E-AblePower Technology

DOC. EAP-MAN-INV-2026-01
REV. A · NOVEMBER 2026

INSTALLATION AND OPERATION MANUAL

Hybrid Inverter

For grid-connected and backup systems

Covers battery and AC wiring, BMS communication, display setup, output priority, charging settings and parallel connection.



PV + BATTERY + GRID

One integrated hybrid power path for the whole site.

PARALLEL OPERATION

Two units share the battery bank and the load.

BACKUP TRANSFER

Automatic grid takeover when the battery reaches its floor.

LISHUI E-ABLE POWER EQUIPMENT CO., LTD.
No.368, Chengbei Road, Liandu District, 323000, Lishui, Zhejiang, China

www.e-ablepower.com
arthur@e-ablepower.com · WhatsApp +86 153 5558 9600

DOCUMENT INFORMATION

Contents

01 Safety information 3
02 System overview 4
03 Installation and wiring 5
04 BMS communication 7
05 Display overview 9
06 Output priority 10
07 Charging settings 12
08 Parallel connection 14
09 Battery priority at night 16
10 Commissioning checklist 17
11 Support and contact 18

About this manual

This manual describes the E-ABLE hybrid inverter platform and the menu paths used on its colour display. It is written for qualified installers and service technicians. Read the safety information before wiring, and keep this document with the system for future reference.

The illustrations are representative. The display on your unit may differ slightly in layout, but the menu names and sequence are the same. Always follow the labels on the product and the requirements of the local grid operator.

Document control

Document number	EAP-MAN-INV-2026-01
Revision	A — first release
Date	November 2026
Applies to	E-ABLE hybrid inverter platform
Language	English
Publisher	Lishui E-ABLE Power Equipment Co., Ltd.
Website	www.e-ablepower.com

Symbols used

DANGER — risk of electric shock, burns or death. Isolate before working.

WARNING — risk of damage to the inverter, battery or connected equipment.

NOTE — useful information for a correct or efficient installation.

KEEP THIS MANUAL

Hand this manual to the system owner after commissioning. It contains the settings required for night-time battery use, parallel operation and future service.

01 · INSTALL

Pages 5–8

Wire the battery, AC and PV inputs, then set the BMS protocol and check the battery reading.

02 · CONFIGURE

Pages 9–13

Read the display, set the output priority and charging mode, and match the current limits to the battery.

03 · VERIFY

Pages 14–17

Commission the system, verify parallel operation and complete the handover checklist.

01 · SAFETY

Safety information

The inverter works with hazardous DC and AC voltages. Installation, commissioning and service must be carried out by qualified personnel who are familiar with the local electrical code and the battery system.

DANGER — ELECTRIC SHOCK
The PV array, battery and AC terminals remain live even when the inverter display is off. Isolate the PV, battery and AC supplies, then verify that no voltage is present before opening any terminal cover.

Before you start

- Read this manual and the battery manufacturer's instructions.
- Confirm that the PV open-circuit voltage and battery voltage are within the inverter's rated input range.
- Check that the AC grid voltage, frequency and phase configuration match the inverter model.
- Obtain grid-connection approval where required before energizing the system.

Personal protection

- Use insulated tools and appropriate personal protective equipment.
- Do not work on the system in wet conditions or with wet hands.
- Remove metal jewellery before working on DC terminals.
- Keep children and unauthorized persons away from the installation area.

Electrical precautions

Polarity

Verify the positive and negative polarity of every PV and battery string before connecting it. Reverse polarity can cause permanent damage to the inverter and the battery.

Isolation

Open the PV input breaker, the AC input breaker and the battery breaker before working on the wiring. Lock off where possible and attach a warning tag.

Battery short-circuit current

A battery can deliver a very high short-circuit current. Keep terminals covered, use insulated tools and never lay tools or metal parts on top of the battery.

Grid connection

The grid connection must comply with the local grid code and the approved interconnection terms. Do not energize the AC output until the installation has been inspected and approved.

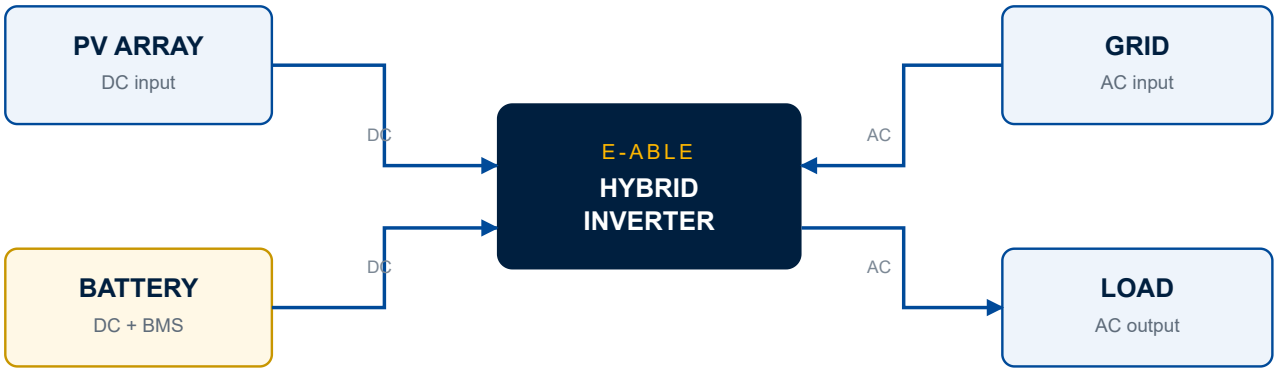
WARNING — NO USER-SERVICEABLE PARTS
Do not open the inverter enclosure beyond the wiring compartment and the Wi-Fi module port. There are no user-serviceable parts inside. Contact E-ABLE for service or repair.

