Product description

With this automatic charger all 2–6–12V lead acid batteries can be charged automatically. When the connected battery is completely charged, the current will be reduced to prevent overcharging. Due to the automatic voltage and current control the connected battery will always stay completely charged and at the same time the overcharging as well as the gas development will be prevented.

The product has the following features:

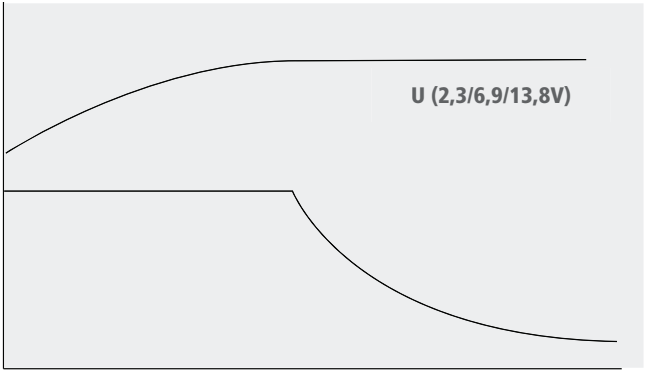
- ▶ limited time short circuit and wrong polarity prevention
- ▶ constant final charging current
- ▶ optical display for charging and polarity
- ▶ adjustment of the charge-voltage with slide switch

This article has been checked according to EU-regulations 89/336/EWG (EMVG, 09.11.1992) and is according to law requirements. The changing of the switch or the usage of other components as indicated leads to an extinguish of this approval.

Operating information

In contrast to simple chargers the charging current of this automatic charger is not constant and depends on some components, for example the actual charging level of the battery, the age of the battery, the type of the battery and the capacity. Also it is important how much the battery has been dischar-

ged before. If the battery had been discharged with high currency then there will be in the beginning of the charging a high current (max. 0.3A), which decreases after a short period. This means that with rising voltage the charging current decreases. The following diagram shows this behavior:



Charging curve **Time**

For the charging itself it is not important if the battery is partly or completely discharged. The battery can stay connected to the charger for a long period, the surrounding temperature should be in the range of 10°C to 25°C. In case the battery has been connected to the charger with the wrong polarity then this will be indicated through a red light („**verpolt**"). Disconnect the battery from the charger immediately.

Usage of the product

1. **Choose the proper charging voltage**
   (2,6,12V). Attention: the wrong charging voltage can destroy this product or the battery.
2. **Connection to the battery**

Connect firstly the red pin of the charger to the plus (+) part of the battery and the black part to the minus (–) of the battery.

3. **Connection to 230V AC**
   Connect the charger to the 230V plug, the green **"Laden"**-LED will shine.

Notice!

The product is short-term short circuit prevented! Longer lasting short circuits (longer than 1 min.) must be prevented under all circumstances, otherwise parts of the charger or the electronic might be overloaded. The green **„Laden"**-LED only shines, if charging-current is present!

Attention!

- While charging the battery please pay attention to the right polarity!
- To prevent defects to the battery make sure to never deeply discharge the battery!
- Make sure to have enough air supply!
- Open the cells of the lead acid battery before charging!
- Check the acid of the battery for longer charging!
- Check the acid of the battery in between always make sure not to have any open fire, open light and glimmers close to the charged batteries (danger of explosion due to gas)!
- Always check the charging instructions on the battery (normally printed on the battery).

Technical data	
Charging voltage:	2.3/6.9/13.8Volt
max. current:	0.3 Ampere
Operating voltage:	230 Volt ~
Dimensions:	190x55x78mm

Malfunctions

If it can be assumed that the charger cannot be operated anymore without any danger, the charger has to be taken out of operation and it has to be made sure that it cannot be operated unintentionally.

This applies when:

- the product shows obvious defects
- the product doesn't function any more
- parts of the product are loose
- connecting cables show defects

In case of repairing the product use only original spare parts. The usage of other substitutes can lead to serious defects.

Repair of the product has to be carried out by experts.

Warranty

We grant warranty of 2 year for this product. The warranty includes free of charge repair of defects, which result clearly from incorrect materials or manufacturing mistakes.

The guarantee applies for a correct function of the elements according to the scaled definitions in pre-assembled state as well as the obedience of the technical dates in reference to the soldering regulations, correct craftsmanship and correct setting up and operating. All other additional claims are excluded.

We will not accept any guarantee or liability for resulting defects in connection with this product. We refrain to repairing or improving the product, delivery of spare parts or repaying of the money.

In case of the following criteria the warranty does not apply neither will we repair the product:

- changing and own repairing of the product
- changes of the switches
- during the construction not planned outsourcing of components
- destruction of the PCB and soldering spots
- overcharging of the product
- defects resulting from operations of external persons
- defects resulting from not paying attention to the manual or drawings
- connection to wrong current
- connection to wrong polarity
- wrong operation or defects from misuse
- defects due to wrong or manipulated fuses

In all of the above cases the product will be returned at your expenses.

Environmental protection notes:

This product must not be disposed of through normal household waste at the end of its durability, but handed in at a collecting point for recycling of electrical and electronic devices. This is shown by the picture on the product, the manual or the packaging. The materials are recyclable according to its labeling. By means of its reuse, the material recycling or other types of recycling of old devices, they make an important contribution to the environmental protection.

Disposal of used batteries/chargers!

As an end consumer you are obliged by law (battery regulation) to return all used batteries and chargers, a disposal through household waste is not permitted.

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