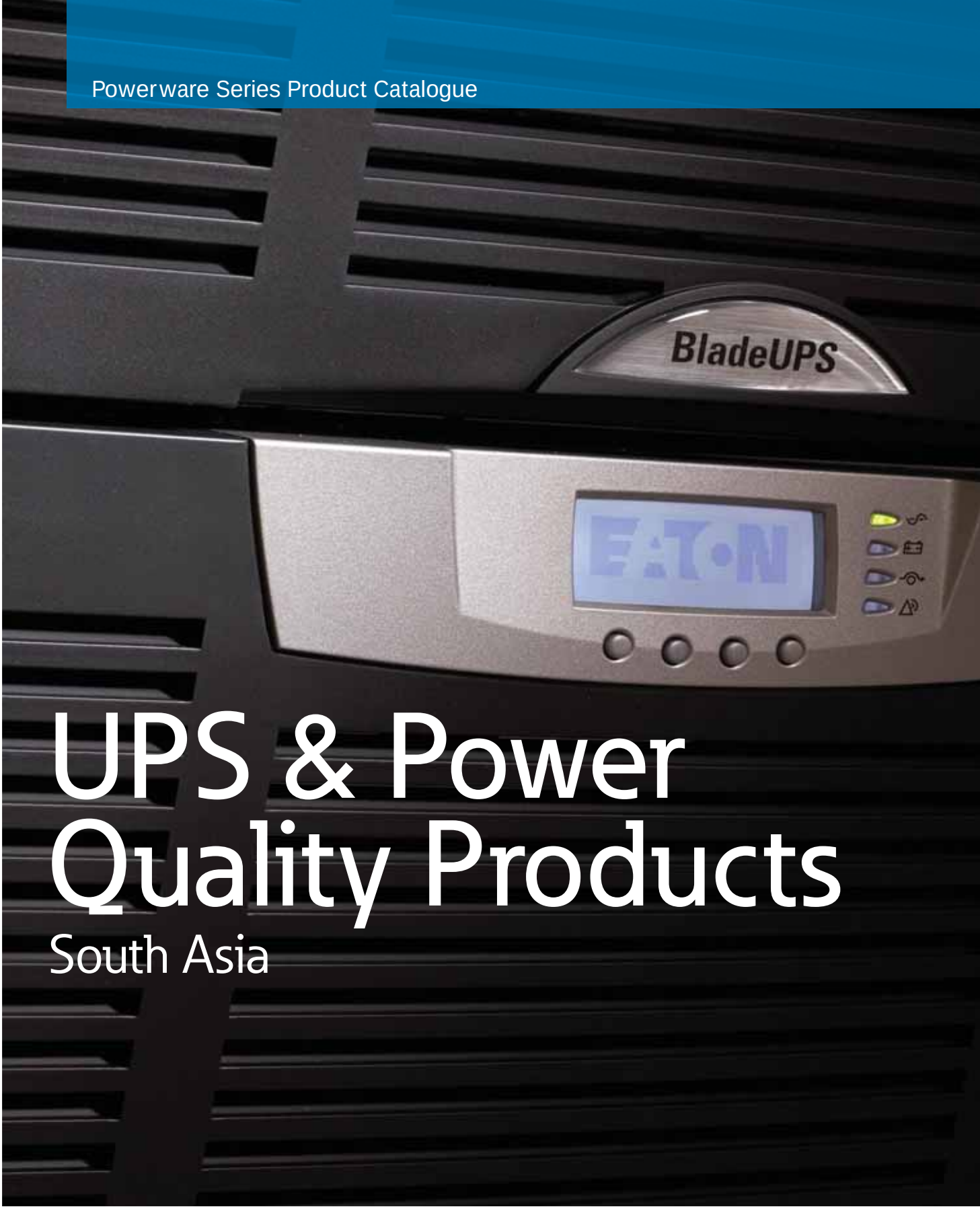
Powerware Series Product Catalogue



UPS & Power Quality Products

South Asia

Powering Business Worldwide

Contents

Uninterruptible Power Supplies

Corporate overview

Founded in 1911, Eaton® Corporation is a diversified industrial manufacturer and a global leader in various industrial markets, including:

- Electrical systems and components for power quality, distribution and control
- Hydraulics components, systems and services for industrial and mobile equipment
- Hydraulics, fuel and pneumatic systems for commercial and military aircraft
- Intelligent truck drivetrain systems for safety and fuel economy
- Automotive engine air management systems, powertrain solutions and specialty controls for performance, fuel economy and safety

With 2009 sales of $11.9 billion USD, Eaton has approximately 70,000 employees globally and sells products to customers in more than 150 countries.

Sustainable by Design

Sustainability has always been at the heart of Eaton's business – this means meeting the current needs of our society while enabling future generations to meet their own needs. Sustainable design for our products means helping our customers utilise electrical power more efficiently while significantly improving environmental performance.

At Eaton, we apply the ISO 14001, an international environmental management system, on-site and R&D certification to all of our facilities.

In addition, to clearly demonstrate and communicate the environmental value of the products to customers and consumers, Eaton has developed a rigorous evaluation process based on the guidelines of international organisations such as the International Standards Organisation (ISO). Eaton product and services that meet the environmental standards of this process earn the Eaton "Green Leaf" label. Though all of our products are designed to meet government standards and public expectations for protecting the environment, "Green Leaf" products and solutions go well beyond normal standards to provide exceptional benefit to our customers and the environment.

We also care for the way our parts and materials are supplied. Eaton is a part of Green Suppliers Network, a network that helps its component suppliers to develop "Lean and Clean" manufacturing processes that result in reduced waste and saved money, all while reducing their impact on the environment.

For more information on how Eaton is Sustainable by Design, please visit www.eaton.com/sustainability.

An Eaton Green Solution

Power Quality Business

Eaton Power Quality Division, a part of the Electrical Sector, has more than 45 years of experience in designing and producing innovative power quality products.
The result is an expansive portfolio of products, which help to protect our customer's business processes, critical applications and systems from all power problems and failures.

Eaton product and service range

- AC UPS from 350 VA to 4000kVA
- DC systems of all sizes
- A broad portfolio of rack-based power distribution units (ePDU®)
- Software and connectivity products for power management and remote control
- Technical support and maintenance
- Complete power quality solutions

Eaton products are manufactured in Finland, USA, China, Taiwan, India, Brazil, UK and New Zealand.

Single-Phase Products And Solutions

Eaton's power management solutions are based on protecting the nine most common power problems present in any environment. This unique approach makes your product selection decisions about power protection much simpler. The nine power problems listed below are potentially harmful to both your data and your hardware.

Eaton products offer three levels of power protection: Level 3, Level 5 and Level 9, plus the rugged FERRUPS® product line that provides protection from eight potential problems in harsh environments.Based on the parameters defined by your application, you can select a UPS from the level that best matches your power protection needs.

The Level 3 UPS primarily protects against three of the nine power problems including power failures, power sags and power surges. This essential, cost-effective protection is necessary in order to prevent damage such as data loss, file corruption, flickering lights, hardware damage and equipment shutoff. For example, if the utility fails you could lose all of your work-in-progress. The Level 3 UPS offers a degree of protection against the remaining power problems and is most commonly used to protect single workstations and point-of-sale (POS) equipment.

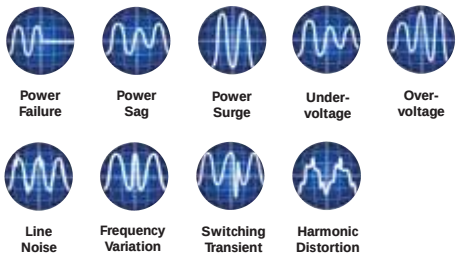
Basic solution: Protection from three potential problems

Level 5 UPS are most effective against five power problems (power failures, power sags, power surges, under-voltage and over-voltage) and offer a degree of protection against other power problems. Some of the damages you risk by not using a Level 5 UPS include premature hardware failure, data loss and corruption, data error, keyboard lockup, storage loss and system lockup. Level 5 UPS are recommended for small network systems - all the way up to enterprise networking environments.

Intermediate solution: Protection from five potential problems

Level 9 UPS protects against all nine power problems: power failures, power sags, power surges, under-voltage, electrical line noise, over-voltage, frequency variation, switching transients and harmonic distortion. Level 9 comprehensive protection minimises the opportunity for component stress, burnt circuit boards, data crashes and program failures. Level 9 UPSs offer the highest level of power protection available and are always recommended for mission-critical applications like server farms, hospitals and Voice Over Internet Protocol (VOIP) applications.

Complete solution: Protection from all nine potential problems



Advanced Technologies

Eaton has been developing its innovative technical solutions in the power protection field since receiving its first patent in 1962. As a technology leader Eaton meets the customers' fast growing needs with advanced patented technologies.

Eaton's three-phase UPS products are based on the same technical platform, including a similar internal topology, common control hardware and algorithms, standardised communications capabilities and a common user-interface.

Single platform benefits

- UPS units behave in a uniform way and carry similar features
- Product upgrades are easier as the process is identical
- Improved service capabilities due to usage of common spare parts and accessories across product families and standard service tools
- Similarity of service training and documentation guarantee that customers in all countries receive the same high level of service

Transformer-free Technology

The transformer-free technology used in Eaton UPSs with small and lightweight filter inductors, high performance IGBTs in both inverter and rectifier, and advanced control algorithms brings improved performance and value. Compared to legacy UPS topology designs, a transformer-free UPS is typically only 50% the weight and occupies just 60% the footprint. Low input THD (<5% at full load) and high input power factor (>0.99) are supported down to nearly 10% load without the need for an additional input filter. In addition, full load efficiency can reach 94.5% and above.

User benefits

- High efficiency up to 94.5%
- Less weight
- Smaller footprint

Powerware Hot Sync® Technology

The number one function of a UPS is to supply continuous conditioned, reliable electricity to critical loads. In the 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 a Master-Slave principle, which introduces a risk of single point failure. The absolute reliability of a UPS system can be reached 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.

Hot Sync eliminates single point of failure, with the ability to synchronise and support critical loads independently of other UPS modules in the system. UPS modules can share loads without any communication wiring to the outside world.

The secret here is a patented built-in digital signal processor (DSP) algorithm, running continuously in each unit. It drives the UPS outputs toward synchronisation and takes care of load sharing. If there is a common bypass available, it is used as valid synchronisation source for output. In the absence of common bypass, the processor makes subtle adjustment to the inverter frequency on the basis of output power level measurement in order to find a common frequency and load balance among the units. There exists, as shown in Figure 2, a relationship between the power imbalance and the voltage phase difference.

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 perfomed with the load supported continuously by the UPS-grade clean power.

User benefits

- Available for both single and three-phase products to meet any mission-critical need up to 3.3 MVA (400V) systems
- Easy and modular parallel UPS system upgrade with additional capacity or redundancy
- Eliminates single point of failure

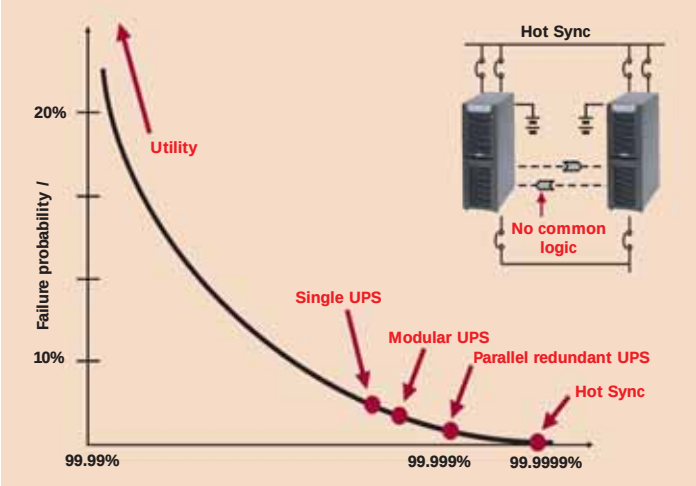


Figure 1. Patented Hot Sync technology provides the highest availability for load.

