

Installation and Operating Manual

LCD-Charge Control S

No. 1247

Easy-to-use, comfortable Remote-Control and Information Unit, dedicated for the Battery Charger Series VBCS Triple and VAC Triple (hereinafter called Triple).

It indicates the mode of operation, the charging phase, the battery voltages as well as the charging current. While charging from solar, it shows the actual solar power (W) and for statistics there is a resettable energy-meter (Wh and Ah). The mode of operation can be simply changed by pressing a single button. That means the 230V charging can be switched off or it can be switched to charging on a reduced current (AC Power Limit). This is helpful with weak 230V grids. A special protection logic is used to reactivate the AC charger if the battery is liable to be totally discharged.

The large, clear display has an illuminated LCD with superior readability and extremely low power consumption. With the Plug and Play connection, it can easily be retrofitted at anytime, and because of the compact design it can be mounted at almost any location.

The dimensions of the unit are perfectly adapted to the VOTRONIC modular system. The VOTRONIC modular system includes the tank display units (fresh and sewage water, as well as feces), the LCD series (battery computer, voltmeter, ammeter and thermometer), as well as the switch and fuse panels.



Please read the mounting instructions and operating manual including the safety regulations completely prior to starting connection and start-up.

Installation and Connection

The small mounting depth (approx. 27 mm) of the electronic system allows flush mounting into furniture boards to ensure, that an optimum installation place can always be chosen. The clear opening of the cutout is min. 71 x 66 mm to ensure safe alignment of the front panel. Please use the delivered drilling jig, which has been designed to consider combination with further display panels.

If possible, the rear cutout opening should be covered with electrically nonconducting material to ensure efficient protection of the electronic system and full utilization of the storage space, which might be located behind.

The delivered control cable of 5 m length is used to connect the display unit to the VOTRONIC Battery Charger VBCS or VAC Triple (connection "Display"). The connection is ready to be plugged in, and the cable should be laid according to the safety instructions.

Now the unit is ready for operation.

If the length of the control cable is not sufficient for connection of the connection unit, an accessory extension cable of 5m length (order No. 2005) is available. The total cable length is then 10 m.



The included control cable is specifically designed and tested for this application. It must be used for the device to function properly. Using a seemingly similar cable can cause malfunction, which is not covered by the guarantee.

Initial Start-up:

Connect the solar controller according to the instructions to be ready for operation, and make the plug-type connection between display and VOTRONIC Triple. Now, also the LCD-Charge Control S is ready for operation.

Operation



Button 1: Next page of Display, Adjustment of illumination (3 s)



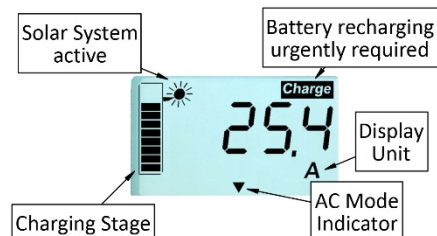
Button 2: Switching AC Mode



Button 3: Illumination on/off, Adjustment of Brightness (3 s)

Display Contrast/Reading Angle

The background illumination can be adapted in steps of 10 % according to the requirements. For this the Display has to show the battery voltage. Pressing the right button for 3 seconds activates the adjustment of the backlight. Each further brief press of the right button changes the brightness. The setting is automatically saved after a short time and the display will return to normal operation.



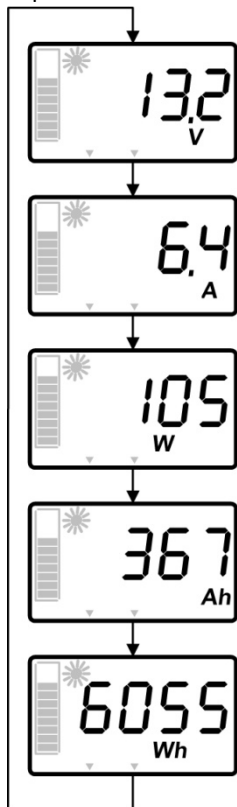
Activation, Deactivation

The LCD-Charge Control S gets current from the Triple. The unit is optimized for extreme current saving operation and offers two operation modes.

