



**SmartGen**  
ideas for power

# BAC06H BATTERY CHARGER USER MANUAL



**SMARTGEN (ZHENGZHOU) TECHNOLOGY CO., LTD.**



Chinese trademark

**SmartGen** English trademark

**SmartGen** —make your generator *smart*

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#### Software Version

Date	Version	Content
2017-02-04	1.0	Original release.
2017-06-21	1.1	Changed the product name from BAC06W to BAC06H
2017-11-19	1.2	Update "CASE DIMENSIONS"



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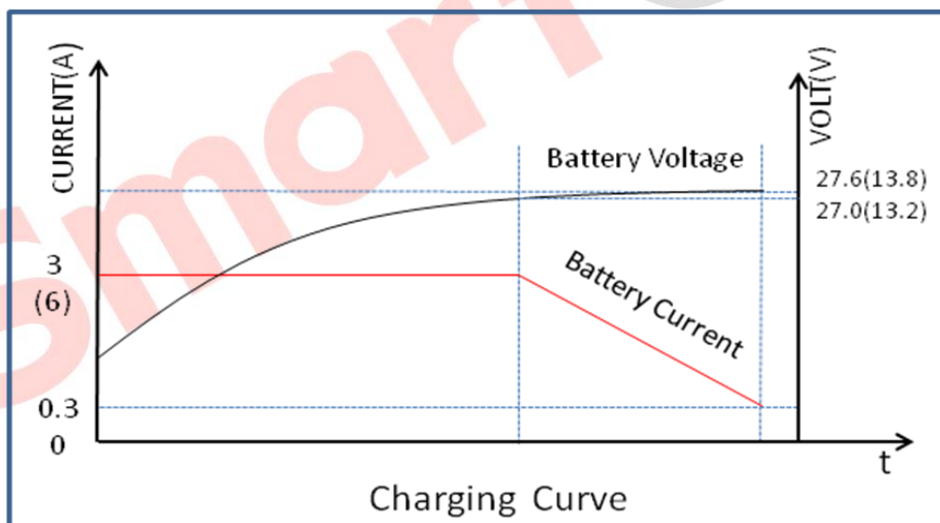
## 1 OVERVIEW

BAC06H battery charger adopts the latest switch power components, which is designed for charging lead-acid starting battery according to its property. The charger is suitable for lead-acid battery float charge. BAC06H is a kind of high voltage charger and its input voltage can be reached at 480V. The maximum charge current for 12V charger is 6A; the maximum charge current for 24V charger is 3A.

## 2 PERFORMANCE AND CHARACTERISTICS

- Designed in switching power structure, wide range of AC voltage input, small volume, light weight and high efficiency;
- Two-stage charging method (constant current firstly and then constant voltage), fully considering charging property of the lead-acid battery, can avoid overcharging and extremely prolong battery life.
- With short circuit and reverse connection protection;
- Floating voltage can be adjusted via potentiometer on the spot;
- Suit for 12V and 24V battery with the corresponding BAC06H-12V charger and BAC06H-24V charger;
- LED display: Full charged indication and charging indication;

## 3 CHARGING PRINCIPLE



According to charging property of the lead-acid battery, BAC06H battery charger uses 2-stage charging method and charge mode is “constant-current”. When battery voltage is under the threshold, it is charging in constant-current mode; when the battery voltage is higher than the threshold, the charging current is decreasing as the battery voltage is rising until it reaches the set voltage, and then charge mode is turned into “floating charge”. Charge current is gradually reducing and battery voltage is rising up to the set value. When charging current is lower than 0.3A, the battery is basically fully charged (charging indicator is off). Afterwards, charging current will offset self-discharge of the battery. Thus the charger can maintain a full charged condition and extend the battery life.