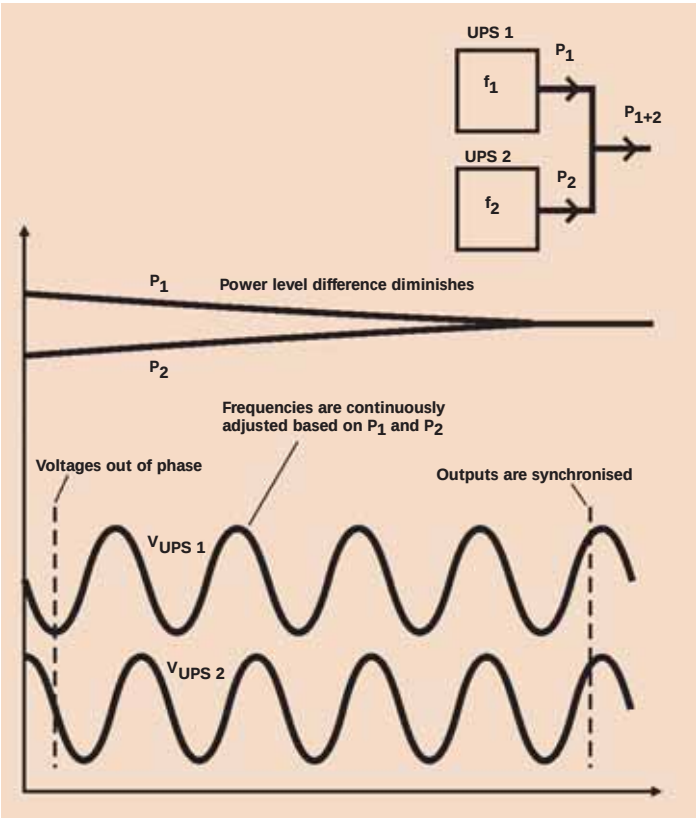


Figure 2. Well-balanced load share is achieved by adjusting output frequencies; thus the phase difference between parallel UPS output voltages is forced to zero.

Parallel Output, Load Bus

ABM® Technology

Battery service life is a major contributor to UPS reliability. Since batteries are electro-chemical 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, back-up 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.

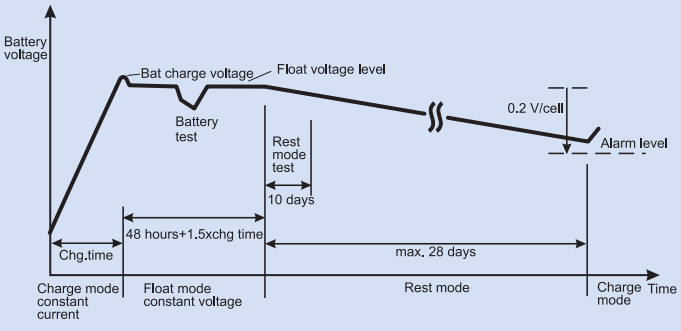
Eaton has created ABM® Technology to extend the life of valve regulated lead-acid batteries by applying sophisticated logic to the charging regime. Using traditional trickle charge method, batteries become subject to electrode corrosion and electrolyte dry-out, especially in standby service use due to continuous float charging. ABM is essentially an addition of intelligence to the charging routine by preventing charging when it is not necessary, 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. Also, it optimises the recharge time, which is advantageous when there may be consecutive power outages within a short period. ABM has been used for over fifteen years in our UPSs ranging from 1 to 160 kVA and is now applied in UPS up to 1100 kVA.

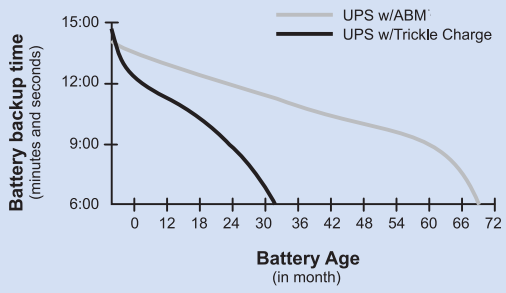
User benefits

- 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 +50ºC temperature range

ABM cycle and operation – how does it work?

The basic idea about 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, the 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 re-starts 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 alarm. 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.





Eaton 5115

Technology: **Series 5 (line-interactive)**
Rating: **500-1400 VA**
Voltage: **240 Vac**
Backup time: **Typical 5 min**
Configuration: **Cabinet**

Designed to offer advanced power protection for office servers and other critical applications, Eaton 5115 protects your equipment against five of the nine most common power problems that can harm your equipment or result in corrupted data.

In offices a crucial part of the work is stored on servers and reliable shutdown software is needed to ensure that no data is lost even during longer power outages. With a 5115 and Eaton's Intelligent Power® Manager software protecting the server, business goes on while the UPS invisibly and automatically takes care that no data is lost due to power problems. The Intelligent Power Manager software facilitates easy and versatile remote monitoring and management of multiple devices that is accessible from any web browser on a network computer.

Typical applications:

- Small office servers
- High-capacity PCs and workstations

Product highlights:

- High performance protection
- Software suite bundled
- ABM, prolongs battery life by up to 50%
- Hot-swappable user replaceable batteries
- Standard USB and RS232 serial ports extend communication capacity

TECHNICAL SPECIFICATION	500VA	750VA	1000VA	1400VA
Rating (VA / Watt)	500/320	750/500	1000/670	1400/950
Characteristic				
Nominal input voltage (Vac)	240 Vac	240 Vac	240 Vac	240 Vac
Input voltage range	192 - 288 VAC (+/-20%)	192 - 288 VAC (+/-20%)	192 - 288 VAC (+/-20%)	192 - 288 VAC (+/-20%)
Operating frequency	50/60 Hz auto sensing	50/60 Hz auto sensing	50/60 Hz auto sensing	50/60 Hz auto sensing
Input power factor	Same as load	Same as load	Same as load	Same as load
Output voltage	240 Vac	240 Vac	240 Vac	240 Vac
Output voltage regulation	216-254 VAC (-10%/+6%) or +/-5% on battery		216-254 VAC (-10%/+6%) or +/-5% on battery	
Overload capacity	110% 3 min; 150% 10 cycles		110% 3 min; 150% 10 cycles	
Efficiency	95%	95%	95%	95%
Connection				
Input connection	IEC320/10A	IEC320/10A	IEC320/10A	IEC320/10A
Output connection	4xIEC320/10A	4xIEC320/10A	6xIEC320/10A	6xIEC320/10A
Standard communication ports	1 x RS232 & 1 x USB Port	1 x RS232 & 1 x USB Port	1 x RS232 & 1 x USB Port	1 x RS232 & 1 x USB Port
Battery				
Typical runtime (Full load)	5 min	6 min	5 min	5 min
Interface				
LED	Four LEDs; UPS on, UPS on battery, overload, alarm		Four LEDs; UPS on, UPS on battery, overload, alarm	
Operating condition, standard and approval				
Operating temperature	0ºC to +40ºC	0ºC to +40ºC	0ºC to +40ºC	0ºC to +40ºC
Storage temperature	-15ºC to +55ºC	-15ºC to +55ºC	-15ºC to +55ºC	-15ºC to +55ºC
Altitude	< 3000 m	< 3000 m	< 3000 m	< 3000 m
Audible noise at 1 metre	< 40ddBA	< 40ddBA	< 40ddBA	< 40ddBA
Markings	CE/GS/C-Tick	CE/GS/C-Tick	CE/GS/C-Tick	CE/GS/C-Tick
Safety	EN 50091-1-1 & IEC 609050		EN 50091-1-1 & IEC 609050	
EMC (Class B)	AS62040.2.2001, C-Tick	AS62040.2.2001, C-Tick	AS62040.2.2001, C-Tick	AS62040.2.2001, C-Tick
Dimension (HxWxD in mm) / Weight (kg)				
Dimension	185x150x268	185x150x333	185x150x333	185x150x388
Weight	8	12	13	17
Part number				
	05146549-5591	05146555-5591	05146561-5591	05146567-5591

Battery Runtimes (in minutes)				
200VA/128W	17	38	41	58
300VA/192W	11	27	28	41
500VA/320W	5	14	15	28
600VA/402W	-	9	10	19
750VA/503W	-	6	8	14
900VA/603W	-	-	6	10
1000VA/670W	-	-	5	8
1200VA/804W	-	-	-	6
1440VA/938W	-	-	-	5

This guide provides typical application information. Battery runtimes are approximate and may vary with equipment, configuration, disk access, battery age, temperature, etc.

Eaton 5115 RM

Technology: **Series 5 (line-interactive)**
Rating: **500-1500 VA**
Voltage: **220-240 Vac**
Configuration: **Multi-mount 19” rack, Zero U & wall mount**

The Eaton 5115 Rack Mount UPS is the ideal high-density power protection solution for servers, storage systems, network equipment and other critical devices. The slim design and wide range of installation possibilities make the 5115RM the most versatile UPS available. Occupying only 1U of rack height, the 5115 conserves valuable rack space for other critical devices while delivering powerful performance.

Unlike other UPSs that use simulated sine wave, the Eaton 5115 Rack Mount provides pure sine wave output during battery operation. As a result, the connected devices continue to receive high quality electrical input and operate smoothly even during power outages. In addition, this unique UPS corrects incoming voltage fluctuations to further protect the connected equipment.

Typical applications:

- Rack mounted servers
- Network devices
- Storage systems

Product highlights:

- 1U rack conserves valuable rack space
- Unique chassis adapts to rack-mount, wall mount, side cabinet (zero U) and bench top applications
- ABM prolongs battery life by up to 50%
- True sine wave output delivers smooth, continuous power
- Load segments - scheduled shutdown of non-critical load
- Hot-swappable user replaceable batteries
- Standard USB and RS232 serial ports extend communications capacity
- X-Slot card communication options
- Software suite bundled

Options:

- ConnectUPS-X Web/SNMP card with in-built switching hub
- Relay card

TECHNICAL SPECIFICATION	500VA	750VA	1000VA	1500VA
Rating (VA / Watt)	500/320	750/500	1000/670	1500/1000
Characteristic				
Nominal input voltage (Vac)	220/230/240 Vac	220/230/240 Vac	220/230/240 Vac	220/230/240 Vac
Input voltage range	+20/-20% of nominal	+20/-20% of nominal	+20/-20% of nominal	+20/-20% of nominal
Input frequency range	45-65Hz	45-65Hz	45-65Hz	45-65Hz
Operating frequency	50/60 Hz auto sensing	50/60 Hz auto sensing	50/60 Hz auto sensing	50/60 Hz auto sensing
Nominal output voltage	220/230/240 Vac (user selectable)		220/230/240 Vac (user selectable)	
On utility output voltage regulation	-10%/+6% of selected nominal Voltage		-10%/+6% of selected nominal Voltage	
On battery output voltage regulation	+5% RMS	+5% RMS	+5% RMS	+5% RMS
Overload (normal operation)	110% overload, shutdown after 3 minutes, 150% overload, shutdown after 3 cycles			
Connection				
Input connection	IEC320/10A	IEC320/10A	IEC320/10A	IEC320/10A
Output connection	4xIEC320/10A	4xIEC320/10A	4xIEC320/10A	4xIEC320/10A
Standard communication ports	1 x RS232 Serial Port & 1 x USB Port		1 x RS232 Serial Port & 1 x USB Port	
Battery				
Battery type	Sealed, lead-acid maintenance free		Sealed, lead-acid maintenance free	
Recharge time	< 3 hours to 90% useable capacity		< 3 hours to 90% useable capacity	
Start-On-Battery	Allows start of UPS without utility power		Allows start of UPS without utility power	
Interface				
LED	LED status display; AC Power On, Load Group, Overload, On Battery and General Alarm Indicators			
Operating condition, standard and approval				
Operating temperature	0ºC to +40ºC	0ºC to +40ºC	0ºC to +40ºC	0ºC to +40ºC
Storage temperature	-15ºC to +50ºC	-15ºC to +50ºC	-15ºC to +50ºC	-15ºC to +50ºC
Altitude	< 3000 m	< 3000 m	< 3000 m	< 3000 m
Audible noise at 1 metre	< 40ddBA	< 40ddBA	< 40ddBA	< 40ddBA
Markings	CE/C-Tick	CE/C-Tick	CE/C-Tick	CE/C-Tick
Safety	EN 50091-1-1 & UL 1778	EN 50091-1-1 & UL 1778	EN 50091-1-1 & UL 1778	EN 50091-1-1 & UL 1778
EMC	EN 50091-2, EN6100-3-2, C-Tick		EN 50091-2, EN6100-3-2, C-Tick	
Dimension (HxWxD in mm) / Weight (kg)				
Dimension	44x440x578	44x440x578	44x440x578	44x440x578
Weight	15.9	18.8	18.8	22.0
Part number				
	103003267-6591	103003270-6591	103003273-6591	103003276-6591

Battery Runtimes (in minutes)				
200VA/130W	19	37	41	76
300VA/190W	11	25	29	58
500VA/320W	5	13	15	28
600VA/402W	-	9	12	21
750VA/520W	-	6	8	16
900VA/600W	-	-	6	11
1000VA/670W	-	-	5	9
1200VA/800W	-	-	-	8
1500VA/938W	-	-	-	5

This guide provides typical application information. Battery runtimes are approximate and may vary with equipment, configuration, disk access, battery age, temperature, etc.

