Installer Quick Start Guide

Terra A Series

Version: V1.0

Contents

1. Installation Overview

This quick installation guide provides the basic installation and commissioning procedure for the GeePower Terra A residential energy storage system.

The installation sequence includes:

- Mechanical installation of battery modules and inverter
- AC grid connection
- Smart Meter and CT installation
- System power-on procedure
- Basic inverter configuration
- WiFi monitoring setup

All electrical installation and commissioning work must be completed by qualified personnel in accordance with local electrical regulations.

2. Mechanical Installation

2.1 Installation Location Requirements

Before installation, select a suitable installation location to ensure sufficient ventilation, heat dissipation, and safe operation of the system.

The inverter requires sufficient clearance around the system to maintain proper airflow, prevent overheating, and ensure long-term reliable operation.

Clearance Requirements:

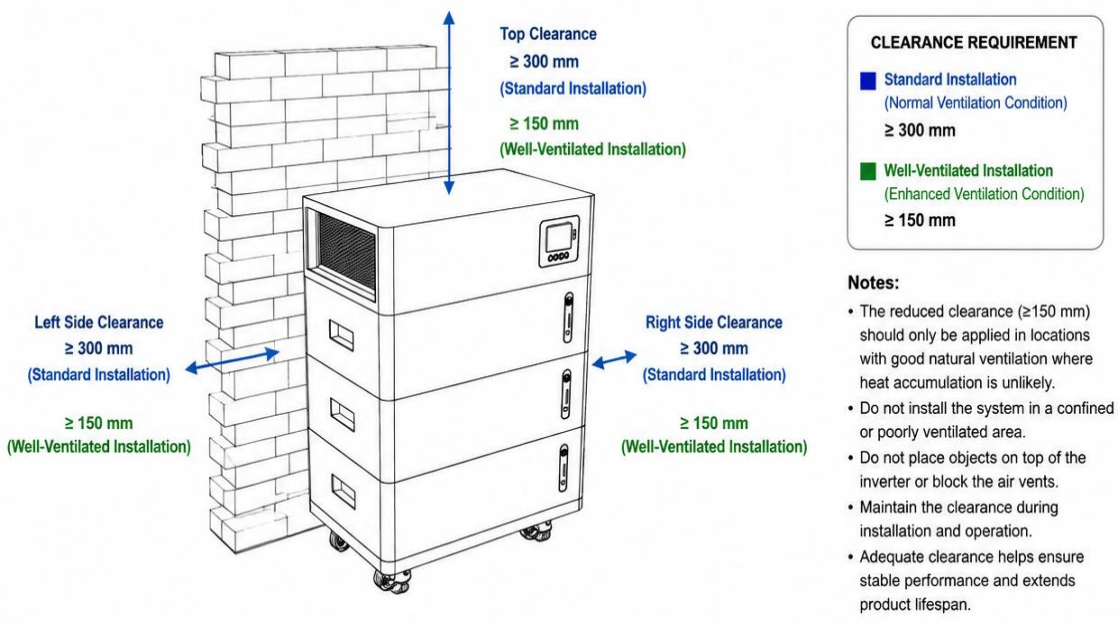
Standard Installation Condition:
Maintain a minimum clearance of:

- **≥ 300 mm** on both sides of the inverter.
- **≥ 300 mm** above the inverter.

Well-Ventilated Installation Condition:
In locations with good natural ventilation and sufficient airflow, the clearance may be reduced to:

- **≥ 150 mm** on both sides of the inverter.
- **≥ 150 mm** above the inverter.

The reduced clearance should only be applied where heat accumulation is unlikely and adequate ventilation is maintained.



Installation Requirements:

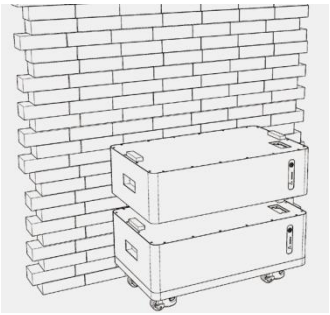
- Install the system on a solid and level surface.
- Install the system in an upright vertical position only.
- Do not install the system in a confined or poorly ventilated area.
- Do not place objects on top of the inverter or block the ventilation openings.
- Maintain sufficient clearance around the inverter for installation, operation, and maintenance access.
- Avoid installation locations exposed to direct sunlight, near heat sources, or close to flammable materials.
- The ambient temperature of the installation location should be below 40℃ for optimal operation.
- Relative humidity should be 0–95% (non-condensing).

2.2 Battery Module Installation

Before installation:

- Confirm the installation surface is level, solid, and suitable for supporting the system weight.
- Ensure all battery modules and installation accessories are available.
- Check that the wheel locking mechanism is functional before positioning the system.

Installation procedure:

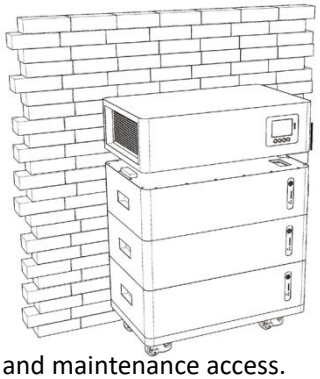


Battery module stacking (bottom to top)

- Place the battery base on a stable and level surface.
- Lock the wheels after positioning the base.
- Install battery modules from bottom to top.
- Ensure every battery module is correctly aligned and fully seated.
- Confirm the battery stack is stable before installing the inverter.

⚠ **Warning:**
Battery modules are heavy. Two-person lifting is recommended.

2.3 Inverter Module Installation



After all battery modules are installed:

- Place the inverter module on the top of the battery stack.
- Ensure the inverter is correctly aligned with the battery frame.
- Confirm the inverter is stable and level.
- Ensure enough space is available for cable connection, ventilation, and maintenance access.
- Confirm the mechanical installation is complete and the system is stable before proceeding with electrical installation..

3. Electrical Wiring Connection

Before Wiring

Before starting electrical installation:

- Ensure the inverter, battery system, and all related protection devices are switched OFF.
- Disconnect the customer Main Switch before connecting customer-side wiring.
- Verify that all terminals are voltage-free before working.
- Remove protective covers from cable entry points.

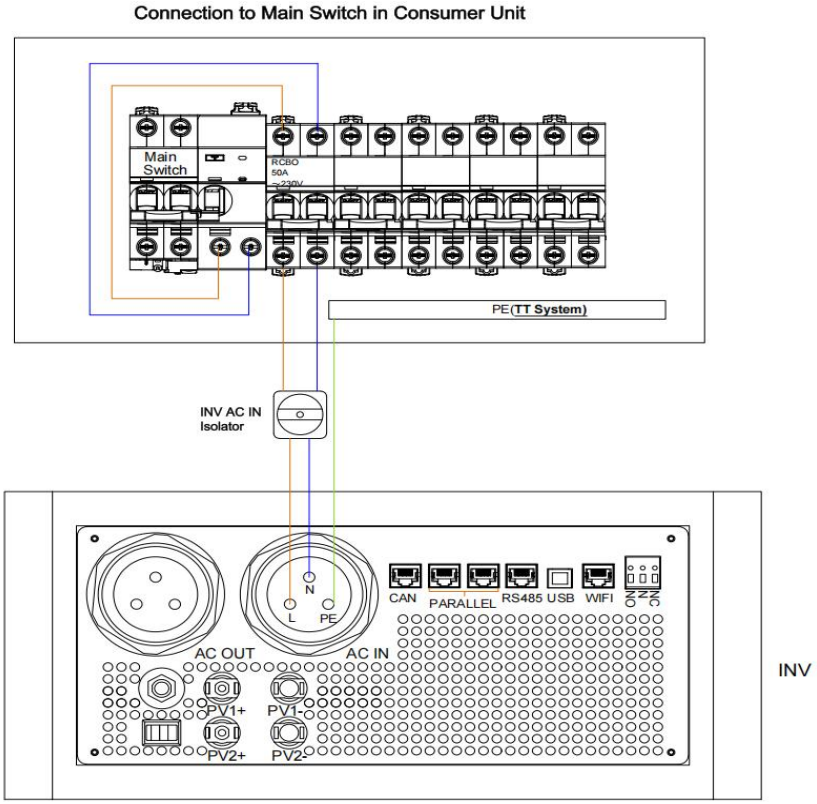
Cable Color Code

Line (L): Brown
Neutral (N): Blue
Protective Earth (PE): Green/Yellow

3.1 Connect Customer Grid Connection to Terra A Inverter AC IN

Connection:

Customer Main Switch → 50A RCBO → AC Rotary Isolator → Terra A Inverter AC IN



Purpose:

The AC IN connection provides the main bidirectional AC interface between the Terra A inverter and the customer electrical installation.

Through this connection:

Grid → Terra A System

- The grid can supply power to the system and connected loads when required.
- The battery can be charged from the grid according to the configured operating mode and charging schedule.

