

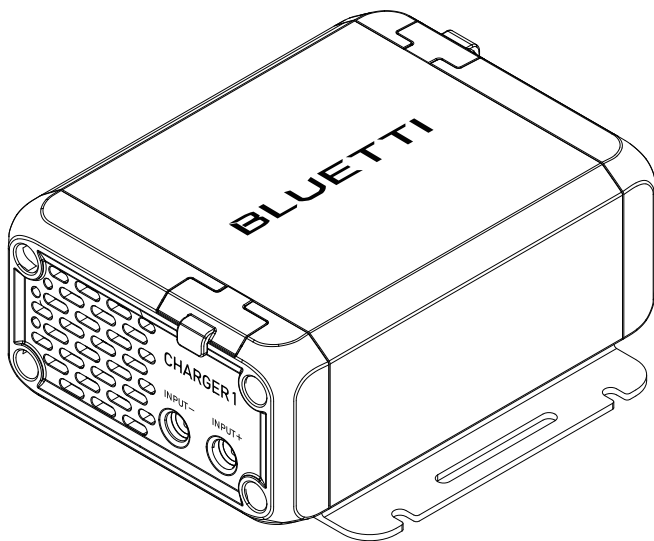
CHARGER 1

DC-DC Charger

User Manual v1.0

Please read this manual carefully before use and keep it for future reference.





Thank You!

Thank you for making BLUETTI a part of your family.

From the very beginning, BLUETTI has tried to stay true to a sustainable future through green energy storage solutions while delivering an exceptional eco-friendly experience for our homes and our world.

That's why BLUETTI makes its presence in 100+ countries and is trusted by millions of customers across the globe.



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Notice

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The contents of this manual are subject to change without notice. Please get the latest version from: <https://www.bluettipower.com/pages/user-guides>

If you have any questions or concerns about this manual, please contact BLUETTI support for further assistance.

About the Manual

Introduction

This manual provides information on the functionality, basic operation, and safety instructions of the CHARGER 1 DC-DC Charger (hereinafter referred to as CHARGER 1). Please read and understand all instructions in this manual before use.

Symbol Conventions

This manual uses the following symbols to highlight important information:

Symbol	Category	Description
	Danger / Attention	It indicates a hazardous situation which, if not avoided, could result in death or serious injury.
	Notice	It indicates a potentially hazardous situation which, if not avoided, could cause substantial damage to property and the environment.

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1. Safety Instructions

Read this manual for instructions on the proper use and safety information for the product. The safety instructions provided herein are for illustrative purposes that include but are not limited to those listed in this manual. Actual operation shall comply with all applicable safety standards. If you have any questions, feel free to contact BLUETTI support or your local BLUETTI dealers.

1.1 Statement

To ensure a safe operation, it's crucial to observe and adhere to the following:

- Always operate or store the product in the conditions specified in this manual.
- The ambient conditions must comply with the requirements in the relevant international, national, or regional standards.
- Avoid unauthorized disassembly, component replacement, or modification of software codes.
- Keep this manual carefully for future reference.
- Read all instructions and warnings on the CHARGER 1, car battery, and BLUETTI portable products, and their respective user manuals.
- Use a standard 12V or 24V car battery, or two 12V batteries connected in series.
- Make sure the product's output voltage falls within the portable power station's DC input voltage.

BLUETTI shall not be liable for the following circumstances:

- Damage resulting from force majeure events such as earthquakes, fires, storms, floods, or mudslides.
- Damage incurred during the customer's own transportation.
- Damage resulting from inadequate storage conditions as specified in the manual.
- Damage caused by customer negligence or improper operation.
- Damage caused by customer's intentional actions.
- Damage caused by misuse not in accordance with the instructions in this manual.

