Eaton 93PR 15kW-80kW

Eaton 93PR UPS
An innovative UPS solution
Lithium-ion battery compatible

Powering Business Worldwide

A cost-effective, reliable and flexible three-phase monolithic transformer-free UPS solution

Product values

- Provide a reliable, easy-to-maintain power protection system for small and medium applications
- Free customers from restrictions of expense, space and lacking professional maintenance personnel/ technology experts by providing low TCO (total cost of ownership) and superior performance

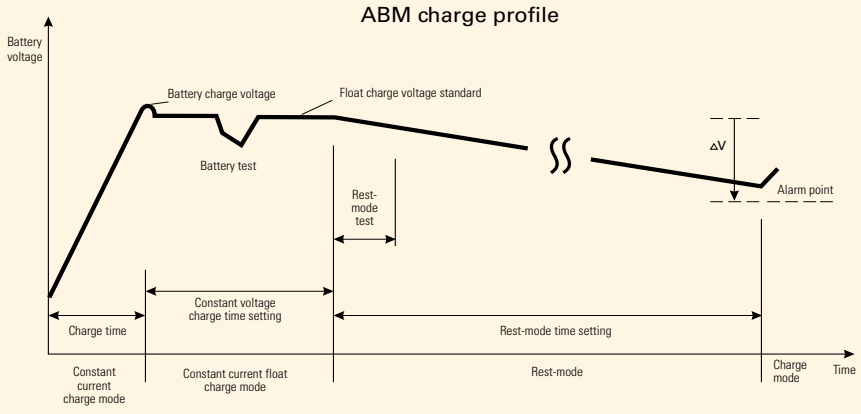
Typical applications

- Network centers of government facilities and educational institutions
- Information & Technology data centers of small and medium enterprises
- Data centers of financial institutions such as banks and securities companies

Eaton 93PR features

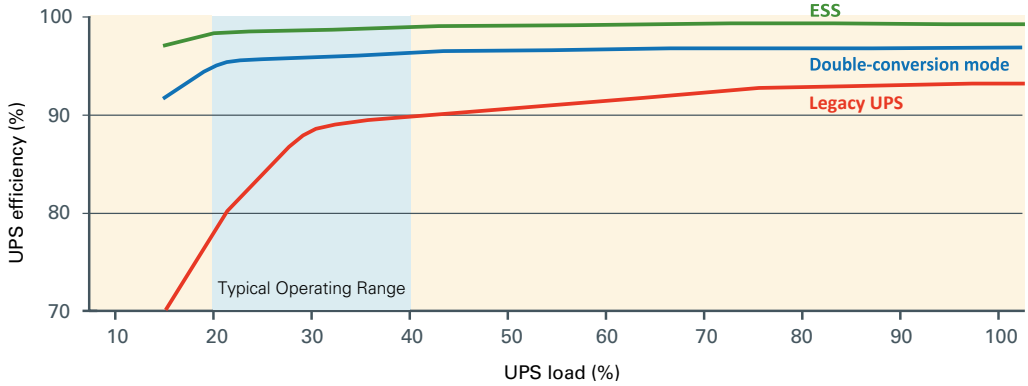
The high-availability and easy-to-maintain transformer-free UPS creates a reliable power protection system for IT installations and mission critical applications

- Real-time monitoring of the capacitor status eliminates potential safety issues that may happen when capacitors are operating under high temperature
- Eaton ABM intelligent battery management technology effectively extends the battery life by more than 50%
- Module-level maintenance enables low MTTR



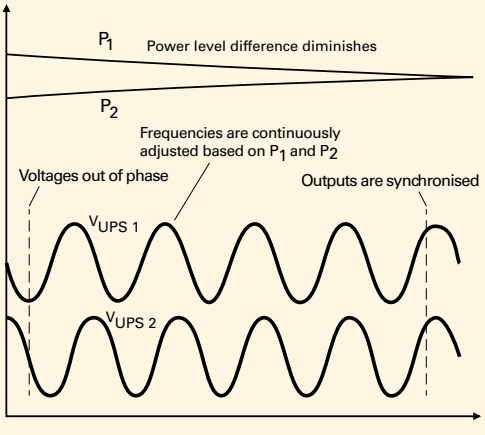
The cost-effective and high-efficient power supply solution optimizes customer initial investment cost and whole-lifecycle operating costs

