



SureSine™ Inverter

FOR REMOTE OFF-GRID PV/SOLAR SYSTEMS

- Superior Load Operation
- More Power Available
- Extremely High Reliability
- No Cooling Fan Needed

SureSine is a pure sine wave inverter delivering AC power in off-grid solar applications, including rural electrification, telecom, remote homes, RVs, caravans and boats. A cast, anodized aluminum enclosure with no internal cooling fan needed ensures long-term reliability in the harshest conditions.

The SureSine's combination of performance, features and competitive price provides the best small inverter value on the market. It is highly reliable, having no internal cooling fan or other moving parts prone to failure.

KEY FEATURES AND BENEFITS

• Improved Load Operation

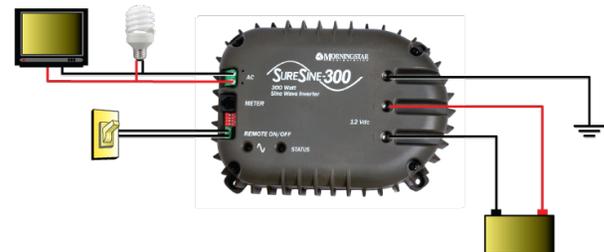
- **Pure Sine Wave** – provides quality AC equivalent to grid power. Toroidal transformer design generates good wave form throughout the range of input voltages. 600W peak/surge power; handles 200% surge up to 600W.
- **Outstanding Surge Capability** – handles a 200% surge during load start-up, to a maximum of 600 watts.

• More Power Available

- **High Efficiency** – a high peak efficiency will reduce heating and make more solar energy available for powering loads.
- **Low Self-Consumption** – the SureSine consumes 450mA while powering loads. During no load conditions, solar energy is not wasted because the SureSine automatically powers down to stand-by mode, reducing self-consumption to one tenth of operating consumption.

• Extremely High Reliability

- **Extensive Electronic Protections** – the SureSine has extensive electronic protections that will automatically protect against faults and user mistakes such as short circuit, overload,



high temperature and low voltage disconnect. Recovery from most faults is automatic

- **No Internal Cooling Fan** – a key design objective since fans often fail in harsh environments and are noisy, consume power and blow dirt into the electronics.
- **Tropicalization** – the SureSine uses epoxy encapsulation, conformal coating, stainless steel hardware, and an anodized aluminum enclosure to protect against harsh tropical and marine environments.
- **Other Features**
 - **More Information** – the two LEDs provide important information to the user about system status and any fault conditions. An optional digital meter may be connected to the SureSine to display additional system information.
 - **Remote On/Off** – improves safety by making it easy to install the SureSine in an inaccessible location or enclosure. Reduces system cost by avoiding the need to add an AC safety disconnect to the system.
 - **Adjustability & Communications** – four DIP switches provide easy adjustability of several system parameters. Additional adjustability is possible via RJ-11 to RS-232 adapter to a personal computer and using Morningstar's PC software. MODBUS support available.

Technical Specifications

Versions	SI-300-115V-UL	SI-300-220V
Electrical		
Continuous Power Rating	300 Watts @ 25°C	
Peak Power Rating (10 minutes)	600 Watts @ 25°C	
DC Input Voltage	10.0V – 15.5V	
Waveform	Pure sine wave	
AC Output Voltage (RMS)*	220V or 115V +/- 10%	
AC Output Frequency*	50 or 60 Hz +/- 0.1%	
Peak Efficiency	92%	
Total Harmonic Distortion (THD)	< 4%	
Self Consumption		
Inverter On (no load)	450mA	
Inverter Off	25mA	
Stand-by	55mA	
Low Voltage Disconnect (LVD)	11.5 V or 10.5 V**	
Low Voltage Reconnect	12.6 V or 11.6 V**	
LVD Warning Threshold (buzzer)	11.8 V or 10.8 V**	
LVD Delay Period	4 minutes	
High Voltage Disconnect	15.5 V	
High Voltage Reconnect	14.5 V	
Standby On Threshold	~ 8 Watts	
Standby Off Threshold	~ 8 Watts	
High Temperature Disconnect	95°C (heatsink)	
High Temperature Reconnect	80°C (heatsink)	

Electronic Protections

- Reverse Polarity (fused)
- AC Short Circuit
- AC Overload
- High Voltage Disconnect
- Low Battery Disconnect
- High Temperature Disconnect

- DC Terminals: Max. Wire Size
– 2.5 to 35 mm² / 14 to 2 AWG
- Remote On/Off Terminals: Max. Wire Size
– 0.25 to 1.0 mm² / 24 to 16 AWG
- Enclosure: IP20
Cast anodized aluminum

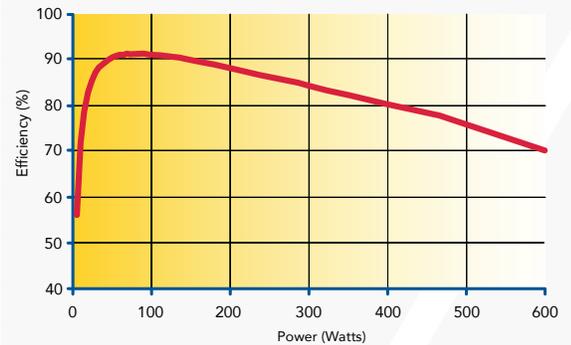
Mechanical Specifications

- Dimensions: 213 x 152 x 105 mm
8.4 x 6.0 x 4.1 in
- Weight: 4.5 Kg / 10.0 lbs
- AC Terminals: Max. Wire Size
– 4 mm² / 12 AWG

Environmental Specifications

- Ambient Operating Temp: –40°C to +45°C
- Storage Temperature: –55°C to +85°C
- Humidity: 100% (non-condensing)
- Tropicalization: Conformal coating on printed circuit boards. Epoxy encapsulated transformer and inductors.

Inverter Efficiency



Temperature De-Rate Curve



*Two separate versions available:
220VAC at 50 Hz or 115VAC at 60 Hz
Other output voltages available upon request.

**User selectable on both versions.

Certifications

- CE, RoHS and REACH Compliant
- ETL Listed (UL 458) - 115V version ONLY
- FCC Title 47 (CFR), Part 15 Subpart B for Class B
- Device
- EN 60950-1+A11:2001, rev. 4/4/04
- Manufactured in a Certified ISO 9001 Facility

Warranty

Two year warranty period.
Contact Morningstar or your authorized distributor for complete terms.

Due to Morningstar's policy of continuous improvement, product availability, features and specifications are subject to change without notice. Information in this publication has been checked for accuracy; however, no responsibility is assumed for typos or errors.