

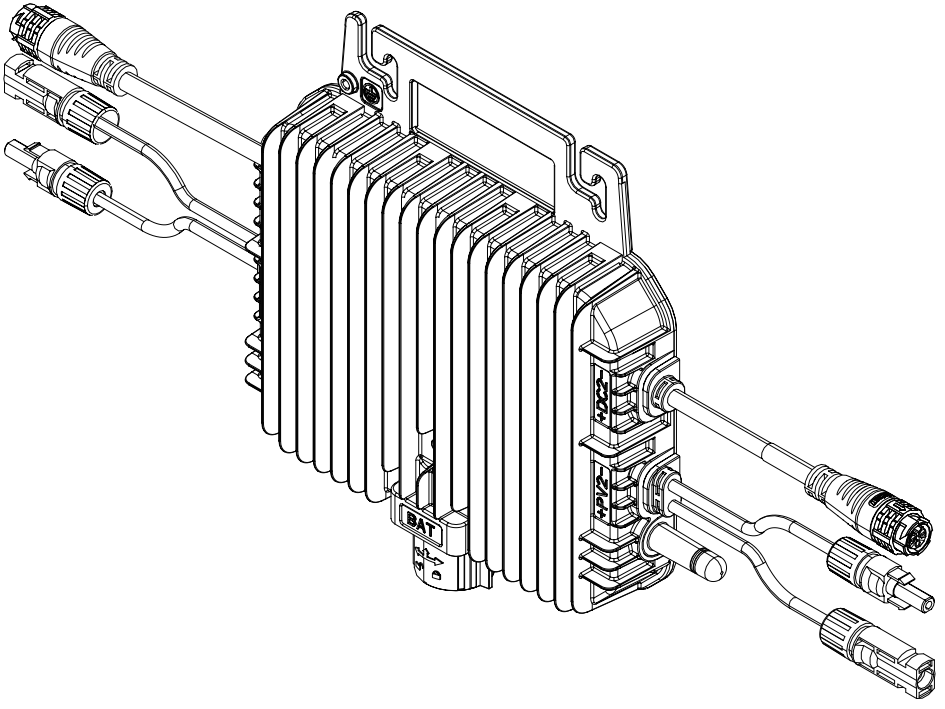
D100S

Solar Charge Controller

User Manual

Please read this manual before use and follow its guidance.
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.



Notice

BLUETTI's products, services, and features are subject to the agreed-upon terms and conditions during purchase. Please note that some products, services, or features described in this manual may not be available under your purchase contract. Unless otherwise specified in the contract, BLUETTI makes no representations or warranties of any kind, express or implied, with respect to the contents of this manual.

The contents of this manual are subject to change without notice. Please get the latest version from: <https://www.bluettipower.eu/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 safety instructions, functionality, and basic operation of the D100S solar charge controller. Please read and understand all instructions in this manual before use.

Target Audience

- Technical support engineer
- Qualified electrician
- End-user

Symbol Conventions

To ensure the safe installation and operation of the solar charge controller, and to reduce the risk of electric shock, this manual employs the following safety symbols to indicate hazards and precautions.

Symbol	Category	Description
	Danger / Warning / Attention	It indicates a hazardous situation which, if not avoided, could result in death or serious injury.
	Notice / Hint	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. General Requirements

1.1.1 Statement

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

- Always operate or store the unit in the conditions specified in this manual.
- Avoid unauthorized disassembly, component replacement, or modification of software codes.

⚠ *BLUETTI shall not be liable for damages resulting from the following circumstances:*

- Force majeure events such as earthquakes, fires, storms, floods, or mudslides.
- Damage caused by the customer's own transportation.
- Damage caused by customer's negligence, improper operation, or intentional actions.
- System or hardware damage caused by third parties or customers, including but not limited to improper handling and installation not in accordance with the instructions in this manual.
- Damage caused by adjustments, changes, or removal of labels in violation of this manual.
- Issues incurred after the warranty period has expired and in the absence of extended warranty service.

