Magnum MMS912E

Magnum MMS912E Inverter/Charger Instruction Manual

Model: MMS912E
Brand: Magnum

Product Overview

The Magnum MMS912E Inverter/Charger is a pure sine wave inverter designed for smaller power requirements. It integrates an inverter and a 40 Amp Power Factor Corrected (PFC) charger. This unit is versatile, lightweight, and provides a reliable foundation for energy systems. The built-in PFC charger optimizes energy consumption from a generator, using 25-30% less AC current compared to standard chargers. The MMS912E is CE listed, ensuring safety and reliability. Its design features an hourglass case and a die-cast aluminum base, which also functions as a heat sink for enhanced high-temperature operation.

Figure 1: The Magnum MMS912E Inverter/Charger. This image displays the overall appearance of the unit, highlighting its compact design and the prominent Magnum Energy branding.

Key Features

- **Pure Sine Wave Output:** Provides clean and stable AC power suitable for sensitive electronics.
- **Integrated PFC Charger:** 40 Amp Power Factor Corrected charger for efficient battery charging, reducing generator AC current draw by 25-30%.
- **Standard 20 Amp Transfer Relay:** Automatically passes AC power through the inverter when connected to shore power or a generator.
- **Low/High Battery Protection:** Safeguards batteries from over-discharge or over-charge.
- **Current Overload Protection:** Protects the unit and connected devices from excessive current.
- **Battery Temperature Sensor:** Ensures optimal charging by adjusting charge parameters based on battery temperature.
- **CE Listed:** Complies with stringent European safety requirements.
- **Durable Construction:** Die-cast aluminum base acts as a heat sink for superior high-temperature operation.

Safety Information

Read all instructions and warnings before installing or operating this inverter/charger. Failure to follow these instructions may result in electric shock, fire, severe injury, or death. Keep this manual for future reference.

- Installation must be performed by qualified personnel in accordance with all applicable electrical codes.
- Ensure proper ventilation around the unit to prevent overheating.
- Do not expose the unit to water, rain, or excessive moisture.
- Disconnect all power sources before performing any maintenance or wiring.
- Use appropriate wire gauges and fusing for all connections.
- Do not operate the unit if it has been damaged in any way.

Setup and Installation

1. Unpacking and Inspection

Carefully unpack the MMS912E Inverter/Charger and inspect it for any shipping damage. Report any damage to your dealer immediately. Retain the packaging materials for future transport.

2. Mounting Location

Select a mounting location that is:

  - Dry and protected from moisture.
  - Well-ventilated to allow for heat dissipation.
  - Accessible for wiring and maintenance.
  - Close to the battery bank to minimize DC cable length and voltage drop.
  - Away from flammable materials or gases.

Mount the unit securely to a solid surface using appropriate fasteners. Ensure the unit is mounted in a position that allows for proper airflow around its heat sink fins.

3. Wiring Connections

All wiring must comply with local and national electrical codes. It is recommended that a qualified electrician perform the installation.

1. **DC Battery Connections:** Connect the positive (+) and negative (-) terminals of the inverter to the battery bank. Use appropriately sized, high-quality DC cables to minimize voltage drop. Ensure proper polarity. Install a DC disconnect switch and fuse/breaker between the inverter and the battery bank.
2. **AC Input Connection (Shore/Generator Power):** Connect the AC input from your shore power or generator to the designated AC input terminals on the inverter. This connection allows the internal charger to charge batteries and the transfer relay to pass AC power through.
3. **AC Output Connection (Loads):** Connect your AC loads (appliances, outlets) to the AC output terminals of the inverter.
4. **Grounding:** Properly ground the inverter chassis to a reliable earth ground.
5. **Battery Temperature Sensor (BTS):** Connect the included battery temperature sensor to the designated port on the inverter and attach the sensor to the side of a battery in the battery bank. This ensures accurate temperature compensation for charging.

Important: *Double-check all wiring connections for tightness and correct polarity before applying power. Loose connections can cause overheating and damage.*

Operating Instructions

1. Initial Startup

1. Ensure all wiring is complete and secure.
2. Turn on the DC disconnect switch between the inverter and the battery bank.
3. Observe the indicator lights on the inverter. Refer to the LED indicator section for status meanings.
4. If connecting to shore power or a generator, apply AC input power. The inverter's transfer relay will engage, and the charger will begin if batteries require charging.
5. Turn on the AC output breaker/switch to power your loads.

2. Inverter Mode

When no AC input power is present (e.g., shore power disconnected, generator off), the MMS912E will automatically switch to inverter mode, drawing power from the battery bank and converting it to 120V AC power for your connected loads.

3. Charger Mode

When a valid AC input source (shore power or generator) is connected, the MMS912E will enter charger mode. It will prioritize passing AC power directly to your loads via the transfer relay and simultaneously charge the battery bank using its integrated PFC charger. The charger automatically adjusts its output based on battery state of charge and temperature (if BTS is connected).

4. Transfer Relay Operation

The built-in 20 amp transfer relay automatically switches between inverter power and incoming AC utility/generator power. This transition is typically seamless, ensuring continuous power to your loads.

