Green Hero

Totem Core

T-CORE-10

Installation and user manual

10 kW three-phase hybrid inverter with Green Balance



For owners and qualified installers. Read the safety instructions before installation or use.

Green Hero HK Limited

English edition 1.0 | 22 October 2026

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Keep this manual, the battery instructions and the installation record together. Chapter 2 applies to all work.

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1 About this manual

This manual covers installation, electrical connection, commissioning, operation, Green Balance communication, troubleshooting and maintenance of the Green Hero Totem Core T-CORE-10 three-phase low-voltage hybrid inverter. Read it before work starts and keep it with the installation records. Installation and electrical work are for qualified personnel. Owners may use the operating and support sections without opening the equipment.

Product identity	Value
Product	Totem Core
Model	T-CORE-10
Rated output	10 kW
Material code	A81151400
Manufacturer	Green Hero HK Limited
Manufacturer address	UNIT 2A, 17/F GLENEALY TOWER, NO. 1 GLENEALY, CENTRAL, HONG KONG

Read the model and serial number from the inverter nameplate. The inverter serial number, Green Balance dongle identifier and battery serial number identify different products; record each separately.

1.1 How to use the instructions

Electrical ratings on the unit nameplate and approved installation design take precedence over an illustration. Optional equipment must be ordered, fitted and commissioned before its functions can be used. A communication feature appearing in an app does not by itself mean it is enabled on the installation.

1.2 Safety signal words

Signal	Meaning
DANGER	A hazardous situation that will result in death or serious injury if not avoided.
WARNING	A hazardous situation that could result in death or serious injury.
CAUTION	A situation that could cause minor or moderate injury.
NOTICE	Instructions preventing equipment damage or incorrect operation.

2 Safety

2.1 Qualified personnel and safe isolation

DANGER. AC, PV and battery supplies are separate energy sources. Switching off the grid supply alone does not make the inverter safe. Before wiring or maintenance, isolate every connected source, including any generator and BACK-UP circuit, secure against reconnection, wait at least five minutes and verify absence of voltage with suitable test equipment. The waiting time is not proof that the equipment is voltage-free.

Only qualified electrical personnel familiar with the equipment and applicable local rules may install, commission, open, repair or maintain it. Use insulated tools and appropriate personal protective equipment. Use ESD protection when authorised work involves electronic components. Do not remove protective covers for a customer inspection.

2.2 PV strings

PV cables can remain live in daylight after the inverter is stopped. Use the supplied, matching DC connector system and correct crimping tools. Check polarity, cold-weather open-circuit voltage, operating voltage, short-circuit current and insulation before connection. Never exceed the ratings in chapter 10. Secure the array frame and support system to protective earth as required. Do not intentionally earth PV positive or negative, and do not connect the same PV string to more than one inverter. Never disconnect PV connectors under load.

2.3 Battery

WARNING. A low-voltage battery can supply very high fault current and cause fire, burns or electric shock. Follow the battery manual as well as this manual. Isolate the battery before connecting cables; check polarity and voltage with a meter. Do not bridge positive and negative, connect loads between battery and inverter, or share one battery string between separate inverters unless an approved system design explicitly permits it.

Use only an approved battery profile and communication cable. Temperature, state of charge and the battery management system can limit charging and discharging. If the battery cannot start, is damaged, swollen, leaking or unusually hot, stop the work and contact the supplier. Do not repeatedly attempt to start an abnormal battery.

2.4 AC protection and earthing

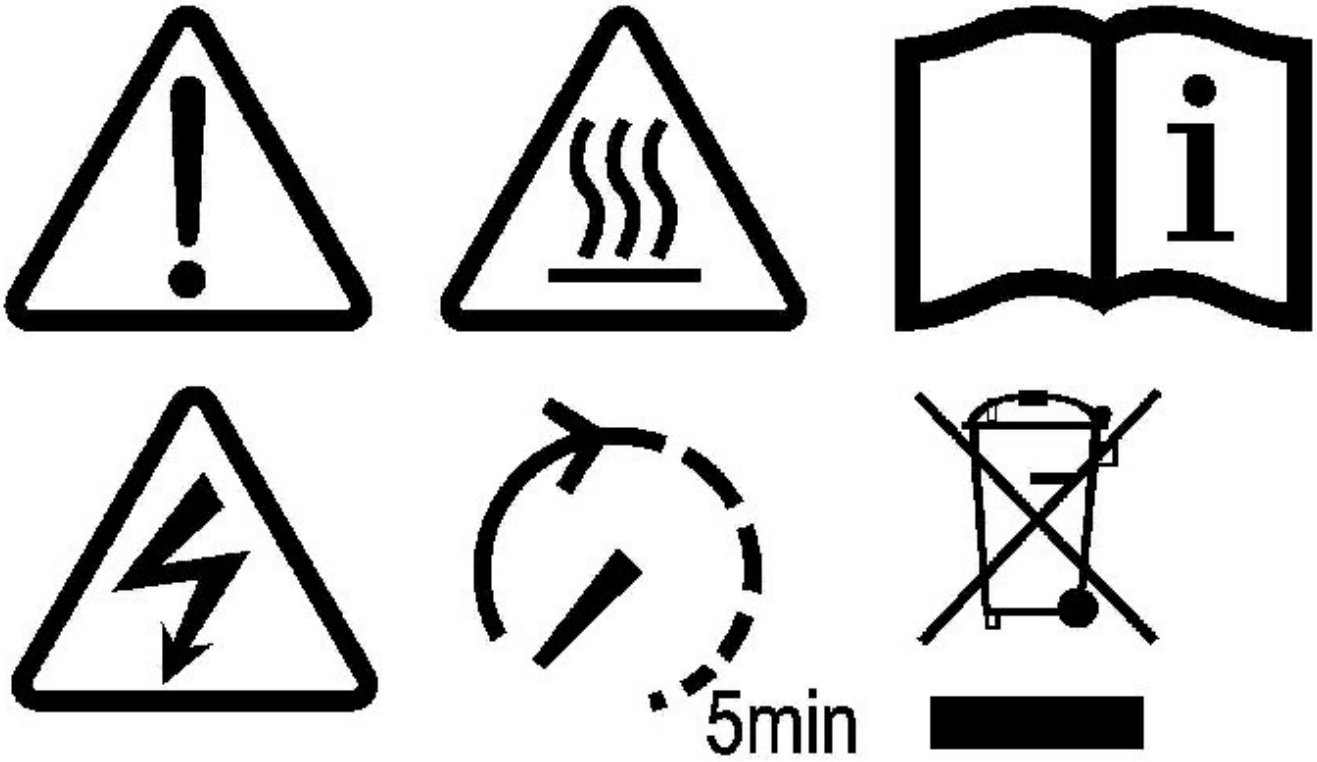
Check the grid voltage, frequency, phase sequence and neutral against the approved grid profile. The installer must size cables, breakers, residual-current protection and disconnection arrangements for the actual installation and local requirements. Protective earth must be connected before energising. Bond exposed conductive parts and the chassis of all parallel units. Do not bypass protection or change grid and insulation thresholds to clear a fault.

2.5 Backup loads and handling

The BACK-UP output is a separately designed circuit, not an unrestricted whole-house supply. Do not use it as the sole supply for life-support equipment. Large motor starting currents and capacitive loads can trip backup protection. The reference limit for capacitive loads is 0.7 times rated inverter output. If overload recurs, reduce the load and have the installation checked. Backup requires a suitable battery and an approved earthing and switching arrangement.

The enclosure and heatsink can become hot. Keep children away and do not cover the air inlet or outlet. Two people must lift the unit; support the chassis rather than the terminals, cables or communication ports. Keep the unit balanced and protect the enclosure when placing it down.

2.6 Symbols on the product



Product symbols: general warning, hot surface, read the instructions, high voltage, residual voltage with a five-minute wait, and separate electrical-waste collection. Observe the markings on the delivered unit.

At end of life, have qualified personnel disconnect and remove the equipment. Do not dispose of the inverter with household waste. Use an approved electrical-waste collection route; handle batteries separately according to the battery instructions.

3 Delivery and storage

Before accepting delivery, inspect the packaging for crushing, holes, cracks or moisture. Check the product model against the order. Photograph damage and notify the supplier before installation. After unpacking, check the enclosure, connectors and the quantities on the delivery note. Do not install a damaged or incomplete unit.

Item	Check
Inverter and mounting hardware	One inverter, wall bracket, supplied fasteners and sealing parts; check against the delivery note.
Power connectors	Matching PV contacts and housings, battery terminal covers and AC connectors for the ordered configuration.
Green Balance	Green Hero communication unit, matched cable and power equipment as specified in the order. These may be supplied separately.
Meter and sensors	Approved Green Hero meter, phase CTs and communication cable if included in the order.
Documents	Product manual, delivery and inspection information, applicable conformity documentation and purchase warranty terms.

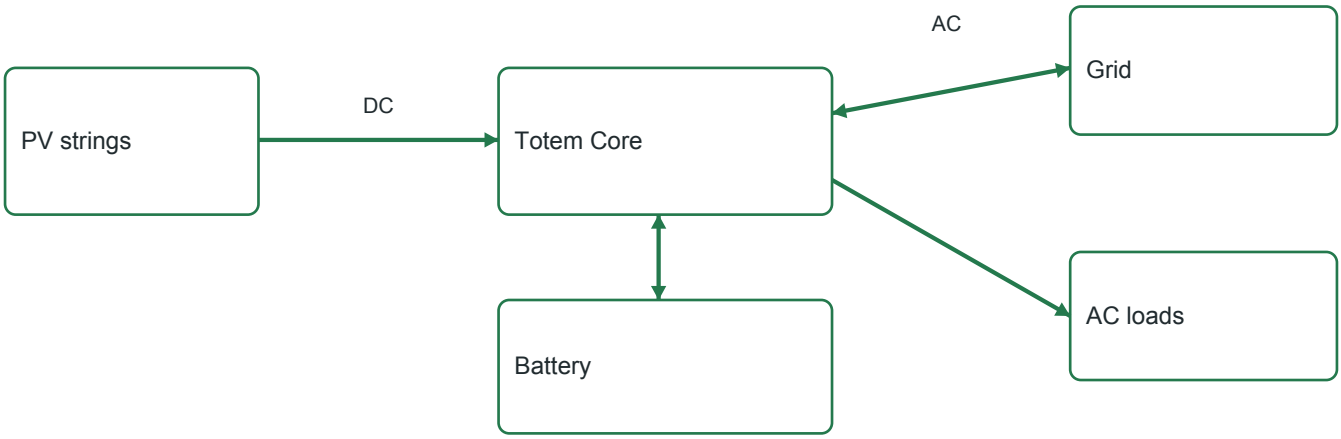
The Totem Core delivery uses Green Hero communication equipment. A third-party Wi-Fi or 4G module is not needed for the Green Balance instructions in this manual. Accessories and quantities depend on the order; a generic illustration is not a packing list.

