

POWERTECH

MB3934

12V/20A DC-DC Battery Charger



Instruction Manual

Please read and save all instructions to ensure safe and effective use of this product.

1 SAFETY PRECAUTIONS

⚠ WARNING! To avoid any personal injury, please read the safety instructions below.

- People with reduced physical, sensory or mental capabilities, or lack of experience and knowledge should not use this device. Children should be supervised to ensure they do not use this device.
- **Do NOT** disassemble or modify the device.
- **Do NOT** use the device when the damage is found.
- **Do NOT** expose it to fire, dust or high temperature environments.
- **NEVER** smoke or allow a spark or flame in vicinity of battery or engine. This may cause the battery to explode.
- **ENSURE** the correct connecting of DC input and output considering polarity. Disconnect the cable from the battery before installation or adjusting wiring. Failure to do so may result in a risk of electric shock, fire, or serious injury.
- This charger is only suitable for battery types including 12V Lead Acid, Gel, Calcium, AGM or LiFePO4. Do not use it for other purposes.

2 PRODUCT FUNCTIONS

Input/Output Leads

Control Panel

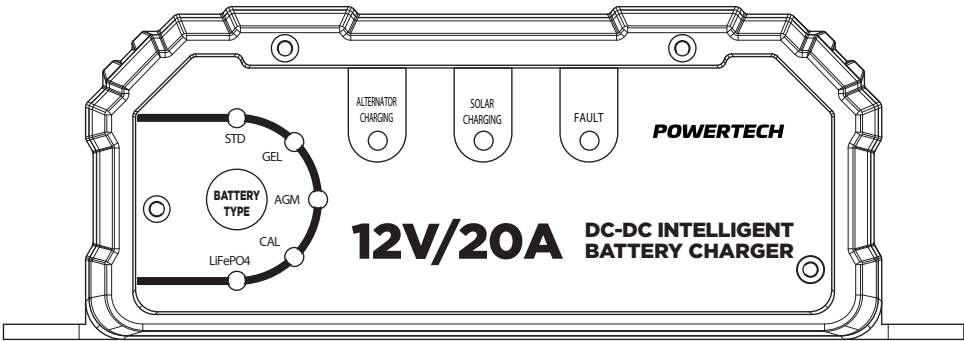
Mounting Brackets



Thank you for purchasing this DC-DC battery charger. It is ideal to keep your 12V dual battery system charged up for any outdoor or camping activities with premium quality and experience:

- One button control with smart charging.
- High efficiently to charge 12V auxiliary battery.
- Compatible with input of traditional or smart alternator.
- Compatible to charge LiFePO4 battery.
- Built-in MPPT solar controller with 94% up efficiency.
- Silicon potting on circuit board resistant to dust and water.
- Fanless design makes quite running, friendly for use at night.
- Compact shape with Anderson plug easy for installation.
- Comprehensive protections against Low-voltage, Over-voltage, Over-Temperature and reverse polarity.

2.1 Display Panel



2.2 LED Indicators

Charging LED Indicator

Input	Battery Type (Green)	Alternator Charging (Green)	Solar Charging (Green)	Fault (Red)	Charging Stage
Alternator	on	Quick Flash	on/off	off	Bulk or Absorption
	on	Slow Flash	on/off	off	Float
Solar	on	on/off	Quick Flash	off	Bulk or Absorption
	on	on/off	Slow Flash	off	Float

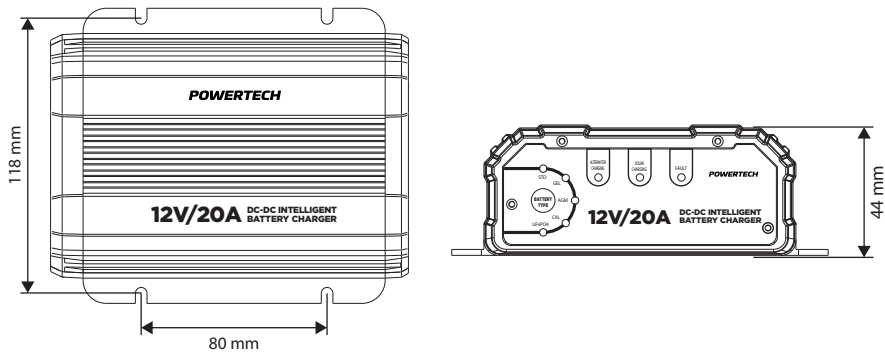
Fault Indicator

Battery Type (Green)	Alternator Charging (Green)	Solar Charging (Green)	Fault (Red)	Fault Status	Solutions
Quick Flash	Quick Flash	off	off	Under-voltage from alternator input or auxiliary battery	Check the specifications for the normal voltage of alternator, solar and auxiliary battery being accepted. Ensure the working voltage is within the range. Disconnect the input then connect again to restart the device.
Quick Flash	off	Quick Flash	off	Under-voltage from solar input or auxiliary battery	
Quick Flash	off	off	Quick Flash	Over-voltage from auxiliary battery	
off	Quick Flash	off	Quick Flash	Over-voltage from alternator input	
off	off	Quick Flash	Quick Flash	Over-voltage from solar input	
off	off	off	Quick Flash	Over-temperature	Cool down the device and relocate it to somewhere with better ventilation. After cooling restart the device.
off	off	off	Quick Flash	short-circuit from output	Check the circuit and change te cable if needed.

