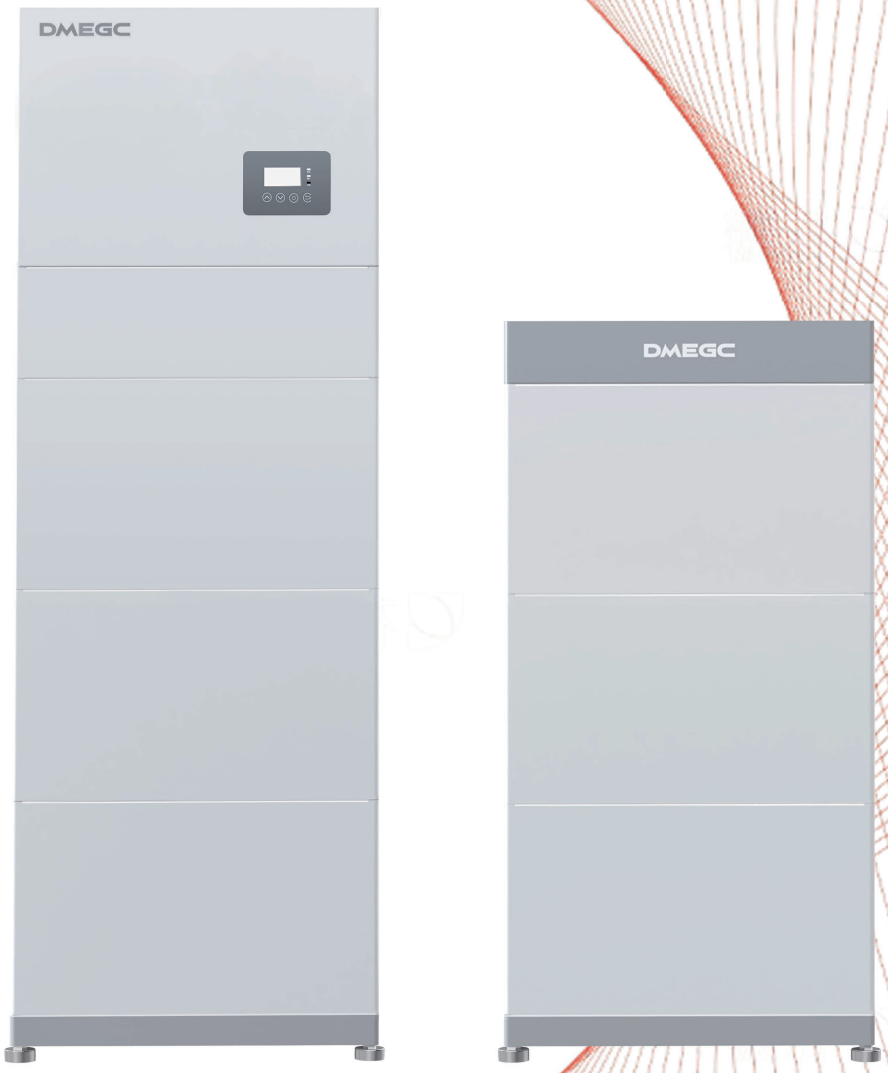
DMEGC



INSTALLATION, OPERATION & MAINTENANCE MANUAL OF

DM-INV-SPH3.6K, DM-INV-SPH5K, DM-INV-SPB5K
DM-INV-SPH6K, DM-INV-SPH8K
H02
V2

www.dmegc-ess.com

DISCLAIMER

The material furnished in this document is believed to be accurate and reliable. The information and recommendations in this document do not constitute commitments or warranties in the form of assignments. The information in this document is subject to change without notice. You may refer to the DMEGC Cloud Platform (https://dmegc.inteless.com) for the most updated version.

COPYRIGHT STATEMENT

 Please keep the manual properly and operate in strict accordance with all safety and operating instructions in this manual. Please do not operate the product before reading through the manual.

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01 INTRODUCTION

1.1. Content and structure of this document

This document is valid for:
Inverter: DM-INV-SPH3.6K, DM-INV-SPH5K, DM-INV-SPB5K, DM-INV-SPH6K, DM-INV-SPH8K
Battery: H02
This document describes the mounting, installation, commissioning, configuration, operation of the product as well as the operation of the product user interface.
Read this document through, understand the safety information, and get familiar with the functions and features of the device before installing and operating it.
Illustrations in this document are reduced to the essential information and may deviate from the real product.

1.2. Target group

This document is intended for qualified persons and end users. Only qualified persons are allowed to perform the operations marked with a warning symbol in this document. Tasks that do not require any specific qualifications will not be marked and can be performed by the end user. Qualified persons must have.

- Knowledge of working principle of inverters.
- Knowledge of how to deal with the dangers and risks associated with installing and using electrical devices, batteries and systems.
- Knowledge of the installation and commissioning of electrical devices and systems.
- Knowledge of the applicable standards and directives.
- Understood and complied with this document, including all safety precautions.
- Understood and complied with the documents of the battery manufacturer, including all safety precautions.

1.3. Levels of warning messages

The following levels of warning messages may occur when handling the product

Symbol	Description
⚠ DANGER	DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.
⚠ WARNING	WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE	NOTICE indicates a situation which, if not avoided, can result in property damage.
INFORMATION provides tips which are valuable for the optimal installation and operation of the product.	

1.4. Definition of abbreviations and nouns

AC	alternating current	AUX	auxiliary
APP	application	EMS	energy management system

BAT	battery	INV	inverter
BMS	battery management system	MPPT	maximum power point tracking
DC	direct current	PV	photovoltaic

02 SAFETY

2.1. Intended use

The inverter, battery packs and the electricity meters make up a system for optimization of self-consumption for a household. The inverter can achieve bidirectional transfer between AC current and DC current. The battery pack is used for the energy storage.
This system is suitable for indoor and outdoor installation.
Inverter must only be operated with PV arrays of protection class II in accordance with IEC 61730, application class A. The PV modules must be compatible with this product.
PV modules with a high capacity to ground must only be used if their coupling capacity does not exceed 1.0 µF.
All components must operate in a scenario suitable for their operation.
Be sure to use this product in accordance with the information provided in the accompanying documents and local applicable standards and directives. Any other operation may cause personal injury or property damage.
Alterations to the product, e.g. changes or modifications, are only permitted with the express written permission of DMEGC. Unauthorized alterations will void guarantee and warranty claims.
DMEGC shall not be held liable for any damage caused by such changes.
Any use of the product other than that described in the Intended Use section does not qualify as appropriate.
The enclosed documentation is an integral part of this product. Keep the documentation in a convenient place for future reference and comply with all instructions contained therein.
The type label must remain permanently attached to the product.

2.2. Safety instructions for battery

2.2.1. General safety precautions

- Over voltage or wrong wiring can damage the battery pack and cause deflagration, which can be extremely dangerous.
- All types of breakdown of the battery may lead to a leakage of electrolyte or flammable gas.
- Battery pack is not user-serviceable. There is high voltage in the device.
- Read the label with Warning Symbols and Precautions, which is on the right side of the battery pack.
- Do not connect any AC conductors or PV conductors directly to the battery pack which should be only connected to the inverter.
- Do not charge or discharge damaged battery.
- Do not damage the battery pack in such ways as dropping, deforming, impacting, cutting or penetrating with a sharp object. It may cause a leakage of electrolyte or fire.
- Do not expose battery to open flame.

2.2.2. Response to emergency situations

The battery pack is composed of multiple batteries and designed to prevent the danger caused by malfunction.
If the user touches the inner material of the battery cells due to damage to the shell, the following actions are recommended.

1. Inhalation: Leave the contaminated area immediately and seek medical attention.
2. Eye injuries: Rinse eyes with running water for 15 minutes and seek medical attention.
3. Skin injuries: Wash the contacted area with soap thoroughly and seek medical attention.
4. Ingestion: Induce vomiting and seek medical attention.

If a fire breaks out in the place where the battery pack is installed, perform the following counter-measures:

- Fire extinguishing media

1. Respirator is not required during normal operations.
2. Use FM-200 or CO_2 extinguisher for battery fire.
3. Use an ABC fire extinguisher, if the fire is not from battery and not spread to it yet.

