The Magnum Energy MS Series Inverter/Charger from Sensata Technologies— a pure sine wave inverter designed specifically for the most demanding mobile, backup, and off-grid applications. The MS Series Inverter/Charger is powerful, easy-to-use, and best of all, cost effective.

**Power Factor Corrected (PFC) Charger:** Our PFC charger is built into all of our inverter/chargers. It uses less energy from a generator than a standard charger—using 25-30% less AC current than standard chargers.

**Safe and reliable:** The MS2000, MS2012, MS2812, and MS4024 are ETL Listed to the stringent requirements of UL/cUL 458 for mobile use and the MS2012, MS2812, and MS4024 are ETL Listed UL 1741 and CSA C22.2 #107.1-01 for renewable energy installations. All models also meet KKK-A-1822E standards for emergency vehicle use.

**Easy-to-install:** Install the MS 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.

**FEATURES**

**Pure Sine Wave**
Power your TVs, 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%.

**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.

**Choices**
The MS Series comes in 12, 24, and 48 volt configurations, allowing you to choose the model that is right for you.

**Versatile Mounting**
Mount the MS Inverter/Charger on a shelf, bulkhead, or even upside down.

**Model Numbers**
- MS2000
- MS2000-15B
- MS2000-20B
- MS2012
- MS2012-15B
- MS2012-20B
- MS2024
- MS2812
- MS4024 (series stackable)
- MS4048 (series stackable)
- MS4048-20B

**Available For**
- Backup Systems
- Marine Systems
- Off-Grid Systems
- RV Systems
- Trucks

**Available Accessories**
- AGS
- Battery Monitor Kit
- Conduit Box
- DC Load Disconnect
- Remote Switch Adapter
- Fuse Blocks
- MagWeb
- Remote - ME-ARC
- Remote - ME-RC
- Smart Battery Combiner

