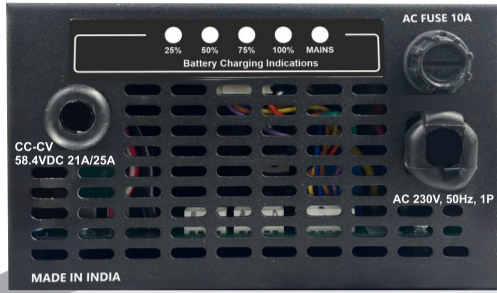


EV BATTERY CHARGER **21A/25A**
51.2 V



CON0000007392

Customer Care No. - 9667 123 456

E-mail: customer.care@genusinnovation.com

WARRANTY CARD

MODEL NO.	SERIAL NO.
DATE OF PURCHASE	DEALER NAME
CUSTOMER NAME CONTACT	
ADDRESS	

- Genus Innovation Ltd. warrants the product to the original purchaser, provided the product remains in the possession and use of the original purchaser from the date of purchase.
- The warranty is valid for 24 months on all parts (except LEDs, switches, external body, mains lead, and battery lead).
- The warranty will not apply to defects arising in the company's opinion from: Accident, abuse, misuse, neglect, improper installation (if not carried out by the company or its representative), Fire, flood, natural calamities, or other acts of God Unauthorized repairs or modifications Issues related to fuse and MOV are not covered under warranty. Service for these will be chargeable.
- The company will not be held liable for any injury, damage or loss caused to life or property. The warranty will be void if the original seals are found broken or tampered with.

LIMITED WARRANTY STATEMENT

- Genus Innovation Ltd. represents and warrants that the charger is free from defects in material and workmanship.
- The warranty period is 24 months from the date of installation or 26 months from the date of manufacturing, whichever is earlier.
- During the warranty period, Genus Innovation Ltd. or its authorized service network will repair or replace the product or any part (except LEDs, switches, and external body) found defective, free of charge for parts and labor.
- Repaired or replaced products/parts will continue under the remaining warranty period.
- All replaced parts/boards/equipment will become the property of Genus Innovation Ltd.

The consumer shall have no coverage or benefits under this warranty in the product that any of the following conditions are applicable:

- The product has been subjected to abnormal use/conditions, improper storage, excessive moisture, excessive temperature(beyond specification), unauthorized modifications or repairs(including but not limited to the use of unauthorized spare parts), accident, acts of God, abuse or liquid/food spillage, improper installation and breakage or damage.
- The consumer did not notify Genus Innovation Ltd. of the defect during the warranty period.
- The serial number or accessory date code has been removed, defaced or altered.
- The product has not been used with or connected to an accessory that is:
 - Not supplied by Genus Innovation Ltd or its affiliates.
 - Not suitable for use the product.
 - Used in a manner other than its intended purpose.

e) All plastic surfaces and other externally exposed parts that are scratched or damaged due to abnormal customer use are not covered under warranty.

To derive the benefit of this warranty for any defects in the product, the consumer shall ship the product or part thereof at their own cost to the authorized service center of Genus Innovation Ltd. Genus Innovation Ltd. shall bear the cost of shipping the repaired product or part thereof back to the consumer after completion of service under the limited warranty.

WARRANTY DISCLAIMER

No other express warranty is applicable to the product. The duration of any implied warranties, including but not limited to the implied warranties of merchantability or fitness for a particular purpose or use is limited to the duration of this express warranty stated herein. Genus Innovation Ltd. shall not be liable for:

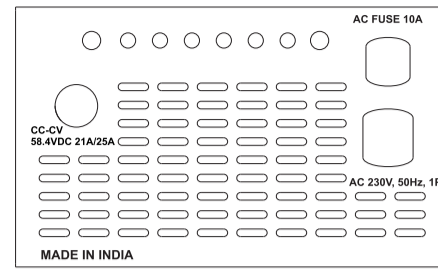
- Loss of use of the product
- Inconvenience or delay
- Any consequential damage arising out of the use of, or inability to use the product
- Any breach of express of implied warranties, including merchantability of fitness for a particular purpose

It's a hereby expressly clarified that all warranties (express of implied) in respect of the PRODUCT are provided by the Genus Innovation Ltd. All disputes shall be subject to the jurisdiction of JAIPUR only.