Terra A System → Customer Installation

- Battery energy can be supplied to household loads.
- Available PV energy can be supplied to household loads where PV is installed.
- Grid import and export are monitored through the Smart Meter and CT, allowing the inverter to manage system power flow according to the configured operating settings.
- Surplus energy may be exported to the grid only where the system is appropriately configured and export is permitted under the applicable DNO requirements.

AC Isolation

A dedicated AC Rotary Isolator shall be installed between the customer electrical installation and the Terra A inverter AC IN connection.

The AC Rotary Isolator provides a clearly identifiable local means of isolating the inverter from the grid supply for maintenance, servicing, and safe shutdown.

The isolator should be installed in a suitable and accessible location and clearly identified as serving the Terra A inverter.

Wiring Procedure

Before wiring:

① Switch OFF the customer Main Switch.

② Verify that the incoming supply cable is voltage-free.

③ Install the AC Rotary Isolator in a suitable accessible location between the customer supply and the Terra A inverter.

④ Connect:

Customer Supply → AC Rotary Isolator Input

AC Rotary Isolator Output → Terra A Inverter AC IN

⑤ Confirm correct L/N/PE connections and tighten all terminals securely.

⑥ Before energising the circuit, confirm that the AC Rotary Isolator operates correctly and is clearly identified.

Recommended Cable

L/N cable: ⩾ 6 mm^2

PE cable: ⩾ 4 mm^2

Cable sizing must be verified by the installer according to the installation method, circuit length, protective device rating, and applicable electrical requirements.

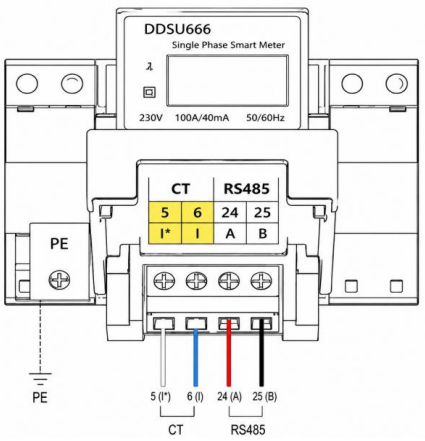
Recommended Protective Device

The maximum operating current at this connection may reach 40 A. **A 50 A RCBO is recommended.**

Important Notes

- The Terra A AC IN connection is a bidirectional AC power connection, not a conventional one-way grid input.
- The AC Rotary Isolator provides local isolation of the Terra A inverter from the grid supply.
- The AC IN circuit may remain live whenever the upstream supply and AC Rotary Isolator are ON.
- Before installation, maintenance, or servicing, isolate all relevant energy sources and verify that the circuit is voltage-free.
- Smart Meter and CT installation are required for correct grid power measurement and system power flow control.

3.2 Install Smart Meter and CT Clamp



Connection

Smart Meter AC power supply:

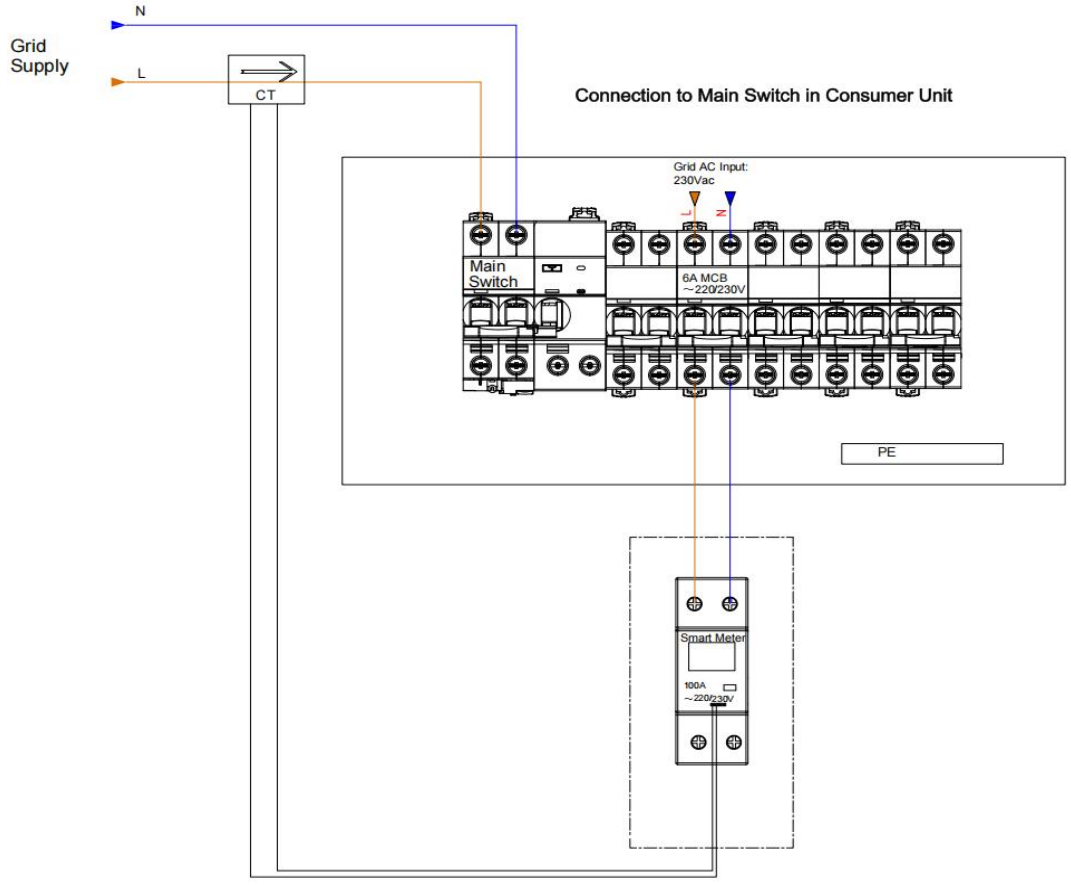
Customer Main Switch → 6 A MCB → Smart Meter AC Input

CT signal connection:

CT Clamp with Fixed Signal Cable → Smart Meter CT Input

White wire → Smart Meter Terminal 5 (I*)

Blue wire → Smart Meter Terminal 6 (I)



Function

The Smart Meter and CT clamp work together to measure the magnitude and direction of power flow between the utility grid and the household electrical system.

The CT clamp measures the current flowing through the incoming grid L conductor. The Smart Meter processes the CT measurement and grid-voltage data and transmits the information to the Terra A inverter.

The measurement data is used by the Terra A system for:

- Grid import monitoring
- Grid export monitoring
- Household energy-flow measurement
- System power-flow control
- Remote monitoring and data display

Wiring Procedure

Before wiring:

- Switch OFF the customer Main Switch.
- Isolate all relevant energy sources and verify that the circuit is voltage-free.
- Identify the incoming grid L conductor upstream of all household branch circuits.

Installation:

- Install the Smart Meter and the recommended 6 A MCB in the consumer unit.
- Connect the Smart Meter AC voltage input through the 6 A MCB according to the wiring diagram.
- Install the CT clamp around the incoming grid L conductor only.
- Ensure that the arrow on the CT clamp points towards the load side/customer loads.
- Connect the white CT wire to Smart Meter Terminal 5 (I*).
- Connect the blue CT wire to Smart Meter Terminal 6 (I).
- Verify the Smart Meter power-supply connection, CT position, CT direction and signal-wire polarity before restoring the power supply.

Protective Device

A 6 A MCB is recommended upstream of the Smart Meter for circuit protection.

The installer may add or select appropriate MCB protection according to the actual circuit design, existing protective measures, installation conditions and applicable electrical requirements.

CT Installation Requirements

- The CT clamp is supplied with a fixed 6 m signal cable.
- Install the CT clamp on the incoming grid L conductor upstream of all household branch circuits.
- Do not install the CT clamp around both the L and N conductors.
- The arrow on the CT clamp must point towards the load side/customer loads.
- Do not extend or modify the fixed CT signal cable unless permitted by GeePower.
- Incorrect CT orientation or wiring may result in incorrect power-flow measurement, abnormal system power control or failure of the inverter to supply power correctly to the household loads.