- Damage caused by third parties, including but not limited to improper shipping, usage, and installation not in accordance with the instructions in this manual.
- Damage or negative outcomes caused by adjustments, changes, or removal of labels in violation of this manual.
- Damage or negative outcomes resulting from using power sources not specified in this manual, or from using this product to power non-BLUETTI portable products.
- Incidents involving personal safety, fire, equipment malfunction, or any adverse aftermath, resulting from using this product with power-reliant equipment in critical sectors like atomic, energy, aviation, medical, and other domains where safety is paramount.

1.2 General Requirements

INSTRUCTIONS PERTAINING TO RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS IMPORTANT SAFETY INSTRUCTIONS

 **WARNING** - When using this product, basic precautions should always be followed, including the following:

- Always switch off the vehicle before starting any electrical work.
- Do not clean the product with water.
- Do not disassemble the product on your own.
- Keep the product away from heat resources and high temperatures.
- Do not use the product in an environment with fire, explosive gases, or smoke.
- Do not store the product with flammable liquids, gases, or explosive materials.
- Do not use the product in an environment with salty mist or high humidity.
- Do not insert foreign objects into any ports and vents of the product.
- Do not put fingers or hands into the product.
- Do not contact with any metal tools or objects while the product is in operation.
- Make sure the product is thoroughly dry before use.
- Use the product in a clear, clean, and well-ventilated area.

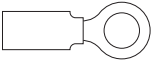
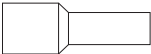
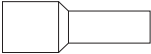
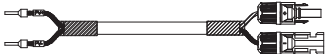
- Do not attempt to install the product or perform any other operations by anyone other than authorized personnel. If the replacement of components is necessary, seek assistance from qualified technical support personnel.
- Do not operate the product with a damaged cord, plug, or output cable.
- To reduce the risk of damage to the electric plug and cord, pull the plug rather than the cord when disconnecting the product.
- Switch off the circuit breaker immediately in case of malfunction.
- Regularly inspect the product and its accessories for damage or deterioration. If the product's shell is cracked, do not use it and contact BLUETTI support or your local BLUETTI dealers.
- Keep children, pets, bugs, and other animals out of reach of the product.
- This product is designed for use with IT/AV products only.
- Wear goggles and protective gloves when wiring and installing.

1.3 Operation Requirements

- Ensure all screws are securely tightened.
- Make sure to match the correct positive and negative terminals.
- Install the product before starting the vehicle.
- Connect input cables to the product first, then to car battery.
- Ensure the product is firmly installed before use.
- Follow the portable power station's user manual for usage and storage guidelines when powering it.

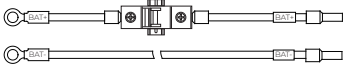
2. Packing List

Standard Accessories

Description	Image	Qty.
CHARGER1 DC-DC Charger		1
Hex Socket Screw		4
Self-tapping Screw		6
Hex Socket Wrench		1
OT Terminal		4
Tube Terminal (red, positive)		2
Tube Terminal (black, negative)		2
MC4 Output Cable		1
Product Documentation		1

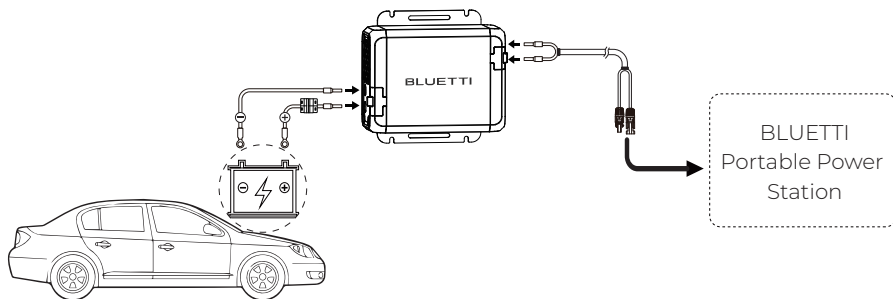
Optional Accessory

(Available on the official BLUETTI website: <https://www.bluettipower.com>)

Description	Image
DC Input Cables (5m, 6AWG, with a 60A circuit breaker)	