- Firefighting instructions

1. If fire occurs when charging batteries, if it is safe to do so, disconnect the battery pack circuit breaker to shut off the power to charge.
2. If the battery pack is not on fire yet, extinguish the fire before the battery pack catches fire.
3. If the battery pack is on fire, do not try to extinguish but evacuate people immediately.

⚠ WARNING	There may be a possible explosion when batteries are heated above 150°C.When the battery pack is burning, it leaks poisonous gases. Do not approach.

- Effective ways to deal with accidents

1. On land: Place damaged battery into a segregated place and call local fire department or service engineer.
2. In water: Stay out of the water and don't touch anything if any part of the battery, inverter, or wiring is submerged.
3. Do not use submerged battery again and contact the service engineer.

2.3. Important safety instructions

⚠ DANGER	Danger to life due to electric shock when live components or cables are touched.

There is high voltage in the conductive components or cables of the product. Touching live parts and cables can result in death or lethal injuries due to electric shock.

- Do not touch non-insulated parts or cables.
- Disconnect the product from voltage sources and make sure it cannot be reconnected before working on the inverter or the battery pack.
- After disconnection, wait for 5 minutes until the capacitors have discharged.
- Do not open the product.
- Wear suitable personal protective equipment for all operations on the product.

⚠ DANGER	Danger to life due to danger voltages on the battery pack.

There is danger voltage at the pin connector for the power cable. Reaching into the pin connector for the power cable can result in lethal electric shock.

- Do not open the battery pack.
- Do not wipe over the battery pack with a damp cloth.
- Leave the protective caps on the pin connectors for the batteries power connection until the inverter cables are connected to the battery pack.
- Disconnect the system from voltage sources and make sure it cannot be reconnected before working on the inverter or the battery pack.

⚠ WARNING	Risk of chemical burns from electrolyte or toxic gases.

During normal operation, no electrolyte would leak from the battery pack and no toxic gases would 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 may form.

- Store the battery pack in a cool and dry place.
- Do not drop the battery pack or damage it with sharp objects.
- Only set the battery pack down on its back or its bottom.

- Do not open the battery pack.
- Do not install or operate the battery pack in potentially explosive atmosphere or areas of high humidity.
- If moisture has penetrated the battery pack (e.g. due to a damaged housing), do not install or operate the battery pack.
- In case of contact with electrolyte, rinse the affected areas immediately with water and consult a doctor without delay.

⚠ CAUTION Risk of burns due to hot heatsink and housing.

The heatsink and housing can get hot during operation.
During operation, do not touch any parts other than the cover of the inverter.

NOTICE Damage to the inverter due to electrostatic discharge.

- Touching electronic components can cause damage to or destroy the inverter through electrostatic discharge.
- Ground yourself before touching any component.

NOTICE Damage due to cleaning agents.

- The use of cleaning agents may cause damage to the product and its components.
- Clean the product and all its components only with a cloth moistened with clear water.

⚠ DANGER Danger to life due to electric shock when live components or PV cables are touched.

When PV panels exposed to sunlight, the PV array generates high DC voltage which presents in the DC conductors. Touching the live DC cables can result in death or lethal injuries due to electric shock.
- Disconnect the inverter from voltage sources and make sure it cannot be reconnected before working on the device.
- Do not touch non-insulated parts or cables.
- Do not disconnect the DC connectors under load.
- Wear suitable personal protective equipment for all work on the inverter.

⚠ DANGER Danger to life due to electric shock from touching an ungrounded PV module or array frame.

- Touching ungrounded PV modules or array frames can result in death or lethal injuries due to electric shock.
- Connect and ground the frame of the PV modules, the array frame and the electrically conductive surfaces so that there is continuous conduction.
- Observe the applicable local regulations.

⚠ DANGER Danger to life due to electric shock when touching live system components in case of a ground fault.

When a ground fault occurs, parts of the system may still be live. Touching live parts and cables can result in death or lethal injuries due to electric shock.
- Disconnect the product from voltage sources and make sure it cannot be reconnected before working on the device.
- Touch the cables of the PV array on the insulation only.
- Do not touch any parts of the substructure or frame of the PV array.
- Do not connect PV strings with ground faults to the inverter.

2.4. Symbols explanation

Symbol	Explanation
	Beware of a danger zone This symbol indicates that the product must be additionally grounded if additional grounding or equipotential bonding is required at the installation site.
	Beware of electrical voltage The product operates at high voltages.

	Beware of hot surface The product can get hot during operation.
	Danger to life due to high voltages in the inverter, observe a waiting time of 5 minutes. Prior to performing any work on the inverter, dis-connect it from all voltage sources as described in this document.
	WEEE designation Do not dispose of the product together with the household waste but in accordance with the disposal regulations for electronic waste applicable at the installation site.
	Observe the documentation.
	CE marking The product complies with the requirements of the applicable EU directives.
	RCM (Regulatory Compliance Mark) The product complies with the requirements of the applicable Australian standards.
	UKCA marking The product complies with the regulations of the applicable laws of England, Wales and Scotland.
	RoHS labeling The product complies with the requirements of the applicable EU directives.
	Risk of chemical burns.
	Risk of explosion.
	Risk of electrolyte leakage.
	Refer to the instruction for operation.
	Use eye protection.
	Fire, naked light and smoking prohibited.
	No nearing.
	Do not dispose of the battery pack together with the household waste but in accordance with the locally applicable disposal regulations for batteries.

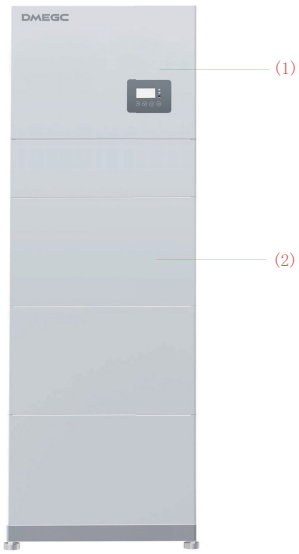
	Recycling code.
UN38.3	Marking for transport of dangerous goods The product passes the certifications of the UN38.3.

03 PRODUCT INTRODUCTION AND APPLICATION SCENARIOS

3.1. Nomenclature introduction

Name	Designation in this document
DM-INV-SPH3.6K DM-INV-SPH5K DM-INV-SPB5K DM-INV-SPH6K DM-INV-SPH8K	3.6kW Single-phase hybrid inverter 5kW Single-phase hybrid inverter 5kW Single-phase battery inverter 6kW Single-phase hybrid inverter 8kW Single-phase hybrid inverter
H02	Battery

3.2. System introduction

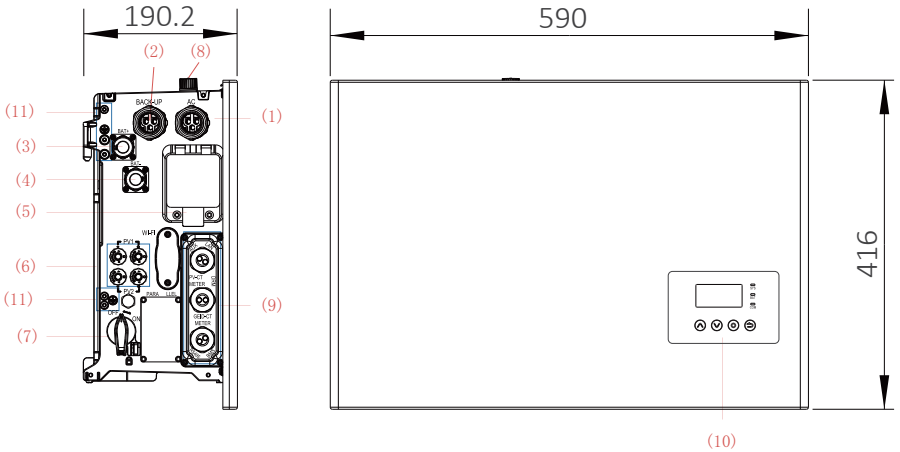


DMEGC HOME BESS
Dimension(W×H×D)：
590×(416+181+333*N+78)×204mm
N： Number of batteries

