

# ATLAS MARINE SYSTEMS

## SHF Series **ShorPOWER®** FREQUENCY CONVERTERS 50Hz and 60Hz 37.5-50 kVA



Atlas Marine Systems is the world leader in the design of marine electrical power systems. Atlas provides electrical engineering services to define the vessel electrical distribution system and the appropriate application of its TecPOWER® series switchboards, load management and power management systems. Additionally, the Atlas ShorPOWER product line provides the widest selection of onboard frequency converters available to the yachting community.

### APPLICATION:

The ShorPOWER SHF frequency converter utilizes state-of-the-art technology including the latest generation of power semiconductors and transformers controlled by an ultra-high speed digital system to create precisely regulated output power. This technology allows the converter to be very compact and lightweight while being electrically powerful and highly efficient. The SHF will automatically connect to any marina power source worldwide and provide clean, stable and reliable power for the yacht. This is especially important due to ever increasing regulations regarding the use of onboard diesel engine generators while docked at a marina. Noise and air pollution caused by these generators, coupled by increased operational and maintenance costs, make the use of the ShorPOWER SHF frequency converter a must.

Additionally, the ShorPOWER SHF produces a highly regulated output regardless of fluctuations in the dockside power or changes in load onboard. This regulation protects the onboard electrical system by eliminating voltage transients and harmonic distortions typical of dockside power.

The SHF is designed to be the most reliable converter on the market by manufacturing the converter using only the highest quality components and by engineering the converter specifically for marine use, such as operating continually at 100% load in high ambient temperatures. It is available in single unit ratings from 37.5-50kVA.

The compact, lightweight form factor allows the SHF to be installed where height is restricted. Additionally, the ability to mount the system in either a vertical or horizontal configuration expands the installation opportunities on board. The SHF is designed as a dual input machine to maximize the use of available dock power.

### DIFFERENTIATING FEATURES:

- ≤ 5% input current distortion - provides input power factor correction to maximize obtainable dockside power
- Output power is electrically isolated from the shore supply
- High Efficiency – converts more of the available dock power for onboard usage
- Internal Communication Ports - USB, RJ45 (ETHERNET), RS485 (Modbus), & RS232
- External Communication Port – USB (Service Access)
- TCP/IP/Ethernet interface (Modbus)
- Proportional Dual Shore Cords - maximizes the amount of power obtainable from the dock
- Regulation of unbalanced phases - protects equipment onboard
- Output stabilized when step loads are applied - protects equipment onboard
- Unbalanced loads on board are not reflected on the input – maximizes the amount of power obtainable from the dock
- Generous overload capability - power boost for peak usage times - no need to start generators or load shed
- Precise output voltage and frequency regulation - protects equipment on board
- Voltage transient and lightning protection - protects equipment on board

### DIFFERENTIATING FEATURES (cont'd):

- High reliability with a sophisticated diagnostic and protection system
- Alarm indication when input current exceeds programmed dock breaker rating
- Automatic marina pedestal protection
- Multi Language Display (Arabic, Asian, English, French, German, Italian, Russian, Spanish, others - Specify)

### OPTIONS AVAILABLE:

- Parallelable for increased capacity or redundancy
- Seamless power transfer between ShorPOWER and generator, and between generators
- Remote touchscreen or control panel
- Output load disconnect
- TecPOWER switchboard data link interface
- Horizontal configuration

### MECHANICAL SPECIFICATIONS:

Size: See Figure 1

Cooling: Forced Convection



# ATLAS MARINE SYSTEMS - ShorPOWER® SHF Series

## GENERAL SPECIFICATIONS

### INPUT:

Voltage	177 to 528 volts, 1Ø and 3Ø, 2, 3 or 4 wire plus ground
Frequency	50 - 60 Hz ± 10%
Input Current Distortion	≤ 5%
Power Factor	≥ 0.999
Phase Rotation	Any
Protection	Over/undervoltage, loss of phase, overcurrent, short circuit. Voltage transient protection IAW IEEE C62.41.1 Location Cat. B/C
Inrush Current	No greater than 50% of full load current

### ENVIRONMENTAL:

Acoustical Noise	< 65 dBA at 5 feet (1.5m)
Temperature Range	-40°C to +55°C
Relative Humidity	0 - 95%, Non-Condensing
Enclosure:	NEMA 250, Type 3RX Corrosion Resistant
Ingress of Water:	IP23 (Optional IP55)

### ENERGY FACTORS:

Efficiency	92% typical at full load; 91% typical at half load; varies depending on configuration
------------	---

### OUTPUT:

Unit Power Ratings	37.5, 45, or 50 kVA (Specify)
Power Factor Range	0.5 lagging to 0.8 leading
Overload	100% continuous 110% for 60 min 125% for 10 min 150% for 2 min 200% for 20 sec
Voltage (specify)*	
▪ Single-phase, 2-wire:	200, 220, 230, 240 volts
▪ Single-phase, 3-wire:	110/220, 115/230, 120/240 volts
▪ Three-phase, 3-wire:	220, 230, 240, 380, 400, 415, 440, 460, 480 volts
▪ Three-phase, 4-wire:	115/200, 120/208, 220/380, 230/400, 240/415, 265/460, 277/480 volts
Crest Factor	1.414 ± 3%
Voltage Regulation	± 1.0% under all conditions of line, balanced loads and temperature
Frequency (specify)	50 or 60 Hz ± 0.01% under all conditions of line, load and temperature
Frequency Transients	None
Phase Angle Regulation	± 2° for balanced loads; ± 4° for unbalanced loads
Harmonic Distortion	3% maximum, 2% typical (linear loads)
Protection	Overload, short circuit, over/under voltage, safety disconnect, and over temperature

\*Specifications subject to change without notice

FIGURE 1

