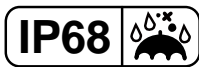


DENRYO

SolarAmp BG

Waterproof and Dustproof Solar Charge Controller
User's Manual Ver.1.02E



1. Introduction

Thank you for purchasing “SolarAmp BG” solar charge controller. This manual contains important safety, installation and operating instructions for “SolarAmp BG” solar charge controller in order to prevent the users from any damage. Make sure to read all of the instructions and cautions in the manual before beginning installation.

2. Product Overview

“SolarAmp BG” is very compact design and very simple to use, which has full electronic protections, waterproof and dustproof.

3. Features

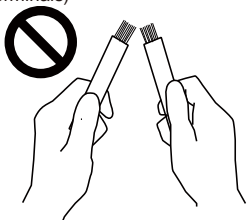
- Waterproof and dustproof (IP68)
NOTE: This does not guarantee no damage, no breakdown, or waterproof and dust proof performance in all conditions.
- 3-stage Charging (Bulk, Absorption, Float)
- Discharged Battery Recovery
- Full Electronic Protections
High / Low Voltage Protection, Over Discharge Protection, Over Load Protection, High Temperature Protection, Reverse Polarity Protection, Load Short Circuit Protection, Surge Protection
- Current Regulation Caused High Temperature
- Positive Earth Ground
- Status LED Indications
State of Charging, High / Low Voltage, Over Load, High Temperature

4. Precaution

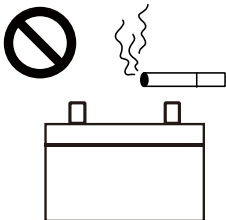
- Cover the PV panel (Photovoltaic panel: Solar panel) with cloth not to generate electricity during installation.
- It is recommended to install an external fuses (less than rated current) between controller and battery, controller and load.
- Connect battery to earth ground if necessary (positive earth ground). If you need negative earth ground, connect only one terminal (battery or PV panel or load terminal) to the earth ground.
- Do not connect device which has large input capacitance such as DC-AC inverter to the load terminal.
- Do not use PV panel or Load of which specification is out of the ratings.
The PV panel Voc should never exceed "Max. Input Voltage" of the controller.
The PV panel Isc should never exceed "Max. Input Current" of the controller.
The Peak current of load should never exceed "Max. Load Current" of the controller.
- Charging will start when PV panel voltage exceeds battery voltage.
- Reverse Polarity Protection and Over Load Protection is not effective in every possible condition, thus please take care when wiring and confirm the specifications of PV panel and battery and load.

5. Safety Information

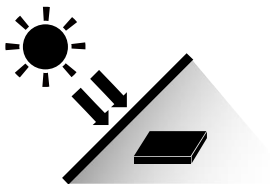
5-1: DO NOT short circuit (For all terminals)



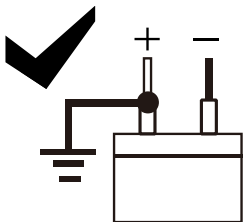
5-2: Explosion hazard



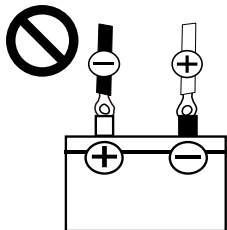
5-3: Keep out of direct sunlight



5-4: Positive earth ground

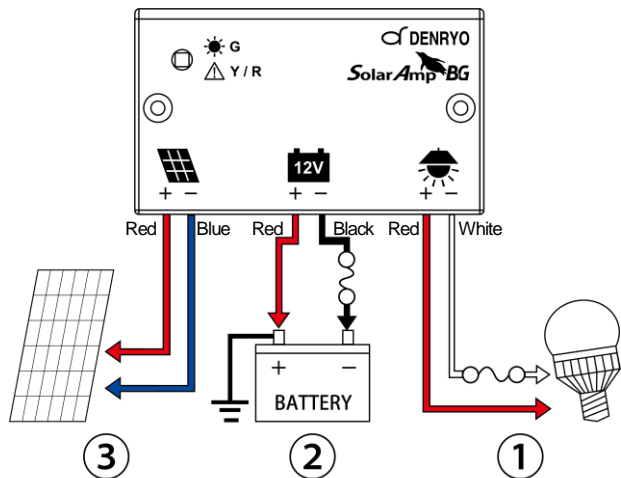


5-5: DO NOT reverse polarity connection (For all terminals)

