

Smart Charge

Switch Mode Multi-stage

Battery Charger

Switch Mode SMART BATTERY CHARGER

EN INSTRUCTION MANUAL

### **Important Information!**

Thank you for purchasing the multi-stage Smart Battery Charger. Please read this instruction manual carefully before operating the device. Keep this manual in a safe place for future reference. This instruction manual is part of the product. It must be handed over along with the device if it is passed on to a third party.

### **Introduction**

This compact smart multi-stage battery charger uses the latest switch-mode technology and is designed particularly to charge lead-acid batteries and LiFePO<sub>4</sub> batteries to their best level. The multi-stage charging algorithm delivers a much faster, efficiency and full charge without the issue of voltage drops. Thanks to the boost-charging feature, this helps activate the battery status and wake up a weak or flat battery to a suitable recharging level. This also improves the charge delivered to your battery, increasing battery life and saving on premature battery failure.

This smart battery charger is equipped with a selector which allows you to set the charger for charging SLA/GEL/AGM/Flooded/Calcium lead-acid batteries and LiFePO4 batteries. The smart battery charger can be used as a constant power supply to run accessories that require a stable and clean DC voltage. For safety reasons, the input and output of the charger are completely isolated and the batteries are protected for overcharged.

The cooling fan is thermal controlled. It will switch on and off automatically to control the internal temperature of the unit.

Warning!

Risk of electric shock! Do not open the device if it has been connected to the AC power source.

This device has been CE tested and conforms to the applicable directives and standards.

## **Instruction and normal responses**

### **Operation as Charger under standard charging mode**

Select the switch to position **S** and select dipswitch No. 1-5 to get the optimum charge to suit your battery specification. Connect the AC input cable to the utility. Connect the battery to the DC output. Turn On the Power switch, the "POWER ON" LED lights up. This indicates the device is ready for charging. The "BULK" LED

lights up. This means the battery charger is beginning at the 1st stage of charging

The 1st stage is to ensure battery is always charged at the maximum charging condition. This is to boost up the charging cycle and particularly wake up a weak battery to absorb energy.

After 10-15 mins, the charger will switch to 2nd stage, the "BULK" LED remains ON, the battery is charged at the maximum current to the battery.

At the 3rd stage, the charger will switch to "ABSORPTION" mode, the red LED goes out and the yellow LED lights up. The charger is delivering constant voltage to the battery with reduced current.

At the 4th stage, the battery has been charged to about 90% of its rated capacity. The "ABSORPTION" LED goes out and the "FLOAT" LED lights up. The charging current is decreased and the charging voltage is held at a constant level. Battery is now under "FLOAT" constant charging.

### **Operation as Charger under LiFePO4 Charging Mode**

Select the switch to position **L** and set dipswitch No. 1-6 OFF to charge LiFePO4 battery.

## Operation as Power Supply

Select the switch to position **P**, the device now operates as a power supply unit. The

Bulk and Absorption LED goes out.

Select dipswitch No. 6 for constant Voltage.

## Trouble shooting

Status	Possible cause	Suggest remedy
<b>No DC output or charger can't startup</b>	No AC input.	Check the AC power source .
	Overheats shutdown..	Allow the device t cool down.
	Bad contact of battery terminal.	Check the connection between charger and battery.
	Output short circurt.	
<b>Battery charging not stable</b>	AC Input voltage is not stable.	Check input AC voltage if it is within the input voltage range.
	Dip switch setting do not match battery type.	Select suitable charging voltage.
<b>Charger cannot switch to "FLOAT"</b>	Battery cable connected to the battery is too thin.	Change cable of proper size.
	Battery in poor condition.	Replace new battery.

## Safety operation

A. The device is for indoor use, do not use the device near flammable materials.

- B. Appliance shall only be used with rated voltage and frequency.
- C. If cables have to be fed through walls with sharp edges, always use tubes or ducts to prevent damage.
- D. Children should be supervised to ensure that they do not play with the device.
- E. Do not allow water to drip or splash on the device.
- F. Make sure the air inlets and outlets of the device are not covered.
- G. Do not reverse the polarity of the connection to the battery.
- H. Do not charge non-rechargeable batteries.
- I. Disconnect the supply before making or breaking the connections to the battery.

**Caution!**

Hot surface when operating at full load condition.

**Warranty** only covers the cost of parts and labor for the repair service within the warranty period. Warranty will not apply where the device has been misused, altered, neglected, improperly installed or physically damaged, either internally or externally or damaged from improper use or use in an unsuitable environment. We shall not be liable for damages, whether direct, incidental, special, or consequential, or economic loss even though caused by negligence, or other fault. If the device requires warranty service, please return it to the place of purchase along with a copy of the receipt with purchasing date.

## **Disposal**

When the device has become unusable, dispose of it in accordance with the applicable disposal regulations.