

Eaton 93TR

Eaton 93TR UPS

Complete data center solution

Lithium-ion Compatible



Lithium

Energy
Aware



Modular
Design

Efficiency
upto 97%



EATON

Powering Business Worldwide

93TR Features and Benefits

The Eaton 93TR UPS combines unprecedented efficiency and reliability with an eye-catching design. A space-saving, scalable and flexible device that's as easy to deploy as it is to manage, it's the perfect three-phase white or grey space solution for today's data center.



Extra Low TCO (Total Cost of Ownership)

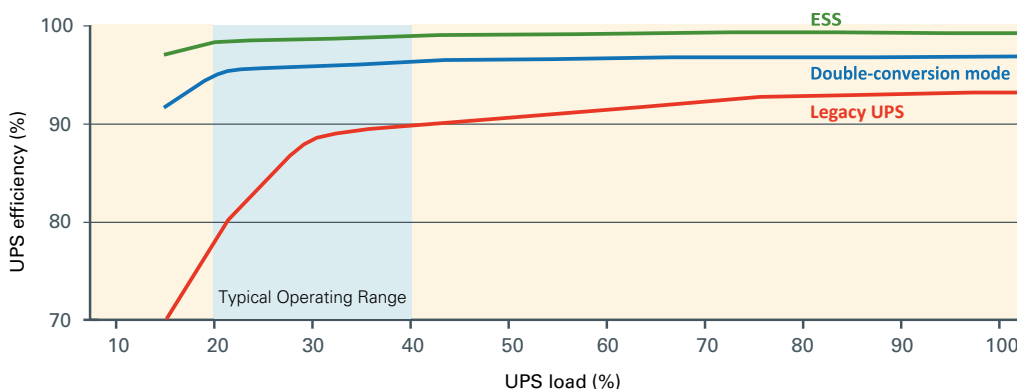
Conserves valuable data center floor space with its compact footprint and internal redundancy design.

Reduces cost and unexpected future growth risks with its vertical scalability, enabling you to scale as you grow.

Reduces power and cooling OPEX through industry-leading energy-efficiency.

- **99% efficiency with Energy Saver System (ESS)**
- Up to **97%** efficiency in double-conversion mode

The 93TR's vertical scalability, internal redundancy and compact footprint design



Your UPS cost will be recovered in 3 years' time thanks to the significant energy savings in Eaton ESS/ double conversion efficiency.

Calculate your 93TR savings with ESS at Eaton.com/ESS.

Easy management



LED light bars for easy status monitoring

Provides easier access to detailed status information through its large, user-friendly LCD touchscreen interface

With the 93TR's graphical LCD interface you can track stats on energy savings, battery time, outage tracking, load profiling and much more.

The green/yellow/red LED light-bars make system status visible from a distance in data centers.

Integrates with the leading virtual platforms through its full suite of power management and connectivity software

Designed for the most advanced IT environments, the 93TR supports optional communication cards that allow remote access via the HTTP(S), SNMP, MODBUS

TCP/IP, Modbus RTU and BACnet IP protocols. In addition, Eaton's Power Xpert® software and Intelligent Power® Software Suite give you all the tools you need to manage power devices in your physical or virtual environment. Learn more at Eaton.com/intelligentpower.

Increases uptime through its 24x7 remote monitoring and reporting capabilities

Eaton's PredictPulse™ remote monitoring and management service provides real-time monitoring of the 93TR and alerts service technicians to take necessary measures when a problem is detected. Learn more at Eaton.com/PredictPulse.

Red light bars showing alerts on system. Yellow light bars indicate battery and bypass status.



Intelligent Power Manager® (IPM) is a world class power management software platform. It seamlessly monitors power and environmental conditions while providing business continuity for workloads using VMware®, Citrix® and Microsoft® platforms. IPM also optimizes power and environmental conditions for data centers using OpenStack® or HPE OneView®.

