

# MSH-RE SERIES | INVERTER / CHARGER

## Introduction

The MSH-RE Series Inverter / Charger from Sensata Technologies – a pure sine wave inverter that combines the tried and tested engineering of Sensata’s MS line with hybrid technology to make it an optimal choice for your renewable and backup power needs. Hybrid technology: Most inverters only use one source of energy to power loads, either from incoming AC power – utility or AC generator – or from the batteries. The MSH-RE 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. Load support: Load support parallels the inverter output with incoming AC sources allowing it to run larger loads from smaller generators.



## Features

- Pure sine wave – Power your T.V.s, stereos, plasma screens, and other sensitive electronics without worry. The pure sine wave inverter and power factor corrected charger provide clean, reliable inverter power with low total harmonic distortion (THD) of less than 5%.
- Easy-to-install – Install the MSH-RE Series in four easy steps: simply connect the inverter’s output to your distribution circuits or electrical panel, connect your utility power cable to the inverter’s easy-to-reach terminal block, connect the batteries, and switch on the power.
- Dual AC inputs – The MSH-RE Series comes with two 60 amp AC inputs – a grid input at 60A and a generator input at 60A.
- Accessible design – The extra large AC access cover with terminal screw block and 360° DC connection terminals with covers make this inverter more accessible when it needs to be.
- Interchangeable – The MSH-RE is interchangeable with the Magnum MS Series and uses the same accessories as the MS Series.
- Lightweight – The lightweight aluminum base and cover also provides noise reduction and corrosion resistance.
- Multiple ports – The MSH-RE Series provides multiple ports, including an RS485 communication port for network expansion, and a remote port.
- Convenient switches – The MSH-RE Series comes with an on/off inverter-mounted switch with an easy-to-read LED indicator.
- Buy with ease – The MSH-RE Series is backed by a three-year (36-month) limited warranty, and a five-year limited warranty when purchased with and installed on an MMP system.

## Model Numbers

- MSH4024RE

## Available For

- Renewable Energy Systems
  - Off-grid Power
  - Back-up Power

## Available Accessories

- Auto Generator Start - ME-AGS-N
- Battery Monitor Kit
- Conduit Box
- DC Load Disconnect
- Fuse Blocks
- MagWeb
- MMP Panels
- Remote - ME-ARC\*
- Remote - ME-RC\*
- Remote Switch Adapter
- Smart Battery Combiner



Pure Sine Wave



24 Battery Voltage Options



4000 VA Continuous Output Options

\* New status displays require ME-RC v2.7 or ME-ARC v3.0 or higher.



## SPECIFICATIONS

<b>MSH4024RE</b>	
<b>INVERTER SPECIFICATIONS</b>	
<b>Input battery voltage range</b>	18 - 34 VDC
<b>Nominal AC output voltage</b>	120 VAC $\pm$ 3%
<b>Output frequency and accuracy</b>	60 Hz $\pm$ 0.05 Hz
<b>Total Harmonic Distortion (THD)</b>	< 5%
<b>1 msec surge current (amps AC)</b>	120
<b>100 msec surge current (amps AC)</b>	82
<b>5 sec surge power (real watts)</b>	5800
<b>30 sec surge power (real watts)</b>	5400
<b>5 min surge power (real watts)</b>	4900
<b>30 min surge power (real watts)</b>	4500
<b>Continuous power output at 25° C</b>	4000 VA
<b>Maximum continuous input current</b>	267 ADC
<b>Inverter efficiency (peak)</b>	93.7%
<b>Transfer time</b>	< 16 msec
<b>Search mode (typical)</b>	< 7 watts
<b>No load (120 VAC output, typical)</b>	25 watts
<b>Waveform</b>	Pure Sine Wave
<b>CHARGER SPECIFICATIONS</b>	
<b>Continuous output at 25° C</b>	110 ADC
<b>Charger efficiency</b>	85%
<b>Power factor</b>	> .95
<b>Input current at rated output (AC amps)</b>	29
<b>GENERAL FEATURES AND CAPABILITIES</b>	
<b>Transfer relay capability</b>	60 AAC maximum each input
<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>Overcurrent protection</b>	Yes, with two overlapping circuits
<b>Overtemperature protection</b>	Yes on transformer, MOSFETS, and battery
<b>Corrosion protection</b>	Yes, PCB's conformal coated, powder coated chassis/top, and stainless steel fasteners
<b>Dual AC branch rated output breakers</b>	No
<b>Listings</b>	ETL listed to UL/cUL 1741, CSA C22.2 No. 107.1-01
<b>Warranty</b>	Three years parts and labor