Object	Name	Explain
1	DM-INV-SPH3.6K DM-INV-SPH5K DM-INV-SPB5K DM-INV-SPH6K DM-INV-SPH8K	Inverter
2	H02	Battery

3.3. Product description

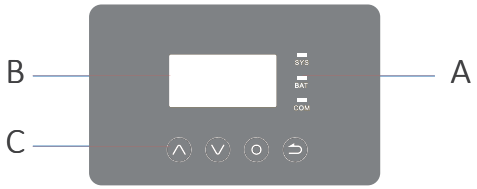
3.3.1. Inverter electrical interface introduction



Position	Designation
1	Grid Connector
2	Backup Connector
3	Battery+ Power Connector
4	Battery- Power Connector
5	Battery Circuit Breaker* of the Inverter
6	Positive and Negative PV connectors, PV1/ PV2
7	PV Switch
8	Wi-Fi Port
9	Communication Ports（CAN/RS485,BMS, LAN, Meter/Grid-CT, DRM**, PV-CT, AUX）
10	Inverter LCD
11	Grounding

*All breakers of the product are switched off when shipped.
**The DRM is only for regions with AS/NZS 4777.2 grid regulations.

3.3.2. Inverter display interface introduction



LCD Display

Object	Name	Description	
A	SYS LED	Red: The inverter is in fault.	
		White: The inverter is in normal state.	
	BAT LED	White: The battery is in charging or discharging.	
	COM LED	White: The inverter is in communication.	
B	LCD Dispaly	Display the information of the energy storage system.	
C	Button Function	⮌	Escape from current interface or function.
		∧	Move cursor to upside or increase value.
		∨	Move cursor to downside or decrease value.
		○	Confirm the selection.

3.3.2.1 Main interface of the inverter LCD

Power 0W Total 00.0kWh Battery % Normal	Main displays the inverter working status and information,including: 1.Power: Current PV power. 2.Total: Total power generation. 3.Battery: Current remaining battery power (SOC). 4.Normal: Current working state of the equipment, including Standby.
>>>> MENU <<<< >Status History Setting	In the Main interface, press ENT key to enter the menu's main interface. Use the up and down key to select a sub-menu, press the ENT key to enter the selected sub-menu, press Return key to return to the previous layer.

3.3.2.2 Display content of sub-menu status item

>>>> Status <<<< >Grid Soalr Battery	Status menu contains five sub-menus: Solar, Battery, Grid, UPS and Comm. These display the relevant information about the current physical or communication interface respectively.
>>>> Grid <<<< >U 230.2V I 2.0A F 49.99Hz	Grid interface displays the real-time information on the utility grid side: voltage U, current I, frequency F, PInv, PMeter AC, PMeter DC.
>>>> Solar <<<< >U1 360.0V I1 1.0A P1 360W	Solar interface displays the real-time information of PV side: voltage U1, current I1, power P1.
>>>> Battery <<<< >U 96.0V I 10.0A P 960W	Battery interface displays the real-time information of battery side: voltage U, current I, power P, residual capacity of Battery (SOC), the internal environmental temperature Temp.
>>>> UPS <<<< >U 230.2V I 2.0A P 460W	UPS interface displays the real-time information in this mode: voltage U, current I, power P.
>>>> Comm <<<< >BMS Yes Net Yes MeterGrid Yes	Communication interface displays the real-time communication situation of BMS, Net, MeterGrid and MeterDC.

3.3.2.3 Display Content of Sub-Menu History Item

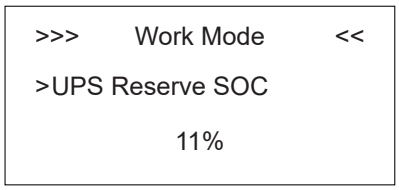
>>>> History <<<< >Grid Consump INV Gen. BAT Gen.	History menu contains seven sub-menus: Grid Consumption, INV Gen., BAT Gen.

> Grid CONSUMP < > Total: 0.0kWh	Grid Consumption interface displays today's or total load consumption from grid.
>>> INV Gen. <<< >Today: 29.1kWh	INV Gen. interface displays today's or total electricity quantity generated from Inverter.
>>> Bat Gen. <<< >Today: 13.8kWh	Bat Gen. interface displays today's or total electricity quantity discharged from the battery.
>>> PV Gen. <<< >Today: 19.0kWh	PV Gen. interface displays today's or total electricity quantity generated from the PV-panels.
>>> Grid Charge <<< >Today: 1.9kWh	Grid Charge interface displays today's or total electricity quantity battery charging from the grid.
>>> PV Charge << >Today: 13.1kWh	PV Charge interface displays today's or total electricity quantity battery charging from the PV-panels.
>>> Error Logs <<< 1: 2018-02-02 16:48 Chg SPI Fault	Error Logs interface displays the 10 latest fault records of this device, including the name of the fault and time of error.
>> Information < >SN: 2500xxxxxxxxx	Make sure all numbers in the information menu are correct.

>> Information << >Inverter Ver.:	Check the inverter software version.

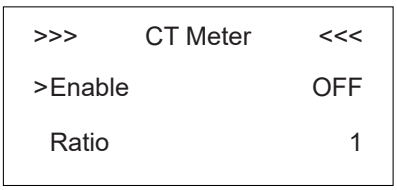
3.3.2.4 Display content of general setting item

> New Password < > 0 0 0 0	Step1: Click setting and enter the password. Please call customer service to obtain the password, the installation's password is a four-digits password, after four-digits password was correctly input, you can enter into the main Setting interface (administrator permissions).	
>>> Setting <<< >Function Safety	>>> Function <<< >Solar Battery Grid	>>> Solar <<< >On Grid Cap. 000000W
Step2: Click Function to enter function setting.	Step3: Click Solar to set the Solar relevant information.	Step4: Set on-grid capacity, storage capacity and number of PV strings (MPPT number).
>>>> Battery <<<< >Bat Model DM-BAT-XXX	>>>> Battery <<<< >SOC Calibration No	>>>> Battery <<<< >Battery Ready No
Step5: Click the Battery Function and check battery type.	Step6: Check SOC Calibration function set No.	Step7: Check the Battery Ready function set No. If you only use the inverter without battery, please set it Yes.
>>>> Grid <<<< >FeedIN Control Power Limit Power Factor	Max. Feed in rate >User Value 50%	>> System Mode << >DC AC Hybrid
Step8: Click the Grid Function to set up relevant parameters of the grid.	Step9: Set the Max. Feed-in power rate value. If you do not want to send power to the grid, set it to 0%.	Step10: Click Function-System Mode to set system mode: DC, AC, Hybrid.
>>> Work Mode <<< >Force Charge Enable	>>> Work Mode <<< >Force Charge Enable	>>> Work Mode <<< > Charge Start Time 1 01:00
Step11: Click the mode then set up work mode.(self-use or force time charge)	Step12: If you want to use force charge, sett Enable here.	Step13: Set the charge and discharge time.

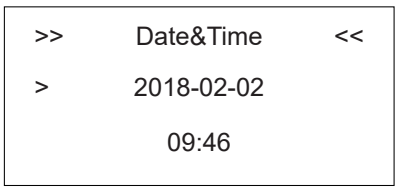


Step14: Set the UPS Reserve SOC, it means how much battery energy to reserve for UPS function.

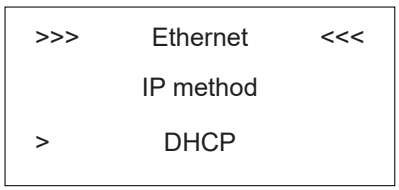
Step15: Click Safety in the setting menu. Set safety standard.For example: AS4777.2-A / AS4777.2-B / AS4777.2-C for Australia, VDE4105 for Germany, CEI0_21 for Italy, G83_2 for Great Britain, NRS097_2_1 for South Africa, RD1699 for Spain, VDE0216 for 60Hz countries.