NOTE — FAULT CONDITIONS
If the inverter reports a fault, record the fault code and the operating conditions before restarting. Do not repeatedly reset a fault without identifying the cause.

02 · SYSTEM OVERVIEW

How the system works

The inverter manages four power paths — PV input, battery, grid input and AC output. The display and the settings menu decide which source supplies the load and when the battery is charged or discharged.



PV input

The PV array charges the battery and supplies the load during the day. PV power is used first when the charging mode is set to PV priority or PV only.

Battery

The battery stores surplus PV energy and supplies the load at night. The BMS communication link gives the inverter the state of charge, voltage and current.

Grid and load

The grid supplies the load when the battery reaches its discharge floor, and can charge the battery if the charging mode allows it. The AC output feeds the backed-up loads.

Setting groups on the display

Normal	Grid-connected operation without export. Output priority, AC voltage and frequency, and power-saving settings.
Battery	Battery type, capacity, charge and discharge limits, and protection voltages.
Parallel	Parallel mode, communication address and independent battery setting for multi-unit systems.
Hybrid	Export and CT-based zero-feed control. Use only where a feed-in agreement or CT is present.
BMS	Battery and inverter communication protocols.
Others	Display, time and service settings.

NO EXPORT?
Use **NORMAL** mode with **BATTERY PRIORITY**. Hybrid mode is intended for sites with a feed-in agreement or a CT for zero-export control; it is not the correct choice for a site that must never export.

03 · INSTALLATION

Battery and communication wiring

Connect the power cables first, then the BMS communication cable. Keep the DC cables as short as practical and route them away from the AC and communication cables.

1 Power cables first

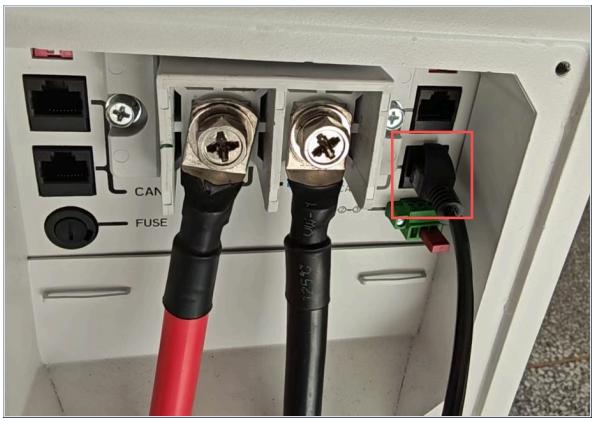
Connect the battery positive and negative cables to the inverter BAT terminals. Verify the polarity against the terminal labels before tightening the bolts.

2 Communication cable next

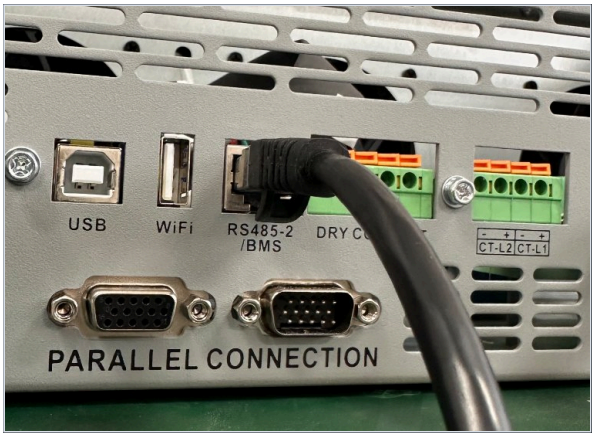
Connect the BMS communication cable between the battery and the inverter. This link carries battery status data — state of charge, voltage, current and alarms — so the inverter can control charging correctly.

WARNING — POLARITY
Reversing the battery polarity can destroy the inverter and the battery. Check the cable ends with a meter before connection.

BEFORE CLOSING THE COVER
Photograph the terminal wiring and record the battery model and BMS protocol in the installation record. This makes future service and support faster.



Battery power terminals. Positive and negative cables with the terminal cover removed.