3. Product Introduction

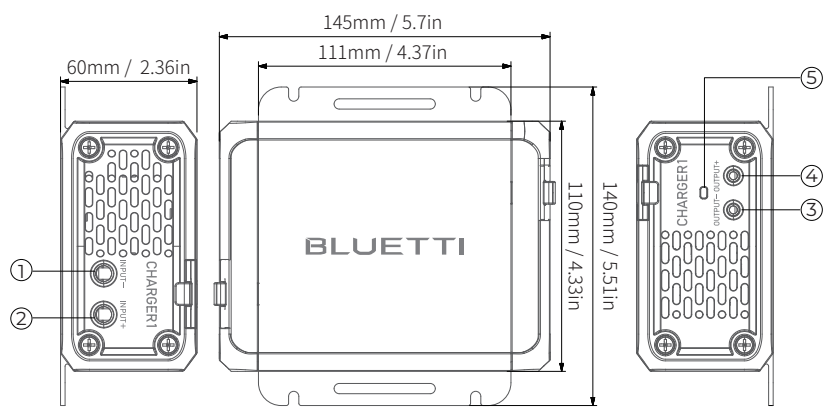
The CHARGER 1 is your go-to for fast charging BLUETTI portable power stations using extra power from your car's alternator. It fits perfectly in cars, SUVs, and RVs and can replenish your power station up to 5 times faster than regular car outlets thanks to its built-in booster module. Plus, it smartly detects your car battery's voltage to prevent drainage, so you'll never be left without power on your adventures.



⚠ Attention:

- Do not connect any ports of CHARGER 1 to AC outlets, and avoid connecting them to batteries exceeding 32V.
- Use BLUETTI's input cables or purchase compatible cables and a 60A circuit breaker.
- Install a 60A circuit breaker on the input cable for safety.

4. Product Overview



No.	Item	No.	Item
①	Negative Input	④	Positive Output
②	Positive Input	⑤	Status Indicator
③	Negative Output		

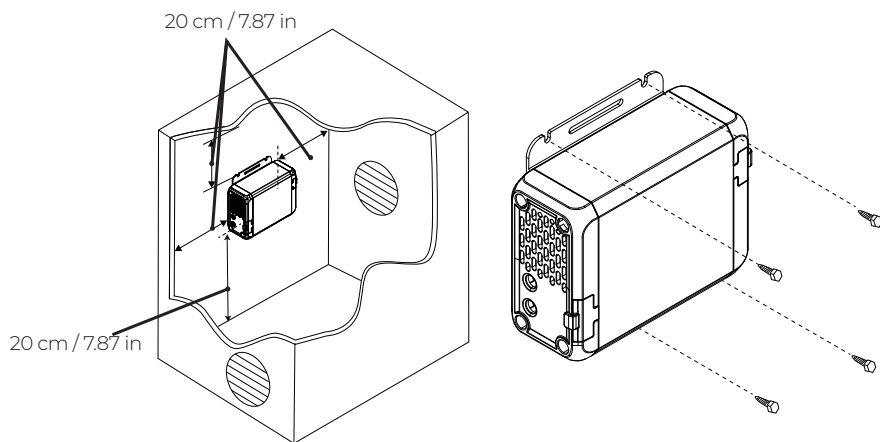
5. Mounting

5.1 Location Requirements

Place the CHARGER1 inside the vehicle's cabin or trunk near the portable power station. Choose a dry area free from other substances and not susceptible to high temperatures. Securely mount the CHARGER1 horizontally on a stable surface.

5.2 Mount the CHARGER 1

1. Select an appropriate location, leaving at least 20cm of clearance on all sides of CHARGER 1.
2. Secure the CHARGER 1 in place using 4 self-tapping screws.



6. Applications

6.1 Compatible BLUETTI Portable Power Stations

The CHARGER 1 is compatible with BLUETTI portable power stations that come with an XT60, DC7909, or aviation port.

