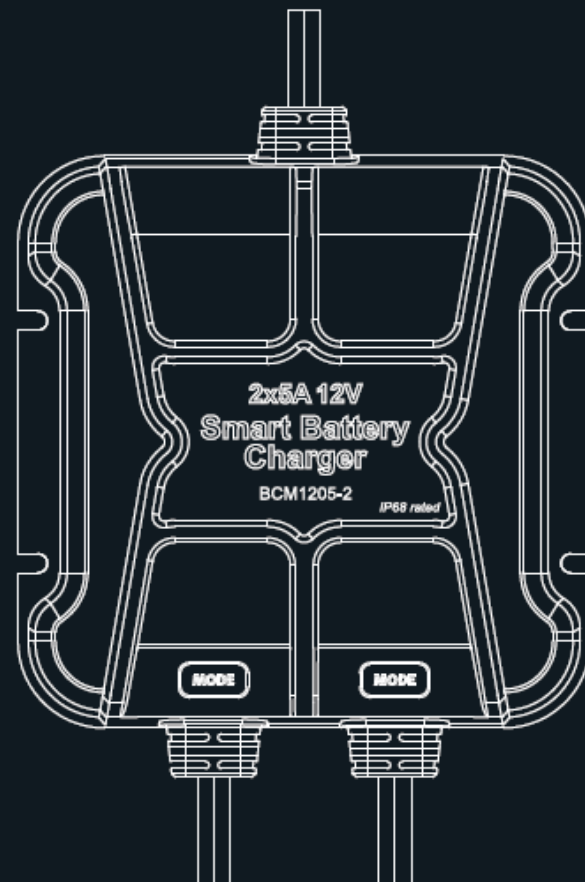
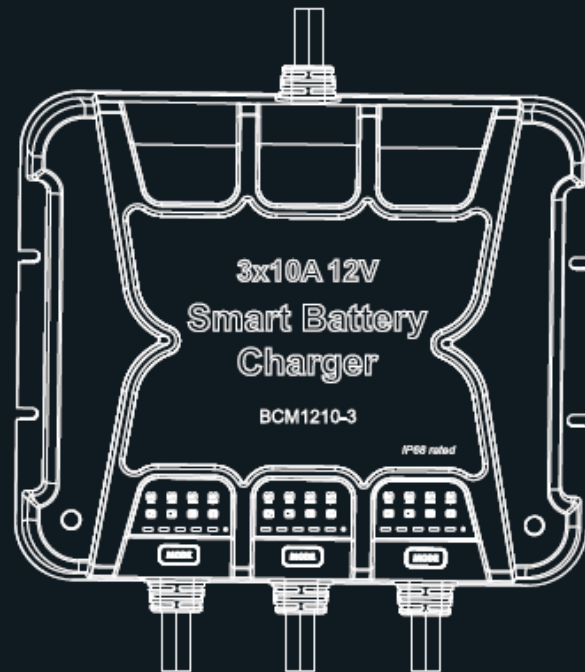


12V Smart Battery Charger



BCM1210-3

BCM1205-2

12V Smart Battery Charger

1. Important safety instructions



Danger



Please read and understand all safety information before using this product. Failure to follow these safety instructions could lead to electric shocks, explosions, and fires that may result in serious injury, death, or property damage.

- (1). Before using the charger, ensure that the battery's voltage and chemical composition are compatible with the charger. Charging modes (12V SLA MODE; 12V AGM MODE; 12V LITHIUM MODE) are designed for different types of batteries. Using the wrong charging mode can damage your battery and accessories. We are not responsible for any damage caused to, or by, or from the use of incompatible parts or components.
- (2). Precautions:
 - ①. When near the lead-acid battery during operation, consider asking someone nearby to help you.
 - a . Have plenty of fresh water and soap nearby in case of contact with the battery acid.
 - b . Wear complete eye and clothing protection.
 - c . Avoid touching your eyes after contact with the battery and related materials. If acid gets in your eyes, rinse with cold water for at least 10mins and seek immediate medical attention.
 - ②. Keep metal tools away from the battery. Metal objects may cause sparks or short circuit the battery, resulting in an electric shock, fire, or explosion.
 - ③. Consent for minors to use the product must be given by the purchasing adult, who must also provide correct instructions and safety warnings. The purchasing adult is responsible for any damage or loss resulting from failure to comply.
 - ④. Do not leave the product and accessories unattended and in the reach of children as this may pose a choking hazard.