Eaton 5130

Technology: **Series 5 (line-interactive)**
Rating: **1250-3000 VA**
Voltage: **230 Vac**
Frequency: **50/60 Hz (auto-sensing)**
Configuration: **Rack-mount/Tower convertible**

The 5130 resolves outages, sags, surges, under-voltage and over-voltage conditions - and supplies regulated power to all connected equipment. This UPS is particularly well suited for protecting:

- IT and networking equipment, such as routers, switches, servers, wireless devices, storage systems, security systems and PC/workstation clusters
- Telecom equipment, such as PBXs, VoIP components and EDGE/3G/WiMAX wireless networking equipment

The 5130 is value-priced, but it delivers features you would normally expect to find in much higher priced systems, such as: load segment control, hot-swappable battery modules, long battery runtime options, multiple communication options, high output power factor and high power density—all in a sleek, modern package.

Features:

- Protects connected equipment from five of the most common power anomalies: failures, surges, sags, under-voltage and over-voltage
- Provides more real wattage in less space with a 0.9 power factor - to protect more equipment and leave more room to expand IT systems
- Offers the choice of rack-mount or tower installation - with space-saving 2U, including internal batteries
- Enables prioritised shutdown of non-essential equipment during outages to maximise battery runtime for critical devices - with PowerShare
- Maximises availability with extended battery runtime options, hot-swappable batteries, optional maintenance bypass, remote monitoring and power management software

Options:

- Extended Battery Modules for longer run times
- MS Slot connectivity cards

TECHNICAL SPECIFICATION	1250VA	1750VA	2500VA	3000VA
Rating (VA / Watt)	1250/1150	1750/1600	2500/2250	3000/2700
Characteristic				
Nominal input voltage (Vac)	230 Vac (200/208/220/240 Selectable)		230 Vac (200/208/220/240 Selectable)	
Input voltage range	160-294 Vac	160-294 Vac	160-294 Vac	160-294 Vac
Operating frequency	50/60 Hz auto sensing, tolerance 47-70Hz		50/60 Hz auto sensing, tolerance 47-70Hz	
Nominal output voltage	230 Vac (200/208/220/240 Selectable)		230 Vac (200/208/220/240 Selectable)	
Output voltage range	230V +6%, -10%	230V +6%, -10%	230V +6%, -10%	230V +6%, -10%
Connection				
Input connection	IEC C14-10A	IEC C14-10A	IEC C20-16A	IEC C20-16A
Output connection	(8) IEC C13-10A	(8) IEC C13-10A	(1) IEC C19-16A (8) IEC C13-10A	IEC C14-10A (8) IEC C13-10A
Standard communication ports	RS232 and USB as standard on all models		RS232 and USB as standard on all models	
Optional	Connectivity slot for SNMP/WEB card and relay card		Connectivity slot for SNMP/WEB card and relay card	
Interface				
LED	13 LED's: bar graph % load, battery charge level and various status and alarms			
Operating condition, standard and approval				
Operating temperature	0ºC to +40ºC	0ºC to +35ºC	0ºC to +35ºC	0ºC to +35ºC
Storage temperature	-15ºC to +50ºC	-15ºC to +50ºC	-15ºC to +50ºC	-15ºC to +50ºC
Altitude	< 3000 m	< 3000 m	< 3000 m	< 3000 m
Audible noise at 1 metre	< 45 dB	< 45 dB	< 45 dB	< 45 dB
Markings	C-Tick, CE, TUV, cUL, UL	C-Tick, CE, TUV, cUL, UL	C-Tick, CE, TUV, cUL, UL	C-Tick, CE, TUV, cUL, UL
Safety	EN50091-1-1 and IEC60950	EN50091-1-1 and IEC60950	EN50091-1-1 and IEC60950	EN50091-1-1 and IEC60950
EMC	EN 50091-2, FCC part 15 subpart J Class A	EN 50091-2, FCC part 15 subpart J Class A	EN 50091-2, FCC part 15 subpart J Class A	EN 50091-2, FCC part 15 subpart J Class A
Dimension (HxWxD in mm) / Weight (kg)				
Dimension	87x441x509 (2U)	87x441x509 (2U)	87x441x634 (2U)	87x441x634 (2U)
Weight	24.3	26.6	33.8	33.8
Part number				
	103006590-6591	103006591-6591	103006592-6591	103006593-6591

Battery Runtimes (in minutes 75% / 50% load)*				
Internal Batteries	13/20	9/14	10/17	9/15
+1 EBM	52/105	33/60	50/85	38/60
+2 EBMs	90/175	55/100	80/130	70/100
+3 EBMs	125/225	80/145	130/210	90/150
+4 EBMs	175/300	105/180	180/290	120/210

Battery Backup Times in minutes 75% / 50% load at 0.7 PF run time chart provides typical information. Battery runtimes are approximate and may vary with equipment, configuration, battery age, temperature, etc.

Eaton 9130 Tower

Technology: **Series 9 (double conversion on-line)**
Rating: **700–6000VA**
Voltage: **208–240Vac**
Frequency: **50/60 Hz (auto-sensing)**
Configuration: **Tower**

The newest Powerware series addition, the Eaton 9130 UPS, resolves utility power problems and delivers superior power protection for IT and networking equipment, medical systems, manufacturing process control - or anywhere critical equipment and applications require clean, continuous power.

Double-conversion design for superior power protection. The 9130 is constantly monitoring power conditions—regulating both voltage and frequency. Even when presented with the most severe power problems, this UPS's output remains within three percent of nominal voltage. With a wide input voltage range, the 9130 does not depend on batteries to smooth out minor power fluctuations. Batteries are conserved for those times when utility power is highly unstable or completely out. If an outage occurs, the 9130 transfers to battery with zero interruption in power, making this an ideal UPS for sensitive and critical equipment.

More real power for less cost. High 0.9 output power factor enables the 9130 to provide its full power capability to modern IT equipment that may have a wide range of leading and lagging power factors.

With a 0.99 input power factor, this UPS avoids the disturbances that some energy converters tend to cause.

Typical applications:

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

Product highlights:

- Offers premium performance with a 0.9 power factor and 95% efficiency
- Increases battery service life and system uptime with ABM battery charging technology
- Enables prolonged runtime of essential equipment during power outages by allowing for orderly, remote shutdown of non-critical systems or processes
- Web-based monitoring and management of power devices network-wide with Intelligent Power Manager software

Options:

- Extended Battery Modules and Cabinets for longer run times
- External Battery Charger Unit for fast charging of long run time Extended Battery Cabinets
- Hard wiring kits for fixed installations
- Interlocked Maintenance Bypass Switches
- BD slot connectivity cards

TECHNICAL SPECIFICATION	700VA	1000VA	1500VA	2000VA	3000VA	5000VA	6000VA
Rating (VA / Watt)	700/630	1000/900	1500/1350	2000/1800	3000/2700	5000/4500	6000/5400
Characteristic							
Nominal input voltage (Vac)	240Vac (200/208/220/230 selectable)			240Vac (200/208/220/230 selectable)		240Vac (200+/208+/220/230 selectable)	
Input voltage range	120/140/160-276 Vac (at 33%/66%/100% 0.7pf load)			140/160/180-276 Vac (at 33%/66%/100% 0.7pf load)			
Operating frequency	50/60 Hz auto sensing, tolerance 40-70Hz						
Input power factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Nominal output voltage	240Vac (200/208/220/230 selectable)						
Output voltage range	+/-2%	+/-2%	+/-2%	+/-2%	+/-2%	+/-2%	+/-2%
Overload capacity	Up to 130 % for 10 seconds, 130-150% for 2 sec					Up to 130 % for 2 min, 130-150% for 30 sec	
Efficiency	90% online, 93% High Efficiency Mode				94% online, 98% High Efficiency Mode		
Connection							
Input connection	IEC C14-10A	IEC C14-10A	IEC C14-10A	IEC C14-10A	IEC C20-16A	Hardwire	Hardwire
Output connection	(6) IEC C13-10A	(6) IEC C13-10A	(6) IEC C13-10A	(8) C13 (1) IEC C19-10A	(8) C13 (1) IEC C19-16A	Hardwire	Hardwire
Standard communication ports	RS232 and USB as standard on all models						
Optional	Connectivity slot for SNMP/WEB card and relay card						
Interface							
LCD display	LCD display showing both UPS meters and UPS settings						
LED	Four LEDs; UPS On, UPS on Battery, UPS on bypass, Alarm						
Operating condition, standard and approval							
Operating temperature	0ºC to +40ºC	0ºC to +40ºC	0ºC to +40ºC	0ºC to +40ºC	0ºC to +40ºC	0ºC to +40ºC	0ºC to +40ºC
Storage temperature	-15ºC to +40ºC	-15ºC to +40ºC	-15ºC to +40ºC	-15ºC to +40ºC	-15ºC to +40ºC	-15ºC to +40ºC	-15ºC to +40ºC
Altitude	< 3000 m	< 3000 m	< 3000 m	< 3000 m	< 3000 m	< 3000 m	< 3000 m
Audible noise at 1 metre	< 52 dBA	< 52 dBA	< 52 dBA	< 52 dBA	< 52 dBA	< 50 dBA	< 50 dBA
Markings	C-Tick, CE, GS	C-Tick, CE, GS	C-Tick, CE, GS	C-Tick, CE, GS	C-Tick, CE, GS	C-Tick, CE	C-Tick, CE
EMC	EN62040-2 Emisions, category C1; Immunity, category C2					EN62040-2 Emisions & Immunity, category C2	
Dimension (HxWxD in mm) / Weight (kg)							
Dimension	250x160x355	250x160x383	250x160x435	345x214x410	345x214x410	574x244x542	574x244x542
Weight	12.2	14.5	19.0	34.5	34.5	75.5	75.5
Part number							

+ 200/208V are derated by 10%

Battery Runtimes (in minutes 75% / 50%)*							
Internal Batteries	12/19	13/22	11/18	21/34	12/20	20/34	16/27
1 EBM	N/A	55/82	47/81	81/130	49/79	81/136	16/107
2 EBMs	N/A	103/186	83/143	145/198	90/143	153/232	120/194
3 EBMs	N/A	151/250	126/208	184/293	134/180	217/328	178/267
4 EBMs	N/A	223/312	195/262	248/431	165/240	273/477	231/372

Run time chart provides typical information at 0.7 pf. Battery runtimes are approximate and may vary with equipment, configuration, battery age, temperature, etc.

Eaton 9130 Rack

Technology: **Series 9 (double conversion on-line)**
Rating: **1000–3000VA**
Voltage: **208–240Vac**
Frequency: **50/60 Hz (auto-sensing)**
Configuration: **Rack-mount**

The newest Powerware series addition, the Eaton 9130 UPS, resolves utility power problems and delivers superior power protection for IT and networking equipment, medical systems, manufacturing process control - or anywhere critical equipment and applications require clean, continuous power.

Double-conversion design for superior power protection. The 9130 is constantly monitoring power conditions—regulating both voltage and frequency.

Even when presented with the most severe power problems, this UPS's output remains within three percent of nominal voltage. With a wide input voltage range, the 9130 does not depend on batteries to smooth out minor power fluctuations. Batteries are conserved for those times when utility power is highly unstable or completely out. If an outage occurs, the 9130 transfers to battery with zero interruption in power, making this an ideal UPS for sensitive and critical equipment.

More real power for less cost. High 0.9 output power factor enables the 9130 to provide its full power capability to modern IT equipment that may have a wide range of leading and lagging power factors.

With a 0.99 input power factor, this UPS avoids the disturbances that some energy converters tend to cause.

