VOTRONIC 6239

VOTRONIC 6239 Pb 2425 SMT 3B 24V 25A Battery Charger Instruction Manual

Integrated Battery Charger for Lead-Acid Batteries

1. Introduction

This manual provides essential information for the safe and efficient operation of your VOTRONIC 6239 Pb 2425 SMT 3B 24V 25A integrated battery charger. Please read these instructions carefully before installation and use to ensure proper function and longevity of the device and connected batteries.
The VOTRONIC 6239 is a powerful 24V charger designed for lead-acid batteries, offering multiple charging programs and advanced protection features.

2. Safety Instructions

- Always observe battery polarity (+, -).
- Connect the charger first (it is short-circuit proof), then connect the batteries (which are not short-circuit proof).
- Ensure proper ventilation during charging.
- Avoid contact with battery acid. Wear protective gear if necessary.
- Do not open the charger housing. Servicing should only be performed by qualified personnel.
- Protect the device from moisture and extreme temperatures.
- Fuses should be connected as close as possible to the batteries for cable protection.
- The rubber feet are for vibration reduction; do not remove them.

3. Setup and Installation

3.1. Mounting

The charger can be installed in any position. Ensure adequate space for ventilation around the unit. The operating temperature range is -20 to +45 °C.

3.2. Electrical Connections

Refer to the connection diagram below for wiring instructions. **Note:** The diagram illustrates a 12V system (Pb-1280 SM1' 28) for general guidance. Your product is a 24V system (VOTRONIC 6239 Pb 2425 SMT 3B). Ensure all connections are made according to the correct voltage and current ratings for your 24V system.

Figure 1: Connection Diagram (Illustrative for 12V system)

This diagram shows the general wiring for a VOTRONIC charger. It details connections for the main battery (labeled 'BORD' or 'Hauptbatterie A'), an optional start battery (labeled 'START'), a remote control unit, and an optional temperature sensor. Key components include fuses (3A, 100A, 10A) and cable cross-sections (e.g., 16 mm² for main battery, 1.5-2.5 mm² for start battery). The diagram also points out the miniature slide switch for battery type and capacity selection. Please adapt cable cross-sections and fuse ratings to your specific 24V, 25A system requirements.

3.2.1. Main Battery (A) Connection

- Connect the positive (+) terminal of the charger to the positive (+) terminal of the main battery. Use a red cable with appropriate cross-section (e.g., 16 mm² as shown in the diagram for a similar model, adjust for 24V/25A).
- Connect the negative (-) terminal of the charger to the negative (-) terminal of the main battery or to the vehicle chassis (Karosserie). Use a black cable with appropriate cross-section (e.g., 16 mm²).
- Install a 100A fuse as close as possible to the main battery's positive terminal for cable protection.
- For "Sense" connections (optional, 0.5-1.5 mm² cable cross-section), connect to the battery terminals to compensate for voltage losses on charging cables.

3.2.2. Optional Start Battery Connection

- The secondary charge output "S" is for charging and maintaining the vehicle's start battery.
- Connect the positive (+) terminal of the secondary output to the positive (+) terminal of the start battery. Use a red cable (e.g., 1.5-2.5 mm^2).
- Connect the negative (-) terminal of the secondary output to the negative (-) terminal of the start battery or chassis.
- Install a 10A fuse as close as possible to the start battery's positive terminal.

3.2.3. Remote Control Connection (Optional)

Connect the remote control unit to the designated port on the charger as indicated in the diagram ("Anschluss für Fernbedienung"). Ensure the cable is securely attached by pulling off the plug terminals for connection.

3.2.4. Temperature Sensor (Optional)

If using a temperature sensor, connect it to the designated input. This allows the charger to adjust charging parameters based on battery temperature for optimal performance and lifespan.

4. Operating Instructions

4.1. Selecting Charging Programs

The charger features a miniature slide switch (as shown in the diagram) to select the appropriate charging program based on your battery type. The available programs are:

- **"Gel" Program (IU1oU2oU3):** Designed for sealed, gas-tight gel/dryfit batteries with fixed electrolyte. This program typically uses a higher charging voltage level and longer U1 maintenance times to achieve short charging times with high capacity storage and prevent long-term starvation.
- **"AGM" Program (IU1oU2oU3):** For sealed, gas-tight AGM (Absorbent-Glass-Mat) non-woven lead batteries. This program requires a particularly high U1 level with adapted maintenance times for full charge, followed by a U2 level for charge maintenance (plate and circular cell technology).
- **"Universal" Program (IU1oU2oU3):** A universal program for charging and maintaining lead-acid batteries in vehicles (mobile/stationary mix). It offers short charging times with a medium U1 level, good charging factor, and good acid mixing for open and closed, maintenance-free, standard, light propulsion, solar, and heavy-duty batteries, as well as AGM batteries with normal U1 level.

4.2. Automatic Continuous Operation

The charger operates fully automatically. Once connected, it continuously charges and maintains the battery at full capacity. In case of a power outage, the batteries are not discharged due to a safety switch separation.

4.3. Parallel and Buffer Operation

The charger supports parallel and buffer operation, meaning the battery remains charged or full even while consumers are drawing power. The charger automatically calculates and monitors charging times.

4.4. Silent Run Function

This function optimizes noise levels, making the charger suitable for night operation.

4.5. Power Supply Function

The charger can supply power to consumers without a connected battery, for example, during battery changes.

4.6. Aid for Deeply Discharged Lead-Acid Batteries

The charger provides gentle pre-charging for deeply discharged lead-acid, gel, and AGM batteries down to 8V. After this initial phase, it provides powerful support to the battery.

5. Maintenance

5.1. Battery Regeneration

The charger includes a lead battery regeneration feature that activates twice a week to counteract harmful acid coatings, extending battery life.

5.2. General Care

Keep the charger clean and free from dust. Ensure ventilation openings are not obstructed. Regularly check cable connections for tightness and corrosion.

6. Troubleshooting

The VOTRONIC 6239 charger is equipped with comprehensive protection functions to prevent damage. If an issue occurs, check the following:

- **No Charge Indication:** Check power supply and battery connections. Ensure polarity is correct.
- **Overload/Overheating:** The charger has protection against overload and overheating. If activated, the charger may temporarily stop charging. Allow it to cool down and ensure adequate ventilation.
- **Short Circuit/Reverse Polarity:** The electronic control provides protection against short circuits and reverse polarity. Correct any wiring errors. The integrated safety switch separates the charger from the battery in such cases.
- **Overvoltage:** The charger protects against overvoltage.
- **Cable Compensation:** The charger compensates for voltage losses on charging cables. Ensure correct "Sense" connections if used.
- **Network Filter:** The integrated network filter allows problem-free parallel operation with solar installations, wind generators, etc., on a single battery.

If problems persist, contact qualified service personnel.

7. Technical Specifications

Feature	Specification
Model Number	6239
Brand	VOTRONIC
Charging Power V/A	24V / 25A
Battery Capacity	46 Ah – 290 Ah
Secondary Charge Output S	4 A
Charge Line	IU1oU2
Installation Position	Any
Temperature Range	-20 to +45 °C
Dimensions	160 x 71 x 305 mm

Feature	Specification
Weight	2400 g (2.4 kg)
Output Voltage	24 Volts (DC)
Current Rating	25 A