

SmartGen

MAKING CONTROL SMARTER

BAC06CF

BATTERY CHARGER

USER MANUAL



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Table 1 - Software Version

Date	Version	Note
2016-01-05	1.0	Original Release
2016-03-05	1.1	Modify terminal CF descriptions
2017-11-19	1.2	Update "CASE DIMENSIONS"; Parameter "Efficiency" changed to "Max. Efficiency"
2021-04-13	1.3	1. Modify the "Two-Stage Charging Curve" of "CHARGING PRINCIPLE"; 2. Upgrade company information, font, format of header and footer.
2023-06-05	1.4	Update the logo of SmartGen.

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1. OVERVIEW

Fit with up-to-date power supply device, float charger BAC06CF 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 output current of 12V charger is 6A, and the maximum output current of 24V charger is 3A.

2. PERFORMANCE AND CHARACTERISTICS

- Switch power supply structure, wide input alternating voltage range, small size, light weight, high efficiency rate;
- Automatic two-stage charging process carried out according to storage battery charging characteristics to prevent overcharging and significantly prolong battery lifetime;
- Built-in output current protective circuit, which can give effective protection when output over current, short-circuit or reverse connection occurs. After troubleshooting over current, short-circuit or reverse connection, the output will be recovered automatically.
- With port of mains failure alarm, the port will close immediately while occurring AC input outage.
- Suitable for 12V or 24V storage battery, the corresponding types are BAC06CF-12V and BAC06CF-24V.
- LED display: float charging indicator and charging indicator.

3. CHARGING PRINCIPLE

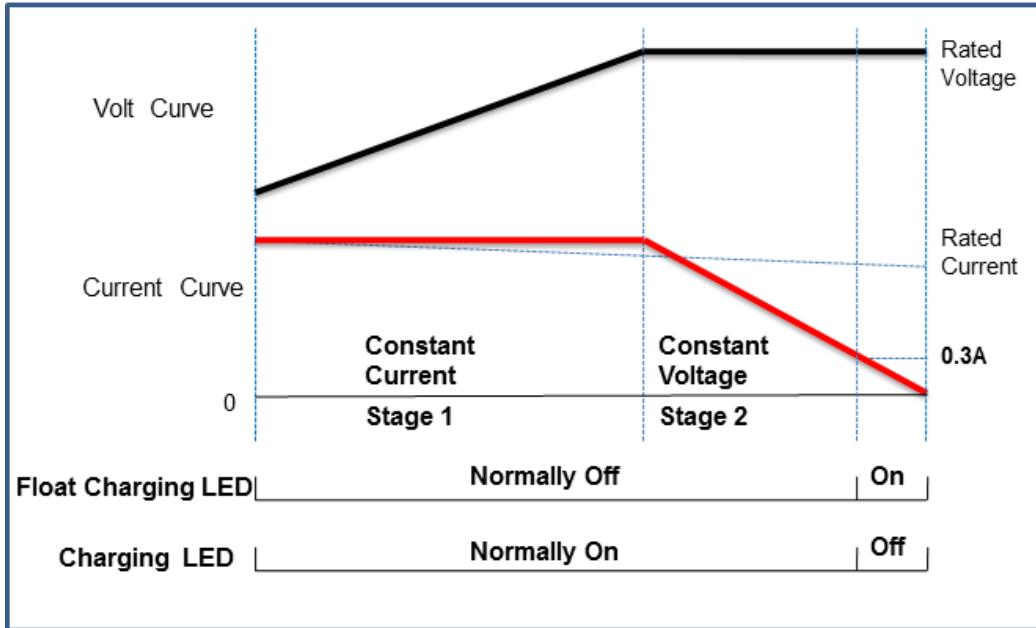


Fig.1 - Two-Stage Method

Charging is performed according to the battery charging characteristics using two-stage method.

- The first stage is named as 'constant current': when the battery terminal voltage falls below the pre-set value;
- The second stage is named as 'constant voltage': 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 0.3A 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

Table 2 – Parameters Configuration

Items	Contents	12V	24V
Input Characteristics	Nominal AC Voltage	AC(100~277)V	
	Max. AC Voltage	AC(90~305)V	
	AC Frequency	50Hz/60Hz	
	Max. Current	2A	
	Max. Efficiency	85%	
Output Characteristics	No-load Output Voltage	13.8V±1%	27.6V±1%
	Charging Current	6A±2%	3A±2%
	Max. Output Power	85W	
	No-load Loss	<3W	
Insulating Property	Insulating Resistance	Between input and output, input and shell are: DC 500V 1min RL≥100MΩ	
	Insulating Voltage	Between input and output, input and shell are: AC 1500V 50Hz 1min Leakage current: $I_L \leq 3.5\text{mA}$	
Working Condition	Working Temperature	(-30~+55)°C	
	Storage Temperature	(-40~+85)°C	
	Working Humidity	20%RH~93%RH(No condensation)	
Shape Structure	Weight	0.67kg	
	Dimension	143mm×96mm×55mm (length×width×height)	