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- ⑤. Do not use damaged products with cracked enclosures, damaged cables, damaged plugs or other dangerous damage.
- ⑥. When the charger is not in use, it can be safely placed in a humid cabin. Thanks to its IP68 waterproof rating, it is protected against water damage. However, before charging, it is crucial to check for any presence of water on the charger, plugs, battery, and the surrounding environment. If water is found, make sure to thoroughly dry these areas before initiating the charging process to prevent any risk of an electric shock.
- ⑦. When disconnecting the product from an AC power socket, always disconnect the plug instead of pulling the cable, to prevent electric shock.
- ⑧. The operating temperature range is -20°C to 40°C and the storage temperature range is -40°C to 60°C. Do not operate and store the product outside the temperature range. Comply with the temperature range for the battery too. Do not charge a frozen battery. If the battery overheats, stop using the product.
- ⑨. Clean the product only when all the cables are disconnected and the product is off. Do not disassemble or modify the product, to avoid electrical hazards, fire, or property damage. Any modifications to the product will void the warranty. If the product is damaged or unusable, please contact your supplier for assistance.
- ⑩. Position the product as far from the battery as the cable permits. Avoid placing the product directly on or above the charging battery, as battery gases can corrode and damage the charger. Ensure that battery acid does not drip onto the charger.
- ⑪. Do not handle this product in confined spaces or areas with limited ventilation.
- ⑫. Explosive Atmosphere: Do not operate the product in environments with potential explosive hazards, such as areas containing fuels, chemicals, or particulate matter like dust or

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metal powder.

- ⑬. Medical equipment: The product may emit electromagnetic fields, which may interfere with the heart pacemakers, defibrillators or other medical devices. Consult your doctor before using this product.

- ⑭. Radio frequency interference:

This product is designed, tested, and verified to comply with regulations governing RF emissions. However, such emissions may negatively impact the operation of other electronic equipment, potentially causing malfunctions.

Product design, test and find compliance with regulations governing RF emissions. Such emissions from the product may have a negative effect on the operation of other electronic equipment surface impact, causing them to malfunction.

FCC Statement: this device has been tested and found to conform to Class B requirements under Part 15 of the FCC Rules for digital devices. These regulations aim to provide reasonable protection against harmful interference in residential installations.

The device generates and uses radio frequency energy, which, if not installed and used as instructed, may cause harmful interference to radio communications.

