

MSH-M Series Inverter / Charger



MODEL NUMBERS:

- MSH3012M
- MSH4024M

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

The MSH-M Series Inverter / Charger from Magnum Energy – 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-M 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-M 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.

Choices: The MSH-M Series comes in 12 and 24 volt configurations, allowing you to choose the model that is right for you.

Interchangeable: The MSH-M 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-M Series provides multiple ports, including an RS485 communication port for network expansion, and a remote port.

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.

Convenient switches: The MSH-M Series comes with an on/off inverter-mounted switch with an easy-to-read LED indicator.

Buy with ease: The MS Series is backed by a three-year (36-month) limited warranty.

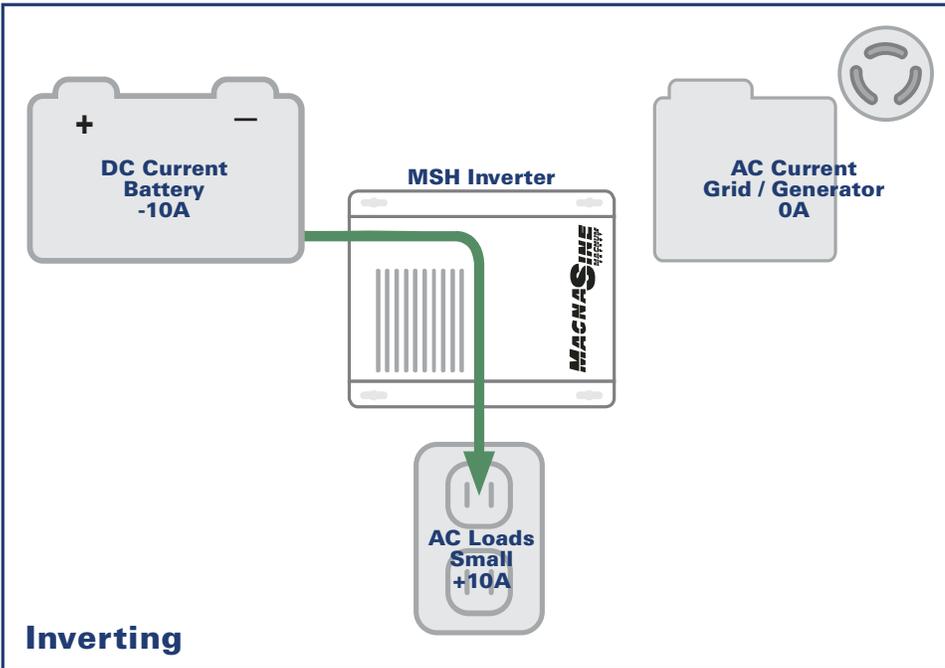
MS Series Specifications

	MSH3012M	MSH4024M
Inverter Specifications		
Input battery voltage range	9 - 17 VDC	18 - 34 VDC
Nominal AC output voltage	120 VAC \pm 5%	120 VAC \pm 5%
Output frequency and accuracy	60 Hz \pm 0.05 Hz	60 Hz \pm 0.1 Hz
Total Harmonic Distortion (THD)	< 5%	< 5%
1 msec surge current (amps AC)	70	120
100 msec surge current (amps AC)	40	82
5 sec surge power (real watts)	3900	5800
30 sec surge power (real watts)	3800	5400
5 min surge power (real watts)	3200	4900
30 min surge power (real watts)	3000	4500
Continuous power output at 25° C	3000 VA	4500 VA
Maximum continuous input current	400 ADC	267 ADC
Inverter efficiency (peak)	90.0%	93.7%
Transfer time	16 msec	16 msec
Search mode (typical)	< 8 watts	< 8 watts
No load (120 VAC output, typical)	30 watts	25 watts
Waveform	Pure Sine Wave	Pure Sine Wave
Charger Specifications		
Continuous output at 25° C	125 ADC	110 ADC
Charger efficiency	87%	87%
Power factor	> .95	> .95
Input current at rated output (AC amps)	18	28
General Features and Capabilities		
Transfer relay capability	60 AAC	
Five stage charging capability	Bulk, Absorb, Float, Equalize (requires remote), and Battery Saver™	
Battery temperature compensation	Standard with available temp sensor connected (battery temp 0 - 50 °C)	
Internal cooling	0 to 120 cfm variable speed drive using dual 92mm brushless DC fans	
Overcurrent protection	Yes, with two overlapping circuits	
Overtemperature protection	Yes on transformer, MOSFETS, and battery	
Conformal coating on PCB's for corrosion protection	Yes	
Powder coated chassis & top for corrosion protection	Yes	
Stainless steel fasteners for corrosion protection	Yes	
Dual AC branch rated output breakers	No	
Listings	ETL listed to UL/cUL 458, CSA C22.2 No. 107.1-01	
Warranty	Three years parts and labor	
Environmental Specifications		
Operating temperature	-20° C to +60° C (-4° F to 140° F)	
Nonoperating temperature	-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 MPX-CB is installed)	
Weight	55 lb (24.9 kg)	
Shipping weight	63 lb (28.6 kg)	
Max operating altitude	15,000' (4570 m)	

