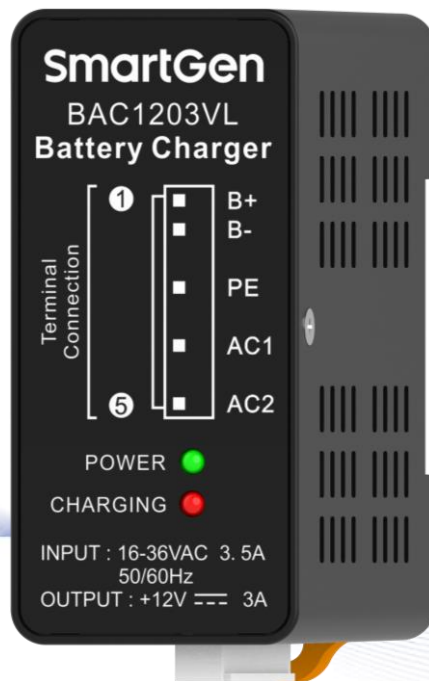


SmartGen

MAKING CONTROL SMARTER

BAC1203VL BATTERY CHARGER USER MANUAL



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Table 1 Software Version

Date	Version	Note
2019-06-20	1.0	Original release.
2023-03-06	1.1	Update the manual format, information and logo of SmartGen; Update the figures of case dimensions.
2024-04-28	1.2	Modify the figures of panel drawing and case dimensions.

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1. OVERVIEW

Fit with up-to-date power supply device, battery charger BAC1203VL is specially designed for meeting the charging characteristics of lead-acid batteries and can be used for long-term supplement (float) charging of 12V battery pack.

2. PERFORMANCE AND CHARACTERISTICS

It has the following characteristics:

- 1) Applies switch power supply structure, wide range and low input voltage, small size, light weight, high efficiency rate;
- 2) Applies automatic two-stage charging process (first constant current, then constant voltage) according to storage battery charging characteristics to prevent overcharging and significantly prolong battery lifetime;
- 3) Short-circuit protection function;
- 4) Suitable for 12V storage battery with maximum charging current 3A;
- 5) LED display: Power indication and charging indication;