Connectivity options:

- Power Xpert Gateway Minislot UPS Card
- Industrial Relay Card - MS
- Industrial Gateway Card
- Gigabit Network Card (Network-M2)
- SNMP



Connectivity Cards

Lithium-ion battery

Power on demand

Eaton's lithium-ion battery systems provide a reliable and flexible solution that ensures 24/7 system uptime while delivering significant total-cost-of-ownership (TCO) savings. Capable of providing mega-watts of power in a small footprint, this battery solution comprises of lightweight battery strings designed to seamlessly connect to a Power Xpert™ 93PR or 93TR UPS.

Why lithium?

Lithium-ion chemistry demonstrates superior characteristics in UPS applications, this results in high energy density, long life, flexible installation, improved cycle life and a lower TCO.

Backup battery runtimes

Contact Eaton for backup times and configurations. A wide range of runtimes from 3 minutes to an hour + are available.

EnergyAware upgrade

With Eaton's EnergyAware kits upgrade, UPS with lithium battery can do much more beyond UPS.

Demand charge management

User avoids demand charges by discharging at peak times.




Time-of-use optimization

Shifts energy consumption to avoid peak energy usage.

Demand response

Utility company requests reduction in power usage.

Benefits of lithium-ion

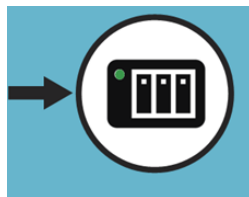
Save money	10 year performance warranty 15 year design life 
Save space	up to 8x cycle 40% smaller 60% lighter 
Reduce risk	24/7 BMS monitoring 

Management and monitoring system

The lithium-ion battery integrates a powerful battery management system (BMS), providing cell protection (temp, current, over/under voltage), cell balancing, state of charge and health and alarms/ reports.

Protection: The BMS processes critical parameters such as voltage levels, temperature, and current at the module and solution levels. Abnormal conditions (warnings and alarms) are quickly detected and, if necessary, the BMS will protect the system from damage by disconnecting the affected battery.

Performance optimization: The BMS incorporates cell and module balancing controls. This function optimizes the voltages of each module to maximize performance and increase service life.



For more information, please visit
Eaton.com/Lithium
Eaton.com/EnergyAware

EATON 93TR UPS TECHNICAL SPECIFICATIONS*

Power modules

Power offering (kW)	400/500/600kW
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Frame options

Frame Offering	Internal Input/Output/Bypass/ MBS switches available as option
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General characteristics

Efficiency in Energy Saver System (ESS)	Up to 99%
Efficiency in double-conversion mode	upto 97%
Parallel capability	Maximum 8 units external parallel
Cold start	Supported
Softstart	Rectifier ramp up, compatible with generator, ramp up rate configurable

Input characteristics

Voltage	380/400/415V
Voltage range	301~478V L-L 175~276V L-N
Frequency range	50/60 Hz
Power factor	> 0.99
Input current distortion	< 3% @ 100% load capacity

Battery

Battery Type	Lithium, VRLA, Ni-Cad
Charging method	BMS, ABM or constant float charge
Battery Voltage	360~700V
Battery Connection	Support common battery

Output

Voltage	380/400/415V 4 wire
Frequency range	50/60 Hz
Regulation	±1% steady state
Voltage THD	< 1% (100% linear load) < 3% (non-linear load)
Overload	110%-60 min, 125%-10 min, 150%-60 sec

Certification

Safety	IEC62040-1
EMC	IEC62040-2
Performance	IEC62040-3
Certificate	CE

Optional accessories

- SNMP Card
- X-Slot Modbus RTU Card
- INDRELAY-MS Card
- Network-M2
- INDGW-M2
- PXGMSUPS Card
- External Sync Control Box
- Lithium battery cabinet
- Top exhaust kits

UPS dimensions (mm)

Height	2000
Depth	1000
Width	1100

Weight (kg)

UPS	400kW: 650kg 500kW: 700kg 600kW: 820kg
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* Due to continuous improvement, specifications are subject to change without notice.

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Learn more at
[Eaton.com/in](https://www.eaton.com/in)

Eaton Power Quality Pvt. Ltd.

2, EVR Street, Sedarpet
Industrial Estate
Pondicherry - 605111
Tel: +91 413 2672000
Eaton.com/in

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