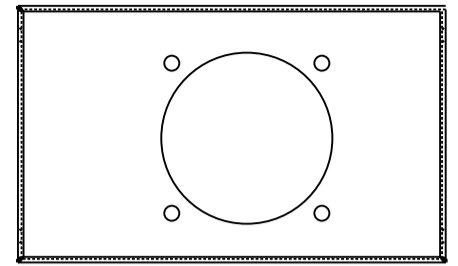
Genus EV Battery Charger

This manual contains important safety and operating instructions for standard Genus EV Charger. Please read this information in its entirety before using your Genus EV Battery Charger. For technical support, please contact the manufacturer of your battery, as their versions of this charger may require special instruction.

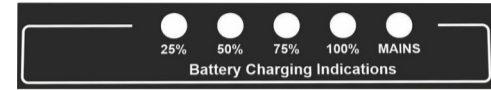
KNOWING YOUR CHARGER



FRONT



BACK



FRONT STICKER

1. WARNING

Use charger only to charge Li-ion batteries. Any other usage may cause injury or damage. Li-ion batteries may produce sparks, flames or smoke. Keep flammable materials away from the batteries and ensure adequate ventilation during charging. Follows all specific precautions provided by the battery manufactures (e.g.maximum charge rates and whether cell caps should be removed while charging)

2. DANGER

Risk of electric shock: Connect the charger power cord only to an outlet that has been properly installed and grounded in accordance with all local codes and ordinance. A ground outlet is mandatory to reduce risk of electric shock. Do not use ground adapters or modify the plug. Do not touch uninsulated portions of the output connector or battery terminals. Always disconnect the ac supply before making or breaking the connection to battery. Do not open or disassemble the charger. All servicing must be performed by the manufacturer or a qualified professional.

Safe Operation Precaution

Do not operate the charger if:

- AC supply cord is damage
- The charger has received a sharp blow, has been dropped or is damaged

Refer all repair work to the manufacturer or authorized service provider.

This charger is not intended for use by person (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction regarding safe use by a responsible person. Children must be supervised to ensure that they do not play with the charger. Do not expose the charger to water or spray while charging the battery

3. INSTALLATION AND SAFETY INSTRUCTIONS

The Genus EV battery charger has been designed to provide safe and reliable operation. To avoid damage to persons, the charger or the battery it is essential to observe the following precautions. Read the installation instructions in this manual carefully. Keep the manual in a safe place for further reference

- Ensure that all ventilation ports are not obstructed to prevent overheating. Do not place the battery charger near heat sources. Ensure sufficient free space around the charger for proper ventilation and an easy access to cable sockets
- Protect the charger from water ingress. Do not pour liquids inside the case.
- Verify that the available supply voltage matches the rating stated on the battery charger nameplate. In case of doubt, consult a retailer or local electricity authority.
- Do not place object on the power cord or route it where it may be stepped on. If the cord becomes damaged or frayed, replace it immediately.
- When using an extension cord or power strip, ensure that the total current drawn by all connected equipment does not exceed the extension's related capacity.
- Always disconnect the mains supply before connecting or disconnecting the battery
- Li-ion batteries may produce sparks, flames or smoke. Keep flammable materials away from the batteries and ensure adequate ventilation during charging
- Do not attempt to recharge non-rechargeable batteries
- Verify that the nominal voltage of the battery to be recharged corresponds to the voltage specified on the charger name plate.
- Do not attempt to service the charger yourself. Opening the cover may expose you to shocks or other hazards.
- If the charger dose not work properly or if the has been damaged unplug it immediately form the mains supply socket and battery and contact a retailer or authorized service center.