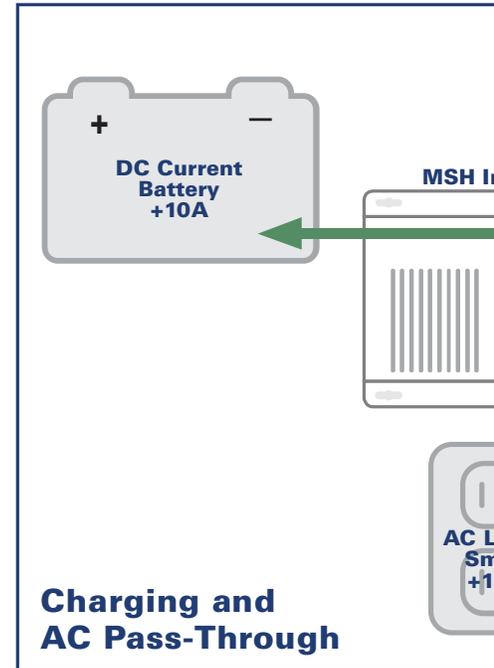
Testing for specifications at 25° C. Specifications subject to change without notice.

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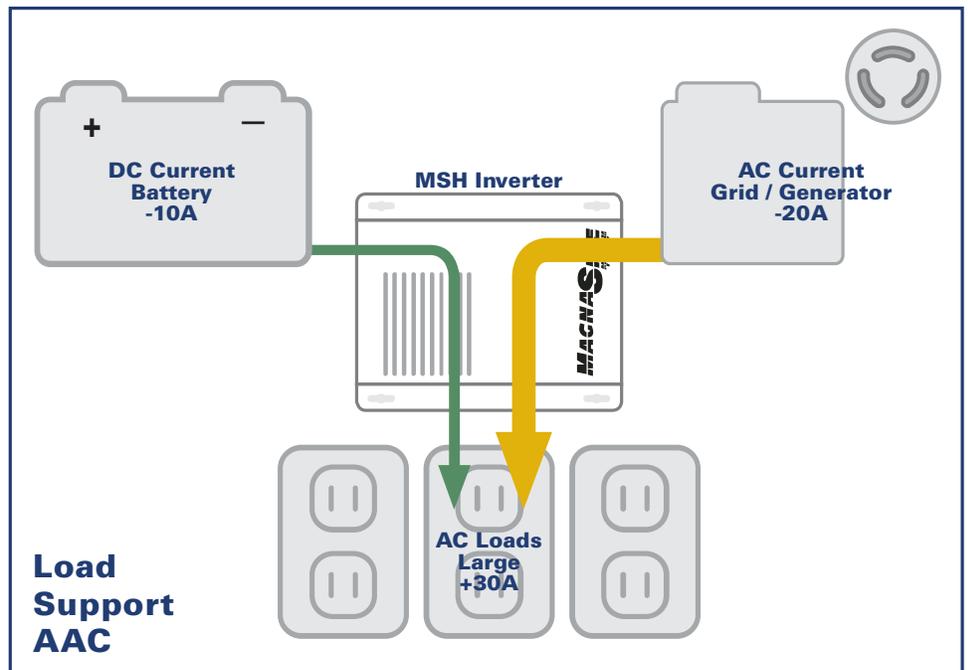
MSH-M Series Hybrid Technology Step-by-Step



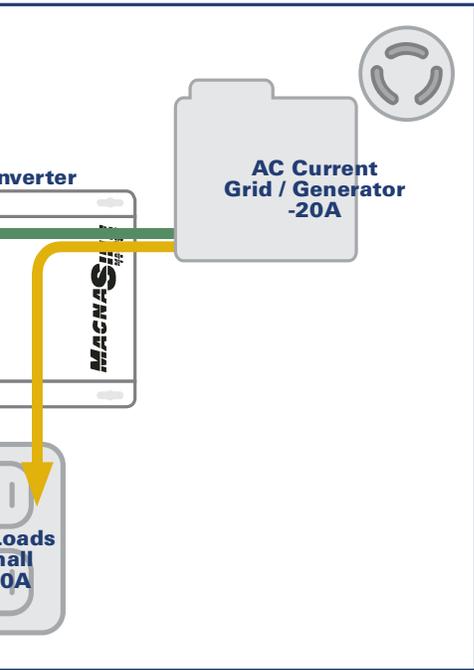
The MSH-M inverter converts the current from the battery to power the AC loads.