Important Notes

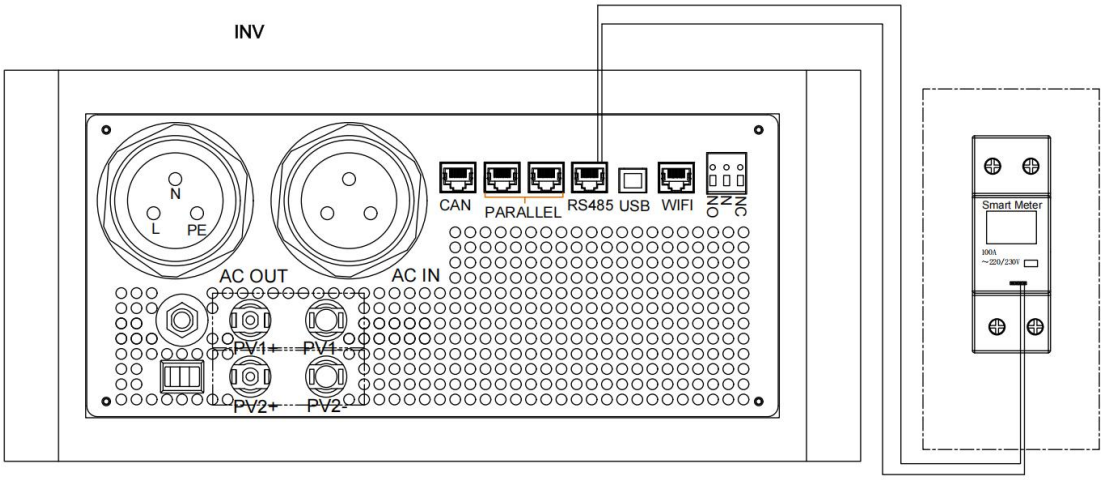
- The Smart Meter AC terminals may remain live whenever the upstream supply and MCB are ON.
- Isolate the circuit and verify that it is voltage-free before installation, maintenance or servicing.
- The Smart Meter and CT clamp must be correctly installed and configured by a qualified installer.
- The Smart Meter, CT clamp and RS485 communication connection are required for correct grid-power measurement and system power-flow control.

3.3 Connect Smart Meter RS485 Communication to Terra A Inverter

Connection

Smart Meter Terminal 24, RS485 A (+) → Terra A Inverter RS485 A

Smart Meter Terminal 25, RS485 B (−) → Terra A Inverter RS485 B

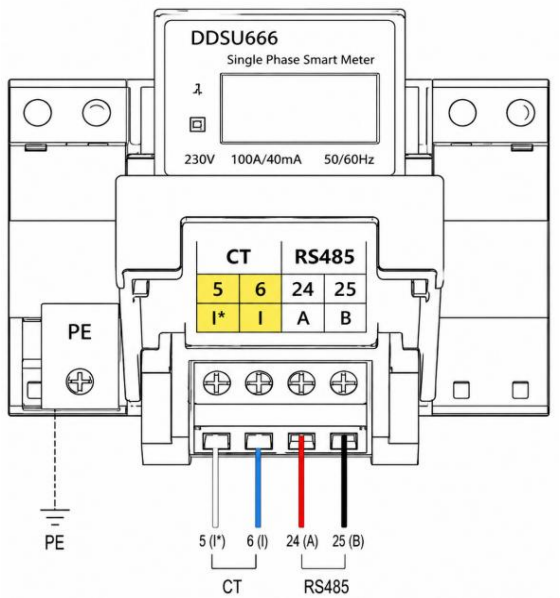


Function

The Smart Meter transmits real-time grid power measurement data to the Terra A inverter through RS485 communication.

This communication enables:

- Energy-flow monitoring
- Grid import and export power measurement
- System power management
- Data feedback for self-consumption control
- Remote monitoring and data display



Wiring Procedure

- Confirm that the Smart Meter and Terra A inverter are isolated from all relevant power sources.
- Connect Smart Meter Terminal 24, RS485 A (+), to the corresponding RS485 A conductor.
- Connect Smart Meter Terminal 25, RS485 B (−), to the corresponding RS485 B conductor.
- Connect the other end of the communication cable to the Terra A inverter RS485 port using the specified RJ45 connection or the RJ45 adapter supplied by GeePower.
- Verify the RS485 A and B polarity before energizing the system.
- After energizing the system, confirm that the inverter can correctly read the Smart Meter data.

Cable Requirements

- A twisted-pair cable should be used for the RS485 A and B conductors to reduce electromagnetic interference and ensure stable signal transmission.
- The cable length should be selected according to the actual installation distance.
- Route the RS485 communication cable separately from AC power cables where practicable.

Installer-prepared cable

After confirming the installation layout, the installer may prepare an RS485 communication cable of an appropriate length.

A suitable standard twisted-pair communication cable may be used with the RJ45 adapter supplied by GeePower.

Important Notes

- Ensure that the RS485 A and B conductors are connected with the correct polarity.
- Reversed RS485 polarity will interrupt communication but will not damage the equipment.
- Do not connect the RS485 terminals to an AC power supply.
- Successful RS485 communication is required for Smart Meter data reading, system power management and self-consumption control.
- If communication cannot be established, check the cable continuity, terminal connections, polarity, Smart Meter address and inverter communication settings.

3.4 Connect Inverter AC OUT and Grid Supply to Manual Transfer Switch (Backup Function)

Connection

Terra A Inverter AC OUT → MTS UPS Input

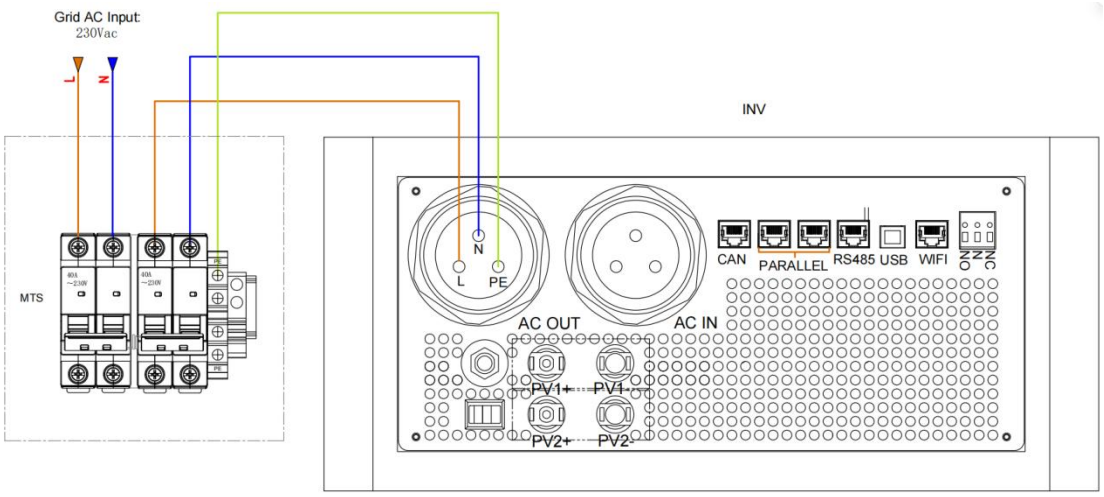
Grid Supply → MTS GRID Input

The MTS receives two alternative power sources:

UPS Supply: Terra A inverter AC OUT

GRID Supply: Direct grid bypass supply

The two supply paths are mechanically interlocked so that only one source can supply the critical load circuit at any time.



Purpose:

- The Manual Transfer Switch manages the power supply source for selected critical load circuits.
- During normal operation, critical loads are supplied through the Terra A inverter backup path.
- When the inverter is unavailable, the Manual Transfer Switch allows the critical loads to be manually transferred to the grid supply.

Wiring Procedure:

Before wiring:

① Ensure the Terra A inverter is powered OFF.

②Switch OFF the customer Main Switch and verify that the relevant AC conductors are voltage-free.

③ Connect the Terra A inverter AC OUT (L/N) to the UPS Input of the MTS.

④ Connect the Grid bypass supply (L/N) to the GRID Input of the MTS.

⑤ Confirm correct L/N connections and ensure all terminals are securely tightened.

Important: The UPS and GRID supply paths must be mechanically interlocked. The two power sources must never be connected to the critical load circuit simultaneously.

Recommended cable:

L/N cable: ≥ 6mm²

PE cable: ≥ 4mm²

The PE conductor must remain continuously connected and must not be switched by the MTS.

MTS (Manual Transfer Switch) Operation

The MTS provides a manual means of transferring the selected critical loads between the Terra A inverter AC OUT (UPS) supply and the Grid supply.

Normal Operation – MTS Position: UPS

- The critical loads are supplied through the **Terra A inverter AC OUT (UPS)** path.
- Under normal grid conditions, the inverter supplies the critical loads according to the configured operating mode.
- If the grid supply is interrupted, the Terra A inverter automatically switches to battery backup and continues supplying the critical loads through AC OUT.
- **No manual operation of the MTS is required during a normal grid outage.**

Inverter Maintenance or Fault – MTS Position: GRID

- The MTS transfers the critical loads from the inverter AC OUT (UPS) path directly to the grid supply.
- This allows the critical loads to remain powered while the inverter is shut down, serviced, maintained, or unavailable due to a fault.
- Before changing the MTS position, follow the correct operating procedure and ensure that the installation is in a safe condition for transfer.

Key Principle:

The MTS is not intended for daily operation. Its purpose is to provide a manual bypass function during inverter maintenance or fault conditions.

During normal operation, the critical loads are supplied through the inverter AC OUT (UPS) circuit. If the inverter is unavailable, the MTS allows the critical loads to be manually transferred to the grid supply, helping to maintain power availability during inverter maintenance or fault conditions.