3.1 Storage

Keep the original packaging and desiccant until installation. Store in a clean, dry environment within the stated temperature and humidity range. Follow the orientation and stacking marks, prevent tipping and protect connectors. After prolonged storage, have the unit inspected before use.

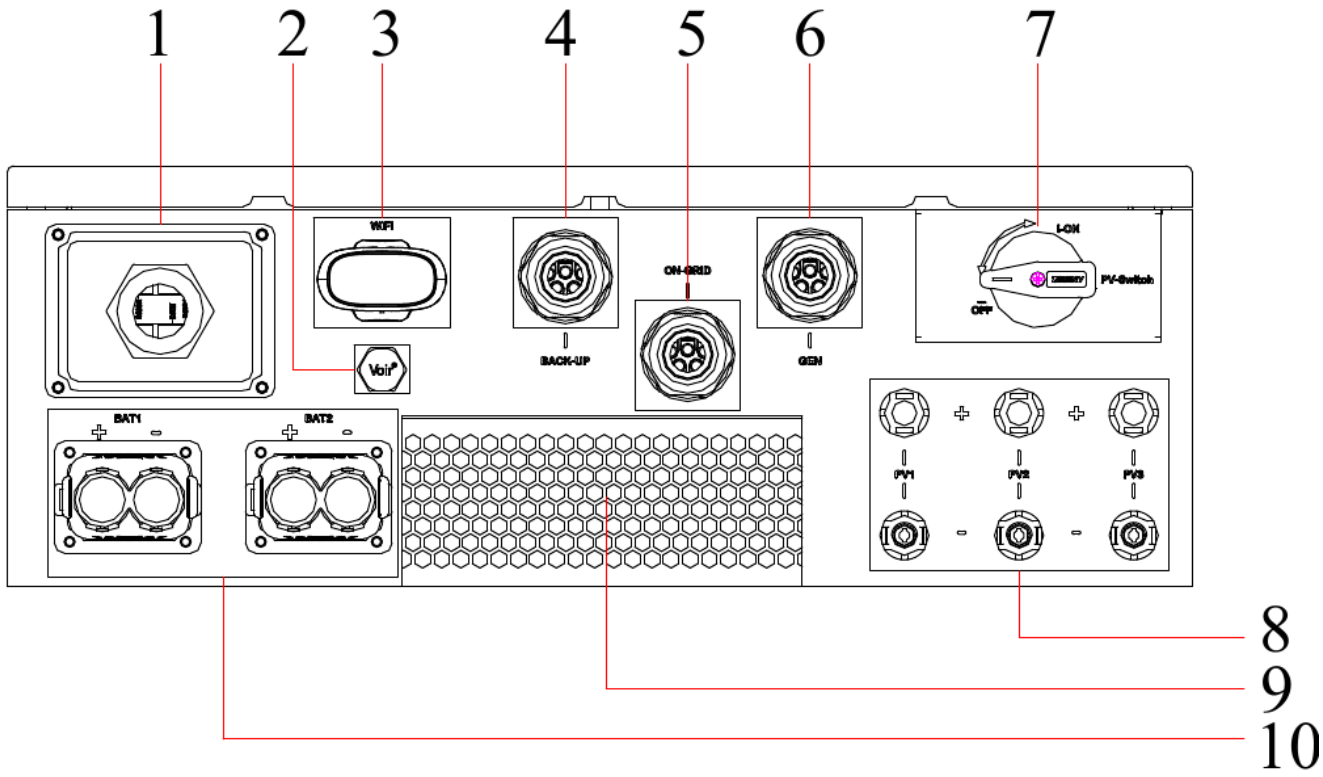
4 Product and installation layout

Totem Core combines PV conversion, battery charging and discharging, grid connection and an optional backup supply. Its internal operating modes determine energy priorities. Green Balance provides the separate communication path to Green Hero monitoring and authorised support functions. Internet connectivity is not proof that the inverter is generating power.



System overview. Power connections and communication are separate. BACK-UP and generator are optional and require approved design.

4.1 Appearance and connections



Underside connection layout. Match the numbers to the legend; identify connectors by the markings on the delivered unit.

No	Function
1	Communication cable entry / interface

No	Function
2	Pressure equalisation vent
3	Communication accessory position; use the supplied Green Balance arrangement
4	BACK-UP AC connection
5	ON-GRID AC connection
6	Generator AC connection, if commissioned
7	PV DC switch
8	PV positive and negative inputs
9	Fan assembly
10	Battery positive and negative connections

4.2 Dimensions

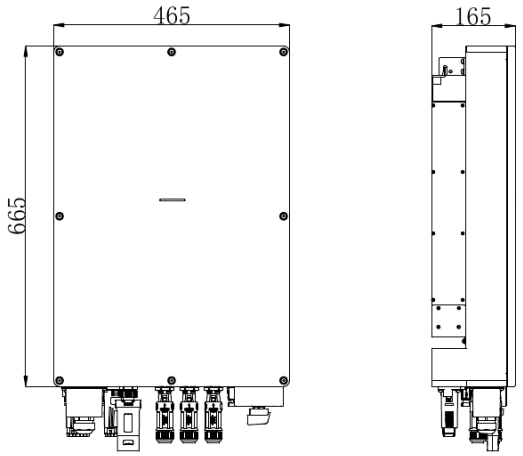


Figure 4.3 Dimensions of wall mount

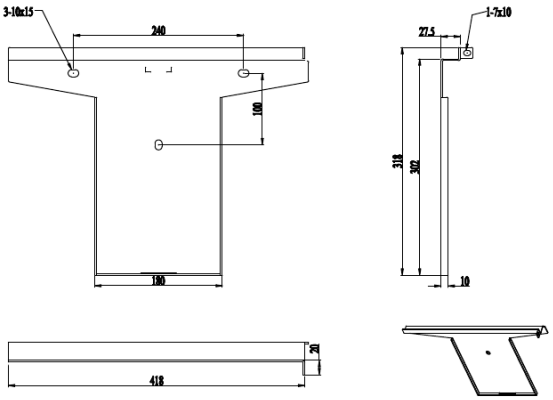


Figure 4.3 Dimensions of wall mount

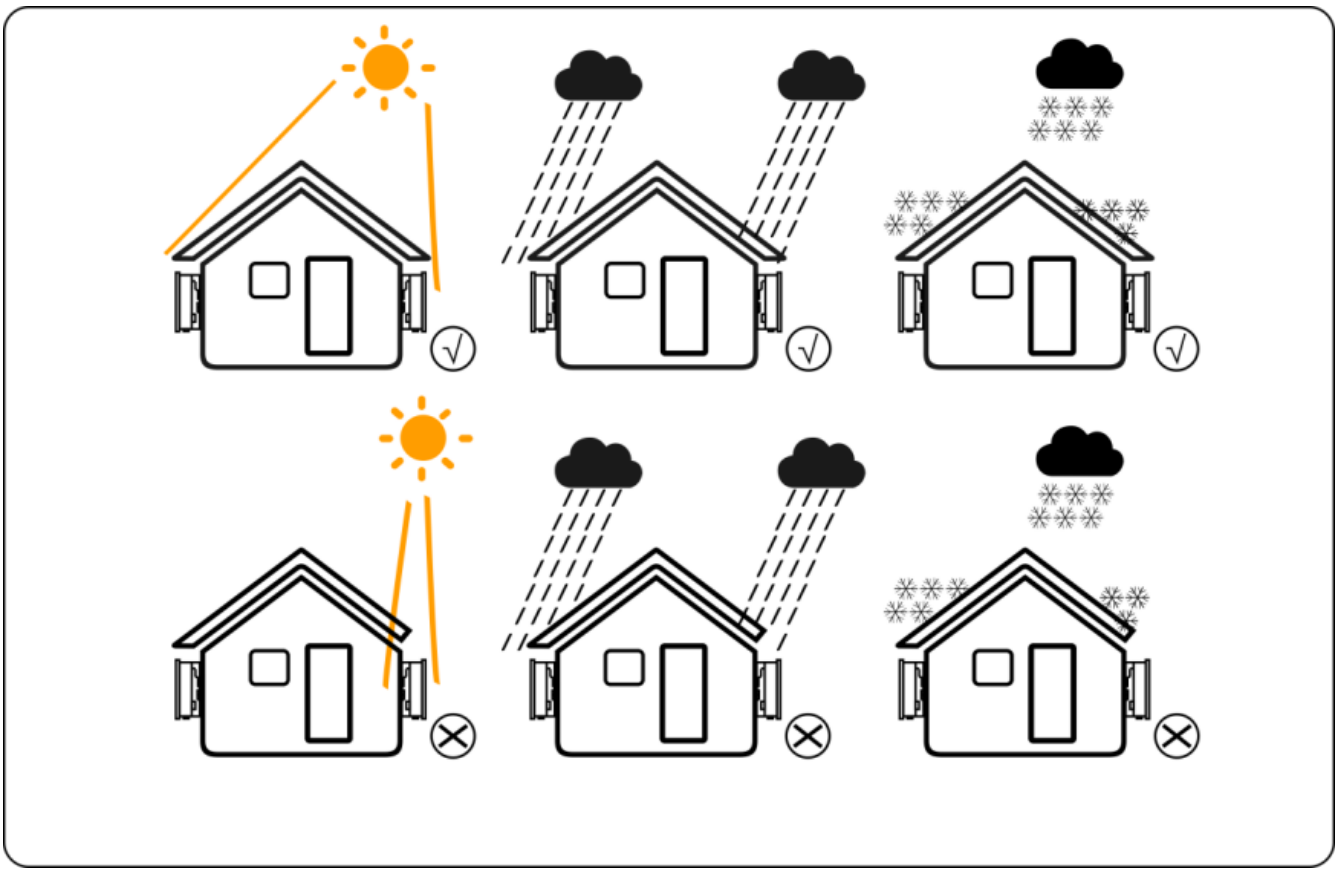
Enclosure dimensions: 465 mm wide, 665 mm high and 165 mm deep. Use the supplied wall bracket to transfer drilling positions. Dimensions shown on the bracket drawing are in millimetres.

5 Mechanical installation

5.1 Location and mounting surface

Choose a non-combustible, structurally sound surface that can carry the inverter and its service loads. Avoid flammable, explosive or corrosive atmospheres. Protect the unit from direct sun, rain and snow without obstructing ventilation. Keep it out of reach of children and away from positions where the hot enclosure can be touched accidentally. The indicator and labels must remain visible.

