Smart Power Controller SAU100J0 Quick Installation Guide

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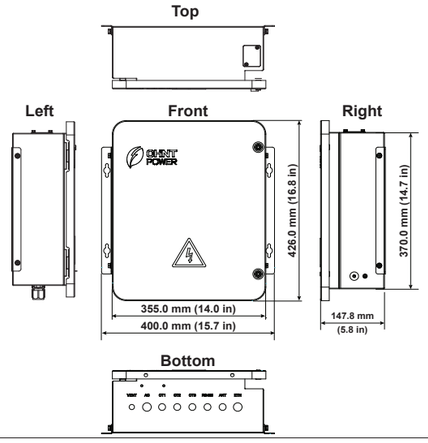
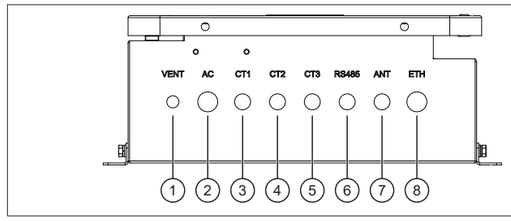
1. Product Overview

1.1 Appearance and Dimensions

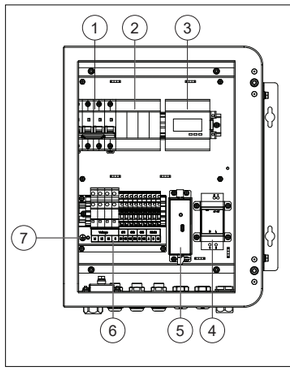


1.2 Bottom Connection Interface



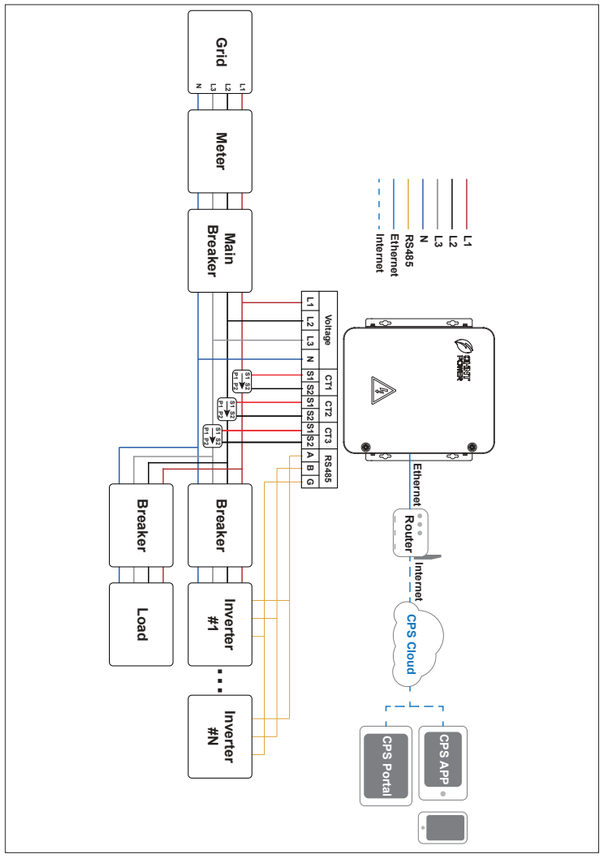
No.	Terminal	Usage
1	Vent	Balance pressure difference
2	AC	AC cable outlet
3	CT1	Current transformer cable outlet
4	CT2	
5	CT3	
6	RS485	RS485 cable outlet
7	ANT	Feeder line outlet for Bluetooth suction cup antenna
8	ETH	Ethernet cable outlet

1.3 Internal Structure



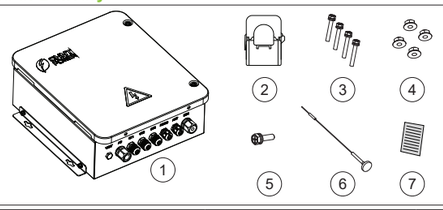
No.	Name
1	Miniature circuit breaker
2	AC surge protector device (SPD)
3	Electricity meter
4	Power supply module
5	Communication module
6	Terminal block (Interface Terminal Assembly)
7	Internal grounding point

