

## PowerVerter 2000W 120V 12VDC RV Inverter/Charger with Auto-Transfer Switching, Hardwired, UL458

MODEL NUMBER: **MRV2012UL**



The MRV2012UL is a heavy-duty, DC-to-AC inverter with automatic line-to-battery transfer and integrated charging system that serves as an extended-run UPS, a standalone power source or an automotive inverter suitable for recreational applications.

### Description

Tripp Lite's MRV2012UL Inverter/Charger is a heavy-duty, DC-to-AC inverter with automatic line-to-battery transfer and integrated charging system that serves as an extended-run UPS, a standalone power source or an automotive inverter suitable for rugged RV applications. It provides equipment with utility- or generator-supplied AC electricity filtered through premium ISOBAR surge protection. It's the ideal, quiet alternative to gas generators -- with no fumes, fuel or noise to deal with!

The MRV2012UL Inverter/Charger supplies up to 2000 watts of continuous 120V AC power from any 12V DC battery or automotive DC source. It passes sine wave utility or generator power during battery charging and UPS line power operation, plus an efficient PWM sine wave AC output in inverter and UPS backup modes. When the hardwire AC input is energized, commercial power passes through to connected equipment and the battery bank is recharged via 3-stage charging system with user-selectable 25/100 amp charger output. In the UPS mode, it responds to blackouts and voltage fluctuations with a near-instantaneous automatic transfer to battery-derived AC output.

It includes a set of high-current DC input terminal posts for simple installation of user supplies batteries and cabling. (See owner's manual for recommendations). The MRV2012UL Inverter/Charger is highly adaptable to a variety of applications and site conditions with adjustable charger settings for wet/gel battery types and selectable line to battery power transfer voltages. It supports an unlimited amount of runtime with any number of user-supplied batteries connected.

To provide the extra power needed to cold-start heavy-duty power tools and motorized equipment, the

### Highlights

- Heavy-duty DC-to-AC, PWM sine wave inverter with automatic line-to-battery transfer and integrated charging system
- Functions as an extended-run UPS, a standalone power source or an automotive inverter
- 2000 watts continuous, 3000 watts OverPower™ and 4000 watts DoubleBoost™ inverter output
- 12V DC or 120V AC input; 120V, 60 Hz output (hardwired)
- 3-stage battery charger with user-selectable 25/100 amp, wet/dry cell operation
- Built-in Isobar® premium AC surge protection
- Unlimited back up time with user supplied batteries

### Package Includes

- MRV2012UL Inverter/Charger
- Instruction manual with warranty information
- Battery Temperature Sensor cable
- Conduit hanger

MRV2012UL Inverter/Charger has an OverPower inverter output feature that temporarily provides up to 150% of the continuous output for up to 60 minutes and a DoubleBoost inverter output feature that delivers up to 200% of the continuous output for up to 10 seconds. With a reliable, large transformer design and frequency control, it can power resistive electronic loads or large inductive motors, compressors and other items with high current needs on startup.

It features an optional APSRM4 wired remote control module with full status LEDs that provides remote power inverter on/off switching and continuous status information (APSRM4 sold separately).

NOTE: To protect against high current draw that may occur during inverter failure, a fuse link rated at 400a should be positioned no more than 18" from the MRV2012UL's battery in the positive line.

## Features

### Inverter

- MRV2012UL serves as an automotive or stationary DC-to-AC inverter with automatic line-to-battery transfer and integrated battery charger
- Supplies a 120V AC output from a 120V AC line power source or 12V DC battery source
- 2000 watts continuous AC output in inverter mode, 3600 watts continuous AC output in AC line power mode

### Automatic Transfer

- 16.6 millisecond automatic transfer between line and battery power supports UPS protection during blackouts and voltage fluctuations for equipment compatible with a one cycle transfer time

### Battery Charger

- 3-stage battery charger with user-selectable 25/100 amp operation and adjustable settings for wet/gel battery types with charger on/off capability; offers fast, reliable battery recharging
- Protected hardwire DC terminal posts safely accept heavy-gauge input wiring from attached battery bank
- Protected hardwire output passes 120V line power or inverter output through to connected equipment
- Extremely reliable large-transformer design tested to UL (USA & Canada) standards

