

# EDPN Power-I Flexible Power System

## INTRODUCTION

EDPN Power-I Flexible Power System is an integrated (N+X) microprocessor based Modular AC/ DC UPS power system that incorporate Controller with LCD Display & Keypad, Rectifier, Inverter, Static Switch and alarm interface module for up to 18KVA capacity. All modules are hot-swappable, allowing fast and safe exchange of any component without interrupting critical load.

## FEATURES

- 19 inch Rack Mount Modular Hot-pluggable connection allows module addition or removal with no interruption to operation
- Easily expands capacity of up to 18kVA for AC Operation and >1000A for DC Operation with N+X redundancy configuration
- Low MTTR (Mean Time To Repair)
- Comprehensive LCD/LED display provides system status and user-friendly panel for ease of program settings in the rectifier and inverter
- Support Long Battery Backup with configurable Battery Charger capacity
- Support VRLA AGM/ Tubular 2/ 12V Battery, Vented 2/ 12V and Ni-Cd Battery operation
- Battery Charger/ Rectifier System and Inverter System can work independently
- Standard Remote Alarm Interface: Volt-Free Dry Contacts
- Standard SNMP remote alarm interface for complete monitoring of operating status in real time
- Optional 230VAC Static Transfer and Manual Bypass Switch for AC UPS critical applications



## SYSTEM SPECIFICATIONS

Input	Voltage	90-300 VAC (Power derate @ < 180VAC)
	Frequency	45-65Hz
	THDI	< 5% @ Full Load
	Power Factor	≥ 0.99
	Startup time	7 sec (Dependant on Load and Output Voltage)
AC UPS Output	Voltage	110/115/120Vac or 208/220/230/240Vac (Programmable), 1 Phase
	Output Regulation	±2% nominal
	Frequency	50/60Hz ±0.5%
	Power, VA	1500VA/ 1200W (Expandable up to 12 Inverter modules), 0.8pf
	Waveform	Pure Sinewave
	Efficiency	≥ 85% at rated load
	Harmine Distortion	<3%, linear load / <5%, non-linear load
	Dynamic Response	±10%, acc to IEC62040-3 Class 1
	Crest Factor	3:1
Overload	Electronic current limit, 105% to 125%: Continuous (Operate with warning indication), 126 - 149% within 20 second, 150% within 10 sec	
DC UPS Output	Voltage	48VDC
	Voltage Range	43-60 VDC (Programmable)
	Power	2000W, 41.7A @ 48VDC (Expandable up to 126 Rectifier modules)
	Efficiency	96.5%
	Regulation	±0.5% (Static), ±5% (Dynamic)
	Noise (Ripple < 100Hz)	<2mV rms unweighted
Environment	Ambient Temperature:	-20°C to +70°C (maximum output power is derated above +50°C)
	Storage Temperature:	-30°C to +85°C
	Humidity:	Up to 95% RH (Non-Condensing)
	Altitude:	<2,500m
	Audible Noise	≤55dB, 1M
	Safety Compliance	EN60950

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# EnPower-I System Components Technical information



## INV4815E Series Inverter Module Features

- Pure Sine wave
- Hot-swap replacement in shelf
- High efficiency, >88%
- Smart fan speed control
- DSP chip designed
- N+X redundancy system, load sharing < 5%
- High power density
- Optional Emergency Power Off (EPO) function

## INV4815E series Specifications

- Input voltage nom. 48Vdc
- Operating voltage 40Vdc ~ 60Vdc
- Surge Protection Telcordia GR-1089 / CORD, ANSI C62.41-IEEE, STD 587-1980
- Input protection Reverse Polarity Protection
- Psophometric noise  $\leq 1.0\text{mV}$  ITU-T O.41 (16.66~6000Hz)
- Peak to peak noise 150mV up to 100MHz
- Output waveform Pure sine wave
- Output power 1500VA/1200W, 0.8pf
- Output voltage 110/115/120Vac or 208/220/230/240Va
- Output regulation  $\pm 2\%$
- Frequency 50/60Hz  $\pm 0.5\%$
- Crest factor 3:1
- THD  $< 3\%$ , linear load /  $< 5\%$ , Non-linear load
- Efficiency  $\geq 89\%$  at rated load
- Dynamic response Max  $\pm 10\%$
- Overload Electronic current limit, 105% - 125%: Continuous (warning indication), 126 – 149% within 20 second, 150% within 10 sec



## RM2048HE Rectifier Module Features

- Highest efficiency conversion, 96.5%
- Reduces heat and energy losses by over 50%
- Lowers OPEX by up to 80%
- “Hot plug/swap” modular architecture for quick and easy system integration/expansion.
- Force air cooled by a temperature controlled, high reliability and monitored fan
- Power Factor Correction
- Paralleling with active load sharing
- Constant power (2000W) from 48V to 59V
- Integrated input (fuse) protection
- High power density with compact size
- Wide input voltage

## RM2048HE Specifications

- AC input voltage 90VAC to 300VAC (power derate below 175VAC)
- Frequency 45-65Hz
- Input power factor  $\geq 0.99$  (Typical)
- Input THDI  $< 5\%$
- Max input current 12A
- Start-Up time 7 sec (Typical)
- Efficiency 96.5%
- Output power 2000W
- Output voltage 48VDC (43V-60V adjustable)
- Output current max. 41.7A (Expandable up to 126 modules)
- Regulation  $\pm 0.5\%$  nominal
- Dynamic response  $\pm 5\%$  nominal
- Load sharing Active Load Share
- Peak-peak voltage  $\leq 100\text{mV}$  at 20MHZ
- Psophometric Noise  $\leq 2\text{mV}$  uweighted (Ripple – 100Hz)



## SM36 Monitoring Controller Module Features

- Serial control for up to 126 rectifiers/inverters, plus peripheral devices.
- Periodic and event logging of up to 16000 records each.
- Multiple language options.
- Temperature compensation.
- Battery current limiting.
- Dual LVD Control.
- Setup from front panel or PC.
- Fast charge control and timer.
- LCD display of parameters.
- Web based configuration.
- TCP/IP interface and SNMP for remote monitoring.
- USB port for local connection.
- Multiple digital and analogue I/O expansion option.
- Battery Mid-point Monitoring



MBSDU-50-2U-19



Optional Maintenance Bypass Switch module

## STS Static Transfer Switch Module Features

- Universal input voltage range (Low Line VAC: 89 – 138VAC, High Line VAC: 176 – 276VAC)
- Available in 50A and 100A
- AC Bypass Frequency Synchronisation Range:  $\pm 2.5\%$
- Hot-swap replacement in shelf
- Fast transfer time, Typically  $< \frac{1}{4}$  cycle
- Operation Mode: Inverter / Mains, priority selectable
- Overload: 120% with 20sec, 160% within 5 sec and 300% within 10msec
- Wide operation temperature range, -20~50°C
- Lower audible noise  $< 55\text{dBA}$
- Optional Emergency Power Off (EPO) function
- Optional Maintenance Bypass Switch (MBS) function