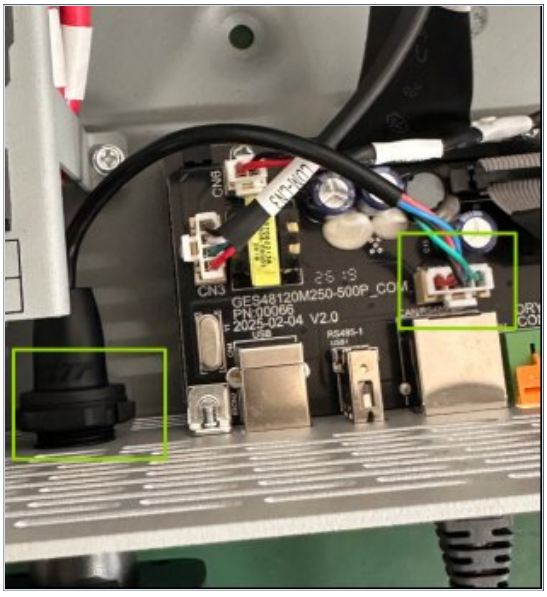


BMS communication port. Connect the battery communication cable to the RS485/BMS port.

Cable routing

- Keep the battery cables separate from the AC input and output cables.
- Route the communication cable away from power cables to avoid interference.
- Support long cable runs and avoid sharp bends at the terminal glands.
- Leave a service loop so the wiring compartment can be opened without straining the cables.

NOTE — BATTERY BREAKER
The battery breaker must be OFF while the cables are connected. Switch it ON only after the polarity and torque have been checked.



Communication board. Route the BMS cable away from power conductors and secure it with a cable tie.

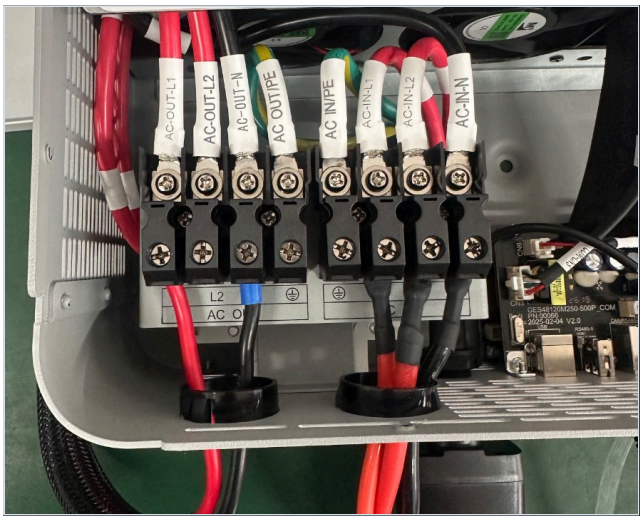
03 · INSTALLATION

AC, PV and power-on

The AC side has two terminal groups: AC input from the grid and AC output to the load. The PV input is a separate DC input. Follow the terminal labels exactly.

AC input and output

Connect the grid to the AC input terminals and the backed-up loads to the AC output terminals. Keep the input and output routes separate and clearly identified.

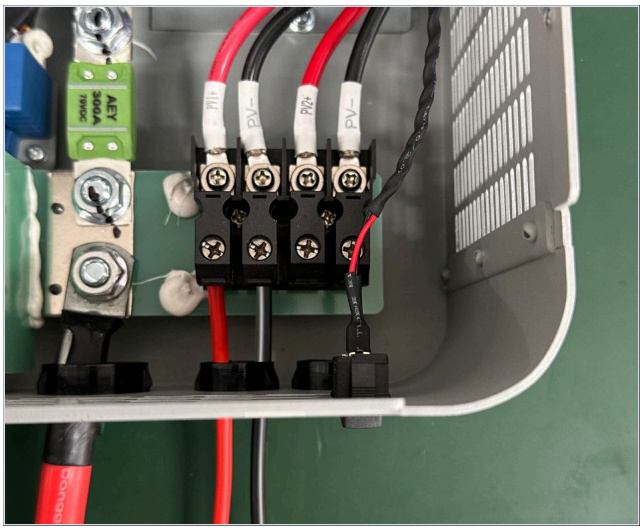


AC terminal group. Follow the INPUT and OUTPUT labels; do not reverse the two routes.

> **WARNING — REVERSE CONNECTION**
> Reversing AC input and output can damage the inverter and create a back-feed hazard.

PV input

Connect the PV strings to the PV input terminals. Check the open-circuit voltage and polarity of each string before connection.



PV input terminals. Confirm string polarity and voltage before inserting the connectors.

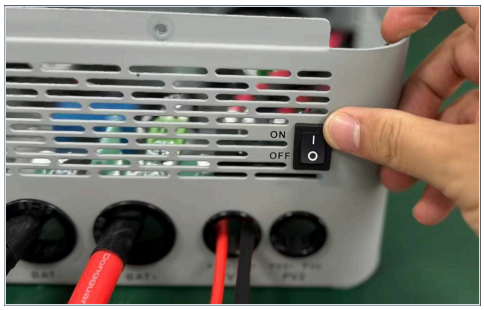
> **NOTE — PV BREAKER**
> The PV input breaker must be OFF during wiring and switched ON only at commissioning.

Power-on sequence

1. **Switch on the battery**
   Turn on the battery breaker. A few seconds of short-circuit protection behaviour at battery startup is normal — wait until the battery starts normally before continuing.

2. **Switch on the PV and AC breakers**
   Close the PV input breaker and the AC input breaker to energize the system.

3. **Switch on the inverter**
   Once the battery is working normally, switch on the inverter. The display starts and the main screen appears.