ENVIRONMENTAL SPECIFICATIONS	
Temperature (Operating/Non-operating)	-20° C to +60° C (-4° F to 140° F) to -40° C to +70° C (-40° F to 158° F)
Operating humidity	0 to 95% RH non-condensing
PHYSICAL SPECIFICATIONS	
Dimensions (l x w x h)	13.75" x 12.65" x 8.0" (34.9 cm x 32.1 cm x 20.3 cm)
Shipping dimensions (l x w x h)	19" x 17" x 13" (48.3 cm x 43.2 cm x 33 cm)
Mounting	Shelf or wall (vents not allowed to face downward unless ME-CB or MMP is installed)
Weight	58 lb (26.3 kg)
Shipping weight	60 lb (27.2 kg)
Max operating altitude	15,000' (4570 m)



## GENERAL NOTES

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



## AGENCY APPROVALS & CERTIFICATIONS

- ETL listed to UL/cUL 1741, CSA C22.2 No. 107.1-01

Sensata Technologies, Inc. ("Sensata") data sheets are solely intended to assist designers ("Buyers") who are developing systems that incorporate Sensata products (also referred to herein as "components"). Buyer understands and agrees that Buyer remains responsible for using its independent analysis, evaluation and judgment in designing Buyer's systems and products. Sensata data sheets have been created using standard laboratory conditions and engineering practices. Sensata has not conducted any testing other than that specifically described in the published documentation for a particular data sheet. Sensata may make corrections, enhancements, improvements and other changes to its data sheets or components without notice.

Buyers are authorized to use Sensata data sheets with the Sensata component(s) identified in each particular data sheet. HOWEVER, NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER SENSATA INTELLECTUAL PROPERTY RIGHT, AND NO LICENSE TO ANY THIRD PARTY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT, IS GRANTED HEREIN. SENSATA DATA SHEETS ARE PROVIDED "AS IS". SENSATA MAKES NO WARRANTIES OR REPRESENTATIONS WITH REGARD TO THE DATA SHEETS OR USE OF THE DATA SHEETS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ACCURACY OR COMPLETENESS. SENSATA DISCLAIMS ANY WARRANTY OF TITLE AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, QUIET POSSESSION, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS WITH REGARD TO SENSATA DATA SHEETS OR USE THEREOF.

All products are sold subject to Sensata's terms and conditions of sale supplied at [www.sensata.com](http://www.sensata.com) SENSATA ASSUMES NO LIABILITY FOR APPLICATIONS ASSISTANCE OR THE DESIGN OF BUYERS' PRODUCTS. BUYER ACKNOWLEDGES AND AGREES THAT IT IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL LEGAL, REGULATORY AND SAFETY-RELATED REQUIREMENTS CONCERNING ITS PRODUCTS, AND ANY USE OF SENSATA COMPONENTS IN ITS APPLICATIONS, NOTWITHSTANDING ANY APPLICATIONS-RELATED INFORMATION OR SUPPORT THAT MAY BE PROVIDED BY SENSATA.

Mailing Address: Sensata Technologies, Inc., 529 Pleasant Street, Attleboro, MA 02703, USA.

## CONTACT US

### Americas

Everett, WA  
425-353-8833  
[MagnumSales@sensata.com](mailto:MagnumSales@sensata.com)

### International

[MagnumInternationalSales@sensata.com](mailto:MagnumInternationalSales@sensata.com)

### Power Conversion

[www.SensataPower.com](http://www.SensataPower.com)