1.4 System Diagram



2. Mechanical Installation

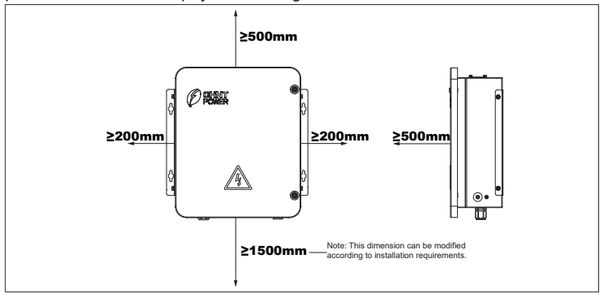
2.1 Scope of Delivery



No.	Name	Type	Quantity
1	Smart power controller	SAU100J0	1
2	Current transformer (CT)	NCTK-36 300A/5A	3
3	Combination screw	M6x42	4
4	Flange nut	M6	4
5	Combination screw	M5x12	1
6	Suction cup antenna	YE0016AA	1
7	Quick installation guide	N/A	1

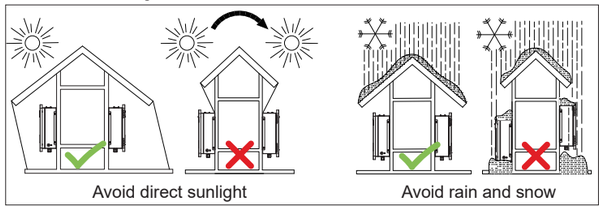
2.1 Recommended Clearances

During planning and installing the controller, appropriate clearances as indicated below shall be reserved to facilitate access, maintenance, and to prevent cable strain or physical damage.



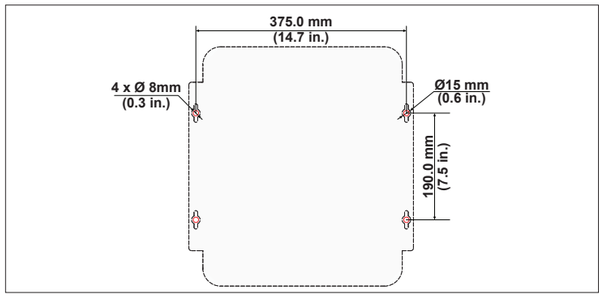
2.2 Installation Environment Requirements

It is recommended to install the controller under a shelter to avoid direct sunlight, rain and snow accumulation, to prevent from increasing controller failures or reducing its service life.



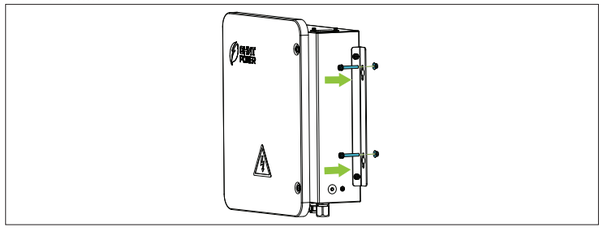
2.3 Installation Procedures

1. Use a marker to mark drilling points for four 8mm diameter holes on the support structure according to the mouting dimensions in the figure below.



2. Drill four holes at the marked positions. Tool: Electric drill with Ø8.0 mm drill bit.

3. Align the four mounting holes on the controller with the four holes on the support structure. Secure the controller using the M6x42 screws and M6 flange nuts, then tighten them firmly. Tool: 10 mm hex socket wrench. Torque: 8.3 - 10 N.m



3. Electrical Connection

DANGER Before wiring, switch off the miniature circuit breaker inside the controller and ensure that all upstream and downstream circuits connected to the controller are completely de-energized.