Without an MTS, the critical loads connected to AC OUT have no direct grid bypass path when the inverter is shut down or unavailable. Therefore, the MTS improves system reliability and maintenance flexibility.

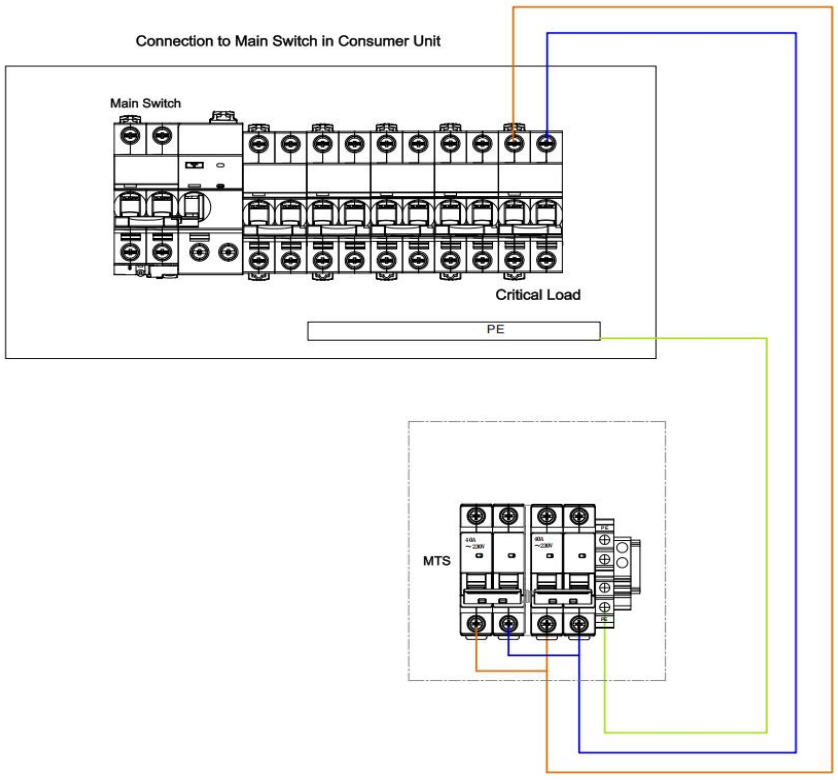
Important Notes:

- The Manual Transfer Switch is **manually operated** and does not automatically transfer the critical loads between the Grid and UPS supplies.
- **The Grid supply and inverter AC OUT (UPS) supply must never be connected to the critical loads at the same time.** Simultaneous connection of both power sources may cause serious damage to the inverter and create an electrical safety hazard.
- If the installation requires the critical loads to be manually switched between **Grid** and **UPS** supplies, an MTS with a **mechanical interlocking mechanism** must be used.
- The mechanical interlock ensures that only **one power source — Grid or UPS — can be connected to the critical loads at any time**, preventing both sources from being connected simultaneously.
- The installer must ensure that the MTS and associated protective devices are correctly rated for the critical load circuit.
- Only selected critical loads should be connected to the inverter AC OUT (UPS) circuit.
- The total critical load must remain within the Terra A inverter's maximum backup output capacity of **6.2 kW**.

3.5 Connect Manual Transfer Switch Output to Critical Loads

Connection:

Manual Transfer Switch(MTS) Output → Selected Critical Loads



Purpose:

- This connection supplies selected critical load circuits through the Terra A inverter backup function.
- During a grid outage, the selected critical loads can continue to receive power from the Terra A inverter when sufficient battery energy is available.

Wiring Procedure

Before wiring:

- Switch OFF the customer Main Switch.
- Ensure the Terra A inverter is powered OFF and both MTS supply sources are safely isolated.
- Confirm the critical load circuit is completely isolated before any wiring work.
- Disconnect the original grid supply connection of the selected critical load circuit.
- The MTS consists of two mechanically interlocked circuit breakers: one for the UPS/Inverter supply and one for the GRID bypass supply.
- Connect the corresponding load-side output terminals of the two interlocked circuit breakers to form the common MTS output, as shown in the approved wiring diagram.
- Connect the common MTS output to the selected critical load circuit.
- Confirm correct L/N connections, verify PE continuity, and tighten all terminals securely.

Recommended cable:

L/N cable: ⩾ 6mm^2

PE cable: ⩾ 4mm^2

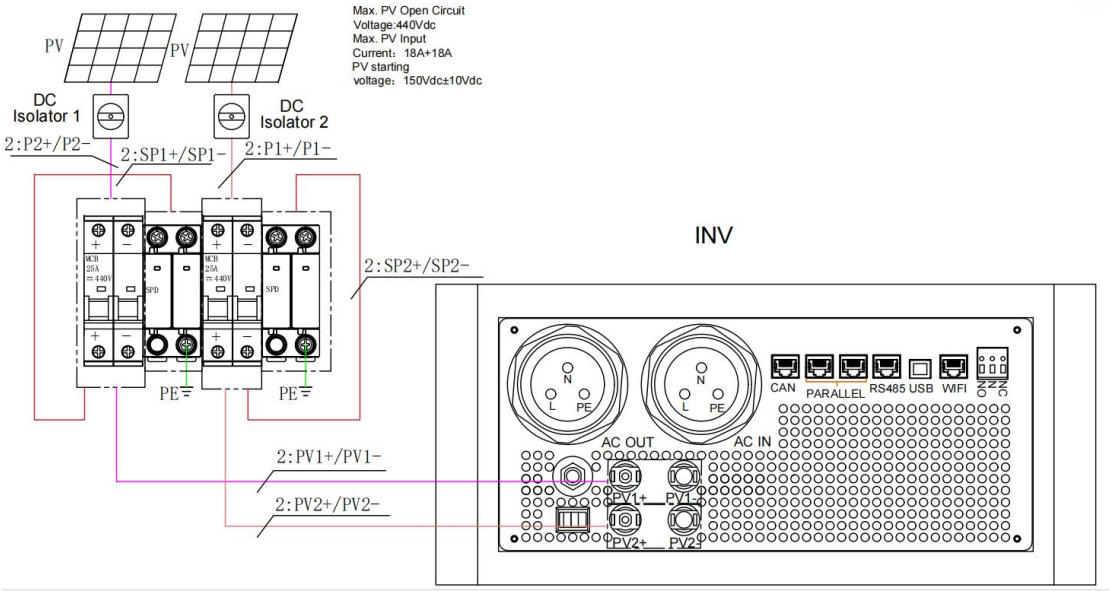
Notes:

- Only selected essential circuits should be connected to the Manual Transfer Switch output.
- The installer should select circuits that are required to remain powered during a grid outage.
- Recommended critical loads: Lighting / Refrigerator / Router / Security equipment
- Do not connect high-power loads such as EV chargers, electric showers, or large heating appliances to the backup supply output.
- The total connected load must remain within the inverter backup power limitation (maximum 6.2kW).

3.6 Connect PV Array to Terra A Inverter (If Installed)

Connection:

PV String 1 → DC Rotary Isolator → PV MCB → Terra A PV1 Input
PV String 2 → DC Rotary Isolator → PV MCB → Terra A PV2 Input



The Terra A inverter provides two independent PV input connections. Each PV string must be connected to the corresponding PV input with the correct polarity.

PV SPD: Connected in parallel with each PV DC circuit for surge protection.

Purpose:

- The PV connection allows solar energy to be supplied to the Terra A inverter for household energy use and battery charging.
- The DC Rotary Isolator provides a dedicated means of isolating the PV supply during maintenance or servicing.
- The PV MCB provides protection for the PV DC circuit.
- The PV SPD provides protection against transient overvoltage and surge events.

Wiring Procedure

Before wiring:

① Ensure the Terra A inverter is powered OFF.
② Ensure all PV MCBs and DC Rotary Isolators are switched OFF.
③ Verify the positive (+) and negative (−) polarity of each PV string.
④ Measure the open-circuit voltage (Voc) of each PV string and confirm that it is within the permitted inverter PV input range.

⑤ Connect PV String 1 (+/−) to the DC Rotary Isolator, then through the PV MCB to the Terra A PV1+/PV1− input.
⑥ Where a second PV string is installed, connect PV String 2 (+/−) in the same way to the Terra A PV2+/PV2− input.
⑦ Connect the PV SPD in parallel with the corresponding PV DC circuit and connect its PE terminal to the appropriate earthing system.
⑧ Check all connections for correct polarity and secure termination before energising the PV circuit.

Important Safety Notice

- PV modules may generate hazardous DC voltage whenever exposed to light, even when the inverter is switched OFF.
- Never reverse the PV input polarity.
- Do not connect, disconnect, or handle PV conductors while the circuit is energised.
- Always switch OFF the DC Rotary Isolator and PV MCB and verify the circuit condition before carrying out maintenance or servicing.

Each PV string must remain within the permitted voltage and current limits of the corresponding Terra A PV input.

4. System Power-On and Commissioning

This section describes the basic commissioning procedure for the GeePower Terra A residential energy storage system after installation and electrical wiring have been completed.