Maintenance

The Magnum MMS912E Inverter/Charger is designed for minimal maintenance. However, periodic checks are recommended to ensure optimal performance and longevity.

- **Monthly:**
    - Inspect all wiring connections for tightness. Loose connections can cause resistance and heat.

- Check for any signs of corrosion on battery terminals and clean if necessary.
- Ensure ventilation openings are clear of dust and debris.

- **Annually:**
  - Perform a thorough visual inspection of the unit for any physical damage.
  - Verify battery health and water levels (for flooded lead-acid batteries).
  - Test the functionality of the inverter and charger modes.

Caution: *Always disconnect all power sources (DC and AC) before performing any maintenance or cleaning on the unit.*

Troubleshooting

This section provides solutions to common issues. If the problem persists, contact Magnum Energy technical support.

Problem	Possible Cause	Solution
No AC Output from Inverter	Low battery voltage Overload condition Over-temperature shutdown DC input fuse/breaker tripped	Charge batteries or reduce load. Reduce connected AC loads. Allow unit to cool; ensure proper ventilation. Check and reset DC breaker or replace fuse.
Charger Not Working	No AC input power AC input breaker tripped Battery voltage too high (fully charged) Battery temperature sensor fault	Verify AC input source is active. Check and reset AC input breaker. This is normal operation. Check BTS connection; replace if faulty.
Unit Shuts Down Unexpectedly	Overload Low battery voltage Over-temperature Loose wiring connections	Reduce loads. Charge batteries. Improve ventilation. Inspect and tighten all connections (DC and AC).

Specifications

Parameter	Value
Model	MMS912E
Output Power (Continuous)	900 Watts
Input Voltage (DC)	12 Volts
Charger Current (PFC)	40 Amps
Transfer Relay Rating	20 Amps
Product Dimensions (L x W x H)	19.5 x 10.5 x 7 inches
Item Weight	254 pounds
Waveform	Pure Sine Wave
Certifications	CE Listed

Warranty and Support

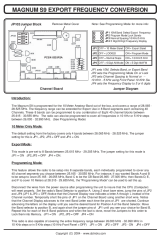
Warranty Information

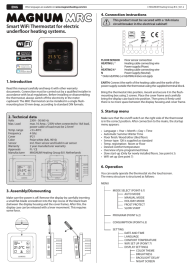
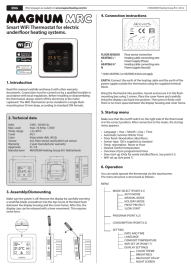
This product comes with a 30-day warranty from Meeker Industries, Inc. The customer is responsible for all return shipping costs for warranty claims within this period. After 30 days, customers should contact the manufacturer, Magnum Energy, directly for service and information regarding their warranty policies.
Note: *Warranty terms may vary. Please refer to the official Magnum Energy website or contact their customer service for the most current and detailed warranty information.*

Customer Support

For technical assistance, troubleshooting beyond this manual, or warranty inquiries after the initial 30-day period, please contact Magnum Energy customer support. Contact details can typically be found on the manufacturer's official website.
Manufacturer: Magnum Energy
For the most up-to-date contact information, please visit the official Magnum Energy website.

Related Documents - MMS912E

	Magnum S9 Export Frequency Conversion Guide A technical guide detailing the process for performing export frequency conversion on the Magnum S9 CB radio, including jumper configurations, programming modes, and comprehensive frequency charts for expanded band coverage.
	CH&E MAGNUM 3" Gas Engine Powered Diaphragm Pumps Operating and Maintenance Manual MCP5537-6537 Operating and Maintenance Manual for CH&E MAGNUM 3" Gas Engine Powered Diaphragm Pumps, Models MCP5537 and MCP6537. Covers safety, specifications, operating instructions, maintenance, troubleshooting, and parts lists.
	Manual de Instrucciones Soldadora Semiautomática Inverter MAGNUM MIG 208 Alu Synergia L 4x4 Manual de instrucciones completo para la soldadora semiautomática inverter MAGNUM MIG 208 Alu Synergia L 4x4. Cubre uso previsto, datos técnicos, seguridad, operación, mantenimiento y garantía.

	[MAGNUM MRC Smart WiFi Thermostat: User Manual and Installation Guide] Comprehensive guide for the MAGNUM MRC Smart WiFi Thermostat, covering installation, operation, programming, WiFi connection, and smart home integration for electric underfloor heating systems.
	[MAGNUM MRC Smart WiFi Thermostat: Installation and Operation Guide] Comprehensive guide for the MAGNUM MRC Smart WiFi Thermostat, covering installation, connection, setup, operation, and smart home integration for electric underfloor heating systems. Learn how to connect to WiFi and use voice assistants.
	[MAGNUM MRC2 WiFi: Intelligenter Thermostat für elektrische Fußbodenheizung] Der MAGNUM MRC2 WiFi ist ein intelligenter Smart-Thermostat zur Steuerung elektrischer Fußbodenheizungen. Erfahren Sie mehr über Komfort, Energieeffizienz und App-Steuerung.