VOTRONIC VCC 1212-90

VOTRONIC VCC 1212-90 90A Charge Converter

INSTRUCTION MANUAL

Introduction

The VOTRONIC VCC 1212-90 is a high-performance B2B (Battery-to-Battery) charge converter designed for universal use with various battery technologies, including conventional lead-acid, lead-gel, lead-AGM, and modern Lithium-LiFePO4 batteries. This device ensures optimal, fast, and gentle charging of your auxiliary battery from the alternator while driving, maintaining battery health and extending its lifespan.
Unlike simple cut-off relays, the VCC 1212-90 intelligently adjusts the charging voltage to the specific requirements of each battery type, ensuring a full charge. It effectively compensates for line losses and voltage fluctuations from the alternator, common in modern vehicles (e.g., Euro 6 with intelligent alternators). The compact and lightweight design, utilizing high-frequency switch-mode technology, ensures reliable operation and an improved energy balance for your onboard battery system.
The unit operates fully automatically, activating with the vehicle's alternator and preventing battery discharge when the engine is off. It also protects connected 12V consumers from overvoltage and voltage fluctuations. A battery temperature sensor is included for enhanced charging precision, especially for lead-acid batteries.

Setup and Installation

Proper installation is crucial for the safe and efficient operation of your VOTRONIC VCC 1212-90 charge converter. It is recommended that installation be performed by a qualified technician.

1. **Mounting Location:** Choose a dry, well-ventilated location for mounting the unit. Ensure it is protected from direct moisture and excessive heat. The compact dimensions (160 x 235 x 71 mm) allow for flexible placement.
2. **Wiring Connections:**
   - Connect the input terminals of the VCC 1212-90 to the 12V starter battery/alternator circuit.

- Connect the output terminals to the 12V auxiliary (onboard) battery.
- Ensure all wiring connections are secure and use appropriate cable diameters (e.g., 50mm² for high current applications) to minimize voltage drop and ensure full current flow.
- Connect the included battery temperature sensor to the designated port on the VCC 1212-90 and attach the sensor to the auxiliary battery for accurate temperature compensation during charging.

3. **Battery Type Selection:** The VCC 1212-90 features selectable charging programs for different battery types (lead-acid, lead-gel, lead-AGM, LiFePO4). Refer to the detailed instructions provided with the product for selecting the correct charging program for your auxiliary battery.
4. **Initial Check:** After installation, verify all connections are correct and secure before powering on the system.

Image: The VOTRONIC VCC 1212-90 90A Charge Converter. This image shows the compact design of the unit, highlighting its various connection points for input, output, and the temperature sensor.

Operating Instructions

The VOTRONIC VCC 1212-90 operates largely automatically once correctly installed and configured.

- **Automatic Activation:** The device automatically activates when the vehicle's alternator is running and provides sufficient voltage. It will begin charging the auxiliary battery.
- **Intelligent Charging:** The integrated microprocessor control with "IU1oU2oU3" charging lines and dynamic charge time calculation ensures a fast, gentle, and complete charge for the connected batteries from any state of charge.
- **Simultaneous Power Supply:** Even when 12V consumers are connected and drawing power, the VCC 1212-90 continues to charge or maintain the auxiliary battery's charge.
- **Temperature Compensation:** For lead-acid batteries, the charging voltage automatically adjusts to the battery temperature (via the connected sensor). This optimizes charging in cold conditions and prevents unnecessary gassing. For LiFePO4 batteries, it provides high-load battery protection and is adapted for low temperatures below 0°C.
- **Engine Off:** When the engine is off, the VCC 1212-90 automatically disconnects, preventing discharge of the starter battery by the auxiliary battery or connected consumers.
- **Parallel Operation:** The unit can operate in parallel with other charging sources connected to the same auxiliary battery without issues.

Maintenance

The VOTRONIC VCC 1212-90 is designed for maintenance-free operation. However, periodic checks can help ensure its longevity and optimal performance:

- **Visual Inspection:** Periodically inspect the unit and its connections for any signs of damage, corrosion, or loose

wiring.

- **Cleanliness:** Keep the unit free from dust and debris to ensure proper heat dissipation. Use a dry, soft cloth for cleaning. Do not use liquid cleaners.
- **Ventilation:** Ensure that the mounting location remains well-ventilated and that the cooling fins (if present) are not obstructed.

Troubleshooting

The VCC 1212-90 incorporates multiple protection mechanisms to ensure safe operation. If you encounter issues, consider the following:

- **No Charging Output:**
  - Ensure the vehicle engine is running and the alternator is producing sufficient voltage. The unit activates automatically with the alternator.
  - Check all input and output cable connections for tightness and proper contact.
  - Verify that the selected battery type setting is correct for your auxiliary battery.
- **Lower Than Expected Charging Current:**
  - Confirm that the cable diameters used for both input and output are adequate for the 90A current rating. Undersized cables can lead to significant voltage drops and reduced charging current.
  - Ensure the alternator itself is capable of delivering the required current. While the VCC 1212-90 compensates for voltage fluctuations, a weak alternator will limit overall performance.
  - The device dynamically calculates charge time and current based on battery state and temperature. A battery that is already partially charged or at a higher temperature might draw less current.
- **Overheating:**
  - The unit has protection against overheating. If it shuts down due to high temperature, check for adequate ventilation around the device. Ensure no objects are blocking airflow to the cooling fins.
  - Allow the unit to cool down before resuming operation.
- **Error Indicators:** The device features electronic regulation for protection against overcharge, overvoltage, short circuits, and reverse discharge. Consult the full product manual for specific error codes or indicator light patterns, if applicable.

If problems persist after performing these checks, please contact VOTRONIC customer support or a qualified service technician.

Technical Specifications

Brand	VOTRONIC
Model Number	VCC 1212-90 (Sunroad Equipment)
Input Voltage	12 Volts DC
Output Voltage	12 Volts DC
Current Rating	90 Amperes
Recommended Battery Capacity	150 - 600 Ah

Product Dimensions (D x W x H)	7.1 x 16 x 23.5 cm
Item Weight	1.48 Kilograms
Color	Silver
Connector Type	Cigarette Lighter Socket (12 V DC) - *Note: This might refer to the input source type, not the physical connector on the unit itself for high current. Refer to installation guide for actual terminal types.*
Compliance	CE

Warranty Information

Specific warranty details for the VOTRONIC VCC 1212-90 90A Charge Converter are not provided in this document. Please refer to the warranty card included with your product or visit the official VOTRONIC website for comprehensive warranty terms and conditions.

Customer Support

For technical assistance, installation queries, or further information regarding your VOTRONIC VCC 1212-90, please contact VOTRONIC customer support. Contact details can typically be found on the manufacturer's official website or in the packaging materials.