Step16: If you use CT meter, please set CT meter enable and the relevant ratio.

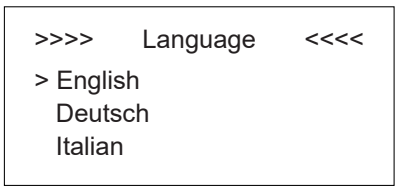


Step17: Click System in the setting menu. Click Date &Time and set up the date and time.

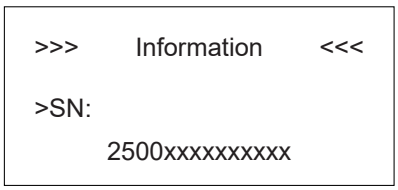


Step18: Click Ethernet to set the IP address.
DHCP mode means that setup IP address is set up automatically.
If you want to set up the IP address manually, please choose manual mode.

Note:
It is needed to set the following 3 parameters for manual mode:
IP Address: IP address;
Subnet Mask: Subnet mask;
Default Gateway: Default gateway;
Automatic display one parameter: MAC Address: display MAC Address.

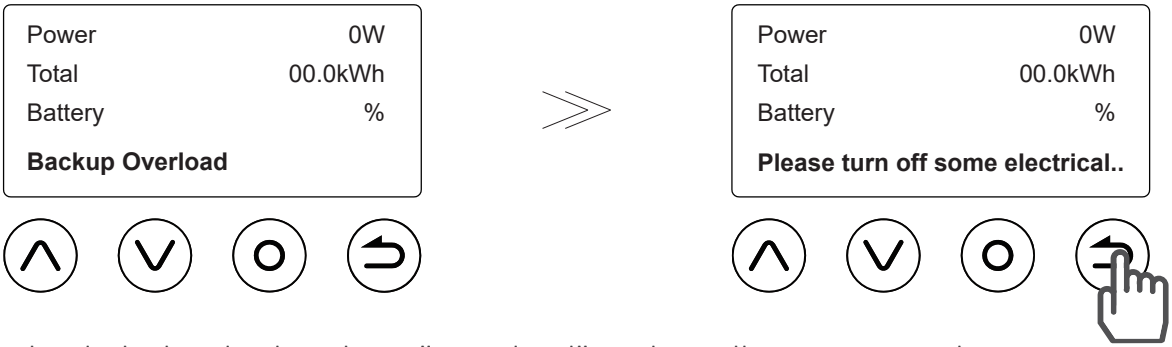


Step19: Click Language to set Language Date & Time Setting Interface.



Step20: Make sure all the following number is correct.
Date & Time Setting Interface.

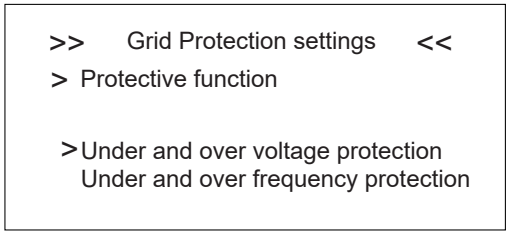
3.3.2.5 Overloaded state



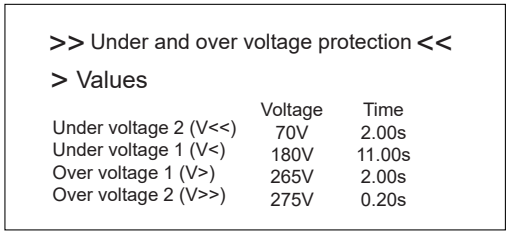
When overloaded, the display show "over load" and scrolls to prompt the customer to reduce some electrical appliances like this "Please turn off some electrical appliances and press the exit button to resume".

3.3.2.6 Set the mode for the inverter to respond to power dispatching

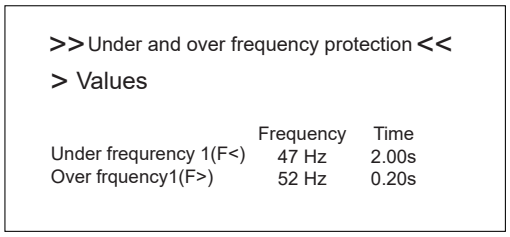
>> Inverter power quality response << >modes > Volt-var response mode Volt-watt response mode Fixed power factor Reactive power mode Power rate limit	Step1: If you use Inverter power quality response, please click Inverter power quality response modes.
>> Volt-watt response mode << > Values Vv1 Vv2 Vv3 Vv4 Voltage: 207V 220V 240V 258V Q% : 44 0 0 -60 Default setting:Enable	Step2: Click Volt-var response mode to set the Volt-var response parameter.
>> Volt-var response mode << > Values Vw1-ch Vw2-ch Vw1 Vw2 Voltage: 207V 215V 253V 260V P% : 20 100 100 20 Default setting:Enable	Step3: Click Volt-watt response mode to set the Values parameter.
>> Fixed power factor << > PF 1.00 Default setting:Enable	Step1: Click Fixed power factor to set the PF parameter.
>> Reactive power mode << > Q 0 var Default setting:Disable	Step2: Click Reactive power mode to set the reactive power.
>> Power rate limit << > Wgra 100 % Default setting:Ensable	Step3: Click Power rate limit to set the power rate parameter.



Step1: If you use Grid Protection, please click Grid Protection settings.

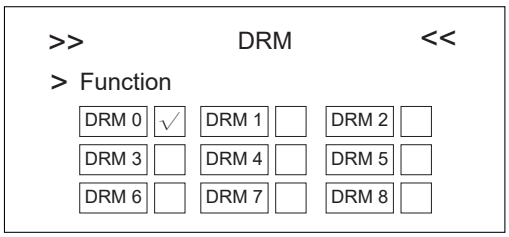


Step2: Click Under and over voltage protection to set the parameter.



Step3: Click Under and over frequency protection to set the frequency parameter.