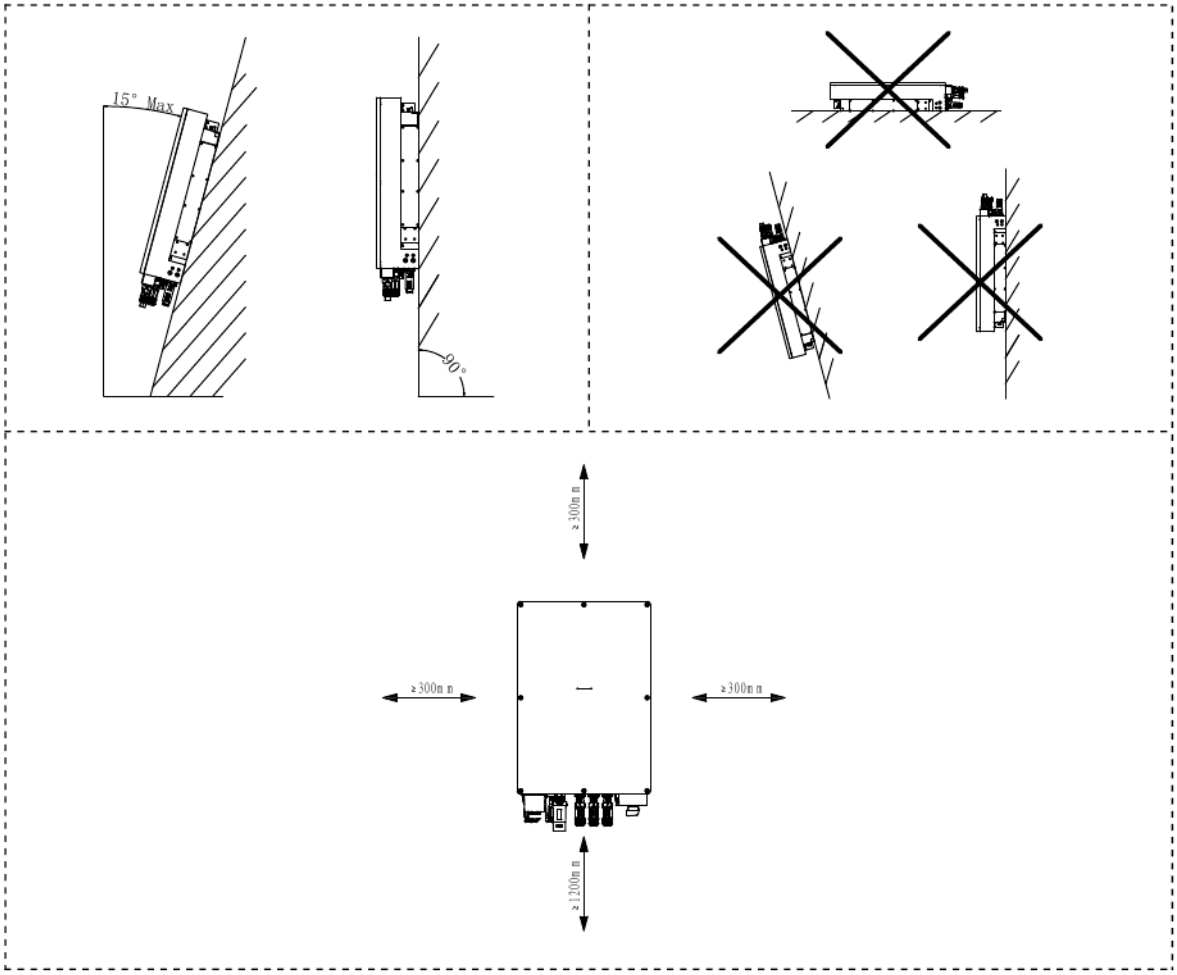
Allow access for wiring, the Green Balance cable, cooling and maintenance. Consider fan noise and vibration when selecting a wall; avoid mounting directly against noise-sensitive rooms. The installation altitude must be below 4,000 m. Avoid strong electromagnetic interference. Where equipment below 30 MHz causes interference, use an engineered separation and filter or ferrite solution; the reference separation is more than 30 m.



Use a sheltered position and keep ventilation clear.

5.2 Orientation and clearances

Mount vertically or with no more than 15 degrees backward tilt. Do not mount upside down, horizontally, tilted forward or with excessive backward tilt. Leave at least 300 mm above and on both sides and at least 1,200 mm below the inverter, as shown in the reference installation drawing. Retain any larger service clearances required by the supplied accessories or local rules.



Permitted orientation and minimum clearances.

5.3 Tools and lifting

Prepare a suitable drill and bit for the wall and anchors, screwdrivers suited to the fitted fasteners, a torque tool, wire strippers, approved PV and battery crimping tools, an AC lug crimper, connector release tools, a suitable multimeter, marking pen and tape measure. Use eye protection, gloves and dust protection for drilling. Check the installed screw head and fastener instructions before choosing the tool.

Two people lift from the front and rear chassis support points and move the unit to the mounting position. Keep the inverter level and do not load the terminals. Place foam or other protective material beneath it when resting it on the ground.

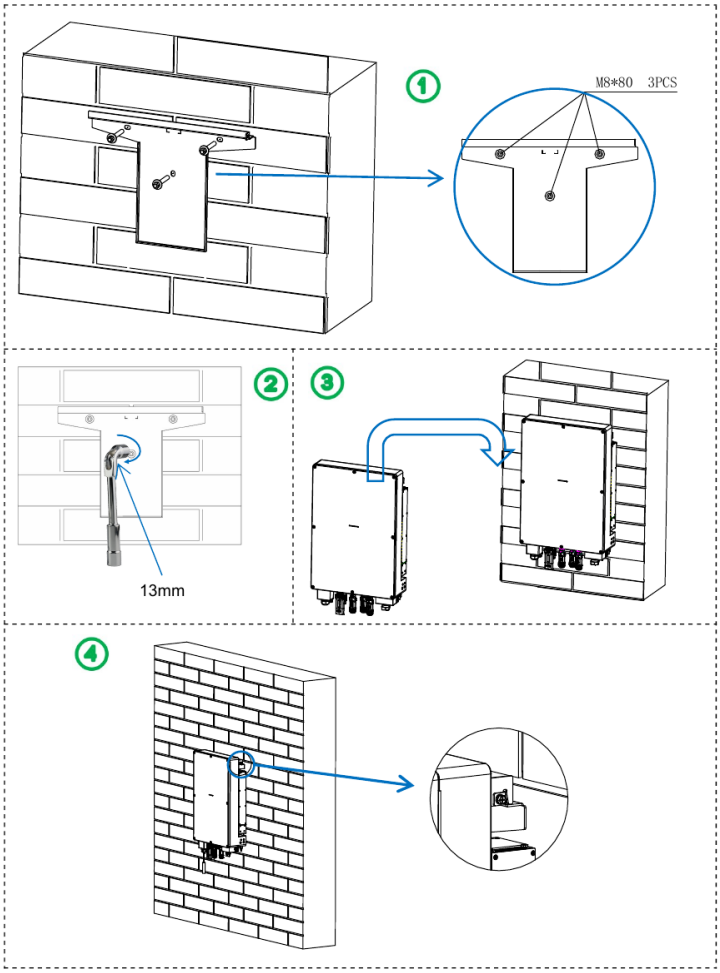
5.4 Mounting procedure

1. Check for concealed cables and pipes. Hold the wall bracket level and mark the actual fixing holes.

2. Select anchors suitable for the wall and load. The reference kit has three M8 x 80 expansion anchors; drill size and depth must match the delivered anchors.

3. Fit the bracket securely, lift the inverter onto it and check that it is fully seated. Fit the locking fasteners as illustrated.

4. Check mechanical security, clearance, access and ventilation before electrical work.

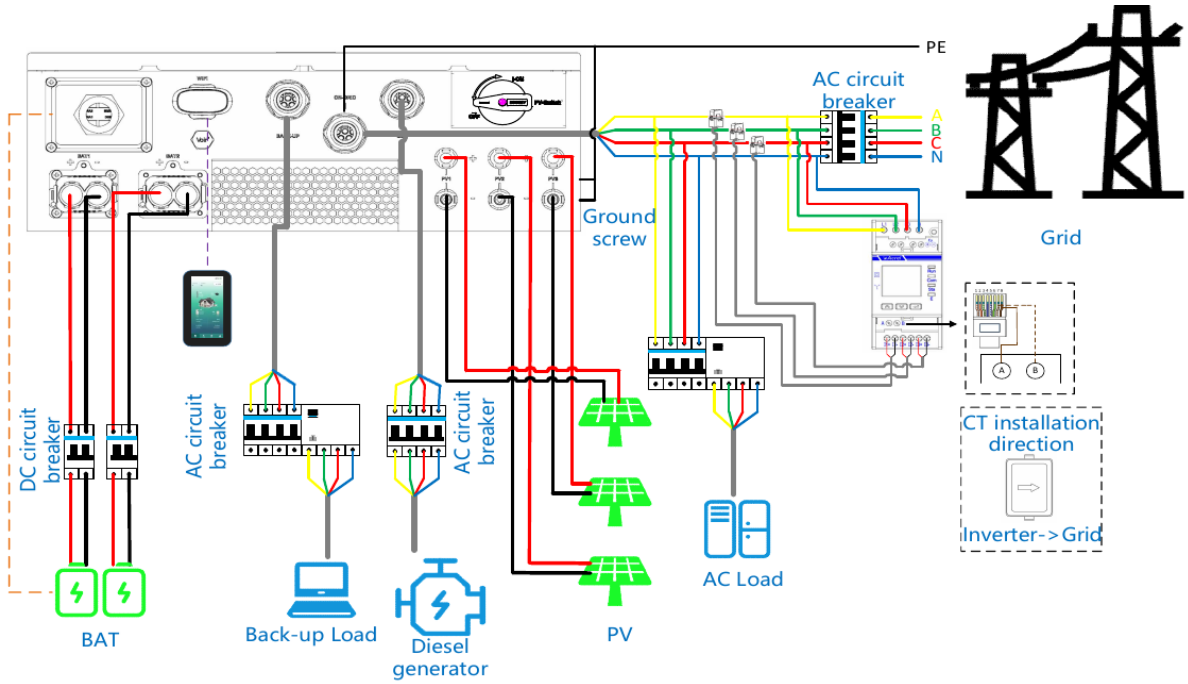


Bracket, hanging and locking sequence. Read fixing dimensions on the actual bracket.

6 Electrical connection and Green Balance

DANGER. Complete safe isolation as described in chapter 2 before opening the connection compartment. This chapter is for qualified installers. Electrical diagrams show connection principles, not a complete site design. Apply the approved grid system, earthing, protection and battery instructions.

6.1 Power system and protection



Power wiring reference. GRID is the public grid, BACK-UP the separately protected backup loads, GEN the optional generator, BAT the battery, PV the solar strings and PE protective earth. The meter and CT direction must match the commissioned profile.