3. CHARGING PRINCIPLE

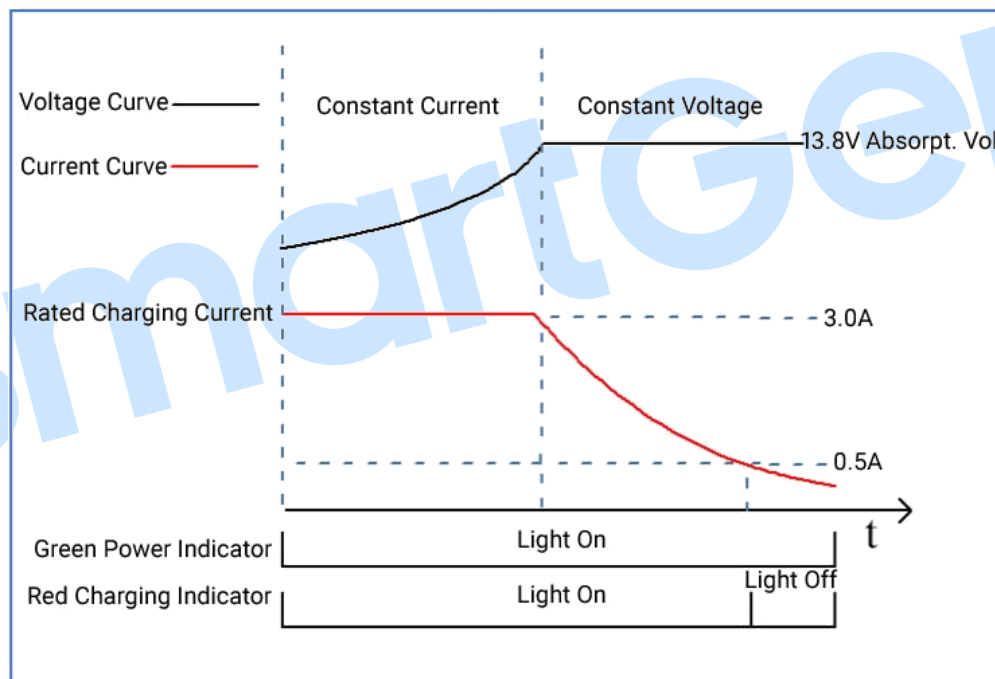


Figure 1 Charging Principle Diagram

Charging is performed according to the battery charging characteristics by 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. At this time charging current gets smaller and smaller gradually. The terminal voltage also gets higher and higher to the pre-set value gradually. when the charging voltage gets over 13.5V, battery is fully charged in a degree. Afterwards charging current only offsets battery's self discharging. long-term charging does no harm to the battery. That is, charger can keep the fully charged status of the battery and also can ensure the usage life of the battery.

4. PARAMETERS CONFIGURATION

Table 2 Technical Parameters

Items	Contents	24V
Input Characteristics	Nominal AC Voltage	AC (16~36)V
	Max. AC Current	3.5A
	No-load Power Consumption	<2W
	AC Frequency	45Hz~65Hz
	Max. Efficiency	80%
Output Characteristics	No-load Output Voltage	13.8V, error±2%
	Rated Charging Current	3.0A, error±5%
	Max. Output Power	40W
Working Condition	Working Temperature	(-30~+70)°C
	Storage Temperature	(-40~+85)°C
	Working Humidity	20%RH~93%RH (No condensation)
Shape Structure	Weight	150g
	Dimension	80mm×35.5mm×65mm (length*width*height)

5. OPERATION

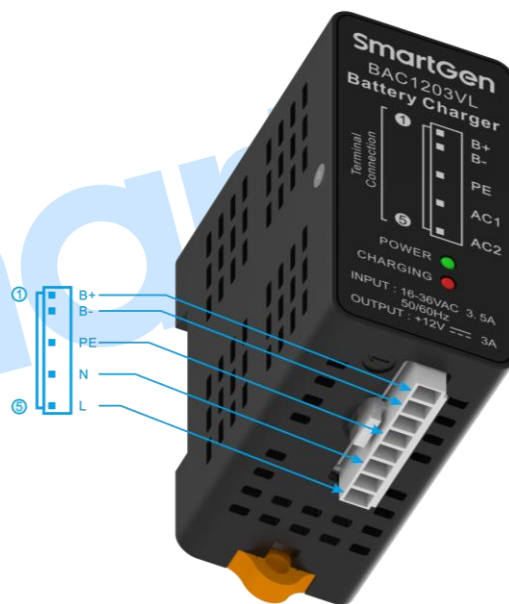


Figure 2 BAC1203VL MASK

Table 3 Wire Connection Description

Mark	Function	Description
1	Output Positive	Connects battery positive; over BVR 1.5mm ² multi-strand copper line is recommended.
2	Output Negative	Connects battery negative; over BVR 1.5mm ² multi-strand copper line is recommended.
3	Ground Terminal	Ground connected terminal;
4	AC Input Terminal	Terminal L, N shall connect (6-36)V; over BVR 1.5mm ² multi-strand copper line is recommended.
5		
Red Indicator	Charging Indicator	It illuminates when the charger is charging.
Green Indicator	Power Indicator	It illuminates when the charger is working.

▲ **NOTE1:** When this is applied on genset, charging current shall produce voltage drop on charging line. so it is recommended to separately connect charging line to battery terminals to prevent affecting sensor precision of collecting samples.

