

SmartGen

MAKING CONTROL SMARTER

BAC2408

Battery Charger

USER MANUAL



郑州众智科技股份有限公司
SMARTGEN(ZHENGZHOU)TECHNOLOGY CO.,LTD.

SmartGen众智 Chinese trademark

SmartGen English trademark

SmartGen – make your generator *smart*

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Table 1 Software Version

Version	Date	Note
1.0	2014-02-16	Original release.
1.1	2022-06-15	Update the format of the manual and the logo of SmartGen.

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1 SUMMARY

Fit with up-to-date power supply device, float charger BAC2408 is specially designed for meet the charging characteristics of the lead-acid engine starter batteries and can be used for long-term float charging of 24V lead-acid batteries.

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2 PERFORMANCE AND CHARACTERISTICS

- 1) Switch power supply structure, wide input alternating voltage range, small size, light weight, high efficiency rate;
- 2) Automatic two-stage charging process (first constant current, then constant voltage) carried out according to storage battery charging characteristics to prevent overcharging and significantly prolong battery lifetime;
- 3) Built-in PFC circuit can calibrate the power factor above 0.99;
- 4) Built-in current protective circuit for short-circuit protection and reverse connection protection. If failure occurs, power indicator and charging indicator will flash rapidly;
- 5) Suitable for 24V storage battery and the rated current is 8A;
- 6) LED display: Power indication (Green light) and charging indication (Red light).

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3 CHARGING PRINCIPLE

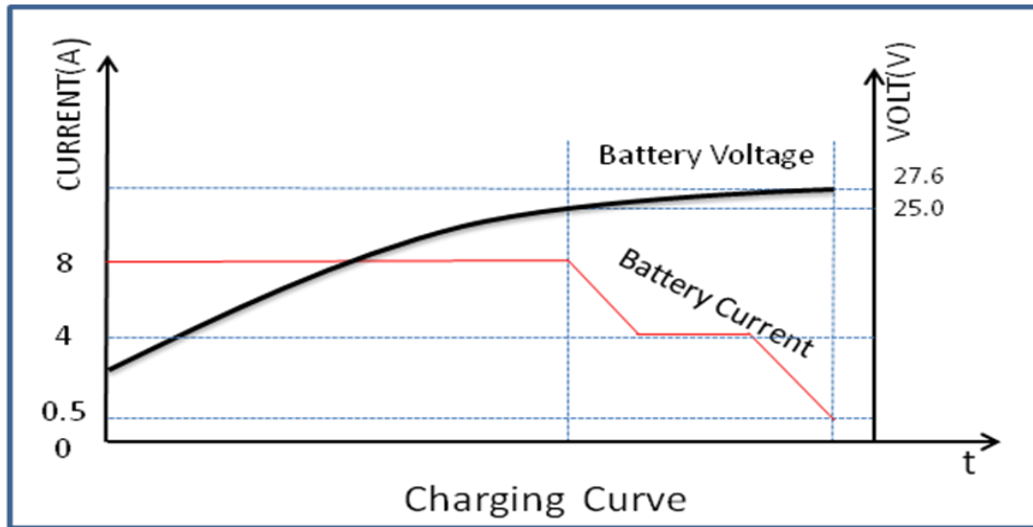


Fig.1- Charging Principle

Charging is performed according to the battery charging characteristics using two-stage method. Charging type is 'constant current type' which means that when the battery terminal voltage falls below the pre-set value, charging current will be constant; when the battery terminal voltage exceeds the pre-set value, charging current will decrease with the rising of terminal voltage until the pre-set current value is reached; then Chargers automatically return to float mode. As soon as charging current value falls below 0.5A and the constant voltage value is reached, the battery is basically charged (charging indicator will extinguish). After that charging current will only neutralize the battery self discharge. Even long-term charging cannot harm the battery, as charger can keep the battery fully charged and so guarantee long lifetime of the battery.

Table 2 Specification

Items	Contents	Parameters	
Input Characteristics	Nominal AC Voltage	AC (100~240)V	
	Max. AC Voltage	AC (90~280)V	
	AC Frequency	50Hz/60Hz	
	Max. Current	3A	
	Efficiency	AC 110V	AC 220V
		>86%	>88%
	Power Factor Calibration	AC 110V	AC 220V
>0.98		>0.90	
Output Characteristics	Rated Charging Current	8A (Error±2%)	
	Max. Output Power	200W	
	No-load Output Voltage	27.6V (Error±1%)	
	No-load power consumption	<3W	
Insulating Property	Insulation Resistance	Between input and output, input and shell both are: DC500V 1min $R_L \cong 500M\Omega$	
	Insulation Voltage	Between input and output, input and shell both are: AC1500V 50Hz 1min; leakage current: $I_L \cong 4.5mA$	
Working Condition	Working Temperature	(-30~55)°C	
	Storage Temperature	(-40~85)°C	
	Working Humidity	20%RH~93%RH (No condensation)	
	Storage Humidity	10%RH~95%RH (No condensation)	
Shape Structure	Weight	0.9kg	
	Dimension	145.5mm×131mm×55mm (length*width*height)	