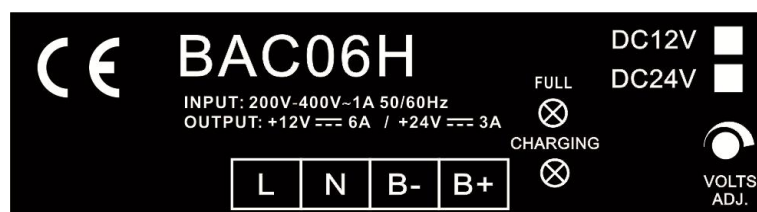
#### 4 SPECIFICATION

Category	Items	Parameter	
		12V	24V
Input	Nominal AC Voltage	AC(200~400) V	
	Max. AC Voltage	AC(180~480)V	
	Max. Input Current	1A	
	No-load Power Consumption	<3W	
	AC Frequency	50Hz~60Hz	
	Max. Efficiency	82%	86%
Output	No-load Voltage	13.8V, Error:±1%	27.6V, Error:±1%
	Rated Charging Current	6A, Error:±5%	3A, Error:±5%
	Max. Power	85W	85W
	Min. Voltage	7.5V	
Insulation	Insulation Resistance	Between input and output, input and shell both are: DC500V 1min, insulation resistance $R_L \geq 50M\Omega$ .	
	Leakage Current	Between input and output, input and shell both are: AC3000V 1min, leakage current: $I_L \leq 3.5mA$ .	
Working Condition	Working Temp.	(-30~+55)°C	
	Storage Temp.	(-40~+85)°C	
	Working Humidity	20%RH~93%RH(no condensation)	
Profile	BAC06W	Weight	0.65kg
		Size	143mmx96mmx55mm (Length*Width*Height)

#### 5 VOLTAGE ADJUSTMENT

When adjusting the voltage on the spot, disconnect the battery from the charger, and then measure the output voltage of the charger while adjusting voltage potentiometer (VOLTS) to a proper value.

#### 6 OPERATION



BAC06H Mask

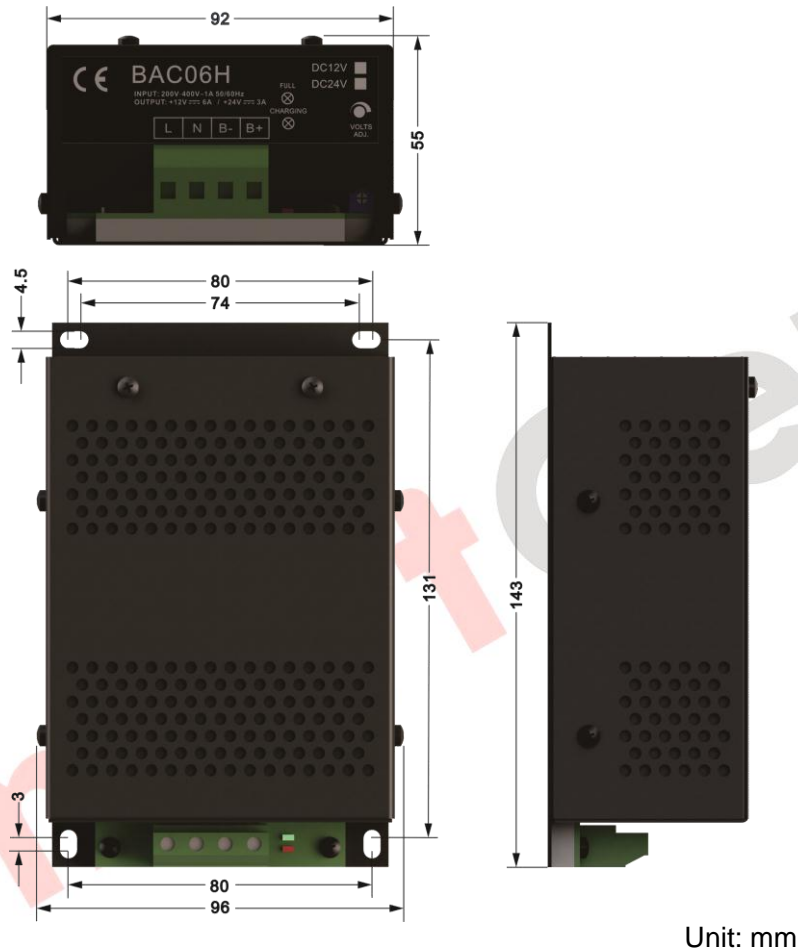
- Terminals L and N connect AC (200~400) V, using multi-strand BVR 1mm<sup>2</sup> copper wires.
- Terminals B+ and B- connect battery positive and negative, using multi-strand BVR1.5mm<sup>2</sup> copper wires.
- FULL: Full charged indicator. When charger works, it will illuminate.
- CHARGING: Battery charging indicator. When charging current is over 0.3A, it will illuminate.
- VOLT: Voltage adjustment potentiometer.



**NOTE:**

- 1) There is diode and current-limiting circuit inner the charger, it can be used together with charging generator in parallel, and there is no need to disconnect the charger when cranking.
- 2) When applied to generator-set, high current will cause voltage drop in charging line, so recommend separately connecting to battery terminal to avoid disturbance on sampling precision.

**7 CASE DIMENSIONS**



BAC06H Dimensions

**8 MODEL SELECTION**

There are two models as follows,

- a) BAC06H-12V is 12V battery charger with the max. charge current 6A.
- b) BAC06H-24V is 24V battery charger with the max. charge current 3A.

**Please pay attention to the charger model before place order.**