3.3.2.7 DRM Enable setting method as page

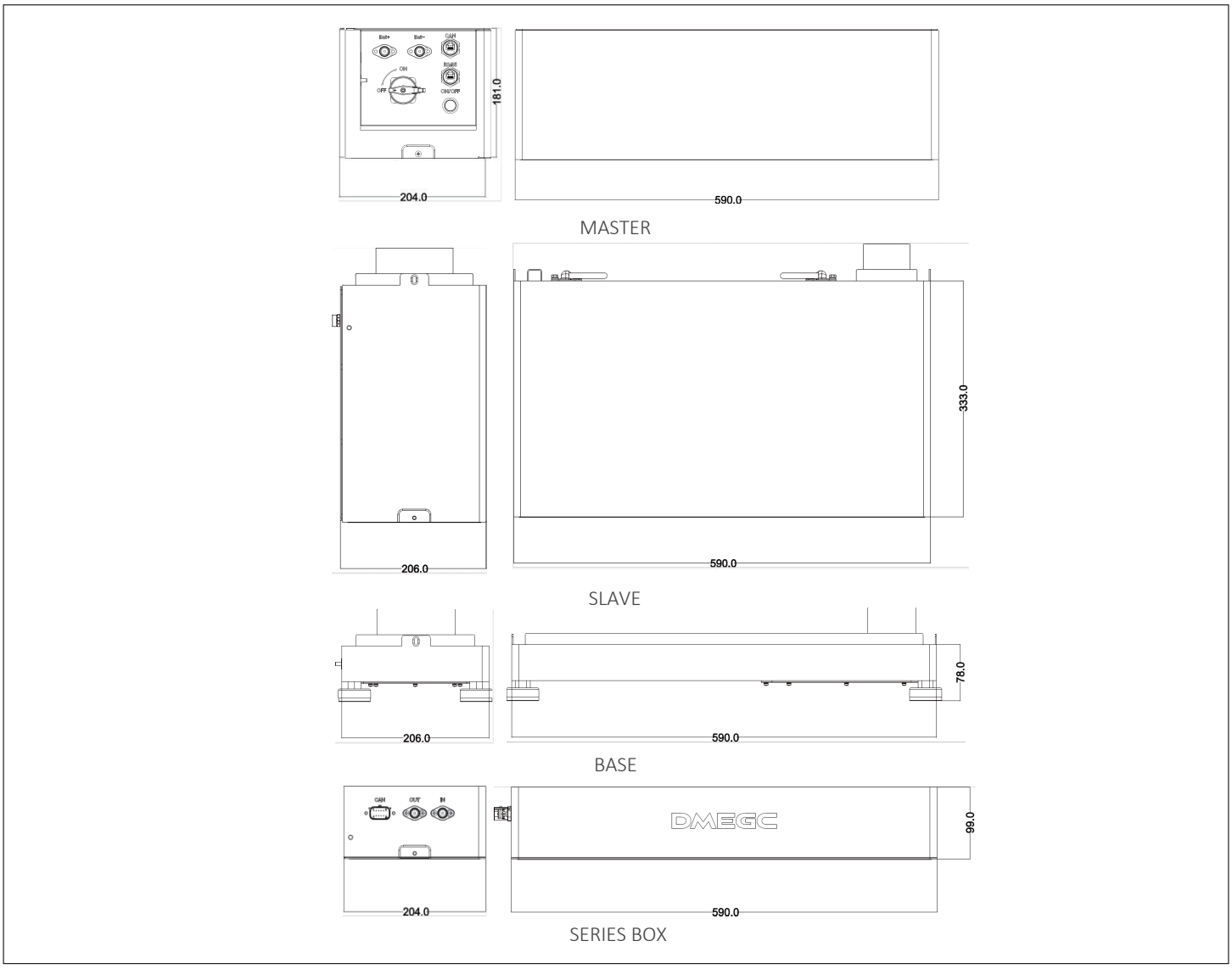


The DRM function bellowing:

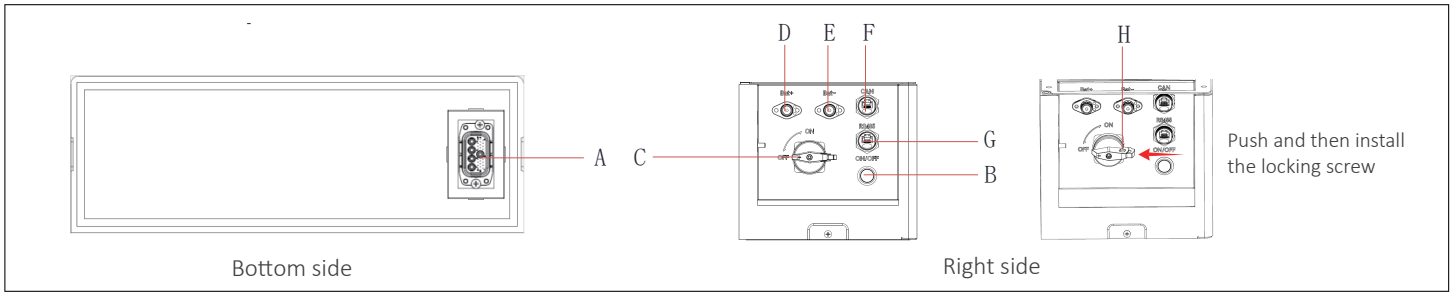
Item	Shorted pin		Description
DRM 0	Pin 5	Pin 6	The inverter the state of “Turn off” and disconnect from the grid.
DRM 1	Pin 1	Pin 6	The absorbed power from the grid is 0% of the rated power.
DRM 2	Pin 2	Pin 6	The absorbed power from the grid is no more than 50% of the rated power.
DRM 3	Pin 3	Pin 6	The absorbed power from the grid is no more than 75% of the rated power.
DRM 4	Pin 4	Pin 6	The absorbed power from the grid is 100% of the rated power.
DRM 5	Pin 1	Pin 51	The feed-in power to the grid is 0% of the rated power.
DRM 6	Pin 2	Pin 5	The feed-in power to the grid is no more than 50% of the rated power.
DRM 7	Pin 3	Pin 5	The feed-in power to the grid is no more than 75% of the rated power.
DRM 8	Pin 4	Pin 5	The feed-in power to the grid is 100% of the rated power.

3.3.3. Battery introduction

Battery pack appearance and dimensions of H02



Connection area overview of H02



Position	Designation
A	The hot-plug interface is connected to the battery module.
B	ON/OFF BUTTON: Start system.
C	BAT SWITCH: A switch for battery's input and output.
D	Bat+: Connect BMS's Bat+ to the inverter's BAT+.
E	Bat-: Connect BMS's Bat- to the inverter's BAT-.
F	CAN: Connect the inverter to BMS's communication.
G	RS485: Only for internal maintenance use.
H	DC switch locking screw hole.

Note: This product is equipped with a self-locking power switch, which complies with AS/NZS 4777.2 safety regulation. The self-locking function prevents accidental restart and ensures safe operation.

During normal operation of battery, three LED indicators on the front cover provide information about the SOC of the battery with white lights on and off or flashing (0.5S on, 1.5S off) .

: White LEDs are flashing

: White LEDs are glowing

○ : White LEDs are off

LED Indicator	No.	SOC	Description
LEDs show the SOC status	1	✺ ○ ○ ○	0% ≤ SOC < 25%
	2	✺ ✺ ○ ○	SOC < 50%
	3	✺ ✺ ✺ ○	SOC < 75%
	4	✺ ✺ ✺ ✺	SOC < 100%
	5	✺ ✺ ✺ ✺	SOC ≥ 100%

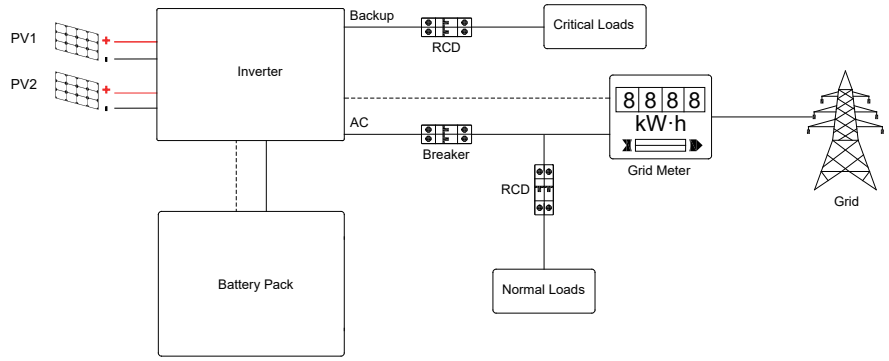
3.4. Application scenarios

Storage System (includes inverter DM-INV-SPH3.6K/DM-INV-SPH5K/DM-INV-SPB5K/DM-INV-SPH6K/ DM-INV-SPH8K and battery H02) can be applied in DC-coupled systems (mostly new installation), AC-coupled systems (mostly retrofit), Hybrid-coupled systems (mostly retrofit, and increase the PV capacity), and Off-grid (with Generator) systems as the following schemes show:

