -             | -      | -            |
| Pulsar EXtreme C 2200          | 68764     | -             | -      | -            |
| Pulsar EXtreme C 3200          | 68769     | -             | -      | -            |
| Pulsar EXtreme C EBM 1000      | 68782     | -             | -      | -            |
| Pulsar EXtreme C EBM 1500      | 68783     | -             | -      | -            |
| Pulsar EXtreme C EBM 2200/3200 | 68781     | -             | -      | -            |
| <b>9120</b>                    |           |               |        |              |
| 9120 700VA                     | 68766     | -             | -      | -            |
| 9120 1000VA                    | 68767     | -             | -      | -            |
| 9120 1500VA                    | 68768     | -             | -      | -            |
| 9120 2000/3000/EBM 1500        | 68780     | -             | -      | -            |
| 9120 EBM 1000                  | 68769     | -             | -      | -            |
| 9120 EBM 2000/3000             | 68786     | -             | -      | -            |

| Legacy products                                 | Battery + | Easy Battery+ | Extend | Intervention |
|-------------------------------------------------|-----------|---------------|--------|--------------|
| <b>9125</b>                                     |           |               |        |              |
| 9125 1000VA                                     | 68766     | -             | -      | -            |
| 9125 1500/2000                                  | 68768     | -             | -      | -            |
| 9125 3000VA                                     | 68769     | -             | -      | -            |
| 9125 EBM 1000/1500/2000                         | 68780     | -             | -      | -            |
| 9125 EBM 3000                                   | 68781     | -             | -      | -            |
| <b>Pulsar Evolution</b>                         |           |               |        |              |
| Pulsar Evolution 500 Rack                       | 68771     | -             | -      | -            |
| Pulsar Evolution 800                            | 68761     | -             | -      | -            |
| Pulsar Evolution 800 Rack                       | 68770     | -             | -      | -            |
| Pulsar Evolution 1100                           | 68766     | -             | -      | -            |
| Pulsar Evolution 1100 Rack                      | 68772     | -             | -      | -            |
| Pulsar Evolution 1500                           | 68767     | -             | -      | -            |
| Pulsar Evolution 1500 Rack                      | 68773     | -             | -      | -            |
| Pulsar Evolution 2200                           | 68764     | -             | -      | -            |
| Pulsar Evolution 3000                           | 68769     | -             | -      | -            |
| Pulsar Evolution EMB 2200/3000                  | 68781     | -             | -      | -            |
| <b>Evolution</b>                                |           |               |        |              |
| Evolution 650                                   | 68765     | -             | 68600  | -            |
| Evolution 650 Rack                              | 68771     | -             | 68600  | -            |
| Evolution 850                                   | 68761     | -             | 68600  | -            |
| Evolution 850 Rack                              | 68770     | -             | 68600  | -            |
| Evolution 1150                                  | 68766     | -             | 68600  | -            |
| Evolution 1150 Rack                             | 68772     | -             | 68600  | -            |
| Evolution 1550                                  | 68767     | -             | 68601  | -            |
| Evolution 1550 Rack                             | 68773     | -             | 68601  | -            |
| Evolution 2000                                  | 68768     | -             | 68601  | -            |
| <b>Evolution S</b>                              |           |               |        |              |
| Evolution S 1250                                | 68763     | -             | 68601  | -            |
| Evolution S 1750                                | 68768     | EB004         | 68601  | -            |
| Evolution S 2500                                | 68764     | EB001         | 68602  | -            |
| Evolution S 3000 2U                             | 68769     | EB001         | 68602  | -            |
| Evolution S 3000 3U                             | 68769     | EB002         | 68602  | -            |
| Evolution S EXB 1250/1750                       | 68780     | -             | 68601  | -            |
| Evolution S EXB 2500/3000                       | 68781     | -             | 68601  | -            |
| <b>Eaton EX</b>                                 |           |               |        |              |
| Eaton EX 1000 RT2U                              | 68762     | EB013         | 68602  | -            |
| Eaton EX 1500 RT2U                              | 68767     | EB013         | 68602  | -            |
| Eaton EX 2200 RT                                | 68764     | -             | 68603  | -            |
| Eaton EX 2200 RT2U/2200 RT2U Netpack            | 68764     | EB001         | 68603  | -            |
| Eaton EX 2200 RT3U HotSwap                      | 68764     | EB002         | 68603  | -            |
| Eaton EX 3000 RT/3000 RT3U HotSwap/3000 RT3U XL | 68769     | -             | 68603  | -            |
| Eaton EX 3000 RT2U/3000 RT2U Netpack            | 68769     | EB001         | 68603  | -            |
| EXB 2200/3000 RT3U                              | 68781     | -             | 68601  | -            |
| <b>Pulsar M</b>                                 |           |               |        |              |
| Pulsar M 2200 2U                                | 68764     | EB001         | -      | -            |
| Pulsar M 2200 3U                                | 68764     | EB002         | -      | -            |
| Pulsar M 3000 2U                                | 68769     | EB001         | -      | -            |
| Pulsar M 3000 3U                                | 68769     | EB002         | -      | -            |
| <b>Pulsar MX</b>                                |           |               |        |              |
| Pulsar MX 4/5 KVA                               | -         | -             | 68604  | -            |
| Pulsar MX Frame 15/20 KVA                       | -         | -             | 68606  | -            |
| Pulsar MX EXB, MX ModularEasy                   | -         | -             | 68602  | -            |
| <b>EX RT</b>                                    |           |               |        |              |
| EX RT 5 to 11kVA                                | -         | -             | 68605  | INT002       |
| <b>9135</b>                                     |           |               |        |              |
| 9135 5000VA/6000VA                              | -         | -             | 68604  | -            |
| 9135 EBM R/T3U                                  | -         | -             | 68602  | -            |
| <b>9140</b>                                     |           |               |        |              |
| 9140 7500 VA/10000 VA                           | -         | -             | 68605  | -            |
| 9140 EBM (7500 - 10000)                         | -         | -             | 68603  | -            |
| <b>9355 12/15 kVA</b>                           |           |               |        |              |
| 9355 12/15 kVA / 8/10 kVA                       | -         | -             | -      | INT002       |
| 9355 20/30/40 kVA                               | -         | -             | -      | INT002       |
| <b>ePDU G2</b>                                  |           |               |        |              |
| Basic/Monitored/Metered Input                   | -         | -             | 68600  | -            |
| Advanced Monitored/Switched/Managed             | -         | -             | 68601  | -            |
| <b>STS</b>                                      |           |               |        |              |
| STS16                                           | -         | -             | 68600  | -            |

