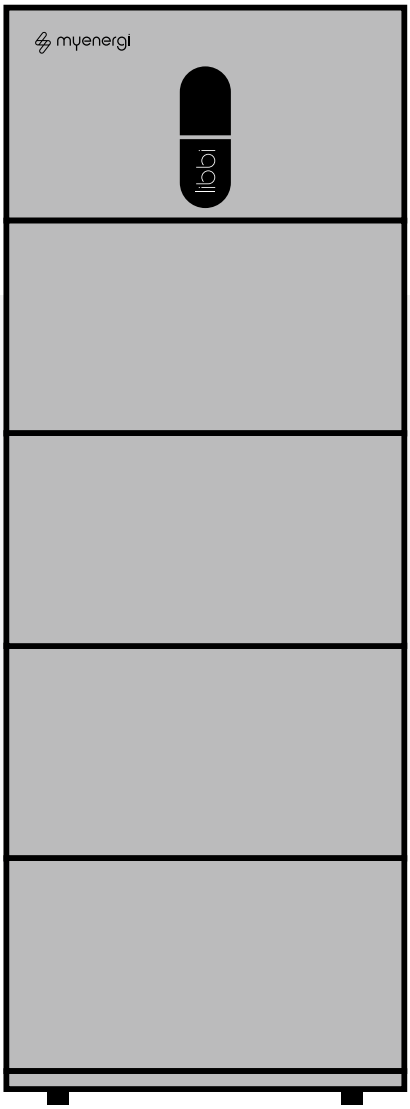
myenergi

libbi 2



Installation, Operation and Maintenance Manual

LIBBI-HS3.6D1-A
LIBBI-HS5D1-A

ENERGY STORAGE SYSTEM

myenergi.com

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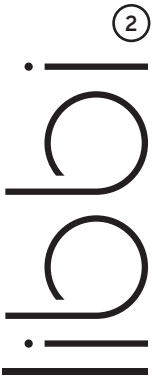
We are grateful for any suggestions for improvement and notices of errors in the installation instructions. myenergi libbi, myenergi zappi, myenergi eddi, myenergi harvi and myenergi hub are registered trademarks of myenergi Ltd.

Liability Limitation

myenergi do not accept any direct or indirect liability for product damage or property loss caused by the following conditions:

- Product modified, design changed or parts replaced without authorisation
- Changes, repair attempts and erasing of serial numbers or seals by an unauthorised person
- System design and installation were not in compliance with standards and regulations; failure to comply with the local safety regulations
- Damage caused by any transportation of the products by the installer
- Failure to follow any and/or all user manuals, installation guides and maintenance regulations
- Improper use or misuse of the device
- Force majeure (stormy weather, lightning overvoltage, fire etc.)
- Damage from external factors

Content



Introduction

Safety Introduction

Read all safety instructions before installing, operating or servicing libbi. Failure to follow the instructions in this manual may result in injury or death, damage to the system, reduced performance, inefficient operation, or invalidation of the manufacturer's warranty. Ensure this manual is retained for future reference and for any maintenance and reparation. Your libbi uses warning signs which contain important information for the system to be operated safely. Ensure these remain undamaged and clear to read. If damaged, warning signs must be replaced immediately.

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

Indicates a notice or 'tip' to guide you along your install.

Any person commissioning, maintaining or servicing libbi must be suitably qualified and must use correctly calibrated test equipment.

DANGER

Danger to life from high voltage. The PV array, inverter and battery can contain dangerous DC voltage. Touching live conductors or live components can cause fatal electric shock. When exposed to sunlight, the PV array generates a dangerous DC voltage which will be present in the DC conductors and the live components of the inverter. Touching the DC conductors or the live components can lead to lethal electric shocks. If you disconnect the DC connectors from the system under load, an electric arc may occur leading to electric shock and burns.

- The inverter can hold a life-threatening voltage even after disconnecting it from the DC and/or AC side
- Prior to performing any work on the inverter or the battery pack, disconnect the inverter from all voltage sources
- Do not touch the DC conductors or uninsulated cable ends
- Do not touch the system with wet hands. Do not clean the system with a wet cloth while it is energised.
- Risk of chemical burns from electrolyte or toxic gases. During normal operation, no electrolyte should leak from the battery pack and no toxic gases shall form. Despite careful construction, if the battery pack is damaged or a fault occurs, it is possible that electrolyte may be leaked or toxic gases formed.
- Under abnormal conditions batteries may vent flammable gases, therefore ensure that these are installed in a suitable location to avoid accumulation of flammable gases, installation must adhere to specific local and national safety codes & regulations.
- The transportation of libbi system must be arranged by the manufacturer or instructed personnel, including the Installer
- When transporting, a certified ABC fire extinguisher with minimum capacity of 2kg must be carried
- When transporting, secure the system to prevent tipping
- It is prohibited to smoke in or near to the transporting vehicle, at any time
- Do not install or operate the system if moisture has penetrated the system (e.g. due to a damaged enclosure)
- Do not install or operate the controller in an environmental temperature below -10°C or over 40°C
- Do not install or operate the battery and inverter in an environmental temperature below -10°C or over 50°C or a humidity over 95%
- Do not install or operate the device in potentially explosive atmospheres or areas containing highly flammable materials or gases
- The libbi battery and inverter may be sited indoors or outdoors and must be orientated vertically and mounted to a suitable surface or wall, ensuring suitable fixings are selected
- The libbi controller must be sited indoors and must be orientated vertically and mounted to a suitable surface or wall, ensuring suitable fixings are selected
- Install devices with displays in a location and at a height to reduce risk of eye strain
- Connect only myenergi compatible equipment, in accordance with these instructions
- The supply circuit shall be protected by an overcurrent device sized to 120% of the design current and in accordance with local and national regulations
- 300mA, bi-directional, RCDs, Type A or B shall be fitted in the supply to the inverter and in the supply from the backup circuit, in accordance with local regulations

- The inverter must be earthed through a permanent earth conductor, correctly installed and reliably connected. All external earth bonds shall be fitted
- This device is intended for a fixed location with a permanent AC supply, where the neutral conductor shall always be wired
- Ensure selection of suitably rated cables to each device
- The system and components are not to be used by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they are supervised or have been given instruction concerning use of the device by a person responsible for their safety
- Do not insert foreign objects into any part of the device, cables or connectors
- Do not rest heavy objects on top of the devices
- Do not damage the system with sharp objects
- Do not attempt to disassemble, tamper, modify or repair the device, as it has no user serviceable parts. Servicing and repair must only be carried out by a suitably qualified installer, with approved myenergi parts
- In adverse weather conditions and when device is located outdoors, avoid any maintenance to this equipment
- Ensure the device always has adequate ventilation; do not block the vents or obstruct airflow on the top or back of the unit. Always adhere to the minimum spacing/distances
- Stop using the device if it is found to be defective, or if any part is cracked, broken or damaged
- Never spray or submerge the devices with water
- Ensure chemicals used for cleaning units are compatible with the materials used in the construction. If in doubt please consult myenergi technical support for further details
- In case of contact with electrolyte, rinse the affected areas immediately with water and consult a doctor without delay
- To exchange a battery, please request for new hazardous goods packaging if needed, pack it and myenergi or a 3rd party arranged by myenergi will collect it

CAUTION

- The inverter and batteries are heavy. There is a risk of injury if the inverter or battery is lifted incorrectly or dropped during transportation or when attaching to or removing from the wall
- Ensure all operations are carried out in accordance with national manual handling rules, guidelines and regulations.
- Lifting and positioning the inverter and battery packs must be carried out by at least two people using correct manual handling techniques.

Regulatory Information

Hereby, myenergi Ltd. declares that the radio equipment type “libbi” is in compliance with the following:

- Radio Equipment (RED Directive 2014/53/EU & SI 2017 No. 1206)
- Low Voltage (LVD Directive 2014/35/EU & SI 2016 No. 1101)
- Electromagnetic Compatibility (EMC Directive 2014/30/EU & SI 2016 No. 1091)

The full text of the EU & UK declarations of conformity is available at the following address:

www.myenergi.com/installers-centre/download-centre/

Radio Equipment (RED)

This libbi controller incorporates a 868/915MHz radio and 2.4GHz wireless transmitter and complies with EN62311 for risks to human exposure.

- Radio operates in bands between 868–870MHz / 915–916.3MHz – 14.9dBm max
- Wi-Fi operates between 2412-2484 MHz (802.11 b/g/n) - 18.3 dBm max

Electromagnetic Compatibility (EMC)

This equipment has been designed and tested to fulfil applicable standards for:

- Radio frequency emissions when installed according to the instructions and used in its intended environment
- Immunity to electrical and electromagnetic phenomena when installed according to the instructions and used in its intended environment

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this instruction manual, may cause harmful interference to radio communications. Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment under EU rules.

Electrical Safety

libbi controller

- OVC II, Class 1 device in accordance with IEC 61140
- The supply for controller is 230Vac ±10%
- An overcurrent circuit breaker, maximum 3A, shall be located in the supply. Supply wiring must be 1.5mm^2 min, 300V minimum rated. Wiring shall be installed without stress and free from being scratched by sharp objects
- Installation shall be ≤ 2000m above sea level.

libbi Inverter

- OVC III (mains), OVC II (PV), Class 1 device in accordance with IEC 61140
- The supply for inverter is 230Va.c. ±10%.
- The installer should consider voltage requirements of the unit and account for any likely voltage drop on conductors
- The cross-sectional area of the supply conductors shall be between 6mm^2 and 8mm^2. Wiring shall be installed without stress and free from being scratched by sharp objects
- The inverter input must not exceed 500Vdc
- Installation shall be ≤ 4000m above sea level

Operation after power failure

The libbi is part of the home battery which stores life-threatening high voltage current (even when the DC side is turned off). Touching the battery outlets is strictly prohibited.

Privacy Notice

External CTs within the myenergi ecosystem are used to measure electrical current and provide data for minute-level energy monitoring.

When your device is connected to the internet, it will send data to our servers at regular intervals. This includes information about its status, performance, charging events, schedules and energy usage, so we can show you useful information in the myenergi App or myenergi myaccount.

Data on the servers can be accessed by myenergi in order to understand how your device is working, improve our services and resolve Customer or Technical Support queries.

We will only know who you are if you or your installer has registered the device on the myenergi app, myenergi myaccount or myenergi Installer assistant app.

For more information, please visit www.myenergi.com.

Grid Compliance

When installed, libbi operates the following grid compliant modes:
AS/NZS 4777.2:2020+A1+A2

Moisture Protection

If the internal mechanisms of the battery, inverter or controller were exposed to moisture this would likely cause damage. Avoid any repairs or maintenance activities outdoors in adverse weather conditions.

Battery Safety Information

This product is a lithium iron phosphate battery with certified compliance under the UN Recommendations on Transport of Dangerous Goods, Manual of Tests and Criteria, Part III, subsection 38.3. For battery cell, chemical materials are stored in a hermetically sealed metal case, designed to withstand temperatures and pressures encountered during normal use. As a result, during normal use, there is no physical danger of ignition or explosion and chemical danger of hazardous materials' leakage. However, if the product is exposed to fire, mechanical shocks or electric stress by misuse, the gas release vent will be opened. The battery cell case will be breached at the extreme. Hazardous materials may be released. Moreover, if heated strongly by the surrounding fire, acid or harmful fumes may be emitted.

Material Safety Data Sheet

For detailed information please refer to the Product Information Sheet which can be found on the myenergi website.

https://support.myenergi.com/hc/article_attachments/20570888448913

Product Description

Features

These instructions will help you to familiarise yourself with libbi. The myenergi libbi is a residential photovoltaic storage system that is composed of a power control module and an extendable battery pack. It stores and releases electrical energy according to the inverter management system requirements. myenergi provides a photovoltaic storage-monitoring platform to monitor and control electricity generation and storage of the libbi. Power can be generated, consumed, and stored at any time in any place, and the information can be monitored and controlled remotely. The libbi comes with an integrated energy management system (EMS). This system enables the inverter to run off-grid or on-grid and manages energy flow intelligently so that the system can operate economically.

The libbi controller forms part of the energy management system and manages system control, CT monitoring and device configuration.

By reading these instructions, you will have all the information needed to help your customer get the maximum benefit from their new eco-smart device. libbi is a residential home battery system designed to store surplus electricity generated by a photovoltaic (PV) array or other compatible renewable energy source for later use. This enables users to increase self-consumption of generated energy and reduce reliance on grid electricity.

Where no on-site renewable generation is installed, libbi can also charge from the grid during off-peak periods to take advantage of time-of-use electricity tariffs and discharge stored energy when demand or electricity costs are higher.

libbi can be installed as a standalone system or integrated with compatible myenergi products, including zappi, eddi and harvi, to provide a connected home energy management system. 'eco-smart' home.

Inverter Appearance

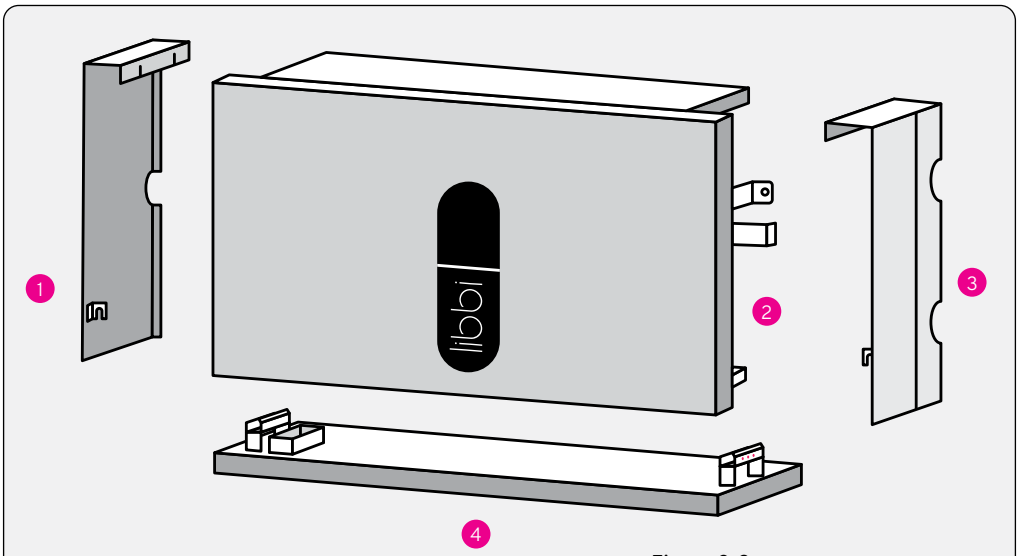


Figure 3-2
Exploded diagram showing the main contents of the inverter box

Item	Description	Item	Description
1	Left protective panel	2	Inverter
3	Right protective panel	4	Floor stand support

External ports on the inverter

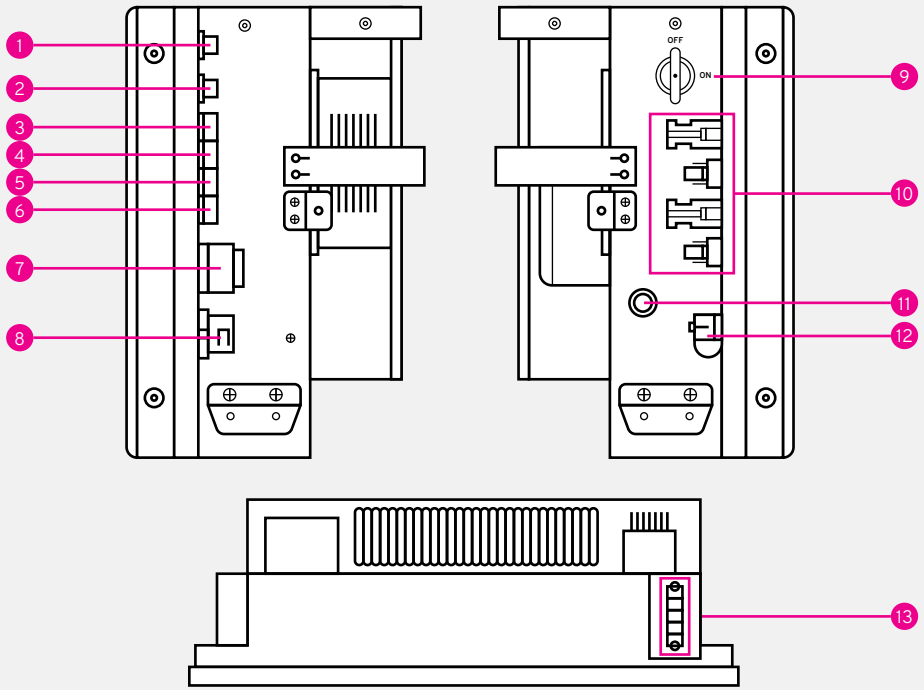


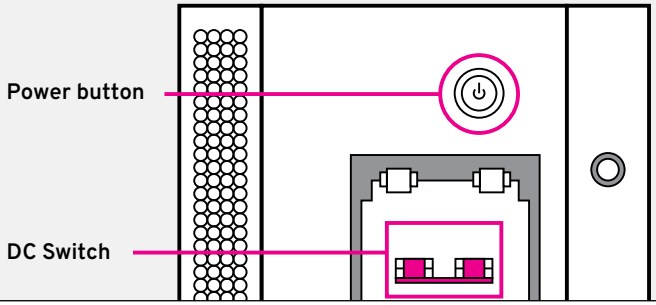
Figure 3-3
External Interface

Item	Description	Item	Description	Item	Description
1	WLAN/4G/LAN (DVC A)	2	CT METER (DVC A)	3	DRM (DVC A)
4	DRY CONTACT (DVC A)	5	PARALLEL1 (DVC A)	6	PARALLEL2 (DVC A)
7	GRID (DVC C)	8	EPS (DVC C)	9	PV SWITCH (DVC C)
10	PV1/PV2 (DVC C)	11	BAT BUTTON (DVC A)	12	BAT COMM (DVC A)
13	BAT CONNECT (DVC C)				

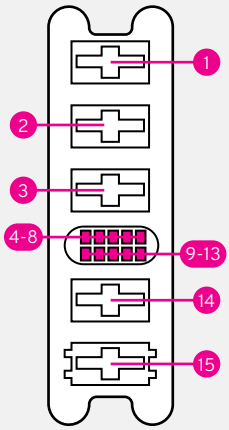
Item	Description
WLAN/4G/LAN (DVC A)	libbi controller port (C110W/C110D)
CT METER	For external METER CONNECTION AND RS485 (UNUSED)
DRM	Demand Response Management port
DRY	Dry Contactor for external connection
Parallel 1	For connection to other libbi inverters for parallel function (UNUSED)
Parallel 2	For connection to other libbi inverters for parallel function (UNUSED)
GRID	For AC connection to power grid
EPS	For AC connection to Emergency Power supplied circuits

Battery Pack Appearance

LIBBI-BM5D1-A

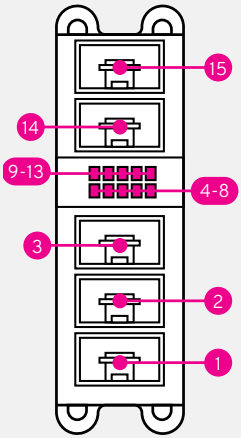


Battery Port Information



Battery Interface female

Code	Describe	Code	Describe
1	Battery -	9	CANL
2	Battery -	10	Activate 5V -
3	Chassis ground	11	Inverter key -
4	CANH	12	Inverter Contact -
5	Activate 5V +	13	UP IN -
6	Inverter key +	14	Battery +
7	Inverter Contact+	15	Battery +
8	UP IN +		



Battery Interface Male

Code	Describe	Code	Describe
1	Battery -	9	CANL
2	Battery -	10	Activate 5V -
3	Chassis	11	NC
4	CANH	12	NC
5	Activate 5V +	13	DO OP -
6	NC	14	Battery +
7	NC	15	Battery +
8	DO OP +		

Parallel System

The inverter has not been tested to AS/NZS 4777.2:2020+A1+A2 for multiple inverter combinations and/or multiple phase inverter combinations so combinations should not be used, or external devices should be used in accordance with the requirements of AS/NZS 4777.1.

Emergency Power Supply (EPS) Mode

When a grid power outage occurs, the libbi automatically isolates itself from the main grid and enters Emergency Power Supply (EPS) mode within approximately 20 milliseconds. During this backup state, libbi draws power from the connected battery stack and any active daytime solar PV generation to keep your essential circuits energised. Only devices wired directly to the inverter's dedicated EPS backup output terminal—typically critical lighting, refrigeration, internet routers, and select socket circuits—will continue to operate, allowing your solar panels to continue powering loads and charging the battery stack during daylight hours.

