



**SmartGen**  
ideas for power

**BAC2405CF**  
**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	Note
2016-03-05	1.0	Original Release
2017-11-09	1.1	Update "CASE DIMENSIONS"

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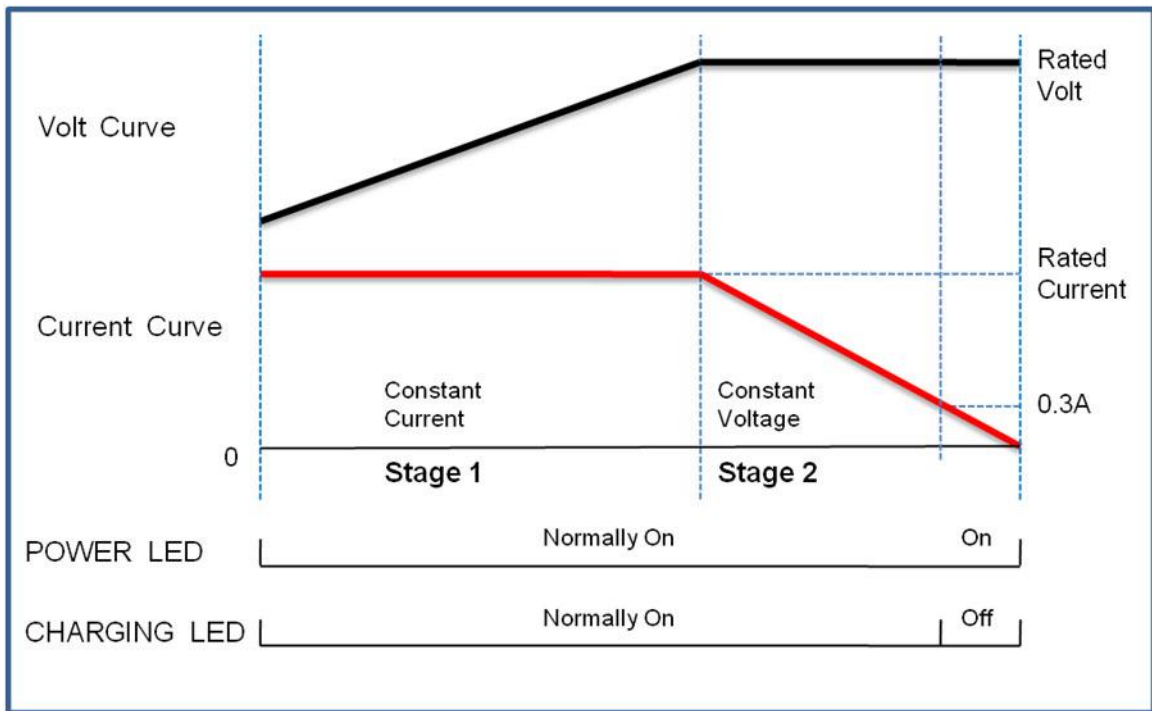
## 1. OVERVIEW

Fit with up-to-date power supply device, float charger BAC2405CF 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. The maximum output current is 5A.

## 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 24V storage battery. The maximum output current of is 5A.
- LED display: float charging indicator and charging indicator.

### 3. CHARGING PRINCIPLE



Two-Stage Method

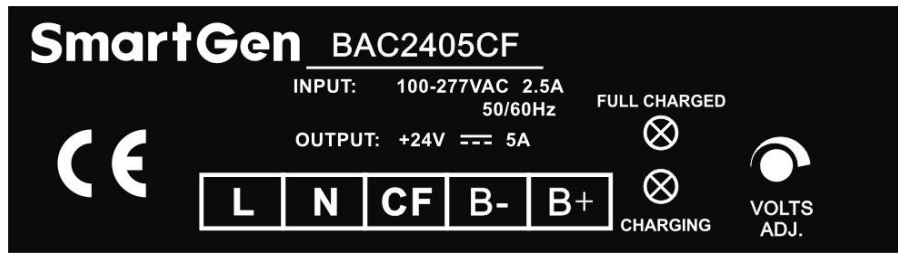
Charging is performed according to the battery charging characteristics using two-stage method.