DC-coupled storage system

Indicates a power cable

Indicates a signal cable

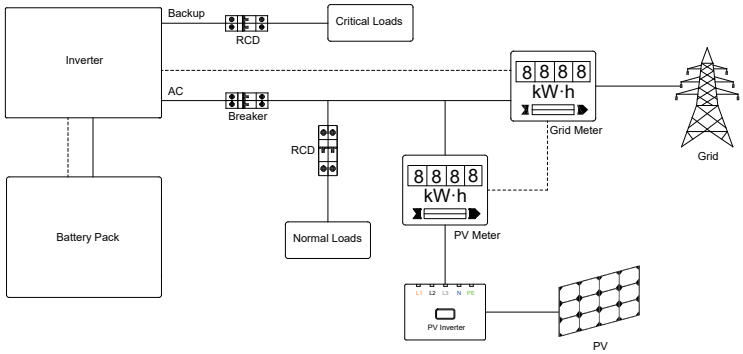


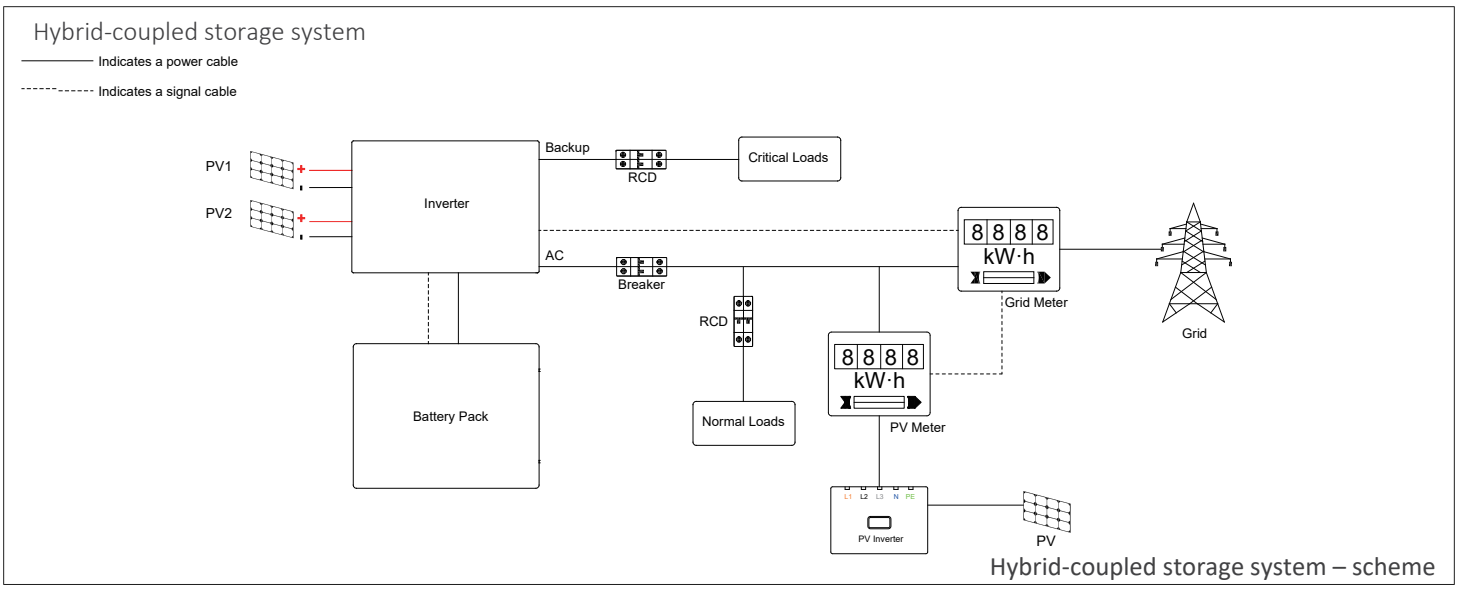
DC-coupled storage system – scheme

AC-coupled Storage System

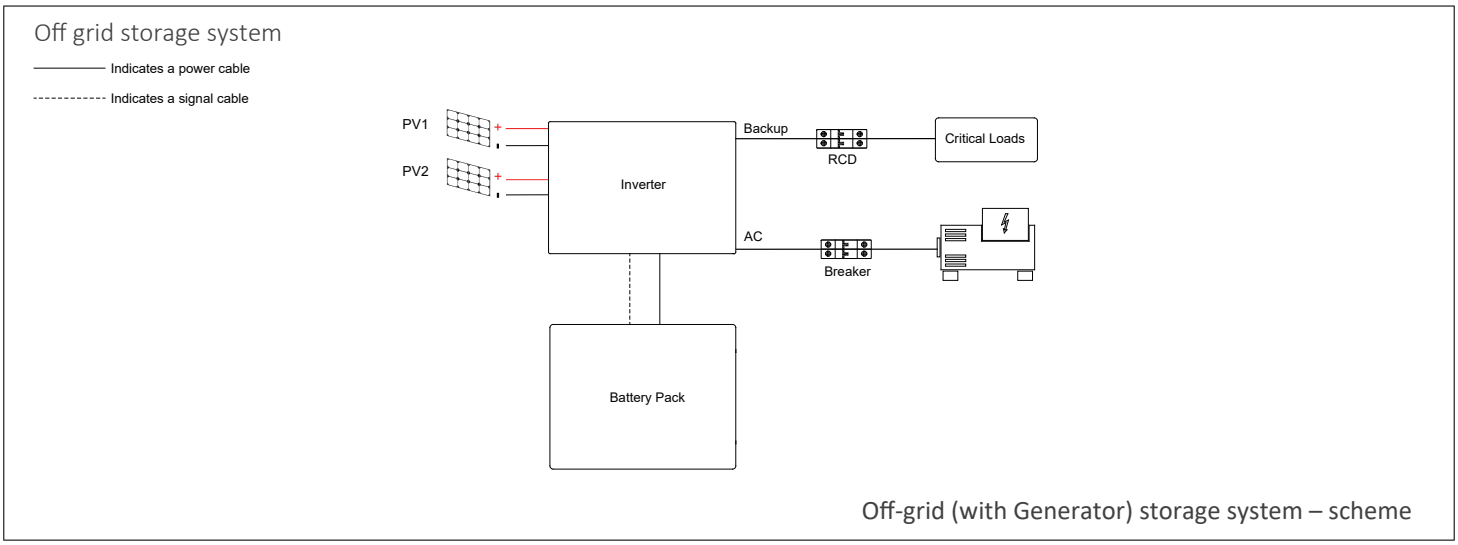
Indicates a power cable

Indicates a signal cable

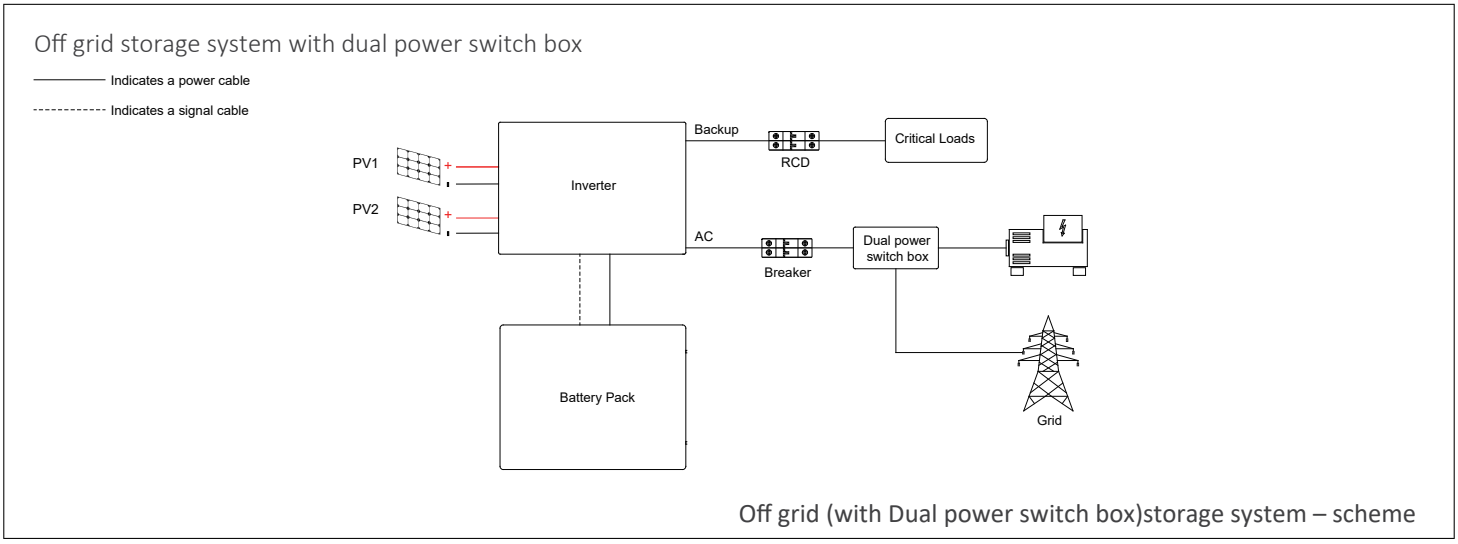




Hybrid-coupled storage system – scheme



Off-grid (with Generator) storage system – scheme



Off grid (with Dual power switch box)storage system – scheme

04 STORAGE AND TRANSPORT

4.1. Storage

4.1.1. Inverter storage

The following requirements should be met if the inverter is not put into use directly:

1. Do not unpack the inverter.
2. Keep the storage temperature at -40-60°C and the humidity at 5%-95% RH.

3. The inverter should be stored in a clean and dry place and be protected from dust and water vapor corrosion.
4. A maximum of six inverters can be stacked. To avoid personal injury or device damage, stack inverters with caution to prevent them from falling over.
5. During the storage period, check the inverter periodically. Replace the packing materials which are damaged by insects or rodents in a timely manner.
6. If the inverters have been stored for more than two years, it must be checked and tested by professionals before being put into use.