5. OPERATION

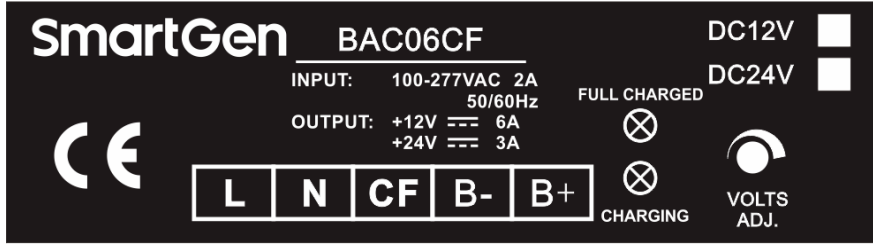


Fig.3 -BAC06CF MASK

Terminal	Function	Description
L	AC Terminals	Connect terminals L and N to AC voltage (100~277)V (using greater than BVR 1.0mm ² multi-strand copper line.)
N		
CF	Charging Fail Alarm Terminals	Internal connect to B- via normal close contact of relay with 1A capacity.
B-	Battery Negative	Connect to battery negative using greater than BVR 2.0mm ² multi-strand copper lines.
B+	Battery Positive	Connect to battery positive using greater than BVR 2.0mm ² multi-strand copper lines.
FULL CHARGED	Green LED Indicator	Full Charged Indicator
CHARGING	Red LED Indicator	Charging Indicator

▲ NOTE:

There is a 10A protector tube in the charger output terminal. This protector will be burned and there is no output voltage if output connection is reversed. Under this condition, the charger will work after replacing protector tube.

6. CASE DIMENSIONS

Unit: mm

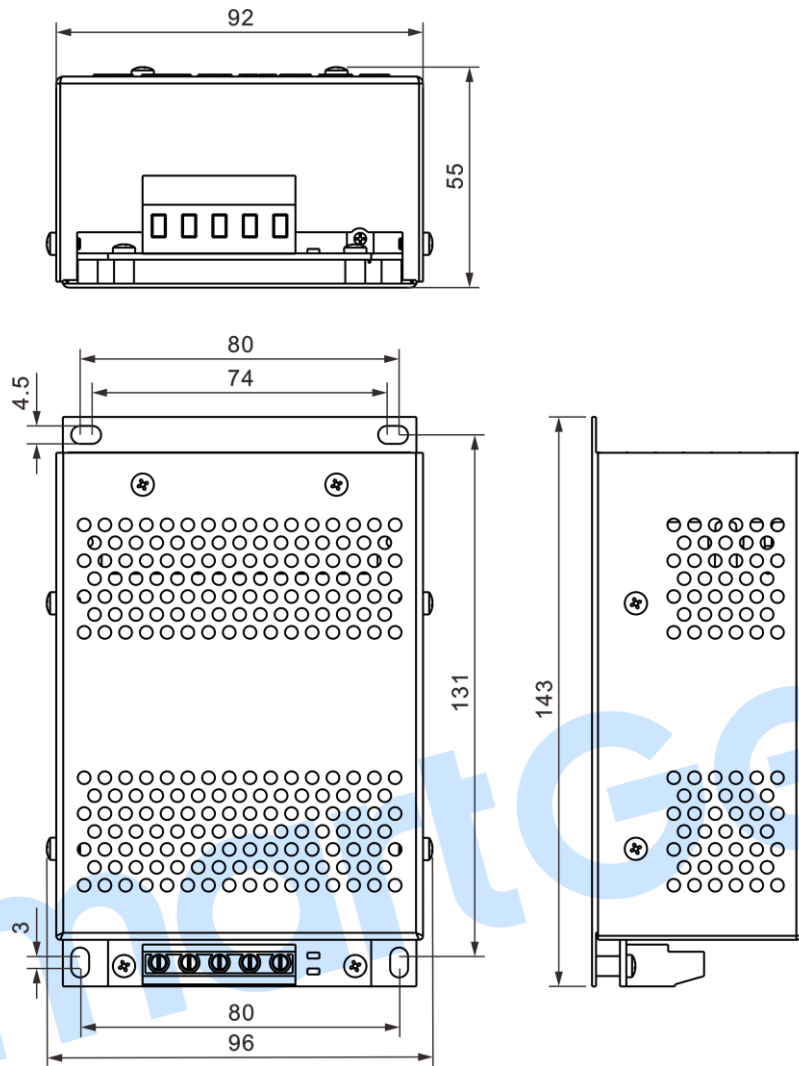


Fig.4 – Case Dimensions

7. TYPE SELECTION

Type	Type of Storage Battery	Rated Output Current
BAC06CF-12V	12V	6A
BAC06CF-24V	24V	3A