- 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**

Items	Contents	24V
Input Characteristics	Nominal AC Voltage	AC(100~277)V
	Max. AC Voltage	AC(90~305)V
	AC Frequency	50Hz/60Hz
	Max. Current	2.5A
	Efficiency	>75%
Output Characteristics	No-load Output Voltage	27.6V±1%
	Charging Current	5A±2%
	Max. Output Power	135W
	No-load Loss	<3W
Insulating Property	Insulating Resistance	Between input and output, input and shell are: DC 500V 1min, $R_L \geq 100M\Omega$
	Insulating Voltage	Between input and output, input and shell are: AC 1500V 50Hz 1min, Leakage current: $I_L \leq 3.5mA$
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



BAC2405CF MASK

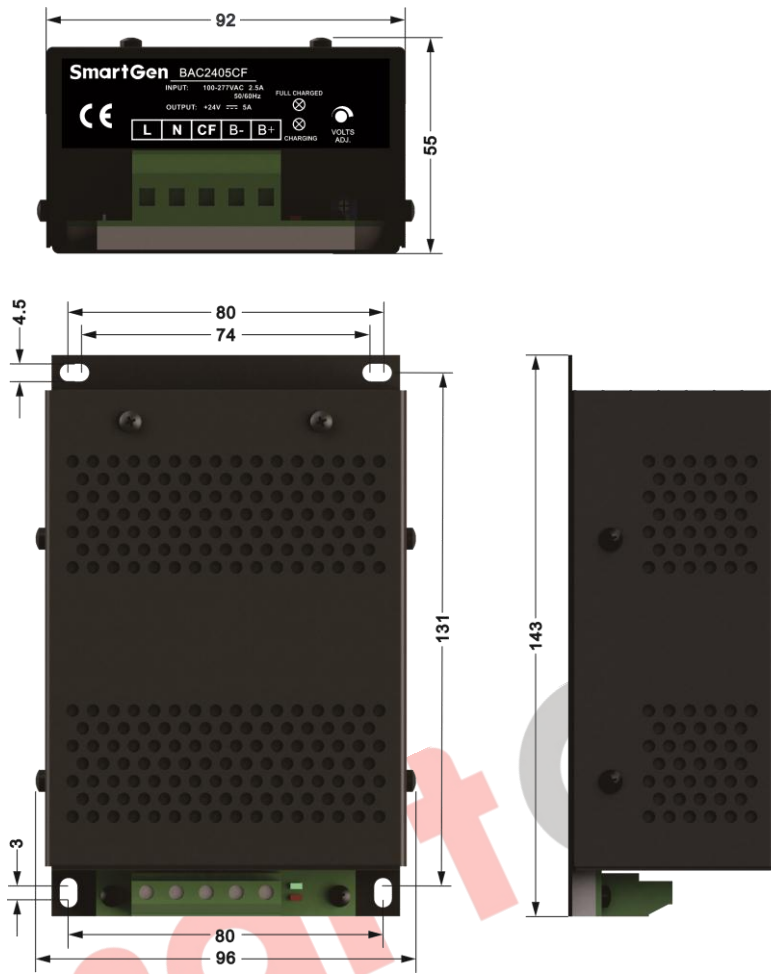
Terminal	Function	Description
L	AC Terminals	Connect terminals L and N to AC voltage (100~277)V (using greater than BVR 1.0mm <sup>2</sup> multi-strand copper line.)
N		
CF	Charging Fail Alarm Terminals	Internal connect to B- via normal close contact of relay with 1A capacity.
B-	Battery Negative	Connect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



BAC2405CF Installation Dimensions