ON-GRID and BACK-UP have different functions and internal switching relays. Do not connect a live grid supply to BACK-UP. Neutral and PE arrangements, island operation and any generator interlocking must follow the approved installation design. External breakers must meet the applicable requirements of IEC 60947-1 and IEC 60947-2.

Reference design values in the base installation drawings are battery-side DC protection rated at least 100 V DC and 150 A, grid/generator-side protection rated at least 500 V AC and 50 A, and BACK-UP-side protection rated at least 500 V AC and 30 A. These are not automatic breaker selections: the installer must coordinate fault protection, cable ampacity, the actual through-current and the T-CORE-10 nameplate ratings.

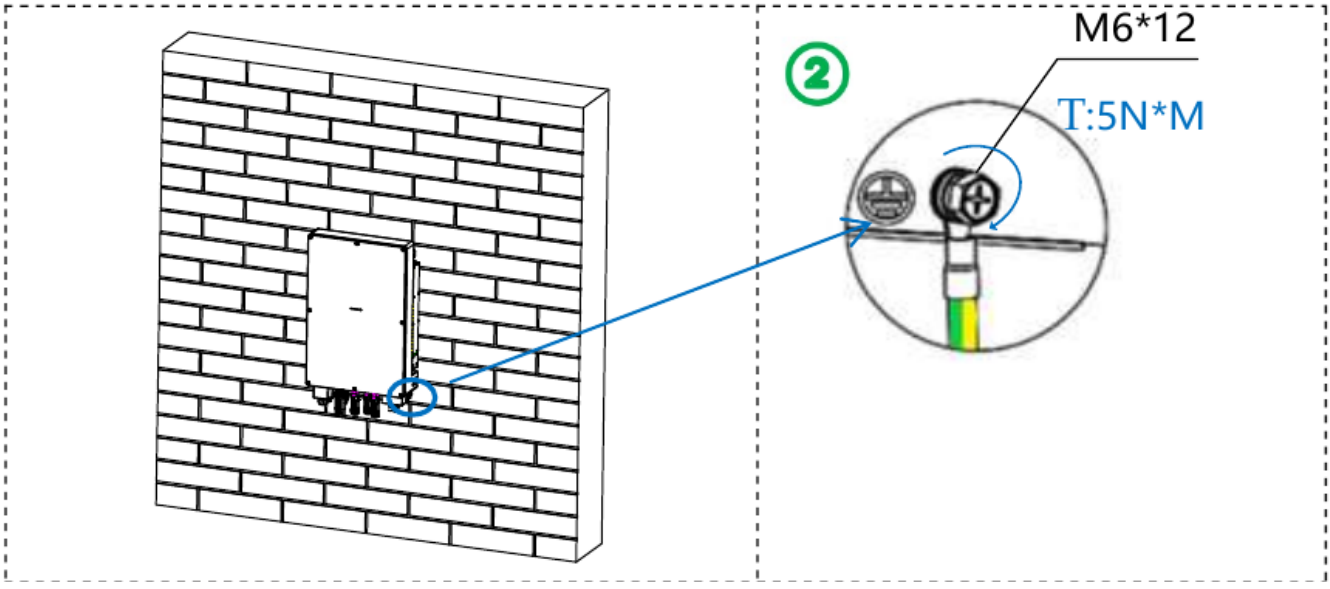
6.2 Cables and terminal preparation

Circuit	Reference conductor	Installer checks
PV	6 mm² Cu	Outdoor PV-rated cable; verify string current, temperature, voltage drop and connector compatibility.
Battery	35 mm² Cu	Size for the approved battery circuit, length, current limit and protective device; confirm lug and terminal fit.
AC circuits	6 mm² Cu	Reference only. Verify ON-GRID, BACK-UP and generator separately, including neutral and PE.
External PE	>= 6 mm² Cu	Select the required protective conductor for the installation and termination.

Use all required phases L1, L2, L3, neutral N and protective earth PE. Keep strands fully inside terminals and fit barriers, covers and glands. Follow the delivered connector torque and strip-length instructions; do not assume that a terminal illustration supplies every torque value. Seal unused entries to retain the enclosure protection.

6.3 Protective earth

Bond the chassis grounding point with the specified outdoor yellow-green conductor and correctly sized ring lug. Crimp with the proper tool. The reference chassis earth fastener is M6 x 12 tightened to 5 N m. Make the protective-earth connection before connecting power circuits and verify continuity. Do not use the communication cable ground as protective earth.



Chassis protective-earth connection, M6 x 12, 5 N m.

6.4 PV connectors

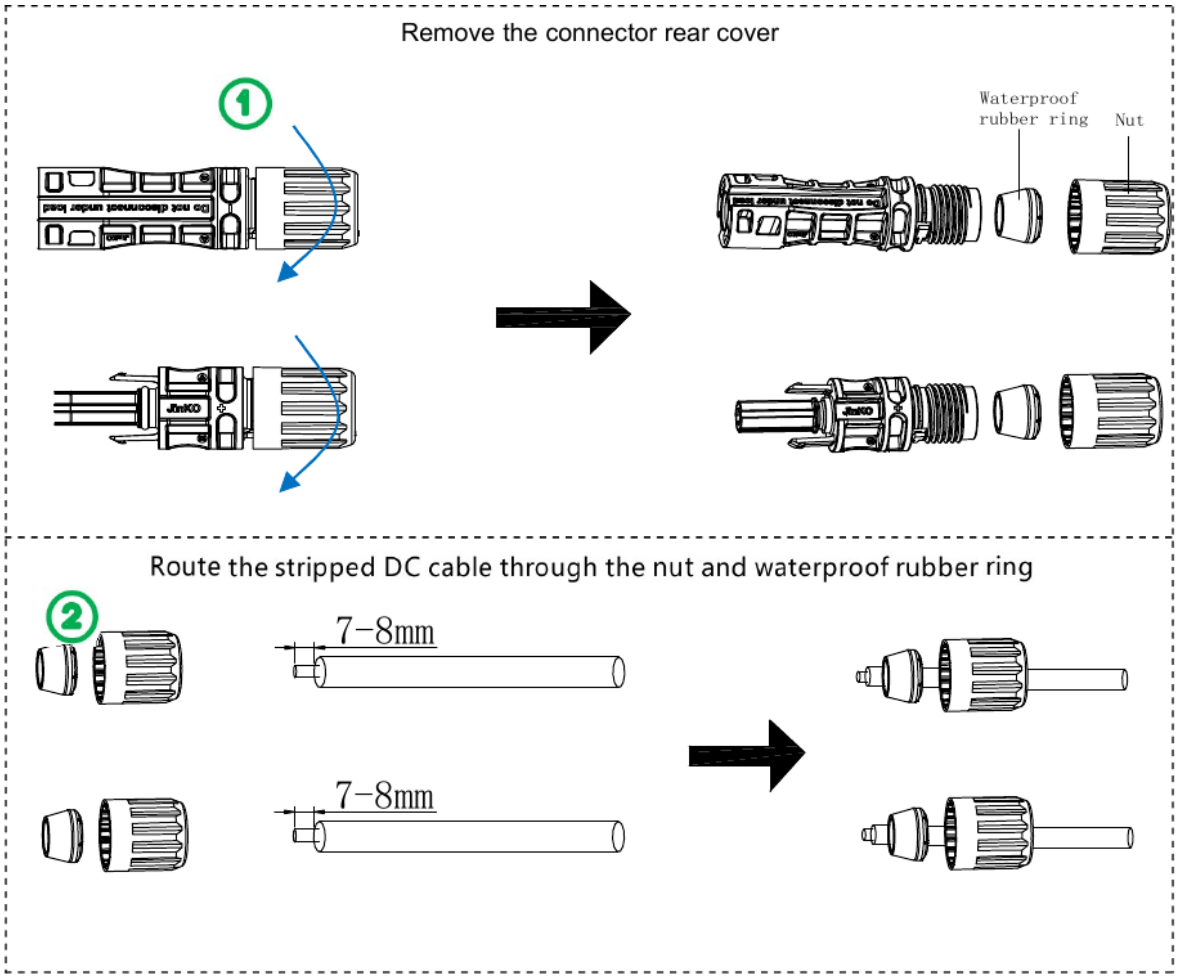
Set the PV switch to OFF and isolate other energy sources before assembly. Check the string calculations against 800 V maximum input, 130-800 V MPPT range, 20 A maximum input and 24 A short-circuit current per MPPT. Do not mix connector makes or mating systems. Use only compatible supplied contacts and housings. Use PV modules meeting the applicable IEC 61730 safety requirements.

1. Identify PV positive and negative and verify them with a meter. Pass the cable through the gland and sealing components.

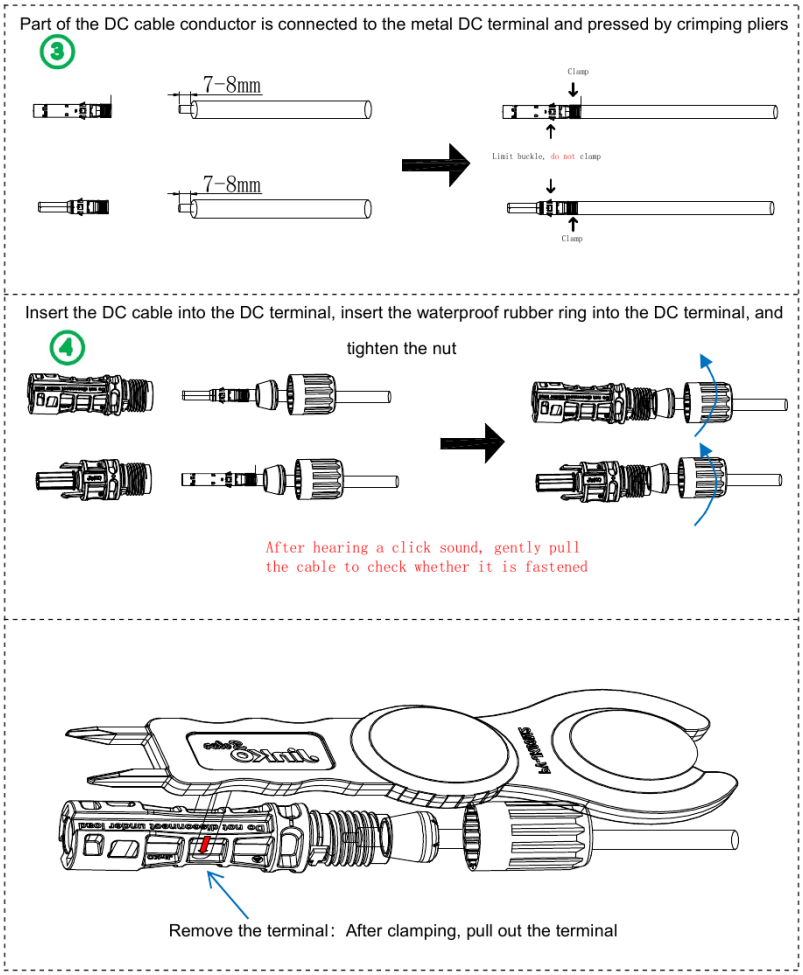
2. Prepare the conductor to the supplied connector specification; the reference drawing shows 7-8 mm stripped length. Crimp the correct metal contact without damaging its retaining feature.