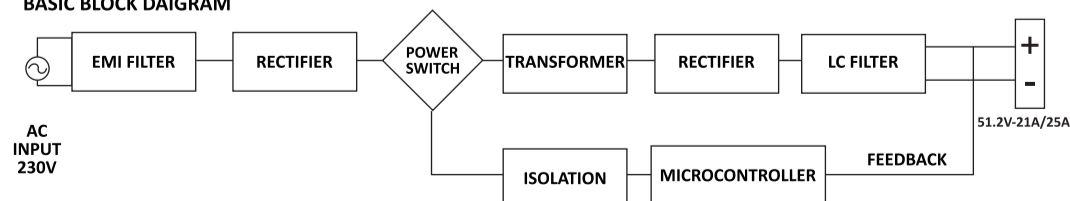
4. OPERATING PRINCIPLE

This SMPS charger designed to provide high performance at minimal cost and compact physical dimensions, using modern high-speed and powerful switching technology.

Key Advantages:

- High efficiency
- Quick charging
- Low power consumption
- Depth of Discharge (DOD)-based charging

BASIC BLOCK DAIGRAM



4.1 PRODUCT FEATURES



LED DISPLAY



INBUILT BATTERY REVIVAL MODE



OVER CHARGE & OVER VOLTAGE PROTECTION



DEEP DISCHARGE BATTERY WAKE-UP FROM 10V



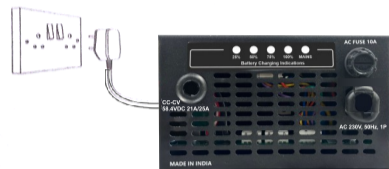
SMART CHARGING (As per Battery Capacity)

5 BATTERY CHARGING PROFILE

- Bulk Stage: The charger supplies a constant current of 21A/25A until battery voltage reaches 55.4V ± 0.5V.
- Absorption Stage: The charger maintain a constant voltage of 55.4V ± 0.5V and reached to 58.4V ± 0.5V. In this stage charging current gradually decreases from 21A/25A to 3A.
- Equalization Stage: The charger operates in constant voltage mode, maintaining 58.4 ± 0.5 VDC and current start to reduce current from 3A to 1A.

6 INSTALLING YOUR CHARGER

6.1 AC Input & Grounding: Connect the charger to a 16A wall socket with AC power supply and proper grounding. Ensure that the pins of any extension cord used are the same size and shape as those of the charger plug. Do not operate the charger with a damaged cord or plug.



This battery charger must be grounded to reduce the risk of electric shock. It is equipped with a power cord that has a grounding conductor and a ground-type plug.

AC Plug connect only to a 16 A Socket

The plug must be inserted into an appropriate outlet that is properly installed and grounded in accordance with local electrical codes. This charger is equipped with a grounding plug as illustrated in the figure above. If a proper grounded outlet is not available, contact a qualified electrician to ensure proper grounding.



When the charger's AC power cord is connected to the wall socket, the mains ON LED will illuminate including that the charger is connected to the power supply. The built-in reverse polarity protection ensures that neither the charger nor the battery will be damaged if connection are reversed.

6.2 DC Connection

Connect the charger output cable to Li-ion battery terminals. After securing the DC connection, plug the mains lead to the AC input socket (as shown in figure)

A. Before charger connection shown below figure



B. Appearance after charger connection shown in below figure.



7 INDICATION

1. EV Battery charger has
- A. LED Display

7.1 LED INDICATION

LED INDICATIONS - CHARGING

Status of Charge	LED 25%	LED 50%	LED 75%	LED 100%	GRID LED
<25%	BLINK	-	-	-	GLOW
25% CHARGED	GLOW	BLINK	-	-	GLOW
50% CHARGED	GLOW	GLOW	BLINK	-	GLOW
75% CHARGED	GLOW	GLOW	GLOW	BLINK	GLOW
100% CHARGED	GLOW	GLOW	GLOW	GLOW	GLOW

7.2

LED INDICATIONS - PROTECTIONS

LED Indications - Protections						
S. No.	Conditions	LED 25%	LED 50%	LED 75%	LED 100%	GRID LED
1	Over Charging Current	BLINK	OFF	OFF	BLINK	GLOW
2	Over Battery Voltage	BLINK	OFF	BLINK	OFF	GLOW
3	Short Circuit	OFF	BLINK	OFF	BLINK	GLOW
4	Reverse Battery	OFF	BLINK	OFF	BLINK	GLOW
5	Over Temperature	BLINK	BLINK	BLINK	BLINK	GLOW
6	Grid High/Low cut	OFF	OFF	OFF	OFF	BLINK