Commissioning must be performed by qualified personnel.

The commissioning procedure includes:

- Pre-commissioning checks
- System power-on
- Communication verification
- Basic parameter configuration
- Final commissioning check

4.1 Pre-Commissioning Checklist

Before powering on the system, confirm the following.

Mechanical Installation

- Battery modules are correctly installed and securely stacked.
- The inverter is correctly installed on the battery stack.
- Sufficient ventilation clearance is maintained around the system.
- All covers are correctly installed.

Electrical Wiring

- Battery power cables are connected with the correct polarity.
- Battery communication cables are connected correctly.
- AC IN wiring is completed correctly.
- AC OUT wiring is completed correctly, if used.
- Manual Transfer Switch wiring is completed correctly, if installed.
- Smart Meter power supply and RS485 communication wiring are completed correctly.
- The CT clamp is installed on the incoming grid live conductor, with the arrow pointing towards the distribution board/customer loads.
- PV wiring polarity is correct, if PV is installed.
- All terminals are tightened securely.

Safety Check

- The protective earth (PE) connection is completed.
- No exposed conductors or damaged insulation are present.
- All required protective devices and isolators are installed.
- All relevant AC and PV isolating devices remain OFF before startup.

4.2 System Power-On Procedure

WARNING

Always follow the correct power-on sequence. Incorrect operation may activate system protection functions or prevent normal operation.

Step 1 – Switch ON the Battery Modules

Starting with the battery module closest to the inverter, press the power button to switch it ON.

Then switch ON the remaining battery modules one by one, working away from the inverter.

Confirm that:

- All battery status indicators illuminate normally.
- No battery alarm or fault is displayed.

Do not start the inverter until all battery modules have been switched ON and their status indicators are normal.

Step 2 – Start the Inverter

Turn ON the inverter power switch.

Wait for the inverter self-check process to complete.

Confirm that:

- The inverter LCD starts normally.
- Battery voltage and State of Charge (SOC) are displayed.
- No inverter alarm or fault is displayed.

Step 3 – Connect the Grid Supply

Switch ON the AC protective device or external AC isolator supplying the inverter AC IN, if installed.

If the Terra A inverter is connected directly to the customer Main Switch and the Main Switch was switched OFF during installation, switch it ON.

Confirm that:

- The inverter detects the grid voltage and frequency.
- No grid-related alarm is displayed.
- The inverter enters normal operating status.

Step 4 – Connect the PV Supply (If Installed)

Switch ON the PV MCB and DC rotary isolator in accordance with the site switching procedure.

Confirm that:

- The inverter detects the PV input.
- PV voltage and power are displayed correctly.
- No PV-related alarm or fault is displayed.

If PV is not installed, skip this step.

Step 5 – Connect the Backup Load Circuit (If Used)

Switch ON the AC OUT RCBO or protective device.

If a Manual Transfer Switch is installed, set it to the required operating position before energising the critical-load circuit.

Confirm that:

- The selected critical loads receive power normally.
- No overload alarm or fault is displayed.
- The total continuous load connected to AC OUT does not exceed 6.2 kW.

For normal operation, the Manual Transfer Switch should be set to UPS. The GRID position is used when the inverter is unavailable or undergoing maintenance.

4.3 Entering Parameter Settings

Key Operation Instructions:

Press the Menu button to enter the setting menu.

Parameter number [00] (Exit) will flash.

Use the / keys to select the parameter number to edit.

Press Enter to enter the editing state; the parameter value will flash.

Adjust the value using ⏶ / ⏷ keys.

Press Enter ⏎ again to confirm the value and return to parameter selection.

To exit the setting menu, select [00] ESC.

Indicators introduction

Indicator light	Color	Description
AC/INV	yellow	Solid on: Mains power output
		Flashing: Inverter output
CHARGE	Green	Flashing: The battery is being charged.
		Solid OFF: The charging is completed.
FAULT	Red	Solid on: Fault status

Real-time data viewing method

On the LCD main screen, press the ⏶ / ⏷ button for page turning to view the real-time data of machine.

Page	PV side parameters	Battery side parameters	Mains side parameters	Load side parameters	Comprehensive parameters
1	PV Voltage	Battery Voltage	AC Voltage	Load Voltage	Current Time
2	PV Current	Battery Current	AC Current	Load Current	Current Date
3	PV Power	Battery power	AC Power	Load Power	PV Total kWh
4	PV Today kWh	BMS Batt SOC	Smart Meter Power	Load Today kWh	Load Total kWh
5	PV Temperature	BMS Batt Volt	AC Frequency	Load Frequency	RS485 Address
6	Bus Voltage	INV Temperature	Today on grid kWh	Load kVA	Soft Version
7	PV Rated Voltage	Battery Rated Current	Reserved	Load Rated Power	Parallel Mode
8	Reserved	Reserved	Reserved	Reserved	Customer ID
9	Reserved	Reserved	Reserved	Reserved	From chip version

4.4 LCD Display Information Overview

The LCD display provides real-time operating information of the inverter, including PV input, battery status, AC side, and AC OUT output data.

When the inverter is operating in grid-connected mode, the total household energy consumption is monitored through the Smart Meter and can be viewed in the WiFi monitoring platform. This accumulated energy consumption data is not displayed on the inverter LCD.

The load-related information shown on the LCD represents only the power supplied through the inverter AC OUT terminal. Therefore, the displayed load voltage, load current, load power, and load energy values correspond to the AC OUT connected loads only, and do not represent the total household consumption when the system is operating in grid-connected mode.

For systems with the UPS function activated, the AC OUT load parameters will update according to the actual connected loads. Before UPS operation is enabled, some load-related values may remain unchanged or display previous factory test data, which is normal.

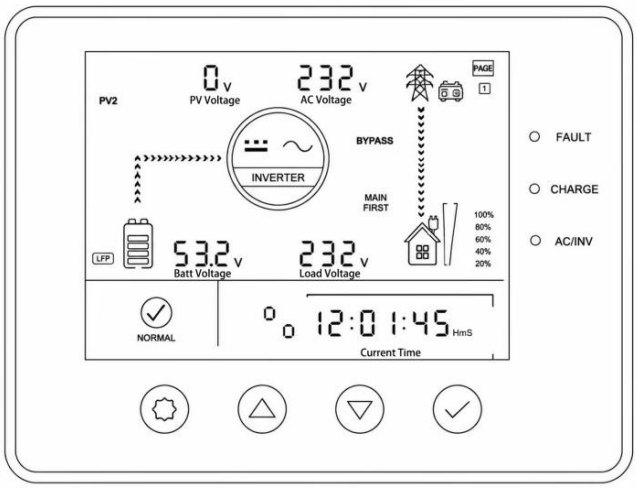
LCD Page 1 – Basic Voltage Information Display

This page displays the basic real-time voltage information of the inverter, including PV input voltage, battery voltage, AC voltage, and load voltage.

Note:

The Batt Voltage value can be used as a basic reference to check the battery operating status. During normal operation, the battery voltage will vary depending on the charging and discharging condition. If the battery is deeply discharged, the battery voltage may decrease significantly. When the battery voltage reaches the configured low-voltage protection threshold, the system will activate battery protection and stop discharging to prevent further battery damage. After the battery voltage recovers through charging, the system will automatically resume normal operation.

During commissioning, these voltage values can be used to verify whether the PV input, battery connection, AC output, and load connection are operating normally.