3. Insert the contact until it locks, assemble the seal and nut, and make a gentle pull check. Verify polarity again before mating.

4. Mate the connectors fully. Use the specified release tool only after safe isolation; never pull the cable to release a connector.



PV connector preparation and locking. The reference strip length is 7-8 mm; use the delivered connector instructions.

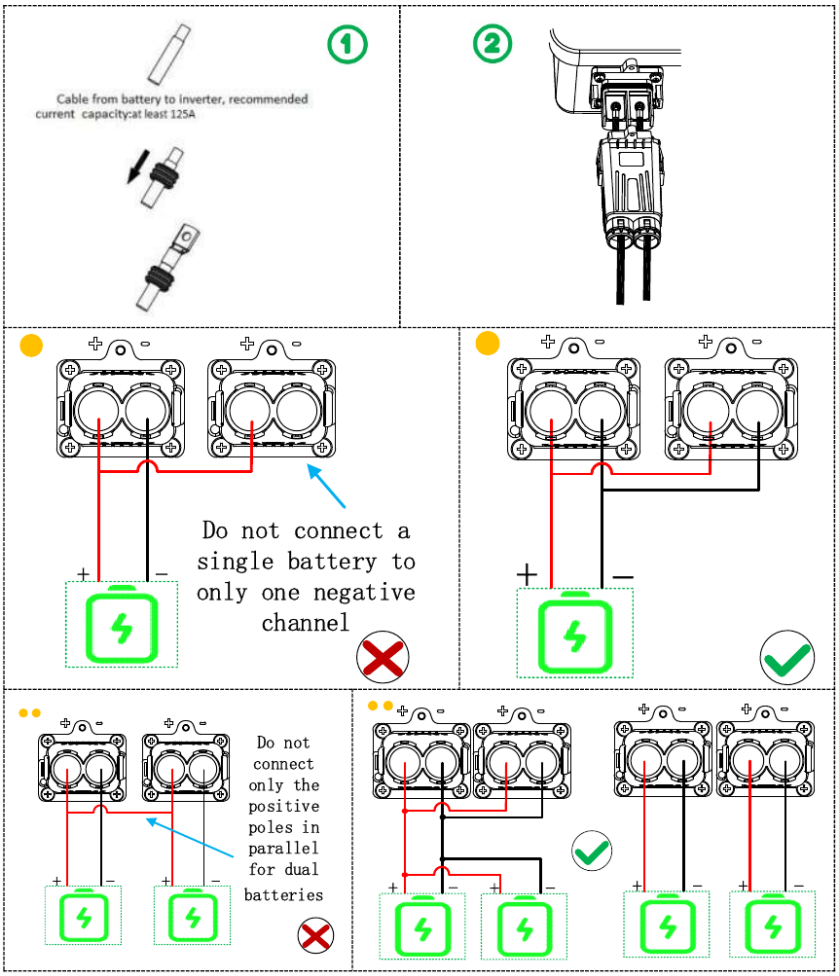


Crimping, locking and release. Do not crimp the retaining latch.

6.5 Battery power and BMS

Check the approved battery voltage, current limits and independent or parallel access method before connection. Match BAT+ to positive and BAT- to negative; insert conductors and lugs fully and tighten to the supplied terminal specification. Do not copy a two-battery connection onto a one-battery installation. Do not parallel only the positive conductors or create an incomplete negative return. The approved harness must provide the complete current path shown in the connection design.

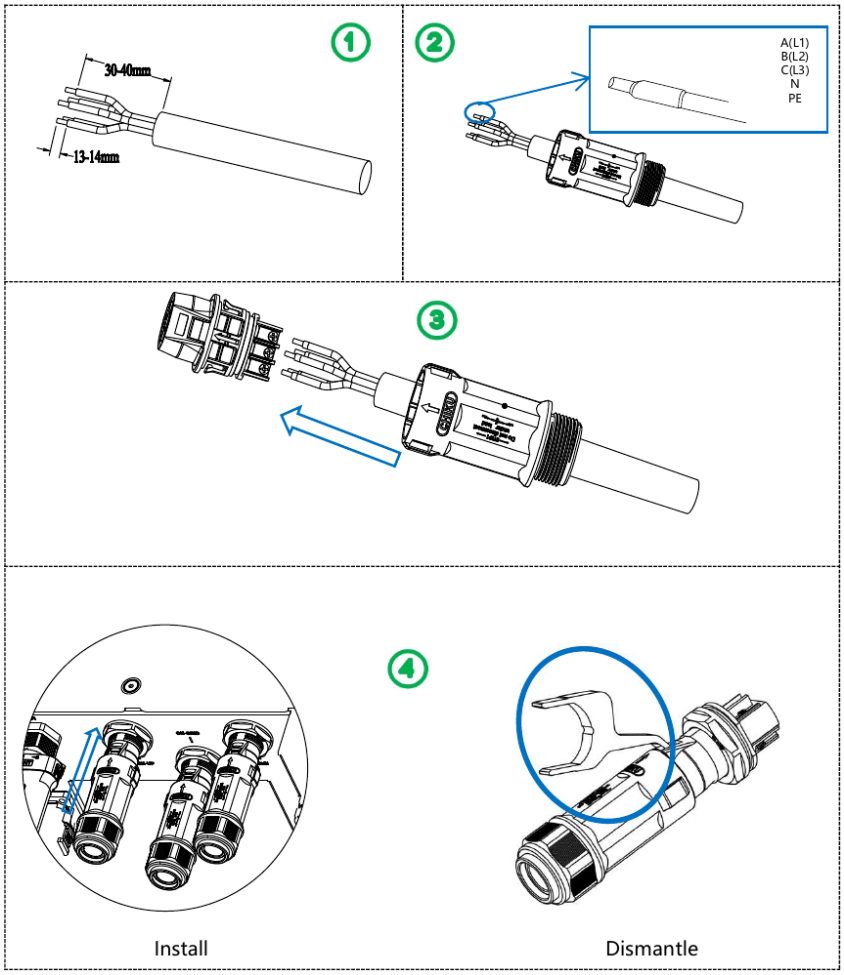
The nameplate limits for this T-CORE-10 are 30-60 V DC and 2 x 105 A maximum charge/discharge current. The permitted operating current may be lower because of the battery, BMS, cabling, temperature or installation configuration. Connect the approved battery communication cable to BMS1 or BMS2 as assigned. The connected battery has its own safety, connection and operating instructions.



Battery connection principles. Crosses mark incomplete or prohibited current paths. The supplied battery harness and approved access method govern the actual installation.

6.6 AC and generator connectors

Verify phase order and the marked L1, L2, L3, N and PE positions on each connector. Do not interchange ON-GRID, BACK-UP and GEN. Strip, crimp, insert and secure all conductors using the correct 5-pole connector parts. Fit the connector barrier, gland and locking parts. A generator connection requires a compatible generator, approved settings and interlocking; its presence does not make generator control available in the customer app.



AC connector assembly and release. A, B and C correspond to L1, L2 and L3; N and PE are separate conductors.

6.7 Green Balance communication unit

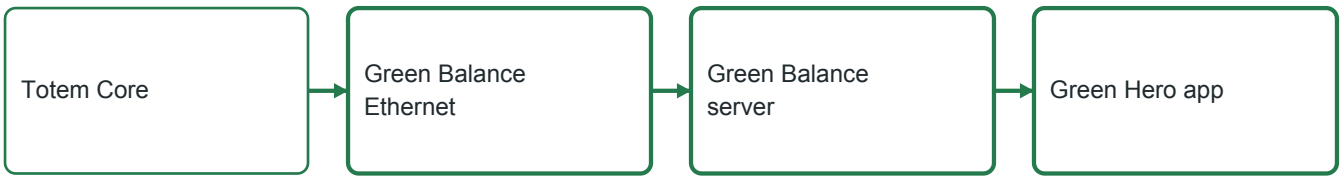
Use the Green Hero communication unit and the matched cable supplied for the inverter hardware revision. A dedicated communication/power connector and a BMS/EMS RS485 service connection are different arrangements. Do not infer their pinout or power voltage from their shape. Do not connect a generic Wi-Fi/4G collector or apply PoE. Have Green Hero confirm the matched cable and power supply before fitting a replacement.

1. With the system safely isolated, identify the Green Balance interface and approved harness for the delivered hardware. Route and strain-relieve the cable and retain the weather seals.

2. Connect the Green Balance unit to the agreed Ethernet network where available and to its approved power source. The installer verifies any site-specific alternative network connection.

3. The installer or support selects the compatible inverter profile, completes device registration and binds the communication unit to the correct installation and customer access.

4. Verify a fresh reading from the inverter and a matching timestamp in Green Balance. Portal connectivity, inverter connectivity and customer-app access must each be checked.



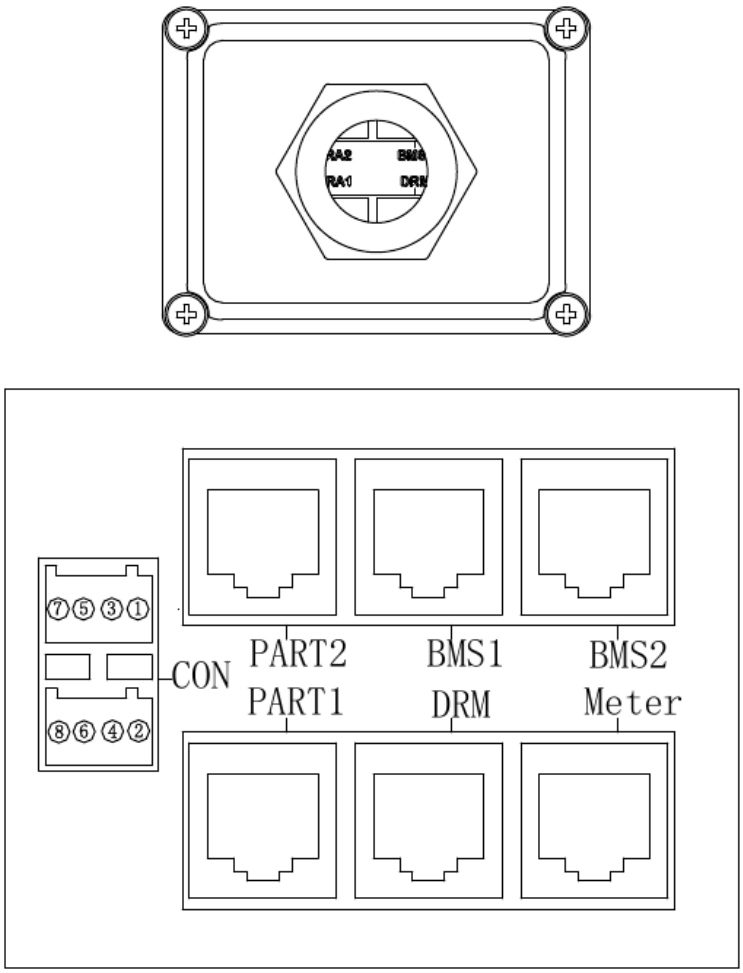
Green Balance commissioning sequence. This is a functional illustration, not a screenshot or a connector pinout.

