

Power Quality Solutions

Eaton 93E UPS

Simply effective power management
for every critical environment



EATON

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.

Energy-efficient design

With a transformer-free design and sophisticated sensing and control circuitry the 93E is capable of achieving up to a 98.5% 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



93E 300/400 kVA

True reliability

Patented Eaton 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, health-care 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

Power	
Ratings	15kVA/13.5kW, 20kVA/18kW, 30kVA/27kW, 40kVA/36kW, 60kVA/54kW, 80kVA/72kW, 100kVA/90kW, 120kVA/108kW, 160kVA/144kW, 200kVA/180kW, 300kVA/270kW, 400kVA/360kW
Topology	Double-conversion online UPS
Electrical Input	400/230V, 4 wire (380/415V selectable)
Input Voltage Range	-15%, +20% from nominal (400V) at 100% load without depleting battery
Operating Frequency	50/60 Hz (40 to 72 Hz) Batteries
Input Power Factor	>0.99 typical
Input Current Distortion	≤5% THD
Electrical output	
Nominal Output Voltage	400/230, 4 wire (380/415V selectable)
Output Voltage	±1% Static; <5% dynamic at 100% resistive
Regulation	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 100-400kVA)
Charging Method	ABM Cyclic Charging
General	
Efficiency	Up to 98% High-efficiency mode (15-80kVA) Up to 98.5% High-efficiency mode (100-400kVA) Up to 94% Double-conversion mode
Overload	150% for 1 minute, 125% for 10 minutes, >150% for 150ms
UPS Bypass	Automatic on overload or UPS failure
Parallel technology	Eaton Hot Sync® Technology
Dimensions W x D x H	500 x 710 x 960 (mm) 15-20kVA (with internal battery) 500 x 710 x 1230 (mm) 30kVA (with internal battery) 500 x 710 x 1500 (mm) 40kVA (with internal battery) 600 x 800 x 1876 (mm) 60-200kVA 1600 x 820 x 1880 (mm) 300/400kVA
Cabinet Rating	IP20 with standard washable dust filters
Weights without internal battery	15/20kVA-72kg, 30kVA-91kg, 40kVA-120kg, 60kVA-202kg, 80kVA-245kg, 100kVA-283kg, 120kVA-311kg, 160/200kVA-457kg, 300kVA-860kg, 400kVA-970kg
Weights with internal battery	15/20kVA-272kg, 30kVA-376kg, 40kVA-490kg

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
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 300-400kVA)	
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



Powering Business Worldwide

Headquarters

Eaton's Electrical Sector Americas Region

1000 Eaton Boulevard Cleveland, Ohio 44122, USA

South Asia Office

Eaton's Electrical Sector Eaton Power Quality Pvt. Ltd.

6th Floor, Tower- B,
Plot No. 8, Sector - 127, Noida - 201301
Tel: +91 - 0120 - 3855300

Sales and Service Toll Free Hotline.: 1800 200 7887

E-mail: EatonPowerQualityIndia@eaton.com

Offices Across India

Mumbai

El Floor, VITS Luxury Business Hotel,
Andheri Kurla Road, Andheri (East),
Mumbai - 400 059
Tel: +91-22-4005 3817, Fax: +91-22-4005 3810

Chennai

No. 36, Nehru Street,
Off. Old Mahabalipuram Road,
Sholinganallur, Chennai – 600 119

Bangalore

Unit No. 501, 4th Floor,
Prestige Atrium, Central Street,
Bangalore - 560 001
Tel: +91 80 4901 2200, Fax: +91 80 4901 2239

Hyderabad

Ground and First Floor,
8-3-1110/B/2, Plot No.104,
Keshav Nagar Colony, Srinagar Colony post,
Hyderabad-500073
Tel: +91 40 4018 9601

Ahmedabad: +91 932 703 1597

Chandigarh: +91 172 501 1578

Coimbatore: +91 934 541 9578

Cochin: +91 934 982 1582

Gurgaon: +91 124 410 0047

+91 124 436 6315

Kolkata: +91 33 4004 0968

Pune: +91 20 3061 1886

Sales and Service Operations

Sri Lanka:

+94 11 2871 000
+94 11 7520 000
+94 11 7520 031

Nepal:

+97 714429777
+97 714429888
+97 714423376

Bangladesh:

+8802 7170368, 7162568, 7162619
+8802 9347918, 9330765, 9348220
+8802 9130363, 9139314