Eaton 93PS Marine UPS

8-40 kW



Key applications:

- Navigation
- Communication
- · Automation and monitoring systems
- · Auxiliary power systems
- Safety systems
- · Distributed UPS systems
- · Peak shaving
- EPOS

Ease of deployment

- Spacious power cabling area at the bottom of the unit
- Factory installed and tested internal transformers reduce footprint and cabling at site by 50%
- Best in class footprint and power density for easier floor planning and space saving
- · Possibility to design inherently redundant systems in one frame
- Back feed protection and bypass fuses included by default for easier planning and secured safety
- Ships with any classification society certificate as requested
- Engineering package to help planning in 3D or 2D environment
- Pre- and after-sales support assisting you from quoting to decommissioning

Ease of maintenance

- Hot Swap power modules means typical MTTR=0h
- Training + pre-defined spare part kits for basic UPS service
- Fully front serviceable
- Mini Slot extension cards for remote monitoring and management
- · No replacement of DC caps during the product design life
- Easy Capacity Test to do full load test without the need for load bank
- Eaton Advanced Battery Management (ABM) maximizes the battery life while providing automatic diagnostics of battery health
- Worldwide coverage of Eaton service at your service 24/7

Economical to operate

- Minimal losses and associated costs due to market leading efficiency reaching above 96%
- Cuts down operational costs by up to 50% compared to a legacy UPS
- Saves up to 650 barrels of marine diesel per UPS
- Flat efficiency curve means high efficiency regardless of the load level
- Compatibility with VRLA, Ni-Cd, Li-Ion or super capacitors allows for choosing the optimal energy or power reserve for your application