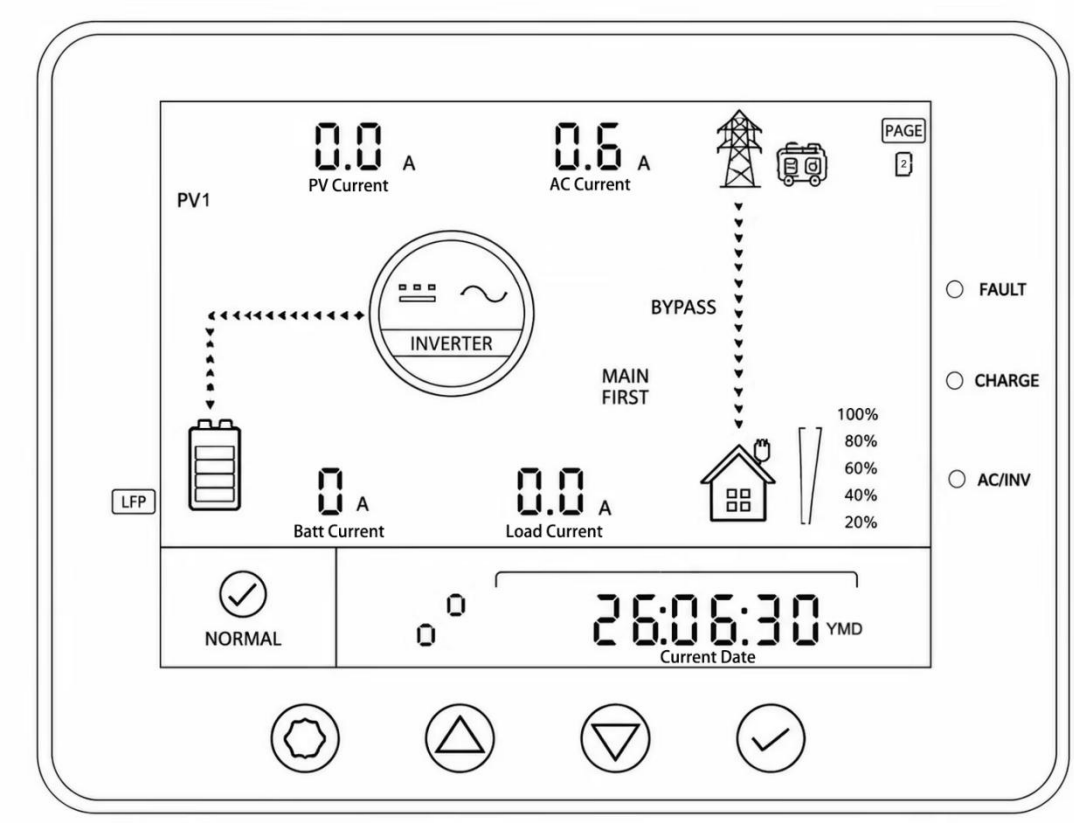


LCD Page 2 – Real-Time Current Data Display

This page displays the real-time current information of the PV input, battery, AC input/output, and grid connection.

PV Current: Displays the current generated from the PV input.
AC Current: Displays the current flowing through the grid connection point. When the system is charging or discharging through the grid, the corresponding current value will be displayed.
Batt Current: Displays the battery charging or discharging current.
Load Current: Displays the current supplied to the loads through the inverter AC OUT terminal.

Note:
The AC current value represents the current exchanged between the inverter and the grid connection point. The displayed value depends on the actual power flow direction, such as grid charging or battery/PV supplying power to the loads.



LCD Page 3 – Real-Time Power Data Display

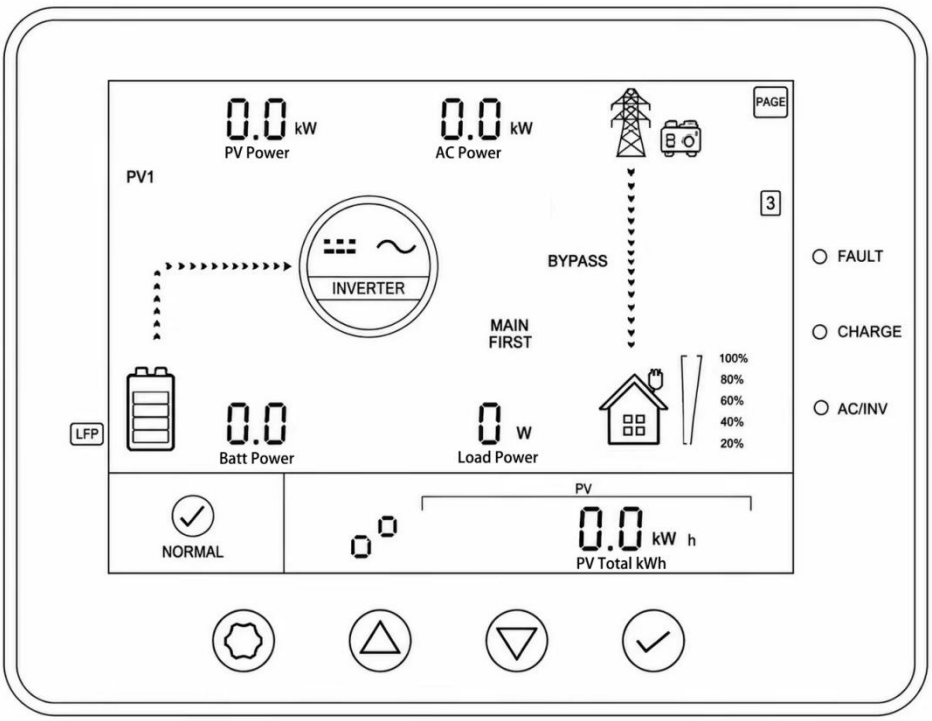
This page displays the real-time power information of the PV input, battery, AC side, and load side.

PV Power: Displays the real-time power generated from the PV input.
AC Power: Displays the real-time power exchanged between the inverter and the grid connection point.
Batt Power: Displays the real-time battery charging or discharging power.
Load Power: Displays the real-time power supplied through the inverter AC OUT terminal to the connected loads.
PV Total kWh: Displays the total PV energy generated.

Note:
The Load Power value represents the output power from the inverter AC OUT terminal. This value will only display the actual load power after the UPS function is activated and the AC OUT terminal is supplying power to the connected loads.

Before the UPS function is enabled, the Load Power value may remain unchanged because no actual load power is being supplied and measured through the AC OUT output.

During system commissioning, the key parameters to verify are PV Power, AC Power, and Batt Power. When these values change according to the actual system operation and power flow direction, it indicates that the inverter power management function is operating normally.



LCD Page 4 – Real-Time Power and Energy Data Display

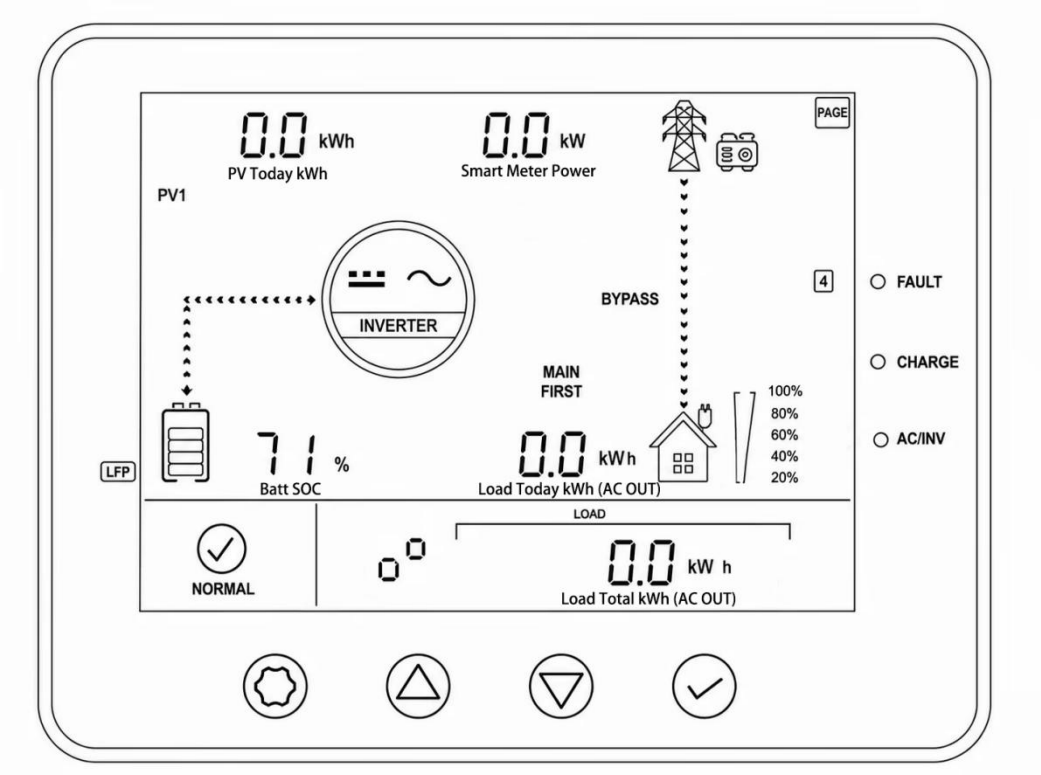
This page displays the real-time power information of the PV input, battery, Smart Meter, and load side.

PV Today kWh: Displays the total PV energy generated on the current day.
Smart Meter Power: Displays the real-time power exchanged at the grid connection point. The value changes dynamically according to household power consumption and power flow direction.
Batt SOC: Displays the current battery state of charge.
Load Today kWh: Displays the daily energy supplied through the inverter AC OUT terminal.

Note:
The load-side parameters displayed on this page represent the power output from the inverter AC OUT terminal to the loads. Therefore, these values will only be updated after the UPS function is activated and the AC OUT output is supplying power to the loads.