# Services for running UPS/ePDU

| Current Products          | Battery + | Easy Battery+ | Extend | Intervention |
|---------------------------|-----------|---------------|--------|--------------|
| <b>Protection Station</b> |           |               |        |              |
| Protection Station 500    | 68750     | -             | 68600  | -            |
| Protection Station 650    | 68760     | -             | 68600  | -            |
| Protection Station 800    | 68765     | -             | 68600  | -            |
| <b>3S</b>                 |           |               |        |              |
| 3S 550                    | 68750     | -             | 68600  | -            |
| 3S 700                    | 68760     | -             | 68600  | -            |
| <b>Ellipse ECO</b>        |           |               |        |              |
| Ellipse ECO 500           | 68750     | -             | 68600  | -            |
| Ellipse ECO 650           | 68760     | -             | 68600  | -            |
| Ellipse ECO 800           | 68765     | -             | 68600  | -            |
| Ellipse ECO 1200          | 68761     | -             | 68600  | -            |
| Ellipse ECO 1600          | 68766     | -             | 68600  | -            |
| <b>5E</b>                 |           |               |        |              |
| 5E 500/650/850            | -         | -             | 68600  | -            |
| 5E 1100/1500              | -         | -             | 68600  | -            |
| 5E 2000                   | -         | -             | 68600  | -            |
| <b>5S</b>                 |           |               |        |              |
| 5S 550                    | 68750     | -             | 68600  | -            |
| 5S 700                    | 68760     | -             | 68600  | -            |
| 5S 1000                   | 68761     | -             | 68600  | -            |
| 5S 1500                   | 68766     | -             | 68600  | -            |
| <b>Ellipse PRO</b>        |           |               |        |              |
| Ellipse PRO 650           | 68760     | -             | 68600  | -            |
| Ellipse PRO 850           | 68765     | -             | 68600  | -            |
| Ellipse PRO 1200          | 68761     | -             | 68600  | -            |
| Ellipse PRO 1600          | 68766     | -             | 68600  | -            |
| <b>5SC</b>                |           |               |        |              |
| 5SC 500                   | 68765     | -             | 68600  | -            |
| 5SC 750                   | 68761     | EB007         | 68600  | -            |
| 5SC 1000                  | 68766     | EB007         | 68600  | -            |
| 5SC 1000 Rack             | -         | -             | 68600  | -            |
| 5SC 1500                  | 68767     | -             | 68600  | -            |
| 5SC 1500 Rack             | -         | -             | 68601  | -            |
| 5SC 2200 RT               | -         | -             | 68601  | -            |
| 5SC 3000 RT               | -         | -             | 68602  | -            |
| <b>5P</b>                 |           |               |        |              |
| 5P 650                    | 68765     | -             | 68600  | -            |
| 5P 650 Rack 1U            | 68771     | EB010         | 68600  | -            |
| 5P 850                    | 68761     | EB008         | 68600  | -            |
| 5P 850 Rack 1U            | 68770     | EB011         | 68600  | -            |
| 5P 1150                   | 68766     | EB008         | 68600  | -            |
| 5P 1150 Rack 1U           | 68772     | EB011         | 68600  | -            |
| 5P 1550                   | 68767     | EB009         | 68601  | -            |
| 5P 1550 Rack 1U           | 68773     | EB012         | 68601  | -            |
| <b>5PX</b>                |           |               |        |              |
| 5PX 1500                  | 68763     | EB004         | 68601  | -            |
| 5PX 2200                  | 68768     | EB004         | 68602  | INT001       |
| 5PX 3000 2U               | 68769     | EB001         | 68602  | INT001       |
| 5PX 3000 3U               | 68769     | EB002         | 68602  | INT001       |
| 5PX EBM 48V RT2U          | 68780     | -             | 68601  | -            |
| 5PX EBM 72V RT3U/RT2U     | 68781     | -             | 68601  | -            |
| <b>9130</b>               |           |               |        |              |
| 9130 700 VA               | 68766     | -             | 68602  | -            |
| 9130 1000 VA              | 68767     | -             | 68602  | -            |
| 9130 1000 RM              | 68767     | -             | 68601  | -            |
| 9130 1500 VA              | 68768     | -             | 68602  | -            |
| 9130 1500 RM              | 68768     | EB014         | 68602  | -            |
| 9130 2000 VA/3000VA       | 68780     | EB005         | 68603  | INT001       |
| 9130 2000 RM/3000 RM      | 68769     | EB003         | 68603  | -            |
| 9130 5000/6000            | -         | -             | 68604  | INT001       |
| 9130 EBM 1000/1000 RM     | 68769     | -             | 68601  | -            |
| 9130 EBM 1500/1500 RM     | 68780     | -             | 68601  | -            |
| 9130 EBM 2000             | 68786     | -             | -      | -            |
| 9130 EBM 2000 RM          | 68781     | -             | -      | -            |
| 9130 EBM 3000             | 68786     | -             | 68601  | -            |
| 9130 EBM 3000 RM          | 68781     | -             | 68601  | -            |
| 9130 EBM 6000             | -         | -             | 68602  | -            |