Display with and without illumination: As soon as the LCD-Charge Control S is operated, the display illumination will be switched-on and will remain activated for 3 minutes. If there is no operation during this time, the illumination will be switched-off automatically. The display shows the same data as before, when the illumination was active. The display illumination is reactivated by pressing any button. The proper function of the button will be performed by pressing the button a second time.

Displays

The Values of the Triple are scrolled with the button 1. Solar power and meters are unavailable when connected to a VAC Triple.



Voltage: The voltage (Volts „V“) of the board battery is displayed. The voltage of the vehicle battery is shown while holding down the button 1 for at least 3 seconds.

Current: The display shows the Triples current charging current (Ampere „A“). For solar and ac charging mode it shows the sum of charging currents for both batteries. In booster mode it shows the charging current of the board battery.

Capacity: While charging by solar, it shows the current solar power. While the solar-charging-regulator inside the Triple reduces the current due to a full battery it also reduces the displayed power. This is indicated by a blinking sun.

Solar Power Meter: The power being generated by the solar system is counted continuously and will be displayed as ampere-hours (Ah), as well as watt-hours (Wh). If the value 9999 Wh is exceeded, the display changes to
 The counter readings can be any time. If the corresponding the reset can be performed by more than 3 seconds until (Set ----)



kWh. separately reset to zero at counter value is displayed, pressing the button 3 for is displayed.

Charging-Phase: The current phase of charging is shown by the bar segments on the left hand side of the display.

Triple Operation Modes

The Triple uses different charging sources, AC (230V), solar (only VBCS Triple) and the alternator. To distinguish between the operating modes there are small triangles at the bottom of the display pointing to the markings off, AC, limit and DC, as long as the sun symbol.

Operating Mode Charging Converter

The indicator "DC" (in the display at the bottom right) indicates the charging converter mode while the vehicles alternator and thus the Triples booster are running. This mode cannot be changed by LCD Charge Control S.

Operating Mode Solar Controller (only VBCS Triple)

The operating mode of the solar controller is indicated by the sun symbol.

- No sun: Solar power is not at disposal
- Full sun: Solar power is at disposal, maximum possible charge
- Only sunrays: Solar charger is ready, the charging converter or mains charger is active in the Triple (see operating mode mains charger).

- Flashing sun: The controller limits the current, due to a full or almost full battery, to avoid battery overcharging. For determination of the possible solar power, the battery must be discharged by a load (such as lighting) until the solar controller supplies full power, and the sun symbol stops flashing.

Operating Mode Mains Charger

The operating mode of the mains charger (AC Mode) is shown by the indicators “Off”, “AC” and “Limit” (at the displays bottom) and can be switched by the button “AC Mode”.

There are three different states:

- “AC”: Indicator points to “AC”. Normal operation of the mains charger unit. In this case the solar charger unit is inactive to the benefit of charging via AC.
- “AC-Off” (only VBCS Triple): Indicator points to “AC-Off”. The mains charger unit is deactivated due to the benefit of solar-charging despite being connected to a 230V supply. Under certain circumstances, for example low battery-voltage, the Triple reactivates the mains charger unit automatically as long as it is required. The display continues to show “AC-Off”.
- “AC-Limit”: Indicator points to “Limit – AC”. The mains charger unit is throttled to the point that the input current consumption is limited and the internal fans are operated with constant, low speed.
- This is useful at places with weak supply-infrastructure (weak fused e.g: only 4A). Moreover, in this operation the fans generate a barely perceptible constant noise, which is especially beneficial at night. This is equivalent to the well-known “Silent-Run” mode of the VOTRONIC Chargers.

The AC modes are switched by the „AC-Mode“ button. The order is:

AC > AC-Off > AC-Limit and back to AC.

General Information

Cleaning:

We recommend to use a damp microfibre cloth with pure water or, if required, with water with a little soap.

Take care that no liquid flows along the display screen or the edges of the front panel!