Technical Specification

External paralleling	General	
External paralleling	Output power rating (PF 1.0)	8, 10, 15, 20, 30, 40 kW
Efficiency in double-conversion mode Efficiency in Energy Saver System mode UP to 98.8% UPS topology Double conversion UPS performance classification UFI-SS-111 Degree of ingress protection Standard UPS color Ambient service temperature range Maximum service altitude Acoustic noise at 1 m, in 25 °C ambient temperature, without transformers Mean Time To Repair (MTTR) Nominal voltage rating Input voltage with internal transformers Input frequency range Input THDi 100% linear load Soft start for generators Internal back feed protection Output wiring Rated output voltage Output UTHD Inverter overload capacity Static bypass capacity Rated output power factor Inverter overload capability at rated voltage Rated output power factor Static bypass capacity Dup to 144 A / 300 ms Rated output power factor Coutput power factor Continuous < 125% load Continuous < 125% load Static bypass capacity Efficiency in person with provided in pub 49 sex for section on pub 40 - 72 Hz Dup to 98.08 Up to 144 A / 300 ms Rated output power factor Up to 144 A / 300 ms Rated output power factor Inverter overload capability at rated voltage Up to 144 A / 300 ms Rated output power factor Inverter overload capacity Linear Inverter overload output power factor Linear Inverter Outp	External paralleling	
Efficiency in Energy Saver System mode UPs topology Double conversion UPS performance classification UPIS performance classification UPS above sea level at 40 °l 40 dBA in double conversion 47 dBA in ESS 48 minutes (UPM) / < 15 minutes (UPS) Ves UPS performance in ups good bank ups ups good bank ups ups good bank ups ups good vession experiments (UPS) UPS yes UPM V 415 V 208 V - 690 V UPM V 415 V 208 V - 6	Inherent redundancy	Up to 20 kW with HotSync technology
Duble conversion UPS performance classification Degree of ingress protection Standard UPS color Ambient service temperature range Maximum service altitude Acoustic noise at 1 m, in 25 °C ambient temperature, without transformers Mean Time To Repair (MTTR) Nominal voltage rating Input wiring Input wiring Input THDi 100% linear load Soft start for generators Output wiring Dutput wiring Bated output voltage Output Voltage with internal transformers Output frequency Dutput ITHD Output frequency Dutput UTHD Input ITHD Output UTHD Output UTHD Input ITHD Input ITHD Output ITHD	Efficiency in double-conversion mode	Up to 96.0%
Degree of ingress protection Standard UPS color Ambient service temperature range Maximum service at 1 m, in 25 °C ambient temperature, without transformers Mean Time To Repair (MTTR) Nominal voltage rating Input wiring Input Wiring Input Wiring Soft start for generators Output Wiring Dutput wiring Dutput wiring Dutput voltage with internal transformers Output voltage with internal transformers Output UTHD Input UTHD I	Efficiency in Energy Saver System mode	Up to 98.8%
Degree of ingress protection Standard UPS color Ambient service temperature range Maximum service attitude Acoustic noise at 1 m, in 25 °C ambient temperature, without transformers Mean Time To Repair (MTTR) ROHS/WEEE compliancy Input Wominal voltage rating input voltage with internal transformers Input THDi 100% linear load Soft start for generators Internal back feed protection Output wiring Output viring Output viring Output UTHD Output UTHD Inverter overload capacity Output UTHD Output UTHD Output UTHD Inverter overload capacity Static bypass capacity Static bypass capacity Edid A5 °C Industrial grey; RAL 7035 Industrial grey; As for C od BA in double conversion <	UPS topology	Double conversion
Standard UPS color Ambient service temperature range Maximum service attitude Acoustic noise at 1 m, in 25 °C ambient temperature, without transformers Mean Time To Repair (MTTR) ROHS/WEEE compliancy Input Nominal voltage rating Input voltage with internal transformers Input THDi 100% linear load Soft start for generators Internal back feed protection Output wiring Output voltage with internal transformers Internal back feed protection Output trequency Output UTHD Inverter overload capacity Static bypass capacity Static bypass capacity Edit Add Sid Sid Sid Sid Sid Sid Sid Sid Sid S	UPS performance classification	VFI-SS-111
Ambient service temperature range Maximum service altitude Acoustic noise at 1 m, in 25 °C ambient temperature, without transformers Mean Time To Repair (MTTR) ROHS/WEEE compliancy Input Nominal voltage rating lunut voltage with internal transformers Input frequency range Input wiring Input THDi 100% linear load Soft start for generators Internal back feed protection Output wiring Pated output voltage with internal transformers Output trequency Output UTHD Inverter overload capacity Acoustic noise at 1 m, in 25 °C ambient 400 dBA in double conversion 470 dBA in ESS Acoustic noise at 1 m, in 25 °C ambient 400 dBA in double conversion 470 dBA in double conversion 470 dBA in ESS Acoustic noise at 1 m, in 25 °C ambient 400 dBA in double conversion 470 dBA in depth in ESS Acoustic (UPM) / < 15 minutes (UPS) Acoustic (UPM) / < 16 dBA in development 400 dBA in development 400 dBA in double conversion 470 dBA in est. Acoustic (UPM) / < 16 dBA in development 400 dBA in development 400 dBA in double conversion 470 dBA in development 400 dBA in developme	Degree of ingress protection	IP23
Maximum service altitude Acoustic noise at 1 m, in 25 °C ambient temperature, without transformers Mean Time To Repair (MTTR) RoHS/WEEE compliancy Input Nominal voltage rating Input voltage with internal transformers Input wiring Input ower factor Input THDi 100% linear load Soft start for generators Internal back feed protection Output wiring Output voltage with internal transformers Output UTHD Output UTHD Inverter overload capacity Name Acoustic noise at 1 m, in 25 °C ambient (40 dBA in double conversion (47 dBA in ESS) A minutes (UPM) / < 15 minutes (UPS) A minutes (UPS) A minutes (UPM) / < 15 minutes (UPS) A minutes (UPS) A minutes (UPS) A minutes (UPM) / < 15 minutes (UPS) A minutes (UPS) A minutes (UPS) A minutes (UPM) / < 15 minutes (UPS) A minutes (UPS) A minutes (UPS) A minutes (UPM) / < 15 minutes (UPS) A minutes (UPS) A minutes (UPS) A minutes (UPM) / < 15 minutes (UPS) A minutes (UPS) A minutes (UPM) / < 15 minutes (UPS) A minutes (UPS) A minutes (UPM) / < 15 minutes (UPS) A minutes (UPS) A minutes (UPM) / < 15 minutes (UPS) A minutes (UPS) A minutes (UPM) / < 15 minutes (UPS) A minutes (UPS) A minutes (UPM) / < 15 minutes (UPS) A minutes (UPS) A minutes (UPM) / A 15 V A minutes (UPS) A minutes (UPM) / < 15 minutes (UPS) A minute sutes in text (UPs) A minute su	Standard UPS color	Industrial grey; RAL 7035
