Power Quality Solutions

Eaton 93E UPS

15 - 500 kVA

Simply effective power management for every critical environment

Powering Business Worldwide

The Eaton 93E: simply effective

The Eaton 93E UPS delivers **simply effective** power protection for ever-expanding loads in today's space-constrained data centres. Facilitating a lower total cost of ownership (TCO) through a combination of energy-efficiency, high reliability and a compact footprint the 93E is an ideal solution for small - to medium - sized data centres and other applications desiring highly reliable power protection.

300/400/500 kVA

Energy-efficient design

With a transformer-free design and sophisticated sensing and control circuitry the 93E is capable of achieving up to a 99% efficiency rating, making it one of the most energy-efficient UPSs in its class - and it still provides maximum load protection. Unlike most high efficiency UPSs, the 93E:

- Provides surge suppression for the load
- Detects the location of faults (utility or load) and takes the appropriate action
- Switches to double-conversion operation in less than 4ms

High system efficiency reduces utility cost, extends battery run times and ensures cooler operating conditions.

Real compatibility

Active power factor correction (PFC) provides 0.99 input power factor and <5% ITHD, thus eliminating interference with other critical equipment in the same network and enhancing compatibility with generators. The 93E is optimised for protecting modern 0.9 p.f. rated IT equipment without the need to oversize.

Application

- Small and Medium data centres
- Industrial automation equipment
- Telecommunications
- Healthcare

True reliability

Patented Powerware Hot Sync® 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.

Compact & serviceable design

Small footprint occupies minimal floor space:

- Up to 60% smaller than similar competitive solutions
- Allows dedication of more floor space to revenue producing equipment

The 93E is easily and quickly serviced to provide the highest level of availability with Mean Time to Repair (MTTR) <30 minutes.With its Easy Capacity Test feature the 93E can test its entire power train under full load stress without the requirement of an external load.

Flexible installation options

Eaton's range of accessories for the 93E provides flexible installation options that expedite deployment and save valuable space. The aesthetically designed accessories enable coordinated solutions that enhance both safety and reliability whilst reducing installation time and total cost.

The accessories family includes System Parallel Modules, External Maintenance Bypass Switches, External Battery Cabinets, External Battery Circuit Breakers, Top cable Entry Cabinets, Rear Chimneys, IP21 kit (15-200kVA) & Internal Transformer Options (15-100kVA).

User Interface

Large LCD graphically displays UPS status and offers easy access to measurements, controls and settings.

Connectivity

With Eaton® Mini-Slot connectivity cards, you can monitor, manage and remotely shutdown UPSs across the network.

- Network Card–MS Web/SNMP Card allows you to connect your 93E UPS directly to the Ethernet network and the Internet
- Network and MODBUS Card-MS provides remote monitoring of a UPS system through a Building Management System (BMS) or Industrial Automation System (IAS)
- Relay Card-MS provides the essential dry-contact interface between your Eaton UPS and any relay-connected computer as well as a variety of industrial applications

Software

Eaton's Intelligent Power® Software Suite incorporates two important applications for ensuring quality power and uptime:monitoring and management of power devices across the network combined with automatic, graceful shutdown when faced with an extended power outage.

- Monitor and manage multiple power devices across your network
- Extend the uptime of dual-powered servers with redundancy capabilities
- Enable server shutdown and live migration events

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 the largest 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, meters, software, connectivity, 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 applications.

Our solutions provide the power to make a difference, helping you achieve your business goals while maintaining environmentally sustainable enterprises.

A world-class support structure

As an industry-leading UPS provider, at Eaton we're constantly working to ensure that our service standards meet your needs precisely. Our trained service team is on hand 24/7 to minimise risks by detecting and addressing problems before they happen. In the Asia Pacific region Eaton´s service network consists of more than 200 field engineers who receive comprehensive, up-to-date training on the latest products and technologies.