### Overload / Overtemperature Protection

- DoubleBoost inverter output supports momentary startup loads up to 200% of the continuous rating for up to 10 seconds
- OverPower inverter output supports longer duration overloads to 150% for up to 60 minutes under ideal battery and temperature conditions. (For best results, utilize OverPower usage as short of a duration as possible, ensure battery bank and cabling is able to provide full nominal DC voltage under load and allow inverter/charger to fully cool before and after OverPower usage.)
- Resettable 25A charger AC input breaker and variable-speed cooling fan protect the inverter from load- and temperature-related failures
- Grounding lug properly connects the inverter/charger system to earth ground or vehicle grounding

system

- Automatic overload and thermal shutoff safely turns off inverter as excessive loads or overheating conditions develop

**Operating Modes / Display LEDs**

- 3-position operating mode switch supports "AUTO" mode to enable automatic transfer between DC and AC modes, CHARGE-ONLY to maintain a full battery charge when AC is present without auto transfer and SYSTEM OFF settings
- Six front panel LEDs display AC/DC operational modes, overload status, DC voltage level, shutdown status and system fault status
- 4 configuration dip-switches support wet/gel battery charging profiles, charger enable/disable capability, selectable 75/85/95/105V AC low voltage auto transfer points during brownout conditions
- 4 additional configuration dip-switches support 4 levels of charger limiting relative to output load size, a battery equalization program and battery charger low/high settings

**Optional Features**

- Front panel connector enables remote off/on switching (requires optional APSRM4 remote control module, sold separately)
- Load-sensing control dial enables adjustable load threshold required to automatically turn the inverter on and off in DC mode as load conditions change
- Battery temperature sensor with 20 foot cable to prolong battery life by adjusting the charge level based on battery temperature
- Ignition Switch Control Jack can be used to connect the Inverter to your vehicle's ignition switch in order to automatically control the Inverter.
- Automatic Generator Starter jack enables user configuration of automatic generator startup as inverter batteries drop to 11.5V DC and generator shutoff as inverter batteries are recharged to 14.1V DC

**Construction**

- Moisture-resistant construction enables vehicular operation in high-humidity environments

## Specifications

| OVERVIEW                |              |
|-------------------------|--------------|
| UPC Code                | 037332149121 |
| OUTPUT                  |              |
| Frequency Compatibility | 60 Hz        |
| Pure Sine Wave Output   | No           |