Inverter switch. Switch on only after the battery is stable.

04 · BMS COMMUNICATION

BMS communication setup

The inverter must read the battery's state of charge, voltage and current before it can control charging and discharging correctly. Set the battery protocol and the inverter protocol before checking the battery reading.

Two protocols to set

SETTING	VALUE
Battery protocol	RS485 Luxpower
Inverter protocol	RS485 PYLON
Communication type	485-BMS

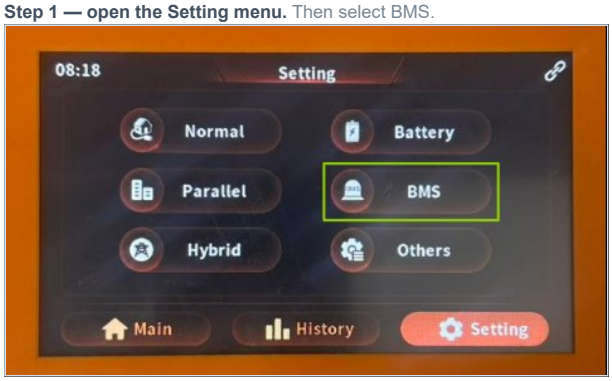
Use the settings menu or the monitoring APP to select each protocol. After saving, return to the main screen and check that the battery values are shown.

WARNING — PROTOCOL MATCH
The protocol must match the battery manufacturer's approved list. If the battery model is not listed, contact E-ABLE with the battery brand and model before changing the setting.

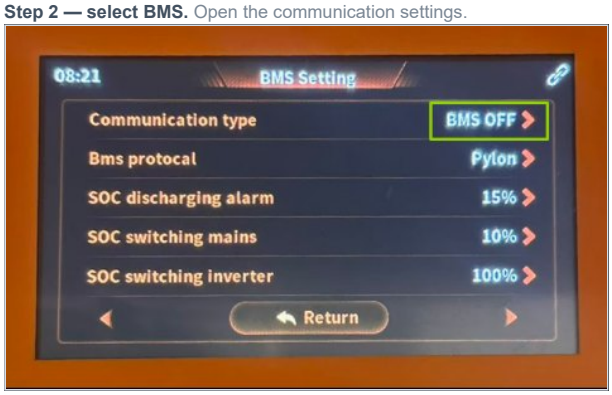
NOTE — ONE BATTERY, ONE PROTOCOL
Do not change protocols while the system is charging or discharging. Stop the battery, change the setting, then restart.



Step 1 — open the Setting menu. Then select BMS.



Step 2 — select BMS. Open the communication settings.



Step 3 — select the protocol (example). Choose the protocol approved for your battery, then confirm.

Before you set the protocol

- Confirm the battery communication cable is connected to the correct port.
- Confirm the battery is powered on and its BMS is awake.
- Have the battery model and protocol list available.

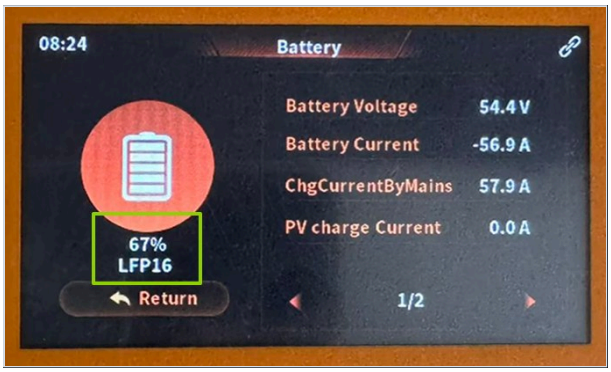
After you set the protocol

- Return to the main screen and wait for the battery values to update.
- Check that SOC, voltage and current are plausible.
- If the values do not appear, recheck the cable and protocol before charging.

04 · BMS COMMUNICATION

Verify the BMS link

The BMS link is working when the inverter displays a battery SOC that matches the battery's actual state. A mismatch, a blank value or a communication alarm means the link is not ready.



Battery data screen. SOC, voltage, current and temperature should all be present.

What to check

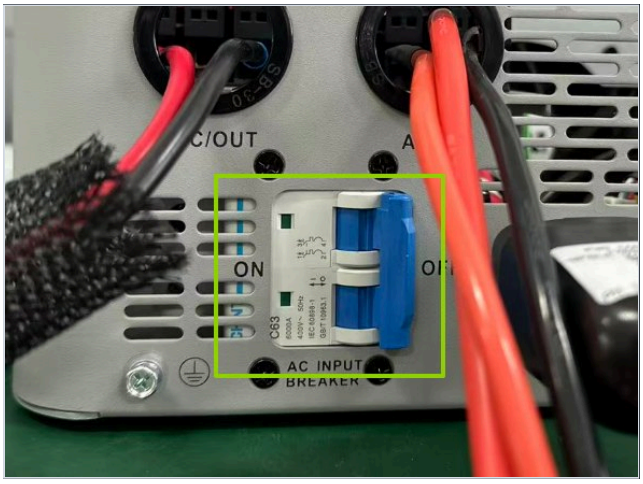
VALUE	EXPECTED
SOC	Matches the battery's own display or app.
Voltage	Close to the measured battery terminal voltage.
Current	Plausible for the load or charge at that moment.
Alarms	No communication or BMS alarm on the screen.

