

ATLAS MARINE SYSTEMS



SHF Series **ShorPOWER®** FREQUENCY CONVERTERS 50Hz and 60Hz 60-125 kVA

Atlas Marine Systems is the world leader in the design of marine electrical power systems. Atlas also provides electrical engineering services to define the electrical distribution system of vessels and to assure 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.



Horizontal Configuration

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 for actual marine use, such as operating continually at 100% load in high ambient temperatures.

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 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 onboard
- Voltage transient and lightning protection - protects equipment onboard

DIFFERENTIATING FEATURES (cont'd):

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

OPTIONS AVAILABLE:

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

MECHANICAL SPECIFICATIONS:

Size: See Figure 1

Weight: See Figure 1

Cooling: Forced Convection

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ATLAS MARINE SYSTEMS - ShorPOWER® SHF Series

GENERAL SPECIFICATIONS

INPUT:

Voltage	177 to 528 volts, 3Ø, 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.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	10 - 95%

ENERGY FACTORS:

Efficiency	92% typical at full load, 91% typical at half load; varies depending on configuration
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OUTPUT:

Unit Power Ratings	60, 75, 90, 100, or 125 kVA (Specify)
System Power Ratings	200 to 1250 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)

- Three-phase, 3-wire: 380, 400, 415, 440, 460, 480 volts
- Three-phase, 4-wire: 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
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Frequency Transients	None
Phase Angle Regulation	± 2° for balanced loads; ± 4° for unbalanced loads

Harmonic Distortion	3% maximum, 2% typical (linear loads)
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Protection	Overload, short circuit, over/under voltage, safety disconnect, and over temperature
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FIGURE 1