Conversely, standard home circuits not connected to the EPS output, as well as high-power appliances such as electric vehicle chargers (e.g., zappi), heat pumps, electric showers, and electric hobs, will remain off to protect the system from overload. Additionally, because the system requires roughly 20 milliseconds to safely transition into isolated operation, EPS does not function as an instantaneous Uninterruptible Power Supply (UPS); sensitive electronics may experience a brief power drop during the switchover. Backup duration will vary depending on your available battery state of charge and the total power drawn by active backup appliances

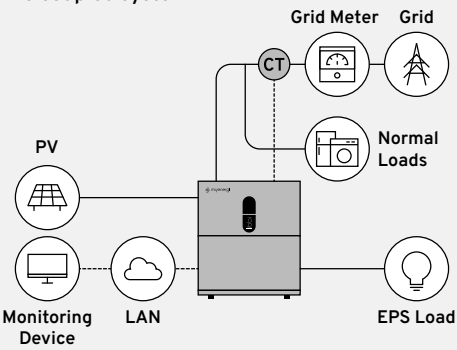
Scenarios

The libbi can be used in both a DC coupled system and an AC coupled system.

DC coupled System

In a DC coupled system, PV connects directly to the libbi inverter. libbi can use this energy in the home, store it in the battery packs or export it to the grid depending on the site configuration.

Figure 3-5
DC coupled system



Here is the single line diagram of a DC coupled system.

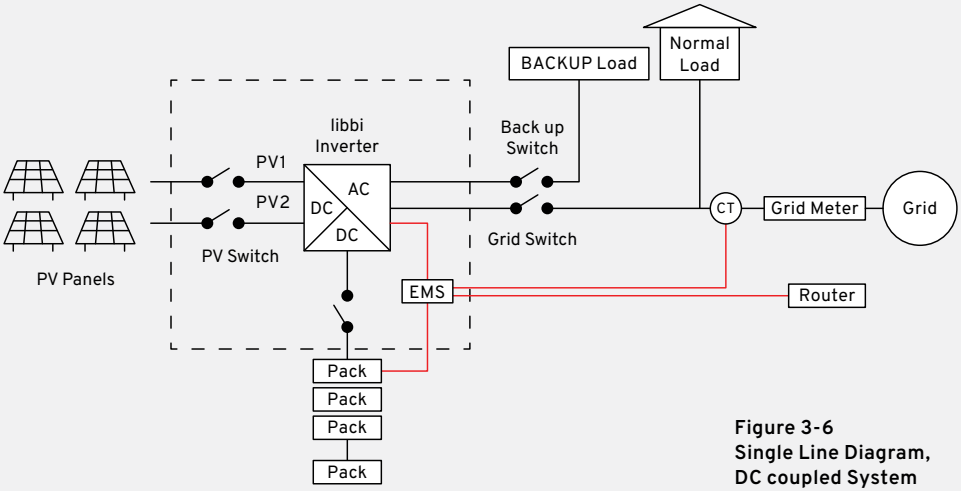


Figure 3-6
Single Line Diagram, DC coupled System

AC coupled System

In an AC coupled system, DC electricity flows from PV panels to the inverter, the AC electricity from the inverter flows to the household loads or other inverters to transform the AC electricity back to DC electricity and then store it in the batteries. An AC coupled system is ideal for retrofit.

The libbi supports two AC coupled system schemas.

Use AC coupled Diagram 1 where an existing PV inverter is already installed and the PV array is not connected directly to libbi.

Figure 3-7
AC coupled System, Diagram 1

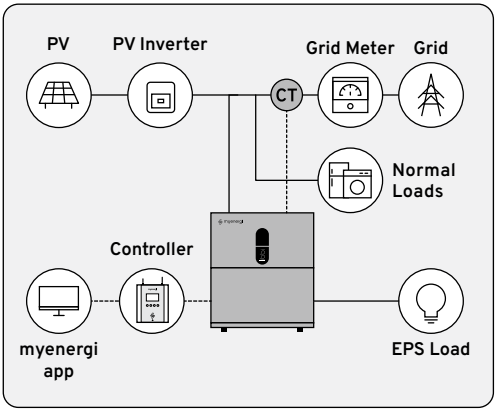
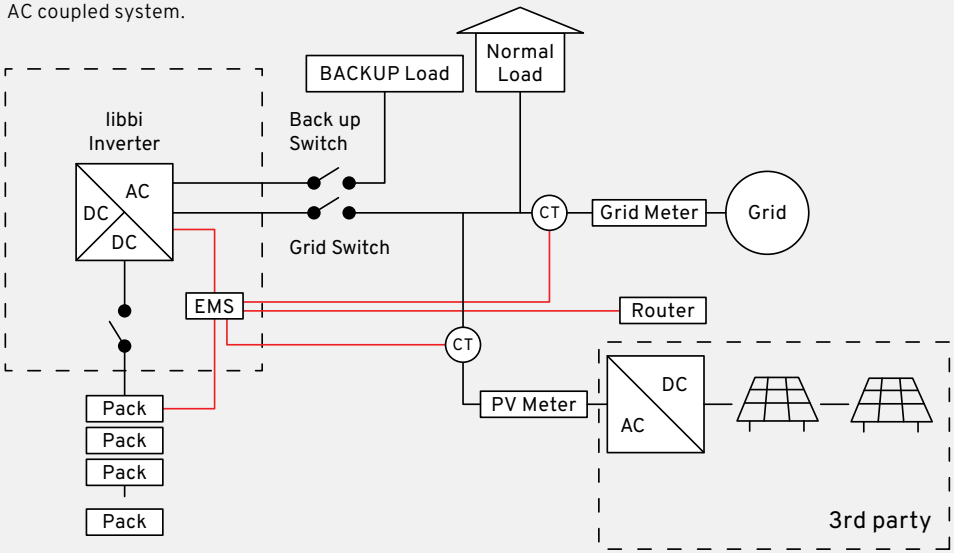


Figure 3-8
Single Line Diagram,
AC coupled System Diagram 1

Here is the single line diagram of a AC coupled system.



If you already have a PV inverter, now want to add a battery system to the inverter, and a PV panel is available for connection, you can use diagram 2 of AC coupled system.

Figure 3-9
AC coupled System, Diagram 2

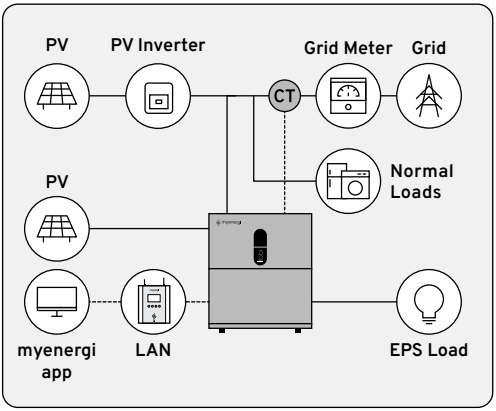
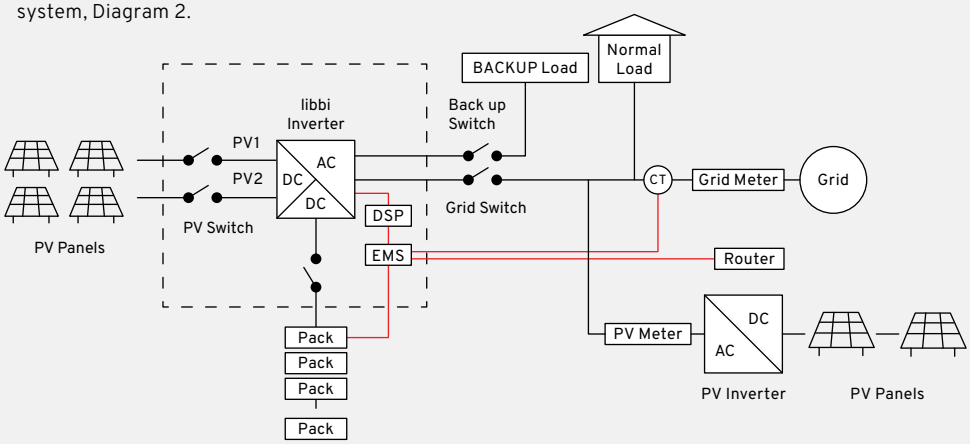


Figure 3-10
Single Line Diagram,
AC coupled System Diagram 2

Here is the single line diagram of an AC coupled system, Diagram 2.

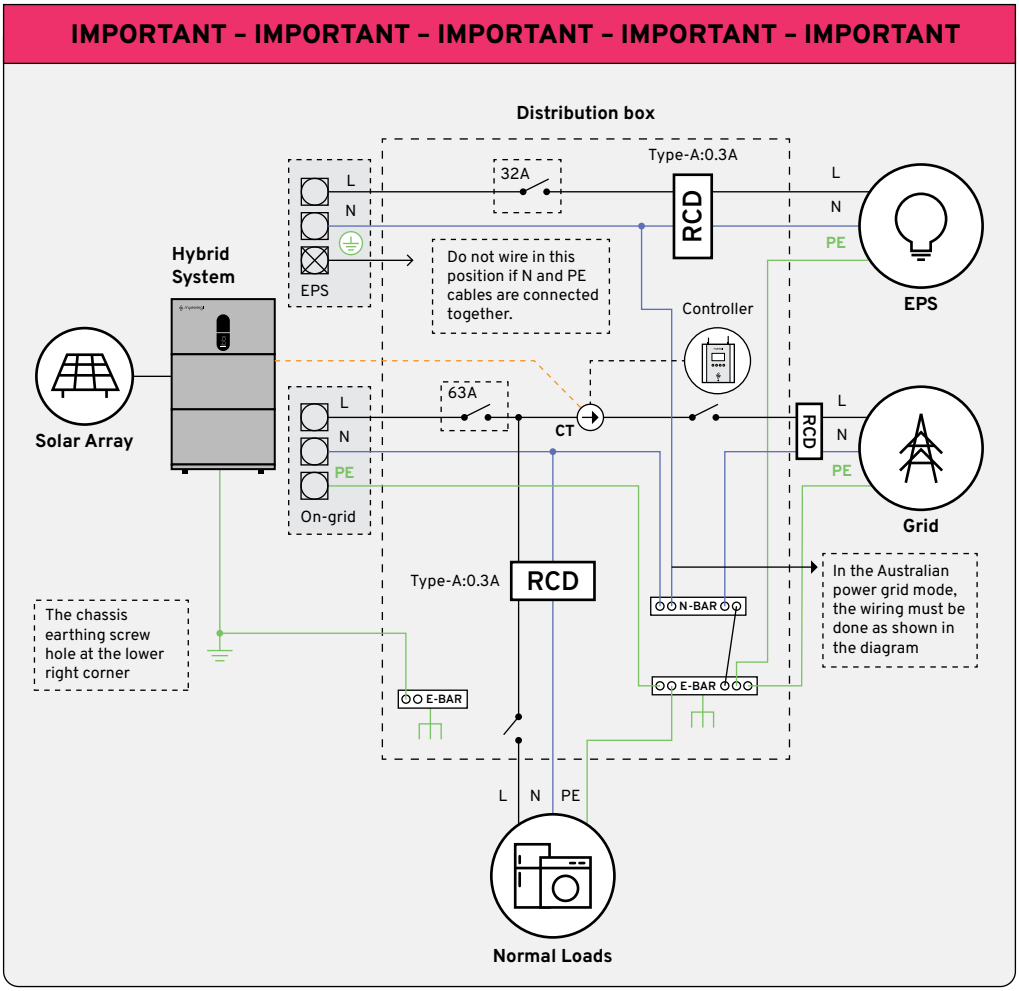


Wiring Diagram

Note: *Confirm that the earthing arrangement meets local wiring regulations. Where a resistance value is required, confirm it during commissioning.*

In Australia and New Zealand, direct connection of the N cable and the PE cable in the distribution box is necessary, as shown in Figure 3-11

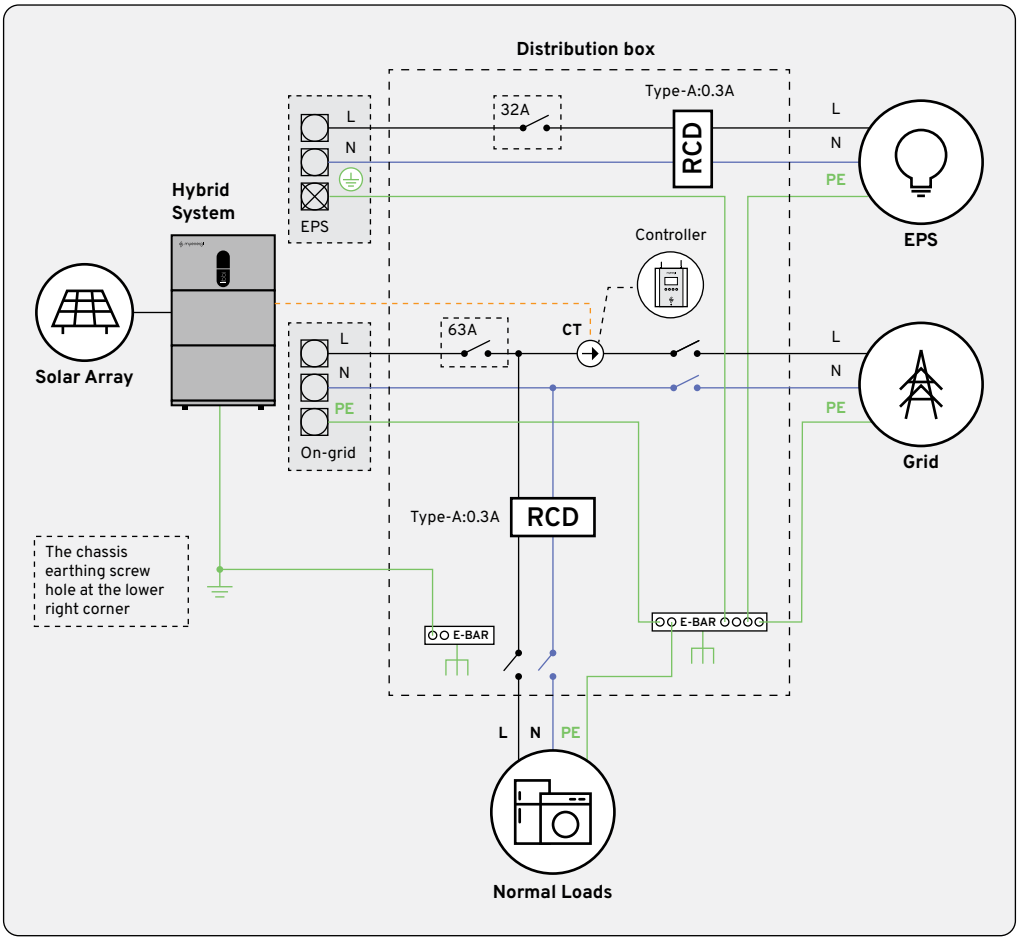
Figure 3-11
Wiring for Australia, New Zealand.



Note: *A minimum requirement of type A or B RCD with 300mA rating*

Note: *Confirm that the EPS protective earth connection is correctly installed and securely tightened. If the EPS earth connection is incorrect, EPS operation may fail during a grid outage.*

Figure 3-12
Wiring outside Australia, New Zealand



Note: *A minimum requirement of type A or B RCD with 300mA rating*

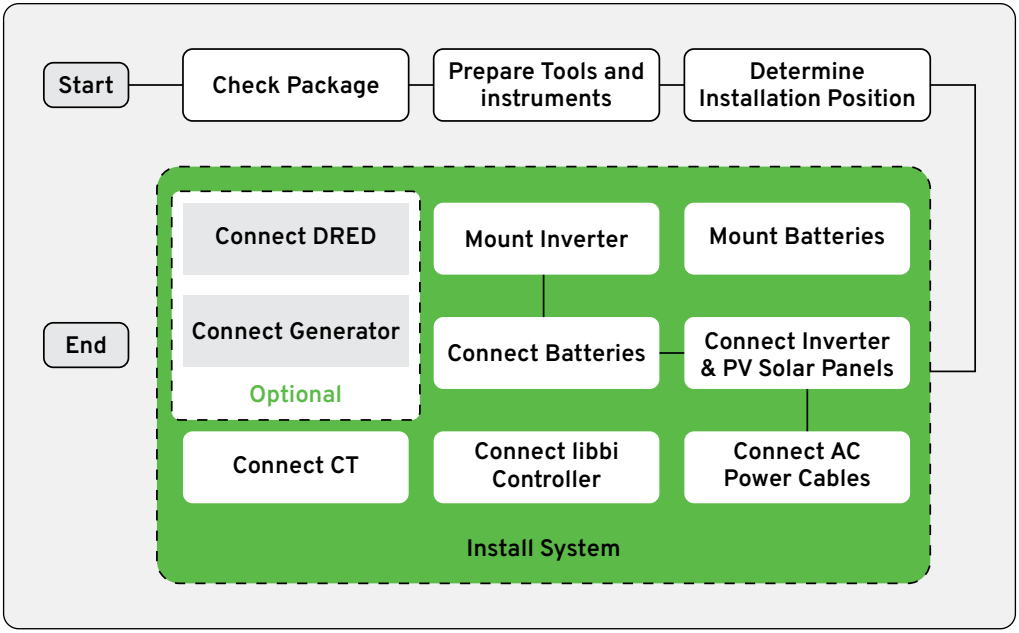
System Topologies

With the libbi, you can install a libbi PV battery system using either of two schemas:

- Install one hybrid inverter and up to 8 battery packs (expansion kit required for 5+)
- Install a parallel system with multiple hybrid inverters of the same model, each with its own battery packs, connected in parallel.

Follow the steps in Figure 4-1 to install a PV battery system with an LIBBI-HS3.6D1-A / LIBBI HS5D1-A.

Figure 4-1
Installation Procedure



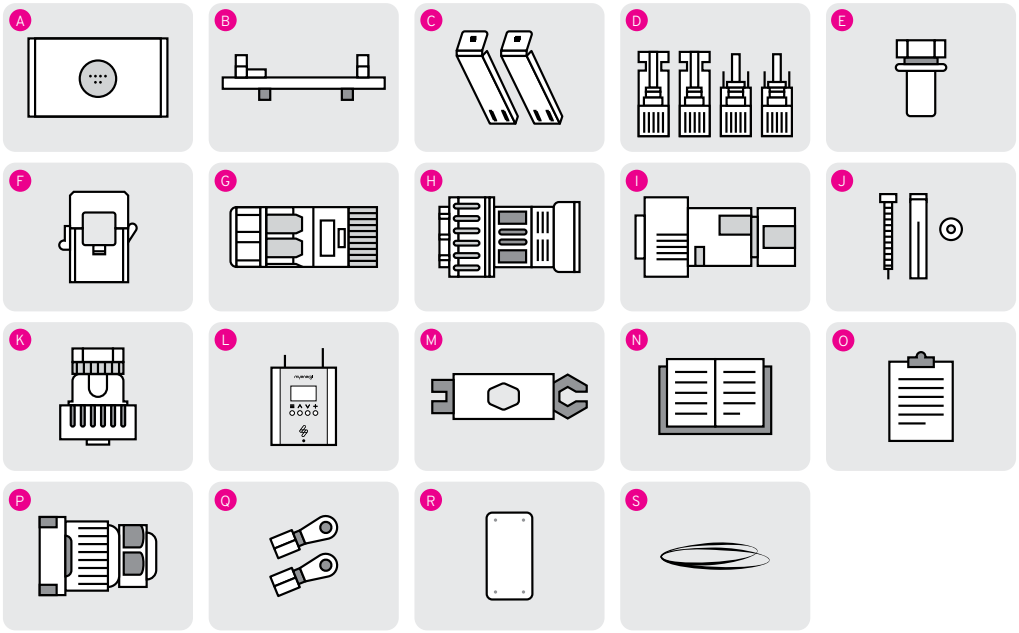
Danger: *Only suitably qualified persons are permitted to install libbi. At least two trained persons are required to lift and position the inverter and battery packs.*

Checking the package

Open each box and check that all parts are present before starting the installation

Danger: *Before opening the package, make sure that the box is not damaged.*

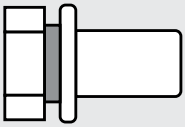
Hybrid Inverter Components



Item	Quantity	Description	Item	Quantity	Description
A	1	Inverter (packed and assembled with base)	**B**	1	Base (must be removed from inverter bottom immediately after unpacking)
C	2	Mounting bracket	**D**	2	PV terminals: 2x positive, 2x negative
E	6 sets	M4x12 Bolt	**F**	1	CT
G	1	AC EPS connector	**H**	1	AC grid connector
I	1	Wi-Fi connector	**J**	1 set	2 screws, 2 rubber sleeves 2 gasket (base and wall bracket)
K	1	RJ45 connector	**L**	1	libbi controller (separate box)
M	1	PV connector tool	**N**	1	User manual, Warranty card, Certificate of Quality card
O	1	Test report	**P**	1	CT connector
Q	2	Ring terminals	**R**	1	Positional punch card
S	1	Controller communication cable (5m)			

Battery pack components

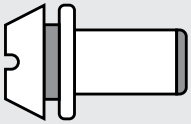
A battery pack delivery includes the following.