IF THE READING IS WRONG
Check the communication cable at both ends, confirm the protocol, and confirm that the battery BMS is powered. Do not start charging until the reading is correct.

Breakers and Wi-Fi module

Power path

Switch on the PV input breaker and the AC input breaker to energize the system. Both must be ON for normal operation.



Breaker panel. PV input and AC input breakers in the ON position.

Monitoring link

Install the Wi-Fi module in the Wi-Fi port so the system can be monitored remotely. The module must be fully seated and kept dry.

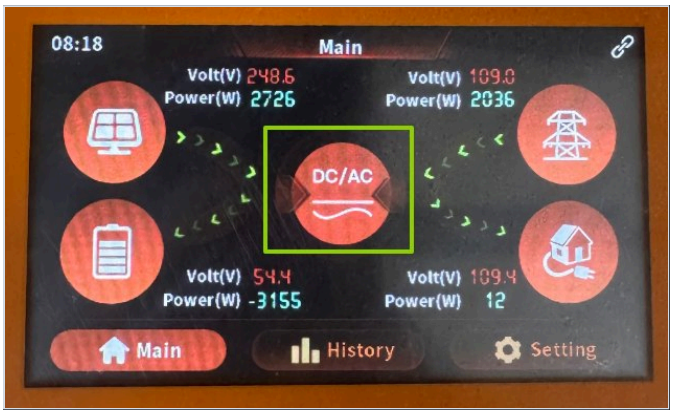


Wi-Fi module. Insert into the Wi-Fi port and secure the cable gland.

05 · DISPLAY

Main display overview

The main screen groups the operating data into six areas. Check each area before changing a setting, and use the values as the baseline for commissioning.



Main screen. PV, grid, battery and load values are shown around the central DC/AC indicator.

1 · Solar PV input
Panel voltage and power.

2 · AC input
Grid voltage, power and connection status.

3 · Battery
SOC, voltage, charge and discharge power.

4 · AC output load
Power delivered to the backed-up loads.

5 · Machine
Inverter status, temperature and faults.

6 · History
Daily and total energy records.

Reading the screen

Power flow

The arrows around the DC/AC indicator show the direction of power. An arrow toward the battery means charging; an arrow away from the battery means discharging.

Status and faults

The machine area shows the current operating state. If a fault appears, record the code before clearing it and refer to the quick checks on page 17.

BEFORE CHANGING A SETTING
Note the PV power, grid status, battery SOC, load power and any fault code. These values tell you whether the system is operating normally before you change a priority or charging setting.

06 · OUTPUT PRIORITY

Output priority setup

Output priority decides which source supplies the backed-up load. Set it under Normal mode. The same screen is used for Mains, PV, Battery and Hybrid priority.

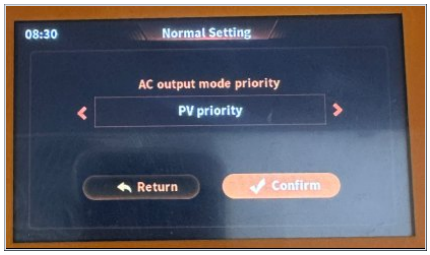
Setting › Normal › AC output mode priority › Select priority › Confirm



1 — Setting › Normal. Open the Normal setting group.



2 — AC output mode priority. The current value is shown on the right.



3 — Select the priority. Use the arrows, then Confirm.

Priority options

OPTION	BEHAVIOUR	TYPICAL USE
Mains priority	Grid supplies the load; battery is held as backup and takes over only when the grid fails.	Unstable grid, maximum backup reserve.
PV priority	PV and battery supply the load; grid is the fallback when PV charging is insufficient.	Stable grid, maximize solar self-use.
Battery priority	Battery supplies the load; grid takes over when the battery reaches its discharge floor.	Night-time battery use; no-export sites.
Hybrid	Excess PV can be exported; a CT is normally used for zero-feed control.	Sites with a feed-in agreement or CT.

PRESS CONFIRM
Highlighting an option does not save it. Press **CONFIRM** and return to the main screen to verify that the new priority is active.

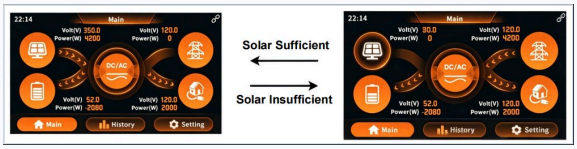
NO EXPORT?
Choose **BATTERY PRIORITY** in Normal mode. Do not choose Hybrid unless the site has a feed-in agreement or a CT for zero-export control.

06 · OUTPUT PRIORITY

Choosing the right priority

The four options look similar on the menu but behave very differently at night and during a grid outage. Match the priority to the site's export permission and backup requirement.