Acoustic noise at 1 m, in 25 °C ambient temperature, without transformers	Ambient service temperature range	0°C to 45°C
temperature, without transformers A dBA in ESS	Maximum service altitude	1000 m (3300 ft) above sea level at 40 °C
Input Nominal voltage rating Input voltage with internal transformers Input wiring Input wiring Input wiring Input wiring Input THDi 100% Inear load Input THDi 100% Inear load Input wiring Input wiring Input transformers Internal back feed protection Internal back feed prote	Acoustic noise at 1 m, in 25 °C ambient temperature, without transformers	
Nominal voltage rating Input voltage with internal transformers 208 V - 690 V 208 V -	Mean Time To Repair (MTTR)	< 8 minutes (UPM) / < 15 minutes (UPS)
Nominal voltage rating Input voltage with internal transformers Input voltage with internal transformers Input frequency range Input frequency range Input wiring Input wiring Input power factor Input THDi 100% linear load Input Wes, for rectifier and bypass lines Output Output Wiring Input Wiring Input Voltage Input ITHD Input ITHD Input ITHD Input Ith I	RoHS/WEEE compliancy	Yes
Input voltage with internal transformers Input frequency range Input wiring Input wiring Input wiring Input power factor Input THDi 100% linear load Soft start for generators Internal back feed protection Output Output wiring Input voltage Output voltage Output voltage Output voltage Output trequency Output ITHD Inverter overload capacity Inverter overload capacity Output space capacity Inverter overload capacity Inverter overload capacity Input transformers Input Yes Input transformers Input transformers Input THD Inp	Input	
Input wiring Sph+N+PE (3ph+PE with input transformer)	Nominal voltage rating Input voltage with internal transformers	
Input wiring Input power factor Input THDi 100% linear load Soft start for generators Internal back feed protection Output Output wiring Rated output voltage Output trequency Output UTHD Inverter overload capacity Static bypass capacity Input THDi 100% linear load (3ph+PE with input transformer) (299 (3ph+PE with input transformer) (299 (200 (200 (3ph+PE with input transformer) (200 (200 (200 (3ph+PE with input transformer) (200 (200 (3ph+PE with input transformer) (200 (3ph+PE with input transformer) (200 (200 (3ph+PE with input transformer) (3ph+PE with input transformer) (200 (3ph+PE with input transformer) (3ph+PE with input transformer) (3ph+PE with input transformer) (200 (400 (400 (400 (400 (400 (400 (400	Input frequency range	40 - 72 Hz
Input THDi 100% linear load Soft start for generators Internal back feed protection Output Output Output wiring Rated output voltage Output voltage with internal transformers Output ITHD Output UTHD Output UTHD Inverter overload capacity Static bypass capacity Short-circuit capability at rated voltage Output power factor Yes Yes Yes Yes, for rectifier and bypass lines Yes Yes, for rectifier and bypass lines Yes Yes Yes Yes Yes Yes Yes	Input wiring	1 - 1
Soft start for generators Internal back feed protection Putput Output Output wiring Rated output voltage Output voltage with internal transformers Output ITHD Output UTHD Output UTHD Inverter overload capacity Static bypass capacity Soft start for generators Yes Yes, for rectifier and bypass lines 380 V, 400 V, 415 V 208 V - 690 V Output frequency 50 Hz / 60Hz configurable < 1.5% (100% linear load), < 3.5% (100% non-linear load) 10 min 102 – 110% load 60 s 111 – 125% load 10 s 126 – 150% load 300 ms > 150% load Continuous < 125% load, 20 ms 1000% load Static bypass capacity Short-circuit capability at rated voltage Rated output power factor 1.0	Input power factor	0.99
Output Output wiring Rated output voltage Output voltage with internal transformers Output UTHD Output UTHD Output UTHD Inverter overload capacity Static bypass capacity Output power factor Output power factor Yes, for rectifier and bypass lines Yes, for rectifier and bypass lines Aph+N+PE / 3ph+PE 380 V, 400 V, 415 V 208 V - 690 V 208	Input THDi 100% linear load	< 3%
Output Output wiring 3ph+N+PE / 3ph+PE Rated output voltage 380 V, 400 V, 415 V Output voltage with internal transformers 208 V - 690 V Output frequency 50 Hz / 60Hz configurable < 1.5% (100% linear load), < 3.5% (100% non-linear load)	Soft start for generators	Yes
Output wiring 3ph+N+PE / 3ph+PE Rated output voltage 380 V, 400 V, 415 V Output voltage with internal transformers 208 V - 690 V Output frequency 50 Hz / 60Hz configurable Output UTHD < 1.5% (100% linear load), < 3.5% (100% non-linear load)	Internal back feed protection	Yes, for rectifier and bypass lines
Rated output voltage 380 V, 400 V, 415 V 208 V - 690 V 208 V	Output	
Output voltage with internal transformers 208 V - 690 V Output frequency 50 Hz / 60Hz configurable Output UTHD < 1.5% (100% linear load), < 3.5% (100% non-linear load)	Output wiring	3ph+N+PE / 3ph+PE
Continuous Con	Rated output voltage Output voltage with internal transformers	
non-linear load 10 min 102 - 110% load 60 s 111 - 125% load 10 s 126 - 150% load 300 ms > 150% load Static bypass capacity Continuous < 125% load 20 ms 1000% load Short-circuit capability at rated voltage Up to 144 A / 300 ms Rated output power factor 1.0	Output frequency	50 Hz / 60Hz configurable
Inverter overload capacity 60 s 111 - 125% load 10 s 126 - 150% load 300 ms > 150% load Continuous < 125% load, 20 ms 1000% load Short-circuit capability at rated voltage Rated output power factor 1.0	Output UTHD	< 1.5% (100% linear load), < 3.5% (100% non-linear load)
10 s 126 - 150% load 300 ms > 150% load Continuous < 125% load, 20 ms 1000% load Up to 144 A / 300 ms Rated output power factor 10 s 126 - 150% load Up to 144 A / 300 ms 1.0	Inverter overload capacity	10 min 102 – 110% load
10 s 126 - 150% load 300 ms > 150% load Continuous < 125% load, 20 ms 1000% load Short-circuit capability at rated voltage Rated output power factor 1.0		60 s 111 - 125% load
Static bypass capacity Continuous < 125% load, 20 ms 1000% load Short-circuit capability at rated voltage Up to 144 A / 300 ms 1.0		10 s 126 - 150% load
Static bypass capacity 20 ms 1000% load Short-circuit capability at rated voltage Up to 144 A / 300 ms Rated output power factor 1.0		300 ms > 150% load
Rated output power factor 1.0	Static bypass capacity	
	Short-circuit capability at rated voltage	Up to 144 A / 300 ms
Load power factor range 0.8 lagging to 0.8 leading	Rated output power factor	1.0
	Load power factor range	0.8 lagging to 0.8 leading