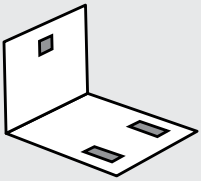
M5x12: 8pcs

ST6.3x50: 2pcs
D10x50: 2pcs

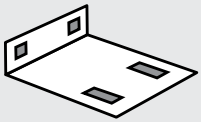
M6 Gasket: 2pcs



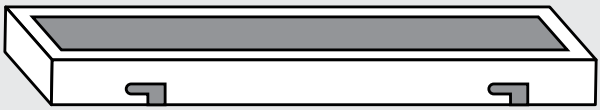
M4x12: 2pcs



Mounting Kit-Wall: 2pcs

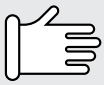


Mounting Kit-Battery: 2pcs



Mechanical Cover x2

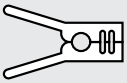
Preparing Tools and Instruments

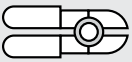

Protective Goggles

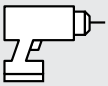

Protective Gloves

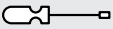

Protective Mask


Protective Shoes

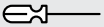

Wire Clamp

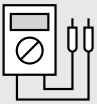

Cable Crimper

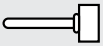

10mm Power Drill


Flat-head Screwdriver


Torque Wrench


PH1 & PH2 Screwdriver

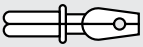

Multi-meter


Rubber Mallet


Levelling Instrument


Tape Measure

Marker Pen


Wire Stripper


On grid wire 8mm²

EPS Wire 6mm²

PV Wire (4mm² Max. Voltage 1,000v)

Installation Position Requirements

The libbi battery system can be installed indoors or outdoors, but the position for installation must meet these requirements:

- Sufficient space for personnel to install and maintain the equipment and to observe the LED indicator light status on the hybrid inverter.
- Ambient temperature: For the inverter and battery pack see specifications.
- Relative humidity: 0–95% (No condensation).
- Level floor, not sloped.
- Sheltered from direct sunlight or severe weather.
- Well ventilated
- NOT near flammable or explosive materials.
- NOT exposed to salt hazards.
- NOT subject to strong vibration or electromagnetic fields.
- NOT a habitable room, as defined in AS/NZS 3000
- NOT accessible to children.

Danger: *The battery system needs to keep a certain safe distance (<600mm) from the surrounding doors, windows, escape routes and other systems.*

Restrictions

DO NOT install the system in these locations:

- In habitable rooms, such as living rooms or bedrooms, or in any location restricted by local regulations
- A ceiling or wall with a cavity
- On a roof
- Entrance or exit
- Underneath staircases or passageways.
- Areas where relative humidity and condensation exceed 95%
- Places exposed to salty air
- Earthquake zones, unless additional safety measures have been taken
- Places at more than 4,000 meters above sea level
- Places in direct sunlight or places where the ambient temperature varies a lot
- Places with flammable materials and gases
- Places where explosions may occur
- Locations where the installation of panels is restricted by AS/NZS 3000
- Within 600mm of any heat source, for example, hot water unit, gas heater, air conditioning unit, or any other equipment
- Within 600mm of any outlet
- Within 600mm of any window or vent
- Within 600mm of the side of any other installation

- Hazardous areas with insufficient distance from gas cylinders or gas relief valves as defined in AS/NZS 3000
- Controller must be installed protected from weather as it is not IP rated

When the libbi is installed indoors, make sure that the building structure, room furniture, and appliances do not interfere with the operation and maintenance of the system.

If the libbi is installed in a corridor, aisle, lobby, or similar area that leads to an emergency exit, at least one meter of space must be allowed for safe egress.

If the wall or structural surface is made of non-combustible material, a layer of non-combustible material can be placed between the equipment and the surface.

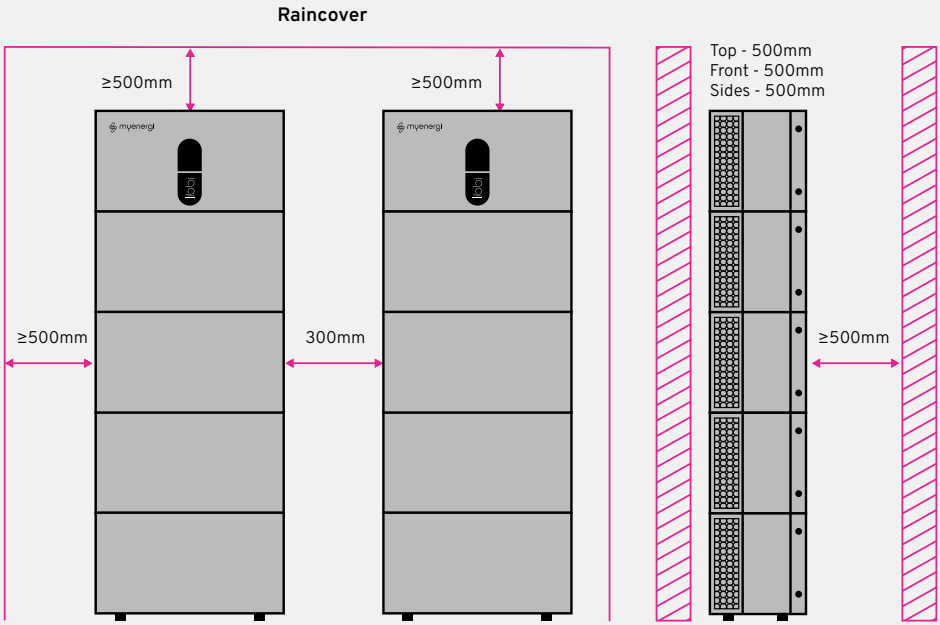
Clearance Requirements

If the libbi is mounted on a wall or on a surface that is 300mm from a wall or structure that separates the equipment from habitable rooms, the distance between the equipment and other structures or objects must be increased.

The minimum required clearance is as follows:

- 500mm to the sides of the equipment
- 500mm above the equipment
- 500mm in front of the equipment

Figure 4-2
Peripheral Clearance Requirements for Installation



Note: *For outdoor installations, a shelter above the equipment is necessary. When installing the libbi, make sure that the distance between the highest point of the equipment and the ground or the mounting platform does not exceed 2.2 meters.*

If the distance between the libbi and the object above it, for example, a ceiling, is less than 500mm, the surface of the object must be paved with non-combustible material in the form of a circle with a radius of 600mm around the center of the equipment.

Note: *The minimum distance between the libbi and the object above it must be more than 500mm.*

Installing the System

Follow the steps in this section to install a libbi battery system with one hybrid inverter.

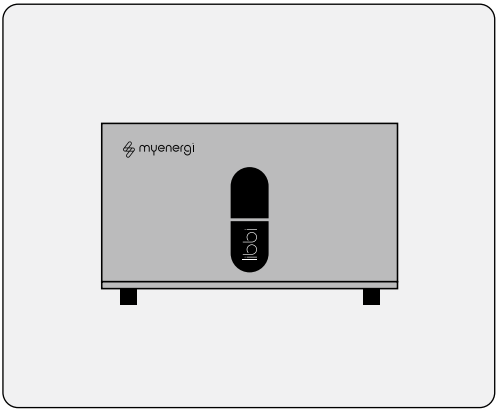
Mounting the all-in-one system

Note: *The inverter should be moved by two persons. One inverter weighs approximately 25 kg.*

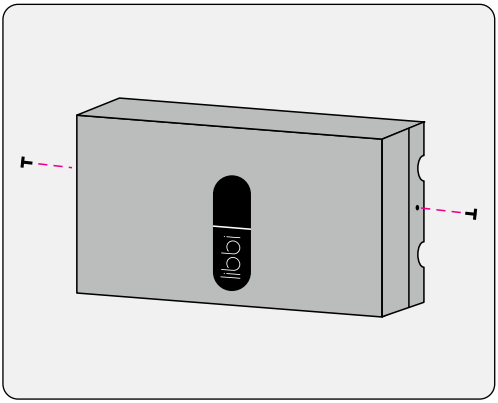
Note: *Wear protective goggles and a mask to prevent drilling dust from entering the eyes or respiratory tract.*

Procedure

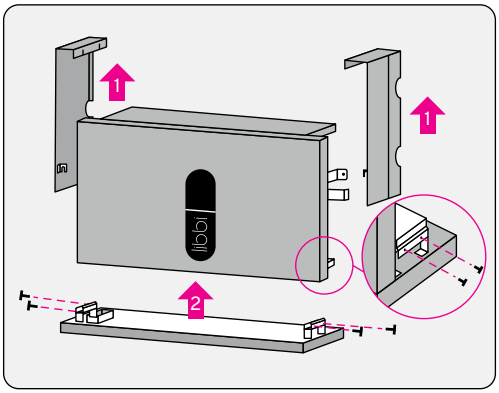
Step 1. Remove the inverter from the carton.



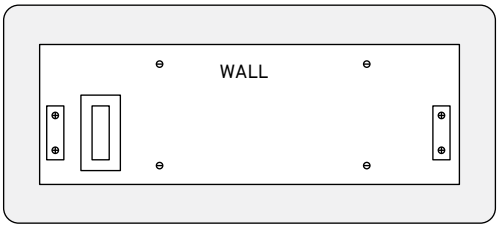
Step 2. Remove the screws in the middle of the protective side panel.



Step 3. Lift out the protective side panels upwards, then remove the bottom fixing screws.

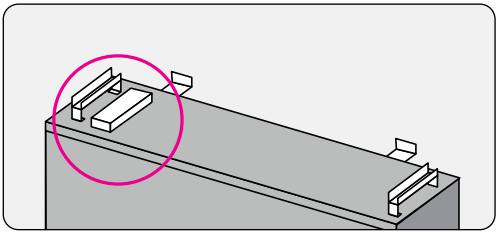


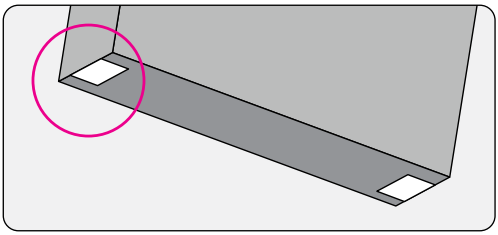
Step 4. Foot plate placement



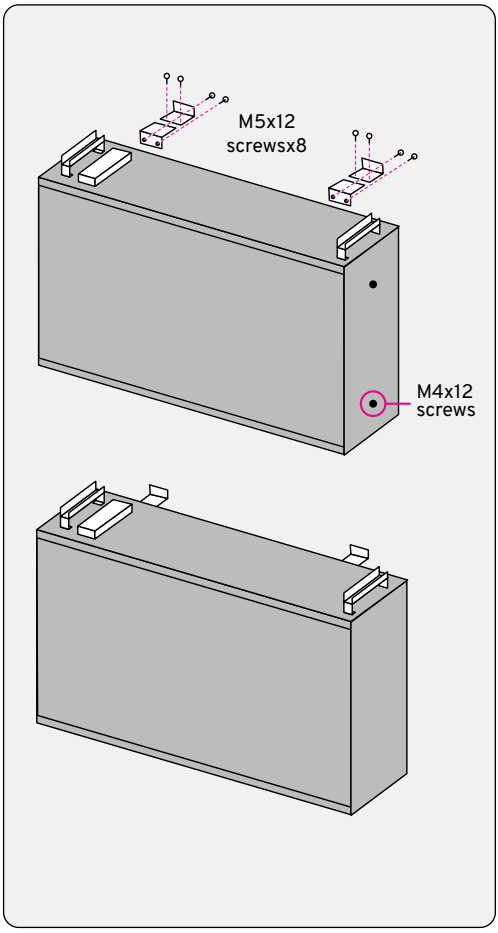
Step 5. Battery pack installation

5.1 Take the battery pack out of the carton and stand it horizontally on the ground, tear off the protective film at the battery interface on both sides of the battery pack, then place the battery pack vertically on the foot plate.



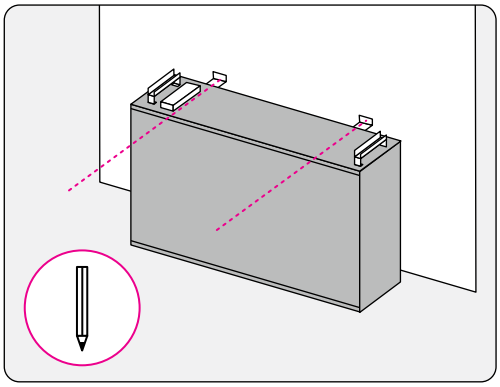


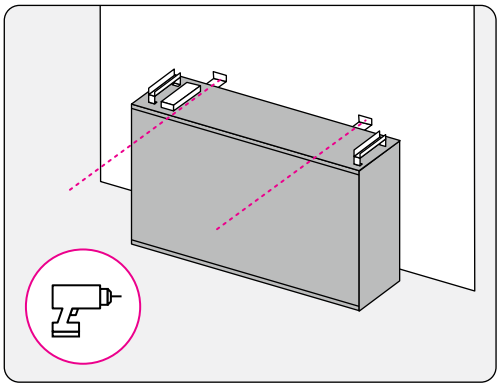
5.2 First, screw the battery mounting kit onto the battery pack, then fix the mounting kit wall to the mounting kit battery with screws. Finally, place the battery pack close to the wall for marking, drilling, installing expansion tubes and screws.

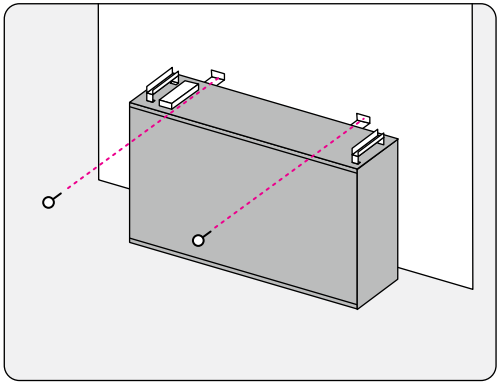


5.3 Install a set of batteries and tighten the screws on both sides, then continue to stack the next battery module.

The battery power and communication connectors align automatically when the battery packs and inverter are assembled correctly.

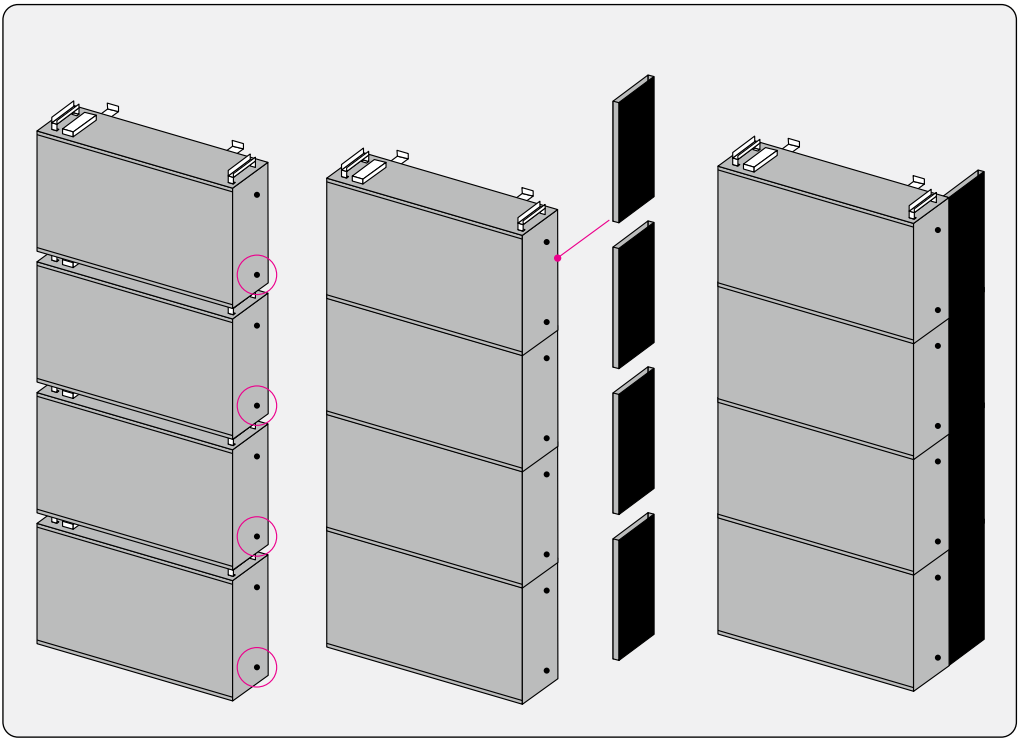






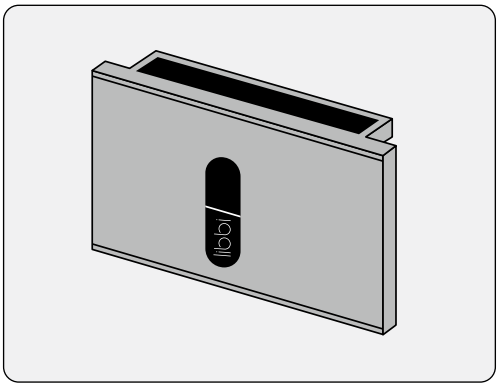
Use M4x12 screws to tighten, the screw torque is 2.0 N.m When needing to assemble the second battery (and all others), repeat step 5-1 to carry out the installation.

After stacking the battery packs, install mechanical cover on both sides.

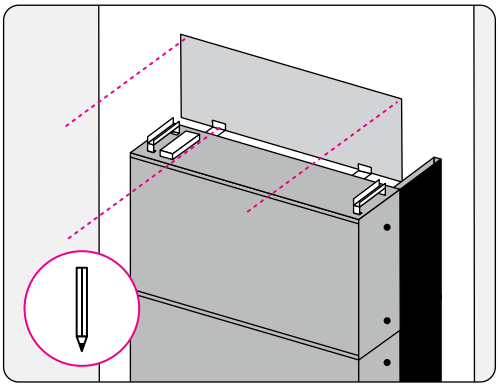


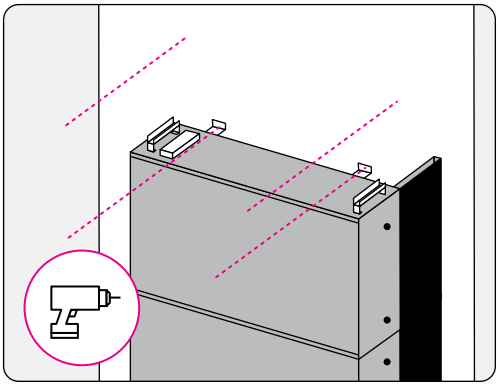
Step 6. Install the hybrid inverter

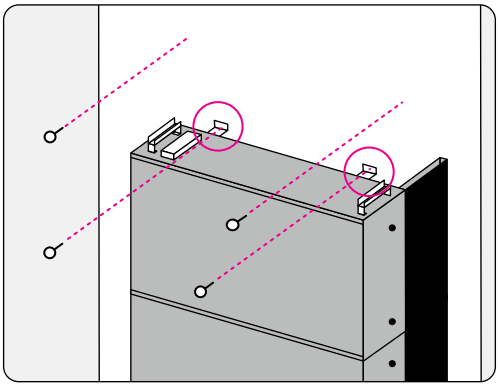
6.1 The disassembled inverter is shown below



6.2 Use the positional punch card to align the holes on the battery pack, mark the inverter mounting hole positions, and drill using a 10mm drill bit. The drilling depth should exceed 50mm. Place the expansion plug into the hole, then secure the base using ST6.3x50mm screws with a torque of 3.0 N.m

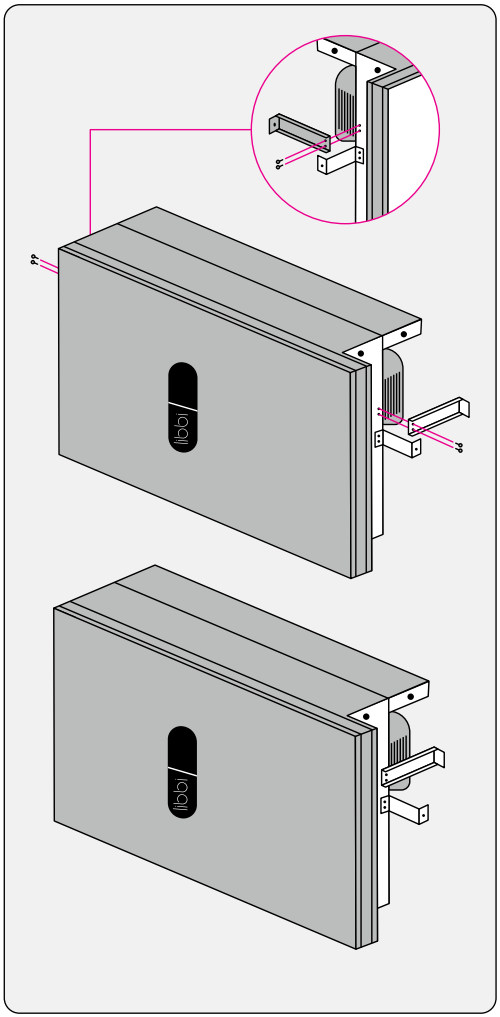






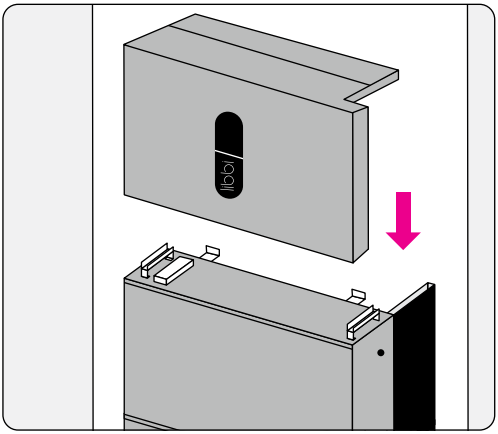
Step 7. Install the wall locking brackets.