Typical applications:

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

Product highlights:

- Offers premium performance with a 0.9 power factor and 95% efficiency
- Increases battery service life and system uptime with ABM battery charging technology
- Enables prolonged runtime of essential equipment during power outages by allowing for orderly, remote shutdown of non-critical systems or processes
- Web-based monitoring and management of power devices network-wide with Intelligent Power Manager software

Options:

- Extended Battery Modules for longer run times
- BD slot connectivity cards

TECHNICAL SPECIFICATION	1000VA	1500VA	2000VA	3000VA
Rating (VA / Watt)	1000/900	1500/1350	2000/1800	3000/2700
Characteristic				
Nominal input voltage (Vac)	240Vac (200/208/220/230 selectable)		240Vac (200/208/220/230 selectable)	
Input voltage range	120/140/160-276 Vac (at 33%/66%/100% 0.7pf load)		140/160/180-276 Vac (at 33%/66%/100% 0.7pf load)	
Operating frequency	50/60 Hz auto sensing, tolerance 40-70Hz		50/60 Hz auto sensing, tolerance 40-70Hz	
Input power factor	0.99	0.99	0.99	0.99
Nominal output voltage	240Vac (200/208/220/230 selectable)		240Vac (200/208/220/230 selectable)	
Output voltage regulation	+/-2%	+/-2%	+/-2%	+/-2%
Overload capacity	Up to 130 % for 10 seconds, 130-150% for 2 sec		Up to 130 % for 10 seconds, 130-150% for 2 sec	
Efficiency	90% online, 93% High Efficiency Mode	90% online, 93% High Efficiency Mode	90% online, 93% High Efficiency Mode	91% online, 93% High Efficiency Mode
Connection				
Input connection	IEC C14-10A	IEC C14-10A	IEC C14-10A	IEC C20-16A
Output connection	(6) IEC C13-10A	(6) IEC C13-10A	(8) C13 (1) IEC C19-16A	(8) C13 (1) IEC C19-16A
Standard communication ports	RS232 and USB as standard on all models		RS232 and USB as standard on all models	
Optional	Connectivity slot for SNMP/WEB card and relay card		Connectivity slot for SNMP/WEB card and relay card	
Interface				
LCD display	LCD display showing both UPS meters and UPS settings			
LED	Four LEDs; UPS On, UPS on Battery, UPS on bypass, Alarm			
Operating condition, standard and approval				
Operating temperature	0ºC to +40ºC	0ºC to +40ºC	0ºC to +40ºC	0ºC to +40ºC
Storage temperature	-15ºC to +40ºC	-15ºC to +40ºC	-15ºC to +40ºC	-15ºC to +40ºC
Altitude	< 3000 m	< 3000 m	< 3000 m	< 3000 m
Audible noise at 1 metre	< 52 dBA	< 52 dBA	< 52 dBA	< 52 dBA
Markings	C-Tick, CE, GS	C-Tick, CE, GS	C-Tick, CE, GS	C-Tick, CE, GS
EMC	EN62040-2 Emisions, category C1; Immunity, category C2			
Dimension (HxWxD in mm) / Weight (kg)				
Dimension	86.5x438x438 (2U)	86.5x438x438 (2U)	86.5x438x600 (2U)	86.5x438x600 (2U)
Weight	16	19.5	29.0	29.5
Part number				
	103006455-6591	103006456-6591	103006457-6591	103006463-6591

Battery Runtimes (in minutes full load/half load)*				
Internal Batteries	6/19	5/14	6/17	3/9
1 EBM	31/68	24/61	33/72	18/45
2 EBMs	51/111	46/112	59/129	34/84
3 EBMs	82/192	69/172	88/183	53/122
4 EBMs	100/246	90/221	119/260	69/165

* Up to 4 EBMs can be connected. EBM runtimes include internal batteries. Run time chart provides typical information. Battery runtimes are approximate and may vary with equipment, configuration, battery age, temperature, etc.

Superior de-centralised power protection for medium to high density rack environments

Eaton 9135

Technology: **Series 9 (double conversion on-line)**
Rating: **6000VA**
Voltage: **208–240V**
Frequency: **50/60 Hz (auto-sensing)**
Configuration: **Rack-mount/Tower convertible**

The new Eaton 9135 UPS from our Powerware series resolves power problems and supplies continuous, conditioned power. You get clean power for valuable IT and networking equipment, battery backup to gracefully handle utility outages, and on-demand visibility into UPS status from anywhere.

The 9135 delivers superior power protection for medium-density data centres, banking and security systems, manufacturing process control, retail point-of-sale systems and telecommunications/VoIP equipment. Combining premium performance with innovative features, the 9135 is an exceptional UPS in its class.

Get more usable power for every utility dollar

The 9135 provides exactly the level of power protection needed under the conditions of the moment—optimising for both efficiency and performance. When this feature is activated, the UPS monitors incoming power and operates in high-efficiency mode unless power conditions warrant an automatic switch to double-conversion mode.

With this technology, the UPS can operate at up to 97 percent efficiency under normal conditions - and up to 91 percent when poor power conditions require the UPS to work harder to deliver clean power. High efficiency leads to a greener IT infrastructure - one that uses less energy and dissipates less heat, which in turn reduces power and cooling costs.

Typical applications:

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

Product highlights:

- Provides clean, continuous power to protect critical equipment and applications from power-related downtime, data loss, corruption, and process interruption
- Saves valuable rack space by delivering up to 6000 VA/4200W in only 3U
- Provides deployment versatility by offering rack and tower installation options with rail kits and pedestal provided
- Increases availability with hot-swappable batteries and power module and an optional external maintenance bypass
- Offers extended battery runtime options to power essential systems for more than an hour during an outage
- Web-based monitoring and management of power devices network-wide with Intelligent Power Manager software

Options:

- MS Slot connectivity cards
- Extended battery modules, 3U high

TECHNICAL SPECIFICATION	6000VA
Rating (VA / Watt)	6000/4200
Characteristic	
Nominal input voltage (Vac)	230 Vac (208/220/240 selectable)
Input voltage range	156-280V @ 100% load, 120-280V @ 70% load
Operating frequency	50/60 Hz auto sensing, tolerance 40-70Hz
Input power factor	0.95
Nominal output voltage	230 Vac (208/220/240 selectable)
Output voltage regulation	+/-2%
Overload capacity	Up to 130 % for 10 seconds, 130-150% for 2 sec
Efficiency	>91% online, >97% High Efficiency Mode
Connection	
Input connection	Hardwired
Output connection	Hardwired + (2) C19, (8) C13
Standard communication ports	RS232, USB and Relay Port as standard on all models
Optional	Connectivity slot for SNMP/WEB card and relay card
Interface	
LCD display	LCD display showing both UPS meters and UPS settings
LED	Four LEDs; UPS On, UPS on Battery, UPS on bypass, Alarm
Operating condition, standard and approval	
Operating temperature	0ºC – +40ºC
Storage temperature	-15ºC – +40ºC
Altitude	< 3000 m
Audible noise at 1 metre	< 46 dBA
Markings	C-Tick, CE, TUV(GS), cUL
EMC	EN62040-2 C1, AS62040-2 C1, FCC Part 15
Safety	EN50091-1-1, EN62040-1-1, IEC60950-1-1
Dimension (HxWxD in mm) / Weight (kg)	
Dimension	130.6x444.5x741 (3U)
Weight	57
Part number	
	103006722-6591

Battery Runtimes* Standard Extended Battery Modules (in minutes)						
Load (VA/Watts)	1000/700	2000/1400	3000/2100	4000/2800	5000/3500	6000/4200
Internal Batteries	36	13	10	7	5	4
+1 EBM	132	52	40	29	22	18
+2 EBMs	232	95	74	53	41	33
+3 EBMs	332	140	110	80	62	50
+4 EBMs	433	184	146	107	83	68

Run time chart provides typical information. Battery runtimes are approximate and may vary with equipment, configuration, battery age, temperature, etc.

Superior de-centralised power protection for medium to high density rack environments

Eaton 9140

Technology: **Series 9 (double conversion on-line)**
Rating: **7.5 and 10 kVA**
Voltage: **1ph/1ph in/out: 230 Vac (200-240 Vac)**
3ph/1ph in/out: 380-415/220-240 Vac
Backup time: **7-45 minutes**
Configuration: **Rack-mount**

Today's racks of IT equipment are requiring even greater power, from computer rooms and wiring closets to commercial data centres. Whether you manage the IT needs of a small and medium business or a commercial facility, you know it is a challenge to provide in-rack power protection for expanding loads in shrinking spaces.

Fortunately, technology advancements have also raised the power density of power protection systems. The Eaton 9140 uninterruptible power system (UPS) delivers efficient, reliable power protection in only 6U of rack space, including batteries.

This double conversion, on-line UPS resolves all nine common utility power problems and supplies clean, continuous power to all connected equipment. If utility power goes out altogether, there is no delay transferring to backup power, either to UPS batteries or an auxiliary generator.

Typical applications:

- Critical servers in rack configuration
- Telecom rack applications

Product highlights:

- Conserves valuable rack space, only 6U high including batteries
- Pre-installed rack-mount hardware significantly reduces installation time
- Modular lightweight design facilitates installation and improves service time
- Upgradable from 7.5kVA to 10kVA, to accommodate system growth
- Input configurable as 1 or 3 phase
- ABM prolongs battery life by up to 50%

Options:

- ConnectUPS-X Web/SNMP card with in-built switching hub
- Extended battery modules, 3U high

TECHNICAL SPECIFICATION	7500VA	10000VA
Rating (VA / Watt)	7500/6000	10000/8000
Characteristic		
Nominal input voltage (Vac)	220-240 Vac single phase , user selectable to 380/220V, 400/230V, 415/240V, three	
Input voltage range	174 to 288 Vac single phase, 301 to 499 Vac three phase	174 to 288 Vac single phase, 301 to 499 Vac three phase
Operating frequency	50/60Hz (±5Hz)	50/60Hz (±5Hz)
Input power factor	0.99	0.99
Nominal output voltage	220/230/240 VAC single phase	220/230/240 VAC single phase
Output voltage regulation	±2% static , ±10% dynamic	±2% static , ±10% dynamic
Efficiency	>90%	>90%
Connection		
Input connection	Hardwired	Hardwired
Output connection	Hardwired + (3) C19 & (2) C13	Hardwired + (3) C19 & (2) C13
Optional	External battery cabinets; Web/SNMP adaptor; AS/400 relay adaptor	
Battery (in minutes)		
Typical runtime (Full load)	7	5
Typical runtime (Half load)	18	12
Interface		
LCD display	Graphical LCD with backlight LCD languages (English, French, Spanish, German)	
LED	Four LEDs for notice and alarm	Four LEDs for notice and alarm
Operating condition, standard and approval		
Operating temperature	0ºC to +40ºC	0ºC to +40ºC
Storage temperature	-20ºC to +50ºC	-20ºC to +50ºC
Altitude	< 3000 m	< 3000 m
Audible noise at 1 metre	< 55 dBA	< 55 dBA
Quality	ISO 9001	ISO 9001
Markings	C-Tick, CE, TUV(GS), cUL	C-Tick, CE, TUV(GS), cUL
Safety	UL, cULus, NOM, TUV, CE	UL, cULus, NOM, TUV, CE
Dimension (HxWxD in mm) / Weight (kg)		
Dimension	263x430x760 (6U)	263x430x760 (6U)
Weight	115	115
Part number		
	103005093-6591	103004728-6591

Battery Runtimes* Standard Extended Battery Modules (in minutes)								
Load (VA/Watts)	1250/1000	2500/2000	3750/3000	5000/4000	6250/5000	7500/6000	8750/7000	10000/8000
Internal Batteries	80	31	18	12	9	7	6	5
+1 EBM	137	61	38	27	21	17	14	12
+2 EBMs	189	99	68	52	42	35	31	27
+3 EBMs	275	138	92	69	55	46	40	35
+4 EBMs	365	181	121	90	72	60	51	45

* EBM run times include internal batteries. Run time chart provides typical information. Battery run times are approximate and may vary with equipment, configuration, battery age, temperature, etc.