Never use solvents, aggressive household cleaners, and scratching or abrasive agents or objects to clean the front panel and particularly the display itself.

Trouble-Shooting

No display at all

Connection cable is intermitted, damaged, or it is not inserted

„Hieroglyphs“ on the display

Internal test programs have found (memory) error or communication has been disrupted by strong sources of interference or poor cable connection. Remove the cable connector for 10 seconds. Clean the male contact with a fine brush.

Technical Data:

Nominal Voltage:	12 V and 24 V
Operating Voltage Range:	8...32 V (of the Triple)
Current Consumption:	3...30 mA, depending on illumination
LC Display with specific segments	
Representation Surface:	49 x 28 mm
Illumination:	white LED
Dimensions:	80 x 85 x 24 mm
Assembly Dimensions:	approx. 66 x 72 mm
Weight:	approx. 55 g



Safety Regulations and Appropriate Application:

The VOTRONIC LCD-Charge Control S has been designed according to the valid safety regulations.

Appropriate application is restricted to:

1. Use in combination with a VOTRONIC VBCS or VAC Triple with a nominal voltage of 12 V or 24 V.
 2. Technically faultless condition.
 3. Installation in a well-ventilated room, protected from rain, humidity, dust, aggressive battery gas, as well as in an environment being free from condensation water.
 4. With a rear insulating cover of the display unit.
- Never use the unit at locations where the risk of gas or dust explosion exists!
 - Open-air operation of the unit is not allowed.
 - Cables are always to be laid in such a way that damage is excluded. Observe to fasten them tightly.
 - Never lay 12 V (24 V) cables and 230 V mains supply cables into the same cable conduit (empty conduit).
 - Check live cables or leads periodically for insulation faults, points of break or loosened connections. Occurring defects must be remedied immediately. The unit is to be disconnected from any connection prior to execution of electrically welding or work on the electric system.
 - If the user is not able to draw from the manual, which characteristic values are valid for a unit or which regulations are to be observed, a specialist is to be consulted.
 - The user/buyer is obliged to observe any construction and safety regulations.
 - **The unit is not equipped with parts, which can be replaced by the user.**
 - Non-observance may result in injury or material damage.
 - **Never use solvents or aggressive household cleaners for cleaning of the display!**
 - The warranty period is 36 months from the purchase date (against presentation of the sales slip or invoice).
 - The warranty will be void in case of any inappropriate utilisation of the unit, if it is used beyond the technical specification, in case of improper operation or external intervention. We do not assume any liability for any damage resulting hereof. The liability exclusion is extended to any service being executed by third, which has not been ordered by us in writing. Service is to be effected exclusively by VOTRONIC, Lauterbach.

Declaration of Conformity:



In accordance with the provisions of the statutory requirements and the relevant directives, Electrical Equipment (Safety) Regulations 2016, Electromagnetic Compatibility Regulations 2016, The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 this product complies with the following standards or normative documents:

BS EN55014-1; BS EN61000-6-1; BS EN61000-4-2; BS EN61000-4-3; BS EN61000-4-4;
BS EN62368-1; BS EN50498, BS EN IEC 63000.



Declaration of Conformity:

In accordance with the provisions of Directives 2014/35/EU, 2014/30/EU, 2009/19/EC, this product complies with the following standards or normative documents:

EN55014-1; EN61000-6-1; EN61000-4-2; EN61000-4-3; EN61000-4-4;
EN62368-1; EN50498.



The product must not be disposed of in the household waste.



The product is RoHS compliant. It complies with the directive 2015/863/EU for Reduction of Hazardous Substances in electrical and electronic equipment.



Recycling:

At the end of its useful life, you can send us this device for professional disposal.

You can find more information about this on our website at www.votronic.de/recycling

Delivery Scope

- 1 LCD-Charge Control S
- 1 Control Cable, Length 5 m
- 4 Fastening Screws
- 1 Installation and Operating Manual
- 1 Drilling Jig

Available Accessories

- Control Cable Extension, 5 m Length Order No. 2005
- Casing S Order No. 2024

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