4.1.2. Battery storage

The following requirements should be met if the battery is not put into use directly:

1. Place batteries according to the signs on the packing case during storage. Do not put batteries upside down or sidelong.
2. Stack battery packing cases by complying with the stacking requirements on the external package.
3. Store the battery pack out of reach of children and animals.
4. Store the battery pack where it should be minimal dust and dirt in the area.
5. Handle batteries with caution to avoid damage.
6. The storage environment requirements are as follows:
   a.Ambient temperature: -10-55°C, recommended storage temperature: 15-30°C.
   b.Relative humidity: 15%- 85%.
   c.Place batteries in a dry and clean place with proper ventilation.
   d.Place batteries in a place that is away from corrosive organic solvents and gases.
   e.Keep batteries away from direct sunlight.
   f.Keep batteries at least 2m away from heat sources.
7. The batteries in storage must be disconnected from external devices. The indicators (if any) on the batteries should be off.
8. Batteries should be delivered based on the "first in, first out" rule.
9. The warehouse keeper should collect battery storage information every month and periodically report the battery inventory information to the planning department. The batteries that have been stored for nearly 6 months should be recharged timely.
10. If a lithium battery is stored for a long time, capacity loss may occur. After a lithium battery is stored for 12 months in the recommended storage temperature, the irreversible capacity loss rate is 3%-10%. It is recommended that batteries not be stored for a long period. If the batteries need to be stored for more than 6 months, it is recommended to recharge the batteries to 65-75% of the SOC.

4.2. Transport

During transportation, please follow these guidelines:

1. Priority to use the original packaging for transportation. If the original packaging is not available, put the product inside a suitable cardboard box and seal it properly.
2. Handle with care, choose the corresponding handling method according to the weight, and pay attention to safety.
3. During transportation, please keep the packaging away from dangerous sources and take waterproof measures.
4. Please fix the packaging during transportation to prevent falling or mechanical impact.

05 MOUNTING

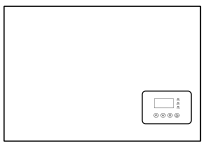
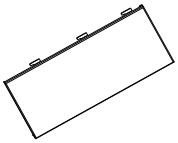
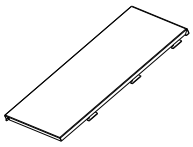
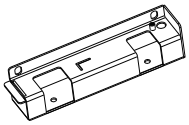
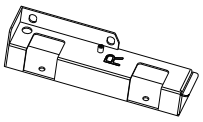
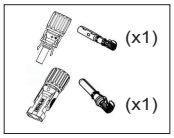
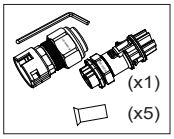
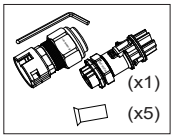
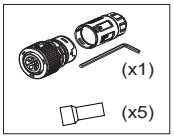
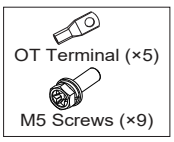
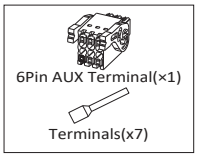
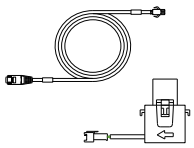
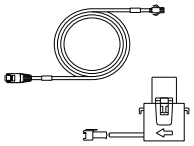
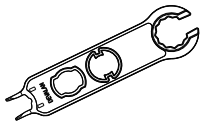
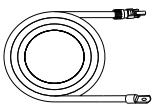
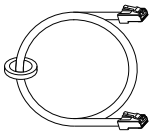
5.1. Checking the outer packing

Before unpacking the product, check the outer packing for damage, such as holes and cracks. If any damage is found, do not unpack the product and contact your dealer as soon as possible.

5.2. Scope of delivery

Check the scope of delivery for completeness and any externally visible damage.
Contact your distributor if the scope of delivery is incomplete or damaged.

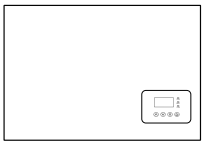
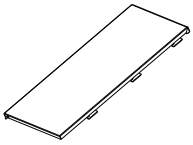
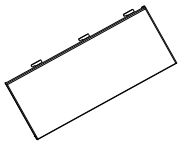
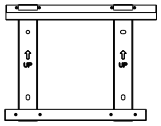
5.2.1. Scope of delivery for inverter installation

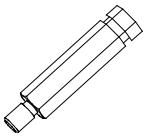
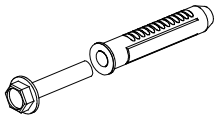
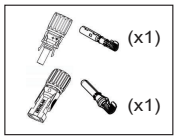
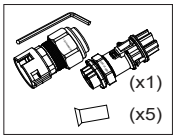
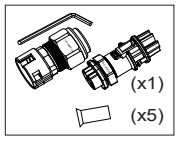
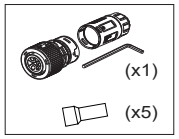
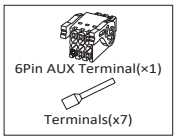
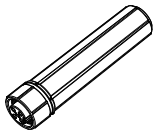
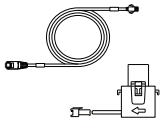
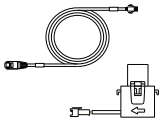
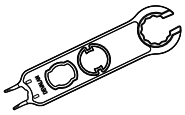
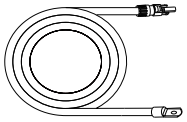
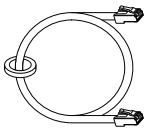
				
Inverter (X1)	TOP Cover (X1)	Left Cover (X1)	Cable Cover (X1)	Left Support Foot (X1)
				
Right Support Foot (X1)	PV Connectors (x2)	Grid Connector(X1)	Backup Connector (X1)a	Backup Connector (X1)b
				
Screws and Terminals Set (×1)	WiFi Module (×1)	6 Pin AUX Terminal Block (X1)	Grid-CT(x1) Grid-CT line (×1)c	PV-CT(x1) PV-CT line (×1)c
				
Wrench Tool (X1)	Negative Power Cable (×1)d	Positive Power Cable (×1)d	Communication Cable (×1)d	Documentation (×1)

a: Use for INV-6K/8K
b: Use for INV-3.6k/5K
c: Optional
d: Use for H02

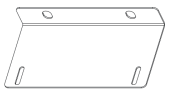
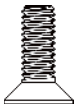
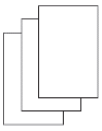
NOTICE DM-INV-SPH(3.6-8)K/DM-INV-SPB5K inverter is only compatible with the H02 battery of DMEGC, independent installation is not supported.