Eaton 9155

Technology:	**Series 9 (double conversion on-line)**
Rating:	**8-30kVA**
Voltage:	**220-240/380-415 Vac, 50/60 Hz**
Backup time:	**Typical 5-33 min internal (extendable up to several hours)**
Configuration:	**Cabinet**

Eaton 9155 are Series 9 UPS designed to protect high 0.9 p.f. rated, critical computers and servers. The centralised UPS protection is an essential part of IT infrastructure in today's IT, telecom, healthcare, banking and industrial automation applications. The 9155 feature active input power factor control (PFC) and low 2-5% Total Harmonic Distortion (current) with IGBT rectifier technology

The Eaton 9155 operate using the unique ABM function. While traditional UPS charges batteries continuously, ABM charges batteries only when necessary, thus preventing battery corrosion. The exceptional ABM function prolongs the service life of batteries by up to 50%.

Typical applications:

- High-capacity computers
- Server rooms
- Networks
- Process automation, control equipment
- Telecommunication applications
- Offshore, military and special projects

Product highlights:

- Hot Sync® redundancy
- ABM® providing up to 50% longer battery life time
- Active input power factor correction (PFC) providing 2-5% THD(i) harmonics
- High 0.9 p.f. output rating for server and high computer loads
- Market leading internal battery runtime
- User friendly graphical LCD display with light blue back light
- Web/SNMP and ModBus monitoring capability
- Software Suite bundled
- In-built Maintenance Bypass Switch on 20-30kVA models

Options:

- System Parallel Cabinets for Hot Sync Capacity/Redundancy Solutions
- "UPS Centre" distribution cabinets for small computer room applications
- External Maintenance Bypass Switches
- Extended Battery Cabinets
- X Slot connectivity options

TECHNICAL SPECIFICATION	8000VA	10000VA	12000VA	15000VA	20000VA	30000VA
Rating (VA / Watt)	8000/7200	10000/9000	12000/10800	15000/13500	20000/18000	30000/27000
Characteristic						
Nominal input voltage (Vac)	S models: 220/230/240 Vac single phase; N models: 220/380, 230/400, 240/415 Vac three phase			S models: 220/230/240 Vac single phase; N models: 220/380, 230/400, 240/415 Vac three phase		
Input voltage range	175/305V - 276/478V at 100% load, 115/200V - 276/478V at 50% load					
Operating frequency	50/60 Hz (45 to 65 Hz)		50/60 Hz (45 to 65 Hz)		50/60 Hz (45 to 65 Hz)	
Input power factor	0.99 (5% THD)	0.99 (5% THD)	0.99 (5% THD)	0.99 (5% THD)	0.99 (5% THD)	0.99 (5% THD)
Nominal output voltage	220/230/240 VAC single phase		220/230/240 VAC single phase		220/230/240 VAC single phase	
Output voltage regulation	±2% static; ±5% dynamic at 100% load change, < 1 ms response time			±2% static; ±5% dynamic at 100% load change, < 1 ms response time		
Overload capacity	150% for 5 sec / 125% for 1 min (online), 1000% for 20 msec (bypass)			150% for 5 sec / 125% for 1 min (online), 1000% for 20 msec (bypass)		
Efficiency	92% with computer load; 93% with linear load			92% with computer load; 93% with linear load		
Connection						
Standard communication ports	1 x RS232 for local support, 2 x X-slot (empty); 1 x relay contact, 1 x emergency power off input, 2 x environmental input					
Optional	External battery cabinets; isolation transformer; external mechanical bypass switch; X-slot; Web/SNMP, Modbus/Jbus, relay card, RS232 port, Hot Sync card					
Interface						
LCD display	Graphical LCD with blue backlight, English, German and Spanish languages, extendable					
LED	Four LED for notice and alarm		Four LED for notice and alarm		Four LED for notice and alarm	
Operating condition, standard and approval						
Operating temperature	0ºC to +40ºC	0ºC to +40ºC	0ºC to +40ºC	0ºC to +40ºC	0ºC to +40ºC	0ºC to +40ºC
Storage temperature	-15ºC to +40ºC	-15ºC to +40ºC	-15ºC to +40ºC	-15ºC to +40ºC	-15ºC to +40ºC	-15ºC to +40ºC
Altitude	< 1000 m at +40ºC, < 3000 m at +25ºC		< 1000 m at +40ºC, < 3000 m at +25ºC		< 1000 m at +40ºC, < 3000 m at +25ºC	
Audible noise at 1 metre	< 50 dB(A) at 1 metre		< 50 dB(A) at 1 metre		< 50 dB(A) at 1 metre	
Quality	ISO 9001; 2000 & ISO 14001:1996		ISO 9001; 2000 & ISO 14001:1996		ISO 9001; 2000 & ISO 14001:1996	
Markings	CE and GOST markings / C-Tick		CE and GOST markings / C-Tick		CE and GOST markings / C-Tick	
EMC	EN 50091-2 Class A, C-Tick		EN 50091-2 Class A, C-Tick		EN 50091-2 Class A, C-Tick	
Safety	IEC 62040-1-1, IEC 60950, EN 62040-1-1		IEC 62040-1-1, IEC 60950, EN 62040-1-1		IEC 62040-1-1, IEC 60950, EN 62040-1-1	
Dimension (HxWxD in mm) / Weight (kg)						
Dimension	817x305x702	817x305x702	817x305x702	817x305x702	1684x494x762	1684x494x762
Dimension (with extra runtime)	1214x305x702	1214x305x702	1214x305x702	1214x305x702	-	-
Weight (UPS without batteries)	70	70	70	70	200	200
Weight (UPS with internal 1xBAT)	165	165	165	165	300	N/A
Weight (UPS with internal 2xBAT)	270	270	270	270	400	400
Weight (UPS with internal 3xBAT)	N/A	N/A	N/A	N/A	500	500
Weight (UPS with internal 4xBAT)	N/A	N/A	N/A	N/A	600	600

Battery Runtimes (in minutes)						
Typical runtime UPS+1xBAT	15	10	8	5	5	N/A
Typical runtime UPS+2xBAT	33	25	20	15	13	7

This guide provides typical application information. Battery runtimes are approximate and may vary with equipment, configuration, disk access, battery age, temperature, etc.

Eaton BladeUPS™

Technology: **On-Line, Double Conversion On Demand**
Rating: **12 to 60 kW N+1 using 12kW modules**
Voltage: **400 Vac, 50/60 Hz**
Backup time: **5 minutes typical, extendable**
Configuration: **Rack-mount**

Eaton BladeUPS is the first product on the market to offer a "On-line, Double Conversion On Demand" power technology. This innovative design takes into consideration the design capabilities of the actual computer power supplies in such a manner that the UPS furthers that capability in order to provide an extremely efficient and robust protection solution without generating additional heat.

The BladeUPS is a rack-mounted three-phase input and three-phase output uninterruptible power system. Each 12kW module can be paralleled to achieve a maximum 60 kW N+1 system. Paralleling can be accomplished for either redundancy or capacity purposes. Each 12 kW module is identical and can be converted from a single stand alone UPS to a system capable of being paralleled by simply changing the power cord. The BladeUPS is designed for computer data centre installations.

Paralleling of the BladeUPS modules takes place in the BladeUPS bar, which is mounted separately in the rear of the IT rack. This bar provides the required input and output power connections for the BladeUPS modules. Each BladeUPS bar comes equipped with full 60 kW rated input and output lugs within a designated wiring area. The protected load can be connected to the wiring section, or distributed output can be taken in 12 kW increments from the locking output connector on the rear of the BladeUPS module.

A single BladeUPS module can be connected to the BladeUPS bar, with additional modules installed to meet future power demands.

Typical applications:
- Data centres with rack mount blade servers
- Telecommunications

Product highlights:
- Minimum efficiency of 97% in normal operation
- Easy to install, configure and deploy
- Fits into standard 19" rack cabinets
- Hot-swappable battery and electronics modules
- Parallel for capacity/redundancy
- HotSync redundancy
- Decentralised bypass ensures no single failure point
- ABM prolongs battery life by up to 50%

Options:
- X Slot connectivity options

An Eaton Green Solution

TECHNICAL SPECIFICATION	12000VA
Characteristics	
Power rating	12 kW per UPS Module
Efficiency	Up to 97%
Heat dissipation	371W/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 meters (3300 ft ASL)
Input	
Input voltage	208 Vac and 400 Vac models
Voltage range	208V model: 180 to 265 Vac. 400V model: 311 to 519 Vac
Frequency range	50 or 60 Hz, ±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 synchronization
Output	
Rated output voltage	208V model: 180 to 225 Vac, Ph to Ph. 400V model: 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, Leading: 0.9
Total output voltage distortion	<3% with IT loads (PFC power supplies), <5% non-linear or non-PFC power supplies
Battery	
Battery type	VRLA - AGM
Battery runtime (Internal)	13 minutes at 50% load. 4.8 minutes at 100% load
Battery string voltage	240 Vdc
Battery test	Automatic battery test standard (remote scheduling capable); 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 to 1.75 VPC at >90 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)
Communications and user interface	
Software compatibility X-Slot ® Bays	UPS ships with Software Suite CD Two available for the cards listed below
Optional X-Slot communication cards	Application: Eaton card Web – TCP/IP: ConnectUPS-X Web/SNMP card Modbus® RTU: Modbus card IBM eServer™ (i5™, iSeries™, or AS/400®): Relay interface card Parallel: Powerware Hot Sync CAN Bridge card
Control panel LCD	Two lines by 20 characters. Four menu-driven interface buttons. 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
Certifications	
Safety	208V model: UL1778, cUL. 400V model: CE
EMI	208V model: FCC Part 15 Class A. 400V model: EN 62040-2 Class A
Surge protection	ANSI C62.41, Cat B-3
Hazardous materials (RoHS)	EU Directive 2002/95/EC Category 3 (4 of 5)
Dimension (HxWxD in mm) / Weight (kg)	
Dimension	267 (6U) x 442 x 660, 132 (3U) x 437 x 660
Weight (UPS only)	61
Weight (UPS and Batteries)	140

Eaton 9355

Technology: **Series 9 (double conversion on-line)**
Rating: **8-40 kVA**
Voltage: **380-415 Vac, 50/60 Hz**
Backup time: **Typical 5-33 min internal (extendable up to several hours)**
Configuration: **Cabinet**

Eaton 9355 are Series 9 UPS designed to protect high 0.9 p.f. rated, critical computers and servers. The centralised UPS protection is an essential part of IT infrastructure in today's IT, telecom, healthcare, banking and industrial automation applications. The 9355 feature active input power factor control (PFC) and low 2-5% Total Harmonic Distortion (current) with IGBT rectifier technology.

The 9355 operate using the unique ABM function. While traditional UPS charges batteries continuously, ABM charges batteries only when necessary, thus preventing battery corrosion. The exceptional ABM function prolongs the service life of batteries by up to 50%.