3.1 Recommended Tools and Torques

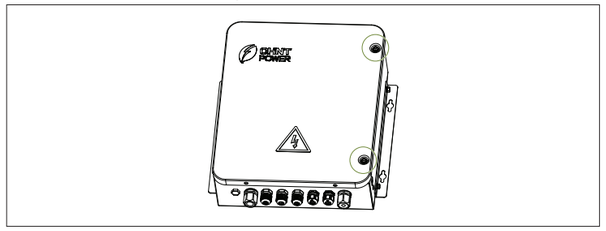
Tool	Usage	Torque Value
5mm hex socket wrench	Open front cover	N/A
	Secure front cover	3 N·m
PH2 Phillips screwdriver	Fix internal grounding terminal	1.6 N·m
	Fix AC terminal	1.3 N·m
No.10 socekt wrench	Fix external grounding terminal	5.9 N·m
#1 flathead screwdriver	Fix CT terminal	0.6 N·m
	Fix RS485 terminal	
Wire stripper, diagonal plier, and crimping plier	Cable preparation	N/A

3.2 Cable Specification

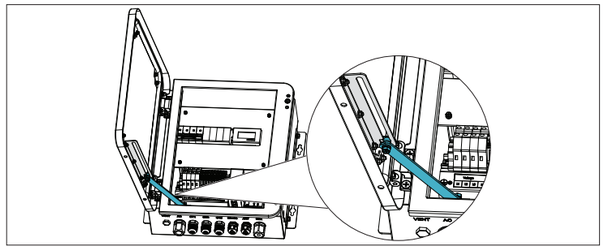
Cable	Type	Cable Outer Diameter	Cross-Sectional Area (CSA)
AC cable	Outdoor four-core copper wire	6mm-15mm	L1/L2/L3/N: 4mm²- 10 mm² PE: 1 mm²-6 mm²
	Outdoor single-core copper wire	4mm- 6mm	
Grounding cable	Outdoor copper-core wire	6.4mm-7.3mm	6 mm²-10mm²
RS485 cable	Double-layer insulated cable	4.5mm-6mm	3 x 0.2mm²-0.75mm²

3.3 Open Front Cover

1. Loosen the two screws to open the front cover.



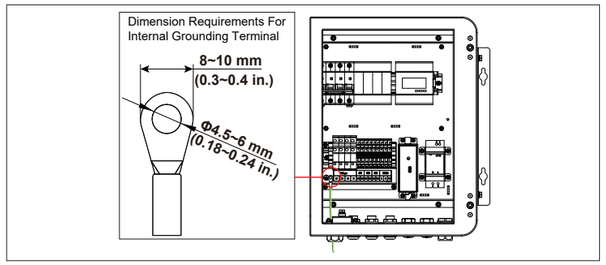
2. Use the support rod to hold the front cover, ensuring it is firmly snapped into the slot.



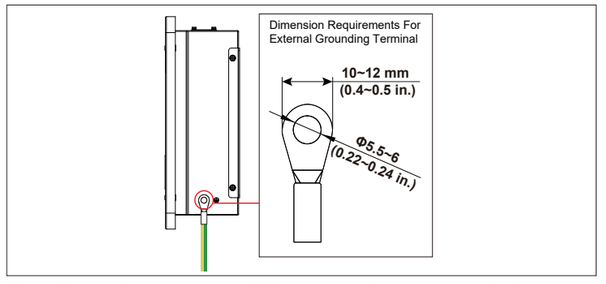
3.2 Grounding (Protection Earthing)

The grounding cable must be connected using at least one of the following methods:

- Internal Grounding: Connect grounding cable to the grounding hole located at the lower-left inside the controller using the pre-installed M4x10 screw.



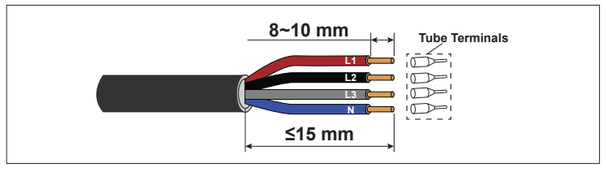
- External Grounding: Connect grounding cable to the grounding hole is located in the lower-right corner outside the controller using the M5x12 screw.



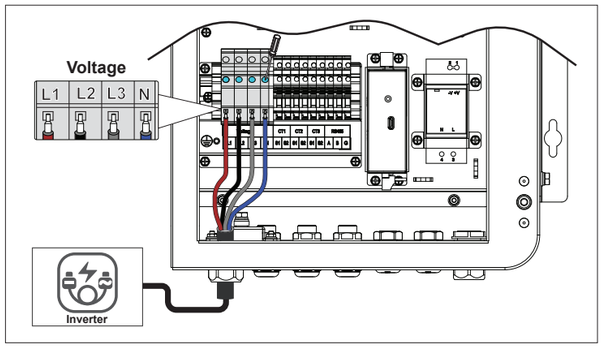
Note: After wiring, the external PE point needs to be coated with glue or paint. Other sizes of grounding cables that meet local standards and safety regulations can also be used for grounding connections. But CHINT shall not be liable for any damage caused.