| Current Products                                              | Battery + | Easy Battery+ | Extend | Intervention |
|---------------------------------------------------------------|-----------|---------------|--------|--------------|
| <b>Eaton EX</b>                                               |           |               |        |              |
| Eaton EX 700                                                  | 68761     | -             | 68602  | -            |
| Eaton EX 1000                                                 | 68762     | EB013         | 68602  | -            |
| Eaton EX 1500                                                 | 68767     | EB013         | 68602  | -            |
| Eaton EX EBM 1000/1500                                        | 68769     | -             | 68601  | -            |
| <b>9SX</b>                                                    |           |               |        |              |
| 9SX 5/6kVA                                                    | -         | EB006         | 68604  | INT001       |
| 9SX 8000/11000                                                | -         | -             | 68605  | INT002       |
| 9SX EBM 180                                                   | -         | -             | 68602  | -            |
| 9SX EBM 240                                                   | -         | -             | 68603  | -            |
| <b>9PX</b>                                                    |           |               |        |              |
| 9PX 1000/1500/9PX EBM 180/9PX ModularEasy 6000i               | -         | -             | 68602  | -            |
| 9PX 2200/3000                                                 | -         | -             | 68603  | INT001       |
| 9PX 5/6kVA                                                    | -         | EB006         | 68604  | INT001       |
| 9PX 8/11kVA/9PX 3:1 6/8/11kVA                                 | -         | -             | 68605  | INT002       |
| 9PX 10/12 KVA                                                 | -         | -             | -      | INT002       |
| 9PX 16/22 KVA                                                 | -         | -             | -      | INT003       |
| 9PX EBM 240/9PX Modular Easy 11000i                           | -         | -             | 68603  | -            |
| 9PX EBM 48                                                    | -         | -             | 68601  | -            |
| 9PX EBM 72                                                    | -         | -             | 68601  | -            |
| <b>9PX Marine</b>                                             |           |               |        |              |
| 9PX 1500 Marine                                               | -         | -             | 68603  | -            |
| 9PX 3000 Marine                                               | -         | -             | 68604  | INT001       |
| <b>9E</b>                                                     |           |               |        |              |
| 9E 6/10 KVA                                                   | -         | -             | -      | INT001       |
| 9E 15/20 KVA                                                  | -         | -             | -      | INT002       |
| <b>9155</b>                                                   |           |               |        |              |
| 9155 8/10 kVA/12/15 kVA                                       | -         | -             | -      | INT002       |
| 9155 20/30 KVA                                                | -         | -             | -      | INT003       |
| <b>Blade UPS</b>                                              |           |               |        |              |
| BladeUPS 24 KW                                                | -         | -             | -      | INT004       |
| Blade UPS 36 KW                                               | -         | -             | -      | INT005       |
| Blade UPS 48 KW                                               | -         | -             | -      | INT006       |
| Blade UPS 60 KW/60 KW N+1                                     | -         | -             | -      | INT007       |
| <b>93 PS</b>                                                  |           |               |        |              |
| 93 PS (8+8) KVA/(10+10) KVA/(15+15) KVA/(20+20) KVA/30/40 KVA | -         | -             | -      | INT003       |
| 93 PS 8/10 KVA/15/20 KVA                                      | -         | -             | -      | INT002       |
| <b>93 PM</b>                                                  |           |               |        |              |
| 93 PM 30/40/50 KVA                                            | -         | -             | -      | INT004       |
| 93 PM 60/80 KVA                                               | -         | -             | -      | INT005       |
| 93 PM 100/120 KVA                                             | -         | -             | -      | INT006       |
| 93 PM 150/160/200 KVA                                         | -         | -             | -      | INT007       |
| <b>93E</b>                                                    |           |               |        |              |
| 93E 15/20 KVA                                                 | -         | -             | -      | INT002       |
| 93E 30/40/60 KVA                                              | -         | -             | -      | INT003       |
| 93E 80/100 KVA                                                | -         | -             | -      | INT004       |
| 93E 120 KVA                                                   | -         | -             | -      | INT005       |
| 93E 160/200 KVA                                               | -         | -             | -      | INT007       |
| <b>ePDU G3</b>                                                |           |               |        |              |
| ePDU G3 Basic (BA)                                            | -         | -             | 68600  | -            |
| ePDU G3 Metered Input (MI)                                    | -         | -             | 68601  | -            |
| ePDU G3 Metered Outlet (MO), Switched (SW), Managed (MA)      | -         | -             | 68602  | -            |
| <b>FlexPDU &amp; HotSwapMBP</b>                               |           |               |        |              |
| FlexPDU & HotSwapMBP                                          | -         | -             | 68600  | -            |
| <b>ATS/ STS</b>                                               |           |               |        |              |
| ATS 16 / ATS 16N                                              | -         | -             | 68600  | -            |
| ATS 30A Netpack                                               | -         | -             | 68602  | -            |

# Green by design

Eaton is constantly working with customers to develop solutions that drive sustainable growth around the globe. Our UPS solutions strive for unparalleled energy efficiency, efficient resource use, maximum use of recyclable materials and the reduction of emissions throughout the entire life of the product, from cradle to grave.

Our engineers are constantly developing smarter ways to deliver ecological and economic benefits. This includes the development of energy efficient and environmentally friendly technologies.



## Design

Taking account of the environment is a part of the design process at Eaton. Four characteristics guide the design team during their work: energy efficiency, resource efficiency, recycling and compliance with regulations.

The Life Cycle Assessment (LCA) process is used to gather information about the potential environmental impact of a product.

✉ [LCA@Eaton.eu](mailto:LCA@Eaton.eu)

Eaton is constantly monitoring the use of hazardous substances and material in its design and manufacturing processes. Our products do not contain **REACH** SVHCs (Substances of Very High Concern) and Eaton is seeking to comply with the **RoHS Directive** in advance of it becoming a legal requirement to do so.

## Manufacturing

Eaton is focused on building sustainable operations and managing Environment, Safety and Health (EHS) through standardisation. Our global Managing Environment, Safety and Health (MESH) programme is a unified system that consolidates existing programmes (ISO 14001, OHSAS 18001, OSHA VPP) into a single integrated management system.

All EMEA manufacturing locations are ISO14001 certified.

