



## HT8 CHARGE CONTROLLER

### INSTRUCTIONS FOR INSTALLATION AND USE

The HT8 charge controller represents an excellent combination of high reliability and low cost. This fully solid-state (MOSFET) charge regulator controls intelligently the charging of the battery with minimal self-consumption. The use of the HT8 charge controller allows an optimized management of the energy produced by the photovoltaic module to provide the total recharge of the battery.

#### *Functions of the HT8 charge controller:*

##### Battery overcharge protection:

Whenever the battery reaches the fully charged status (at a voltage of approx. 14,1V) the charge controller HT8 reduces the flow of energy coming from the photovoltaic module and effects a trickle charge. In this way the battery will be recharged up to 100% of its capacity and no overcharge of the same will take place. During this phase a controlled boiling of the electrolyte will take place, improving the battery performances and increasing its lifetime.

##### Battery overdischarge protection:

Whenever the battery is totally discharged (about 10,8V) the charge controller HT8 disconnects the load to prevent the battery from damaging. The load will be automatically reconnected as soon as the battery will have been partially recharged (about 12,3V). This important function guarantees an increase of the battery lifetime and prevent the load from too low voltage power supply.

##### Protection:

The charge controller HT8 contains an innovative active protection to keep safe against overload, short circuit and polarity inversion, both input (modules) and output (loads). Whenever the current to the loads exceeds the value of 10A, the charge controller HT8 will cut off the loads. In this case it will be necessary to disconnect the loads for 10 seconds at least, remove the cause of the problem (short circuit or polarity inversion) and then reconnect it to the charge controller.

##### Blocking diode:

The HT8 charge controller has a built in blocking diode to avoid reverse flow of current during the night. Therefore the photovoltaic modules can be directly connected to the charge controller.

### DISPLAY

On the front of the regulator there are two LEDs which provide precious information regarding the state of charge of the battery.

The GREEN LED will be on during the day, showing that the photovoltaic module is connected correctly and is charging the battery. During the night the green LED will be off.

If the battery is fully charged (about 14,1V) the green LED will flash on and off.

This indicates that the regulator is performing a trickle charge action in order to obtain a constant voltage, so that the battery can raise a state of charge of 100% of its nominal capacity.

The RED LED will be on if the battery is totally low (about 10,8V). This means it is necessary to either drastically reduce the energy consumption, or better switch off all electrical appliances. The RED LED will turn off as soon as the battery is partially recharged (about 12,3V) and the loads reconnected. The RED LED could turn on even in case of overload (more than 10A) at the load output.

**INSTALLATION OF THE HT8 CONTROLLER:** (pay attention to the polarities when making connections)

- A) Fix the regulator to the wall properly.
- B) Connect the two middle terminals to the 12V battery using cables of section between 2,5 and 6 mm<sup>2</sup>.  
Bigger is the section and lower will be the energy loser.
- C) Connect the photovoltaic module to the left-side terminals, making sure that the maximum input current coming from the module is not more than 8A. When the photovoltaic module has been connected the green LED will come on, indicating that the connection has been properly made and the battery is charging (visible only during day time).
- D) Connect the right-side terminals to the load. Attention: a common-negative connection between battery and load is not allowed.

- For all the connections a proper cable section is suggested, e.g. 6mm<sup>2</sup>.
- Make sure that there are no frayed cables when could provoke an accidental short circuit.
- Make sure that the total amount of load consumption is not more than 8A.

#### TECHNICAL DATA

System Voltage	12V
Maximum Input Current	8A
Maximum Output Current	8A
Self-Consumption	6mA
Trickle Charge Activation	14,1V
LVD (Low Voltage disconnection) of the loads	10,8V
Loads voltage reconnection	12,3V
Operative Temperature	from -20 up to +50°C
Dimensions	134 x 80 x 29,5mm
Weight	150g
Connecting terminals	6mm <sup>2</sup>

The company reserves the right to change specifications without notice.