Battery	
Battery technology	VRLA, Li-Ion, NiCd,
	Eaton Super Capacitors
Nominal battery voltage	336 V - 480 V
Charge current limit	
Load ≤80%	Up to 50 A, configurable
Load >80%	Up to 30 A, configurable
Charging method	Eaton ABM technology or float
Boost charge function	Yes
Temperature compensation	Yes
Battery start option	Yes
Communications	
MiniSlots	2 communication bays for Web/SNMP, ModBus/Jbus & Industrial realy
Standard connectivity ports	Device USB and Host USB, RS-232 service port, relay output, 5 building alarm inputs, 1 relay output and a dedicated EPO
Accesories	
Accessories for UPS	Internal transformers; Single feed kit; Earth fault monitoring; 24V Emergency Power Off (EPO); Custom system and battery voltages; Custom colors
Compliance with standards	
Safety (CB certified)	IEC 62040-1
EMC	IEC 62040-2
Performance	IEC 62040-3
RoHS	EU directive 2011/65/EU
WEEE	EU directive 2012/19/EU
Environmental Aspects - Requirements and Reporting	IEC 62040-4, EN 50581

Due to continuous product imrovement programmes, specifications are subject to change without notice. For product specific specifications, contact Eaton sales representatives.



Eaton
EMEA Headquarters
Route de la Longeraie 7
1110 Morges, Switzerland Eaton.eu

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