5 EFFICIENCY CURVE

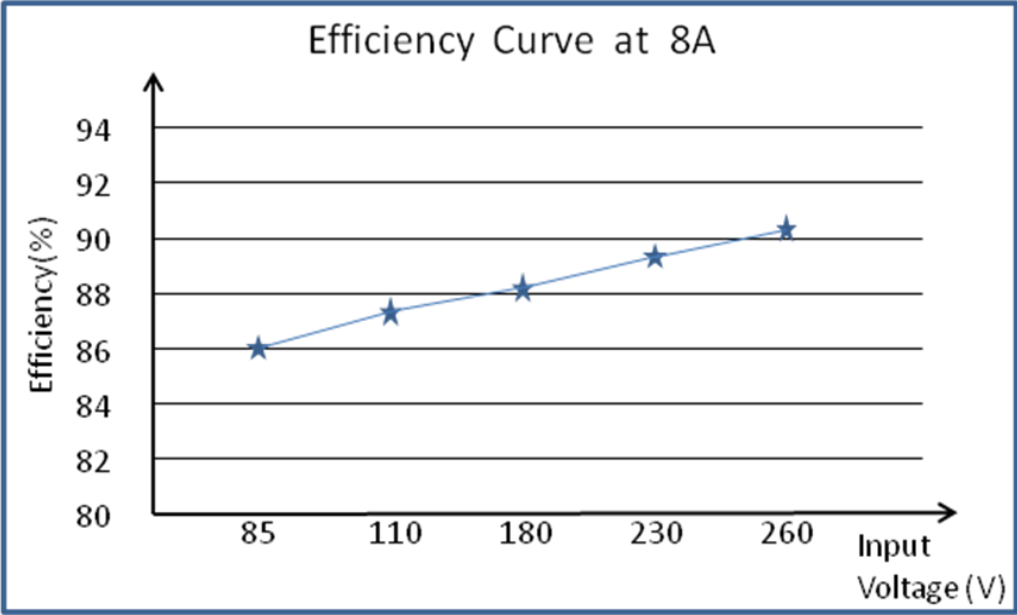


Fig.2- Efficiency Curve

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6 OPERATION



Fig.3- BAC2408 Mask

1. Connect terminals L and N to alternating voltage (100~240)V using BVR 1mm² multi-strand copper line.
2. Connect B+ and B- to battery positive and negative using multi-strand BVR2.0mm² copper wires.
3. PE terminal: earth terminal; connect to shell innerly.
4. POWER: power supply indicator, illuminated when the charger is operating normally.
5. CHARGING: charging indicator, illuminated when charging current exceeds 0.5A while extinguished when battery charging is finished.

▲ NOTE:

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

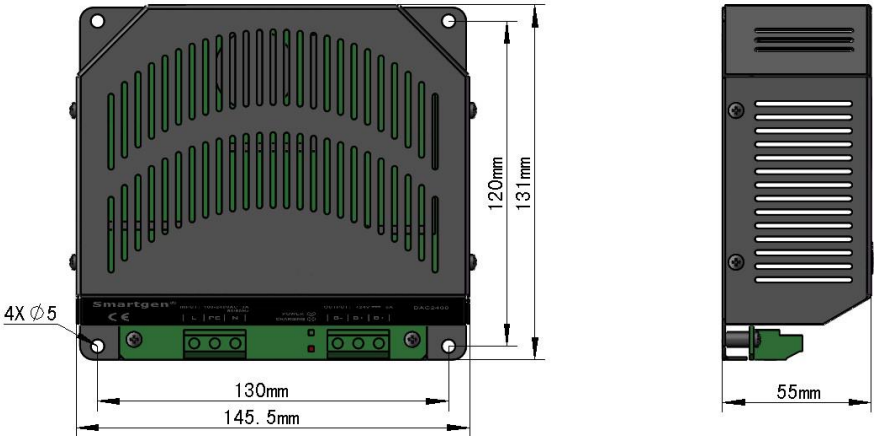


Fig.4- BAC2408 Case Dimensions

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