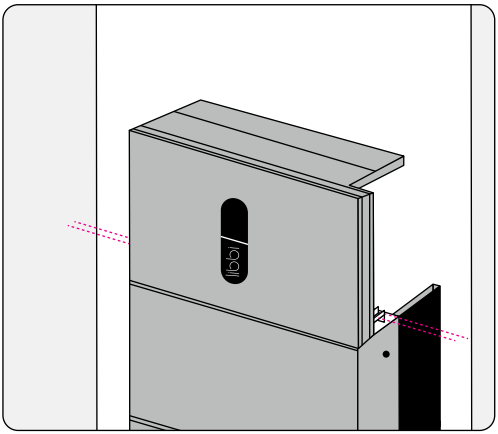
Fix the mounting brackets on both sides of the inverter with screws.

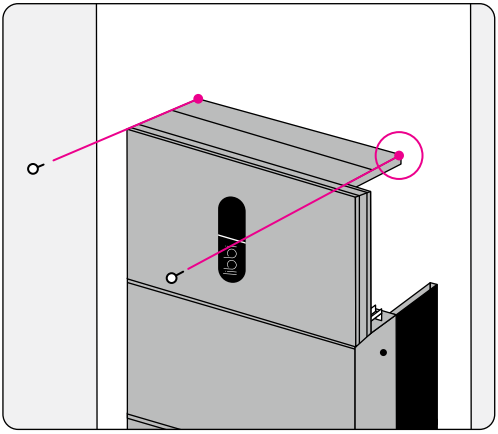


7.1 Stack the inverter on top of the battery pack. Secure it through the upper screw holes using M4 x 12mm screws. Tighten to 2.0 N.m.

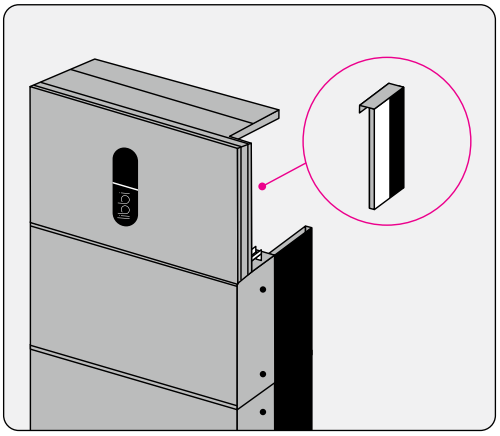
7.2 Install and secure the wall bracket. After adjusting the wall bracket, fix it using M4x12 screws with a screw torque of 2.0 N.m

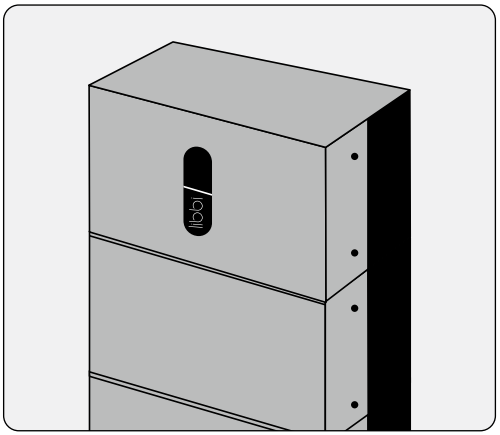






Step 8.
Refit the side covers on both sides of the inverter and tighten the screws.





Connecting PV Input

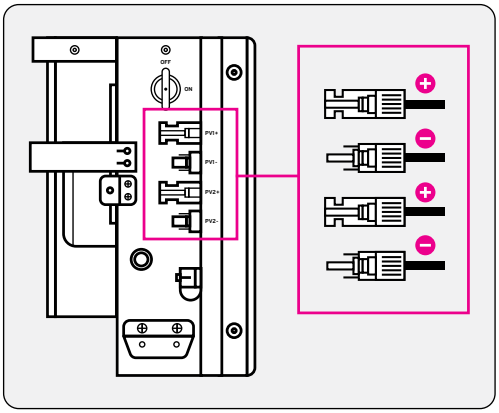
Before connecting PV cables, make sure the PV switch inside the cable box and the external PV isolator are both OFF.

Connecting the Inverter and PV Solar Panels

- 4mm² PV wires are recommended for connection.
- Distinguish the PV polarities and DO NOT reverse the connection.
- Make sure that the input voltage of the PV is within the acceptable input voltage range of the inverter, not higher than 500 V.

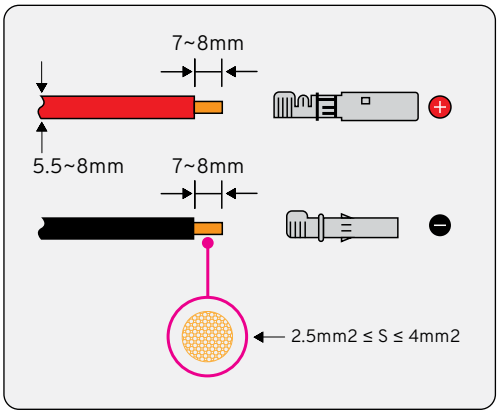
Warning: *Before connecting PV cables, make sure the PV switch inside the cable box and the external PV isolator are both OFF.*

Note: *The scenario where two photovoltaic strings are connected to a single power module requires the model and quantity configuration of the two photovoltaic strings to be consistent. The PV strings should not be grounded to ensure the minimum insulation resistance of the equipment. Before connecting the PV strings to the inverter, the minimum insulation resistance of the PV strings to ground must meet the requirement (R = maximum input voltage / 30mA). If the insulation resistance value is lower than the above requirement, it will trigger an insulation resistance inverter alarm (low insulation impedance).*

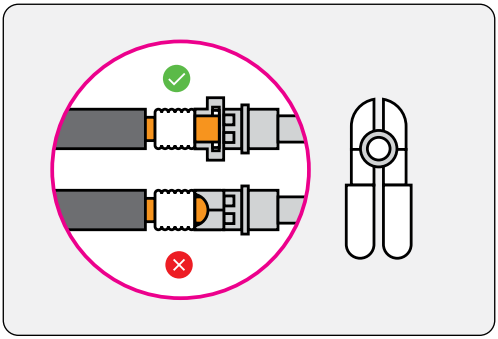


Procedure

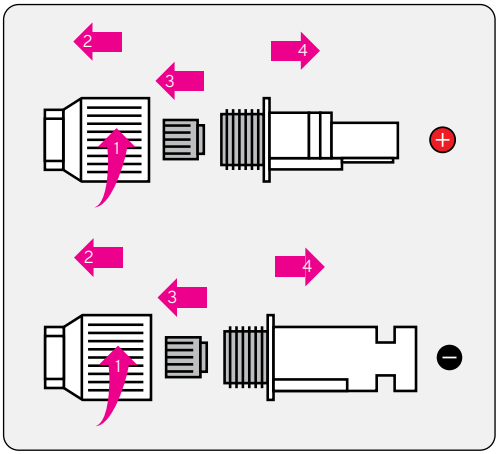
1. Use a wire stripper to remove an approximately 8mm length of insulation layer of the PV wire.



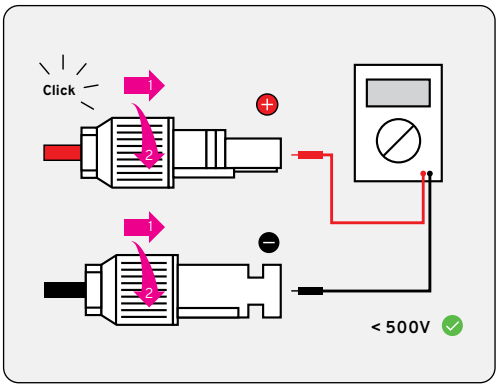
2. Then place the metal connector on top, and finally, use the crimping tool to crimp the metal connector to the wire.



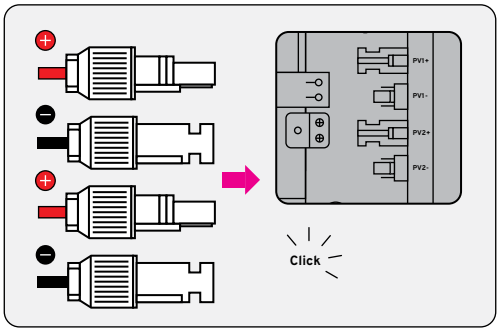
3. After the metal conductor is crimped to the wire, you must place the metal connector into the terminal cover, strain reliever and compression sleeve.



4. Finally, plug the metal connector into the connector housing and screw all the components together using the assembly tool. Properly tightening MC4 solar connector ensures they are water-tight and safe to use. Use a multi-meter to measure the voltage of the PV wire. Make sure that the voltage is lower than 500V.



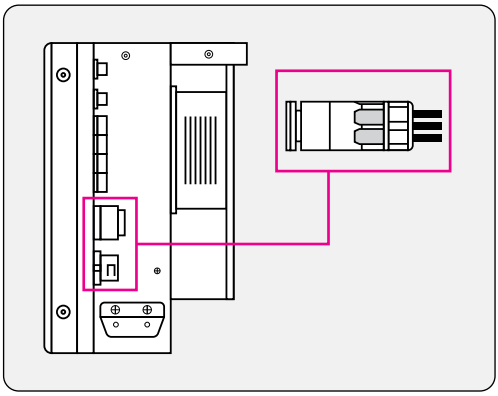
5. Plug the PV wires into the PV1+, PV1-, PV2+, and PV2- ports in the inverter and snap them.



Connecting to Grid and Backup/EPS

Note: *There are three connection ports marked "L", "N", and "⏚" inside the AC connector. Connect the line conductor to L. Connect the neutral conductor to N. Connect the protective earth conductor to PE. The L and N wires of the AC cable must not be reversed or short-circuited.*

The PE wire of the AC cable must be grounded. The connector supports stranded copper conductors only. Fit suitable ferrules or pin terminals to the conductors before connection.



Notice

- Recommended cables: a 6mm² cable for EPS connection and a 8mm² cable for ON GRID connection.
- Make sure that the resistance of the wires is lower than 1 Ω.
- Make sure that the grounding resistance, measured between the inverter case and the earth terminal of the distribution box, is less than 0.1 Ω.

Danger: *Before connection, make sure that the AC current breakers and the LOAD Switch in the distribution box are in the OFF state.*

Caution: *When connecting the wires to the connector, make sure that the phase wires and the earth wire are connected correctly.*

Caution: *Some appliances require a restart delay after a power interruption. Confirm that any appliance connected to the Backup/EPS circuit is suitable for backup operation.*

Procedure

1. Use a wire stripper to remove an appropriate length of the jacket and insulation layer from one wire of the AC cable.
2. Disassemble the grid/load connectors in the order shown in the diagram.
3. Unscrew the swivel nut from the threaded sleeve of the AC connector and insert the wire into the corresponding pins of the AC connector and use a philips screwdriver No.1 (torque 0.8 N.m) to tighten the screws. Then assemble the AC connector components in the order shown in the diagram.

Note: *The type A or B RCD (≥ 300 mA) must be installed on the EPS port of the system according to local regulations.*

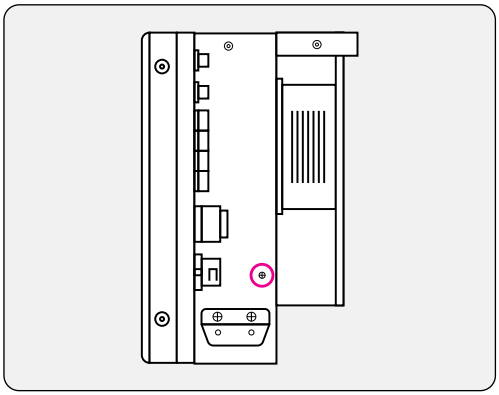
An AC circuit breaker of these specifications is recommended:

- *For ON-GRID connection: 63 A/230 VAC 6 kA*
- *For EPS connection: 32 A/230 VAC 6 kA*

Protective Earth (PE) Connection:

Connect a dedicated earth wire from the external grounding stud/terminal on the inverter chassis directly to the main earthing terminal in your distribution or main board.

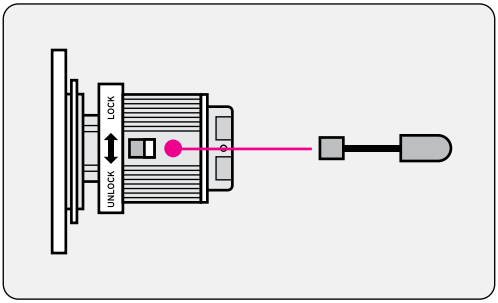
Recommended cable size: minimum of 6mm²
(Must use correct ring terminal)

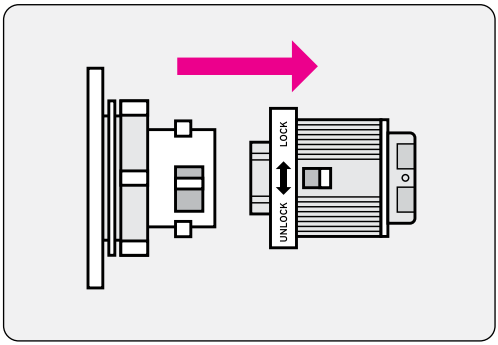


4. Removal of Connector from Inverter ports.

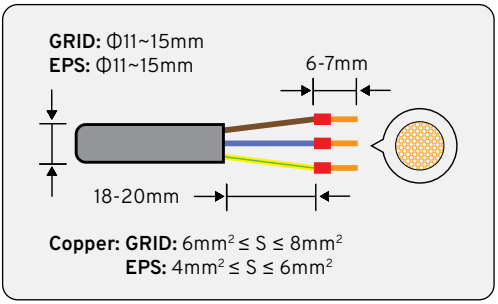
GRID: Insert tool to release locking tab and rotate the locking ring in the direction shown on the connector. Then pull connector straight back away from inverter port

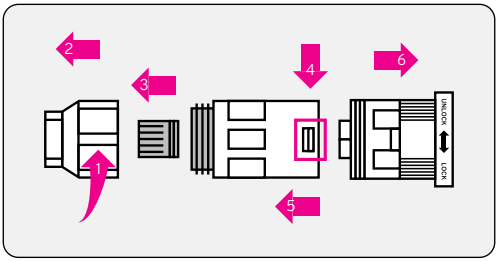
EPS: Use the unlocking tool to press the connector unlock, then pull the dust cover. Then pull connector straight back away from inverter port

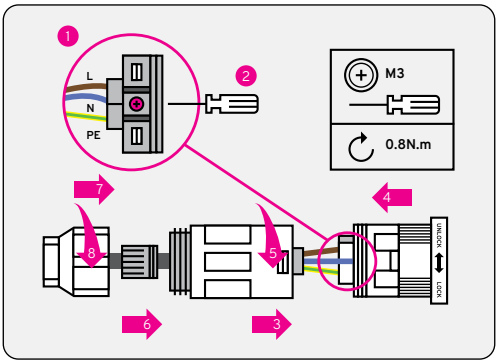


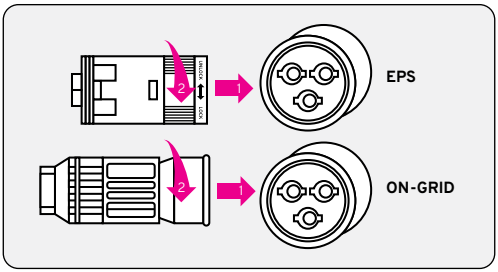


5. Plug the AC connector into the ON GRID or EPS port inside the inverter and tighten the connector.







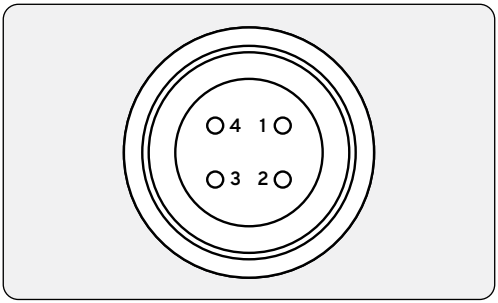


Connecting a libbi controller

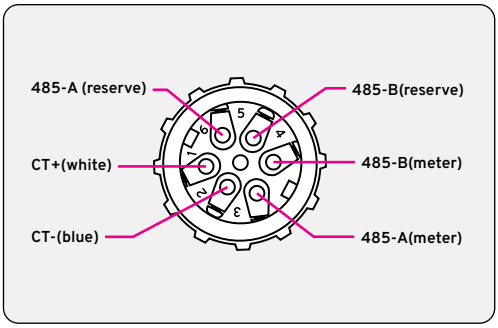
Note: *DO NOT remove waterproof plug.*

Procedure

1. Using the pre made cable provided for libbi controller plug into port.
2. Cable may be extended using twisted pair wire ie. CAT5e cable



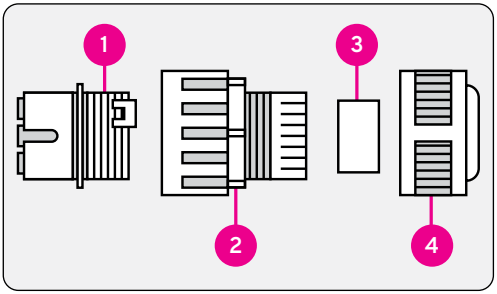
Pin 1	+12V
Pin 2	GND
Pin 3	RS485-A
Pin 4	RS485-B



PIN	Description
1	CT+(White)*not used
2	CT-(Blue)*not used
3	RS485-A(meter)
4	RS485-B(meter)
5	RS485-B (reserve)
6	RS485-A(reserve)

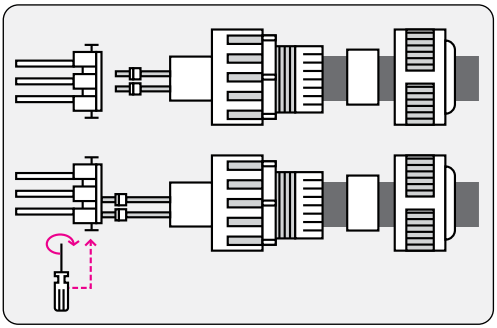
CT/RS485 port

1. Unscrew the nut, sealing, body, and housing of the CT connector

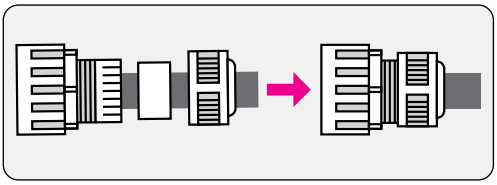


1	Housing
2	Body
3	Sealing
4	Nut

2. Thread the wires of the CTs through the nut, sealing, and the body, insert them into the pins of the CT & Meter connector, and then tighten the screws.



3. Tighten the nut, sealing, body, and housing of the CT & Meter connector.



4. Plug the CT& Meter connector into the CT port inside the inverter and tighten it.

Note: *The arrow on the CT must point toward the power grid.*

Connecting a DRED or an RRCR (Optional)

Note: *The libbi complies with AS/NZS 4777.2:2020+A1+A2 standard. Its DRM port can be connected to a Demand Response Enabling Device (DRED) in Australia or New Zealand or a Radio Ripple Control Receiver (RRCR) in other areas or countries.*

When the Australia or the New Zealand grid standard is selected, the DRM port can be enabled to connect a DRED. When other grid standards are selected, this port can be enabled to connect an RRCR. For more information about grid standards, see GRID CODE.

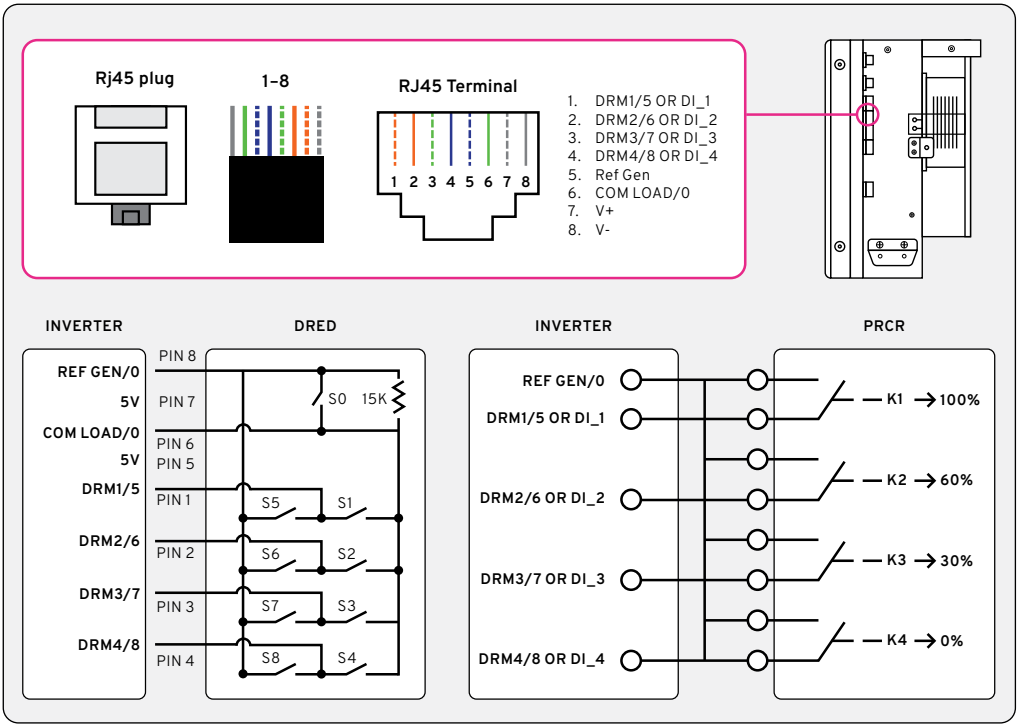
A DRM connector is necessary for the connection. Table 4-4 shows the pin descriptions of the DRM connector.