3.3 AC Cable Wiring

1. Strip the jacket and insulation layer of the AC cable to the appropriate length, exposing the conductors. Insert the conductors into the tube terminals until contacting the terminal's barrel end, align the cable insulation edge with the terminal's crimping wings, then crimp firmly to secure the connection.
Note: The tube terminals are customer-supplied, compatible model is E6010.

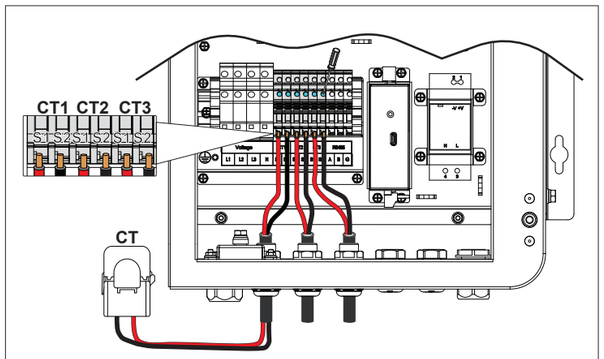


2. Loosen the locking nut of AC cable gland, and thread the crimped AC cable through the AC outlet. Insert the phase lines (L1/L2/L3) and neutral line (N) into the corresponding terminals. Tighten the terminal screws. Finally, re-tighten the gland nut.



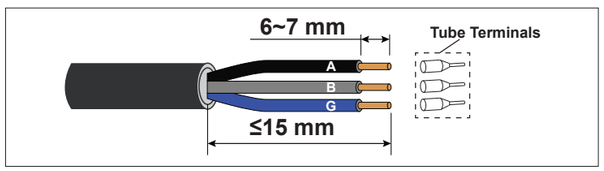
3.4 CT Cable Wiring

Loosen the locking nuts of CT cable gland, and thread the pre-crimped CT cable through the CT outlet. Insert the CT wires into the corresponding terminals. Tighten the terminal screws. Finally, re-tighten the gland nuts.

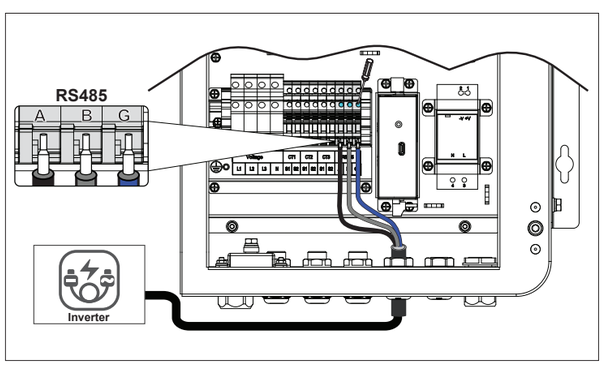


3.5 RS485 Cable Wiring

1. Strip the jacket and insulation layer of the RS485 cable to the appropriate length, exposing the conductors. Insert the conductors into the tube terminals until contacting the terminal's barrel end, align the cable insulation edge with the terminal's crimping wings, then crimp firmly to secure the connection.
Note: The tube terminals are customer-supplied, compatible models are E0206~E0506.

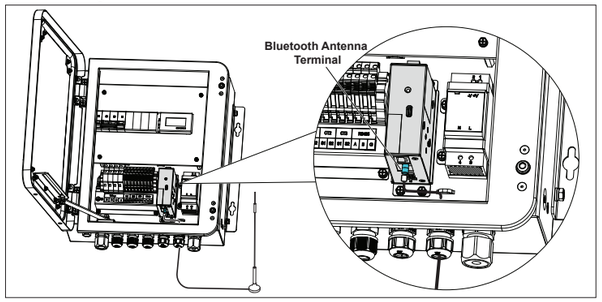


2. Loosen the locking nut of RS485, and thread the crimped RS485 cable through the RS485 cable outlet. Insert the RS485 wires into the corresponding terminals and tighten the terminal screws. Finally, re-tighten the gland nuts.