For the supported BMS/EMS service route, the documented RS485 signals are pin 1 A and pin 2 B on the selected BMS port. The installer must configure the port for the approved external EMS role; the reference line setting is 115200 bit/s, 8 data bits, no parity, 1 stop bit. This is not the smart-meter baud rate. Only the supplied, verified cable may be used; no wiring changes are made while energised.

Green Balance hardware revisions can have different indicators. Use the delivered unit identification and support instructions; do not interpret its LEDs using another collector model. Do not factory-reset, reflash or swap the unit to solve an inverter alarm without support instructions.

6.8 Communication compartment and port functions

Route cables through the correct waterproof openings, connect them to the marked ports, then refit the cover, screws and glands. These RJ45-shaped signal ports are not Ethernet network ports. Keep mains wiring segregated from signal wiring.



Communication compartment reference: METER, BMS1, BMS2, DRM, PARA1 and PARA2. Read the actual port labels.

Port	Purpose
METER	Approved meter RS485 communication.
BMS1 / BMS2	Battery CAN and multiplexed EMS RS485, according to the approved allocation.
DRM	Demand-response signals or approved lead-acid temperature input; not a general customer control port.
PARA1 / PARA2	Inverter parallel communication and synchronisation.
CON / DO / DI	Configured relay outputs and digital input; functions depend on the installation.

6.9 Smart meter and CTs

The approved meter measures the grid connection. Match meter L1, L2, L3 and N to the corresponding phases and neutral. Connect each CT to the matching current input and phase, keeping its positive/negative leads and direction consistent with the commissioned profile. In the reference arrangement, CT arrows point from the inverter/site towards the grid. Do not swap phases or reverse CTs solely to make the displayed values look plausible.

For the documented Totem SEM3 cable, METER pin 8 goes to A+ through the orange/white conductor and pin 7 goes to B- through the orange conductor. This cable is a custom mapping; its colours do not describe a standard Ethernet lead. Verify pin numbering and continuity on a de-energised replacement cable. The approved SEM3 installation uses a matched meter profile and communication speed; support verifies these before changing the inverter meter port.



Documented Totem SEM3 communication cable. This is an electrical connection diagram, not a view of the connector face.

Validate the result with a known import condition and, when available, a known export condition. Check phase voltage and current together, the sign and magnitude of total active power, and the import/export counters. If apparent consumption rises with production, retain the readings and have support check CT direction, phase association and software sign mapping together. EP verification terminals are not customer connections.

6.10 BMS connector reference

Pin	BMS1	BMS2
1	RS485 A1	RS485 A2
2	RS485 B1	RS485 B2
3	Not assigned	Not assigned
4	CAN H1	CAN H2
5	CAN L1	CAN L2
6	GND	GND
7-8	Not assigned	Not assigned

The standard reference lead uses orange/white on pin 1, orange on pin 2, blue on pin 4, blue/white on pin 5 and green on pin 6. Battery-side connector pinouts may differ. Confirm both ends against the approved battery harness; never assume that an ordinary network lead is correct.

6.11 DRM and dry contacts

DRM pin	Signal
1	DRM1/5
2	DRM2/6
3	DRM3/7
4	DRM4/8
5	REF GEN
6	COM LOAD
7-8	Not assigned

The standard signal colours for pins 1-6 are orange/white, orange, green/white, blue, blue/white and green. DRM and lead-acid NTC functions share an interface and require the correct commissioned configuration. A lead-acid NTC assembly must be the approved harness; do not use it for a lithium battery.

Dry-contact reference	Connection
DO1	Pin 2 OP1_NO / Pin 4 OP1_COM
DO2	Pin 1 OP2_NO / Pin 3 OP2_COM

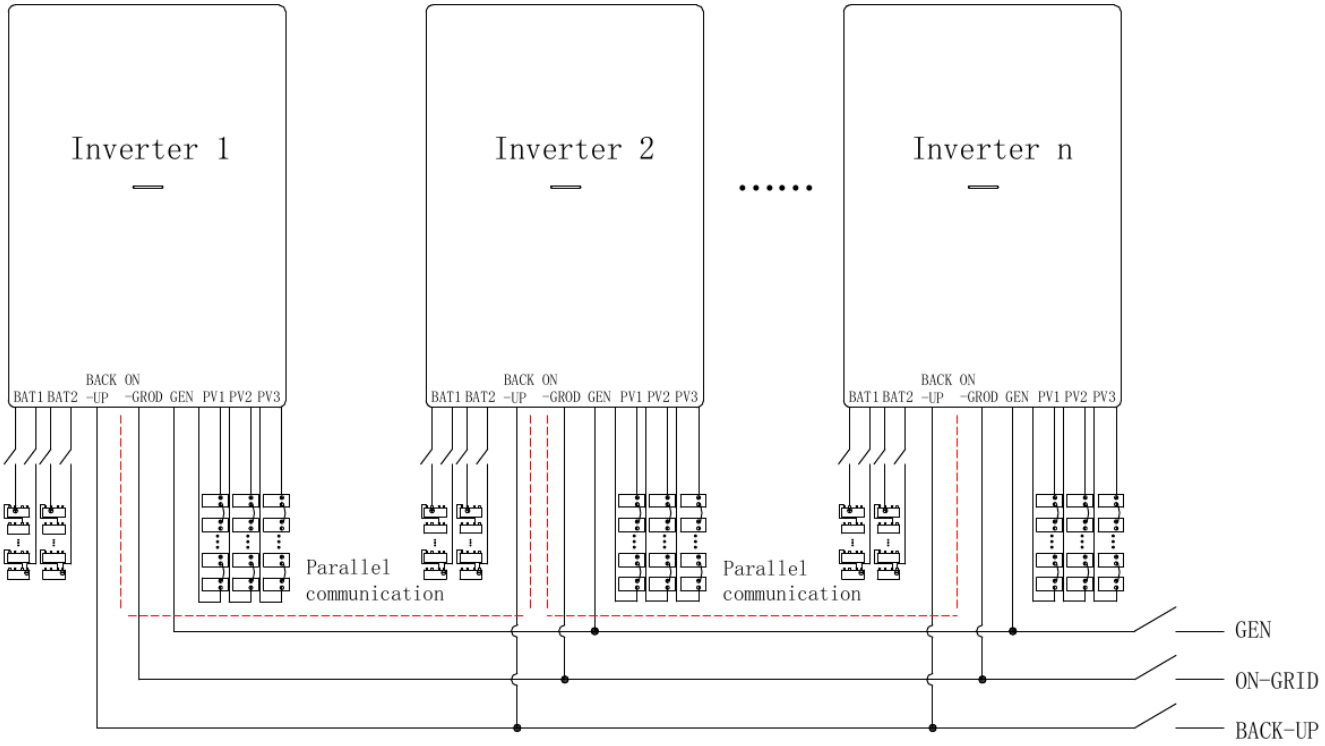
The separate CON reference assigns pins 1/3 and 2/4 to configurable outputs, pins 5/6 to DI, pin 7 to GND and pin 8 to 12 V. Connector naming and assigned functions must be verified on the delivered hardware. Do not use this reference as a dongle power pinout or apply a voltage to a dry-contact input.

6.12 Parallel installations

Parallel operation requires a separate approved system design, compatible firmware, unique unit assignments and commissioning by Green Hero or its installer. The reference platform supports up to six units; this is not permission to connect an unqualified combination. Connect PARA1 of one inverter to PARA2 of the next with the specified cable. Backup-side cable lengths must be coordinated to balance loop impedance. Total load must remain within the commissioned system rating.

Pin	PARA1	PARA2
1	CON1_AO	CON2_AO
2	CON1_BO	CON2_BO
3	CON1_AI	CON2_AI
4	CON1_BI	CON2_BI
5-6	Not assigned	Not assigned

Pin	PARA1	PARA2
7	CON_SyncH	CON_SyncH
8	CON_SyncL	CON_SyncL



Parallel power and communication reference. Actual switchgear, protection and conductor lengths are part of the approved parallel-system design.

7 Commissioning and operation

7.1 Before energising

1. Check secure mounting, ventilation, covers, glands and accessibility.

2. Verify PE continuity, phase sequence, neutral arrangement, cable identification and protective devices.

3. Measure PV and battery polarity and voltage, and check all terminal connections with power isolated.

4. Confirm that grid, battery and BACK-UP switches are in the required starting positions and that unintended sources cannot backfeed the system.

5. Verify battery communication, compatible battery profile, meter configuration and CT phase/direction.

6. Record the inverter model and serial, battery details, Green Balance identifier, firmware, grid profile and commissioning settings.

7.2 Initial start

1. With the inverter stopped and pre-start checks complete, close the AC breaker between ON-GRID and the public grid.

2. Turn on the PV DC switch when PV is connected.

3. Turn on the battery and close the battery-to-inverter DC switch, following the battery instructions.

4. Wait for successful self-test and the appropriate running indication. A start delay may apply. Do not repeatedly cycle the switches while the test runs.