Smart meters supported by the inverter

Model	Manufacturer
CTF16L-2k-100	YaDa
YDS70-C16	YaDa
DDSU666	CHINT

**Not required when using C110W/C110D Controller*

Table 4-4
DRM Connector Pin Descriptions



The libbi is pre-configured to the following Radio Ripple Control Receiver (RRCR) power levels as shown in Table 4-5.

Note: *In the "PIN x" columns, "0" means the corresponding relay is closed and "1" means the corresponding relay is opened.*

Table 4-5 RRCR Power Level

PIN4	PIN3	PIN2	PIN1	PIN6	Active Power	Cos(Q)
1	0	1	1	1	0%	1
1	1	0	1	1	30%	1
1	1	1	0	1	60%	1
1	1	1	1	0	100%	1
1	1	1	1	1	100%	1
0	X	X	X	X	Standby	1

Procedure

1. Confirm DRM is enabled through the selected grid code before connecting the external DRED/ DRM device.
2. Use the DRM connector to connect the DRM port inside the cable box to the external device.

Status

Inverter States

The inverter status can be determined by the LED indicators shown in Table 4-6.

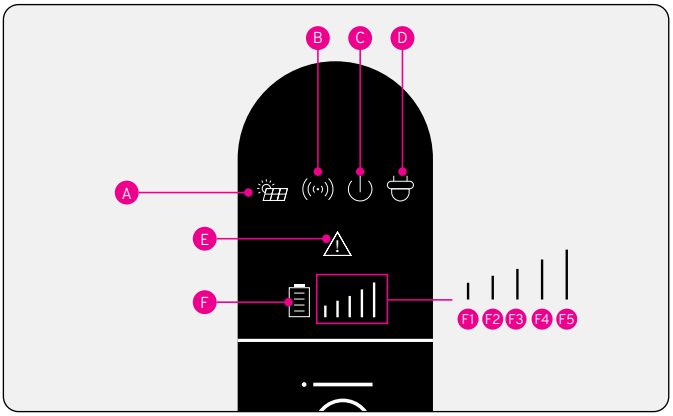


Table 4-6
Indicator LED Status

Icons	Implication	Color	Status	Describe
A	PV Indicator	Green	On	PV operating normally
			Flashing	PV connected but not operating
			Off	PV not connected
B	Communication Indicator	Green	On	Monitoring backend connected and communication normal
			Off	Monitoring module not connected or communication abnormal
C	Grid Indicator	Green	On	System in On-grid operation mode
			Flashing	System in bypass mode
			Off	System in initialization, standby, off-grid, fault, commissioning, or upgrade mode
D	Off-Grid Indicator	Green	On	System in off-grid PV charging mode
			Off	PV off-grid charging not in progress
E	Fault Indicator	Red	On	System fault
			Off	None
F	Battery Indicator	Green	On	Battery operating normally
			Flashing	Battery abnormal (alarm or BMS communication abnormal)
			Off	Battery shutdown or battery disconnected
F	Battery SOC Indicator (Flashing during charging)	Green	F5: 5/5	≥80%
			F4: 4/5	≥60%
			F3: 3/5	≥40%
			F2: 2/5	≥20%
			F1: 1/5	≥5%
			0	<5%

Battery Pack States

A battery pack can be in five states: OFF, NORMAL, ALARM, FAULT, and PROTECTION. For more information, see Indicator Lights and States.

Self-consume

In SELF CONSUME mode, the electricity generated by the PV panels is consumed in this order:

Step 1 - Supplies electricity for household use.
Step 2 - Stores the excess electricity in batteries.
Step 3 - Pushes the excess electricity onto the local power grid.

When the sun goes down, the household power supply is automatically switched to the batteries. If the power supply from the batteries is not sufficient, power is sourced from the local power grid.

Priority

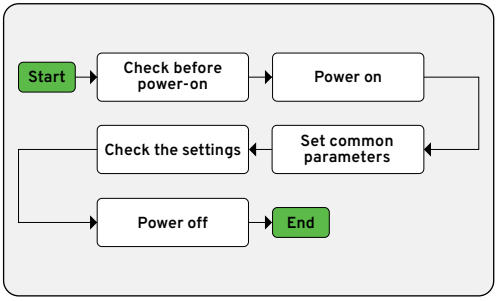
In BAT PRIORITY mode, the batteries are only used as EPS. When the grid fails, the household load is powered by the batteries. When the grid is working, the household load is powered by the grid, not by the batteries. The PV panels or the local power grid send electricity to the batteries, where it is stored until needed.

Peak Shift

In Peak Shift mode, the installer or user can set battery charge and discharge times where this function is supported by the system configuration.

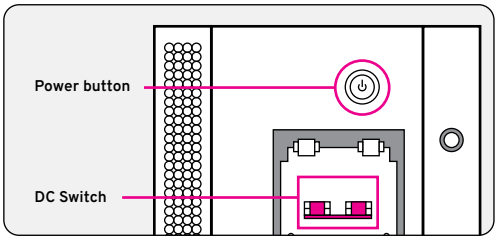
Follow the steps in Figure 5-1 to commission the system.

Figure 5-1 First Start Procedure



Turning on a Battery Pack

Press and hold the battery power button for 1 to 3 seconds until the power button indicator turns on.



Turning off a Battery Pack

Press the power buttons (1~3s) until the indicator light of the power button goes out.

Precaution: *Before shutting down the battery pack, make sure it is not charging or discharging.*

Checking Before Power-on

Before powering on the system, thoroughly check the installation.

1. Make sure that the libbi is firmly fastened to the mounting panel on the wall.

2. Check the electrical connection of the inverter. Make sure that:
   - PV+ and PV- cables are firmly connected and the polarity and voltage are correct.
   - The ON GRID and EPS cables are connected firmly and correctly.

3. Check the electrical connection in the distribution board. Make sure that:
   - The AC circuit breakers for the normal loads are correctly connected.
   - The AC circuit breakers for the EPS loads are correctly connected.
   - Both breakers are in the OFF state.

Power on Sequence

1. Controller
2. Battery
3. Inverter
4. PV Isolator

Powering On

Before powering on the system, thoroughly check the installation.

Note: *After isolating the system, wait at least 5 minutes and test with a properly calibrated voltage tester before touching conductors or carrying out maintenance.*

1. Remove the protective panels on both sides of the inverter.
2. First, turn on the circuit breaker switch on the battery pack, and then long press the battery button next to the inverter (1-3 seconds) until the green light on the battery button lights up.
3. Beside the inverter, turn on the PV Switch.
4. In the distribution box, turn on the AC current breaker between the ON GRID port and the grid.
5. In the distribution box, turn on the AC breaker between the EPS port and the EPS load.
6. Reinstall the protective panels on both sides of the inverter.

Powering off

Note: *If PV output voltage is 0 V in sunlight, check the PV connection. Check for reverse connection of the PV and make sure that the circuit connection is correct.*

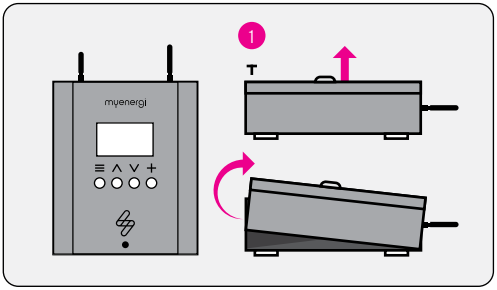
1. If EPS loads are applied, turn off the LOAD Switch in the distribution box and the AC current breaker between the LOAD port and critical load.
2. In the distribution box, turn off the AC current breaker between ON GRID port and the grid.
3. Press the battery buttons (1~3 seconds) until the indicator light of the power button goes out. Finally, turn off the circuit breaker switch on the battery pack.
4. Beside the inverter, turn off the PV Switch.

Controller Installation

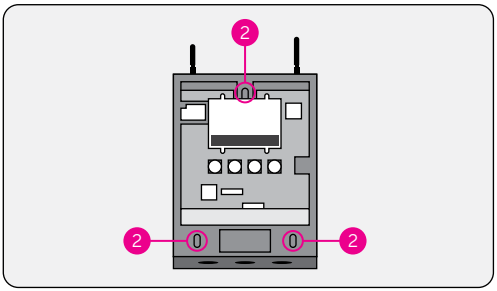
Note: *libbi controller is not suitable for installation outdoors.*

Note: *Ensure the device always has adequate ventilation; do not block the vents or obstruct airflow at the back of the controller.*

With the controller on its back on a flat surface, remove the front cover by unscrewing the Torx screw (1) and lifting off, in a tilting motion, from the bottom edge upwards.



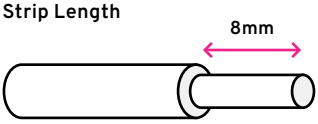
Place the back of the controller against the wall where you will be installing the device, ensure level and then mark the three holes (2) onto the wall in preparation for drilling.



Using a drill, make three holes to the correct depth, use suitable fixings for the wall or mounting surface. Insert three screws and tighten to secure the controller to the wall's surface.

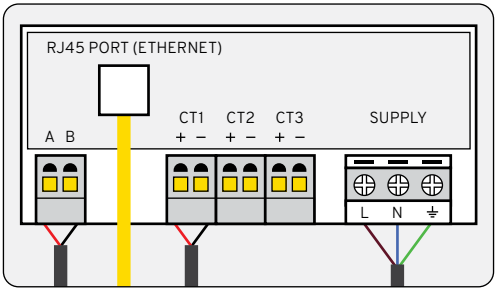
Warning: *ELECTRIC SHOCK – An electric shock can be fatal; electrical connection work may only be carried out by a competent person.*

Strip Length



Supply

The controller must be supplied from phase 1 (L1). This ensures correct monitoring and control across the full L1 setup (if applicable). If the controller is placed on any other phase, readings and control signals will not align with the system and operation will be affected.



Warning: *Power to the controller must NOT be supplied by the inverter backup circuit.*

Adhere to local wiring regulations when selecting the type and size of cable to be used, 3 Amp circuit protection is recommended for fused mains supply. When making mains connections it should be ensured that if the cable slips in such a way as to place strain on the conductors, the protective earthing conductor will be the last to take the strain.

Gland Requirements

Glands are to be used as a way of anchoring the cables. The size of cable and gland used is the responsibility of the installer and should be determined on an install-by-install basis dependent upon install specifics.

Controller to Inverter Communication (RS485)

The controller communication cable, provided, must be inserted into the RS485 port of the controller, Red to A, Black to B.

Note: *5m controller communication cable is supplied. If extension is required, it must be done using twisted pair cable like CAT5e/6 and should NOT be extended further than the distance of 100m.*

Ethernet Connection

To connect the controller using Ethernet, insert the Ethernet cable into the RJ45 port.

Note: *If the controller detects an Ethernet connection it will turn off Wi-Fi and default to a hardwired connection, so it is important that if you intend to connect via Wi-Fi to leave this port free.*

Security Measures

If you're running Ethernet cable outside the property, make sure it's well protected. Exposed cabling can be vulnerable to tampering, which could lead to unauthorised access to the network. Wherever possible, keep cable runs indoors or route them through secure areas to reduce the risk.

To keep your device secure, a lockout will happen if a password or PIN is entered incorrectly:

Wi-Fi AP Password

Condition: *3 incorrect attempts in a row*
Result: *Locked for 1 minute*

Installer Device PIN

Condition: *3 incorrect attempts in a row*
Result: *Locked for 1 minute*

User Lock PIN

Condition: *3 incorrect attempts in a row*
Result: *Locked for 1 minute*

During lock out, further password or pin entry attempts are disabled, your screen will display: Too many password attempts {Countdown}s

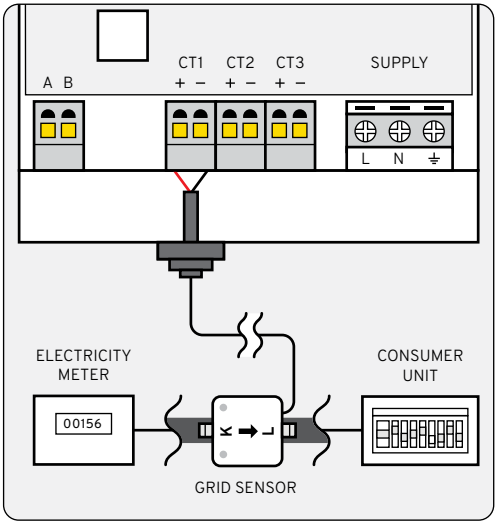
CT Sensor Installation

Current Transformers, CTs, measure current at key points in the installation. For example, the grid connection point, 3rd party solar inverter / wind turbine or a AC battery system. Installation of a CT to monitor the Grid connection point is required. You are only required to fit one grid CT per phase in a 3-phase eco-system. Other CTs are optional and can be purchased separately. The number and location of CTs used within an installation will vary according to devices installed and the user requirements. CTs can be wired to any myenergi device with CT inputs (e.g. libbi, eddi, zappi or harvi). This enables flexible installation as the CT can be wired to the nearest device. The harvi device can be used for most CT connections if it is not practical to wire CTs directly to the libbi controller.

Grid CT

The Grid CT sensors (supplied) needs to be clipped around L1 of the electricity supply meter. The positioning of the Grid CT sensor is crucial, take note of the following when deciding where best to install the sensor:

- Can be connected to any myenergi device with a CT input e.g. the libbi, eddi or zappi (wired sensor) or harvi (wireless sensor)
- ALL of the imported and exported power must be 'seen' by the sensor – be sure to install it upstream of ANY junction box (the CT can be fitted inside the consumer unit)
- There must be only one Grid CT per-phase for the whole installation



- The CT should be on the incoming Live
- The directional arrow on the bottom of the CT sensor must be pointing towards the consumer unit
- Ensure the CT is fully closed and clicks shut
- Be sure to wire the CT the correct way round; black [–], red [+] otherwise import and export readings will be swapped

Additional CTs (harvi)

There is an option to add other CT sensors (available separately) for monitoring the generation or other appliances, such as 3rd party battery systems. Installing a CT for the generator (third party PV system) will allow the main screen to show the generated power and the total power consumption of the all the other appliances in the property.

CTs can also be used to limit the power drawn from the supply:

- Additional CTs can be connected to any myenergi device with a CT input that is linked to the network
- The arrow on the bottom of the sensor must be pointing in the direction of normal power flow (e.g. away from the PV inverter) if on the line cable
- Ensure the sensor is fully closed and clicks shut
- Be sure to wire the CT the correct way round; black [–], red [+]

Extending CT Sensor Cable

If there is a need to extend the CT sensor cable, a twisted-pair cable like CAT5e or telephone cable must be used (only use one pair).

Warning: *Do NOT use mains cable, bell wire or speaker cable. It is important to use only twisted-pair cable to maintain signal integrity. The cable can be extended up to 100m.*

CT Wireless Sensor (Optional Accessory)

In some cases it can be difficult or impractical to install a wired sensor. libbi may be connected to a sub-board rather than the main consumer unit, or the two consumer units may be in different buildings.

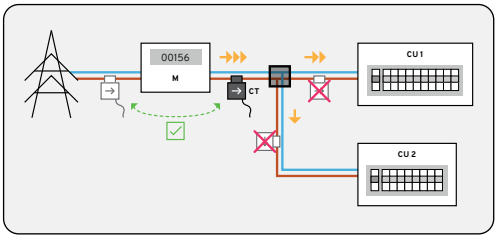
The solution is to install harvi – a device that enables myenergi products to be installed without using wired CT sensors for measuring the generation power; instead the CT sensor is connected to harvi.

harvi harvests power from the CT sensor, so no battery or separate power supply is required.

Refer to the harvi installation guide for details on installing and configuring harvi for your system.

CT Golden Rules – Grid CT

- Only ONE Grid CT per phase
  (check for only one ~ symbol in Linked Devices Info)
- Located to 'see' ALL import and ALL export current
  (i.e. always upstream of any junction box)
- Arrow pointing in direction of import
  (e.g. towards consumer unit if on Line cable)



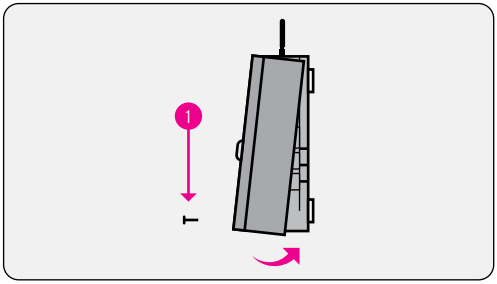
All other CTs

- Arrow should point towards the consumer unit

CT Can do's

- Can be wired to ANY myenergi device in the network
- Cable can be extended up to 100m (must use twisted-pair cable e.g. one pair of CAT5e)
- Cable can be shortened
- Can be clipped around two or more conductors feeding appliances of the same type
  (e.g. two Live cables from two inverters that are on the same phase)
- Can be in close proximity to other CTs.
- Wires can be swapped around in device to reverse the direction of the readings (e.g. change import to export)
- Can be grouped with other CTs of the same type so that the power reading is summed (e.g. east and west solar Generation)
- Can be set to None if you want to exclude the reading

Fitting the Controller Cover



1. Refit the controller cover.
2. Align the top edge first, then press the bottom edge into position and tighten the Torx screw. (1)

Initial Configuration

Controller

After completing and checking the wiring of the supply, switch on the libbi controller via the circuit breaker or fused spur.

Controller Set-up

When the libbi controller is powered for the first time, the Setup Wizard starts automatically and prompts the installer to confirm the installation type.

This helps to pre-configure the libbi, as required.

Within the setup wizard the grid code must be selected, please confirm the correct grid code for the region you are installing in. (Grid code parameters are pre-set and cannot be edited) list of parameters found at rear of manual

As part of the initial set-up the installer will be asked to set a passcode which will protect the settings in the installer menu from being changed. This passcode is not shared with end users

CT Configuration

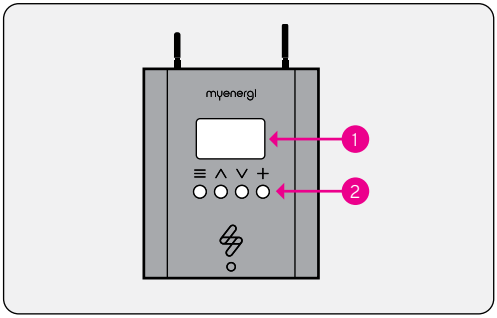
CT1 by default is set to GRID on every libbi. To amend the CT inputs connected to the libbi to match those installed, within the menu options navigate to:

CT CONFIG	
CTINT:	Internal load
Type:	1–phase
CT1:	Grid
CT2:	None
CT3:	None

Device settings > Installer Settings > CT Config
Once in the CT config menu, use the up/down arrows to highlight the required CT input and press (+) to confirm. Within the CT Type, adjust as required by pressing (+) and then the up/down arrows to choose, pressing (+) again to confirm when finished.

It is possible to monitor a 3-phase supply directly on the libbi by selecting '3-phase' as the 'Type'. This will automatically change all 3 CT inputs to 'Grid'.

Controller Overview



1. Display	Graphic LCD display LED backlight
2. Control buttons	Four tactile buttons to navigate the menus and alter settings

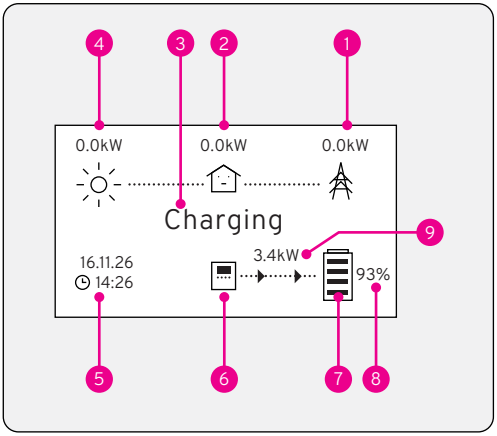
Enter menu (from main screen)
Exit current menu

Move up a menu item
Increase Value

Move down a menu item
Decrease Value

Select item
Confirm value and move to next setting

Controller Status Screens



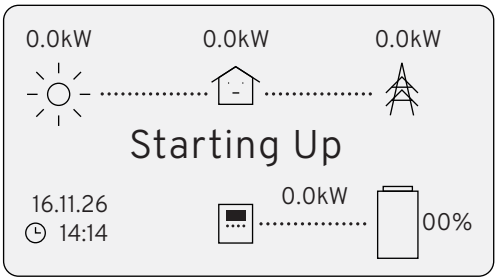
1.	**Import/Export Power:** The power imported/ exported from the grid (kW). The arrow direction indicates if importing (left) or exporting (right).
2.	**House Load Power:** Power the property is currently using (kW). This option requires a generation CT or PV to be connected directly into libbi.
3.	**Operating Mode:** Current operating mode (status) of the libbi.
4.	**Generation Power:** Power being generated by solar or wind generation, if applicable. To measure this a CT must be connected to generation or PV directly connected into libbi.
5.	**Date & Time:** Current date and time.
6.	**libbi Controller Icon**
7.	**libbi Battery Icon:** Indicates the current charge state of the battery.
8.	**Current Battery State of Charge (SOC):** Indicates the percentage of charge within the battery.
9.	**Battery Charge Power:** Discharged from the battery (kW). The arrow direction indicates if discharging (left) or Charging (right)

Common Status Screens

This section gives you a brief overview of some of the common status screens you can expect to see on your libbi controller display and what they mean.