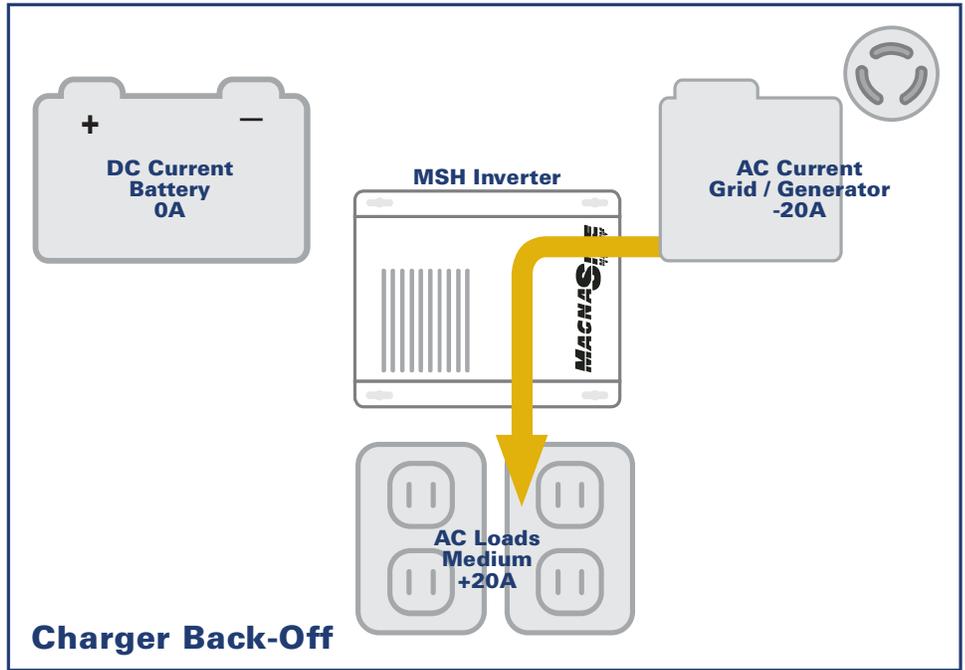
The MSH-M inverter uses current from the AC loads and also converts this current to charge the battery.



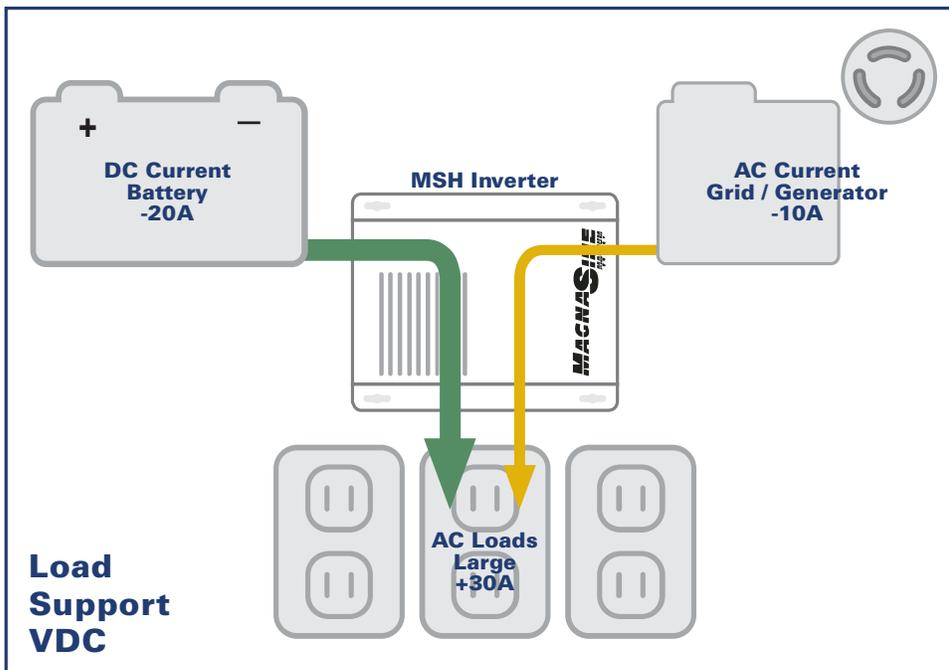
If AC loads are added that are above the capability of the grid/generator, the MSH converts current from the battery and combines it with the current from the grid/generator to power the additional AC loads.



from the grid/generator to power the inverter and to charge the battery.



When the AC loads increase, the MSH inverter reduces or stops the battery charge current to allow the grid/generator to continue powering the AC loads.



If the battery is being charged externally (i.e. solar, wind, or hydro), the MSH converts any excess current from the battery to power the AC loads and reduce the current from the grid/generator.