Typical applications:

- High-capacity computers
- Server rooms
- Networks
- Process automation, control equipment
- Telecommunication applications
- Offshore, military and special projects

Product highlights:

- Hot Sync redundancy
- ABM providing up to 50% longer battery life time
- Active input power factor correction (PFC) providing 2-5% THD(i) harmonics
- High 0.9 p.f. output rating for server and high computer loads
- Market leading internal battery runtime
- User friendly graphical LCD display with light blue back light
- Web/SNMP and ModBus monitoring capability
- Software Suite bundled
- In-built Maintenance Bypass Switch on 20-40kVA models

Options:

- System Parallel Cabinets for Hot Sync Capacity/Redundancy Solutions
- "UPS Centre" distribution cabinets for small computer room applications
- External Maintenance Bypass Switches
- Extended Battery Cabinets
- X Slot connectivity options

TECHNICAL SPECIFICATION	8000VA	10000VA	12000VA	15000VA	20000VA	30000VA	40000VA
Rating (VA / Watt)	8000/7200	10000/9000	12000/10800	15000/13500	20000/18000	30000/27000	40000/36000
Characteristic							
Nominal input voltage (Vac)	220/380, 230/400, 240/415 Vac three phase				220/380, 230/400, 240/415 Vac three phase		
Input voltage range	175/305V - 276/478V at 100% load, 115/200V - 276/478V at 50% load				175/305V - 276/478V at 100% load, 115/200V - 276/478V at 50% load		
Operating frequency	50/60 Hz (45 to 65 Hz)		50/60 Hz (45 to 65 Hz)		50/60 Hz (45 to 65 Hz)		
Input power factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Nominal output voltage	380/400/415 three phase		380/400/415 three phase		380/400/415 three phase		
Output voltage regulation	2% static; 5% dynamic at 100% load change, < 1 ms response time				2% static; 5% dynamic at 100% load change, < 1 ms response time		
Overload capacity	150% for 5 sec / 125% for 1 min (online), 1000% for 20 msec (bypass)				150% for 5 sec / 125% for 1 min (online), 1000% for 20 msec (bypass)		
Efficiency	92% with computer load; 93% with linear load				92% with computer load; 93% with linear load		
Connection							
Input connection	Hardwired	Hardwired	Hardwired	Hardwired	Hardwired	Hardwired	Hardwired
Output connection	Hardwired	Hardwired	Hardwired	Hardwired	Hardwired	Hardwired	Hardwired
Standard communication ports	1 x RS232 for local support, 2 x X-Slot (empty), 1 x relay contact, 1 x emergency power off input, 2 x environmental input						
Optional	External battery cabinets; isolation transformer; external mechanical bypass switch; X-Slot, Web/SNMP, Modbus/Jbus, relay card, RS232 port, Hot Sync card						
Interface							
LCD display	Graphical LCD with blue backlight, English, German and Spanish languages, extendable				Graphical LCD with blue backlight, English, German and Spanish languages, extendable		
LED	4 LED for notice and alarm		4 LED for notice and alarm		4 LED for notice and alarm		
Operating condition, standard and approval							
Operating temperature	0ºC to +40ºC	0ºC to +40ºC	0ºC to +40ºC	0ºC to +40ºC	0ºC to +40ºC	0ºC to +40ºC	0ºC to +40ºC
Storage temperature	-15ºC to +40ºC	-15ºC to +40ºC	-15ºC to +40ºC	-15ºC to +40ºC	-15ºC to +40ºC	-15ºC to +40ºC	-15ºC to +40ºC
Altitude	< 1000 m at +40ºC, < 3000 m at +25ºC		< 1000 m at +40ºC, < 3000 m at +25ºC		< 1000 m at +40ºC, < 3000 m at +25ºC		
Audible noise at 1 metre	< 50 dB(A) at 1 metre		< 50 dB(A) at 1 metre		< 50 dB(A) at 1 metre		
Quality	ISO 9001; 2000 and ISO 14001: 1996		ISO 9001; 2000 and ISO 14001: 1996		ISO 9001; 2000 and ISO 14001: 1996		
Markings	CE and GOST markings / C-Tick		CE and GOST markings / C-Tick		CE and GOST markings / C-Tick		
EMC	EN 50091-2 Class A, C-Tick		EN 50091-2 Class A, C-Tick		EN 50091-2 Class A, C-Tick		
Safety	IEC 62040-1-1, IEC 60950, EN 62040-1-1		IEC 62040-1-1, IEC 60950, EN 62040-1-1		IEC 62040-1-1, IEC 60950, EN 62040-1-1		
Dimension (HxWxD in mm) / Weight (kg)							
Dimension	817x305x702		817x305x702		1684x494x762		
Dimension (with extra runtime)	1214x305x702		1214x305x702		-	-	-
Weight (UPS without batteries)	75	75	75	75	200	200	217
Weight (UPS with internal 1xBAT)	165	165	165	165	300	N/A	N/A
Weight (UPS with internal 2xBAT)	N/A	275	275	275	400	400	N/A

Battery Runtimes (in minutes)							
Typical runtime with 1xBAT	15	10	8	5	5	N/A	N/A
Typical runtime with 2xBAT	33	25	20	15	23	7	N/A
Typical runtime with 3xBAT	49	40	28	22	22	13	8
Typical runtime with 4xBAT	79	57	45	37	31	20	12

* Battery runtimes are approximate and may vary with equipment, configuration, battery age, temperature, etc. Runtimes at 0.7 pf.

Eaton 9390

Technology: **Series 9**
Rating: **40-160 kVA at 0.9 p.f.**
Voltage: **240/415 VAC 50/60 Hz**
Backup: **10-90 min**
Configuration: **Cabinet**

Eaton 9390 provides unmatched power performance for input harmonics, efficiency and output power factor. It's scalable for capacity and redundancy to meet the present and future power needs. 9390 provides peace-of-mind and resolves all utility power problems. Whether you're selecting a UPS for a branch office, manufacturing floor, medical facility, or a large data centre, there's a 9390 model that delivers just the right combination of performance and price for your needs.

Typical applications:

- Data centres, server farms
- Building, banking and telecommunication systems
- Industrial automation equipment
- Healthcare systems

Product highlights:

- High efficiency - up to 94%
- Parallel systems with Hot Sync redundancy and scalability
- ABM providing up to 50% longer battery life
- Active input Power Factor Correction (PFC) providing up to 5% THD(i) harmonics
- High output power factor for PFC controlled server and computer loads
- SNMP/Web communication offered as standard or optional
- User friendly graphical LCD display with multi-language support
- Built-in mechanical bypass switch (40-80kVA)

Options:

- Systems Parallel cabinets for Hot Sync Capacity/Redundancy Solutions
- Wall-mounted external bypass switch modules
- Static Transfer Switch
- X-Slot communication options
- Long-life battery cabinets and racks
- Sync Control option for use with Static Transfer Switches

TECHNICAL SPECIFICATION	40kVA	60kVA	80kVA	100kVA	120kVA	160kVA
Rating (kVA / kW)	40/36	60/54	80/72	100/90	120/108	160/144
Characteristic						
Nominal input voltage (Vac)	220/380, 230/400, 240/415 VAC 50/60 Hz			220/380, 230/400, 240/415 VAC 50/60 Hz		
Input voltage range	190/330V - 276/478V at 100% load, 161/279V - 276/478V at 50% load		190/330V - 276/478V at 100% load, 161/279V - 276/478V at 50% load		190/330V - 276/478V at 100% load, 161/279V - 276/478V at 50% load	
Operating frequency	50 Hz or 60 Hz (45 to 65 Hz)		50 Hz or 60 Hz (45 to 65 Hz)		50 Hz or 60 Hz (45 to 65 Hz)	
Input power factor	0.99	0.99	0.99	0.99	0.99	0.99
Input current distortion	<5% THDi typical		<5% THDi typical		<5% THDi typical	
Nominal output voltage	220/380, 230/400, 240/415 VAC		220/380, 230/400, 240/415 VAC		220/380, 230/400, 240/415 VAC	
Output voltage regulation	±1% static, ±5% dynamic at 10% to 90% load change, < 1 ms recovery time			±1% static, ±5% dynamic at 10% to 90% load change, < 1 ms recovery time		
Overload capacity	101-110% for 10 min 111-125% for 1 min 126-150% for 10 sec 1000% for one cycle (bypass)		101-110% for 10 min 111-125% for 1 min 126-150% for 10 sec 1000% for one cycle (bypass)		101-110% for 10 min 111-125% for 1 min 126-150% for 10 sec 1000% for one cycle (bypass)	
Efficiency	up to 94%	up to 94%	up to 94%	up to 94%	up to 94%	up to 94%
Connection						
Input connection	Dual Input, Hardwired		Dual Input, Hardwired		Dual Input, Hardwired	
Output connection	Hardwired	Hardwired	Hardwired	Hardwired	Hardwired	Hardwired
Standard communication ports	(2 or 4) x X-Slot, 1 x relay contact, 1 x Emergency power off input, 2 x environmental inputs			(2 or 4) x X-Slot, 1 x relay contact, 1 x Emergency power off input, 2 x environmental inputs		
Optional	External battery cabinets and racks; system parallel cabinets; external maintenance bypass; X-Slot: SNMP/Web/HUB, ModBus, Relay cards			External battery cabinets and racks; system parallel cabinets; external maintenance bypass; X-Slot: SNMP/Web/HUB, ModBus, Relay cards		
Interface						
LCD display	Graphical LCD with blue backlight		Graphical LCD with blue backlight		Graphical LCD with blue backlight	
LED	4 status indicators		4 status indicators		4 status indicators	
Operating condition, standard and approval						
Operating temperature	0ºC to +40ºC, +45ºC with 7.5% derating, batteries max +25ºC			0ºC to +40ºC, +45ºC with 7.5% derating, batteries max +25ºC		
Storage temperature	-15ºC to +45ºC	-15ºC to +45ºC	-15ºC to +45ºC	-15ºC to +45ºC	-15ºC to +45ºC	-15ºC to +45ºC
Altitude	< 1500 m	< 1500 m	< 1500 m	< 1500 m	< 1500 m	< 1500 m
Audible noise at 1 metre	55 dB(A) 40 kVA; 62 dB(A) 60-80 kVA 65 dB(A) 100-120 kVA; 70 dB(A) 160 kVA		55 dB(A) 40 kVA; 62 dB(A) 60-80 kVA 65 dB(A) 100-120 kVA; 70 dB(A) 160 kVA		55 dB(A) 40 kVA; 62 dB(A) 60-80 kVA 65 dB(A) 100-120 kVA; 70 dB(A) 160 kVA	
Quality	ISO 9001 : 2000, ISO 14001 : 1996		ISO 9001 : 2000, ISO 14001 : 1996		ISO 9001 : 2000, ISO 14001 : 1996	
Markings	CE / C-Tick	CE / C-Tick	CE / C-Tick	CE / C-Tick	CE / C-Tick	CE / C-Tick
EMC	EN 50091-2	EN 50091-2	EN 50091-2	EN 50091-2	EN 50091-2	EN 50091-2
Safety	IEC 62040-1-1; IEC 60950; EN62040-1-1		IEC 62040-1-1; IEC 60950; EN62040-1-1		IEC 62040-1-1; IEC 60950; EN62040-1-1	
Dimension (HxWxD in mm) / Weight (kg)						
Dimension	1872x519x804	1872x519x804	1872x519x804	1872x944x804	1872x944x804	1872x944x804
Weight (UPS only)	285	313	313	430	480 (N Model) 530 (U Model)	530

Battery Runtimes (in minutes)						
Typical runtime UPS+1xBAT	15	10	8	5	5	N/A
Typical runtime UPS+2xBAT	33	25	20	15	13	7

Eaton 9395

The Eaton 9395 uninterruptible power system (UPS) is a double-conversion UPS that resolves all utility power problems and supplies clean, continuous, uninterruptible power to connected equipment. Whether you're selecting a UPS for a branch office, manufacturing floor, medical facility, or a large data centre, there's a 9395 model that delivers just the right combination of performance and price for your needs.

Taking large system mission critical reliability to the next step. The 9395 combines the reliability and redundancy of a multi-module UPS into an integrated, pre-wired solution. Built with 275 kVA building blocks, the 9395 features N+1 internal redundancy, which allows one 275 kVA module to automatically carry the load in the event the other module is out of service.

Advanced design delivers unequalled power performance. The innovative design of the 9395 delivers the industry's best performance combination of efficiency, input current distortion and power factor. The 9395 operates at a high efficiency of up to 95 percent, reducing utility costs and extending battery runtimes. Higher system efficiency produces cooler operating conditions, which reduces facility air conditioning cost, extends the life of UPS components, and increases overall reliability, availability, and performance. A new input circuit design keeps input current THD low and input power factor near unity without compromising overall efficiency.