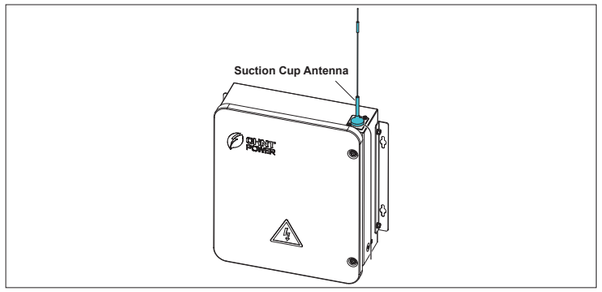


3.6 Install Suction Cup Antenna

The communication module inside the controller supports both wired (via Ethernet cable) and wireless (Bluetooth) communication.
To enable Bluetooth operation:
1. Thread the Bluetooth cable through the ANT hole, then use hand to secure the mounting nut to the module's Bluetooth antenna terminal.



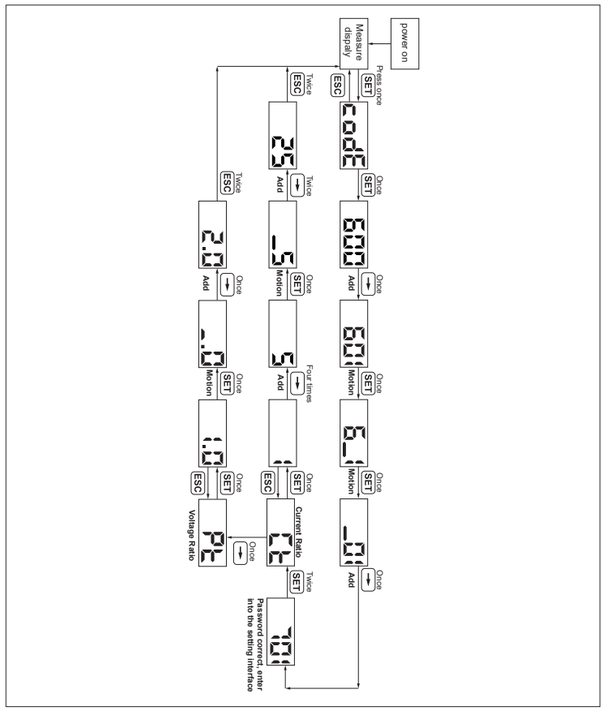
2. Attach the antenna's magnetic base to the surface on the controller top.



After completing all wiring steps, secure the front cover by tightening all screws to prevent water ingress. Ensure that all waterproof terminals are firmly fastened, and seal any gaps at the bottom of the terminals with firestop putty.

4.Meter Ratio Setting

The default password for the electricity meter is 701.
Set the current ratio according to the connected CT specifications and configure the voltage ratio as 1.0 (i.e., 1:1)