5. Close the BACK-UP load breaker only after the inverter starts successfully and the backup circuit is ready.

6. Verify the measured power flows and alarms, then confirm fresh data and correct customer access in Green Balance.

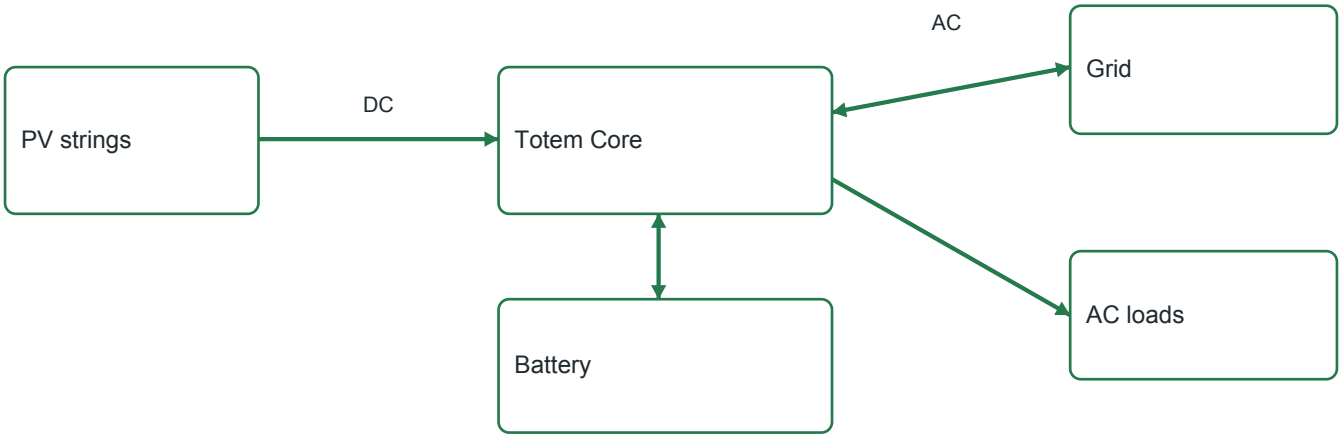
7.3 Stopping and restarting

Use the installation-specific stop and isolation procedure prepared by the installer. A complete shutdown must account for grid, PV, battery, BACK-UP and any generator supply; the communication unit alone is not the inverter. Before electrical access, follow chapter 2 including the five-minute wait and voltage verification. For an authorised restart after a fault, document the alarm first, isolate all required sources, wait at least five minutes and restart using the approved start sequence. Stop repeated attempts if the fault returns.

7.4 Energy priority modes

These describe inverter capabilities, not a promise that every mode can be selected in the customer app. The installer selects a supported mode and the battery reserve, power limits and grid conditions that apply. A stored schedule and an enabled operating mode are separate settings.

Mode	Energy priority
Self-consumption	PV supplies loads first, then charges the battery; permitted surplus can be exported. When PV is insufficient, the battery contributes within its limits and the grid supplies the remainder. Without PV, the battery and/or grid supply loads. During a grid outage, only the commissioned backup arrangement may supply loads.
Timed charging and discharging	During a charging window, PV and, if permitted, grid energy charge the battery while loads remain supplied. During a discharge window, PV and battery support loads within reserve and power limits. Grid energy supplies unmet demand.
Backup reserve	PV and permitted grid charging prioritise the battery reserve for outages; remaining energy supplies loads and permitted export. During an outage, available PV and battery energy supply only approved backup loads.
Feed-in priority	PV supplies loads first, then permitted grid export; remaining available energy may charge the battery. Other conditions follow the supported self-consumption strategy.



Energy routes depend on operating mode, reserve and permitted export. Arrows show possible routes, not a simultaneous power balance.

7.5 Operating states

State	Meaning
Standby	Waiting for start conditions; this is not proof of a fault or of normal generation.
Self-test	Initialisation and checks before entering a running state. A failed test can lead to fault state.
On-grid	Connected to the grid under the approved grid settings. Power exchange remains subject to limits.
Off-grid	Supplying the commissioned backup circuit without grid exchange, when conditions permit.
Fault	Protection or a fault has interrupted operation. Record the exact alarm before recovery.

7.6 Inverter indicator

Indication	Reference meaning
Green steady	On-grid operation.
Green flash about once per second	Ready or waiting for power-on completion.
Green fast flash about 0.1 s	Initialisation or an authorised firmware update; do not interrupt an update.
Blue steady	Off-grid operation.
Red steady	Serious system fault; inverter stopped. Record the exact alarm and contact support.
Red flash about every 0.5 s	System error with the inverter stopped. Record the exact alarm before recovery.
Red flash about every 2 s	Alarm with the inverter stopped. Record the exact alarm before recovery.

These are inverter indicators. Green Balance unit indicators are separate and depend on hardware revision. An indicator or app icon alone is not proof of AC production; check measured power and timestamp.

8 Green Balance and the Green Hero app

Use the Green Hero app and Green Balance access supplied for your installation. The installing partner or Green Hero support supplies the correct sign-in and installation access. Monitoring registration and customer access are separate from electrical commissioning. This manual does not require a different inverter app, Bluetooth pairing sequence or third-party collector account.

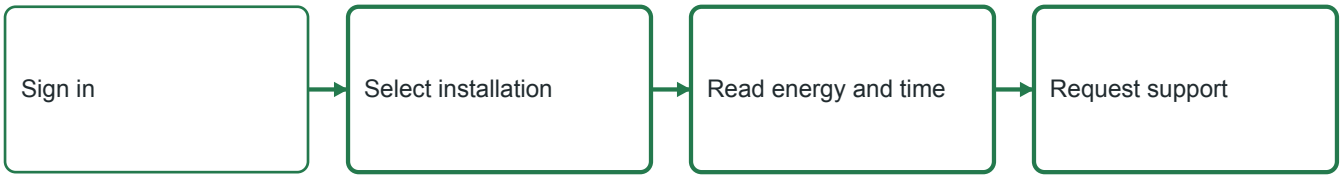
8.1 Customer access

1. Install or open the Green Hero app through the link supplied by your installer. Sign in with your assigned account.

2. Open the installation you have been given access to. If it is missing, ask support to check the account-to-installation assignment; do not create a duplicate installation.

3. Open the energy or Green Balance view available for that installation. Check the installation name and latest measurement time.

4. Compare PV, battery, grid and load information together. Missing or old data must not be interpreted as zero production.



Customer workflow illustration. Screen names and available controls depend on the installed app version and access rights; this is not a simulated app screenshot.

8.2 Reading measurements

PV power is incoming solar power, battery power is charging or discharging, grid power is import or export at the approved meter, and load is the installation consumption calculated or measured by the supported profile. Read the direction labels and units. An internal DC source can be active while the AC conversion stage is stopped; use inverter AC power and operating state to check actual AC delivery.

Supported installations deliver periodic measurements; the current reference uses minute data and quarter-hour energy history. An app value is not a second-by-second electrical test. During an internet outage, queued data may arrive later and the last visible value can be old. Check measurement time before judging a fault or comparing meters.

8.3 Settings and permissions

Only use settings explicitly enabled for your inverter, Green Balance unit, installation and account. Supported time-window functions may require separate activation. Request a fresh read before changing a value. Review the whole charging or discharging window, including start and end. A confirmed change requires an executed result and matching readback; queued, received or timed out does not prove the inverter changed. Ask support about an uncertain result before resending.

Grid standards, protection settings, battery limits, emergency stop, firmware and inverter power control are installer/support functions unless an explicitly approved customer function is supplied. Do not assume that a stored schedule enables a mode or that price optimisation and grid services are active merely because monitoring works.

8.4 Connection troubleshooting

Symptom	Action
Installation missing in app	Check account and installation access with support.
Unit online but readings absent	Check latest timestamp; support checks inverter profile, cable and meter status.
Values are old	Check local network and internet, then ask support about queued data. Do not treat old values as live.
Data in portal but not app	Ask support to check the customer and installation mapping.
Setting is unavailable or fails	Check activation, permission and request status. Do not factory-reset the unit.

8.5 Updates and service access

Green Hero support manages compatible updates separately for the communication unit and inverter. Do not interrupt an active update or load an arbitrary firmware file. Replacing a unit requires controlled registration and installation assignment so that access and history remain correct. Contact support before replacing or resetting the communication unit.

9 Troubleshooting and maintenance

9.1 First checks and support information

Record the exact alarm name, time, inverter model and serial, operating state, battery state of charge, PV power, AC power and latest measurement time before recovery. Photograph indicators and breaker positions without removing covers. Report a recent outage, electrical work or switch operation. If there is smoke, burning smell, exposed damage or repeated protective tripping, keep away and have the installation made safe by the appropriate emergency or electrical service.

The table numbers below identify entries in this manual, not Modbus register addresses or universal app error codes. The unit may group PV1/2 or battery1/2 conditions differently by firmware. The unused second battery input must be assessed against the actual configuration. All electrical measurements, cable changes, protection changes and recovery commands are installer/support work.

No	Alarm and class	Installer or support action
1	PV1/2 not connected Info	Check the fitted PV switches, string connection and available daylight. The installer verifies the circuit; an unused input is assessed against configuration.
2	PV1/2 overvoltage Fault	Installer: measure PV open-circuit voltage and check cold-weather string design against the maximum input voltage. Correct the string design before restart.
3	PV1/2 overload timeout Alarm	Reduce excessive load or current demand. Support checks limits and recovery status before an authorised restart or fault clear.
4	PV1/2 reverse polarity Fault	Installer: safely isolate and verify positive/negative polarity. Correct the wiring before energising.
5	PV connection mode incorrect Alarm	Installer/support: compare the configured connection mode with the actual wiring and approved product profile. Do not change unsupported customer-app fields.
6	PV1/2 power-stage fault Fault	Record the alarm. An installer may perform the documented controlled restart after checking the installation. If the fault persists, contact Green Hero support.
7	PV1/2 soft-start failure Alarm	Record the alarm. An installer may perform the documented controlled restart after checking the installation. If the fault persists, contact Green Hero support.
8	Battery1/2 not connected Info	Check whether that battery input is intended to be used. Installer verifies the battery power connection, switch, communication and configured access method.
9	Battery1/2 overvoltage Info	Installer compares measured battery voltage with the approved battery profile and charge/discharge limits. Do not raise protection limits to hide the alarm.
10	Battery1/2 undervoltage Info	Installer compares measured battery voltage with the approved battery profile and charge/discharge limits. Do not raise protection limits to hide the alarm.

No	Alarm and class	Installer or support action
11	Battery1/2 energy insufficient Info	Check battery state of charge, temperature, reserve and BMS permissions. Full, low or protected batteries may legitimately limit charging or discharging.
12	Battery1/2 charging prohibited Alarm	Check battery state of charge, temperature, reserve and BMS permissions. Full, low or protected batteries may legitimately limit charging or discharging.
13	Battery1/2 discharging prohibited Alarm	Check battery state of charge, temperature, reserve and BMS permissions. Full, low or protected batteries may legitimately limit charging or discharging.
14	Battery1/2 discharge ended Alarm	Check battery state of charge, temperature, reserve and BMS permissions. Full, low or protected batteries may legitimately limit charging or discharging.
15	Battery1/2 full Info	Check battery state of charge, temperature, reserve and BMS permissions. Full, low or protected batteries may legitimately limit charging or discharging.
16	Battery1/2 reverse polarity Fault	Installer: safely isolate and verify positive/negative polarity. Correct the wiring before energising.
17	Lead-acid battery temperature abnormal Alarm	For an approved lead-acid installation, check battery temperature and the NTC harness. Do not apply lead-acid sensor instructions to a lithium battery.
18	Battery connection mode incorrect Alarm	Installer/support: compare the configured connection mode with the actual wiring and approved product profile. Do not change unsupported customer-app fields.
19	Battery1/2 overload timeout Alarm	Installer checks approved charge/discharge current, battery capability, cabling and BMS limits. Reduce excessive demand using supported settings.
20	Battery1/2 power-stage fault Fault	Record the alarm. An installer may perform the documented controlled restart after checking the installation. If the fault persists, contact Green Hero support.
21	Battery1/2 soft-start failure Alarm	Record the alarm. An installer may perform the documented controlled restart after checking the installation. If the fault persists, contact Green Hero support.
22	Grid voltage abnormal Alarm	An occasional grid disturbance may clear automatically. For repeated events, installer checks voltage, frequency, phase wiring and breaker. Grid protection changes require an approved profile and support.
23	Grid frequency abnormal Alarm	An occasional grid disturbance may clear automatically. For repeated events, installer checks voltage, frequency, phase wiring and breaker. Grid protection changes require an approved profile and support.
24	Grid phase sequence reversed Alarm	Installer checks all phases, phase sequence and neutral, including connection integrity. Do not work on live terminals.