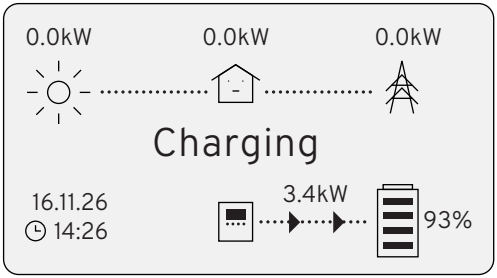
Starting Up

Seen briefly at start up when libbi first powers on.



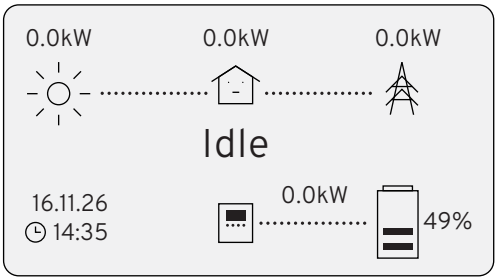
Charging

libbi battery is being charged.



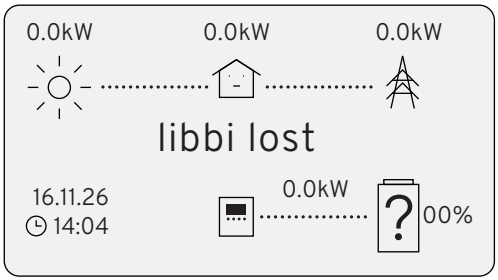
Idle

Appears when libbi is not charging or discharging.



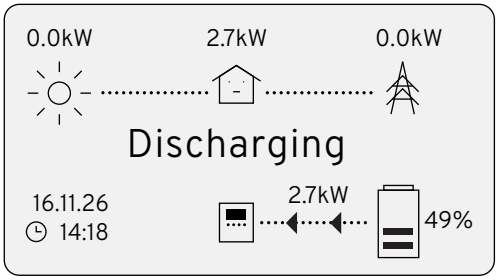
libbi lost

libbi controller has lost communication with the libbi inverter and battery.



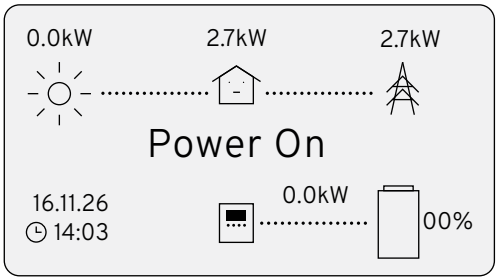
Discharging

libbi battery is discharging.



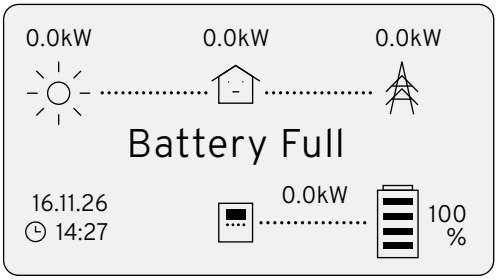
Power On

Appears after the 'starting up' screen and shows libbi controller is powering on.



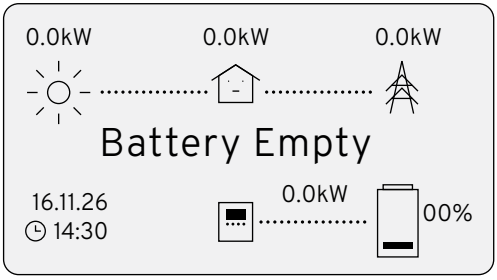
Battery full

The battery is fully charged.



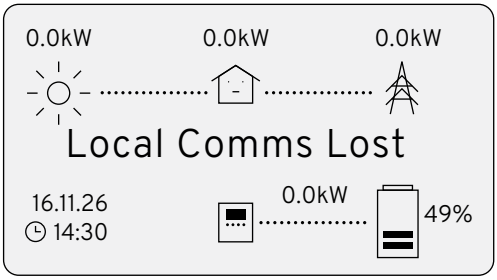
Battery Empty

The battery is fully discharged.



Master lost

libbi is a slave device and has lost communication with the master device.



Registration

Overview

If libbi is being installed as a standalone myenergi device, you can skip this section.

Up to 6 myenergi devices can be wirelessly linked together. The device you are using as your 'hub' will count as 2 of the 6 devices. By pairing devices, you can use more of your own energy or have more control and visibility. Other devices available are:

eddi; A microgeneration energy diverter that uses surplus energy to heat water or rooms rather than exporting to the grid.

zappi; An eco-smart electric vehicle charge point that can use surplus energy to charge the car.

harvi; A self-powered wireless sensor that can be used along with myenergi load controlling devices such as libbi, eddi and zappi. It is able to detect grid import/export conditions as well as generation energy and send this information wirelessly to devices. Using a harvi can greatly simplify installation.

myenergi devices can be linked using either the built-in radio or with a network connection. If using an network connection, the libbi controller simply needs to be connected to your local network – either with an ethernet cable running directly to your internet router or via built-in Wi-Fi.

Channels

myenergi products use the connected network, Wi-Fi, as the preferred connection method.

If the Wi-Fi connection is unavailable or fails, myenergi products use a Radio Frequency, RF, signal as a backup connection between products.

harvi is the exception, as it only uses RF.

By default, myenergi products use RF Channel 1. All linked myenergi products must use the same RF channel.

In rare cases, other equipment operating on the same frequency may cause interference. If products fail to link, or the connection seems poor, changing the RF channel may improve the connection.

Pairing libbi

When installing libbi into an existing myenergi eco-system, then libbi will be linked as a 'Secondary Device' (slave) to the existing 'Load Controller' (master). libbi has already been set as 'Secondary Device' (slave) from the answers you gave during the setup wizard.

Note: *When libbi is installed on a CSIP-AUS controlled site the libbi must be set to master for the site.*

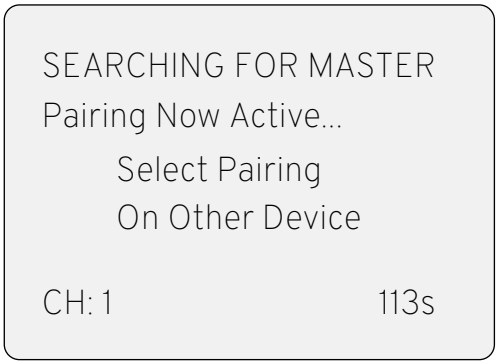
1. Go to your 'Load Controller' device and in the device menu navigate to:

   "Device Settings" > "Installer Settings" > "Linked Devices" > "Pairing Mode".

   Your "Load Controller" will begin searching for "Secondary Device" (slave) devices.

2. Go to your libbi controller (master) menu and navigate to:

   "Device Settings" > "Installer Settings" > "Linked Devices" > "Pairing Mode"



3. When you see your libbi device display on your 'Load Controller' device screen, select (+) on your Load Controller device to confirm.

Device Settings

Most device types have settings which can only be changed via the Linked Devices menu. For example, **libbi, eddi** and **zappi** have a setting for priority and harvi has settings to configure its CT inputs.

The device settings are accessed through the Linked Devices menu; select Devices then select the appropriate device and press (+) to bring up the device settings screen. Refer to the relevant device instruction document for more information regarding the actual device settings.

After a device has been paired, you will have to wait a few seconds for the device to update before the settings can be accessed. The screen will show DEVICES UPDATING when this is happening.

Device Priorities

The priority of each, load controlling linked device, can be set from any device with a display. The example below shows one **eddi** device, two **zappi** devices and one **harvi** on the same 'network'. If you have a myenergi **libbi**, this will be shown in your Devices list.

1	The priority is shown on the left of each load controlling device with 1 being the highest priority. If two or more devices have equal priority, the available surplus (for that priority level) is shared between them
2	The device shown in CAPITAL letters is the device currently being viewed
3	The ~ symbol indicates which device has the grid CT attached /configured to it. There should only be one in the system
4	The serial number of each device is shown on the right
5	If the ? symbol is shown alongside a device, it indicates that communication has been lost from the device (the device cannot be 'heard')

Removing Devices

A device can be removed by navigating to:
"Installer Settings" > "Linked Devices" > "Devices" and then select Remove Device.

If you want to remove ALL devices then go to:
"Installer Settings" > "Linked Devices" > "Reset Settings"

Commissioning

Internet Connection – Hardwired Ethernet

If connecting to the internet via Wi-Fi, skip ahead to the next section.

With Wi-Fi AP mode turned on, you can connect directly to your myenergi device using a web browser. Enter the device's local IP address (usually 192.168.4.1) to access the setup page.

The first time you do this, you'll be asked to create a password. This is used to protect your libbi settings.

You need to complete this step before the device can connect to your home network and access online services.

If no valid Wi-Fi credentials are available or AP mode is manually turned on, the myenergi device enters Access Point mode, creating a temporary local access point for configuration. This mode lasts 15 minutes and will automatically disable, requiring reactivation if needed; the time limit is fixed.

If connection to the internet is being made by hardwired Ethernet you will have already inserted the Ethernet cable into the RJ45 Port of the controller. Simply connect the other end of the cable into the customer's home router and connection to the internet will occur.

Note: *if the device detects an Ethernet connection it will use this and turn off Wi-Fi options within the device. If at any time the Ethernet cable is removed, it will not automatically turn Wi-Fi options back on. These will need to be turned on manually within the device menu.*

Wi-Fi SETUP

Connect to the hotspot below to setup

SSID: myenergi XXXX
P/W: a8jd10qHB4p
Status: Disconnected

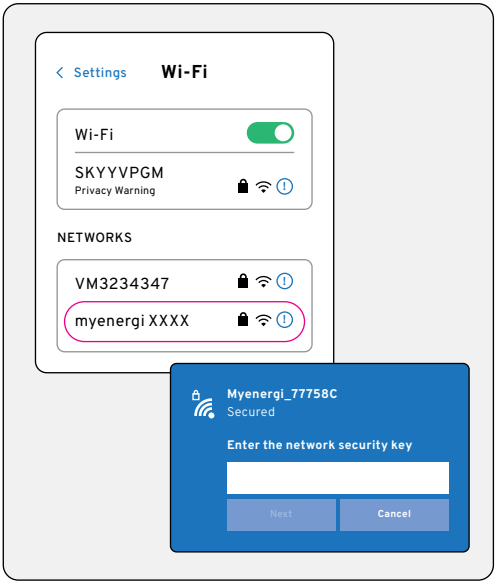
Press X to skip

Internet Connection – Wi-Fi

1. Go to the main menu on your libbi controller and navigate to:

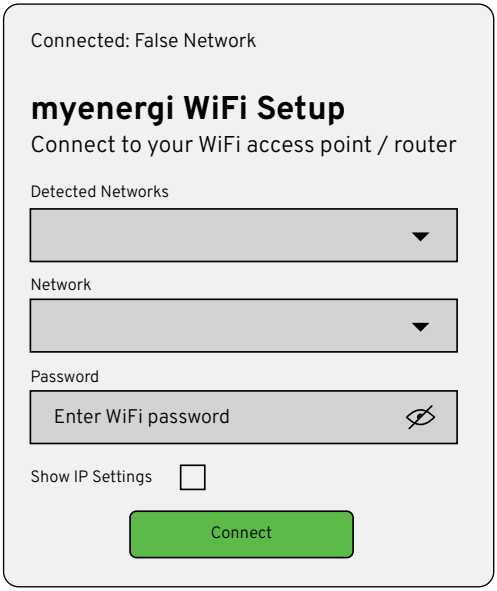
   'Device Settings' > 'Internet' > 'Wi-Fi'.

Note: *Make a note of the SSID and Password (P/W) now for use in the following steps.*



2. Connect your smartphone or computer to the myenergi access point by entering your phone or computer Wi-Fi Settings and searching for the network displayed with the same name as the SSID you noted down above. Once displayed, select the network to connect
3. You will be prompted for a password. Enter the password displayed on the libbi controller screen that you noted down at step 1
4. You will now be prompted to create a new password to protect the Wi-Fi settings from being changed by anyone else. The new password must be at least 8 characters long and consist of a combination of lowercase and uppercase letters and digits
5. Wait 5 seconds for your password to change and the webpage to reload

6. Once connected, you will be directed to another webpage where you will need to select your home Wi-Fi network from the list in the “Detected Networks” box and type in your home Wi-Fi’s password to connect to your router



Note: *However, if you want to give your libbi a fixed IP address then tick the “Show IP Settings” box and fill in the extra information required.*

Note: *If page doesn’t load, type 192.168.4.1 into your web browser of mobile phone browser to enter Wi-Fi setup screen.*

Note: *Please be patient. It could take up to 15 seconds for the connection to take place.*

Operation

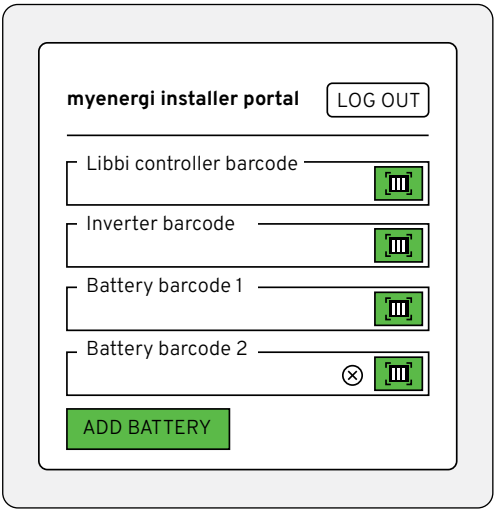
Installer Portal

It is the installer's responsibility to ensure each libbi installed is registered in the myenergi installer portal. Registration of the libbi within the installer portal commences the product warranty. Please contact myenergi installer support to have an account set up and be given log in details. The installer portal can be found at installer.myenergi.com which can be accessed on your mobile browser.

Each product will need to be entered individually, and the barcode required can be found on the packaging of each product. Once entered, the products will become visible in your customer's myenergi myaccount.

Note: *The first time you log in you will be asked to change your password. Barcode required for EACH battery module installed (up to 8). Press the "Add Battery" button to create another entry field. Barcodes can be entered manually, if necessary.*

1. You will receive an account log on after completing the myenergi libbi installation training
   Go to installer.myenergi.com and enter your login details
2. For each libbi install, scan the barcode on the battery, inverter and controller
3. Once details for inverter, controller and battery(ies) have been entered, press "Submit"



Customer app and myaccount

Before you leave the customer please ensure they have registered their new device in the myenergi app and myaccount. If this is the customer's first myenergi device please follow the "First myenergi Device" instructions below. If this is an additional device and the customer already have a myenergi account follow "Additional device installed" instructions.

First myenergi device

If this is the customer's first myenergi device they will need to register for an account.

1. Download the myenergi app on the customer's phone or tablet device
2. Open the app and click, "Register for an account"
3. Enter the customer's email address and have the customer create a password, when prompted
4. Select the customer's preferred contact preferences, then click "next"
5. Have the customer check their email for a verification code
6. Enter the verification code into the app, where requested and press "next"
7. In the app, click the green "+" symbol to add the customer's first location
8. When asked if there is a 'hub' present, select "No", as this is the customer's first myenergi device and will already have a built-in virtual hub (vHub)
9. Enter the "Reg S/N" and "Reg Code"

Note: *These can be found in the libbi controller menu settings:* ***Menu > Information > Page 2***

10. Once complete your device will now show in the customer's myenergi app and myaccount.

Additional device installed

If libbi has been installed into an existing myenergi eco-system the customer should already have an account set up. Once the libbi is paired with the existing, registered myenergi device(s) the libbi should automatically appear as a device in the customer's myenergi app and myaccount.

Check this has happened before you leave.

Export Limitation

With a growing number of renewable generation (such as PV and Wind Turbines) in homes and businesses, there is the risk that the grid could be overloaded if there are large amounts of surplus generation being exported all at once. To avoid this issue, DNSP (Distribution Network Service Provider) stipulate a pre-determined amount of electricity that can be exported to the grid. This is the 'export limit' which may vary per property. With export limitation present within libbi, the DNSP doesn't have to worry about large amounts of surplus electricity entering the grid.

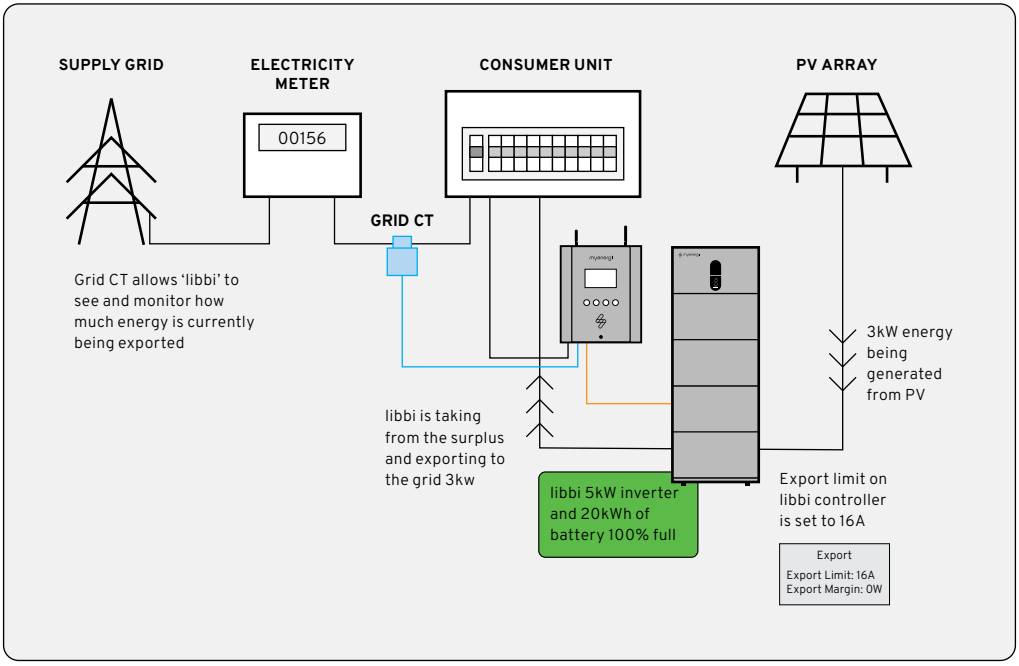
Under normal operating conditions myenergi devices will aim to use all available surplus energy within the property before exporting anything back to the grid. However, a limit to export may be necessary, and libbi allows you to set a limit reflective of the amount stipulated by the DNSP.

To do this, in the libbi controller menu, navigate to; ***'Main Menu' > 'Device Settings' > 'Installer Settings' > 'Supply Grid' > 'Export' > 'Export Limit'***

The 'Export Limit' may be set to an amount between 1 – 100A or 'off'. If set to 'off' this will automatically set the device to its maximum capacity. Depending on the requirement of the DNSP, set the limit accordingly. If you are working in kW, you can convert this to Amps working on the basis that 1kW = 4.35Amp.