PROTECTION	REMEDY / RECTIFICATION
Battery Over Voltage	1. Disconnect charger from battery and remove grid Supply then re-install charger. If again same problem found then check your battery is OK or not. 2. Call authorized service engineer.
Battery Over Charging	1. Disconnect charger from battery and remove grid Supply then re-install charger. If again same problem found then call authorized service engineer.
Over Temperature	1. Check fan is running or not. 2. Place this charger in proper ventilated area and do not place it in high ambient. 3. Wait for some time, charging automatic start, If problem not resolved then call authorized service engineer.
Short Circuit/ Reverse Battery	1. Disconnect charger from battery and remove grid Supply then re-install charger. If again same problem found then call authorized service engineer.

8 PRODUCT SPECIFICATION

Specification	21A Charger Ratings	25A Charger Ratings
AC Input		
AC Input Nominal working range	90 V - 300VAC	90 V - 300VAC
Nominal Input Voltage	230 V ± 5VAC	230 V ± 5VAC
AC Input frequency Range	47 - 53 Hz	47 - 53 Hz
AC Input Low Cut Voltage	90 V ± 10VAC	90 V ± 10VAC
AC Input Low Voltage Recovery	100 V ± 10VAC	100 V ± 10VAC
AC Input High Cut Voltage	300 V ± 10VAC	300 V ± 10VAC
AC Input High Voltage Recovery	290 V ± 10VAC	290 V ± 10VAC
AC Input Current	Max 8A RMS	Max 8A RMS
DC Output		
Output load	Li-ion Battery (16S)	Li-ion Battery (16S)
Max. Charge Voltage	58.4 V ± 0.5VDC	58.4 V ± 0.5VDC
Battery Nominal Voltage	51.2VDC	51.2VDC
Battery Charging Current	21A ± 0.5ADC	25A ± 0.5ADC
Display and Alarm		
Display Indication	LED Indication	LED Indication
Alarm Indication	Buzzer	Buzzer
Battery charging status	25%, 50%, 75%, 100% LED Blink	25%, 50%, 75%, 100% LED Blink
Battery charged status	25%, 50%, 75%, 100% LED Glow	25%, 50%, 75%, 100% LED Glow
AC Input available	Mains OK LED Glow	Mains OK LED Glow
Protection and Alarm		
Output Over Load	Indication and Alarm	Indication and Alarm
Output Over Voltage	Indication and Alarm	Indication and Alarm
Over Temperature with Auto Recovery	Indication and Alarm	Indication and Alarm
Output Short Circuit	Indication and Alarm	Indication and Alarm
Output Reverse Battery	Indication and Alarm	Indication and Alarm
Input side Current Protection	AC Fuse 10A	AC Fuse 10A
Output side Current Protection	DC Fuse 30A	DC Fuse 40A
Input side Surge Protection	MOV	MOV
Mechanical		
Enclosure Type	IP 20	IP 20
Enclosure Dimensions L X W X H	(315.4 X 142.5 X 87.8 mm) ± 1 MM	(315.4 X 142.5 X 87.8 mm) ± 1 MM
Product Weight (without Packing Box)	3.5 Kg	3.5 Kg
Output Battery Cable	PVC Copper Wire 2C, 2.5Sqmm	PVC Copper Wire 2C, 4Sqmm
Input AC Cable	3 Core 1 sqmm Cable with molded Top 16A	3 Core 1 sqmm Cable with molded Top 16A
Battery Connector Type	2 Core Anderson connector SB50	2 Core Anderson connector SB50
Environmental		
Operating Temperature	0°C - 50°C	0°C - 50°C
Storage Temperature	-.10°C - 60°C	-.10°C - 60°C

*Note -
1. All Pictures shown are for illustration purpose only. Actual product may vary due to product enhancement.
2. Specification are subject to changed without prior notice



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