1.1.2 Safety Instructions

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

- Do not install, use and maintain the unit in adverse weather conditions such as lightning, rain, snow, and strong breezes (including but not limited to handling and operating the unit and cables, plugging and unplugging signal connections to outdoor facilities, working at height, outdoor installations, etc.).
- Always turn off the power source before starting any electrical work.
- Do not disassemble, modify, tamper with or repair the unit on your own.
- Regularly inspect the unit and its accessories for damage or deterioration.
- Use a tester to check for the presence of dangerous voltage before touching any conductor or terminal.

- If the unit's shell is cracked during transportation or use, do not use it and contact BLUETTI support or your local BLUETTI dealers.
- Use a dry powder extinguisher if the unit catches fire.
- In case of fire, EVACUATE the building or affected area immediately, activate the closest FIRE ALARM system and call your LOCAL EMERGENCY NUMBER.
- Use genuine cables and accessories provided by BLUETTI.
- Keep the unit away from heat sources or high temperatures, and do not expose it to direct sunlight.
- Do not store the unit with flammable liquids, gases, or explosive materials.
- Make sure the area where you are using the unit is well-ventilated and spacious.
- Contact BLUETTI support if this manual cannot adequately explain the malfunction to you.
- Do not block or cover the unit's vents, as this may lead to a reduction in its power generation capability.

Legal and Regulatory Requirements

- The transportation, wiring, and maintenance shall comply with all applicable laws, regulations, and standards.
- User-provided materials and tools required shall meet the requirements specified in applicable laws, regulations, and relevant standards.

1.2 Installation Requirements

- The installation and replacement should only be performed by qualified professionals.
- Before installing, disconnect the unit from the PV modules.
- Place the unit in a well-ventilated area and do not touch it, as the shell becomes hot and can reach temperatures of up to 80°C (176°F) during operation.
- Ensure that the environment meets the requirements specified in the "Specifications" section (protection class, temperature, altitude, etc.).
- In case of any damage to the power cable or the battery cable, contact professionals immediately for a replacement.

Danger

Avoid working with live electrical components.

1.2.1 Personnel Requirements

- The installation, electrical connection, commissioning, maintenance, troubleshooting, and replacement of the unit should only be performed by trained professionals who follow proper safety precautions and operating practices.
- To operate the BLUETTI unit, professionals must hold the appropriate qualifications and certifications mandated by local regulatory authorities. These certifications cover tasks such as high-voltage operations, working at heights, and specialized equipment handling.

1.2.2 Drilling Requirements

When drilling holes in the wall or on the ground, the following safety measures should be considered.

- Wear goggles and protective gloves at all times.
- Shield and protect the unit to prevent any debris from falling into it. After drilling, make sure to remove all debris from the surrounding area.
- Avoid drilling holes directly on the unit, as this can damage its electromagnetic shielding performance. Additionally, metal shavings from drilling can potentially cause short circuits on the circuit board.

1.3 Radio Interference Statement

This solar charge controller has been tested and complies with the limits set by CE RED, which are designed to provide reasonable protection against harmful interference in residential installations. This solar charge controller 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 solar charge controller 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.

1.4 Grounding Instructions

This product is classified as a Class I device and requires grounding. The device chassis is equipped with a grounding screw mounting point. Please determine the grounding method based on the actual installation scenario.

1.5 Symbol Descriptions

Symbol	Description
	<p>Recycling and disposal Electrical equipment that has reached the end of its service life must be collected separately and taken to an approved recycling facility. Disposed equipment must be returned to an authorized dealer or approved recycling company.</p>
	<p>Electric shock warning This unit generates high voltage during operation. The installation, commissioning, and maintenance should only be performed by qualified professionals or trained personnel.</p>
	<p>Warning Be careful. Hazards may occur during operation.</p>
	<p>Hot surface The unit becomes hot during operation. Do not touch its metal surface.</p>
	<p>CE mark This unit complies with the Low Voltage Directive for the European Union.</p>
	<p>Read instruction Please read the instruction carefully before installing, operating, and maintaining the unit.</p>

Warning

- The symbols on the box contain important information for safe operation.
- The nameplate on the back of the box contains important parameter information related to the unit.