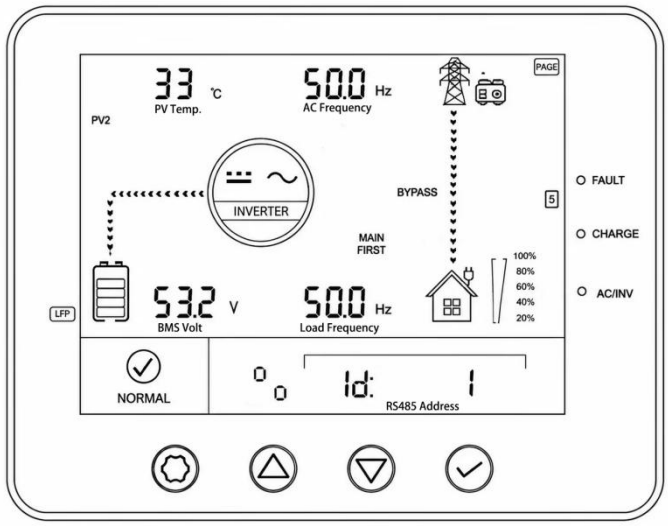
Before the UPS function is enabled, the load parameters may remain unchanged because no actual load power is supplied and measured through the AC OUT output. Some displayed values may remain from factory testing and commissioning, which is normal.

During system commissioning, Smart Meter Power is the key parameter to verify. When the value changes dynamically according to the household power consumption and the power flow direction matches the actual operating condition, it indicates that the meter communication and energy management function are operating normally.



LCD Page 5 – Additional System Information Display

This page displays additional system information, including PV temperature, AC frequency, battery voltage, load frequency, and RS485 communication address.

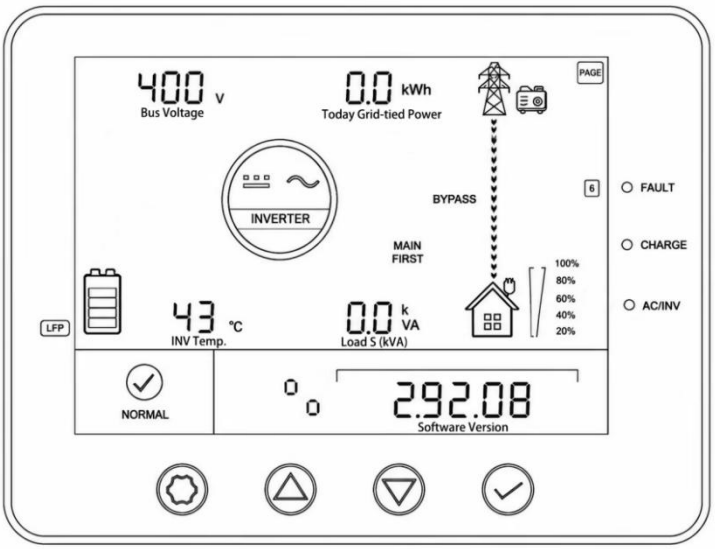


LCD Page 6 – System Status Information Display

This page displays additional system information, including **DC bus voltage, daily grid-connected energy, inverter temperature, load apparent power, and software version**.

Today Grid-tied Power: Displays the daily energy exchanged through the grid connection point.
Load S (kVA): Displays the apparent power of the load connected to the inverter AC OUT terminal.

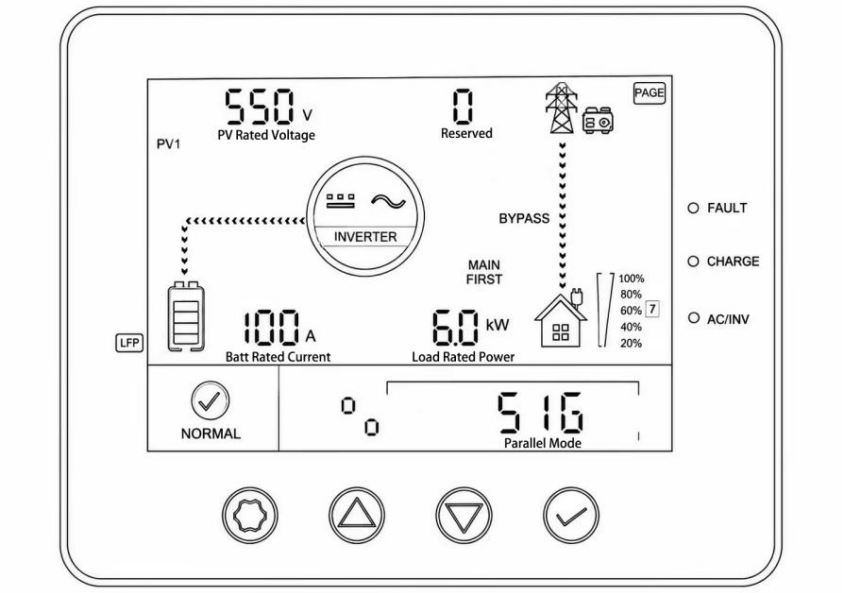
Note: The Load S (kVA) value represents the apparent power measured at the inverter AC OUT terminal. This value will only reflect the actual load condition after the UPS function is activated and the AC OUT output is supplying power to the connected loads.



LCD Page 7 – System Parameter Information Display

This page displays the basic system parameter information, including **PV voltage, battery charging current, load rated power, and parallel operation status**.
Batt Rated Current: Displays the configured maximum battery charging current.

Note: The displayed values are system configuration parameters rather than real-time operating data. Please refer to the actual inverter specifications and installation settings for the rated values.



4.5 LCD Display Verification

After the system is powered on, the installer should verify the inverter operating status and Smart Meter communication through the inverter LCD display.

Smart Meter Communication Verification
After system startup:

- Enter the inverter LCD display menu.
- Select **Menu** button
- Press the **UP** button to navigate to **Page 4 - Real-Time Data**.
- Confirm that the Smart Meter information is displayed correctly.

Check:

- Grid voltage and Smart Meter power data are displayed correctly.
- Smart Meter power changes dynamically according to the actual household power flow.
- Grid import/export power is displayed correctly.
- The CT is installed in the correct direction.
- No Smart Meter communication alarm is displayed.

If the Smart Meter data is displayed correctly and corresponds with the actual system operating condition, communication between the inverter and Smart Meter can be considered normal.

4.6 Parameter Configuration

The Terra A inverter parameters are pre-configured before shipment. The installer only needs to configure the charging and discharging schedule and other permitted user settings according to customer requirements.

Parameter Protection

Important system and protection parameters are factory configured and should not be modified without authorization from GeePower.

The installer should only adjust the parameters specified below. Do not change any other system operating parameters unless instructed by GeePower Technical Support.

Installer Adjustable Parameters

Parameter 28 – Maximum Charging Current

Factory default: 60A.

The charging current can be adjusted up to a **maximum of 100A**. However, GeePower recommends avoiding unnecessarily high charging currents to support battery performance and long-term cycle life.

Parameters 40–55 – Charging & Discharging Schedule

Configure the charging and discharging time periods according to the customer's electricity tariff and usage requirements.

Parameter 61 – Backup Reserve SOC

Factory default: 10%. For a 15kWh battery system, this provides approximately 13.5kWh of usable energy under normal operation.

The reserve SOC can be adjusted; however, GeePower recommends maintaining the factory default of 10% or higher to avoid excessive depth of discharge and support long-term battery performance and cycle life. A higher reserve may be selected if the customer requires more capacity for backup operation.

Scheduled Charge / Discharge Settings (Time-of-Use)

The Scheduled Charge/Discharge function allows the battery to **charge during off-peak tariff periods and discharge during peak tariff periods**, helping customers make better use of variable electricity tariffs and reduce electricity costs.

The charging and discharging periods should be configured according to the customer's electricity tariff and daily energy usage.

Important – Settings Across Midnight

If a scheduled period crosses midnight, it must be divided into **two separate time periods.**

For example, if the required charging period is from 23:00 to 06:00, please set:

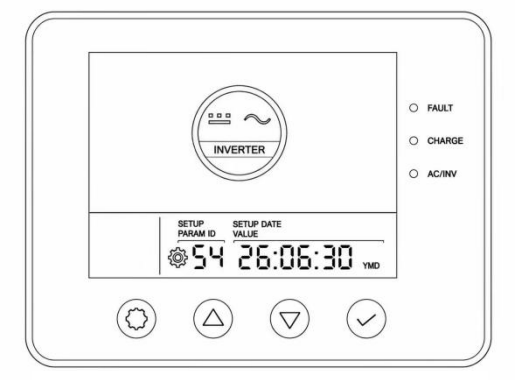
- **Time Period 1**: 23:00:00–00:00:00 (previous day)
- **Time Period 2**: 00:00:00–06:00:00 (next day)

The system will then operate continuously across midnight according to the two configured periods.

Step-by-Step Instructions please refer to Appendix A Scheduled Charge / Discharge Settings

Appendix A Scheduled Charge / Discharge Settings

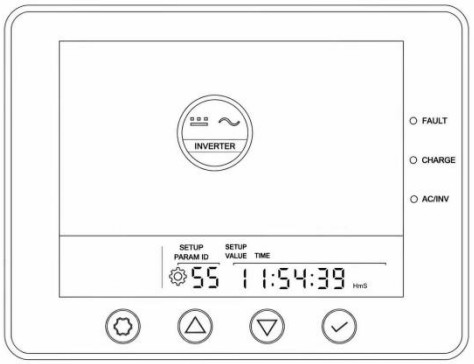
Charge Settings



【54】00:00:00 (Default Setting)

Set **Parameter 54 to adjust the date**.