## Use Phase

### Green technologies

|                                                     |                                                                                                      |                                                                                                |
|-----------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| <b>Energy Saver System (ESS)</b>                    | Enables extremely high energy efficiency and reliability under normal operating conditions           | Eaton 93PM and Power Xpert 9395P UPSs                                                          |
| <b>Easy Capacity Test (ECT) technology</b>          | Enables testing of entire power train under full load stress without the need for an external load   | Eaton 9355, 93E, 93PM and Power Xpert 9395P UPSs                                               |
| <b>Hot Sync technology</b>                          | Start from a single module and add power when required                                               | BladeUPS, Eaton 9PX, 9155, 9355, 93E, 93PM and Power Xpert 9395P UPSs                          |
| <b>Advanced Battery Management (ABM) technology</b> | Increases the life of batteries by employing a three-stage charging technique                        | BladeUPS, Eaton 5P, 5PX, 5SC, 9130, 9SX, 9PX, 9155, 9355, 93E, 93PM and Power Xpert 9395P UPSs |
| <b>Hot-Swappable batteries</b>                      | Allows batteries to be replaced or removed one string at a time while the equipment is still running | BladeUPS, Eaton 5130, 5P, 5PX, EX, 9130, 9SX and 9PX UPSs                                      |
| <b>EcoControl technology</b>                        | Automatically disables peripherals when the master drive is turned off                               | Eaton Protection Station, Ellipse ECO and Ellipse PRO                                          |
| <b>Variable Module Management System (VMMS)</b>     | Maximises efficiencies at lighter loads without compromising reliability.                            | Power Xpert 9395P UPSs                                                                         |

## End of Life

Eaton takes into account the environmental effects of the packaging and the end-of-life processing of our products and to aid more responsible dismantling, end-of-life instructions are available for recyclers.

We are committed to adhering to the following legislation when applicable:

**WEEE** (Directive 2002/96/CE)  
Waste Electrical and Electronic Equipment

**Batteries** (Directive 2006/66/CE)  
Batteries and accumulators and waste batteries and accumulators

**Packaging** (Directive 2004/12/CE)  
Packaging and packaging waste

To find out more about Green by design, please visit: [www.eaton.eu/green](http://www.eaton.eu/green)



# Hot Sync Technology



## Paralleling UPS technology

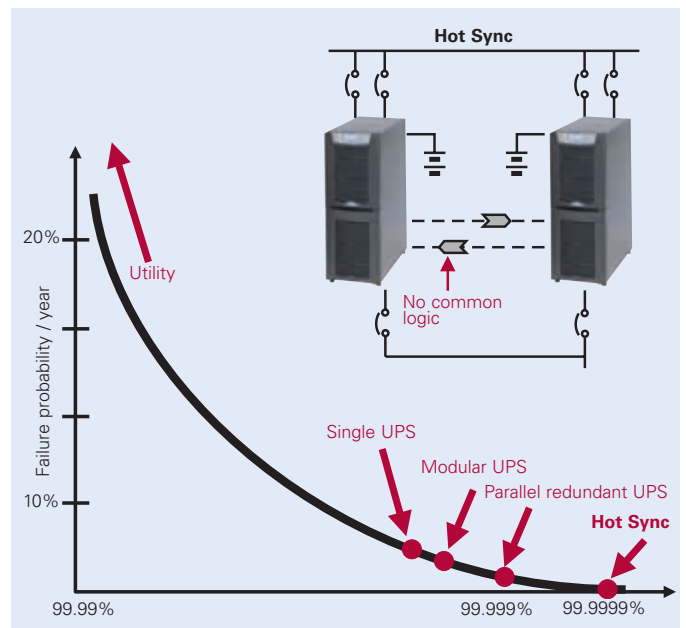
The number one function of a UPS is to supply continuous conditioned, reliable electricity to a critical load. In case of a single unit, reliability can be increased by modular design, where redundant internal modules can take over each others' tasks, if one of the modules fails.

To further increase reliability, a true parallel configuration can be employed, where two or more units share the load. A failed unit is isolated while the remaining ones continue to support the critical load. Competitive UPS products on the market utilise centralised or distributed load-sharing technology with the master-slave principle, which introduces a risk of single point failure. The absolute reliability of a UPS system can be achieved with patented Powerware Hot Sync® parallel load-sharing technology. **(Figure 1)**

Hot Sync technology is designed for parallel redundant N+1 systems to satisfy 24/7 applications. It can also be used in parallel capacity systems to benefit from scalability for customers' ever-increasing load demands modules can share loads without any communication wiring to the outside world.

## User benefits

- Available for both single- and three-phase products to meet any mission-critical need up to 7.7 MW (400 V) systems
- Easy and modular parallel UPS system upgrade with additional capacity or redundancy
- Erases single point of failure, load sharing is not endangered by loss of communication



**Figure 1.** Power availability with various power supply configurations.

# Hot Sync Technology

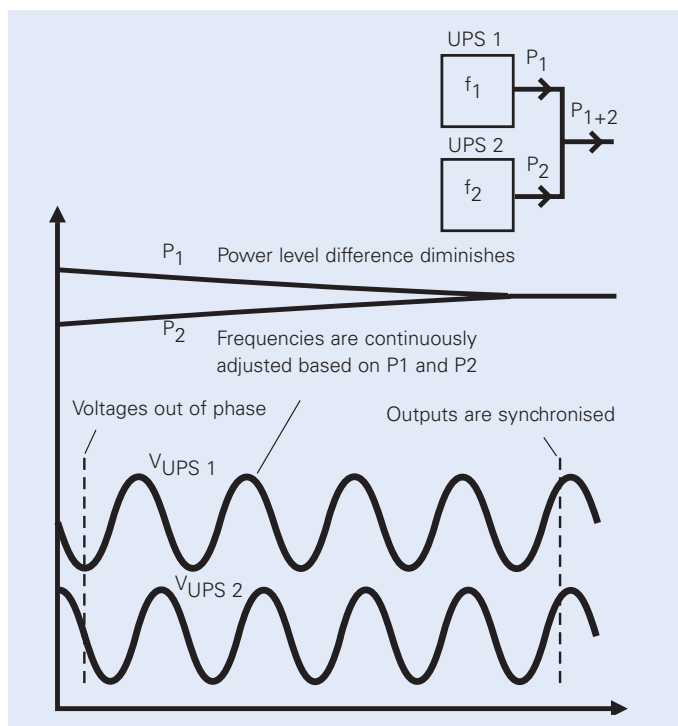
The internal output impedance of a UPS is inherently mainly inductive, i.e. it looks as a small inductor in series with a stiff alternating voltage source. So, if there is any difference between the output voltage phases, it means that there is a power flow from unit to unit, resulting in unequal load sharing. In the **Figure 3**, two units have equal output voltages with phase angle displacement.