Features:

- Delivers the highest reliability and availability for large, mission-critical systems by integrating a redundant multi-module UPS (including the System Bypass Module) into a single, pre-wired unit
- Grows with changing power requirements with scalable architecture that allows you to add another 275 kVA module on-site later for capacity or redundancy
- Eliminates the need to switch to bypass for service with concurrent serviceability: One redundant 275 kVA module can be isolated and serviced while the other is online
- Provides unmatched power performance for efficiency, input current harmonic distortion (THD), and power factor
- Ensures battery reliability with innovative ABM three-stage charging system, battery health-checks, optional temperature-compensated charging, and remote monitoring
- Lowers installation time and costs with small footprint and the flexibility to install against walls using top- or bottom-entry cabling and by eliminating the need to run inter-unit cabling on-site with pre-wired configuration
- Integrates seamlessly with PowerXpert software (optional) to enable you to monitor and manage the UPS, as well as the entire power system, including all upstream and downstream switchgear

TECHNICAL SPECIFICATION	225kVA	275kVA	300kVA	450kVA	550kVA	650kVA	825kVA	1100kVA
Rating (kVA / kW)	225/202	275/247	300/240	450/405	550/495	650/585	825/742	1100/990
Characteristic								
Efficiency in double conversion mode (full load)	>94.3%	>94.3%	>94.3%	>94.3%	>94.3%	>94.3%	>94.3%	>94.3%
Efficiency in double conversion mode (half load)	93.3%	93.3%	93.3%	93.3%	93.3%	93.3%	93.3%	93.3%
Efficiency in Energy Saver System (ESS)	Up to 93%	Up to 93%	Up to 93%	Up to 93%	Up to 93%	Up to 93%	Up to 93%	Up to 93%
Distributed parallelling with Hot Sync technology	5	5	5	5	5	5	5	5
Internal N+1 redundance capable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Field upgradable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Inverter/rectifier topology	transformer-free IGBT with PWM				transformer-free IGBT with PWM			
Audible noise	<76 dB	<76 dB	<76 dB	<76 dB	<76 dB	<76 dB	<81 dB	<81 dB
Altitude (max)	1000m without derating (max 2000m)				1000m without derating (max 2000m)			
Input								
Input wiring	3 ph + N + PE		3 ph + N + PE		3 ph + N + PE		3 ph + N + PE	
Nominal voltage rating (configurable)	220/380, 230/400, 240/415 V 50/60 Hz				220/380, 230/400, 240/415 V 50/60 Hz			
Input voltage range	+10% / -15%		+10% / -15%		+10% / -15%		+10% / -15%	
Input frequency range	45-65 Hz		45-65 Hz		45-65 Hz		45-65 Hz	
Input power factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Input ITHD	less than 4.5%		less than 4.5%		less than 4.5%		less than 4.5%	
Soft start capability	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Internal backfeed protection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Output								
Output wiring	3 ph + N + PE		3 ph + N + PE		3 ph + N + PE		3 ph + N + PE	
Nominal voltage rating (configurable)	220/380, 230/400, 240/415 V 50/60 Hz				220/380, 230/400, 240/415 V 50/60 Hz			
Output UTHD	<3% (100% linear load); <5% (standard non linear load)				<3% (100% linear load); <5% (standard non linear load)			
Output power factor	0.9	0.9	0.8	0.9	0.9	0.9	0.9	0.9
Permitted load power factor	0.7 lagging - 0.8 leading		0.7 lagging - 0.8 leading		0.7 lagging - 0.8 leading		0.7 lagging - 0.8 leading	
Overload when bypass available	Continous <115%, 20 ms 1000% Note! Bypass fuses may limit the overload capability							
Battery								
Type	VRLA, AGM, Gel, Wet Cell				VRLA, AGM, Gel, Wet Cell			
Charging method	ABM technology or Float				ABM technology or Float			
Temperature compensation	Optional		Optional		Optional		Optional	
Battery nominal voltage (lead-acid)	480 V (40 x 12 V, 240 cells)		480 V (40 x 12 V, 240 cells)		480 V (40 x 12 V, 240 cells)		480 V (40 x 12 V, 240 cells)	
Charging current Default A	38	38	38	76	76	114	114	152
Charging current Max* A	83	83	83	166	166	249	249	332
Communications								
X-Slot	4 communication bays		4 communication bays		4 communication bays		4 communication bays	
Serial ports	1 available		1 available		1 available		1 available	
Relay inputs/outputs	5/1 programmable		5/1 programmable		5/1 programmable		5/1 programmable	
Compliance with standards								
Safety (CB certified)	IEC 62040-1, IEC 60950-1, UL1778**, cUL**				IEC 62040-1, IEC 60950-1, UL1778**, cUL**			
EMC	IEC 62040-2, EN50091 Class A (restricted access) **				IEC 62040-2, EN50091 Class A (restricted access) **			
Performance	IEC 62040-3		IEC 62040-3		IEC 62040-3		IEC 62040-3	
Dimension (HxWxD in mm) / Weight (kg)								
Dimension / Weight	1880x1350 x880 / 830	1880x1350 x880 / 830	1880x1350 x880 / 830	1880x1890x880 / 1430		1880x3600x880 / 2520		1880x4340 x880 / 3120

* Limited by maximum UPS input current rating
** US models. In the interest of continous product improvement all specifications are subject to change without notice

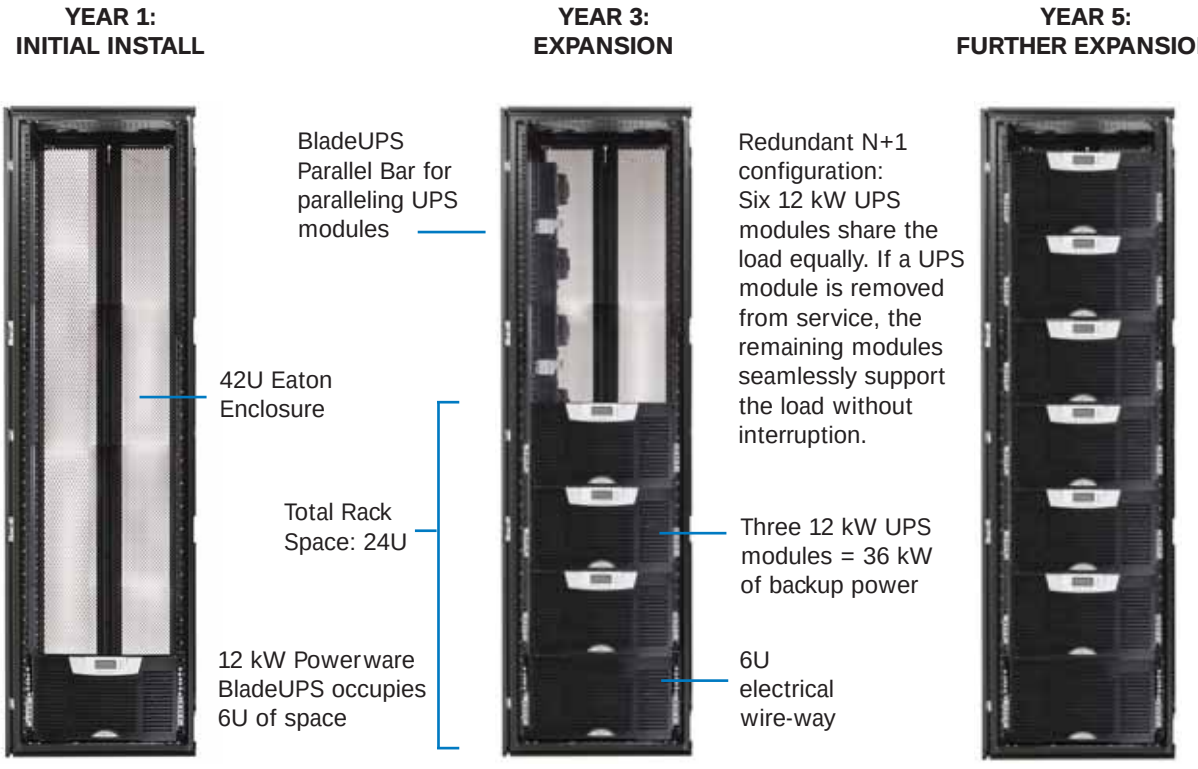
Data Centre Solutions

BladeUPS - Scaleability

Meet current and changing requirements with modular architecture

The building block of the Eaton BladeUPS system is a 6U rack-mount module that provides 12 kW of backup power protection. The system expands easily to provide maximum results. As your data centre grows, the system's modularity plays a key role in optimising your capital planning and deployment. Using the patented and field-proven Hot Sync paralleling technology, up to six BladeUPS modules can be paralleled for extra capacity or redundancy, providing 60 kW of redundant backup power protection in one 19 inch rack.

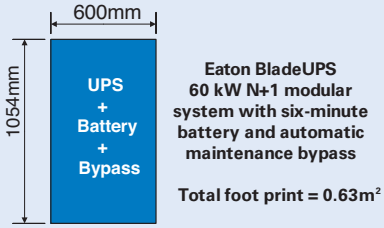
Patented load-sharing control intelligently distributes the workload among modules without requiring direct synchronisation links among them. Any module can provide backup support for any other, with no interruption or downtime. For instance, in a redundant system you could perform full maintenance on any module without any interruption of conditioned power to the protected IT equipment.



BladeUPS - Flexibility

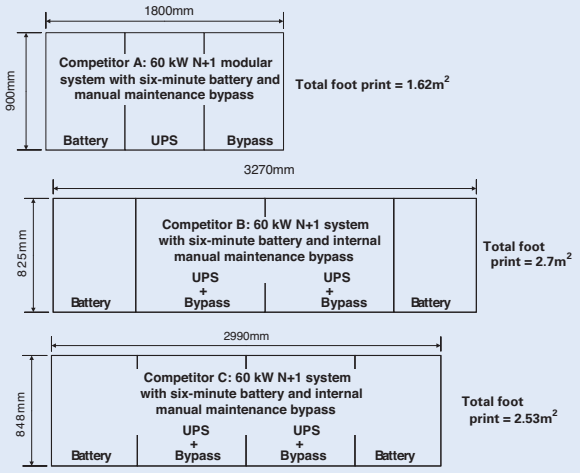
Save space with high power density UPS

The BladeUPS offers the smallest footprint of any UPS in its class—double the power density of any other UPS on the market. This compact design leaves more space for IT equipment in the rack and data centre.



Eaton BladeUPS 60 kW N+1 modular system with six-minute battery and automatic maintenance bypass

Total foot print = 0.63m²



BladeUPS system footprint compared to competitors' footprints for 60 kW N+1 redundant application

Expedite deployment with flexible installation options

The BladeUPS can be deployed in a variety of system architectures to support the specific requirements of your computer room or data centre, and to support the desired level of redundancy (Tier I through Tier IV, as defined by the Uptime Institute).

Centralised power protection for small computer rooms

Start with one 12 kW module and expand to 60 kW with N+1 redundancy in single 19" rack enclosure.

Zone power protection for mid-sized computer rooms

Deploy 60 kW (N+1) in a 19" rack to protect a row of IT equipment racks.

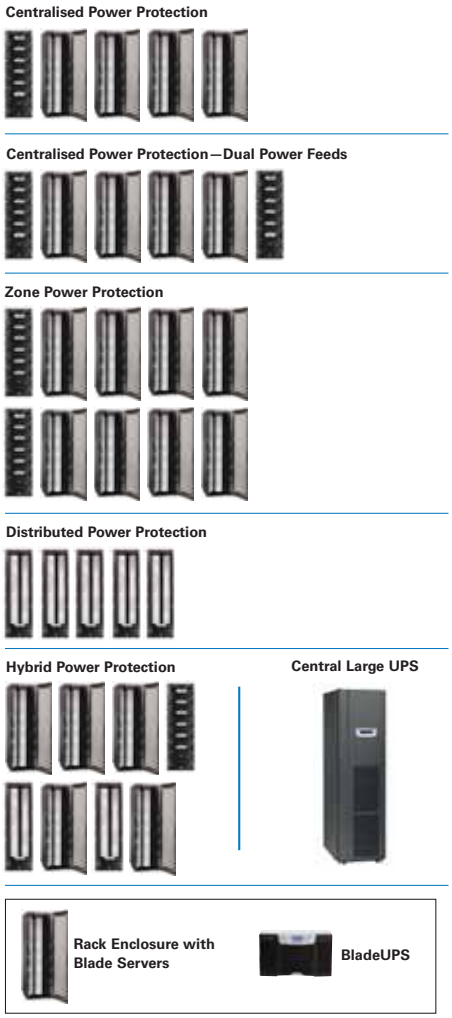
Distributed power protection

Distribute 12 kW modules to protect one to three racks - thereby achieving zero footprint power protection. Hybrid power protection. Stronger redundancy of power protection for equipment racks containing critical IT equipment.

- For dual-corded loads with one source on a central UPS and the other on utility power, you can back up selected loads with a local BladeUPS, deployed in a distributed or zone fashion.
- For dual- or single-corded loads on a central UPS, you can back up selected loads with a local BladeUPS (distributed or zone) in series with the central UPS. This configuration provides maximum reliability close to critical loads, with minimal heat dissipation and maximum efficiency. With the flexibility to deploy and re-deploy a BladeUPS either in single or parallel systems - data centre managers can tailor power protection to adapt to changing needs, often without the need for an electrician or service technician.

Eaton also offers an assortment of plug-and-play power distribution accessories with various input and output connections to distribute power from the BladeUPS to rack power strips or directly to high-power servers.

