



PURE SINE WAVE INVERTER



The **SureSine** inverter has been developed using Morningstar's power electronics expertise and 25 years of experience with remote off-grid photovoltaic (PV) systems. This product is a pure sine wave inverter designed specifically to meet the needs of rural PV electrification requiring AC power including solar home systems, schools, community centers and health clinics. This inverter is also a good choice for small PV systems for telecom, remote cabins and weekend homes, and RV/caravans and boats.

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. A sine wave will extend the life of the household appliances (lights, TV, fans) and improve load performance.

Toroidal transformer design – Generates good wave form throughout the range of input voltages.

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.

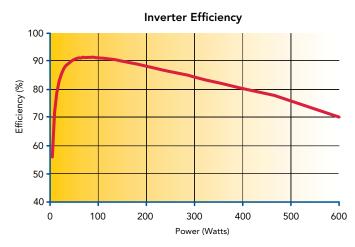
Tropicalization – The SureSine uses epoxy encapsulation, conformal coating, stainless steel hardware, and an anodized aluminum enclosure to protect against harsh tropical and marine environments.

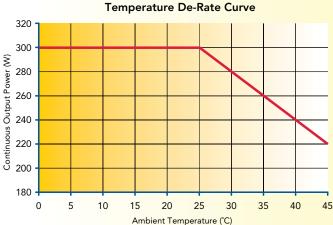
Other Features

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 – 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.





TECHNICAL SPECIFICATIONS

Electrical Specifications

Continuous Power Rating
 Peak Power Rating (10 minutes)
 DC Input Voltage
 Waveform
 Pure sine wave

• AC Output Voltage (RMS)* 220V or 115V +/- 10% • AC Output Frequency* 50 or 60 Hz +/- 0.1%

Peak Efficiency
 Total Harmonic Distortion (THD)
 4%

Self Consumption

Inverter On (no load) 450mA Inverter Off 25mA Stand-by 55mA

Low Voltage Disconnect (LVD)
 Low Voltage Reconnect
 LVD Warning Threshold (buzzer)
 11.5 V or 10.5 V**
 12.6 V or 11.6 V**
 11.8 V or 10.8 V**

LVD Delay Period
 High Voltage Disconnect
 High Voltage Reconnect
 Standby On Threshold
 Standby Off Threshold
 High Temperature Disconnect
 High Temperature Reconnect
 Watts
 95°C (heatsink)
 80°C (heatsink)

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

Electronic Protections

Reverse Polarity (fused)

AC Short CircuitAC Overload

- High Voltage Disconnect
- Low Battery Disconnect
- High Temperature Disconnect

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

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

Environmental Specifications

Ambient Operating Temp -40°C to +45°C
 Storage Temperature -55°C to +85°C

Humidity
 Tropicalization
 Tropicalization

100% (non-condensing)
Conformal coating on printed

circuit boards

Epoxy encapsulated transformer

and inductors

Certifications

- CE Compliant
- UL Listed (UL 458) 115 V version ONLY
- cUL (CSA C22.2 No. 107.1-01) 115 V version ONLY

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

AUTHORIZED MORNINGSTAR DISTRIBUTOR:







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^{**}User selectable on both versions.