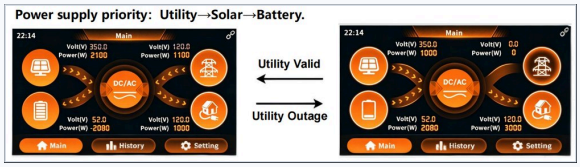
PV priority — solar first



Load runs from PV and battery; the grid is the fallback when PV charging fails. Maximizes solar use.

BEST FOR STABLE GRIDS WITH GOOD SOLAR

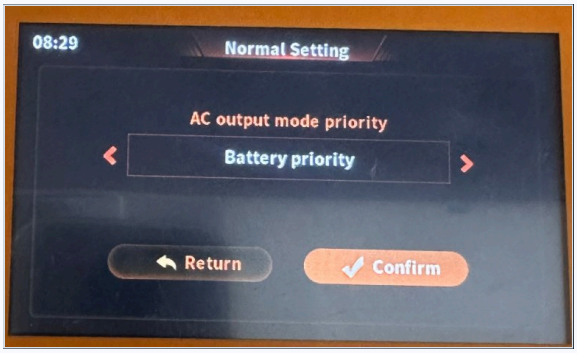
Grid priority — mains first



Charges and supplies from the mains; the battery takes over only when the grid fails. Works like a backup UPS.

BEST FOR UNSTABLE GRIDS AND BACKUP RESERVE

Battery priority — battery first



No PV at night: the battery powers the load; when the battery is low, the grid takes over. Maximizes DC use.

BEST FOR NIGHT-TIME BATTERY USE AND NO-EXPORT SITES

Hybrid mode — export and CT



Excess solar feeds back to the grid; a CT is normally used for zero-feed control.

ONLY FOR SITES WITH A FEED-IN AGREEMENT OR CT

CUSTOMER SYMPTOM — GRID WINS AT NIGHT

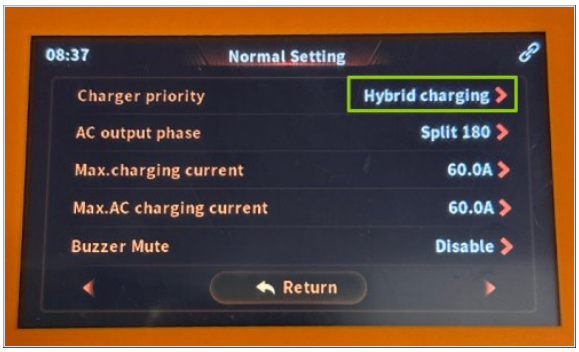
If the grid supplies the load at night while the battery is full, the inverter is in **MAINS PRIORITY**. Change it to **BATTERY PRIORITY** and press Confirm. See page 16 for the full procedure.

07 · CHARGING

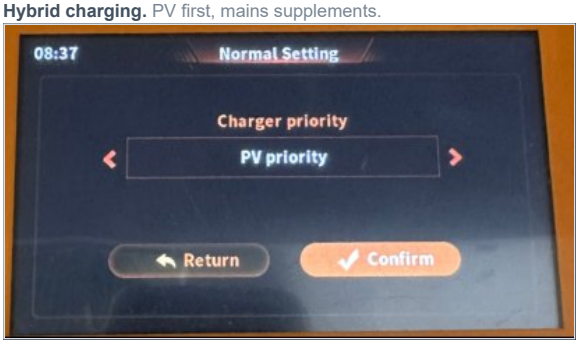
Charging mode options

The charging mode is separate from the output priority. It decides whether the battery is charged from PV, from the grid, or from both. Set both correctly for the site's tariff and export permission.

MODE	BEHAVIOUR	TYPICAL USE
Hybrid charging	PV first; the mains supplements when PV is insufficient.	Fastest charge; unstable grid.
PV only	Solar alone charges the battery; no grid charging.	Good solar; lowest energy cost.
Mains priority	Mains charges first; PV charges when the mains fails.	Time-of-use tariff or poor solar.
PV priority	PV charges first; the mains charges when PV fails.	Stable grid; high electricity price.



Hybrid charging. PV first, mains supplements.



PV only. Solar alone charges the battery.

NIGHT-TIME BATTERY USE

If the charger is set to **MAINS PRIORITY**, the battery may be recharged from the grid at night. For a customer who wants to use the battery at night, choose **PV PRIORITY** or **PV ONLY** unless the tariff requires grid charging.

CHARGING MODE IS NOT OUTPUT PRIORITY

Output priority decides what supplies the load; charging mode decides what charges the battery. A system can be in Battery priority and still charge from the grid if the charging mode allows it.

Choosing a charging mode

Good solar, no export

PV priority or PV only. Avoid grid charging unless the battery is undersized for the night load.

Time-of-use tariff

Mains priority can charge during the cheap window; confirm the schedule with the customer.

Frequent outages

Hybrid charging keeps the battery ready; pair it with a higher discharge floor for reserve.

