

# 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	

## 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 Max 18 A/ 15 kW module (depending on load level) Max 25 A/ 20 kW module (depending on load level)	
Battery start option	Yes	
Alternative energy source technologies	Wet cell batteries NiCd batteries Lithium-ion batteries Supercapacitors	

## Communication

MiniSlots	2 communication bays
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.