You can choose from distribution designs with or without monitoring capability, for redundant or non-redundant applications spanning from zero U to full rack height.



BladeUPS Features

Compact

- 12 kW modules occupy 6U of standard rack space, including the batteries
- Designed and optimised for high-powered blade servers and high density computing environments

Scalable - easily deploy and expand

- Combine modules to deliver 60 kW of redundant backup power in one rack enclosure
- Highly flexible, providing numerous configurations and adaptable deployment
- The solution can grow with expanding IT needs
- Fully redundant architecture

Efficient - Reduce cooling and energy costs

- Industry-leading 97% efficiency
- Air conditioning requirements can reduce by more than one-third
- BladeUPS can be located close to equipment racks without creating hot spots

Reliable

- Hot Sync paralleling technology
- Hot-swappable batteries and electronic modules
- ABM technology

Eaton Enclosures

Eaton's Enclosure solutions address the first critical step in planning an ideal data centre and encompass a wide range of cabinets and racks for network, telecom and server applications.

Features and Benefits

- Highly functional and stylish, value packed and competitively priced
- Perforated doors exceed server airflow requirements
- Split rear doors minimized floor space requirements and provide ease of installation and maintenance
- Floating 19” rails provide more room for zero U cable management and PDU installations
- Z-server rails offer additional mounting locations for Enclosure Power Distribution Units (ePDUs™) and cable management
- Internal, welded frame with repetitive hold pattern delivers high load bearing capacity and additional mounting locations
- Internal door hinges offer a high level of cabinet security
- Door stiffeners offer mounting locations for fan trays
- Tool-free accessories facilitate installation and reduce installation time and costs

Cutting-edge Rack Based Power Solutions

Eaton ePDUs

Eaton ePDUs feature the broadest portfolio in the industry across all power densities and technologies to satisfy the needs of every data centre. From single to dual chassis, five technology options, the broadest power range and the ability to manufacture ePDUs with custom arrangement of outlets (number and type) for every region, ePDUs are distinguished for their quality, dependability and versatility. All products are designed for the specific application with an emphasis on safety and reliability.

The ePDU range includes an extensive range of vertical zero U products that do not occupy server space in racks as well as 1U and 2U formats. Environmental Monitoring options are also available.

Eaton ePDUs

Basic

Economical power distribution to up to 24 receptacles in a rack or wiring closet

Metered

Distribution with power monitoring on any receptacle, branch circuit or the entire unit

Monitored

Power distribution with secure, remote monitoring and alerts over IP networks

Switched

Power distribution with secure, remote monitoring and alerts over IP networks

Distributed power protection

Provides secure, network receptacle-level control and network monitoring. Optional integrated environmental and inter-networking capabilities

Managed

Local and remote monitoring, plus advanced Revelation™ technology that provides receptacle-level monitoring and remote server boot-up or electronically lock designated receptacles to prevent unauthorised use.

Typical Applications

- High-density data centres
- Telecommunications equipment centres
- Wiring closets

Superior power quality depends on efficient power distribution. With today's small-size devices, a single rack of equipment might produce 40 or more power cords to manage.

Eaton enclosure-based power distribution units (ePDU™) complement your UPS systems, distributing power in high-density rack environments—or anywhere conditioned power must be distributed to multiple pieces of equipment.

Rack Power Module

Partner the Eaton BladeUPS with a Rack Power Module (RPM) to create a highly flexible, adaptable power delivery architecture at the rack level. The RPM delivers up to 36 kW of power in an organised manner to loads of various voltages, power cords and layouts.

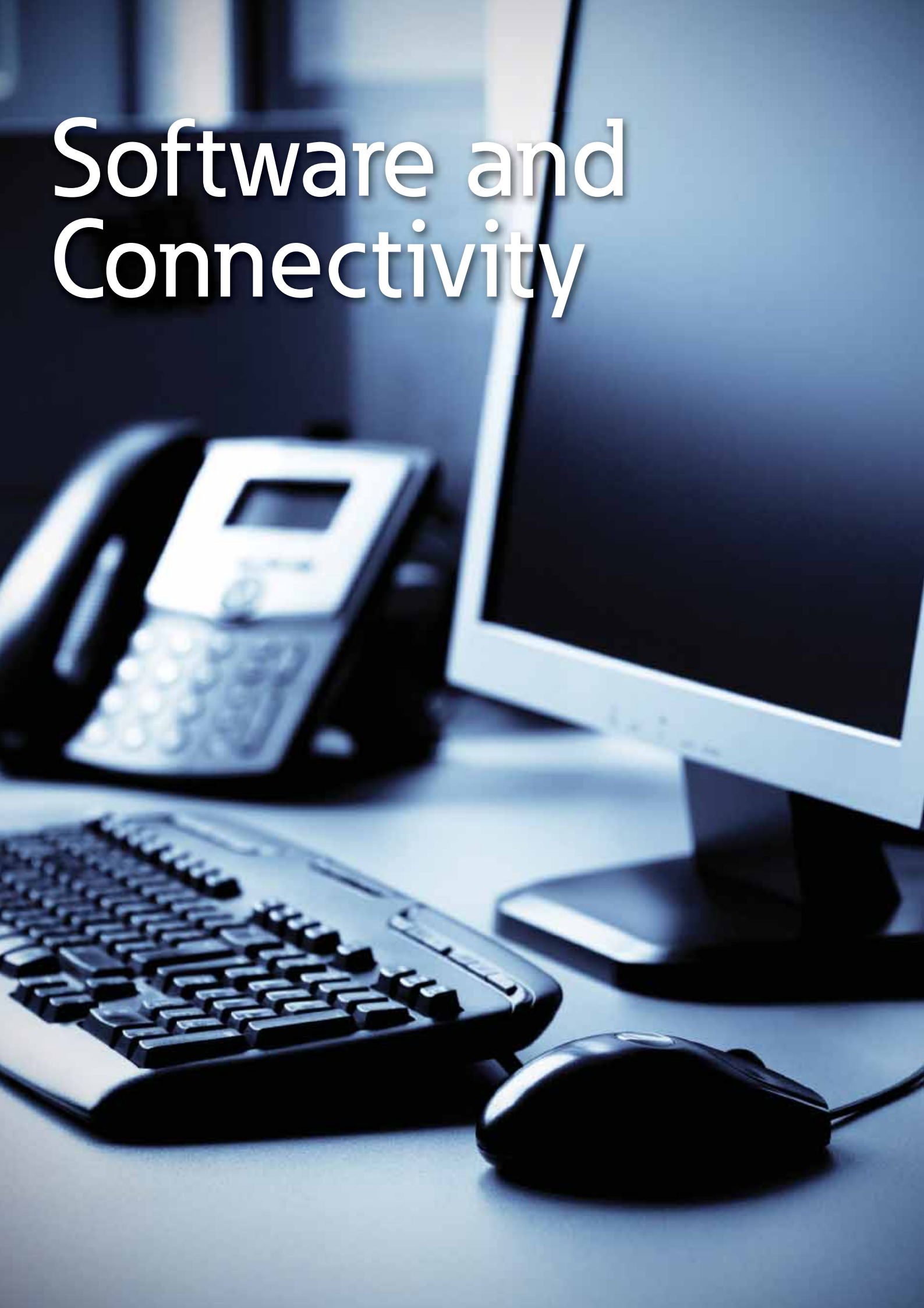
The 3U RPM can be deployed in the same rack with the UPS and IT equipment; there's no need for a dedicated infrastructure rack. The resulting architecture has fewer cables to manage, fewer distribution points to monitor, and greater flexibility for IT personnel make changes without an electrician. Consider a Tier II data centre with 42 racks at 5 kW per rack: the BladeUPS with RPM can meet power requirements with half the number of racks, 60 percent less rack space, 45 percent less cabling and 41 percent less square footage than other vendors' power distribution products that require dedicated racks.

These advantages make the BladeUPS with RPM ideal for distributed protection in small to mid-sized data centres, or to add zone protection in large data centres that have centralised UPSs.

ERM – Environmental Rack Monitor

- Monitors temperature and humidity at two locations plus up to four additional input contact sensor devices
- Displays real-time status to a PC, internet-ready wireless device or network management system (NMS) software
- Automatically notifies designated recipients of out-of-range conditions
- Auto-discovery of up to 100 ERMs on a network and auto-aggregation utilities
- Helps to protect critical assets from variables including: Temperature, Humidity, Presence of smoke, Presence of water, Intrusion of enclosures and Vibration or shock

The power density in the data centre is increasing and the equipment is getting smaller. At the same time more and more heat is being produced. Racks are becoming more tightly packed and there is less room for air flow. Temperature rise in a cabinet is fast and localised, and the ERM enables the data centre manager to monitor heat and humidity in the racks and act quickly when needed. The ERM has options for detecting smoke, water, vibration and door opening and closing. It provides results over the network via a Web page interface. Data centre managers can also monitor up to a hundred different ERMs from a single IP address.



Software and Connectivity

Software and Connectivity

In order to get full benefit out of a UPS it needs to communicate with the outside world. Eaton UPSs have intelligent digital control with comprehensive fault detection and self test capability built into the internal microprocessor system of the device.

Warnings given by our ABM Technology are not of very great value if the message never reaches service department. IT system administrators need to be informed if power supply is compromised, facility managers have to be notified if temperature rises in the UPS or battery room and service has to be alarmed if there is a component failure in the system.

Having the ability to control power systems remotely or automatically opens up new opportunities and can bring huge savings in work effort, energy usage and response time. Controllable power distribution can be used to reboot equipment or turn it off when it is not needed.

Eaton software and connectivity solutions scale from homes to most mission-critical data centres and from largest factories to unmanned remote observation stations. They link to network, IT, facility, automation and building management systems delivering information to e-mail, mobile devices and Web among others.

In the optimum case sophisticated analysis in the power devices themselves or software such as Intelligent Power Manager can prevent the risk of downtime. Even in the case where risk is present, a fast delivery of an alarm increases the likelihood that it can be dealt with before there are any consequences to the operation of the powered system. Even in case where power loss can't be avoided, software can help by automatically shutting down systems in a controlled and predefined manner, preventing data corruption on storage devices and databases.

Eaton's offices and representatives have experts who can help in designing and installing these solutions.

Options to Manage and Monitor Your UPS

ConnectUPS Web/SNMP card is a complete UPS monitoring, control and shutdown solution 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 NetWatch and LanSafe software. The unique three-port switching hub on the X-Slot model provides additional network connections.

ConnectUPS Web/SNMP card

Environmental Monitoring Probe (EMP) adds temperature, humidity and two contact closure monitoring capability to ConnectUPS Web/SNMP cards. It is especially well suited for monitoring rack temperature and door status. Operating system shutdown can be triggered if user defined thresholds are exceeded or contact closure status changes.

Environmental Monitoring Probe

Relay/AS400 cards are an easy connection to IBM AS/400 series computers as well as industrial and building management systems.

Relay/AS400 card

X-Slot ModBus card connects the UPS to industrial and building management systems using ModBus RTU protocol.

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.

The most reliable and convenient way of expanding UPS communications is to use hot-swappable slot cards. This eliminates the hassle of wiring external devices and the adaptors are powered directly from the UPS.

ModBus card

ViewUPS-X

Software Suite

NetWatch is a shutdown agent for the ConnectUPS Web/SNMP card. It is a very compact piece of software, but still features powerful configuration options for shutdown actions, timings and user notification. NetWatch is available for Windows, Novell, MacOS X and most Unix platforms including Linux.

LanSafe® is a network shutdown software product that currently supports up to 20 operating systems. It ensures controlled sequential shutdown of the whole network across platforms in case of a prolonged power failure. LanSafe allows the shutdown of up to 64 computers protected by a single UPS.

Intelligent Power Manager (IPM) software brings managing a wide range of power and environmental devices under control through a single, web-based interface. This versatile software solution is compatible with network-enabled devices, including Eaton UPSs, non-Eaton UPSs, environmental senors and ePDUs.

Because no network or data center is identical, Intelligent Power Manager has the flexibility to sort units using customized views, centralized alarms and event logs. As a result, it can define an up-to-the-minute, global view of the state of power and environmental conditions across your enterprise that is accessible from any web browser on a network computer.

Eaton offers a full line of shutdown and monitoring software products to enhance the protection provided by its UPSs. The Software Suite, conveniently packed on one CD-Rom, follows every UPS free of charge.

For more product information please contact

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