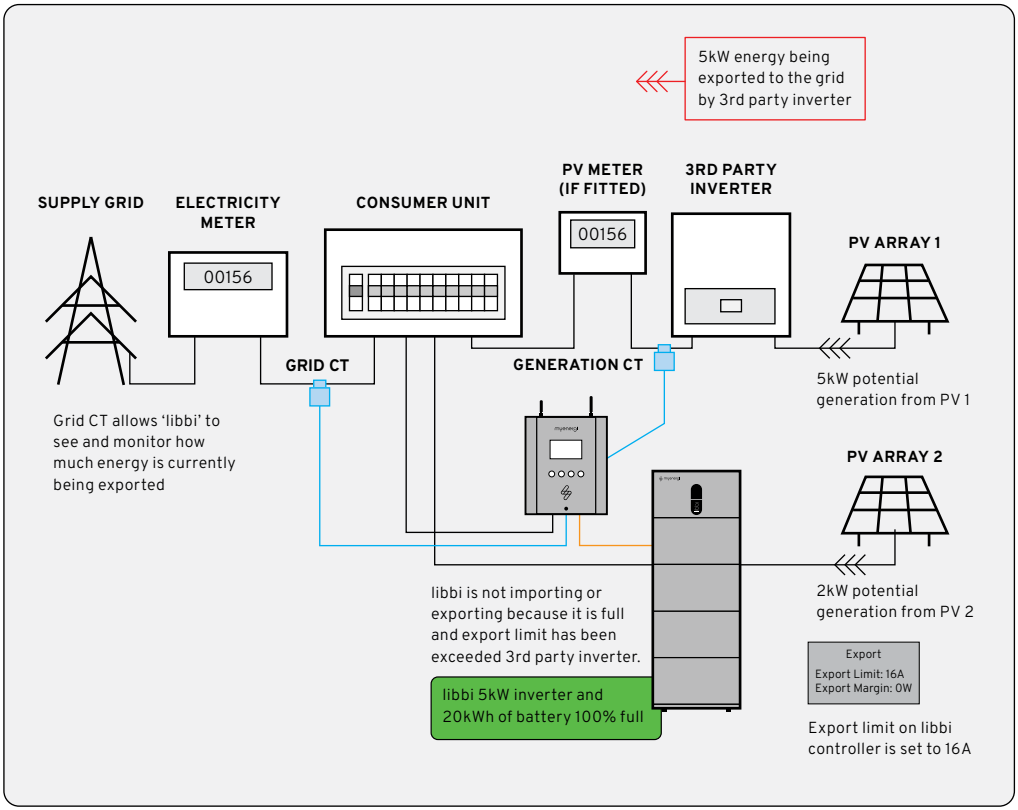
Example 1 – libbi is the only device with potential of exporting to the grid

In this scenario there is a libbi only. Export Limit in the libbi controller device menu has been set to 16A. The PV is currently generating 3kW of energy. As the libbi battery is full, it cannot store any of the generated energy and the property doesn't require any load at this time, leaving it as surplus. The DNSP, in this example, have stated maximum export allowed to the grid is 3.68kW. The libbi will therefore allow the 3kW of the surplus energy to leave the inverter and be exported to the grid.



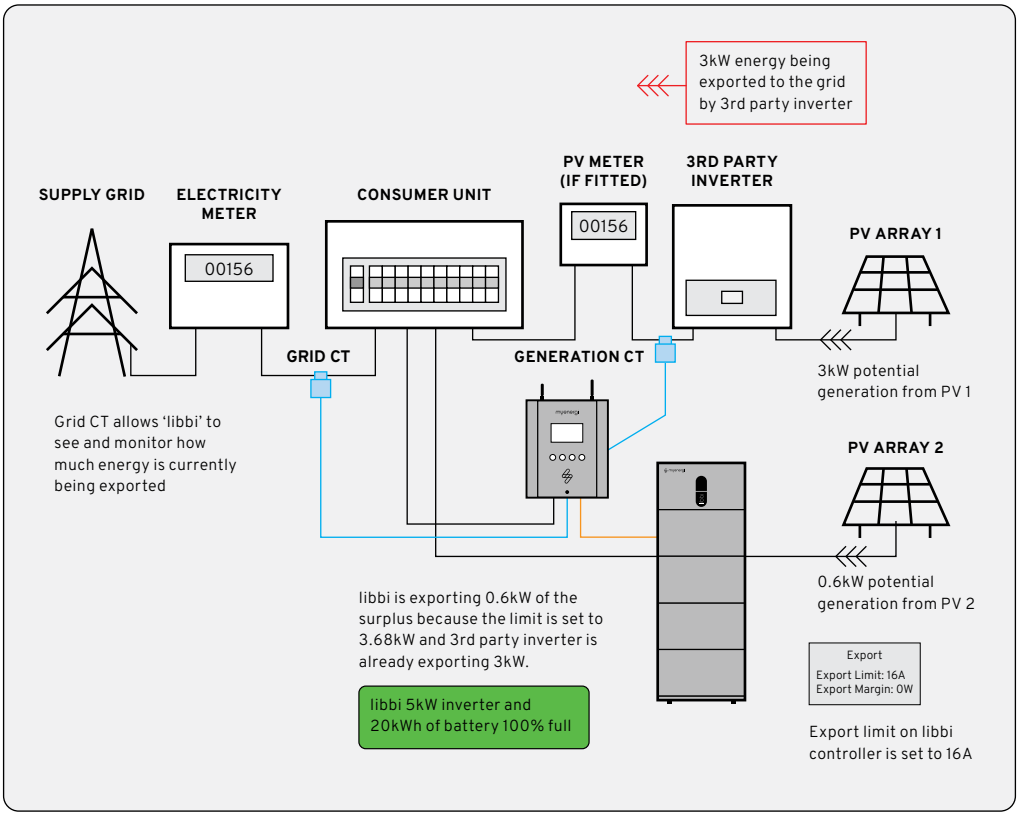
Example 2 – libbi is not importing or exporting because the battery is full and the export limit has already been exceeded by the third-party inverter.

In this scenario there is a libbi and a 3rd party inverter. There are two PV arrays, the first with a 3rd party inverter and the second directly connected to libbi. Export Limit in the libbi controller device menu has been set to 16A. The PV is currently generating 5kW energy from PV Array 1, with another 2kW potential generation from PV Array 2. As the libbi is full, it cannot store any of the generated energy and the property doesn't require any load at this time, leaving it as surplus. The DNSP, in this example, have stated maximum export allowed to the grid is 3.68kW. The 3rd party inverter is already taking 5kW of the surplus and exporting this straight back out to the grid. libbi is constantly monitoring the grid CT and knows that the limit has already been exceeded. In this case the libbi will stop itself exporting any generation from PV Array 2.



Example 3 – Multiple export sources, export limit not reached.

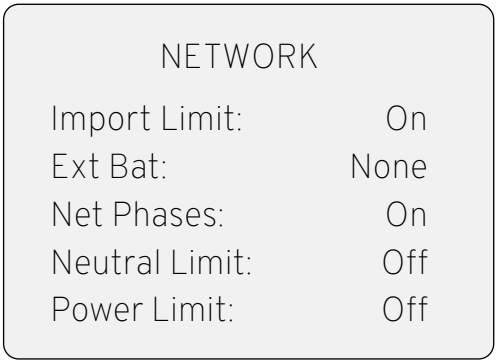
In this scenario there is a libbi and a 3rd party inverter. Export Limit in the libbi controller device menu has been set to 16A. PV Array 1 is currently generating 3kW energy and PV Array 2 is currently generating 0.6kW. As the libbi is full, it cannot store any of the generated energy and the property doesn't require any load at this time, leaving it as surplus. The DNSP, in this example, have stated maximum export allowed to the grid is 3.68kW. The 3rd party inverter is taking 3kW of surplus from PV Array 1 and exporting this straight back out to the grid. libbi is constantly monitoring the grid CT and knows that the limit has not yet been met. libbi takes the 0.6kW available from PV Array 2 and exports this to the grid.



Import Limit

When installing a libbi the import limit must be set. This is to ensure our load balancing feature will protect the main fuse of the property when importing from the grid.

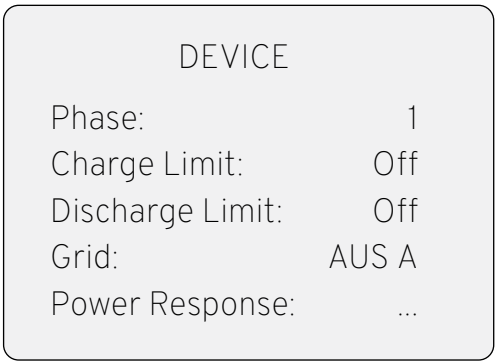
To do this, in the menus navigate to:
"Device settings" > "Installer Settings" > "Supply Grid" > "Network" > "Import Limit"



Power Response Modes

- ***Main menu > Device Settings > Installer Settings > Supply Grid > Device > Power Response***

In this menu you are able to set the power response mode along with the adjustments for the modes, Power factor, Q(u), P(u), P(f), Q control, etc.



Note: *This menu is inside "Installer Settings" and as such is passcode protected and cannot be accessed by end users.*

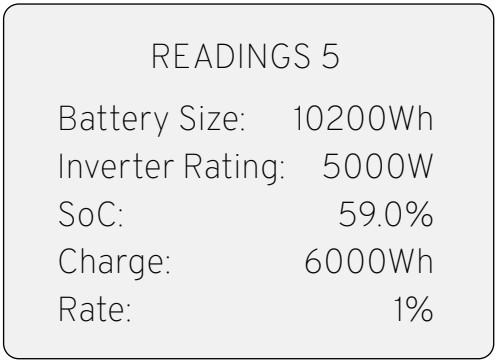
Maintenance

To ensure the libbi install has been successful and is fully compliant with any local regulations, there are certain elements to be tested and confirmed before leaving site.

- Check all battery modules are connected and communicating. To do this in the controller device menu navigate to:

  Main Menu > Readings > Readings 5

  This screen is showing a 10.2kWh system with a 5kW inverter. If the battery size isn't showing all modules installed check comms cables between batteries are inserted correctly, then reboot the system and check this readings screen again.



- Complete "Basic Functional Testing"
- Check the time and date are correct
  This is crucial for supporting any tariff schedules that have been set
- Check the grid power CT is showing sensible readings and the direction of the power flow is as expected
- If generation CT has been installed, check that the generated power is shown in the top left of the main controller display (If PV is connected directly to the libbi inverter, separate generation CT is not required)
- Check that libbi is connected to the internet and is working correctly
- Make sure any required safety limits have been set i.e. Import Limit
- Confirm the backup is working as expected
- Ensure all module elements, including controller, are registered
- Ensure the customer is happy with the app settings and they know how to use it

Advanced menu

The Advanced Menu is where you can find the setting to reset the Wi-Fi and Restore Settings to your device, should you ever need to.

Restore Settings

Restoring settings will reset:

- Backlight time
- Display contrast
- Generation icon visibility
- Auto DST
- Date format

Follow the steps below:

1. Navigate to the Advanced Menu
2. Click on "Restore Settings".
3. Press tick to confirm.

Review Settings

Main Menu > Information

Information that can be viewed

1. Status code
2. Serial number
3. FW version
4. Grid sensor
5. Last fault
6. Network information
7. Grid code

Indicator Lights and States

A battery pack can be in five states: OFF, NORMAL, ALARM, PROTECTION, and FAULT. In each state, the battery pack can operate in different modes. There is an indicator light whose color is variable on the power button.

Product Status	LED Indicator status			
	Led color	LED blink status		
		Blink Mode	Blinking (sec)	Off (sec)
OFF	Off	OFF all the time		
Normal	Green	On all the time		
Alarm	Red	Blinks once every 1.5 seconds	0.75	0.75
Protection	Red	Blinks once every 0.5 seconds	0.25	0.25
Fault	Red	ON all the time		

Earth Fault

Earth Fault Introduction

Earth faults caused by insulation failure or accidental contact between live parts and ground that creates a low-resistance path for current to flow to earth, represent significant risks that require proper understanding and protective measures to mitigate their potentially dangerous effects.

Earth Fault Alarm

In the event of an earth fault, the controller will display a fault code and push an alarm notification in the app.

Both users and certified professional personnel must maintain the HS3.6D1-A and HS5D1-A battery inverter to ensure the healthy and safe operation of the system.

In this section, you can find the following:

1. The inspection checklist for users of the battery system.
2. The inspection checklist for professional personnel.
3. Error codes, alarm codes, and the possible solutions of the system and the BMS.

Inspection Checklist

Inspection Activity	Interval
Check for visible damage to any part of the system.	Six months
Check the inverter and battery packs for signs of wear and tear, heat damage, discoloration, and unusual smells.	Six months
Check the warning signs and guidance signs on the inverter and the battery pack for signs of wear and damage, and make sure none have been removed or obscured.	Six months
Check whether any part of the system makes an abnormal noise when the system is running.	Six months
Monitor the temperature of the battery pack and clean the battery pack if necessary.	Six months to a year
Make sure that the ground around the system is clean and tidy.	Six months to a year
Check the maintenance access to make sure that it is clear and unobstructed.	Six months to a year
When the system is running, check the voltage, temperature, and other parameters of the battery packs.	Six months
When the system is running, check the parameters of the inverters.	Six months
Check the battery packs for ineffectiveness or damage.	Six months

Troubleshooting

When you see the red alarm light on the inverter, you can find possible solutions in this section. If the problem persists after trying these solutions, please contact myenergi or an authorized distributor.
When a problem is successfully solved, after a period of time, the red LED alarm light turns off, but you can always view it in the error records.

Error Codes of the System

Code	Description	Possible Solutions
F00	Soft Time Out: Soft-start timeout.	1. Restart the inverter and wait until it runs correctly. 2. If the code is still shown, contact myenergi tech support.
F01	INV Volt Short: The inverter output is shorted.	1. Disconnect all power sources and shut down the inverters and the battery packs. 2. Disconnect the load. 3. Power on and restart all the inverters and the battery packs. 4. If no error is reported, it means the load is shorted. Check the load. If the code is still shown, contact myenergi tech support
F02	GFCI Sensor Fault: A failure occurs to the Ground Fault Circuit Interrupter (GFCI) sensor.	1. Disconnect all power sources. 2. Restart the inverter and wait until it runs correctly. 3. If the code is still shown, contact myenergi tech support
F04	Bus Volt Low: The bus voltage is low.	1. Check the settings of the input mode. 2. Restart the inverter and wait until it runs correctly. If the code is still shown, contact myenergi tech support.
F05	Bus Volt High: The bus voltage is high.	
F06	Bus Short Circuit: The bus is shorted.	1. Restart the inverter and wait until it runs correctly. 2. If the code is still shown, contact myenergi tech support.
F07	PV ISO Under Fault: The insulation resistance of a PV panel is low.	1. Check the ground connection. 2. Check the ground resistance of PV+ and PV-: • If the resistance is smaller than 2 MΩ, check the PV string for ground fault or poor ground insulation. If necessary, contact myenergi tech support. • If the resistance is greater than 2 MΩ and the error code is still shown, contact myenergi tech support.

Code	Description	Possible Solutions
F08	PV Input Short Circuit: The PV input is shorted.	1. Check the settings of the input mode. 2. Disconnect the PV input. 3. Restart the inverter and wait until it runs correctly. If the code is still shown, contact myenergi tech support.
F09	Bypass Relay Fault: A failure occurred to the bypass relay.	1. Disconnect the PV input. 2. Restart the inverter and wait until it runs correctly. If the code is still shown, contact myenergi tech support
F19	EPS Relay Fault: A failure occurred to the EPS relay.	
F10	INV Curr Over: The output current on the inverter exceeds the threshold.	1. Wait five minutes for the inverter to restart automatically. 2. Check the EPS loads. If the load exceeds the rated output power of the inverter, disconnect some load. If the code is still shown, contact myenergi tech support.
F11	INV DC Over: The DC component of the output current of the inverter is too high.	1. Restart the inverter and wait until it runs correctly. 2. If the code is still shown, contact myenergi tech support
F12	Ambient Over Temp: The ambient temperature is too high.	1. Let the inverter cool for a few minutes. 2. Restart the inverter.
F13	Sink Over Temp: The temperature of the heat sink is too high.	1. Observe whether the inverter can run correctly. 2. Make sure that the ambient temperature is in the range of -25°C to 60°C. 3. If the code is still shown, contact myenergi tech support.
F15	DisChg Curr Over: The battery is discharged with over current.	1. Wait five minutes for the inverter to restart automatically. 2. Check the EPS loads. If the load exceeds the rated output power of the inverter, disconnect some load. 3. If the code is still shown, contact myenergi tech support.
F16	Chg Curr Over: The battery is charging with over current.	1. Check the battery wiring port for short circuits. 2. Restart the inverter and the battery packs. If the code is still shown, contact myenergi tech support.
F17	Current Sensor Fault: A failure occurred to the current sensor.	1. Restart the inverter and wait until it runs correctly. 2. If the code is still shown, contact myenergi tech support.

Code	Description	Possible Solutions
F18	**INV Abnormal:** Abnormal output voltage or output frequency of the inverter.	Contact myenergi tech support.
F20	**Always Over Load:** The EPS load always exceeds the rated output power of the system	Check the EPS loads. If the load is lower than the rated output power of the inverter and the error is still shown, contact myenergi tech support.
F22	**Parallel Communicate Fault:** A failure occurred to the communication between the inverters in a parallel system.	1. Check the parallel cable for connection. 2. Check the inverter address settings. In a parallel system, the address of the primary inverter must be set to 1, and the addresses of the other inverters must be set to 2, 3, or 4. 3. If the code is still shown, contact myenergi tech support.
F23	**Parallel Grid Abnormal:** In a parallel system, some connections are incorrect.	1. Check the wiring at the grid end and make sure the wiring is correct. 2. Restart the inverter and wait until it runs correctly. 3. If the code is still shown, contact myenergi tech support.
F24	**EPS Air Switch Abnormal:** An error occurred to activation of the air switch on the EPS load end.	1. Turn off all the switches on the EPS load end. 2. If the code is still shown, contact myenergi tech support.
F25	**Parallel Power Imbalance:** Power imbalance occurs to the parallel system.	1. Turn off all the switches on the EPS load end. 2. Restart the inverter and wait until it runs correctly.
F26	**Parallel Inverter Grid Phase Sequence Abnormal**	1. Make sure that the phase sequence at the grid end of the inverter is consistent. 2. If the code is still shown, contact myenergi tech support.
F32	**DSP ARM SCI Fault:** A failure occurs to the communication between DSP and ARM.	1. Restart the inverter and wait until it runs correctly. 2. If the code is still shown, contact myenergi tech support.

Status codes

Code	Description	Possible solutions
58	**Generation CT polarity** Polarity of the gen CT is the wrong way around.	1. Contact installer. 2. If problem persists, contact myenergi tech support.
101	**Battery Empty**	Status only - The minimum state of charge has been met.
102	**Battery Full**	Status only - The maximum state of charge has been met
106	**Grid CT lost** Grid readings have been lost, device has stopped to be safe.	1. Contact installer. 2. If problem persists, contact myenergi tech support.
107	**Local comms lost** Load control device has been lost, device has stopped to be safe.	1. Ensure master device is powered on. 2. Check pairing of all devices and re-pair, if necessary. 3. Check all devices are on the same channel. 4. If issue cannot be resolved, call myenergi tech support.
151	**Inverter undervoltage** The inverter reports low grid voltage.	1. Contact installer 2. If issue persists, contact myenergi tech support.
152	**Inverter overvoltage** The inverter reports high grid voltage.	1. Contact myenergi tech support.
153	**Inverter under frequency** The inverter reports low grid grid voltage.	1. Contact myenergi tech support.
154	**Inverter over frequency** The inverter reports high grid frequency.	1. Contact myenergi tech support.
156	**Battery lost** Communications between the battery and inverter have failed.	1. Check battery is turned on. 2. Contact installer. 3. Contact myenergi tech support.
157	**Battery undervoltage** Battery voltage is under threshold.	1. Reboot Battery. 2. If issue persists, contact myenergi tech support.
158	**Battery voltage low** Reporting low battery voltage.	1. Reboot Battery. 2. If issue persists, contact myenergi tech support.
159	**Battery voltage high** Reporting high battery voltage.	1. Reboot Battery. 2. If issue persists, contact myenergi tech support.
160	**Overload** Inverter circuit overloaded. Occurs when the demand is more than the inverter can deliver, when in backup mode.	1. Turn off loads powered by the backup circuit. 2. If problem persists, contact myenergi tech support.
161	**GFCI over threshold** Inverter internal protection triggered due to internal fault in inverter.	1. Contact myenergi tech support.
163	**Fan fault** Inverter fan fault detected.	1. Contact myenergi tech support.
164	**Bat under capacity** Battery power is insufficient to discharge.	1. Contact myenergi tech support.