Terminal	DC Input Voltage	Model
MC4-XT60	12V-28V	AC2A, AC2P, EB55, AC50B
MC4-XT60	12V-60V	AC70, AC70P, AC180T
MC4-DC7909	12V-28V	EB3A, AC60, AC60P
MC4-DC7909	12V-60V	AC180, AC180P
MC4-SP21-02PT Aviation	10V-150V	AC200MAX, AC200P, AC200L, AC200P L
MC4-SP21-04PT Aviation	12V-150V	AC300, AC500, EP500, EP500Pro
MC4-M25 Aviation	11V-60V	AC240, AC240P

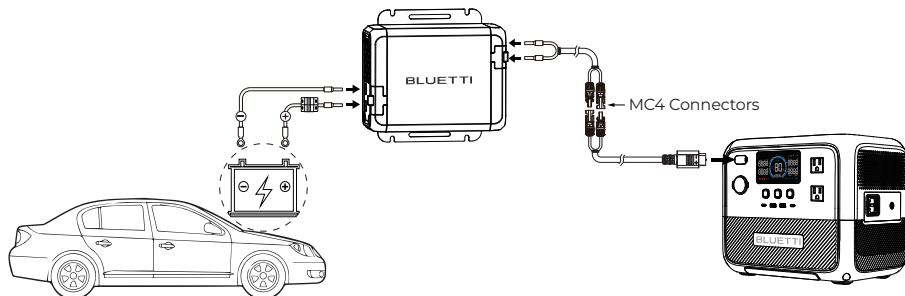
Note:

- For unlisted products, please contact BLUETTI support for assistance.
- If the ambient temperature exceeds 40°C (104°F), the product won't charge AC300, AC500, EP500, and EP500Pro. Keep it in a cooler place.
- When charging the AC300, AC500, EP500, or EP500Pro, set the DC 1/2 Input Source to "Others" on the unit's screen.

Attention:

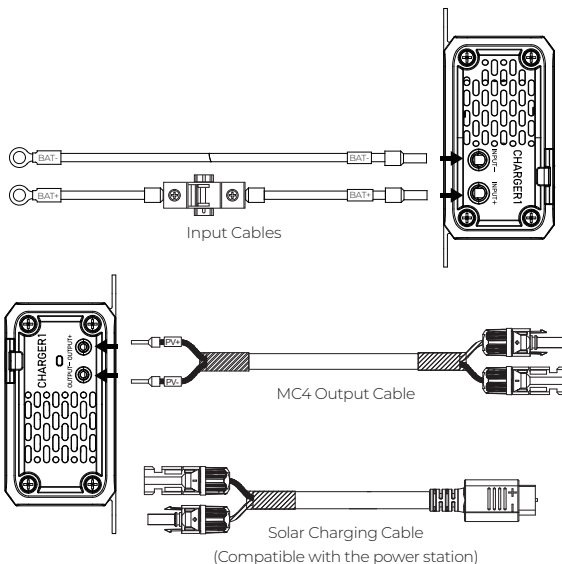
Make sure the CHARGER 1's output voltage falls within the power station's specifications.