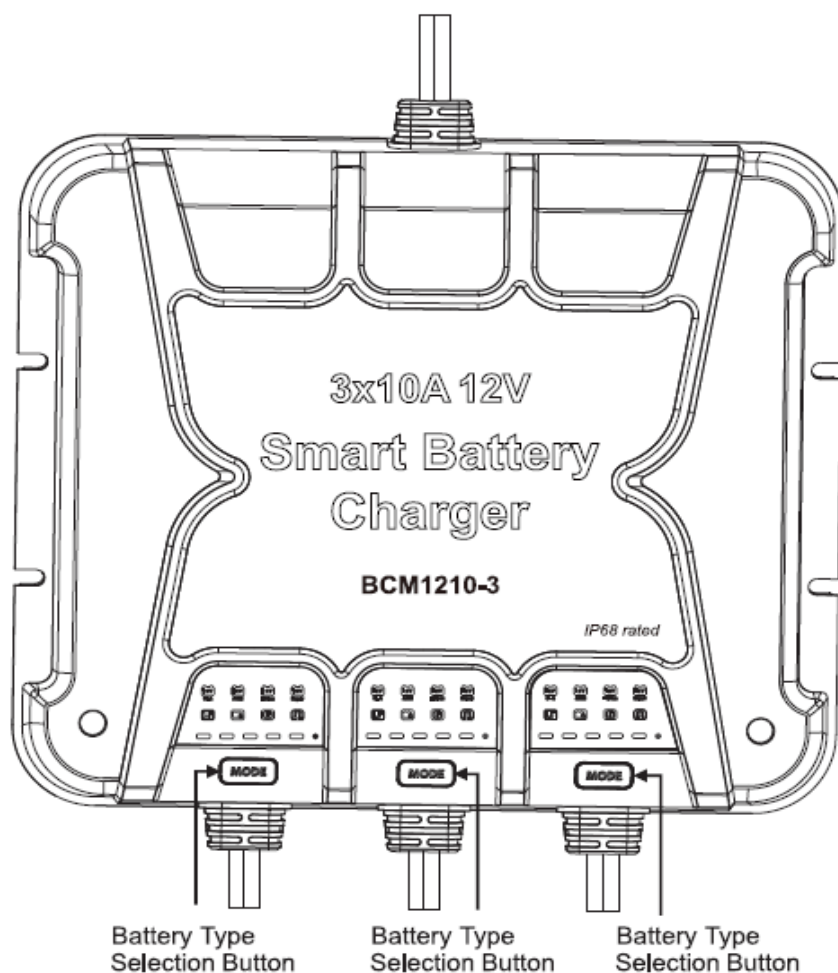
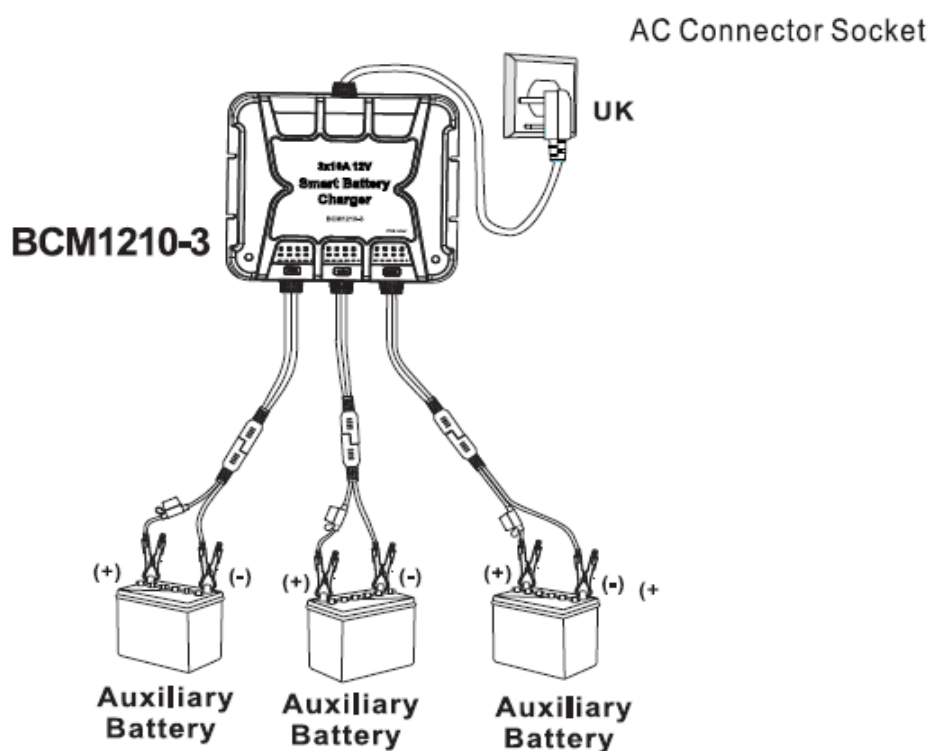
If the device causes interference with radio or television reception, which can be confirmed by turning the device off and on, users are encouraged to address the issue using one or more of the following methods:

- 1). Reorient or relocate the receiving antenna.
- 2). Increase the distance between the equipment and the receiver.
- 3). Connect the device to a different outlet on a separate circuit from the receiver.
- 4). Consult the dealer or a qualified technician for assistance.