The voltage  $V_{diff}$  and current  $I_{diff}$  between units exhibit a 90 degrees phase shift due to the inductive source impedance. The main voltage ( $V_1$  and  $V_2$ ) and the current between units  $I_{diff}$  are in phase resulting in active power flow.

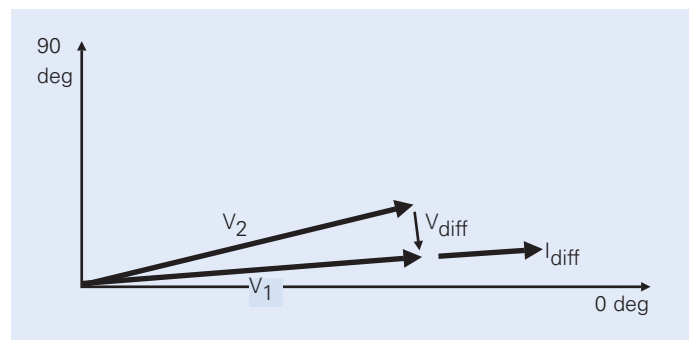
The greater the phase shift, the heavier the power imbalance. If we now introduce a controller to adjust the voltage phase by the output power, the phase difference can be forced to decrease. To adjust the phase difference to zero and to achieve accurate load sharing, we may integrate the measured phase thus arriving at power-controlled frequency. For the purpose of fast frequency locking and to enable synchronisation to external bypass, a term containing the power level change rate is added.

The flow diagram (**Figure 4**) shows how the load sharing proceeds.

The output power is monitored and the new frequency calculated at 3000 times per second. The measurements are also used for fast identification of a failed module. This feature is based on the computation of instantaneous output power. A negative value, even for a single instant, is an indication of an internal failure, e.g. a shorted inverter IGBT. In a response the UPS trips immediately off-line, causing minimal voltage disturbance. This feature is known as 'selective tripping'.



**Figure 2.** Well-balanced load share is achieved by adjusting output frequencies; thus the phase difference between parallel UPS output voltages is forced to zero.



**Figure 3.** A phase displacement between parallel connected UPS voltages ( $V_1$  and  $V_2$ ) causes current flow between the units thus imbalances load share.

Hot Sync technology allows full maintenance to be performed one-by-one on redundant UPS modules without an external maintenance bypass switch. The critical load does not need to be disconnected from the conditioned power. Scheduled or unscheduled maintenance can be performed with the load supported continuously by the UPS-grade clean power.

$$F_n = F_{n-1} - K_1(P_n) - K_2(\dot{P}_n)$$

**Where:**

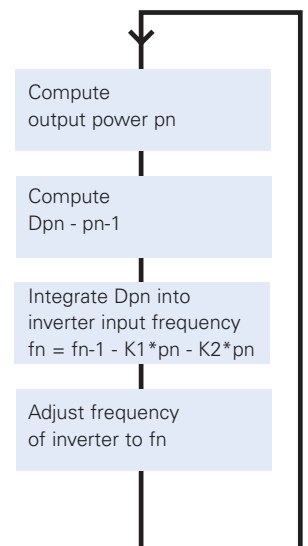
$F_n$  = frequency

$F_{n-1}$  = previous frequency

$P_n$  = power to load

$K_1$  = frequency reduction factor

$K_2$  = power change rate factor



**Figure 4.** With HotSync algorithm, inverter phase angle is adjusted by output power and its change rate.

Accurate, equal load share is the number one characteristic to determine the integral quality and reliability of the parallel UPS system providing redundancy or increased capacity. With HotSync technology this is achieved without need for additional communications line between UPSs thus no single point of failure is added when introducing parallel modules to a system. From operational and also economical viewpoint, the achieved "close to perfect" reliability returns clear savings in the long run as every downtime incident is costly and might lead to unpredictable consequences.

# ABM Technology



ABM technology significantly increases battery service life.

## Superior battery management

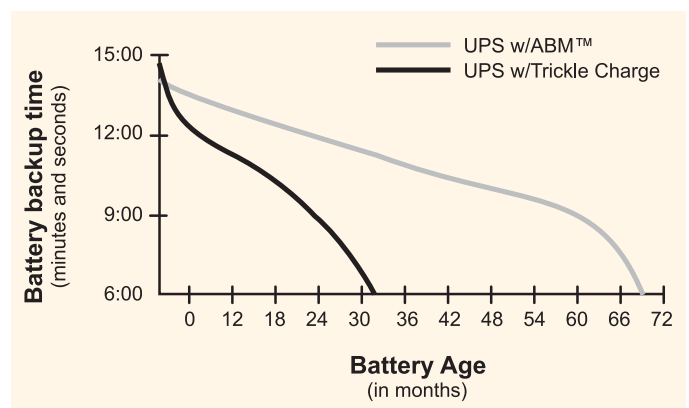
Battery service life is a major contributor to UPS reliability. Since batteries are electrochemical devices, their performance gradually decreases over time. Premature wear-out means higher costs in terms of replacement labour and shorter service cycle. A worn battery entails a risk of unexpected load loss. In normal UPS operation, backup power is needed only occasionally and the battery 'wearing' rate depends strongly on how the full charge is being maintained. Excess charging is detrimental under any operating circumstances.

## Significant extension of battery life

Eaton has created ABM® technology to extend the life of valve-regulated lead-acid batteries by applying sophisticated logic to the charging regime. Using the traditional trickle charge method, batteries become subject to electrode corrosion and electrolyte dry-out, especially in standby service use due to continuous float charging. ABM is essentially an addition of intelligence to the charging routine by preventing unnecessary charging, thus significantly retarding wear-out. ABM provides an additional feature for monitoring battery condition and advance warning about the end of battery life upon detection of a weak battery. It also optimises the recharge time, which is advantageous when there may be consecutive power outages within a short period. ABM has been used for over 15 years is now applied in UPSs up to 1100 kW.