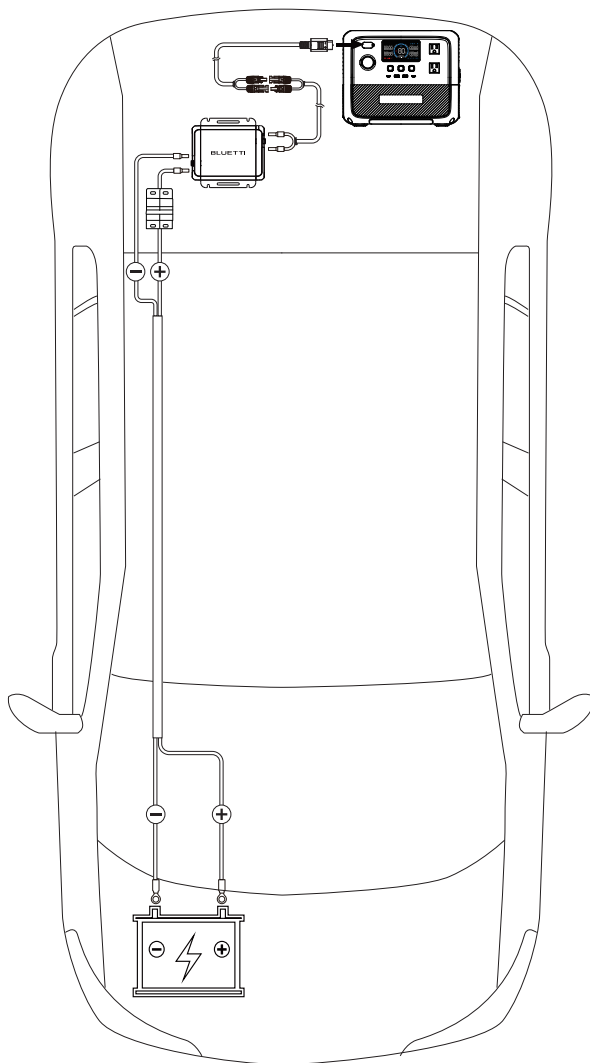
6.2 Wire up Your Charger



Preparation

- Make sure the vehicle is not started and its battery is in good condition.
- Make sure that the car battery and power station are compatible with CHARGER 1.
- Prepare a 2.5mm hex screwdriver and the necessary connection cables as shown below.





Wiring & Operations

1. Connect the red input cable (BAT+) to the positive input port of CHARGER 1, and the black input cable (BAT-) to the negative input.
2. Connect the red output cable (PV+) to the positive output of CHARGER 1, and the black output cable (PV-) to the negative output.
3. Connect the MC4 connectors from both the output cable and the solar charging cable.
4. Connect the red input cable's OT terminal to the positive terminal of the car battery, and the black input cable's OT terminal to the negative terminal.
5. Tighten all screws securely and turn on the circuit breaker.
6. Start the vehicle and wait for about 30 seconds. The status indicator flashes green rapidly, about 4 times per second. When the CHARGER 1 successfully starts up, it turns steady green.
7. Connect the solar charging cable to the power station for charging. The indicator flashes green once per second.
8. Use the app to adjust CHARGER 1's output voltage to match the power station's specifications.
9. You can check the charging status on the power station's display.
10. When charging is completed, the indicator turns steady green.

Note:

- When wiring, avoid high temperature, sharp edges, or friction spots, and secure cables tightly to prevent wear or loose connections.
- Deactivate CHARGER 1 by either turning off the vehicle or using the app before changing the cables.

7. Specifications

Model	CHARGER 1
Weight	Approx. 0.72kg / 1.587lbs
Dimensions (L × W × H)	145mm × 110mm × 60mm / 5.7in × 4.33in × 2.36in
Working Temperature	-20°C to 60°C / -4°F to 140°F
Working Humidity	10% to 90%
Storage Temperature	-20°C to 60°C / -4°F to 140°F
Storage Humidity	0% to 90%
Noise	50dB Max.
Working Altitude	<2,000m / 6,561ft
Protection Grade	IP20
DC Input	13.8V, 50A Max. (with alternator for 12V battery)
	27.6V, 25A Max. (with alternator for 24V battery)
DC Output	
Default Voltage	27V
Voltage Range (with alternator for 12V battery)	15.0V to 56.0V (adjustable via app)
Voltage Range (with alternator for 24V battery)	27.0V to 56.0V (adjustable via app)
Current	10A
Power	560W

8. Indicator Instructions

Status	Indicator
Battery voltage low	Flashing green once every 4 seconds
Starting up	Flashing green 4 times per second
Startup successful	Steady green
Charging	Flashing green once per second
Charging complete	Steady green
Input overvoltage	Steady red
Input overcurrent	Flashing red twice with a 1-second interval
Output short circuit	Flashing red 3 times with a 1-second interval
Output undervoltage	Flashing red 4 times with a 1-second interval
Output overvoltage	Flashing red 5 times with a 1-second interval
Overtemperature	Flashing red 6 times with a 1-second interval
Startup failed	Flashing red once with a 1-second interval
Output overload	Flashing red 7 times with a 1-second interval