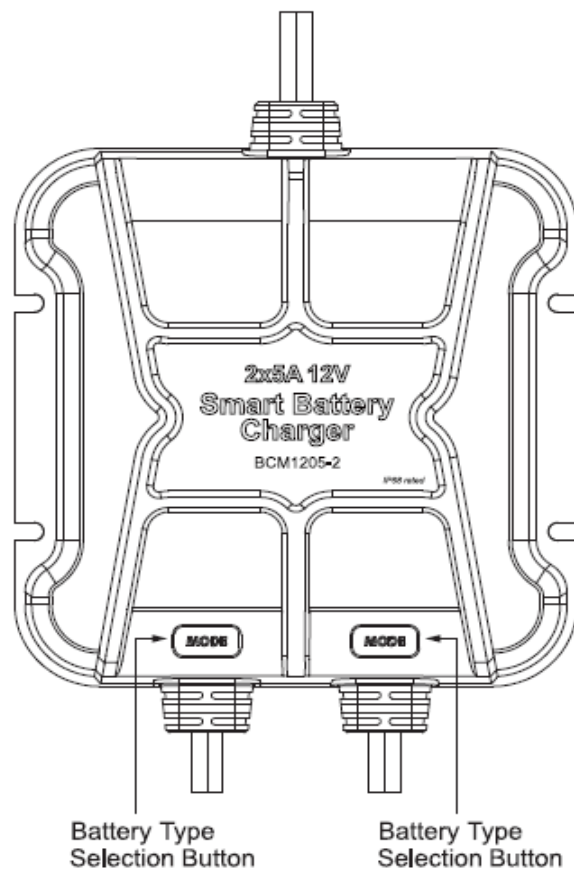
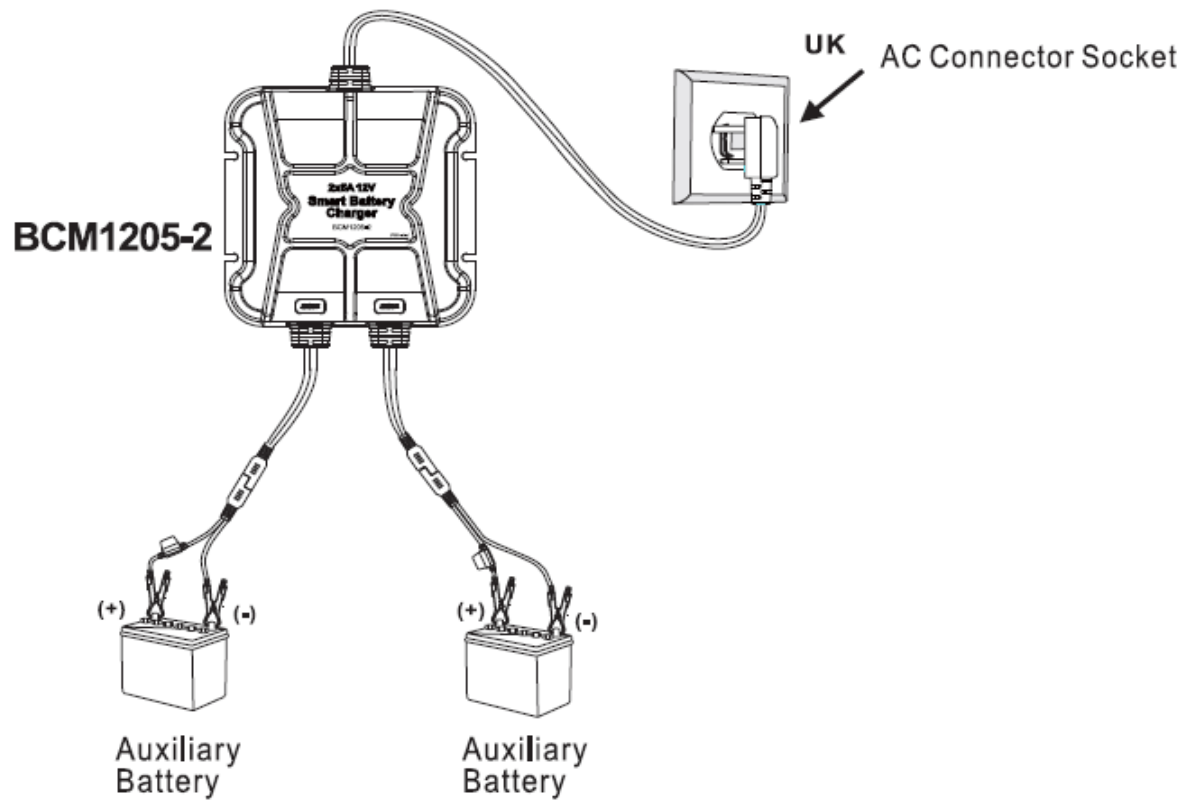
- ⑮. This product comes with a 1-year warranty.

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2. Product connections

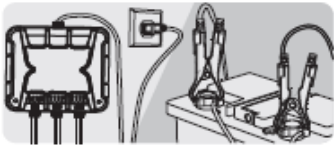
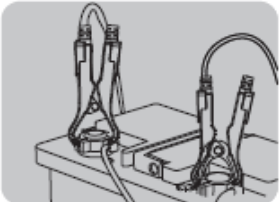




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3. How to connect?




Step 1:		Separate the battery clips cable from the charger using the DC connector between the charger and crocodile clips. Plug the AC power plug into the socket.
Step 2:		Attach battery clips to the battery: red (+) and black (-). Replace crocodile clips by ring terminals included in a separate bag if a permanent connection to the battery is required (recommended in case of vibration). Crimp ring terminals on the cable ends by a suitable crimping tool.
Step 3:		Select a suitable "MODE" for your battery: 12V SLA/AGM, 12V LITHIUM, 12V CALCIUM. When the charger is powered on, it returns to its last selected mode.
Step 4:		Connect the battery clips cable to charger via the DC connector.

TO PREVENT ELECTRIC SHOCK: If you want to stop charging, unplug the mains power plug from the AC socket before disconnecting the battery.