2. D100S Solar Charge Controller

2.1 Introduction

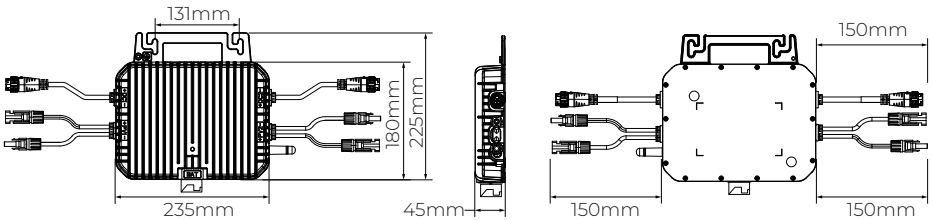
The D100S is specially designed for the balcony solar + storage system. It works together with PV modules, microinverters, and energy storage batteries (B210) to offer users a reliable energy storage solution. The system operates in three different modes:

Mode 1: Under conditions of ample and steady solar supply, the energy generated by the PV modules is stored in the B210 battery. Once the B210 is fully charged, any excess energy generated is seamlessly channeled to power your household appliances directly through the microinverter.

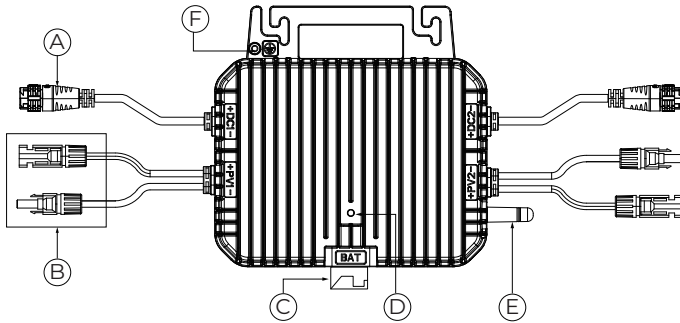
Mode 2: In conditions where there is no need for charging the B210, the solar energy harvested from the PV modules can seamlessly flow into your home's supply system.

Mode 3: In case of insufficient solar supply or during peak hours when electricity rates are higher, the energy stored in the B210 can be employed to ensure the functioning of your household appliances through the microinverter.

2.2 Dimensions



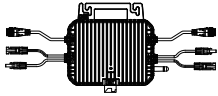
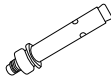

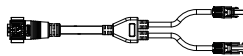
2.3 Terminals




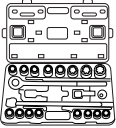


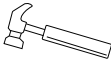


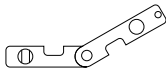
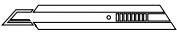
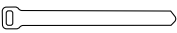


No.	Description
A	DC Output Connector (to the microinverter)
B	PV (Solar) Input Connector (to the PV module)
C	B210 Battery Connector
D	LED Indicator
E	WiFi / Bluetooth Antenna
F	Grounding




3. D100S Installation

3.1 Packing List

Description	Picture	Qty.
D100S Solar Charge Controller		1
M8*60 Expansion Bolt		2
M5*10 Grounding Screws		1
DC to MC4 Connection Cable		2

3.2 Required Tools

No.	Picture	Description
1		Impact Drill (with 10mm drill bit)
2		Socket Wrench Set
3		Torque Wrench
4		Cross Screwdriver
5		Hammer
6		Marker
7		Measuring Tape
8		Level Ruler
9		Box Cutter
10		Cable Tie
11		Anti-static Gloves
12		Protective Goggles

No.	Picture	Description
13		Mask
14		Safety-toe Shoes
15		Vacuum Cleaner

3.3 Space Requirements

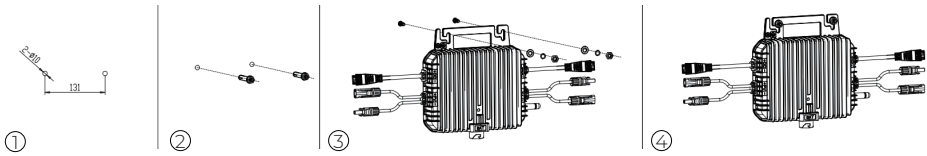
- When setting up the D100S, it's important to avoid direct exposure to elements like sunlight, rain, and snow.
- Leave at least 2 inches (5cm) of space around the D100S to allow for proper airflow and heat dissipation.