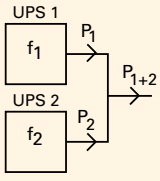
- Energy utilization efficiency improves. By adopting three-level topology and industry-leading high-efficient technology, the efficiency can be maintained above 96% under typical load rates
- Up to 99% efficiency can be achieved in ESS mode; it can also be achieved under parallel configuration. This ensures that the UPS can achieve higher system availability while providing reliable power in high quality
- Unity output power factor (utmost active power possible), which enables 100% utilization rate of system capacity



Flexibly adapt to business development and energy storage system upgrades

- The built-in Eaton Hot-sync parallel function provides parallel capability for redundancy and capacity with easy software configuration
- Powerful charger can provide charging power up to 55% of the rated power of the UPS to increase its ability to manage longer back-up time and Lithium-ion battery system





Lithium-ion battery compatible UPS solution

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 93PR 15-80kVA 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.

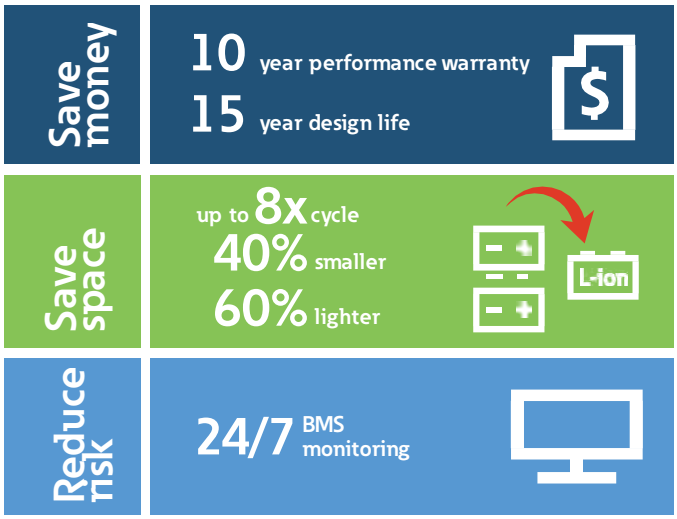
Management and monitoring system

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.

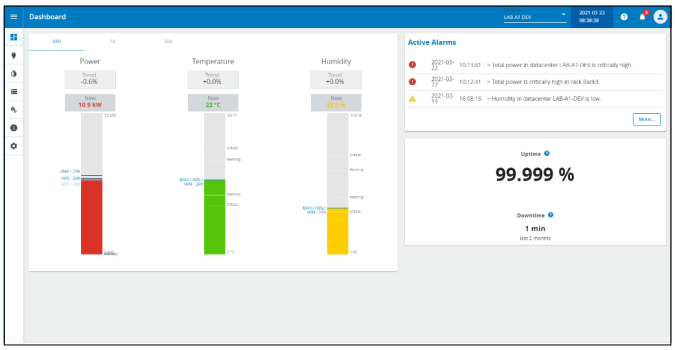
Benefits of lithium-ion



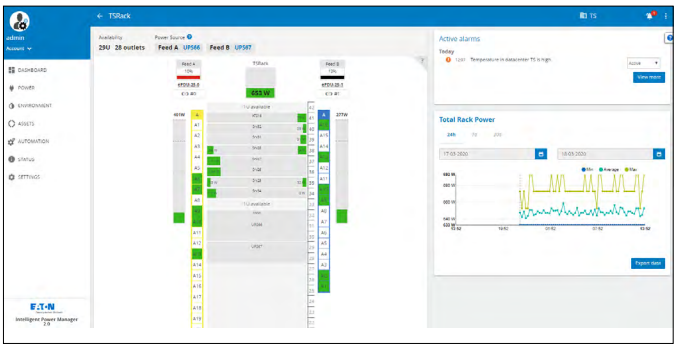
5-inch colorful touch screen display allows control and monitoring of system status and performance. 93PR also provides users with various communication interfaces and options:

- Voltage-free contacts
- Mini-slots for SNMP, Modbus or Relay communication
- RS232 & USB interface
- Users can obtain system information such as system efficiency, battery capacity and historical events via a touch screen display
- Designed for the most advanced IT environments, the 93PR 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. 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®

