

# Eaton 91PS and 93PS UPS

3:1; 8 - 30 kW and 3:3; 8 - 40 kW



## Key applications

- IT applications:
  - Server rooms
  - Localised Data centres
- Mission critical applications:
  - Manufacturing/Industrial facilities
  - Transportation
  - Retail Buildings
  - Healthcare
  - Telecommunication
  - Government

## Lowest total cost of ownership (TCO)

- Highest efficiency in its power range with above 96 % efficiency in double conversion mode and up to 99 % efficiency in Energy Saver System mode
- Scalable architecture and 'Pay as you grow' capability (add more modules and up to 4 frames) to minimise Capital Expenditure
- Eaton 91PS and 93PS provide significantly more in a smaller package, with a footprint of only 0.25 / 0.36 m<sup>2</sup>
- Unity power factor (1.0) - more real power

## Maximum availability

- Hot swappable power modules can be replaced or added while other modules continue protecting the load
- Modular design allows internal redundancy (separate battery configuration also available)
- Short circuit and backfeed protection (required by the UPS standard) are integrated, eliminating the need to design them into the upstream panel and reducing the total cost of installation
- Eaton 91PS/93PS and Eaton's Intelligent Power Manager software takes the resiliency of the system to the next level by bridging the electrical and IT infrastructure



Powering Business Worldwide

# Technical specification

## General

Model rating (1.0 p.f.)	Eaton 91PS	Eaton 93PS
Model catalogue reference	91PS-XX(15)-YY-91PS-XX(30)-YY-	93PS-XX(20)-YY-93PS-XX(40)-YY-
Number of internal batteries	0 - 4 strings (32 blocks per string)	
Upgradability	Yes, up to 30 kW	Yes, up to 40 kW
External paralleling	Up to 4 units with HotSync technology	
UPS topology	Double conversion, 3-level IGBT converters	
Efficiency in double-conversion mode	96%	
Efficiency in Energy Saver System (ESS) <sup>1</sup> mode	Up to 99%	
UPS dimensions (width x depth x height)	335 x 750 x 1300 mm (15/20 kW frame) 480 x 750 x 1750 mm (30/40 kW frame)	
UPS Degree of protection	IP 20 (higher available as option)	
Acoustic noise at 1 m, in 25 °C ambient temperature	< 60 dBA in double conversion < 47 dBA in ESS	
Maximum service altitude	1000 m (3300 ft) above sea level at 40 °C Maximum 2000 m (6600 ft) with 1 % derating per each add. 100 m	

## Input

Input wiring	3 phases + neutral	
Rated input r.m.s. current:	220/380 V; 230/400 V; 240/415 V	
<b>Input ITHD:</b> Resistive load Non-linear load	< 3 % 8-10 kW < 5 % 15-40 kW < 4 %	
<b>Voltage tolerance:</b> Rectifier input Bypass input	187 to 276 V rated voltage -15% / +10%	
Rated input frequency	50 or 60 Hz, user configurable	
Frequency tolerance	40 to 72 Hz	
Input power factor	0.99	
Soft start capability	Yes	
Internal Back feed protection	Yes, for rectifier and bypass lines	

## Output

Model rating (1.0 p.f.)	Eaton 91PS	Eaton 93PS
Output wiring	1 phase + neutral	3 phases + neutral
Rated output voltage	220 V; 230 V; 240 V	220/380 V; 230/400 V; 240/415 V,
<b>Output UTHD:</b> 100% linear load 100% non-linear load	< 1.5% < 2.5%	
Rated output power	8 kW / 8 kVA 10 kW / 10 kVA 15 kW / 15 kVA 20 kW / 20 kVA 30 kW / 30 kVA	8 kW / 8 kVA 10 kW / 10 kVA 15 kW / 15 kVA 20 kW / 20 kVA 30 kW / 30 kVA 40 kW / 40 kVA
<b>Overload capability:</b> On inverter	10 min 102-110% load 60 sec 111-125% load 10 sec 126-150% load 300 ms > 150 %	
On bypass	Continuous < 125% load 20 ms 1000% load	
<b>Load power factor:</b> Rated Permitted range	1.0 0.8 lagging to 0.8 leading	

## Battery

Models with internal batteries	Eaton 91PS	Eaton 93PS
Battery technology	12 V, VRLA	
Nominal Ah capacity (C10)	9Ah	
Battery design life	5 years	
<b>Battery quantity:</b> Internal External	32 blocks, 192 cells per battery string 28-40 blocks per string	
<b>Battery voltage:</b> Internal External	384 V 336 V – 480 V	
Charging method	ABM technology or Float	
Charge current limit	Default 5A, configurable Maximum 18 A / power module	Maximum 25 A / power module
Battery start option	Yes	
Alternative energy source technologies	Wet cell batteries NiCd batteries Lithium-ion batteries Supercapacitors	

## Communication

MiniSlots	2 communication bays	
Network/SNMP interface	Yes, standard	
Standard connectivity ports	Mini-slot ports for optional cards, Device USB and Host USB, RS-232 service port, relay output, 5 building alarm inputs and a dedicated EPD, Web and SNMP card	

## Compliance with standards

Safety (CB certified)	IEC 62040-1; CB certified	
EMC	IEC 62040-2	
Performance	IEC 62040-3	
RoHS	EU directive 2011/65/EU	
WEEE	EU directive 2012/19/EU	

1. IEC 62040-3 Class 3 output

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