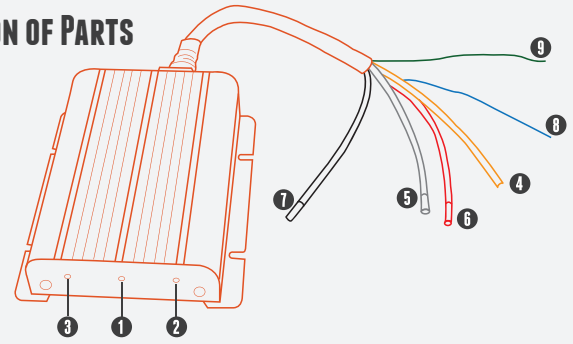
MiniBoostPro Install Guide

BMPRO's MiniBoostPRO is a compact Lithium DC-DC charger with solar input, specially designed for the RV market. The MiniBoostPRO battery charger offers effective charging of your caravan, 4WD or camper trailer's house battery from the towing vehicle's electrical system.

1. Description of Parts



1. Aux LED
2. Solar LED
3. Fault LED
4. Aux In: Connect to primary battery positive terminal.
5. Solar In: Connect to solar panel positive terminal.
6. Batt Out: Connect to charging battery positive terminal.
7. Common Negative: Connect to solar, primary and charging battery secondary negative terminals.
8. Ignition Detect: Connect to towing vehicle's ignition.
9. Batt Chemistry: To configure battery chemistry.

2. Additional Required Accessories

The following accessories (not supplied) are required to complete installation of the MiniBoostPRO:

2 x 40A Automotive Fuse
2 x 2A Automotive Fuse

3. Location

Install the MiniBoostPRO inside your caravan or camper trailer, preferably close to the house battery. To ensure optimal operation, install the MiniBoostPRO in a well-ventilated area with good airflow.

4. Mounting

Securely mount the MiniBoostPRO to a strong, flat surface. The MiniBoostPRO can be installed in any position.

To install the DC-DC charger:

1. Choose a strong, flat surface and securely mount the device on it.
2. Place the charger inside your caravan or camper trailer, near the house battery.
3. Note: Proper mounting and positioning of the charger is important for safe and optimal operation.

5. Cable Size

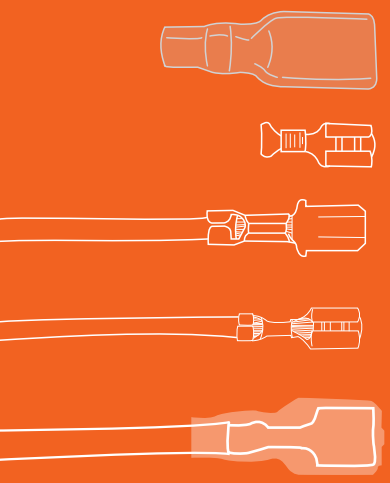
Cables should be sized to carry 30A.

CABLE	CABLE COLOUR	MINIMUM CABLE SIZE
Solar In	White	6.0mm2 or 10 AWG
Aux In	Orange	6.0mm2 or 10 AWG
Batt Out	Red	6.0mm2 or 10 AWG
Common Negative	Black	6.0mm2 or 10 AWG
Ignition	Blue	0.34mm2 or 22 AWG
Batt Chemistry	Green	0.34mm2 or 22 AWG

6. Wiring Considerations

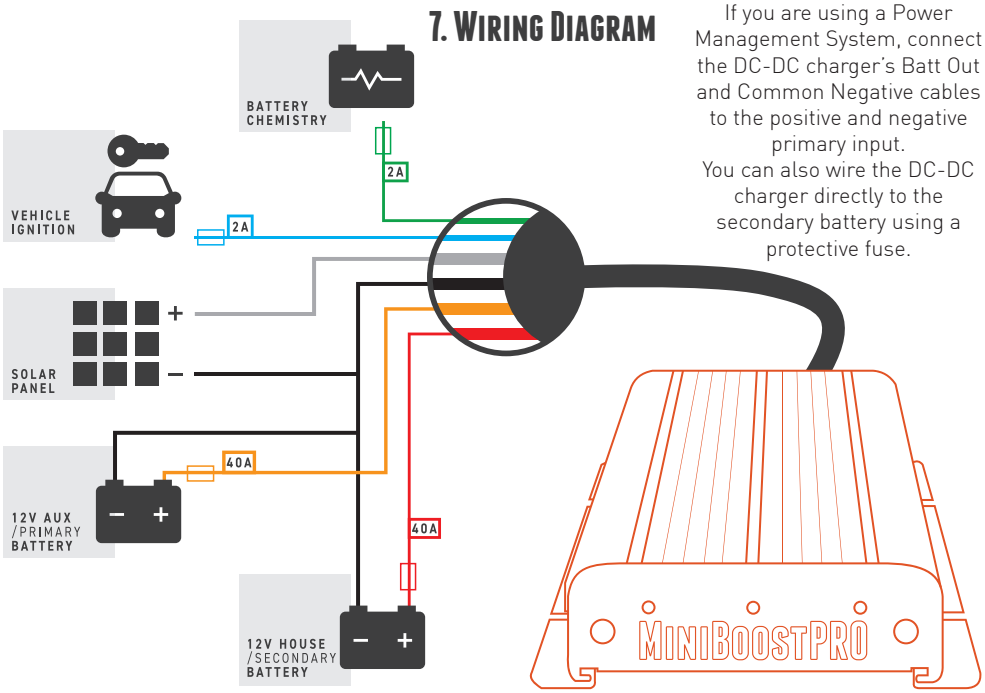
To ensure safe and reliable wiring:

