

# MSH-RV SERIES | INVERTER/CHARGER

12V, 3000W

## Introduction

Designed specifically for use in RVs, the MSH-RV Series inverter/charger from Sensata Technologies is a pure sine wave inverter designed with true hybrid technology allowing it to run larger loads from smaller generators.

Hybrid technology: Most inverters only use one source of energy to power loads, either from incoming AC power – shore or AC generator – or from the batteries. The MSH-RV Series combines the energy from both sources to power loads. This allows the inverter to recharge the batteries when there is surplus power or deliver more power to the loads if they require more than the AC input can supply by itself.

Built-in RV-C connector: The built in RV-C connector and protocol allows the MSH-RV Series to multiplex directly with the RV’s network bus/backbone. Program your inverter/charger settings using the RV’s system monitoring display.



## Features

- Battery Profile Presets – Using ME-RC or ME-ARC Remote Controls, or built-in RV-C compliant interfaces via the ME-RVC Bridge, easily choose and set most standard battery profile settings, including Lithium Iron Phosphate (LFP) – only available via the ME-RC and ME-RVC, Gel, Flooded, AGM1, and AGM2.
- Smart Line Sense – The MSH-RV configures inputs so both outputs always receive power, whether a single input or both are connected to an AC source.
- Load Support – Load support parallels the inverter output with incoming AC sources allowing it to run larger loads from smaller generators.
- Pure Sine Wave – Power sensitive electronics without worry. The MSH-M Series provides reliable utility-grade power.
- Pass Through Capabilities – Larger 50 amp AC capability
- Multiple Ports – The MSH-RV Series provides multiple ports, including either an RV-C connector port or an RS-485 communication port for network expansion, an accessory port, and a port for a battery temperature sensor (ME-BTS).
- Convenient Wiring Access – An extra-large AC access cover with terminal screw block and 360° DC connection terminals with covers make wiring easier.
- Power Factor Corrected Charging – More efficient and works better with generators.
- Buy with Ease – The MSH-RV Series is backed by a three-year (36-month) limited warranty.

## Model Numbers

- MSH3012RV-L

## Available For

- RV Systems

## Available Accessories

- Auto Generator Start - ME-AGS-N
- Battery Monitor Kit - ME-BMK
- Advanced Remote Control - ME-ARC50
- Remote Control - ME-RC50-L
- Smart Battery Combiner - ME-SBC



Pure Sine Wave



12 Battery Voltage Options



3000 VA Continuous Output Options



## SPECIFICATIONS

| <b>MSH3012RV-L</b>                                       |  |
|--|--|
| <b>INVERTER SPECIFICATIONS</b>                           |  |
| <b>Input battery voltage operating range</b>             | 9 to 17 VDC  |
| <b>Input battery voltage range for full output power</b> | 10.4 to 17.0 VDC   |
| <b>AC output voltage accuracy (at 12.6 VDC)</b>          | 120 VAC $\pm 3\%$ ( $\leq$ continuous power)                         |
| <b>Output frequency and accuracy</b>                     | 60 Hz $\pm$ 0.05 Hz  |
| <b>Total Harmonic Distortion (THD)</b>                   | < 5%   |
| <b>Continuous power output (at 25°C)</b>                 | 3000 VA  |
| <b>Continuous AC output current (invert mode)</b>        | 25 A   |
| <b>Continuous AC output current (charger mode)</b>       | 50 A (pass-through and load support)                                 |
| <b>1 msec surge current (amps AC)</b>                    | 85   |
| <b>100 msec surge current (amps AC)</b>                  | 45   |
| <b>5 sec surge power (real watts)</b>                    | 3500   |
| <b>30 sec surge power (real watts)</b>                   | 3500   |
| <b>5 min surge power (real watts)</b>                    | 3400   |
| <b>30 min surge power (real watts)</b>                   | 3100   |
| <b>Maximum continuous input current</b>                  | 400 ADC  |
| <b>Inverter efficiency (peak)</b>                        | 88%  |
| <b>HBCO/HBCI (High Battery Cut Out/In)</b>               | 17.1 VDC /16.5 VDC   |
| <b>LBCO/LBCI (Low Battery Cut Out/In)</b>                | 13.0 VDC (adj with remote, firmware 1.9 or higher needed) / 12.5 VDC |
| <b>Inverter stacking (series or parallel)</b>            | No   |
| <b>AC relay transfer time (minimum)</b>                  | <16 msec   |
| <b>Power consumption – searching</b>                     | 10 watts   |
| <b>Power consumption – inverting (no load)</b>           | 36 watts   |
| <b>Output waveform</b>                                   | Pure Sine Wave   |
| <b>CHARGER SPECIFICATIONS</b>                            |  |
| <b>Continuous output at 25° C</b>                        | 125 ADC  |
| <b>Input current for continuous rated output</b>         | 18 AAC   |
| <b>Maximum current during load support</b>               | 224 ADC from battery   |
| <b>Charger efficiency</b>                                | 86%  |
| <b>AC input frequency range</b>                          | 50 to 70 Hz  |
| <b>AC input voltage range</b>                            | 60 to 140 VAC (120 VAC nominal)                                      |
| <b>Power factor</b>                                      | > 0.95   |

| GENERAL FEATURES AND CAPABILITIES            |  |
|--|--|
| <b>Transfer relay capability</b>             | 50 AAC maximum each input (2 inputs)   |
| <b>Five stage charging capability</b>        | Bulk, Absorb, Float, Equalize (requires remote), and Battery Saver™                    |
| <b>Battery temperature compensation</b>      | Standard with available temp sensor connected (battery temp 0 – 50 °C)                 |
| <b>Internal cooling</b>                      | 0 to 120 cfm variable speed drive using dual 92mm brushless DC fans                    |
| <b>Internal protection</b>                   | Over-current protection and multipoint over-temperature protection                     |
| <b>RVIA “RV-C” (CAN) compliant</b>           | Yes, with electrically isolated CAN port - supports up to 2 inverters per network      |
| <b>Corrosion protection</b>                  | PCB’s conformal coated, powder coated chassis/top, and stainless steel fasteners       |
| <b>Safety listings</b>                       | ETL listed to UL/cUL 458, CSA C22.2 No. 107.1-01                                       |
| <b>Warranty</b>                              | Three years parts and labor  |
| <b>Branch-rated output circuit breakers</b>  | No   |
| ENVIRONMENTAL SPECIFICATIONS                 |  |
| <b>Temperature (Operating/Non-operating)</b> | -4° F to 140° F (-20° C to +60° C) / -40° F to 158° F (-40° C to +70° C)               |
| <b>Operating humidity</b>                    | 0 to 95% RH non-condensing   |
| PHYSICAL SPECIFICATIONS                      |  |
| <b>Dimensions (l x w x h)</b>                | 13.75” x 12.65” x 8.0” (34.9 cm x 32.1 cm x 20.3 cm)                                   |
| <b>Shipping dimensions (l x w x h)</b>       | 19” x 17” x 13” (48.3 cm x 43.2 cm x 33 cm)  |
| <b>Mounting</b>                              | Shelf or wall (vents not allowed to face downward unless ME-CB or MPX-CB is installed) |
| <b>Weight</b>                                | Unit: 55 lb (24.9 kg) / Shipping: 63 lb (28.6 kg)                                      |
| <b>Max operating altitude</b>                | 15,000 ft (4570 m)   |



## GENERAL NOTES

Testing for specifications at 25° C.  
Specifications subject to change without notice.



## AGENCY APPROVALS & CERTIFICATIONS

ETL listed to UL/cUL 458, CSA C22.2 No. 107.1-01

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