3.4 Installation Procedures

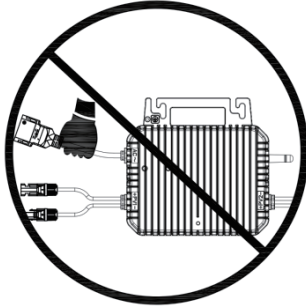
3.4.1 Mount the D100S

The D100S provides a range of mounting options to suit different needs, including walls, PV modules, module racks, and balcony railings. This manual presents an example of mounting the D100S on the wall.

1. Use an impact drill with a 10mm bit to create appropriate holes in the wall. Make sure the holes are at least 60mm deep.
2. Insert the M8*60 expansion bolts into the pre-drilled holes, then tap them in with a hammer until the ends of the bolts are level with the wall surface.
3. Remove the nuts and washers from the expansion bolts. Thread the mounting slot of the D100S through the bolts to temporarily secure it in place.
4. Use a tool like a socket wrench to firmly tighten the D100S in place using the nuts and washers.



⚠ Warning: When installing the microinverter, be sure to hold onto the cable connector rather than gripping or pulling the cable directly.

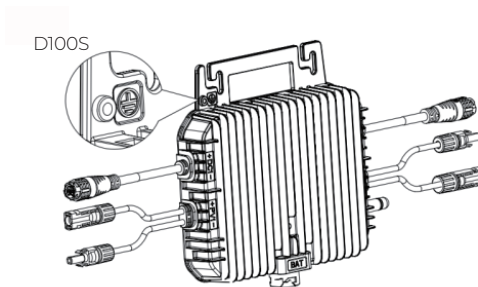


📖 Notice

Grounding: The D100S must be properly grounded. Please select the appropriate grounding method for specific installation conditions, using the provided M5 grounding screws:

- Connect the D100S grounding with the microinverter grounding.
- Alternatively, independently ground the D100S to the Earth.

The grounding position is shown below:



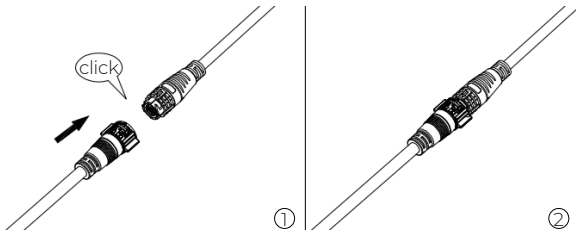
3.4.2 Mount the Microinverter

Please refer to Step 1 in Section 3.4.1 of the A60/A80/A100 Microinverter User Manual for details.

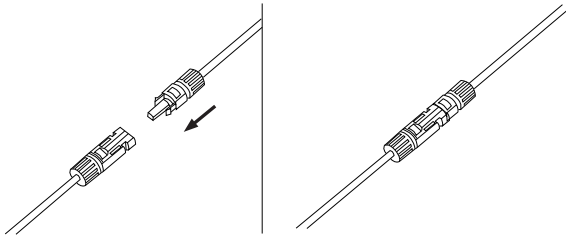
Notice: For an overview of the microinverter, please refer to Section 2 of the A60/A80/A100 Microinverter User Manual.

3.4.3 Connect the Microinverter

Use the DC to MC4 Connection Cable to connect the D100S and the microinverter. Align the two arrows on the DC connectors and firmly push them together. You'll hear a click when they're in place.