We confidently guarantee the experience and know-how of our servicing resources to provide a dedicated support package which helps to ensure your equipment is running safely, reliably, sustainably and energy-efficiently at all times.

Eaton 93E UPS Technical Specifications

only 400kVA-500kVA use 2 module for parallel

Power		
Ratings	15kVA/13.5kW 30kVA/27kW 60kVA/54kW 100kVA/90kW 160kVA/144kW 300kVA/270kW 500kVA/450kW	20kVA/18kW 40kVA/36kW 80kVA/72kW 120kVA/108kW 200kVA/180kW 400kVA/360kW
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		
Nominal input voltage	400/230V, 4 wire (380/415V selectable)	
Input voltage range	-15%, +20% from nominal (400V) at 100% load without depleting battery	
Electrical output		
Nominal output voltage	400/230, 4 wire (380/415V selectable)	
Output voltage regulation	±1% Static; <5% dynamic at 100% resistive load change, <20 ms response time	
Battery		
Battery	192 to 240 Cells (Continual selectable for 15-80kVA) 216/222/228/234/240 Cells (Selectable for 100-500kVA)	
Charging method	ABM Cyclic Charging	
General		
Efficiency	>98% High-efficiency mode (15-80kVA) >98.5% High-efficiency mode (100-300kVA) >99% High-efficiency mode (400-500kVA) >94% Double conversion mode (15-300kVA) >96% Double conversion mode (400-500kVA)	
Overload	150% for 1 minute, 125% for 10 minutes, >150% for 150ms	
UPS bypass	Automatic on overload or UPS failure	
Parallel technology	Powerware Hot Sync® Technology	
Dimensions W x D x H (mm)	500 x 710 x 960 500 x 710 x 1230 500 x 710 x 1500 600 x 800 x 1876 1600 x 820 x 1880	15-20kVA (with internal battery) 30kVA (with internal battery) 40kVA (with internal battery) 60-200kVA 300/400/500kVA
Cabinet rating	IP20 with standard washable dust filters	
Weights without internal battery	72kg 88kg 120kg 202kg 245kg 283kg 311kg 457kg 860kg 970kg 1020kg	15/20kVA 30kVA 40kVA 60kVA 80kVA 100kVA 120kVA 160/200kVA 300kVA 400kVA 500kVA
Weights with internal battery	272kg 376kg 490kg	15/20kVA 30kVA 40kVA

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
Environmental	
Operating temperature	0°C to +40°C Batteries recommended max. +25°C
Storage temperature	-25°C to +55°C without batteries +15°C to +25°C with batteries
Relative humidity	5-95%, non-condensing
Audible noise	15-20kVA≤55 dBA at 1m typical 30-40kVA≤62 dBA at 1m typical 60-120kVA≤65 dBA at 1m typical 160-200kVA≤70 dBA at 1m typical 300-400kVA≤73 dBA at 1m typical 500kVA≤75dBA at 1m typical
Altitude	<1000m at +40°C
Certifications	
EMI standards	EN55022/EN55024
EMC compliance	IEC 62040-2
Quality	ISO 9001: 2000 and ISO 14001:1996
Communication accessories	
Network-MS	Web/SNMP Card
Modbus-MS	Web/SNMP and Modbus Card
Relay-MS	Relay (Dry Contact) Card -DB9 Connection
Industrial Relay	Relay (Dry Contact) Card -Terminal Connection
116750224-001	Environmental Monitor Probe (EMP) kit (need to plug into Web/SNMP Card or Web/SNMP and Modbus Card to work

System accessories
Battery cabinets & battery circuit breakers (60-200kVA)
Maintenance Bypass Switches (MBS) (100-200kVA, standard on 15-80kVA)
Top cable entry (60-200kVA, standard on 300-500kVA)
System parallel modules (60-200kVA)
Dual input kit (15-80kVA)
IP21 hood (15-200kVA)
Rear chimney (60-200kVA)

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

For more information visit: eaton.com/93E

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