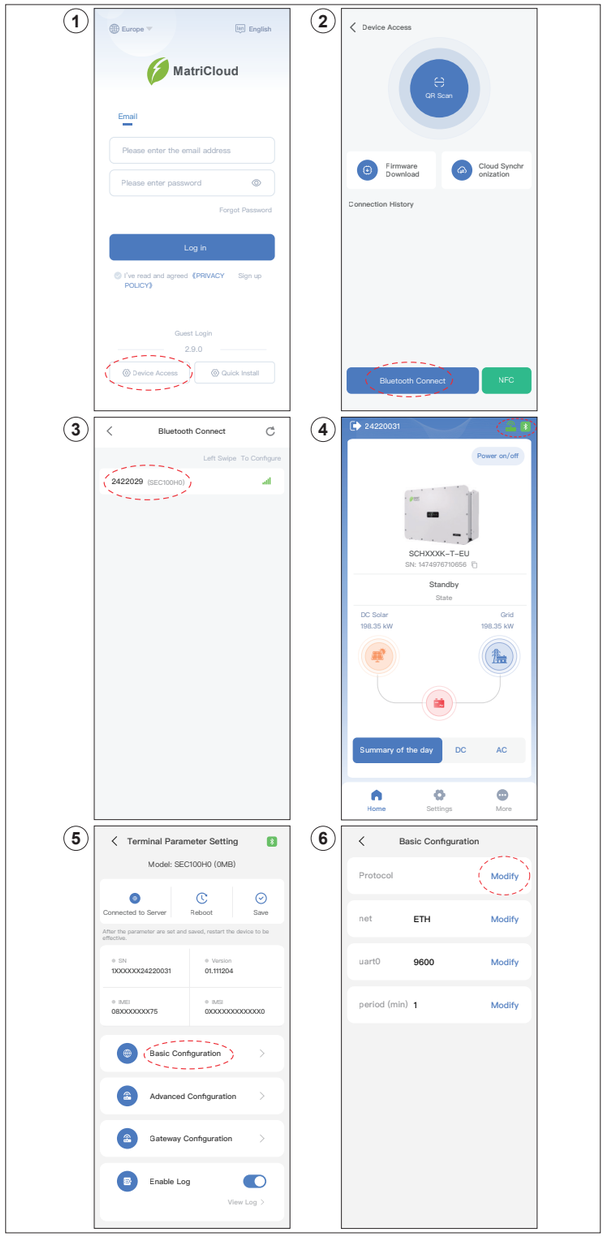
For the meter's wiring mode, communication address, baud rate, and communication protocol, refer to the user manual.

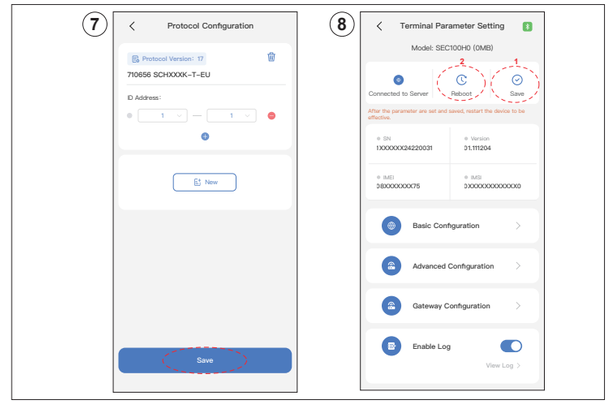
5. Anti-Reflux Configuration (App)

Anti-Reflux parameters are configurable through the MatriCloud platform's mobile application or web interface. The section covers basic App configuration; for advacned options or web setup, refer to the User Manual.
Download Matricloud from the App Store or Google Play, or scan the QR code. (Supports Android 7.0 and iOS 13.0 or later)

5.1 Inverter Protocol Settings

Switch on the circuit inside the controller. Enable the Bluetooth on your mobile device, then launch the MatriCloud App. Configure the inverter protocol as follows:
1. Click **Device Access**. (No account and password are needed)
2. Click **Bluetooth Connect**.
3. Click the Ethernet communication module's S/N (Last 8 numbers of the SN) to access main screen.
4. Click the terminal setting icon in the top-right corner of the main screen.
5. Click **Basic Configuraiton**. (If password needed, enter 1111)
6. Click **Modify** to modify the protocol.
7. Set ID Address according to the inverter installation quantity. Then, click **Save**.
8. Back to terminial parameter settings interface. Click **Save**, then click **Reboot** afterwards.





5.2 Enable Anti-Reflux

Go to the terminal parameters setting interface, then enable the inverter's anti-relux function as follows:
1. Click **Gateway Configuration**. (If password needed, enter 1111)
2. Click **Anti-Reflux Power Flow Configuration**.
3. Enable the anti-reflux feature and configure the releated parameters. Then,click **Completed**.

Parameter	Description
Enable Anti-Reflux	Enable or disable the anti-reflux feature
Meter Brand/Type	Select the meter type or brand inside the controller
CT Direction	Set the CT direction to point toward the inverter and load direction
Upper Limit from power grid	The maximum power that can be drawn from the grid.
Lower Limit from power grid	The minimum power that can be drawn from the grid.
Anti-Reflux Power Flow Check Interval	The fixed time interval between consecutive backflow protection checks.

4. Back to terminial parameter settings interface.Click **Save**, then click **Reboot** afterwards.