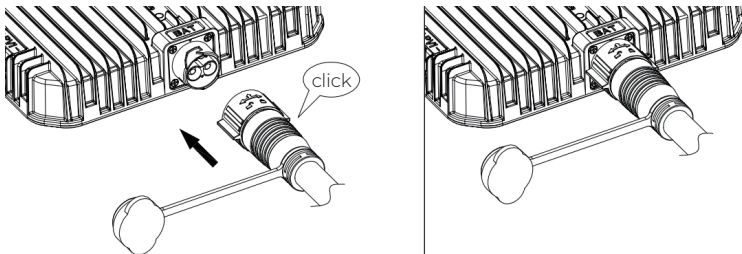


Join the MC4 connectors together. You'll hear a click when they're in place.



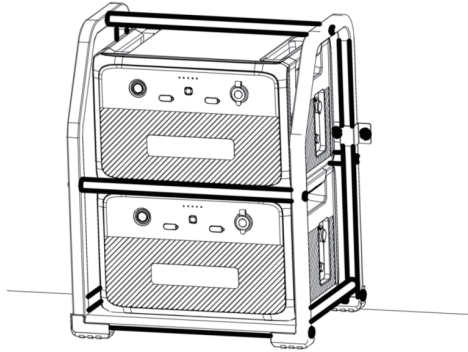
3.4.4 Connect the B210 Battery

Connect the B210 to the battery connector of the D100S using the battery expansion cable. You'll hear a click when they're in place.



Hint

- Do not expose the B210 to direct sunlight.
- Ensure that there is approximately 1.8 inches (45 mm) of clearance between the floor and the B210 rack, as shown in the figure below. Please consider the possibility of water accumulation on rainy days.



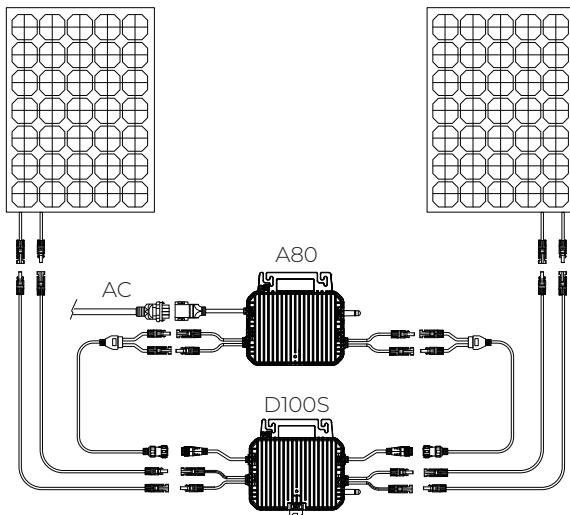
3.4.5 Connect the AC Cable

Please refer to Step 2 in Section 3.4.1 of the A60/A80/A100 Microinverter User Manual for details.

3.4.6 Connect the PV Modules

Join the MC4 connectors together to establish the connection between the PV modules and the D100S. You'll hear a click when they're in place.