3 THE INSTALLATION

3. 1 Selection of Installation Location

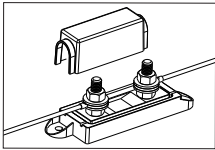
Accordig to the dimension, please find a suitable space and mount the charger with 4 screws (not included) into the mounting brackets. The DC-DC battery charger is able to be installed in a variety of locations including under-the-bonnet. If the charger is to be installed in the vehicle cabin, please ensure there is adequate ventilation around the charger. The charger should be also installed as close as possible to the auxiliary battery as this allows for more efficient charging.



3.2 Selection of Cables

The charger comes with the wire ended with Anderson Plug for diect connection. If it is not long enough for installation you can extend the wire, please check the below data with suggested cable size. Prioritise thicker and shorter wire lengths to enhance performance.

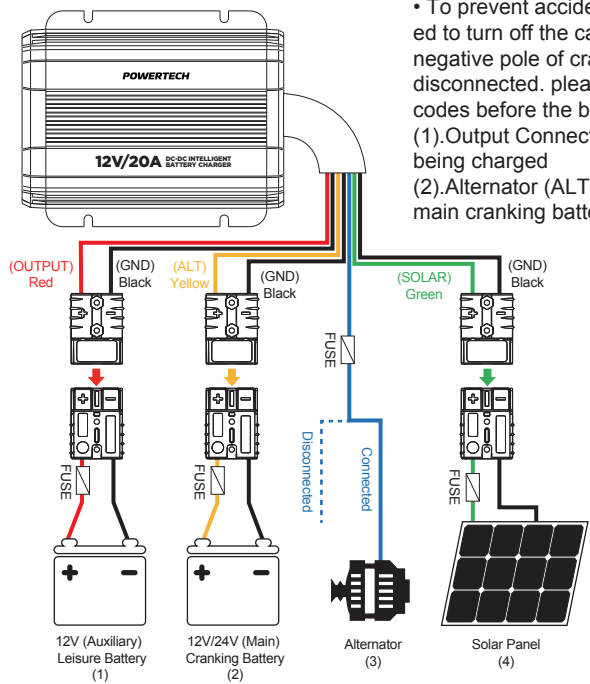
	<5m	<10m	Fuse
Cable to solar/alternator/ auxiliary battery/GND	10AWG	8AWG	40Amp
Cable of ignition	20AWG	20AWG	3Amp



Bolt Down Fuse

- Bolt Down Fuse is preferred for their quality of low resistance.
- Blade type fuses are not recommended because they can result in a high resistance connection that causes excessive heat and may damage the fuse holder or the wiring.
- Self-resetting circuit breakers are not recommended either, as they may trip prematurely due to the heat generated by current flowing through the wires.

3.3 Typical Setup



- To prevent accidental short circuit, it is recommended to turn off the car during the installation and negative pole of cranking battery should be disconnected. please note down any radio anti-theft codes before the battery is disconnected.
- (1).Output Connector: Connects to the auxiliary being charged
- (2).Alternator (ALT) input Connector: Connects to the main cranking battery

- (3).The ignition wire: If your vehicle has a smart alternator, the blue wire connects to a switched ignition source. This can be found from the fuse box, where a fuse tap can be used. If you have a standard alternator, just keep the ignition wire disconnected.
- (4). Connects to an unregulated solar panel.
- After completing the connection step, the DC-DC charger will start to work when the charging condition is valid. See the specification for more details

4 SPECIFICATION

	20A DC-DC CHARGER
Model:	MB3934
Input Voltage:	12-18Vdc (for Alternator)
	12-28Vdc (for Solar)
Input Current:	Max.20A
Rated Output:	12.5Vdc 20A
Output Power:	250W
Standby Current:	<10 mA
Conversion Efficiency:	>94%
Min. Charge Voltage:	4V (0V for LiFePO4)
Operation Temperature:	-20°C - +80°C
Compatible Battery :	12V Lead Acid, GEL, AGM, CAL & LiFePO4
Net Weight:	0.95 KG
Dimensions:	127*154*44 MM

Input Feature	Start Charging	Stop Charging
12V Standard Alternator (ignition not Wired)	>13.1V	>12.6V
12V Smart Alternator (ignition Wired)	>12.0V	>11.5V

Output Feature					
Charge Type	3-Stage				
Charge Mode	Lead Acid	GEL	AGM	CAL	LiFePO4
Bulk	20A @ 12.5Vdc				
Absorption	14.4V	14.1V	14.7V	15.3V	14.6V
Float	13.4V	13.5V	13.4V	13.6V	13.7V

WARRANTY INFORMATION

Our product is guaranteed to be free from manufacturing defects for a period of 12 Months.

If your product becomes defective during this period, Electus Distribution will repair, replace, or refund where a product is faulty; or not fit for intended purpose.

This warranty will not cover modified product; misuse or abuse of the product contrary to user instructions or packaging label; change of mind and normal wear and tear.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and failure does not amount to a major failure.

To claim warranty, please contact the place of purchase. You will need to show receipt or other proof of purchase. Additional information may be required to process your claim.

Any expenses relating to the return of your product to the store will normally have to be paid by you.

The benefits to the customer given by this warranty are in addition to other rights and remedies of the Australian Consumer Law in relation to the goods or services to which this warranty relates.

This warranty is provided by:

Electus Distribution

Address 46 Eastern Creek Drive, Eastern Creek NSW 2766

Ph. 1300 738 555