Eaton 93E UPS

15 - 400 kVA

93E 15 - 200 kVA

Applications:
- Data centre
- Manufacturing
- Telecom
- Healthcare

Double conversion UPS

Double conversion provides the highest level of protection available by isolating the output power from all input anomalies.

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.

The Eaton® 93E UPS delivers superior 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.

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.

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 30% 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 (15-120kVA).

93E 300/400 kVA

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User Interface
Large LCD graphically displays UPS status and offers easy access to measurements, controls and settings.
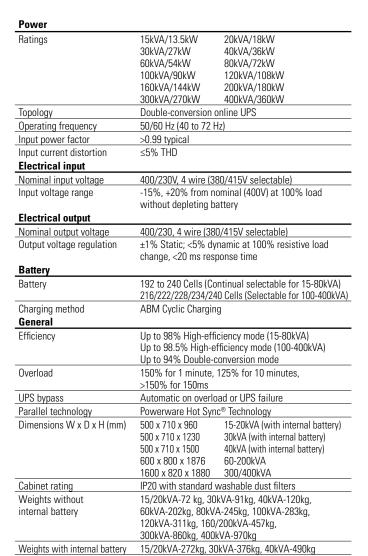
Connectivity
With Eaton® Mini-Slot connectivity cards, you can monitor, manage and remotely shutdown UPSs across the network.

- 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 an RS232 port and the dry-contact interface between your Eaton UPS and any relay-connected computer

- Industrial Relay Card-MS provides a hard-wired dry-contact relay interface for 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.

To learn more, please visit www.eaton.com/intelligentpower

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	
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 100-400kVA)
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	Powerware Hot Sync® Technology	
Dimensions W x D x H (mm)	500 x 710 x 960	15-20kVA (with internal battery)
	500 x 710 x 1230	30kVA (with internal battery)
	500 x 710 x 1500	40kVA (with internal battery)
	600 x 800 x 1876	60-200kVA
	1600 x 820 x 1880	300/400kVA
Cabinet rating	IP20 with standard washable dust filters	
Weights without internal battery	15/20kVA-72 kg, 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	0ºC to +40ºC Batteries recommended max. +25ºC
Storage temperature	-25ºC to +55ºC without batteries +15ºC to +25ºC 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.

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