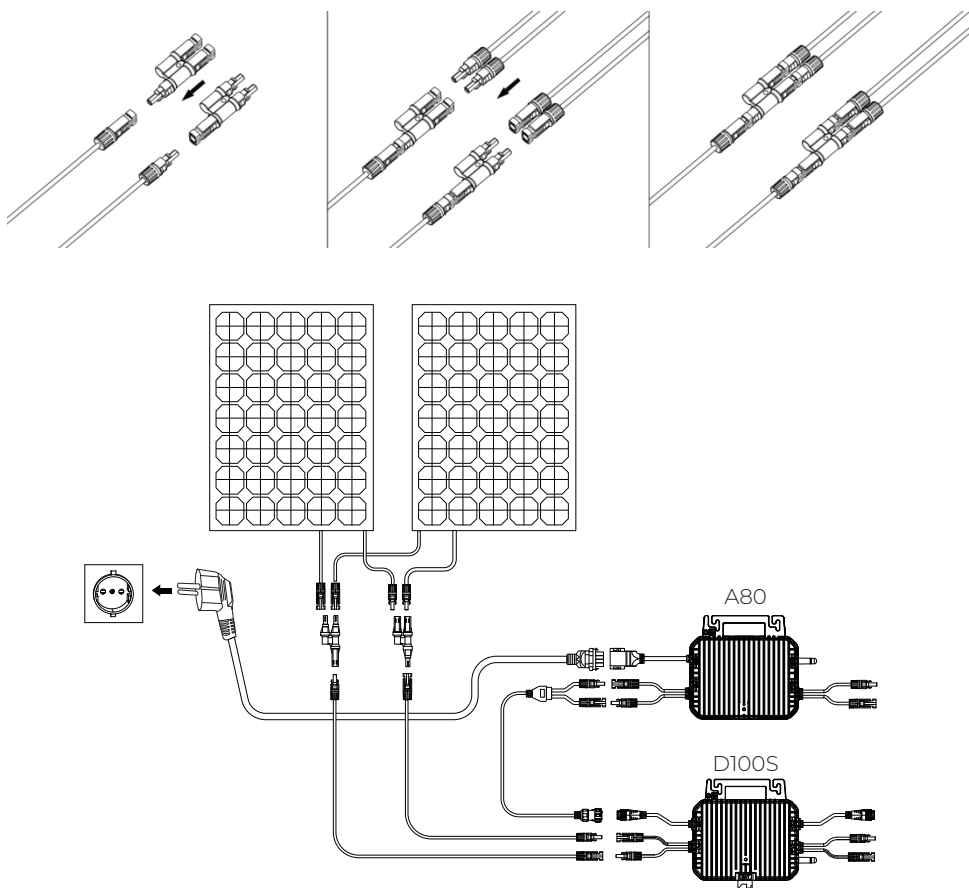
The arrow in the figure below illustrates the connection.



⚠ Warning: Ensure that the open circuit voltage of each PV modules meets the requirements of D100S's input voltage specified in the "Specifications" section, or it may damage your D100S.

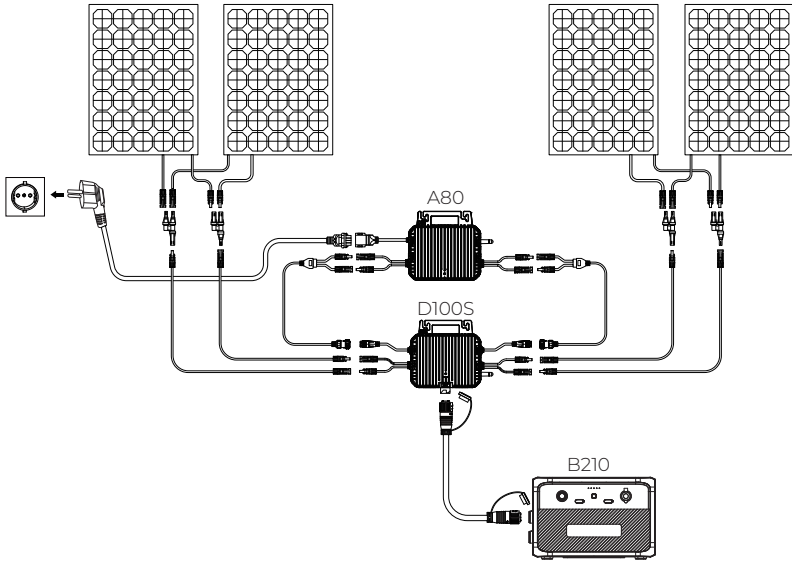
📖 Hint

- If the D100S is located far away from the PV modules, use the MC4 extension cables to connect them (red for positive and black for negative).
- When connecting two PV modules to a D100S, use the MC4 splitter, as shown in the figures below.



- If you need a longer MC4 cable, you can purchase it from the official BLUETTI website at: <https://www.bluettipower.eu>

The arrow in the figure below illustrates the connection.