### User benefits

- Predictive and automatic diagnostics of battery health
- Significant extension of battery life compared to traditional charging method
- Optimisation of battery recharging time with dual mode charging method
- Automatic battery charge voltage compensation within 0 to +50°C temperature range

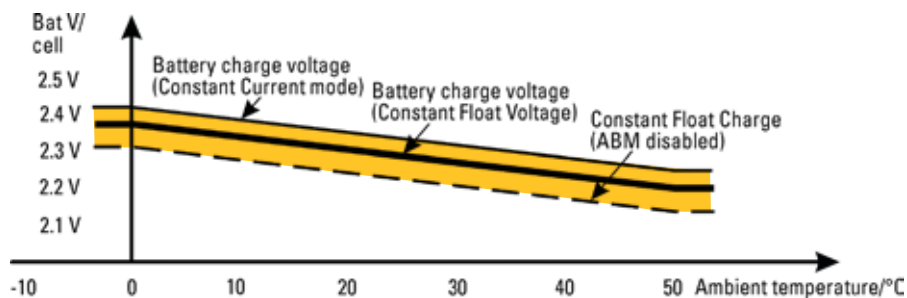


## ABM cycle and operation – how does it work?

The basic idea of ABM is to leave a fully charged battery in rest mode for most of the time, and then apply charge current only at certain intervals. Initially, in order to charge up a fully or partly discharged battery, the charger starts at a constant current appropriate for the battery type used. When the battery voltage reaches a set level, the operation is changed to float mode using a constant but lower voltage, thus providing an optimum recharge time. The battery is kept at this voltage for 24 hours until it comes to the first test point. This takes approximately one minute, and during this period voltage drop measurements are taken while loading the battery, giving an indication of battery condition. The float charging is continued for an additional 24 hours, plus a period equal to 1.5 times the constant current charging time, before the rest mode is

initiated. At this point, charging is discontinued for a maximum of 28 days – as if the batteries were disconnected. During the first 10 days the battery voltage is continuously monitored, and if it drops below 2.1 V/cell, the ABM restarts in charge mode and the user gets a notification of improper battery operation. If it drops below this limit after the 10-day period, charging is resumed without an alarm being raised. In short, the algorithm uses three charging stages in its operation. Thus, the batteries experience much less stress than in the case of traditional charging. A typical battery charging cycle without power interruptions is shown in the graph below.

For convenience, the user has the facility to disable the ABM and instead select continuous 'constant voltage' charging whereby



Temperature compensated charger between  $\pm 0^{\circ}\text{C}$ ... $+50^{\circ}\text{C}$  internal/external measurements.

the charger uses a constant float voltage. 'ABM enabled' is the default setting. The charger voltage levels are (by default setting) programmed to be dependent on an internal temperature sensor measurement, thus providing further enhancement to battery health. The external batteries can be also provided with temperature dependent charger voltage. For this purpose a Web/SNMP card with Environmental Monitoring Probe (EMP) is required.



Optional Web/SNMP card with EMP probe for temperature measurement of an external battery cabinet or rack.

# Energy Saver System

ESS



## Energy Saver System

The rising demand for highly available, reliable and efficient power is a continuous challenge for data centre operators. Higher energy efficiency helps to address increasing environmental, regulatory and economic pressures.

Eaton has developed innovative and proprietary technologies that improve system efficiency without compromising on reliability. Energy Saver System (ESS) is one of these technologies.

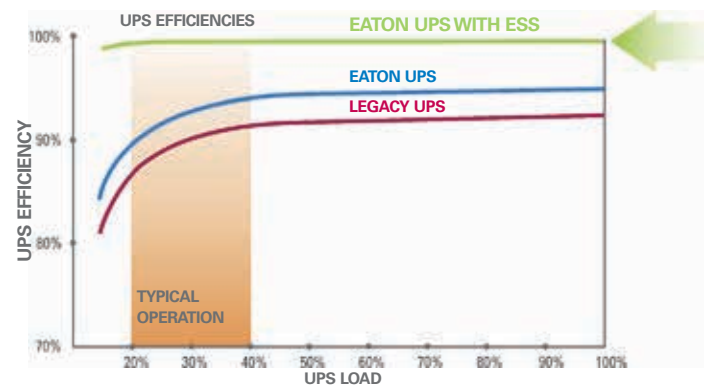
## Maximised energy efficiency

With **85 percent reduction in UPS energy losses**, ESS technology dramatically reduces energy consumption, environmental impact and power costs without compromising load protection. With these outstanding energy savings, it is possible to recover the entire cost of the UPS over a three to five year period.

## Applications

Energy Saver System is available for all Eaton 93PM and Power Xpert 9395P UPSs including:

- stand-alone single UPSs
  - parallel systems
- All existing installations can be upgraded with the ESS capability.



**ESS enables market-leading 99 percent efficiency** across the entire operating range. Compared to conventional 'eco-mode' capabilities available with legacy products, ESS offers the best possible efficiency and the fastest transition times to double-conversion when power disturbances occur.



# Energy Saver System

## No compromise on reliability

In ESS mode the UPS safely provides mains current directly to the load when the input is within the acceptable limits by its voltage and frequency. If input power exceeds the predefined limits by frequency or voltage, the UPS switches to double-conversion. If input power is outside the tolerances of the system, the UPS draws power from available battery modules.

Superior detection and control algorithms continuously monitor incoming power quality and allow the UPS to engage power converters in less than two milliseconds when the utility source exceeds predefined limits by its voltage or frequency, thus always providing secured power to the critical load while maximising efficiency. If the UPS detects a fault condition while operating in ESS, it is able to detect and determine whether the fault is caused by the load or if it is upstream from the UPS. A fault at the bypass source results in immediate switchover to the inverter; a fault in the load keeps the UPS in Energy Saver System (ESS).

Proven Eaton technology ensures reliability and continuous load availability without compromising the protection of the supported equipment.

