

## SPA-II Series **ShorPOWER®** FREQUENCY CONVERTERS



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, using either a single or dual transformer isolation approach, provides the widest selection of onboard frequency converters available to the yachting community.

### APPLICATION:

The SPA Series ShorPOWER® frequency converter is a single transformer isolation system utilizing state-of-the-art technology including IGBT power modules integrated into a pulse width modulated (PWM) control system. The IP23 rated enclosure is constructed of a lightweight corrosion-resistant material and designed to minimize installed space requirements. This compact frequency converter is smaller and lighter than competitive products, while offering additional features. The SPA Series ShorPOWER® frequency converter is available in power ratings ranging from 37.5 kVA to 180 kVA as standard production products.

Unique to the SPA series is its ability to be operated both indoors and outdoors, through a novel method of controlling airflow needed to maintain the proper system temperature. The cabinet design assures only front access is necessary to service the unit. An aspect ratio has been used, similar to that available in the electrical controls industry, to minimize floor space and eliminate the need to remove multiple components or assemblies to access parts in the unlikely event of failure. To achieve the smallest installed space possible, the airflow system requires absolutely no air intake or exhaust from the back, sides, or top of the cabinet. The need for only front and bottom access for airflow makes this design a real space saver. Because of packaging techniques derived from the aerospace industry, the ShorPOWER® SPA series system offers the lightest weight to kVA ratio in the market. No other marine frequency converter approximates the low weight of the ShorPOWER® SPA series units. Although this series does not provide extended voltage transient and lightning protection through the use of an integrated second transformer, this protection can be made available by using an optional second transformer module provided when requested.



### STANDARD FEATURES:

- Power ratings from 37.5 kVA to 180 kVA
- Input auto-ranging from 180 to 530 volts, single and three-phase, 50 or 60 Hz
- Voltage transient and lightning protection (single transformer isolation)
- Single and three-phase outputs in all standard bus configurations
- Compact light weight design
- Smallest installed volume
- Environmentally hardened vacuum florescent display and control panel
- Precise output voltage and frequency regulation
- Pure sine wave output
- 4000 bit event history log
- Automatic proportional dockside power capacity management system (requires dual shore cord system option)
- Fully integrated input / output electronic protection package
- State-of-the-art IGBT and PWM technology
- Input emergency power off (EPO)
- Automatic restart select
- Built-in self-diagnostics system
- No periodic calibration required
- Remote on/off control
- Stud type power connections
- Remote alarm alert interface
- Fully integrated, dual independent shore cord system – GFCI compatible for 60 through 90 kVA units included (requires dual shore cord system option)
- Single shore cord input for 37.5 through 45 kVA units included (Dual cord optional)

# ATLAS MARINE SYSTEMS - ShorPOWER® SPA-II Series

## OPTIONS AVAILABLE:

- Non-integrated seamless power transfer between ShorPOWER® and generator
- Non-integrated generator to generator, seamless power transfer
- Generator auto start for input overload protection (requires seamless power transfer option)
- Parallelable for increased grid expansion or (N + 1) redundancy
- Hinged front doors
- Modular configuration
- Fully integrated Ethernet-based Communication Data Link (CDL) System.
- Output load disconnect
- Remote start / stop / reset switch control box
- TecPOWER™ switchboard data link interface
- Dual shore cord input for 37.5 through 45 kVA units

## GENERAL SPECIFICATIONS

### INPUT:

<b>Voltage Range:</b>	180 to 530 volts
<b>Phase:</b>	Single and three-phase
<b>Phase Rotation:</b>	Any
<b>Frequency:</b>	40 to 70 Hz
<b>Power Factor:</b>	≥ 0.99
<b>Inrush Current:</b>	< 50% of full load current
<b>Protection:</b>	Over/under voltage, loss of phase, over current, short circuit & loss of shore cord

<b>Input Current Distortion:</b>	≤ 5% at full rated load
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### ENVIRONMENTAL:

<b>Temperature Range:</b>	-40°C to +55°C
<b>Humidity:</b>	0% to 95%, non-condensing

### MECHANICAL:

Mechanical specifications vary depending on configuration selected. Contact Atlas Marine Systems to obtain more information.

### OUTPUT:

#### Power Ratings (specify):

- At single-phase: 37.5, 45, 60, 75 kVA
- At three-phase: 37.5, 45, 60, 75, or 90 kVA at 0.85 power factor

#### Overload:

225% for 10 seconds (motor starting)

#### Step Load:

±1% max voltage fluctuation with 0 to 225% load change

#### Voltage (specify):

- Single-phase, 2-wire: 110, 115, 120, 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

**Voltage Regulation:** ± 1%

**Phase Imbalance:** No Restriction

**Frequency (specify):** 50 Hz or 60 Hz ± 0.01%

**Harmonic Distortion:** 2% maximum, 1% typical (linear loads)

**Protection:** Over/under voltage, over/under frequency, over load, short circuit, & over temperature