6. CASE DIMENSIONS

Unit: mm

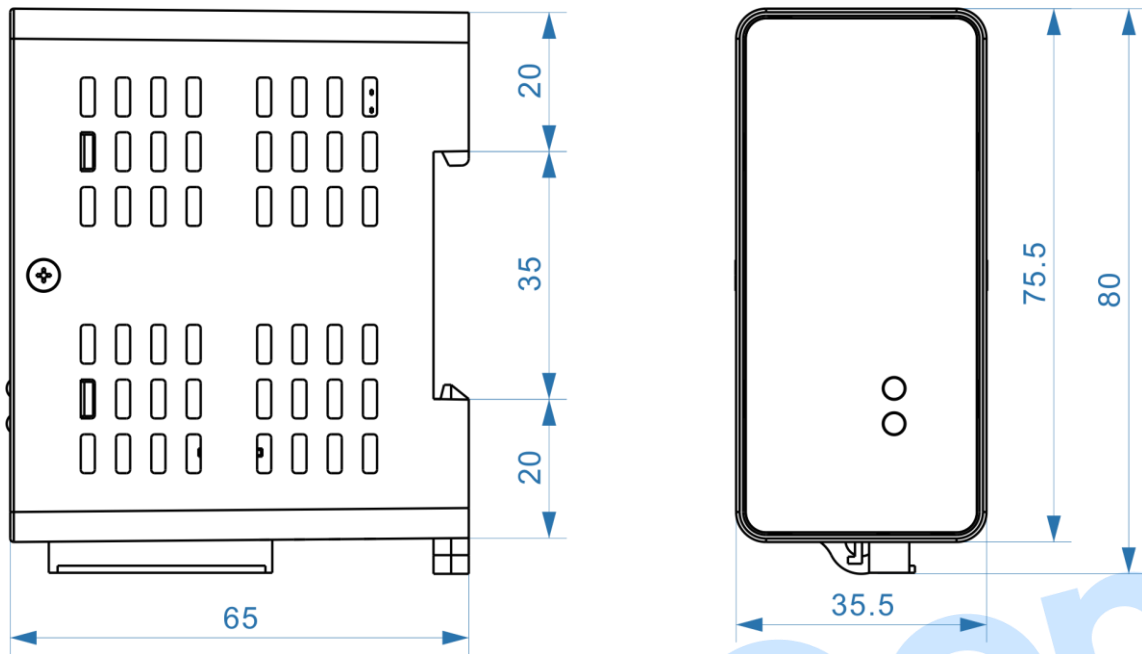


Figure 3 BAC1203VL Guide Rail Installation Size

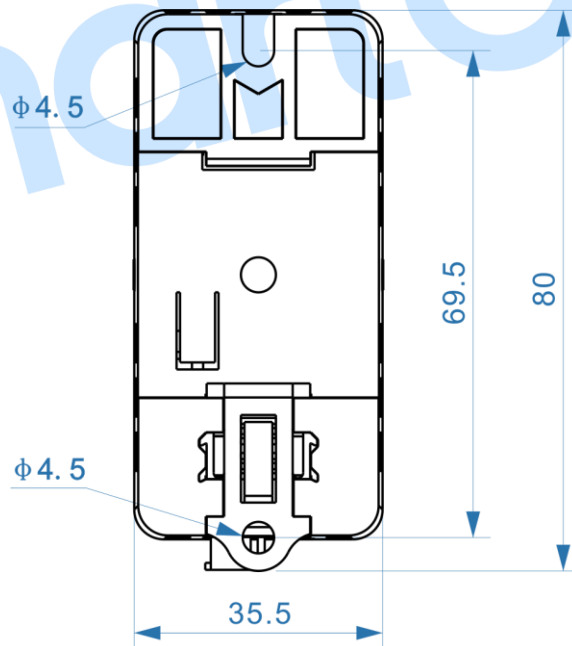


Figure 4 BAC1203VL Screw Installation Size

7. APPENDIX: PACK LIST

Table 4 Packing List

No.	Accessory	Quantity	Remark
1	BAC1203VL	1	
2	Connecting Plug	1	
3	Contact Pin	5	
4	User Manual	1	

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