## Extensive configurability

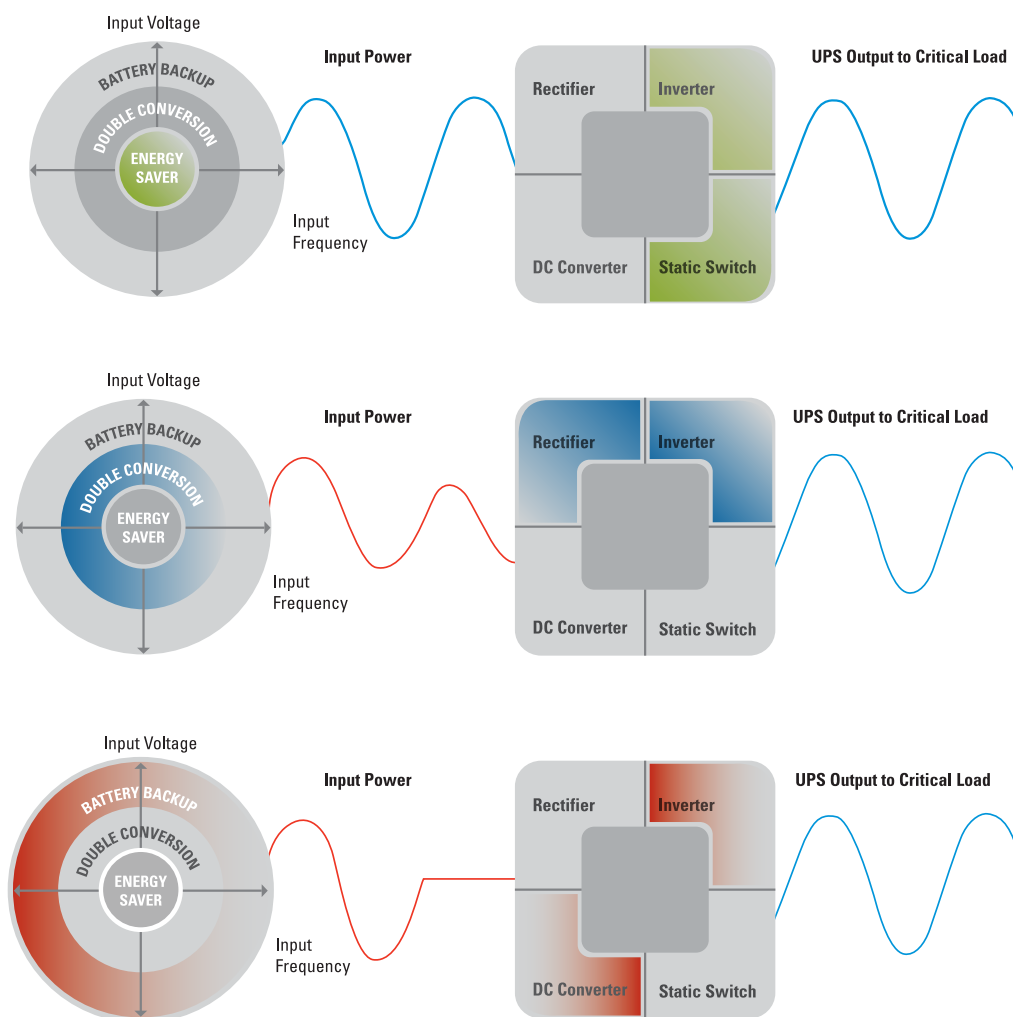
Eaton UPS with Energy Saver System features three configurable modes of operation:

- Standard double-conversion mode: the UPS operates as normal, supplying power through the power converters.
- Energy Saver System: the power converters are in ready state and the static bypass switch allows the UPS to supply mains power directly.
- High Alert mode: the UPS automatically transfers from ESS to double-conversion mode and in case of multiple recurring utility line disturbances it stays there for a predefined time (default one hour) until it is safe to return to ESS.

The UPS seamlessly executes transitions through different operating modes as needed. This is only possible with transformer-free topologies.

## Availability

ESS is available for all 93PM and Power Xpert 9395P UPSs. Parallel UPS systems also support operation in ESS mode. Existing installations can be upgraded with ESS capability.



Active components engaged during Energy Saver System mode

# Variable Module Management System

VMMS



## Applications

### Typical applications where VMMS is particularly efficient include:

- UPSs in redundant N+1 and 2N systems
  - Lightly loaded: UPSs in these systems typically operate at low loads, < 45% load level
- Data centres, especially when the UPS system feeds dual-corded servers
- Any applications where load is not constant

## Variable Module Management System (VMMS)

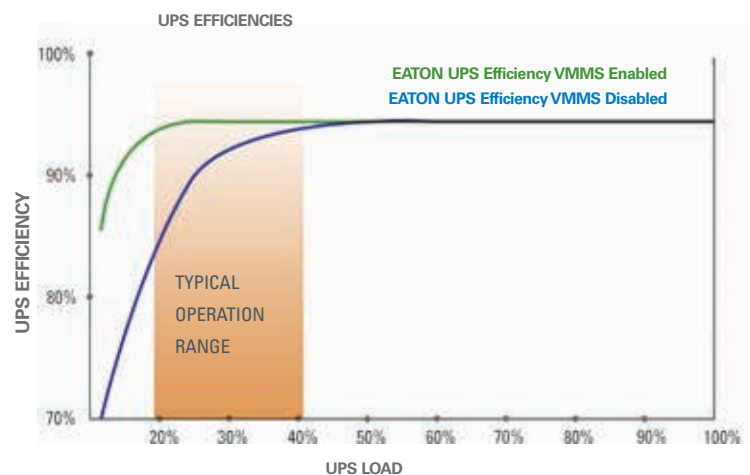
The rising demand for highly available, reliable and efficient power is a continuous challenge for data centre operators. Higher energy efficiency helps to address increasing environmental, regulatory and economic pressures.

Eaton has developed innovative and proprietary technologies that improve system efficiency without compromising on reliability. Variable Module Management System (VMMS) is one of these technologies.

Typical field operations are usually within low load range, but UPSs do not operate at optimal efficiency when used for lighter loads.

In some multi-UPS parallel systems used with lighter loads, the system maximises the load percentage of the UPSs by putting the UPSs that are not needed to power the load into idle mode. This results in partial energy savings and is limited to multi-UPS systems, with no efficiency improvements for -single-UPS systems.

**Variable Module Management System (VMMS)** technology maximises efficiencies at lighter loads without compromising reliability.