- Crimp or solder wire connections.
- Use heat shrink to cover all wire connections and prevent exposed wires.



7. Wiring Diagram

If you are using a Power Management System, connect the DC-DC charger's Batt Out and Common Negative cables to the positive and negative primary input.
You can also wire the DC-DC charger directly to the secondary battery using a protective fuse.



8. Fusing

Fuse protection for the MiniBoostPRO is required on the primary positive terminals, battery positive terminals, battery chemistry selection cable and ignition detect cable.

It is recommended for the primary positive and battery positive terminals, a 40A automotive fuse is used, and for the battery chemistry and ignition detect cables, a 2A automotive fuse is used.

The fuses must be placed as close to the battery as possible to ensure optimal protection.

9. Ignition Detect

The MiniBoostPRO is equipped with an ignition detect cable, designed to detect when the vehicle alternator is turned on, and to help prevent your primary battery from experiencing excessive discharge.

The MiniBoostPRO will start charging the primary battery when the ignition is detected as on and the primary battery voltage is above 12V. If the ignition is off or the ignition wire is not installed, the MiniBoostPRO will start charging when the primary battery voltage is above 12.6V.

IGNITION	AUXILIARY VOLTAGE THRESHOLD
Off	12.6V
On (+12V)	12.0V

Do not connect the ignition cable to the battery positive terminal indefinitely when the MiniBoostPRO is not charging.

10. Battery Chemistry Selection

The MiniBoostPRO's green battery chemistry cable is used to select the battery chemistry. Setting the correct battery chemistry ensures that the appropriate voltage levels are set for charging.

BATTERY CHEMISTRY	BULK ABSORPTION VOLTAGE	BATTERY CHEMISTRY CABLE CONNECTION POINT
Gel	14.2V	Battery Negative Terminal
AGM/Wet	14.4V	Floating/Unconnected
LiFePO4	14.6V	Battery Positive Terminal

11. Charging LED Indicators

SOURCE	MODE	LED	DESCRIPTION
AUX	Charging		Solid green light
	Float		Flashing green light
SOLAR	Charging		Solid blue light, flashing green light, solid red light
	Float		Flashing blue light, flashing green light, solid red light
BLENDING	Solar & Aux Charging		Solid blue and green lights
	Float		Flashing blue and green light
NONE	Battery Good		Flashing green light every 5 seconds

12. Fault LED Indicators

FAULT	FLASHING SEQUENCE	SOLUTION
No source and secondary battery voltage <12.1V	Red Single Flash	Battery requires charging, connect the MiniBoostPRO to auxiliary and/or solar source to begin battery charging
Secondary battery voltage <8V	Red Flash x 2	Secondary battery is not connected or replace with a healthy battery with voltage between 8-14V
Secondary battery voltage >15V	Red Flash x3	Secondary battery is overcharged or not a 12V battery. Check power connections to MiniBoostPRO
Auxiliary input voltage >15V	Red Flash x 4	Check primary input source with suitable service provider
Solar input voltage >25V	Red Flash x 5	Check the solar panel's open circuit voltage is between 9 and 25V

Blending both solar and auxiliary inputs, the MiniBoostPRO provides a combined charging current of up to a maximum of 30A, with a preference to solar. It features proprietary technology designed to charge from modern car alternators. Moreover, it can be used with LiFePO4 batteries as well as with traditional lead acid batteries.

The MiniBoostPRO provides a multi stage charging profile.
It functions when wired directly to 12V batteries and enhances BMPRO's BatteryPlus35 and J35 battery management systems.
A range of protective features built into the MiniBoostPRO will guard your caravan or camper trailer's charging capacity.

This includes a 15 minute delay before charging when the MiniBoostPRO is wired to the AUX input of the BP35 and J35 battery management systems.

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