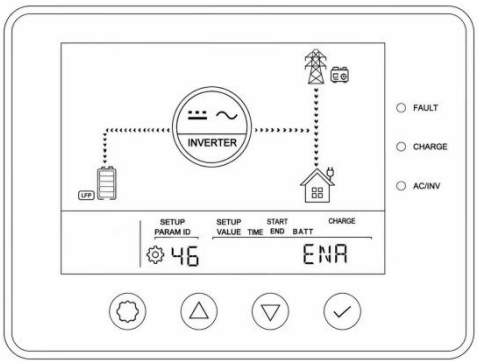
Set Range: 00:01:01-99:12:31



【55】00:00:00 (Default Setting)

Set **Parameter 55 to adjust the time**.

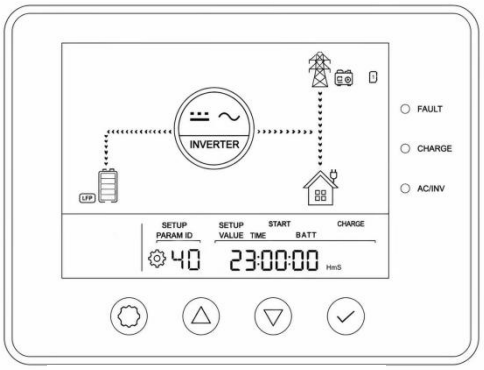
Set Range:00:00-23:59:00



【46】Default Setting: DIS (Disabled)

Set Parameter 46 to ENA to enable the Sectional Charging Function.

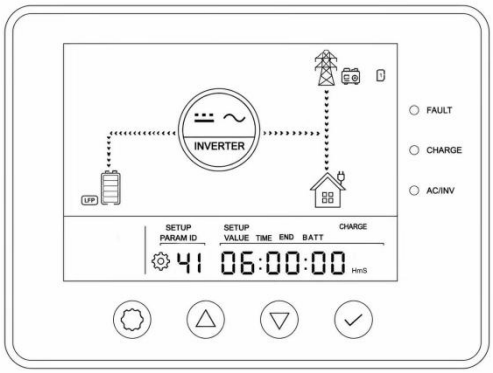
When enabled, the battery will be charged from the grid during the configured charging period. Outside the configured period, grid charging will be disabled.



【40】00:00:00 Default Setting

1st charging period start time

Set Range:00:00-23:59:00



【41】00:00:00 Default Setting

1st charging period end time

Set Range:00:00-23:59:00

【42】 00:00:00 (Default Setting)

2nd charging period start time

Set Range: 00:00–23:59

【43】 00:00:00 (Default Setting)

2nd charging period end time

Set Range: 00:00–23:59

【44】 00:00:00 (Default Setting)

3rd charging period start time

Set Range: 00:00–23:59

【45】 00:00:00 (Default Setting)

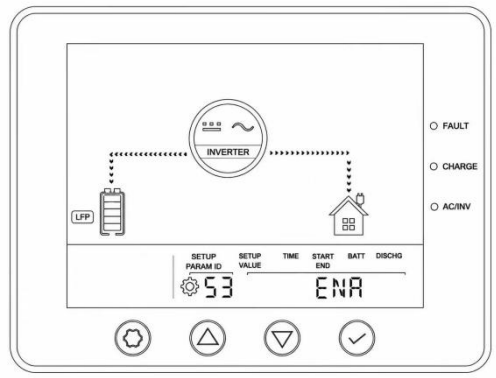
3rd charging period end time

Set Range: 00:00–23:59

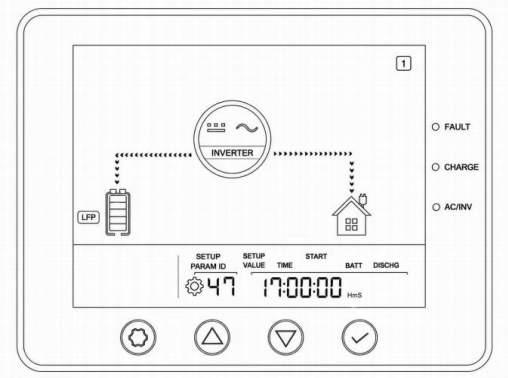
Three charging time periods can be configured by setting Parameters 40–45.

Discharge Settings

Three discharging periods can be configured by setting Parameters 47-52.
Parameter 53 must be set from DIS to ENA before using this function.

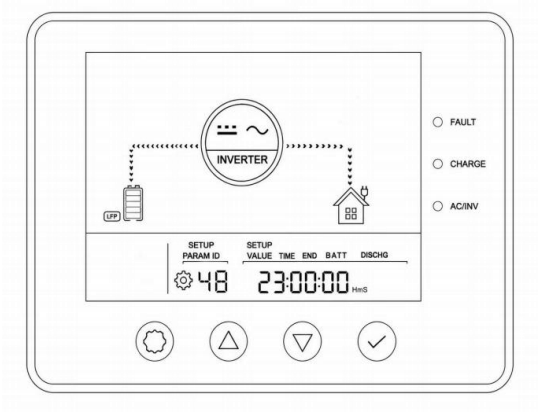


【53】Default Setting: DIS (Disabled)
Set Parameter 53 from DIS to ENA to enable the Sectional Discharging Function.
When enabled, the battery will discharge to support the load only during the configured discharging period, provided that sufficient battery energy is available. Outside the configured period, the system will automatically use mains power to supply the load when grid power is available.



【47】00:00:00 (Default Setting)
1st discharging period start time
Set Range:00:00-23:59:00

【49】 00:00:00 (Default Setting)
2nd discharging period start time
Set Range: 00:00–23:59
【50】 00:00:00 (Default Setting)
2nd discharging period end time
Set Range: 00:00–23:59
【51】 00:00:00 (Default Setting)
3rd discharging period start time
Set Range: 00:00–23:59
【52】 00:00:00 (Default Setting)
3rd discharging period end time
Set Range: 00:00–23:59



【48】00:00:00 Default Setting
1st discharging period end time
Set Range:00:00-23:59:00

4.7 Final Commissioning Check

Before completing commissioning, confirm the following:

- The system starts and operates normally.
- The inverter LCD displays no active alarm or fault.
- Battery and AC operating data are displayed correctly.
- PV operating data are displayed correctly, if PV is installed.
- Smart Meter communication is normal.
- The CT installation position and direction have been verified.
- The Smart Meter power value and direction change correctly with the household load.
- The system responds correctly to changes in household consumption.
- Grid import/export power is measured correctly and the system responds according to the configured operating mode.
- The charging and discharging schedule has been configured according to the customer's requirements.
- The AC OUT critical-load circuit operates normally, if used.
- The Manual Transfer Switch operates correctly, if installed.
- The total continuous backup load does not exceed 6.2 kW.
- All covers have been reinstalled.
- The installation area is clean and safe.

After all checks have been completed successfully, proceed with WiFi module installation and remote monitoring configuration.

5. WiFi Monitoring Setup

5.1 WiFi Module Function

The WiFi module provides the communication connection between the Terra A inverter and the remote monitoring platform.

After successful installation and network configuration, users can remotely access system information through the monitoring APP, including:

- Battery status and State of Charge (SOC).
- Battery charging and discharging status.
- Household energy consumption.
- System operating status and alarms.

The WiFi module also performs **automatic system time synchronisation periodically**. To ensure scheduled charging and discharging functions operate at the correct time, the **correct local time zone must be selected during APP setup and device binding**.

The WiFi module is recommended to remain connected during normal system operation to support remote monitoring, system data access and technical support.

5.2 WiFi Module Installation

After system commissioning is completed, install and configure the WiFi module.
The WiFi module can be installed in a suitable location near the inverter, such as:

- Mounted on the wall near the inverter.
- Secured on the top of the inverter.

Select a location with a **stable WiFi signal** and ensure the module is securely installed.

After network configuration, confirm that the device is **online and communicating normally with the monitoring platform**.

For detailed installation instructions, LED indicator status, network configuration and user registration, refer to the **Stick Logger Quick Guide** supplied with the WiFi module.

6. Installation Completion

After completing the installation and commissioning procedures, perform a final check to confirm that the Terra A system is operating correctly.

Before leaving the installation site:

- Confirm that the system is operating normally with no active alarms or faults.
- Confirm that the WiFi module is online and remote monitoring is available.
- Confirm that the charging/discharging schedule has been configured according to the customer's requirements.
- Confirm that the customer can access the monitoring APP and view the system status.
- Briefly explain basic system operation and safety information to the customer.

The Terra A system is now ready for normal operation.

Documentation & Technical Support

Scan the QR code to access the latest Terra A documentation, monitoring APP guide, warranty information, and technical support resources.

Contact GeePower

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After-Sales Service: service@geepoweress.com
Technical Support: support@geepoweress.com
Website: www.geepoweress.com

For safe and reliable operation, always follow the instructions in this manual and contact GeePower if further assistance is required.