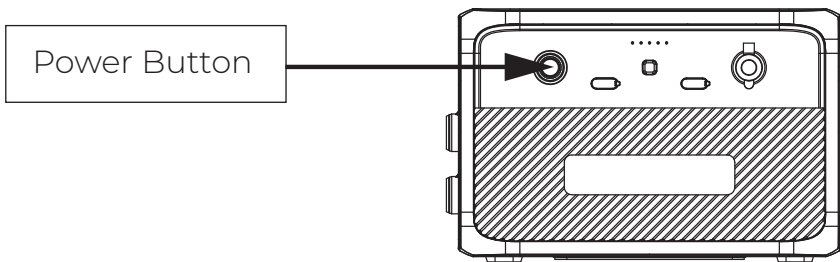


3.4.7 Integrate into the Home Supply System

Please refer to Step 4 in Section 3.4.1 of the A60/A80/A100 Microinverter User Manual for details.

3.5 Power On B210 Battery

Press and hold the B210s Power Button for more than 2 seconds to turn it on. The power indicator will then illuminate.



3.6 BLUETTI App

With the BLUETTI App, you can conveniently monitor the operation status of the D100S, configure its network settings, and review fault reports.

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



Supported operating systems: iOS 11.0 or above, Android 8.0 or above.

For detailed instructions on how to monitor and control the inverter through the app, please refer to the BLUETTI App User Manual.

4. Replacement & Disposal

4.1 Replace the D100S

Step 1: Disconnect D100S from other devices in order:

- 1.Unplug the entire system from the home grid.
- 2.Disconnect D100S from PV modules and B210 batteries.
- 3.Disconnect D100S from the microinverter.

Step 2: Remove the old D100S

Unscrew the bolts that secure the D100S and remove it.

Step 3: Install the new D100S

Refer to Section 3.4 for detailed instructions.

Step 4: Reconnect the system to the home grid and confirm its operation status.

Step 5: Update device information and configure the network in the BLUETTI App.

4.2 D100S Storage & Disposal

- Store the D100S in a cool and dry place, keeping it away from flammable or combustible materials and gases.
- The product can be safely stored within a temperature range of -40°F to 185°F (-40°C to 85°C).
- Before restarting a D100S that has not been used for a long time, be sure to thoroughly inspect the cables and the body of the unit. If any damage or deterioration is found, do not restart the unit and contact BLUETTI support for assistance.
- The modules and components within the D100S may cause environmental pollution. Please follow local regulations and guidelines for proper disposal when the D100S reaches the end of its life cycle.

5. Specifications

Model	D100S
DC Input	
Max. Input Power per MPPT	550W
Max. Input Voltage	60V
Start-up Voltage	16V to 20V
MPPT Voltage Range	18V to 55V
Number of MPPTs	2
Max. Input Current per MPPT	15A
Short-circuit Current per MPPT	20A

DC Output	
Power	1000W±100W
Voltage	58.8V
Current	18A
Efficiency and Protection	
Peak Efficiency	96.5%±1%
MPPT Efficiency	99%
Overvoltage Protection	Type II (PV)
Overtemperature Protection	176°F±1.8°F / 80°C±2°C
Mechanical Parameters	
Protection Class	IP67
Working Altitude	3000m (If the microinverter operates at altitudes above 3000m, it'll reduce its output power.)
Cooling Method	Natural Cooling
Dimensions (L × W × H)	9.25in × 8.86in × 1.85in / 235mm × 225mm × 47mm
Net Weight	6.6lbs±0.7lbs / 3.0kg±0.3kg
General Parameters	
Working Temperature	-40°F to 149°F / -40°C to 65°C (If the D100S operates at temperatures above 131°F / 55°C, it'll lower the output power.)
Storage Temperature	-40°F to 185°F / -40°C to 85°C
Working Humidity	0% to 100%
Storage Humidity	0% to 100%
Warranty	10 Years (For extended warranty, please refer to BLUETTI's Terms and Conditions.)
Others	
Signal Transmission	WiFi / Bluetooth
Nighttime Standby Power	< 300mW
Noise Level	< 40dB
Working Indicator	Yes
Error Indicator	Yes

For more information, please visit:



@BLUETTI Support

@BLUETTI Official



@bluetti_official



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P/N: T7Q3030647-00A0



BLUETTI

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Certificate

Inspector: _____

QC: _____

Just Power On