9. Troubleshooting

Fault	Symptom	Reason	Solution
Output Short Circuit	Flashing red 3 times with a 1-second interval	The output has a short circuit.	1. Check the output ports for damage or foreign objects causing short circuits. 2. Check the output cables for any surface damage. 3. Check for a short circuit in the portable power station's DC input port.
Output Undervoltage	Flashing red 4 times with a 1-second interval	The output voltage is too low.	1. Check the output ports for damage or foreign objects causing short circuits. 2. Check the output cables for any surface damage. 3. Check for a short circuit in the portable power station's DC input port.
Overtemperature	Flashing red 6 times with a 1-second interval	The unit's temperature is too high.	1. Check for loose cables in all connections. 2. Check if the fan is not spinning or obstructed by foreign objects. 3. Make sure the air vents are clear. 4. Do not use and store CHARGER 1 in environments above 60°C (140°F).
Others	/	/	Please contact BLUETTI support for assistance.

Appx. 1 FAQ

Q1: Tips for maintaining the CHARGER 1:

- A:** To keep the CHARGER 1 in good condition:
- a. Regularly tighten the screws.
 - b. Keep it clean and dry.
 - c. Ensure proper ventilation.

Q2: Why should I start the vehicle before using CHARGER 1?

- A:** Starting the vehicle ensures the car's battery has enough voltage. This prevents draining the battery while charging, which could otherwise shorten the battery's lifespan.

Q3: Does CHARGER 1 affect fuel consumption?

- A:** CHARGER 1 efficiently utilizes the excess power from the car's alternator for the power station, minimizing fuel consumption.

Q4: Does CHARGER 1 have safety features?

- A:** Absolutely. CHARGER 1 comes with protections for reverse polarity, overcurrent, short circuit, overvoltage, and undervoltage.

Q5: Where should I place the CHARGER 1 in the car?

- A:** Place the CHARGER 1 inside the vehicle's cabin or trunk as the cooling fan may produce noise when starting up.

Q6: Can CHARGER 1 damage my power station?

- A:** No. Simply adjust CHARGER 1's output voltage via the app to meet your power station's specifications before connecting it.

Q7: Why can't I connect CHARGER 1 to the BLUETTI app via Bluetooth after turning off the engine for a while?

- A:** The CHARGER 1 is designed to automatically shut down 30 minutes after the engine is turned off.

Appx. 2 Abbreviations

- DC: Direct Current
- PV: Photovoltaic

Appx. 3 App Instructions

Scan the QR code below or search "BLUETTI" in the App Store or Google Play to download the BLUETTI app.



For details, please refer to *CHARGER 1 BLUETTI App User Manual*.

Appx. 4 FCC Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

To maintain compliance with FCC's RF Exposure guidelines, this equipment should be installed and operated with minimum distance between 20cm the radiator your body. Use only the supplied antenna.

Appx. 5 IC Warning statement

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

RF exposure statement(BT): The equipment complies with IC Radiation exposure limits set forth for uncontrolled environments. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) L' appareil ne doit pas produire de brouillage;
- (2) L' appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Déclaration d'exposition aux radiofréquences IC:(Con bluetooth)

Cet équipement est conforme aux limites d'exposition IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre le radiateur et le corps.

CAN ICES-003 (B) / NMB-003 (B)

This Class B digital apparatus complies with Canadian ICES-003.

(Cet appareil numérique de la Classe B conforme à la norme NMB-003 du Canada).

CHARGER 1

Chargeur CC-CC

Mode d'emploi v1.0

Veuillez lire attentivement ce manuel avant d'utiliser l'appareil,
puis conservez-le pour vous y référer ultérieurement.