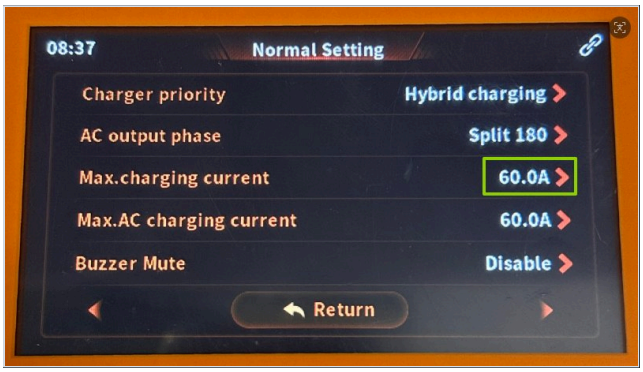
07 · CHARGING

Charging current and protection

Set the current limits and protection values to match the battery datasheet. These settings protect the battery and the wiring; they are not a substitute for the battery's own BMS limits.

1 Maximum charging current

Set the maximum PV and AC charging current. The value must not exceed the battery's continuous charge current or the breaker rating.



Max charging current. Set per the battery datasheet.

2 Charge and discharge SOC limits

Set the maximum charging SOC and the minimum discharging SOC. For night-time use, a discharge floor of 10–20% is typical; confirm the limit with the battery manufacturer.



SOC limits. BMS Setting › SOC discharge / charge limits.

3 Battery type and voltage

Select the battery type. For a gel battery or user mode, set the constant-charge and float voltages to the battery manufacturer's values.



Battery type. Select GEL, LFP16 or USER; set the voltages to the battery datasheet.

4 Protection values

Configure the charging and discharging protection voltages. Incorrect values can cause nuisance alarms or damage the battery.



Battery voltage settings. Constant, float and protection values must match the battery datasheet.

WARNING — VOLTAGE SETTINGS

Do not guess the charge or protection voltages. Use the battery datasheet or the values supplied by the battery manufacturer. If the values are not available, contact E-ABLE before commissioning.

08 · PARALLEL CONNECTION

Parallel connection

Two units can share a battery bank and a load when they are wired and addressed correctly. Use the same model and battery configuration; confirm compatibility with E-ABLE before installing.

1 **Physical link**

Connect the parallel communication cables between the two units. Use the parallel ports shown in the figure; do not use the BMS port for the parallel link.

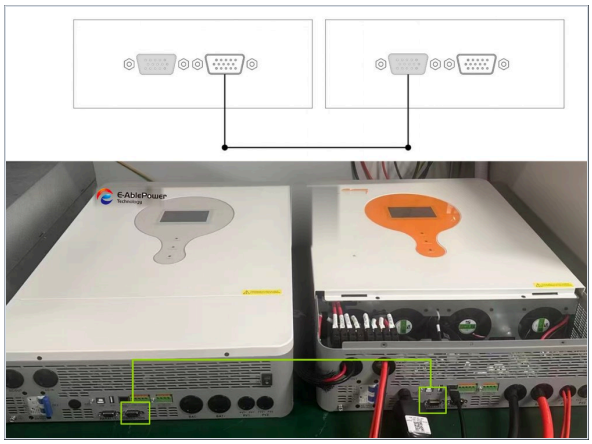
2 **Configure unit 1**

Open the parallel menu on the first inverter, set parallel mode and assign communication address 1. Apply the shared battery and output settings.

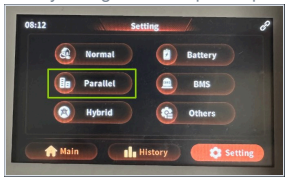
3 **Configure unit 2**

Repeat the same settings on the second inverter, but assign communication address 2. Both units must use different addresses.

> **ADDRESS CONFLICT**
> If both units are set to the same address, the parallel system will not run correctly. Confirm the address on each display before closing the breakers.



Parallel link. Communication cables between the two units; AC and battery wiring remain separate per unit.



Parallel mode.



Address 1.

Before paralleling

- Both units are the same model and firmware family.
- Both battery banks are at a similar SOC before closing the parallel link.
- The AC input and output wiring is identical on both units.

After paralleling

- Both displays show the same battery SOC.
- Each unit carries approximately half of the total load.
- No address or communication alarm is present.

08 · PARALLEL CONNECTION

Verify parallel operation

Check the wiring first, then confirm the two success signs on the displays. A parallel system that is wired correctly but addressed incorrectly will still fail.

Wiring check

Match every line before closing the breaker. The same phase sequence is required on both the AC input and the AC output sides.

L1 to L1
Phase 1 matched.

L2 to L2
Phase 2 matched.

N to N
Neutral matched.

PE to PE
Earth matched.

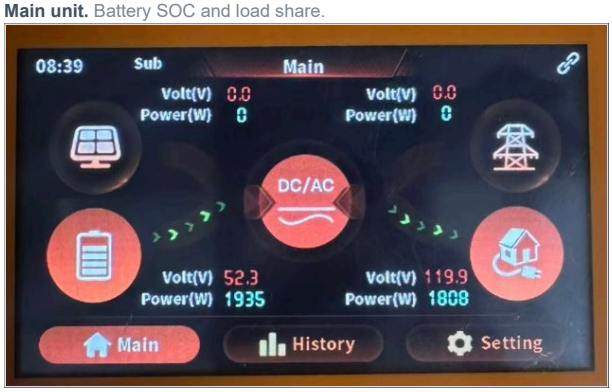


Terminal check. Confirm every line on both AC input and output sides.