4. Power display

Icon	Description
	The five grid power display lights are respectively 20%, 40%, 60%, 80%, and 100% of the charge level.
	Power display (Red)





5. Panel display

Icon	Battery Type Selection	Description
	12V SLA	Used for 12V flooded, enhanced flooded, gel, sealed, maintenance-free batteries.
	12V AGM	Used for 12V AGM batteries.
	12V Lithium	Used for 12V lithium-ion batteries, including LiFePO4 (lithium iron phosphate) batteries. Only for batteries with battery management systems (BMS).

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	<p>12V Repair Mode</p>	<p>When the battery voltage is between 2V and 13.2V, the charger will perform 10 seconds of high-voltage and low-current charging to determine whether the battery needs repair.</p> <ul style="list-style-type: none"> - If the battery voltage is higher than 15V after 10 seconds, the battery will be repaired and charged, the repair indicator light will be on, and the power indicator light will be in a running state. - If the voltage is lower than 15V after 10 seconds, the battery will follow the normal charging program. <p>When the battery voltage is higher than 13.2V, it will be charged directly without repair judgment.</p> <p>The charger outputs high-voltage and low-current to repair and charge the battery. The battery voltage will slowly drop during the repair process.</p> <ul style="list-style-type: none"> - Repair failure: If the battery voltage is higher than 14V after 2 hours of repair, it is judged as a bad battery and the charger stops charging. (Please contact battery supplier) - Repair success: If the battery voltage drops below 14V within 2 hours, it means that the repair is successful and the charger automatically switches to the normal charging program. <p>*This function can repair slightly sulphated batteries.</p>
	<p>Force Mode/ Charge Dead Battery</p>	<p>When the battery voltage is lower than 2V or the lithium battery is in protection state, the charger needs to be set to force mode to charge the dead battery.</p> <p>This can be activated by pressing and holding the MODE button for 5 seconds.</p> <p>After the Power (Red) charging indicator flashes for 60 seconds, the activation is successful if the power indicator light is on, otherwise, it returns to the standby mode.</p>

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icon	Protection Mode	Description
	Over Voltage	<p>If the battery voltage is higher than 15V, the charger will not be able to operate and Over voltage light will turn on.</p> <p>Possible reasons:</p> <ol style="list-style-type: none"> 1) A wrong battery may be connected, such as a 24V one. Please change to a 12V battery. 2) If your battery is correct at 12V, but its voltage is higher than 15V, a repair mode will be turned on automatically.
	Bad Battery	<p>Possible reasons the "Bad battery" light could be on:</p> <ol style="list-style-type: none"> 1) A repair has failed. 2) 72-hour timer function. If the battery has not been fully charged within 72 hours, this icon will light up. Possible causes include: <ul style="list-style-type: none"> - The battery capacity is too large. - The battery is damaged and requires inspection by a professional.
	Over temperature	<p>When the internal temperature of the charger exceeds 85°C, the output current is automatically reduced. If the temperature rises above 100°C, the charger will stop supplying power, and the over temperature indicator will blink.</p>
	Reverse connection protection	<p>When the battery is connected to the charger with the incorrect polarity, the reverse connection indicator will blink. While this does not damage the charger or battery, charging will not occur. Please ensure the connections are correct.</p>

6. Charging time

Battery capacity (Ah)	Time (h)	
	From 0% to 80% charge	From 50% to 100% charge
15	3.3	2.3
30	6.6	4.5
50	11	7.5
80	17.6	12
120	26.4	18

Note: the above battery capacity data is for the BCM1205-2. For the BCM1210-3, multiply battery capacity values by 2.

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7. Specifications

Parameter	BCM1205-2	BCM1210-3
Input voltage	110-240V	
Input power	85W max	500W max
Frequency	50-60Hz	
Output voltage	12V	
Charger type	9 steps	
Output current	Total: 10A (two banks in total, one bank is 5A)	Total: 30A (three banks in total, one bank is 10A)
Battery type	SLA: Flooded, Enhanced Flooded (EFB), Gel, Sealed, Maintenance-Free (MF) and VRLA AGM LiFePO4 Calcium	
Recommend battery capacity	15-150Ah	30-300Ah
Charging time	4-40 hours	
Display mode	LED	
Battery repair function	Yes	
72 hours timer	Yes	
Force mode	Yes	
Operating temperature	-20°C to 40°C	
Storage temperature	-40°C to 60°C	
Humidity	5-95%	
Enclosure rating	IP68	
Protection functions	Reverse connection Over temperature Short circuit Full auto stop	