No	Alarm and class	Installer or support action
25	Grid phase missing Alarm	Installer checks all phases, phase sequence and neutral, including connection integrity. Do not work on live terminals.
26	Neutral conductor abnormal Fault	Installer checks all phases, phase sequence and neutral, including connection integrity. Do not work on live terminals.
27	Heatsink temperature too high Fault	Check sun exposure, airflow, fan and ambient conditions. Allow the unit to cool; the source recovery reference is heatsink at or below 60°C for five minutes. Support verifies applicable recovery conditions.
28	Ambient temperature too high Alarm	Check sun exposure, airflow, fan and ambient conditions. Allow the unit to cool; the source recovery reference is heatsink at or below 60°C for five minutes. Support verifies applicable recovery conditions.
29	Inverter overtemperature Alarm	Check sun exposure, airflow, fan and ambient conditions. Allow the unit to cool; the source recovery reference is heatsink at or below 60°C for five minutes. Support verifies applicable recovery conditions.
30	Insulation fault Fault	Installer tests PV insulation and protective earth using the approved method. Find and correct the insulation defect. Do not lower the insulation protection threshold to make a wet or damaged string run.
31	Leakage protection fault Fault	Installer checks wiring, protective earth and residual-current protection. Repeated tripping requires investigation before any reset.
32	Fan fault Fault	Check externally for blocked ventilation without touching the fan. Isolated fan inspection and any restart are for the installer. Do not disable cooling.
33	Model capacity mismatch Fault	Support verifies the hardware model, nameplate rating and configured capacity. Do not select another model to suppress the alarm.
34	Islanding protection Alarm	Installer checks grid availability and quality, switching and the approved grid profile. Do not defeat anti-islanding protection.
35	DC bus undervoltage Fault	Check battery availability and excessive load; compare AC output, grid and operating state. Follow section 9.2. Persistent faults require Green Hero support.
36	Protective earth fault Fault	Installer checks chassis PE, bonding, conductor damage and terminal security after safe isolation.
37	Parallel communication alarm Alarm	For a commissioned parallel system only: installer checks the correct parallel cable, unique unit assignment, unit count and consistent approved settings.
38	System derating Alarm	Check ambient temperature, ventilation, fan and any battery or grid limitation. Derating may be protective; do not disable protection.
39	Parallel unit count abnormal Fault	For a commissioned parallel system only: installer checks the correct parallel cable, unique unit assignment, unit count and consistent approved settings.

No	Alarm and class	Installer or support action
40	Parallel unit number duplicated Alarm	For a commissioned parallel system only: installer checks the correct parallel cable, unique unit assignment, unit count and consistent approved settings.
41	Parallel parameter conflict Alarm	For a commissioned parallel system only: installer checks the correct parallel cable, unique unit assignment, unit count and consistent approved settings.
42	Meter direction reversed Fault	Installer checks CT direction, phase association, meter A/B, profile and communication speed. Confirm with known import/export before altering signs.
43	Meter communication abnormal Alarm	Installer checks CT direction, phase association, meter A/B, profile and communication speed. Confirm with known import/export before altering signs.
44	DSP1/2 parameter fault Fault	Green Hero support checks parameter compatibility, firmware versions and communication. Do not load unapproved software or replace boards without diagnosis.
45	DSP/CPLD version incompatible Fault	Green Hero support checks parameter compatibility, firmware versions and communication. Do not load unapproved software or replace boards without diagnosis.
46	DSP-CPLD communication fault Fault	Green Hero support checks parameter compatibility, firmware versions and communication. Do not load unapproved software or replace boards without diagnosis.

9.2 DC bus undervoltage

DC bus undervoltage means that an internal DC-link voltage monitored by the inverter is below its required level. It is distinct from low grid AC voltage and from a battery undervoltage alarm.

The alarm alone does not identify a failed component or prove that an external switch was turned off. Support compares grid phases, battery voltage and permissions, PV readings, actual AC output, operating state and other alarms. A unit can report the alarm while AC conversion is stopped. Internal voltage thresholds and a measured DC-link value must be confirmed for the exact hardware and firmware; do not substitute the battery voltage or a threshold from another model.

The installer checks input availability and permitted load, documents the condition and, if appropriate, performs one controlled restart with complete isolation and at least five minutes waiting. If the alarm persists or returns, Green Hero support investigates the start conditions, configuration, voltage sensing and internal power stage. Do not repeatedly reset the unit or reduce protection limits.

9.3 Scheduled maintenance

Interval	Work by qualified personnel
Every 6-12 months	Inspect and clean the heatsink and air paths after safe isolation. Check for dust, foreign objects, damage and restricted airflow.
Every 6-12 months	Inspect electrical connections, cable condition, seals, protective earth and signs of overheating. Tighten only to specified values.
Annually	Check the PV DC switch under fully isolated, no-load service conditions. The reference maintenance procedure calls for ten operating cycles; follow the fitted switch instructions. Never perform this as a customer live-load test.
At service or a network change	Check fresh Green Balance delivery, meter direction, customer access, time and retained installation identity.

Fan noise alone is not a fault diagnosis. Check temperature, airflow, mounting vibration and actual fan alarms. Do not disable a fan or temperature protection to reduce noise. Any quiet-control setting must be confirmed for the exact unit and firmware.

10 Technical data and installation record

The following ratings apply to the Totem Core T-CORE-10 identified in chapter 1. Nameplate limits govern this product; figures for other power variants must not be substituted. Reference operating ranges are hardware design data, not adjustable protection thresholds. The approved country/grid profile can impose narrower limits. Peak or optional capabilities require the applicable product documentation and installation approval.

Identity and rating

Parameter	T-CORE-10
Model	T-CORE-10
Material code	A81151400
Rated AC output	10 kW
Manufacturer	Green Hero HK Limited

PV inputs

Parameter	T-CORE-10
MPPT channels	3
Input strings	One per MPPT
Maximum recommended PV array power from the reference data	18 kWp (3 x 6 kWp)
Maximum input voltage	800 V DC
MPPT operating range	130-800 V DC
Reference full-load MPPT range	180-800 V DC
Reference start voltage	140 V DC
Reference rated PV voltage	600 V DC
Maximum input current	3 x 20 A DC
Maximum short-circuit current	3 x 24 A DC
Reference PV backfeed current	0 A

Battery ports

Parameter	T-CORE-10
Battery inputs	2
Battery voltage range	30-60 V DC
Reference battery range for full load	48-60 V DC
Maximum charge current	2 x 105 A DC
Maximum discharge current	2 x 105 A DC
Communication	CAN / RS485
Battery selection	Approved battery and profile only

Grid AC input and output

Parameter	T-CORE-10
Rated voltage	3L/N/PE 230/400 V AC; 220/380 V AC
Rated frequency	50 / 60 Hz
Maximum input current	30.3 A AC
Maximum input apparent power	20 kVA
Maximum output current	16.7 A AC
Maximum output apparent power	11 kVA
Reference rated output current	15.1 / 14.4 A AC
Reference phase-to-neutral grid range	185-276 V AC
Reference frequency range	45-55 Hz / 55-65 Hz
Reference current distortion at nominal output	< 3%
Power factor range	0.8 leading to 0.8 lagging

Backup output

Parameter	T-CORE-10
Rated output power	10 kW
Rated voltage	3L/N/PE 230/400 V AC; 220/380 V AC
Rated frequency	50 / 60 Hz
Rated current values on nameplate	15.1 / 14.4 A AC
Reference voltage distortion with linear load	< 3%
Reference grid transfer time	< 10 ms

Generator input

Parameter	T-CORE-10
Reference nominal input power	10 kW
Reference phase-to-neutral voltage range	185-276 V AC
Rated voltage	3L/N/PE 230/400 V AC; 220/380 V AC
Rated frequency	50 / 60 Hz
Maximum input current	30.3 A AC
Maximum input apparent power	20 kVA

Environmental and mechanical data

Parameter	T-CORE-10
Dimensions width x height x depth	465 x 665 x 165 mm
Reference weight	36 kg
Protective class	I
Ingress protection	IP65
Ambient operating range	-25 to +60°C
Power derating	Above 40°C ambient
Reference humidity	5-95%
Installation altitude	< 4000 m
Cooling	Air cooling with fan
Reference noise specification	< 45 dB
Reference standby loss	< 15 W

Efficiency and protection reference

Parameter	T-CORE-10
Reference maximum efficiency	98.2%
Reference European efficiency	97.7%
Reference battery conversion efficiency	95%
Reference topology	Isolated
Protection functions	DC isolation, input reverse-polarity protection, output overvoltage/overcurrent/short-circuit protection, anti-islanding, residual-current and insulation monitoring
Overvoltage categories	DC II / AC III
Optional functions	AFCI, PID and additional communications only if fitted and documented

10.1 Compliance and warranty

Use the conformity declaration, certificates and grid-connection approval applicable to the delivered model, hardware and country. A standards list for another variant is not a product certificate. The installer must select the approved country/grid profile. Warranty coverage and duration are those in the purchase documents supplied by Green Hero; battery and communication equipment may have separate terms. Keep the invoice, serial numbers and commissioning records.

10.2 Installation and handover record

Installation address

Inverter model and serial

Green Balance identifier

Battery model and serial

Battery input and access method

Meter model and CT direction

Grid profile and protection

Firmware versions

Mode and reserve settings

Installer and commissioning date

Customer access checked

Shutdown instructions handed over

Support contact

For support, contact the installing Green Hero partner or the contact supplied with your purchase. Provide the completed record, the exact alarm and its time, photographs of indicators and breaker positions, and the latest measurement timestamp. Do not send passwords, private keys or account recovery codes.