BAC4812

BATTERY CHARGER

USER MANUAL

SMARTGEN (ZHENGZHOU) TECHNOLOGY CO., LTD.

Chinese trademark

English trademark

SmartGen — make your generator *smart*

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Software Version

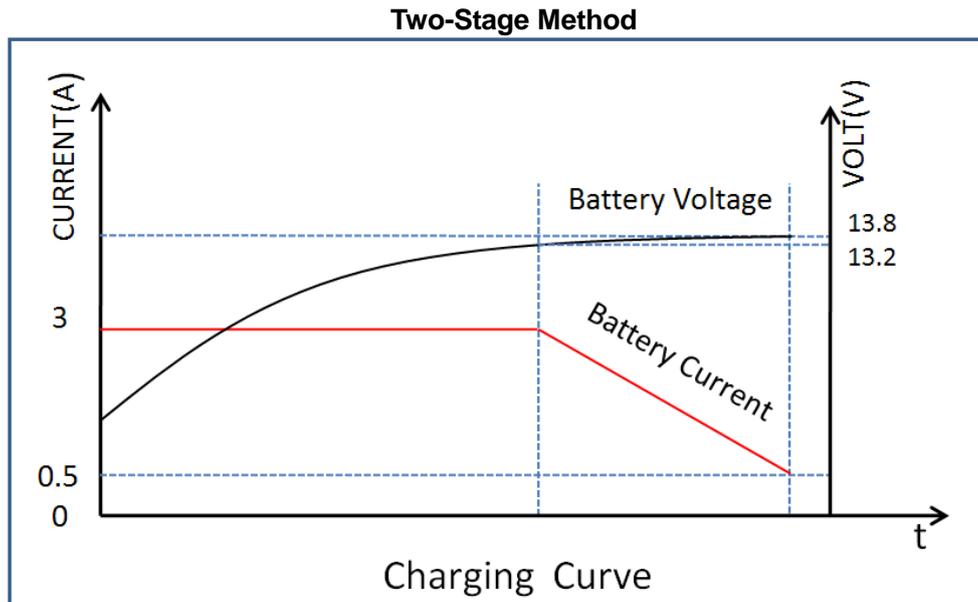| Date	Version	Note
2016-06-24	1.0	Original Release
2021-04-13	1.1	Optimize the translation; Upgrade the company information, font, format of header and footer.

CONTENT

1. OVERVIEW

Fit with up-to-date power supply device, float charger BAC4812 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 12V lead-acid batteries. The maximum charging current is 3A.

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) With auxiliary voltage output port. Firm voltage output: -12V.

4) +12V output has current protective circuit for short-circuit protection and reverse connection protection.

5) -12V output has short-circuit self-recovery function.

6) Both charging voltage and current value can be regulated by potentiometer on the spot;

7) LED display: Power indication (Green light) and charging indication (Red light).

3. CHARGING PRINCIPLE

Two-Stage Method

Charging Curve

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.

4. PARAMETERS CONFIGURATION

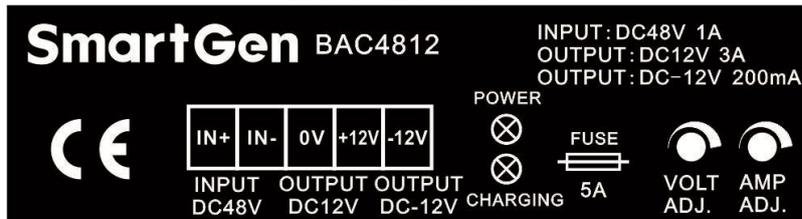| Items	Contents	Parameters
Input Characteristics	Nominal DC Voltage	DC48V
	Max. DC Voltage	DC (36~72)V
	Max. Current	1A
	No-load power consumption	<3W
Output Characteristics	Main Output No-load Output Voltage	13.8V, (Error ±1%)
	Main Output Rated Charging Current	3A, (Error±2%)
	Aux. Output Rated Voltage	-12V, (Error±1V)
	Aux. Output Max. Current	200mA
Insulating Property	Insulating Resistance	Between input and output, input and shell both are: DC500V 1min $R_L \geqq$ 500MΩ
	Insulating Voltage	Between input and output, input and shell both are: AC1500V 50Hz 1min;l Leakage current: $I_L \leqq$ 3.5mA
Working Condition	Working Temperature	(-30~55)°C
	Storage Temperature	(-40~85)°C
	Working Humidity	10%RH~93%RH (No condensation)
Shape Structure	Weight	0.4kg
	Dimension	143mm*96mm*55mm (length*width*height)

5. SETTING

5.1. VOLTAGE REGULATION

When regulating current on the scene, it needs to disconnect battery and charger and measure charger output voltage while measuring voltage potentiometer until suitable value.

5.2. CURRENT REGULATION

Output connects to battery. Measure charging current when charging voltage isn't higher than 12.5V and set suitable value by regulating current potentiometer (AMP). It also can estimate current value according to current potentiometer scale.

6. OPERATION

BAC4812 Panel

1) Connect terminals IN+ and IN- to direct voltage 48V using BVR 1mm^2 multi-strand copper line.

2) Connect +12V and 0V to battery positive and negative using BVR 1.5mm^2 multi-strand copper line.

3) Terminal 0V and -12V output regularly -12V. Max. output current: 200mA.

4) POWER：power supply indicator, illuminated when the charger is operating normally.

5) CHARGING：charging indicator, illuminated when charging current exceeds 0.5A.

6) VOLTS：charging voltage regulator potentiometer

7) AMP：charging current regulator potentiometer

8) FUSE：output fuse; rated current:5A; fuse will blow out when output connection reversed(no output voltage). It will work normally once correct connection and replace the fuse.

9) Replacing fuse operation sequence:

   a) Press inward using straight screwdriver with less strength while screw one time anticlockwise and then take it out.

   b) Place new fuse and slip into fuse holder. Press strongly inward with straight screwdriver while screw one time clockwise.

   ⚠**Note:** Unsuitable operation or overexertion may make the fuse holder damaged.

⚠ **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.

7. CASE DIMENSIONS

Unit: mm

BAC4812 Overall Dimensions