165	**BMS discharge over current**	1. Reboot battery. 2. If issue persists, contact myenergi tech support.
166	**BMS charge over current**	1. Reboot battery. 2. If issue persists, contact myenergi tech support.
167	**BMS over voltage**	1. Reboot battery. 2. If issue persists, contact myenergi tech support.
168	**BMS over temperature** Check ambient temperature at install site.	1. Contact myenergi tech support.
169	**BMS discharge temperature low**	1. Check ambient temperature at install site. 2. Contact myenergi tech support.
170	**Battery voltage imbalance**	1. Reboot battery. 2. If issue persists, contact myenergi tech support.
171	**BMS communications fault**	1. Reboot battery. 2. Contact installer. 3. If issue persists call myenergi tech support.
172	**BMS under voltage**	1. Reboot battery. 2. Contact installer. 3. If issue persists call myenergi tech support.
173	**BMS charge temperature low**	1. Check ambient temperature at install site. 2. Contact myenergi tech support.
174	**BMS voltage high**	1. Reboot battery. 2. If issue persists, contact myenergi tech support.
175	**BMS temperature high**	1. Check ambient temperature at install site. 2. Contact myenergi tech support.
179	**Grid CT polarity** Grid CT may be the wrong way around.	1. Contact installer. 2. If issue persists, contact myenergi tech support.
183	**Inv comms lost**	1. Check inverter and controller are turned on. 2. Contact installer. 3. If problem persists, contact myenergi tech support.
184	**Controller undervoltage**	1. Contact DNSP (Distribution Network Service provider). 2. If issue persists, contact myenergi tech support.
185	**Controller overvoltage**	1. Contact DNSP (Distribution Network Service Provider). 2. If issue persists, contact myenergi tech support.
186	**Controller under frequency**	1. Contact DNSP (Distribution Network Service Provider). 2. If issue persists, contact myenergi tech support.
187	**Controller over frequency**	1. Contact DNSP (Distribution Network Service Provider). 2. If issue persists, contact myenergi tech support.
201	**Soft timeout**	1. Power down following the power down procedure. 2. If issue persists, contact myenergi tech support.
202	**Internal voltage short**	1. Power down following the power down procedure. 2. If issue persists, contact myenergi tech support.
203	**GFCI sensor fault**	1. Power down following the power down procedure. 2. If issue persists, contact myenergi tech support.
205	**Bus low fault**	1. Power down following the power down procedure. 2. If issue persists, contact myenergi tech support.
206	**Bus high fault**	1. Power down following the power down procedure. 2. If issue persists, contact myenergi tech support.
207	**Bus short fault**	1. Power down following the power down procedure. 2. If issue persists, contact myenergi tech support

208	**PV ISO under**	1. Power down following the power down procedure. 2. Contact installer. 3. If issue persists, contact myenergi tech support.
209	**PV input short circuit**	1. Disconnect PV safely using the DC isolator. 2. Power down following the power down procedure. 3. Contact installer. 4. If issue persists, contact myenergi tech support.
210	**Bypass relay fault**	1. Disconnect PV safely using the DC isolator. 2. Power down following the power down procedure. 3. Contact installer. 4. If issue persists, contact myenergi tech support.
211	**Inverter overcurrent**	1. Wait 5 minutes for inverter to restart. 2. If issue persists, power down following the power down procedure. 3. Contact installer. 4. If problem still persists, contact myenergi tech support.
212	**Inverter DC over**	1. Power down following the power down procedure. 2. If issue persists, contact myenergi tech support.
213	**Ambient over temperature**	1. Check ambient temperature at install site. 2. Power down following the power down procedure. 3. Power up libbi following the power up procedure. 4. If problem persists, contact myenergi tech support.
214	**Sink over temperature**	1. Check ambient temperature at install site. 2. Power down following the power down procedure. 3. Power up libbi following the power up procedure. 4. If problem persists, contact myenergi tech support.
215	**Grid relay fault**	1. Disconnect PV safely using the DC isolator. 2. Power down following the power down procedure. 3. Power up libbi following the power up procedure. 4. Reconnect PV. 5. Contact installer. 6. If issue persists, contact myenergi tech support.
216	**Discharge overcurrent**	1. Wait 5 minutes for inverter to restart. 2. Power down following the power down procedure. 3. Power up libbi following the power up procedure. 4. If problem persists, contact myenergi tech support.
217	**Charge overcurrent**	1. Contact installer. 2. If issue persists, contact myenergi tech support.
219	**Inverter abnormal**	1. Power down following the power down procedure. 2. Power up libbi following the power up procedure. 3. If issue persists, contact myenergi tech support.
220	**EPS relay fault**	1. Disconnect PV safely using the DC isolator. 2. Power down following the power down procedure. 3. Power up libbi following the power up procedure. 4. Reconnect PV. 5. Contact installer. 6. If issue persists, contact myenergi tech support.
232	**SCI fault**	1. Power down following the power down procedure. 2. Power up libbi following the power up procedure. 3. If issue persists, contact myenergi tech support
233	**SOC recovery**	Status only - libbi is charging to keep its SOC above a safety threshold

234	**Calibration charge**	Status only - libbi is performing its calibration charge on first install
251	**Upgrading DSP**	Status only - DSP upgrade on inverter has started - Will clear when upgrade is complete
252	**Upgrading ARM**	Status only - ARM upgrade on inverter has started - Will clear when upgrade is complete.

BMS Error codes and troubleshooting

Code	Description	Possible Solutions
BIT0	Battery cell overvoltage alarm	The warning unit overcharging voltage is 3650mV, where the inverter should stop charging and the BMS should not turn off the charging MOS.
BIT1	Battery cell under-voltage alarm	The warning unit over discharging voltage is 2800mV, where the inverter should stop discharging and the BMS should not turn off the discharging MOS.
BIT2	Battery PACK overvoltage alarm	The warning overall overcharging voltage is 57.6V, where the inverter should stop charging and the BMS should not turn off the charging MOS.
BIT3	Battery PACK under-voltage alarm	The warning overall over discharging voltage is 44.8V, where the inverter should stop discharging and the BMS should not turn off the discharging MOS.
BIT4	Charging overcurrent alarm	The warning charging overcurrent is 100A, where the inverter should stop charging and the BMS should not turn off the charging MOS.
BIT5	Discharging the overcurrent alarm	The warning current of discharging overcurrent 1 is 100A where the inverter should stop discharging and the BMS should not turn off the discharging MOS. This alarm will automatically stop after 1min or when the charging current is greater than 1A.
BIT8	Charging high temperature alarm (cell temperature)	The protective limit of charging high temperature is 57°C where the BMS should forcibly turn off the charging MOS.
BIT9	Discharging high temperature alarm (cell temperature)	The warning discharging high temperature is 55°C, where the inverter should stop discharging and the BMS should not turn off the discharging MOS.
BIT10	Charging low temperature alarm (cell temperature)	The warning charging low temperature is 2°C, where the inverter should stop charging and the BMS should not turn off the charging MOS.
BIT11	Discharging low temperature alarm (cell temperature)	The warning discharging low temperature is -18°C, where the inverter should stop discharging and the BMS should not turn off the discharging MOS.
BIT12	High ambient temperature alarm	The warning high ambient temperature is 65°C, where the inverter should stop charging and discharging and the BMS should forcibly turn off the charging and discharging MOS.
BIT13	Low ambient temperature alarm	The warning low ambient temperature is - 15°C, where the inverter should stop charging and the BMS should forcibly turn off the charging MOS.
BIT14	MOSFET high temperature alarm	The warning MOS over-temperature is 90°C, where the inverter should stop charging and discharging and the BMS should not turn off the charging and discharging MOS.
BIT15	Low SOC alarm	The warning low battery SOC is less than 5%, where the inverter should stop discharging and the BMS should not turn off the charging and discharging MOS and should not alarm during charging.

BMS Fault codes and description

Code	Description	Possible Solutions
BIT0	Charging MOSFET malfunction	Restart the battery PACK, if the fault still exists, contact the manufacturer and lock it until the technical personnel resolve the problem.
BIT1	Discharging MOSFET malfunction	Restart the battery PACK, if the fault still exists, contact the manufacturer and lock it until the technical personnel resolve the problem.
BIT2	Temperature sensor malfunction	Restart the battery PACK, if the fault still exists, contact the manufacturer and lock it until the technical personnel resolve the problem.
BIT3	Cell voltage sampling fault	Reset the battery PACK; If the fault is not clear, contact the service engineer.
BIT4	Battery cell malfunction	Restart the battery PACK, if the fault still exists, contact the manufacturer and lock it until the technical personnel resolve the problem.
BIT5	Front-end sampling communication failure	Restart the battery PACK, if the fault still exists, contact the manufacturer and lock it until the technical personnel resolve the problem.
BIT6	Heating control MOSFET fault	Reset the battery PACK; If the fault is not clear, contact the service engineer.
BIT14	Reverse DC connection	Check whether or not the wiring between the battery PACK and the positive and negative wires of the inverter battery is proper

Storage

Storage Environment Requirements

It is recommended that you begin using the battery soon after delivery rather than store the battery pack for a long time. The maximum storage life of a battery pack is three years.

The intended storage environment of the battery pack should meet these requirements:

- Ambient temperature: 0°C to 35°C.
- Recommended storage temperature: 20°C to 30°C.
- Relative humidity: 0–95% (No condensation).
- Dry, ventilated, and clean area.
- No contact with corrosive organic solvents, gases, and other substances.
- No direct sunlight.
- More than two meters from any heat source.

Warning: *When storing a battery in its packaging, make sure that the packaging box is intact and that the battery is appropriately placed and stacked, and the above mentioned requirements are met.*

Interval for Recharging Batteries

While in storage, batteries must be recharged at specified intervals during storage.

Table 9-1

Actual Storage Temperature	Interval
-10°C ≤ T ≤ 30°C	12 months
30°C< T ≤ 45°C	8 months

For example, whether the battery is recharged every 8 months or every 12 months, it can only be recharged a maximum of three times within three years. If the battery has not been recharged within three years, it is recommended that the battery pack be discarded.

Lithium-ion batteries lose capacity during storage. After 12 months of storage at the intended storage temperature, the capacity generally falls irreversibly by 3–10%. Batteries with less than 100% capacity after storage cannot pass the discharge testing and acceptance testing.

Recharging a Battery

If a battery has not been charged for two weeks or more after a deep discharge, or the SOC of a battery is less than 50% after a long period of storage, the battery must be charged to 50%.

Warning: *Before charging the battery, check it for deformation, case damage, or leakage, and if you find any of these things, do not charge the battery.*

Caution: *When you connect the power wires, wear insulated rubber gloves.*

Note: *If the SOC of a battery pack is not less than 50% after more than 12 months of storage, it is not necessary to recharge the battery.*

Prepare a Philips and insulated rubber gloves.

Procedure

1. Connect power cables to the battery charger correctly. The maximum number of battery pack connected parallel is 4.
2. Press the battery “start key” for 1~3 seconds to start the battery pack. Check the LED on the battery “start key” is on.
3. Turn on the battery charger.
4. Set charging parameter on the battery charger.

   Case 1, One battery pack is charged. Set the charge limited voltage 57.6V; Set the charge limited current 50A;

   Case 2, Two ~ Four battery packs are charged. Set the charge limited voltage 57.6V; Set the charge limited current 100A;

5. After the battery is charged, switch off the battery charger and press the battery “start key” for 1~3 seconds to switch off the battery pack.

Warranty

If the equipment fails during the warranty period, myenergi and its authorized partners will provide free service or replace the unit or part with a new one.

What This Warranty Covers

During the warranty service, the professional personnel certified by myenergi or its authorized partners will determine the problem based on the current status of the equipment, confirm the time required for repair or replacement, and complete the repair or replacement within the agreed time.

If a unit or part is replaced, the replaced unit or parts will be recycled and disposed of by myenergi or its authorized partners.

The replacement unit or parts provided by myenergi are determined by the inventory and may not be brand new, but are bound to be in good working condition and at least functionally equivalent to a brand new unit or part. The replacement unit or part will be warranted for the remainder of the original warranty period of the equipment.

How to Obtain Warranty Service

If the equipment does not function as warranted during the warranty period, you can contact myenergi or its authorized partners to obtain warranty service.

Customer Responsibility for Warranty Service

To obtain warranty service, you must take these steps:

1. Provide the purchase invoice to prove that the whole unit or parts are still under warranty.
2. Make sure that the nameplate on the equipment is intact and legible.
3. Make sure that the installation, modification, replacement, or removal of the whole unit or part of the equipment has been done by professional personnel certified by myenergi or its authorized partners.
4. Make sure that the equipment has been operated in the intended environment described in this manual or other documents provided by myenergi.
5. Make sure that no non-standard parts or parts not supplied by myenergi are used in the equipment.

Failure to comply with any of the above information, myenergi or its authorized partners have the right to refuse to provide warranty service.

An emergency is a situation involving a major incident or the possibility of a major incident that cannot be handled according to normal procedures and requires immediate action to limit or address the consequences.

This section describes emergencies that may be encountered when you are using the libbi battery system and how to handle such emergencies.

General Handling

If an emergency occurs, remember the following:

- The grid main switch that supplies power directly to the BESS must be turned off.
- All load switches in the BESS must be turned off.
- The battery switch must be turned off.
- If you want to open the inverter or the battery pack after the power is turned off, to prevent possible fatal personal injury, use a properly calibrated voltage meter to measure the voltage at the input terminals, wait approximately 15 minutes until the DC link capacitors inside the battery pack is completely discharged, and then open the top cover to repair.

Warning: *Before operating the equipment, make sure that the BESS is not supplied with grid power.*

Battery Leakage

If the battery pack leaks electrolyte, avoid contact with the leaking liquid or gas. If you contact with the leaking substance, take the measures listed in Table 11-1 immediately.

Table 11-1
Measures to Solve Battery Leakage Emergency

Exposure	Measures
Inhalation	Evacuate contaminated area, and then seek medical attention.
Eye Contact	Flush eyes with running water for 15 minutes, and then seek medical attention.
Skin Contact	Wash affected area thoroughly with soap and water, and then seek medical attention.
Ingestion	Induce vomiting, and then seek medical attention.

Fire or Explosion

If a fire occurs in the area where the battery pack is installed, take the following measures.

Warning: *Batteries can explode when heated over 150°C. Toxic gases can leak when a battery pack burns. DO NOT approach. However, because the batteries contain only a small amount of oxygen and all batteries are equipped with explosion-proof valves, battery explosions are unlikely to occur.*

Table 11-2
Handling with Fire

Handling with Fire	Description
Fire Extinguishing Agent	A respirator is not usually required. If the fire is caused by a battery, use a specialised fire extinguisher such as Novec 1230, FM-200, or an extinguisher intended for batteries If the fire is not caused by a battery, use a regular ABC extinguisher.
Extinguishing Instructions	If a fire occurs while charging a battery, turn off the battery pack circuit breaker and turn off the charging power if it is safe to do so. If the battery pack is not on fire, the fire should be extinguished before the battery pack catches fire. If the battery pack is on fire, do not attempt to extinguish the fire. Instead, evacuate personnel immediately.
Methods of Handling Accidents	If the battery is in a dry environment, put the damaged battery in an isolated area and call the local fire department or service engineer. If the battery is in a wet environment, DO NOT touch anything if any part of the battery, such as the inverter or cables, is submerged. DO NOT use the submerged battery. Contact a service engineer.

Emergency Handling Plan

If an emergency occurs, follow this emergency handling plan:

1. Turn off the AC circuit breakers.
2. Check the control power supply. If there is a problem. Do not return the system to operation until it has been inspected and confirmed safe by a suitably qualified person.
3. Record the details related to the fault so that myenergi can analyze and rectify the fault. DO NOT operate the equipment before the fault is rectified. Please contact myenergi as soon as possible.

Specifications

Hybrid Inverter	
Dimension (W × H × D, mm)	725 × 390 × 245mm
Net Weight	25kg (31kg with base)
Operating Temperature	-25°C to +60°C *Derated over 45°C
Operating Relative Humidity	0–95% (No condensation)
Operating Altitude	≤ 4000 m
Protective Class	Class I
Overvoltage Category	II (DC side), III (AC side)
Topology	Non-Isolated
Cooling	Natural Convection
Display	LED/APP
Communication Interface	RS485, CAN2.0, Wi-Fi, and 4G
Ingress Protection	IP66
Max. Conversion Efficiency (From Battery)	94.8%
Max. Conversion Efficiency (From PV)	97.2 %
Euro Efficiency	95.9% (3.6) /96.4% (5)
MPPT Efficiency	99 %
Protection Function	• Short Circuit Protection • AC Leakage Fault Protection • Grounding Fault Protection • Anti-islanding Protection • Overload Protection • Surge Protection
Grid Regulation	• AS/NZS 4777.2:2020+A1+A2 • Amd 2:2024 More grid regulation certifications are to be made available. Please contact myenergi for the latest information.
Safety Regulation	IEC/EN 62109-1&2
EMC	EN IEC 61000-6-1:2019 EN IEC 61000-6-3:2021

Battery Terminal Input /Output

	LIBBI-HS3.6D1-A	LIBBI-HS5D1-A
Battery Type	Lithium	
Voltage Range	42–58V DC	
Rated Voltage	48V DC	
Maximum Charge / Discharge Current	80A DC/80A DC	120A DC/120A DC
Maximum Charge / Discharge Power	3600 W/3900 W	5,000 W/5,400 W

PV Input

	LIBBI-HS3.6D1-A	LIBBI-HS5D1-A
Vmax. PV	500V DC	
Rated Voltage	360V DC	
PV Start Voltage	120V DC	
MPPT Voltage Range	120–480V DC	
MPPT Range (Full Load)	200 – 425V DC	250 – 425V DC
MPPT Tracker/Strings	2	
Max. Continuous PV Input Current	20A DC × 2	
Isc PV	25A DC × 2	
Max. Backfeed Current	0A DC	
Max. Continuous PV Input Power	7,200 W	10,000 W

Grid Terminal Input / Output

	LIBBI-HS3.6D1-A	LIBBI-HS5D1-A
Rated Voltage	230V AC	
Rated Frequency	50 Hz	
Maximum Continuous Input Current	32A AC	40A AC
Maximum Continuous Input Power	7,360 W	9,200 W
Rated Output Current	16A AC	21.7A AC
Maximum Continuous Output Current	16.7A AC	22.7A AC
Power factor (Cos phi), Adjustable	0.8 leading–0.8 lagging	
Rated Output Power	3,680 W	5,000 W
Maximum Continuous Output Apparent Power	3,680 VA	5,000 VA
Grid Port Overcurrent Protection	63 A	
Short Circuit Current Mains	100 A	

EPS Load Terminal Output

	LIBBI-HS3.6D1-A	LIBBI-HS5D1-A
Rated Voltage	230V AC	
Rated frequency	50 Hz/60 Hz	
Rated Output Current	16A AC	21.7A AC
Maximum Continuous Output Current	16A AC	21.7A AC
Rated Continuous Output Power	3,680 W	5,000 W
Maximum Output Apparent Power	3,680 VA	5,000 VA
EPS Load Overcurrent Protection	32A	

Battery Pack

Battery specification			LIBBI-BM5D1-A
Normal	Battery capacity		5.12 kWh
	Battery type		LFP
	Rated voltage		48V DC
	Operating voltage range		44.8 – 57.6V DC
Operations	Maximum charging current		80A (0.8C)
	Maximum discharging current		80A (0.8C)
	Operating temperature range	Charge	-10°C~ +50°C
		Discharge	-10°C~ +50°C
	Storage temperature range		0°C~ +35°C
	Relative humidity		0% ~ 95% (No condensation)
	Protective class		I
	Short circuit ratings		360A 300us
BMS	Maximum number of batteries		Maximum 8 batteries
	Monitored item		System voltage, current, battery voltage, battery temperature, PCBA temperature measurement
	Communication mode		CAN
	Ventilation mode		Passive and active cooling
Physical parameters	Weight (kg)		51kg
	Size (W×H×D, mm)		725 x 418 x 245mm (Excluding handles)
	Water resistance level		IP65
Reference to standards	IEC 62619 IEC 62477-1 IEC 62040-1 IEC 61000-6-1 IEC 61000-6-3 UN38.3		

Note: *The battery should be moved by two persons. One inverter weighs approximately 51 kg.*

Abbreviations

A	
AC	Alternating Current
AFCI	Arc-Fault Circuit-Interrupter
App	Application

B	
BESS	Battery Energy Storage System
BMS	Battery Management System

C	
CT	Current Transformer

D	
DC	Direct Current
DOD	Depth of Discharge
DRED	Demand Response Enabling Device
DRM	Demand Response Mode
DSP	Digital Signal Processor

E	
EMI	Electromagnetic Interference
EMS	Energy Management System
EPS	Emergency Power Supply

G	
GFCI	Ground Fault Circuit Interrupter

I	
ISO	Insulation

M	
MPPT	Maximum Power Point Tracker

P	
PV	Photovoltaic

R	
RCD	Residual Current Device
RESP	Response
RRCR	Radio Ripple Control Receiver

S	
SCI	Serial Communication Interface
SOC	State of Charge

Definition of DVC

Decisive voltage Classification (DVC)	Limits of working voltage V		
	a.c. voltage r.m.s. UACL	a.c. voltage peak UACPL	d.c. voltage mean UDCL
A*	25 (16)	35.4 (22.6)	60 (35)
B	50 (33)	71 (46.7)	120 (70)
C	> 50 (> 33)	> 71 (> 46.7)	> 120 (> 70)
The table values in parentheses are to be used for PCE or portions of PCEs rated for installation in wet locations as addressed in 6.1 for environmental categories and minimum environmental conditions. *DVC-A circuits are allowed under fault conditions to have voltages up to the DVC- B limits, for maximum 0.2 s.			

Grid Specification

Grid		Output Voltage Range (VAC)	Output Frequency Range (Hz)	Start Delay (s)
1	China	187–252	49.5–50.2	30
2	Germany	184–264	47.5–51.5	60
3 Australia	AUS–A	180–265	47–52	60
	AUS–B	180–265	47–52	60
	AUS–C	180–265	45–55	60
4 Italy	CEI0-21	195–264	49.8–50.2	60
	CEI0-21 ACEA	195–264	49.8–50.2	60
5	Spain	196–253	48–50.5	180
6	U.K.	184–264	47–52	180
7	Hungary	196–253	49–51	300
8	Belgium	184–264	47.5–51.5	60
9	New Zealand	180–260	45–52	60

Warranty

Full details of the myenergi product warranty are available on our website or by using this QR code.

www.myenergi.com/terms-and-conditions/myenergi-product-warranty/

Help Centre & Downloads

If you experience any issues with your myenergi device or wish to download the datasheet for the libbi, please visit our Help Centre by scanning the QR Code or clicking the link below.

support.myenergi.com/hc/en-gb

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