

Eaton Power Xpert 93E-HE



93E

**Best TCO
for IT space**

80 kVA to 120kVA

Power Factor 0.9 @ 40°C
Power Factor 1.0 @ 30°C
Power Factor 0.8 @ 45°C



The Dashboard

Best in Class Efficiency

96% Double conversion efficiency
40°C without de-rating

Best in Class Footprint

99% HE efficiency
3 Levels IGBT 4ms
MTTR<30min

0.3 kW/m²



Power
Failure



Power
Sag



Power
Surge



Under-
Voltage



Over-
voltage



Line
Noise



Frequency
variation



Switching
Transient



Harmonic
Distortion

Key Features:

- Active Power Factor Correction
- Transformer free Design
- Easy integration in the IT space
- Easy front access
- IT space options : Chimney for cooling
- WEB / SNMP / MODBUS communication
- EPO built in contact

Key Patents:

HotSync® spofless technology

ECT Easy Capacity Test

ABM Advanced battery
management

HE High efficiency mode

Enhanced Features

- Default 0.9pf and optional 1.0 pf
- Up to 3% THDi and 1.5% THDv for Linear & 5% for Non Linear Load.
- Lower acoustic noise.
- 0.7 Lagging to 0.9 Leading Operating PF Range without Derating

Lower TCO

- Up to 96% efficiency @double conversion
- >99% efficiency @ high efficiency mode.

Various Options

- Common Battery
- Lithium ION/Super Cap/VRLA as DC Source
- MBS for 160/200/400/500 kVA as Side Car
- Rear Chimney + IP21 as Option
- Inbuilt Transformer Facility upto 120 kVA

Lower MTTR and MTBF

- Inductor enhancement
- CAP enhancement
- Cable and IO board serviceability enhancement

Simply effective power protection

- Default 0.9pf and @ 30 Degree 1.0 pf.
- Upto 3% THDi @ Rated Non-Linear Load
- Upto 2% THDi @ Rated Linear Load.
- Upto 7% THDi @ Rated 50% Non-Linear Load.
- Upto 5% THDi @ Rated 50% Linear Load.

True reliability

- Eaton Hot Sync® technolog ABM
- Battery temperature compensation

Extensive configurability

- Small Footprint
- Wide software and connectivity
- Rear Chimney solution for against Wall Installation.

Cost saving and sustainability

- Low TCO
- ECT technology
- A wide range of service options



Powering Business Worldwide

Eaton 93E-HE 80-100-120 kVA HE UPS Technical Specification as per IEC62040-3

GENERAL

Construction	80kVA	100kVA	120kVA
Model(Platform/Power Rating)	93E-100/80 (ETO)	93E-100/100	93E-120/120
UPS Topology	Double Conversion, IGBT Converters		
Performance classification	IEC62040-3		
UPS Dimensions: WxDxH (mm)	600 x 800 x 1880		
Degree of protection	IP20, with front door mounted washable dust filter(IP 21 optional)		
Cabinet colour	Black, RAL 9005		
Cable entry	Bottom/Front or Rear, optional Top entry kit		
Weight (kg) without batteries	273		299

ELECTRICAL OUTPUT CHARACTERISTICS - NORMAL MODE

Construction	80kVA	100kVA	120kVA
Rated output voltage	230/400 Vac, three phase, (220/380, 240/415 selectable)		
Crest factor	3:1		
Rated output frequency	50 Hz (default) or 60 Hz		
Total voltage distortion	<1.5% with linear load, <5% with non-linear load defined according to EN62040-3		
Short circuit capability, <400ms	400A	400A	480A
Overload capacity w/out bypass	102–110% load 60mins @ 30°C; 111-125% load 10 minutes, 126–150% load 1 minute, >151% load 500ms @ 40°C		
Overload capacity with bypass	"115% load continuous, 1000% for 20ms at 40°C and ≤1000m altitude Note: Selected external Bypass fuses or breaker may limit the overload capability"		
Load power factor range	0.7 lagging to 0.9 leading without de-rating		
Range of frequency synchronisation with bypass	+/-3Hz/s default, up to 7Hz/s user settable for single UPS, up to 0.5 Hz/s for parallel UPS		

EFFICIENCY IN DOUBLE CONVERSION MODE & HEAT DISSIPATION UNDER LINEAR LOAD CONDITIONS

Construction	80kVA	100kVA	120kVA
Efficiency @ 100% Linear Load	95.8%	95.8%	95.8%
Efficiency @ 75% Linear Load	96.0%	96.0%	96.0%
Efficiency @ 50% Linear Load	96.0%	96.0%	96.0%
Efficiency @ 25% Linear Load	95.40%	95.40%	95.40%
Heat Dissipation @ 100% Linear Load	3156W	3945W	4734W
Heat Dissipation @ 75% Linear Load	2250W	2812W	3375W
Heat Dissipation @ 50% Linear Load	1500W	1875W	2250W
Heat Dissipation @ 25% Linear Load	1148W	1436W	1723W

ENVIRONMENTAL PARAMETER

Construction	80kVA	100kVA	120kVA
Ambient storage temperature	Range of -15 to +55 Degree C in the protective package		
Ambient service temperature	UPS: 0 to +40 Degree C		
Maximum service altitude	1000m above sea level		
Relative humidity	5 to 95%, no condensation allowed		
Acoustic noise at 1m (ISO7779)	≤62dB @ 75% Load		

ELECTRICAL INPUT CHARACTERISTICS

Construction	80kVA	100kVA	120kVA
Power Distribution System compatibility	TN, TN-S, TN-C, TN-C-S, TT (Three-phase, four-wire + PE)		
Rated input voltage	Rectifier: 230/400Vac nominal (220/380, 240/415 Selectable)		
Operating frequency / tolerance	50 or 60Hz; Tolerance 40-72Hz		
Input current distortion	<2% THDi at rated linear load, <5% THDi at >50% of rated load; <3% THDi rated non-linear load		
Input power factor	0.99pf at 100% load		
Number of input phases	3 phases + Neutral + PE (3 phase input)		
Rated rectifier input current (rms @ 400V)	120A	150A	180A
Maximum rectifier input current (rms @ 400V)	131A	164A	197A
Bypass input current (rms @ 400V) Recommended/Max	115/133A	144/166A	173/199A

BYPASS CHARACTERISTICS

Construction	80kVA	100kVA	120kVA
Automatic bypass	"Static bypass switch, continuously rated", no break transfer *bypass capable of 115% continuous load"		
Automatic bypass rating	100kVA		120kVA
Automatic bypass SCR i2t value	275,000 A²s		
Back-feed protection	Optional Internal back-feed contactor		
Separate bypass input feed	Standard (single feed cable links supplied for field fitting)		
Manual bypass switch (internal)	Inbuilt		

BATTERY CHARACTERISTICS

Construction	80kVA	100kVA	120kVA
Battery nominal voltage	216 to 252 Cells, 240 Cells Default (Continual selectable)		
Float charge voltage	216/228/240 x 2.30V = 497/524/552V		
Maximum charge voltage	216/228/240 x 2.35V = 508/536/564V		
Battery cut off voltage	216 Cells = 1.85V/Cell, 228 Cells = 1.75V/Cell, 240 Cells = 1.67V/Cell		
Restored energy time to 90%	Maximum 10 hours recommended (dependant on battery size)		
Charging current (at full load)	20A(default), 40A(max)		
Battery recharge profile	Advanced Battery Management (ABM®) = 90% resting, 10% floating/charging (typical)		



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