Success signs



Main unit. Battery SOC and load share.



Sub unit. Same SOC, half the total load.

> **TWO READINGS CONFIRM A HEALTHY PARALLEL SYSTEM**
> Both inverters show the same battery SOC, and each inverter carries approximately half of the total load.

If the units do not share the load

SYMPTOM	CHECK
One unit carries all the load	Parallel cable, address setting, parallel mode on both units.
Different SOC readings	Battery wiring, BMS communication, battery breaker on each unit.
Address or communication alarm	Addresses must be 1 and 2; cables must be fully seated.

09 · APPLICATION NOTE

Battery priority at night

For a grid-connected site with no export permission, the usual requirement is to use the battery at night and keep the grid as an automatic backup. The correct setting is Normal mode with Battery priority.

1. **Open the priority menu**
   Setting › Normal › AC output mode priority.

2. **Select Battery priority**
   Use the arrows to select **Battery priority** and press **Confirm**. If you only highlight the option, the old setting remains active.

3. **Set the discharge floor**
   When the battery reaches the configured SOC floor (typically 10–20%), the inverter transfers to the grid automatically. Raise the floor for more backup reserve; lower it for more night capacity, within the battery warranty.



Target setting. AC output mode priority › Battery priority › Confirm.

NO EXPORT REQUIRED
Normal mode with Battery priority is a backup-style mode. It does not feed excess PV into the grid, so it suits sites without a feed-in agreement. If a CT is fitted, keep zero-export enabled as a safeguard.

ALSO CHECK THE CHARGER
If the charging mode is **MAINS PRIORITY**, the battery may be recharged from the grid at night. Use **PV PRIORITY** or **PV ONLY** for a true night-time battery cycle.

DAY
PV → load and battery
Solar charges the battery and supplies the load. Surplus is not exported in Normal mode.

NIGHT
Battery → load
With no PV, the battery supplies the backed-up load first.

LOW SOC
Grid → load
At the discharge floor, the inverter transfers to the grid automatically.

IF THE GRID STILL WINS AT NIGHT
Check that the setting was confirmed, that the unit is not in Mains priority, and that the battery discharge limit has not been reached. If the battery is full and the grid still supplies the load, the priority has not been saved.

10 · COMMISSIONING

Commissioning checklist

Complete this checklist before handing the system over. Keep a copy with the installation record and give one to the system owner.

✓	CHECK	EXPECTED RESULT
☐	Battery polarity and terminal torque	Correct polarity, cables secure
☐	BMS communication cable	Connected at both ends, no alarm
☐	Battery protocol and inverter protocol	Set and saved
☐	Battery SOC reading	Matches the battery
☐	PV input voltage and polarity	Within range, correct polarity
☐	AC input and output wiring	Grid to input, load to output
☐	PV and AC breakers	ON, no nuisance tripping
☐	Output priority	Battery priority (no-export sites)
☐	Charging mode	PV priority or PV only
☐	Charge and discharge current limits	Within battery datasheet
☐	SOC charge and discharge limits	Set per customer requirement
☐	Wi-Fi module and monitoring	Online in the APP
☐	Parallel addresses (if fitted)	1 and 2, shared load
☐	Fault log	No active fault

Quick checks

SYMPTOM	ACTION
Grid supplies the load at night	Set Battery priority and press Confirm; check the charger mode.
No battery reading	Check the BMS cable, battery power and protocol.
Battery does not charge from PV	Check the PV breaker, PV voltage and charging mode.
Parallel units do not share load	Check the parallel cable, addresses 1/2 and parallel mode.
Wi-Fi module offline	Reseat the module, check the router signal and APP configuration.

INSTALLER / COMPANY _____

COMMISSIONING DATE _____

SYSTEM SERIAL NUMBER _____

11 · SUPPORT

Support and contact

Contact E-ABLE for technical support, commissioning questions, spare parts or warranty service. Please include the system serial number, the inverter model and the fault code in your message.

LISHUI E-ABLE POWER EQUIPMENT CO., LTD.

No.368, Chengbei Road, Liandu District, 323000, Lishui City, Zhejiang, China

Website: www.e-ablepower.com · Email: arthur@e-ablepower.com

WhatsApp: +86 153 5558 9600

Warranty

The product warranty is provided according to the terms supplied with your order. Keep the invoice, the serial number and the commissioning record. Warranty service may require the installation record and the fault history.

Service information

Before contacting support, record the following:

- Inverter model and serial number.
- Battery model and BMS protocol.
- Fault code and the conditions when it occurred.
- PV, grid and battery values at the time of the fault.

Document history

Rev. A	November 2026 — first release
Document	EAP-MAN-INV-2026-01
Applies to	E-ABLE hybrid inverter platform

DISCLAIMER

The information in this manual is provided for installation and operation guidance. Specifications, menu paths and illustrations may change without notice. The display and labels on the product prevail. Installation must comply with local electrical and grid-connection regulations.

LATEST VERSION

Check www.e-ablepower.com for the latest revision of this manual before installation or service.

E-AblePower Technology

© 2026 Lishui E-ABLE Power Equipment Co., Ltd. All rights reserved. No part of this document may be reproduced without written permission.