New features available using the ME-ARC (with v5.4 or higher firmware).
<table>
<thead>
<tr>
<th>Inverter/Specifications</th>
<th>MS2000/12</th>
<th>MS2012 (-15/-20B)</th>
<th>MS2812</th>
<th>MS2024</th>
<th>MS4024</th>
<th>MS4048</th>
<th>MS4048-20B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Input Battery Voltage Range</strong></td>
<td>9 - 16.8 VDC</td>
<td>9 - 16.8 VDC</td>
<td>18 - 33.6 VDC</td>
<td>18 - 33.6 VDC</td>
<td>36 - 67.6 VDC</td>
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</tr>
<tr>
<td><strong>AC Output Voltage Accuracy</strong></td>
<td>120 VAC ± 5%</td>
<td>120 VAC ± 5%</td>
<td>120 VAC ± 5%</td>
<td>120 VAC ± 5%</td>
<td>120 VAC ± 5%</td>
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<tr>
<td><strong>Output Frequency and Accuracy</strong></td>
<td>60 Hz ± 0.1 Hz</td>
<td>60 Hz ± 0.1 Hz</td>
<td>60 Hz ± 0.1 Hz</td>
<td>60 Hz ± 0.1 Hz</td>
<td>60 Hz ± 0.1 Hz</td>
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<tr>
<td><strong>Total Harmonic Distortion (THD)</strong></td>
<td>&lt; 5%</td>
<td>&lt; 5%</td>
<td>&lt; 5%</td>
<td>&lt; 5%</td>
<td>&lt; 5%</td>
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</tr>
<tr>
<td><strong>1 msec Surge Current (amps AC)</strong></td>
<td>50</td>
<td>70</td>
<td>75</td>
<td>120</td>
<td>120</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>100 msec Surge Current (amps AC)</strong></td>
<td>33</td>
<td>40</td>
<td>37</td>
<td>82</td>
<td>72</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>5 sec Surge Power (real watts)</strong></td>
<td>3300</td>
<td>3900</td>
<td>2850</td>
<td>5800</td>
<td>8500</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>30 sec Surge Power (real watts)</strong></td>
<td>3100</td>
<td>3800</td>
<td>2750</td>
<td>5400</td>
<td>5750</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>5 Min Surge Power (real watts)</strong></td>
<td>2800</td>
<td>3200</td>
<td>2700</td>
<td>4900</td>
<td>5250</td>
<td></td>
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</tr>
<tr>
<td><strong>30 Min Surge Power (real watts)</strong></td>
<td>2200</td>
<td>3000</td>
<td>2200</td>
<td>4500</td>
<td>4750</td>
<td></td>
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</tr>
<tr>
<td><strong>Maximum Continuous Input Current</strong></td>
<td>267 ADC</td>
<td>373 ADC</td>
<td>133 ADC</td>
<td>267 ADC</td>
<td>133 ADC</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Inverter Efficiency (peak)</strong></td>
<td>90.6%</td>
<td>90%</td>
<td>86%</td>
<td>93.7%</td>
<td>94%</td>
<td></td>
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<tr>
<td><strong>AC Relay Transfer Time (minimum)</strong></td>
<td>16 msecs</td>
<td>16 msecs</td>
<td>16 msecs</td>
<td>16 msecs</td>
<td>16 msecs</td>
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<tr>
<td><strong>Power Consumption - searching</strong></td>
<td>&lt;8 watts</td>
<td>&lt;8 watts</td>
<td>&lt;8 watts</td>
<td>&lt;8 watts</td>
<td>&lt;8 watts</td>
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<tr>
<td><strong>Power Consumption - Inverting (no load)</strong></td>
<td>25 watts</td>
<td>30 watts</td>
<td>25 watts</td>
<td>25 watts</td>
<td>25 watts</td>
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<tr>
<td><strong>Output Waveform</strong></td>
<td>Pure Sine Wave</td>
<td>Pure Sine Wave</td>
<td>Pure Sine Wave</td>
<td>Pure Sine Wave</td>
<td>Pure Sine Wave</td>
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<tr>
<td><strong>Charger Specifications</strong></td>
<td></td>
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</tr>
<tr>
<td><strong>Continuous Output at 25° C</strong></td>
<td>100 ADC</td>
<td>125 ADC</td>
<td>60 ADC</td>
<td>105 ADC</td>
<td>60 ADC</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Charger Efficiency</strong></td>
<td>85%</td>
<td>85%</td>
<td>85%</td>
<td>85%</td>
<td>85%</td>
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<tr>
<td><strong>Power Factor</strong></td>
<td>&gt; .95</td>
<td>&gt; .95</td>
<td>&gt; .95</td>
<td>&gt; .95</td>
<td>&gt; .95</td>
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</tr>
<tr>
<td><strong>Input Current for Continuous Rated Output</strong></td>
<td>15 AAC</td>
<td>18 AAC</td>
<td>7.9 AAC</td>
<td>29 AAC</td>
<td>30 AAC</td>
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</tbody>
</table>

**General Features and Capabilities**

- **Transfer Relay Capability**: 30 ACC max. each input (30ACC total on MS2000 models, 60ACC total on all other models)*
- **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
- **Corrosion Protection**: Yes, PCB’s conformal coated, powder coated chassis/top, and stainless steel fasteners
- **Branch-Rated Output Circuit Breakers**: Optional on the MS2000 (15 or 20 amp breakers) or MS2012 (15 or 20 amp breakers)
- **Safety Listings**: ETL Listed to UL/cUL 458, UL 1741, CSA C22.2 #107.1-01, meets KKK-A-1822E standard**
- **Warranty**: 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) [Height on MS2000: 7.0”/17.8 cm]
- **Mounting**: Shelf or wall (vents not allowed to face downward unless ME-CB or MMP/MP is installed
- **Unit Weight**: 42 lb (19.1 kg) | 55 lb (24.9 kg) | 41 lb (18.6 kg) | 55 lb (24.9 kg) | 55 lb (24.9 kg)
- **Shipping Weight**: 48 lb (21.8 kg) | 62 lb (28.1 kg) | 49 lb (22.2 kg) | 62 lb (28.1 kg) | 62 lb (28.1 kg)
- **Max Operating Altitude**: 15,000’ (4570 m)

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*The pass-thru capability on each leg of the -15B and -20B models is limited by the output breaker size on each output.
**MS2000: ETL Listed to UL/cUL 458, CSA C22.2 #107.1-01, meets KKK-A-1822E standard
Testing for specifications at 25° C. Specifications subject to change without notice.
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