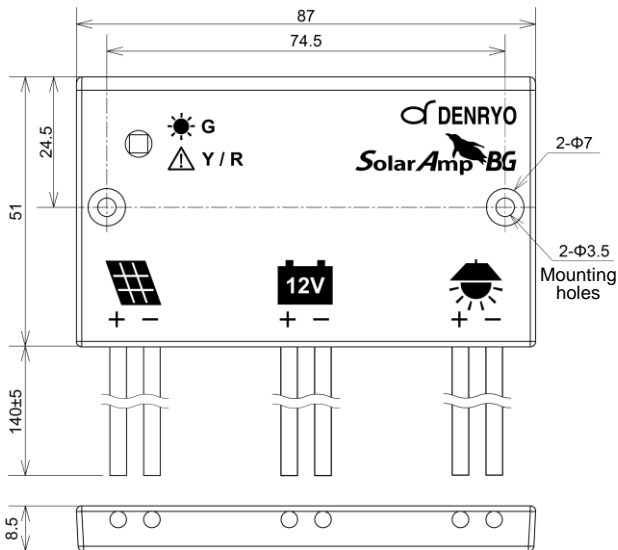


6. Connection

Connect each wire in order (1. LOAD 2. BATTERY 3. PV panel) as the figure below. Please use the proper size wire and connector.



7. Appearance



Unit: mm

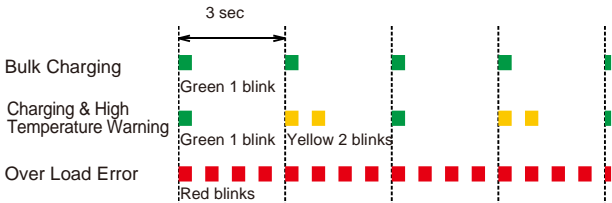
8. LED Indicator

“SolarAmp BG” shows the charging, warning and error status by LED. If any warning or error comes up when charging, LED will show both charging status and warning or error status alternately. In this case, the charging LED will only blink 1 time, do not show the charging stage.



LED/Color		Description
Green	1 blink	Bulk Charging
	2 blinks	Absorption Charging
	Solid	Float Charging
Yellow	1 blink	Low Voltage Warning
	2 blinks	High Temperature Warning
	Blinks	Over Load Reconnecting
Green/Yellow	1/1 blinks	Charging & Low Voltage Warning
	1/2 blinks	Charging & High Temperature Warning
Red	1 blink	Low Voltage Error
	2 blinks	High Temperature Error ^{*1}
	Solid	Over Voltage Error
	Blinks	Over Load Error
Green/Red	1/1 blinks	Charging & Low Voltage Error

*1 Stop charging but continue output to the load.

LED indicator example:



9. Specifications

Model No.	SA-BGA10	SA-BGB10	
System Voltage	12Vdc	24Vdc	
Max. Input Voltage	25Vdc	50Vdc	
Min. Input Battery Voltage	6Vdc	8Vdc	
Max. Input Current	10A		
Max. Load Current	10A		
Self-consumption Current	2mA (Typical)		
Charging Algorithm	3-stage (Bulk, Absorption, Float)		
Charging Voltage	14.4Vdc	28.8Vdc	
Float Charging Voltage	13.7Vdc	27.4Vdc	
High Voltage Protection	18Vdc	36Vdc	
Over Discharge Protection	Warning	11.8Vdc	23.6Vdc
	Error	11.5Vdc	23Vdc
	Recovery	12.5Vdc	25Vdc
High Temperature Protection	Warning	60°C	
	Error	80°C	
	Recovery	60°C	
Battery Type	Lead Acid Battery		
Wire Size	#16AWG, 1.25sq		
Grounding	Positive Ground		
Temperature Coefficient	-30mV/°C	-60mV/°C	
Operation & Storage Temperature	-40°C to +70°C		
Humidity	100%RH		
Dimensions (W x H x D)	87x51x8.5mm		
Weight	65g		
Certifications	 		



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