IPM dashboard



IPM rack view



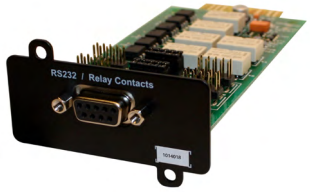
Connectivity options

Gigabit network M2 card

- **Part number:** 744-A3983-00P
- **Product description:** the mini-slot of the UPS is used to provide the integration with the 1000/100Base-T Ethernet network, and the network management software is used to realize UPS monitoring and management functions
- **Communication protocol:** HTTP, SNMP, TFTP, Telnet, BootP, DHCP, WAP, ARP and RARP
- **Support MIB:** UPS Standard MIB RFC-1628
- **Communication configuration:** access the VT-100 emulation terminal through the DB-9 RS-232 port
- **Communication topology structure:** 1000/100Base-T Ethernet integration self-adaptation

Industrial gateway card

- **Part number:** 744-07774-00P
- **Product description:** the mini-slot of the UPS is used to provide the integration with the Modbus network, and the connection between UPS and building management system (BMS) achieves monitoring and management functions. Meanwhile, the product has the integration function with the 1000/100Base-T Ethernet network
- **Modbus command:** read input status
  read input data
- **Communication configuration:** access the VT-100 emulation terminal through the DB-9 RS-232 port
- **Communication rate:** settable between 1200 bps and 19.2 k bps
- **Slave address:** settable
- **Network connection:** RS-485 or RS-232 data communication is realized through isolated terminal blocks
- **Communication topology structure:** two-wire or four-wire communication optional



AS/400 relay/RS-232 interface card

- **Part number:** 744-98067-00P
- **Product description:** the mini-slot of the UPS is used to provide the AS/400 computer and other industrial equipment with four groups of dry contact signals related to the working status of UPS equipment, and provide the intelligent monitoring system with an RS-232 serial communication interface
- **Communication protocol:** Eaton SHUT serial communication interface protocol
- **Communication configuration:** no configuration required
- **Communication topology structure:** the state signal line connection provides four groups of on/off signals indicating the working status of the UPS equipment, and a standard RS-232 serial communication interface are provided

EMP DT1H1C2 temperature and humidity sensor

- **Part number:** 744-A4026
- **Product description:** temperature and humidity sensors dedicated for the Gigabit network card and the industrial gateway management card, and each card supports the connection with up to three temperature sensors at the same time through the USB interfaces

Eaton 93PR 15-80kVA UPS technical specifications

Capacity	Rated capacity/active power (kVA/kW)	15/15	20/20	30/30	40/40	60/60	80/80
Input	Rated input voltage (Vac)	380/400/415					
	Input voltage range (Vac)	201-478					
	Rated input frequency (Hz)	50/60					
	Input frequency range (Hz)	40-72					
	Bypass voltage range (Vac)	+/- 15% by default, +/- 20% optional					
	Input power factor	> 0.99					
	Input current THDi (@ rated linear load)	< 3%					
Output	Rated output voltage (M)	380/400/415					
	Rated output frequency (Hz)	50/60					
	Power factor	1					
	Output voltage regulation (steady state)	± 1%					
	Output voltage tolerance regulation (dynamic)	± 5% (0-100% load variation)					
	Output voltage THDv (@ full linear load)	< 2%					
	Inverter overload capacity	10 minutes, @125%					
Productivity	Double-conversion mode	> 96%					
	ESS mode	99%					
Parallel	Parallel unit	Up to 4					
Battery configuration	Battery quantity	32-44 blocks					
	Charging method	BMS, ABM, or constant float charge					
	Connection	Support common battery (1+1)					
Dimensions	W*D*H (mm)	330*657*528				330*690*986	
Weight	Net weight (Kg)	40	40	44.5	45	96.5	97.5
Communication	Communication interface	2 mini-slots, 3 building alarms inputs, and 1 RS232&1 USB					
	Communication accessories	Gigabit network card; Industrial gateway card; EMP temperature and humidity sensor; AS/400 relay/RS-232 interface card					
Others	Temperature	0-50℃*					
	Humidity	5-95%, non-condensing					
	Altitude	< 1000 m, no derating					
	Noise (1m)	≤ 65dB					
	Safety	IEC62040-1					
	EMC compatibility	IEC62040-2					
	Performance	IEC62040-3					
	Certification	TLC, CQC energy saving, and Seismic test report					

*Conditions apply

Powering Business Worldwide

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