Variable module management technology maximises efficiencies at lighter loads

# Variable Module Management System (VMMS)

## Maximised energy efficiency

VMMS optimally employs uninterruptible power modules (UPMs) in the UPS to achieve higher efficiencies in double-conversion mode in order to maximise the percentage load level of the remaining active UPMs by switching UPMs that are not needed to ready state\*.

This is calculated according to the UPMs' VMMS load threshold – 80% by default – and the system configuration (redundancy requirements). This results in maximised energy savings.

VMMS is only possible thanks to Power Xpert 9395P UPS modularity. VMMS can also be applied in multimodule single-UPS systems.

**\*In "ready state", the UPM rectifies the DC-link, generates logic level PWM (Pulse Width Modulation) signals and filters EMI and lightning spikes.**

## No compromise on reliability

When a disturbance or load increase occurs on a critical bus, all the UPMs in ready state are able to react quickly, immediately switching back to double-conversion mode connecting the existing PWM signals to the IGBT gates.

**In VMMS, all UPMs will switch to double-conversion if:**

- the output voltage fluctuates by more than 3% for any reason
- any UPM reaches its current limit or discharges its battery
- battery recharge is necessary.

Once the above conditions are resolved, the system switches back to VMMS, after a customer-preset time delay (1 to 60 hours): once the load stabilises, Eaton proprietary design and algorithms allow the system to determine which UPMs to switch back to ready state to maximise efficiency according to the new operating conditions.

## Extensive configurability

Customers can decide how to configure their system, establishing the number of redundant UPMs and the max percentage load level per UPM allowed in VMMS setting other UPM's in ready state.

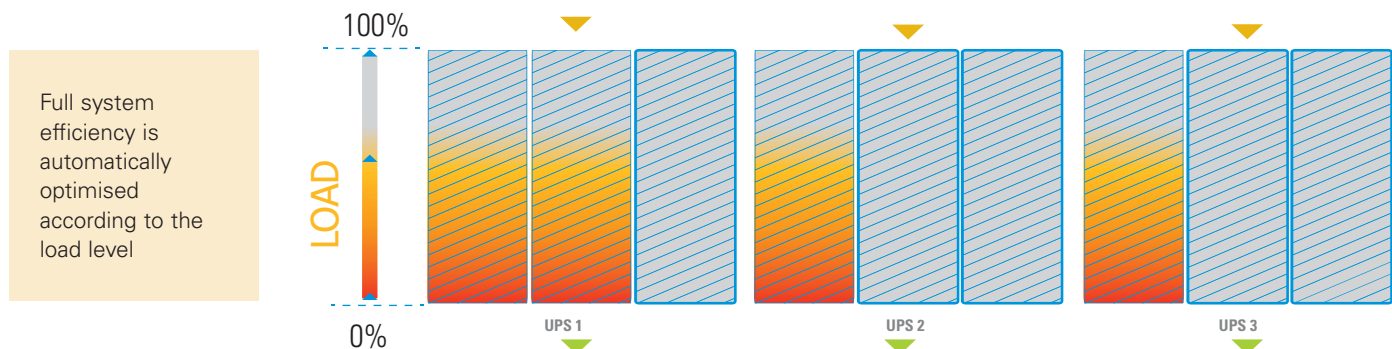
**VMMS can be used in all multi-module (multiple-UPM) Power Xpert 9395P systems:**

- Single 9395P units from 550 kVA to 1100 kVA
- All parallel 9395P systems

**Existing installations can also be upgraded with VMMS capability:**

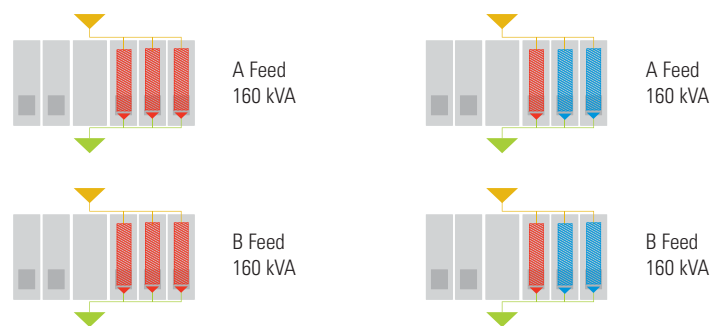
- VMMS maintains redundancy and achieves higher efficiency by intelligently controlling the load levels of UPMs
- Number of redundant UPMs can be selected (N+0, N+1, N+2, N+X)
- UPMs in ready state can be used as redundant units (N+0)

VMMS Parallel Power Xpert 9395P – 900 kVA modular UPS and VMMS



Data centre with dual-corded servers, Power Xpert 9395P-900 kVA UPS on A and B side - 320 kVA load

| UPS configuration         | Without VMMS                                           | With VMMS                                                                                                                                                       |
|---------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Efficiency @ 320 kVA load | 94.6%                                                  | 96.1%                                                                                                                                                           |
| UPS energy savings        | Used as reference for savings calculation              | 41 MWh / year                                                                                                                                                   |
| UPS energy savings        | □ Industry-leading UPS efficiency in double conversion | □ Additional energy savings from reduced cooling in VMMS (typically 30-40% on top of UPS energy savings)<br>□ UPMS in VMMS ready state available for redundancy |



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.eu/electrical](http://www.eaton.eu/electrical)



**Eaton Industries Manufacturing GmbH**  
Electrical Sector EMEA  
Route de la Longeraie 7  
1110 Morges, Switzerland  
[Eaton.eu](http://Eaton.eu)

© 2018 Eaton All Rights Reserved  
Printed in Europe  
Publication No. CA153003EN / CSSC-1309  
Article: Power infrastructure  
solutions & products catalogue  
May 2018

Changes to the products, to the information contained in this document, and to prices are reserved; so are errors and omissions. Only order confirmations and technical documentation by Eaton is binding. Photos and pictures also do not warrant a specific layout or functionality. Their use in whatever form is subject to prior approval by Eaton. The same applies to Trademarks (especially Eaton, Moeller, and Cutler-Hammer). The Terms and Conditions of Eaton apply, as referenced on Eaton internet pages and Eaton order confirmations.

Eaton is a registered trademark of Eaton.

All other trademarks are property of their respective owners.

Follow us on social media to get the latest product and support information.