**Tripp Lite**  
1111 W. 35th Street  
Chicago, IL 60609 USA  
Telephone: 773.869.1234  
www.tripplite.com

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| Output (Watts)                               | 2000  |
| Nominal Output Voltage(s) Supported          | 120V  |
| Output Receptacles                           | Hardwire  |
| Continuous Output Capacity (Watts)           | 2000  |
| Peak Output Capacity (Watts)                 | 4000  |
| Output Voltage Regulation                    | LINE POWER (AC): Maintains 120V nominal sine wave output from line power source. INVERTER POWER (AC): Maintains PWM sine wave output voltage of 120V AC (+/-5%).  |
| Output Frequency Regulation                  | 60 Hz (+/- 0.3 Hz)  |
| Overload Protection                          | Includes 25A input breaker dedicated to the charging system   |
| <b>INPUT</b>                                 |   |
| Nominal Input Voltage(s) Supported           | 120V AC   |
| Recommended Electrical Service               | DC INPUT: Requires 12V DC input source capable of delivering 190A for the required duration (when used at full continuous capacity - DC requirements increase during Over-Power and Double-Boost operation). For automotive applications, professional hardwire   |
| Maximum Input Amps / Watts                   | DC INPUT: Full continuous load - 190A at 12V DC. AC INPUT: 38 amps at 120V AC with full inverter and charger load (20A max charger-only / combined input load to support charger and AC output is automatically controllable to 66%-33%-0% based on AC output I   |
| Input Connection Type                        | DC INPUT: Set of 2 DC terminal posts. AC INPUT: hardwire. User supplies cabling. 0 gauge or larger (see manual). AC INPUT: hardwire   |
| Voltage Compatibility (VAC)                  | 120   |
| Voltage Compatibility (VDC)                  | 12  |
| <b>BATTERY</b>                               |   |
| Expandable Battery Runtime                   | Runtime is expandable with any number of user-supplied wet or gel type batteries  |
| DC System Voltage (VDC)                      | 12  |
| Battery Pack Accessory (Optional)            | &nbsp;<a class="productLink" href="//www.tripplite.com/12VDC-Sealed-Maintenance-Free-Battery-All-Inverter-Chargers-12VDC-Battery-Connections~98-121">98-121</a>&nbsp;sealed lead acid battery (optional)  |
| Battery Charge                               | 25A /100A (user-selectable)   |
| LVC (Low Voltage Cut-Off)                    | 10V DC +/-3%  |
| Expandable Runtime                           | Yes   |
| <b>USER INTERFACE, ALERTS &amp; CONTROLS</b> |   |
| Front Panel LEDs                             | 6 LEDs offer continuous status information on load (6 levels reported) and battery charge level (7 levels reported). See manual for sequences.  |
| Switches                                     | 3-position on/off/remote switch enables simple on/off power control plus auto/remote setting that enables distant on/off control of the inverter system when used in conjunction with&nbsp;<a class="productLink" href="//www.tripplite.com/Remote-Control-Module-Tripp-Lite-PowerVerter-Inverters-Inverter-Chargers~APSRM4">APSRM4</a>&nbsp;accessory (sold separately) in inverter mode. In AC uninterruptibl |
| <b>PHYSICAL</b>                              |   |
| Cooling Method                               | Multi-speed fan   |



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| Form Factors Supported                     | Mounting slots enable secure placement of inverter on any horizontal surface (see manual for additional mounting information)  |
| Included Accessories                       | Battery temperature sensor cable; conduit hanger   |
| Material of Construction                   | Polycarbonate/aluminum   |
| Shipping Dimensions (hwd / cm)             | 30.73 x 53.85 x 34.29  |
| Shipping Dimensions (hwd / in.)            | 12.10 x 21.20 x 13.50  |
| Shipping Weight (kg)                       | 21.00  |
| Shipping Weight (lbs.)                     | 46.30  |
| Unit Dimensions (hwd / cm)                 | 20.32 x 26.67 x 44.45  |
| Unit Dimensions (hwd / in.)                | 8 x 10.5 x 17.5  |
| Unit Weight (kg)                           | 19.60  |
| Unit Weight (lbs.)                         | 43.2   |
| <b>ENVIRONMENTAL</b>                       |  |
| Relative Humidity                          | 0-95% non-condensing   |
| <b>LINE / BATTERY TRANSFER</b>             |  |
| Transfer Time (Line Power to Battery Mode) | 16.6 ms (typical - compatible with many computers - verify transfer time compatibility of loads for UPS applications)  |
| Low Voltage Transfer to Battery Power      | In AC "auto" mode, inverter/charger switches to battery mode as line voltage drops to 75V (user-adjustable to 85, 95, 105V - see manual)   |
| High Voltage Transfer to Battery Power     | In AC "auto" mode, inverter/charger switches to battery mode as line voltage increases to 145V   |
| <b>SPECIAL FEATURES</b>                    |  |
| Load Sensing                               | Optional load-sense function enables automatic inverter shutoff and startup as connected equipment is powered off and on. Front panel load-sense potentiometer can be set to shutoff or turn on inverter power in response to loads of any level, up to 150 watts. |
| <b>CERTIFICATIONS</b>                      |  |
| Certifications                             | Meets UL458 (USA & Canada), RoHS Compliant   |
| <b>WARRANTY</b>                            |  |
| Product Warranty Period (Worldwide)        | 30-month limited warranty  |

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