5.2.2. Scope of delivery for inverter wall bracket installation (Optional)

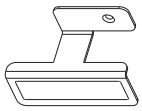
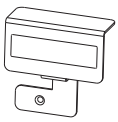
				
Inverter (X1)	TOP Cover (X1)	Left Cover (X1)	Right Cover (×1)	Horizontal Beams of Wall Bracket (×1)

				
Support Plate for Cable Cover (×1)	Support Stud for Right Cover (×1)	ST6*55 (×5)	Small Spirit Level (×1)	PV Connectors (x2)
				
Grid Connector (×1)	Backup Connector (×1)a	Backup Connector (×1)b	6 Pin AUX Terminal Block(×1)	WiFi Module (×1)
				
Grid-CT(x1) Grid-CT line (×1)c	PV-CT(x1) PV-CT line (×1)c	Wrench tool(x1)	Negative Power Cable (×1)d	Positive Power Cable (×1)d
		a: Use for INV-6K/8K b: Use for INV-3.6k/5K c: Optional d: Use for H02		
Communication Cable (×1)d	Documentation (×1)			

5.2.3. Scope of delivery for battery H02 installation

MASTER (H02-MASTER)				
				
Master	Base	Inverter fixed bracket	Expansion screw	M4*12 Phillips head screw
				
M5*12 Phillips head screw	Grounding terminal	Document		

SLAVE Module (H02-SLAVE)				
				
Battery module	Adjustable bracket	M4*12 Phillips head screw	M5*12 Phillips head screw	Expansion screw

Series Box (For ≥2 towers only)				
				
Series box	Series base	Adjustable bracket	Expansion screw	M5*12 Phillips head screw
				
Power cable (+)	Power cable (-)	Communication cable	Grounding terminal	Series base terminal cover (x1)
				
Series box terminal cover (x1)				

* Use for mounting right holder for wall bracket and left holder for wall bracket

5.3. Requirements for mounting

⚠ WARNING Danger to life due to fire or explosion

Despite careful construction, electrical devices can cause fires.
- Do not mount the energy storage system in areas containing highly flammable materials or gases.
- Do not mount the energy storage system in potentially explosive atmospheres.

5.3.1. Basic requirements

- Do not mount the system in areas with flammable or explosive materials.
- Do not mount the inverter at a place within children's reach.
- Do not mount the system outdoors in salt areas because it will be corroded there and may
- cause fire. A salt area refers to the region within 500m from the coast or prone to sea breeze.
- The regions prone to sea breeze vary depending on weather conditions (such as typhoons and
- monsoons) or terrains (such as dams and hills).

- Do not mount the system in areas with flammable or explosive materials.
- Do not mount the inverter at a place within children's reach.
- Do not mount the system outdoors in salt areas because it will be corroded there and may cause fire. A salt area refers to the region within 500m from the coast or prone to sea breeze.
- The regions prone to sea breeze vary depending on weather conditions (such as typhoons and monsoons) or terrains (such as dams and hills).

5.3.2. Mounting environment requirements

- Mount the system in a sheltered place or mount an awning over the product.
- The optimal temperature range for the battery pack to operate is from 15℃ to 30℃.
- Do not expose or place near water sources like downspouts or sprinklers.
- If the battery pack is mounted in the garage, then ensure that it is above the height of the vehicle bumper and/ or door.

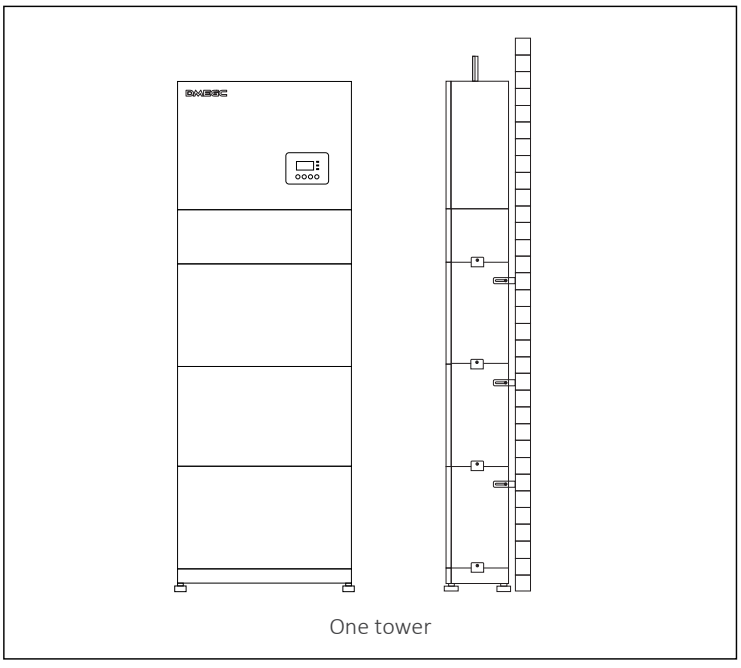
5.3.3. Mounting structure requirements

- The mounting structure where the system is mounted must be fireproof.
- Do not mount the system on flammable building materials.
- Ensure that the mounting surface is solid enough to bear the weight load.
- In residential areas, do not mount the inverter on dry walls or walls made of similar materials which have a weak sound insulation performance because the noise generated by the inverter is noticeable.

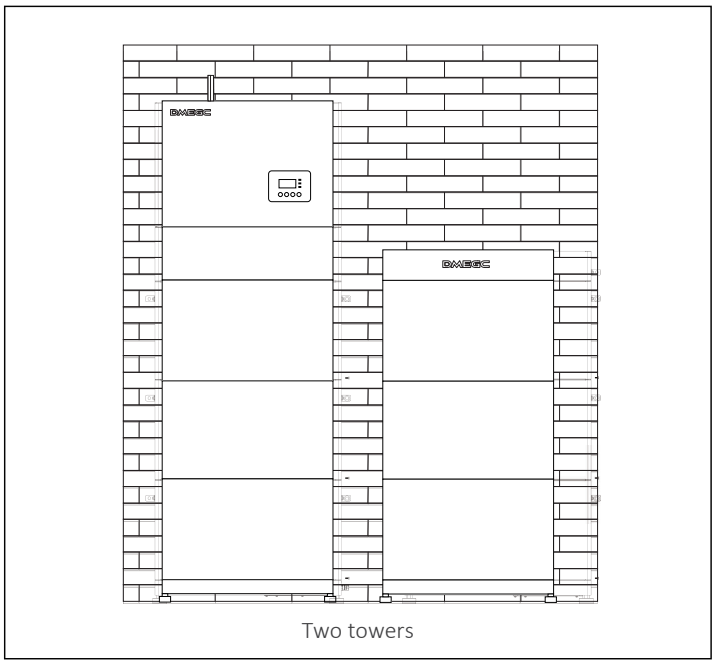
5.3.4. Mounting angle and stack requirement

The system should be mounted on the wall.
The installation angle requirement is as follow:

- Do not mount the inverter at forward tilted, side tilted, horizontal, or upside down positions.



One tower

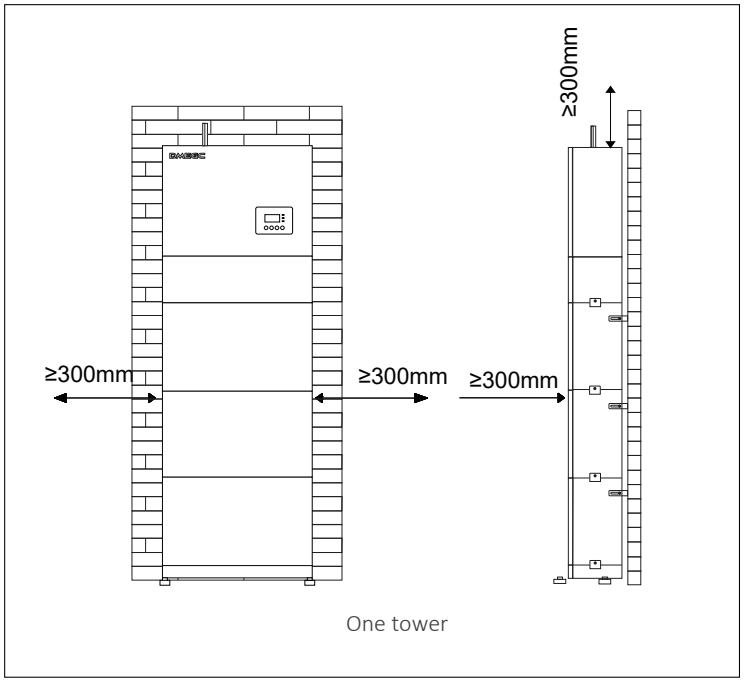


Two towers

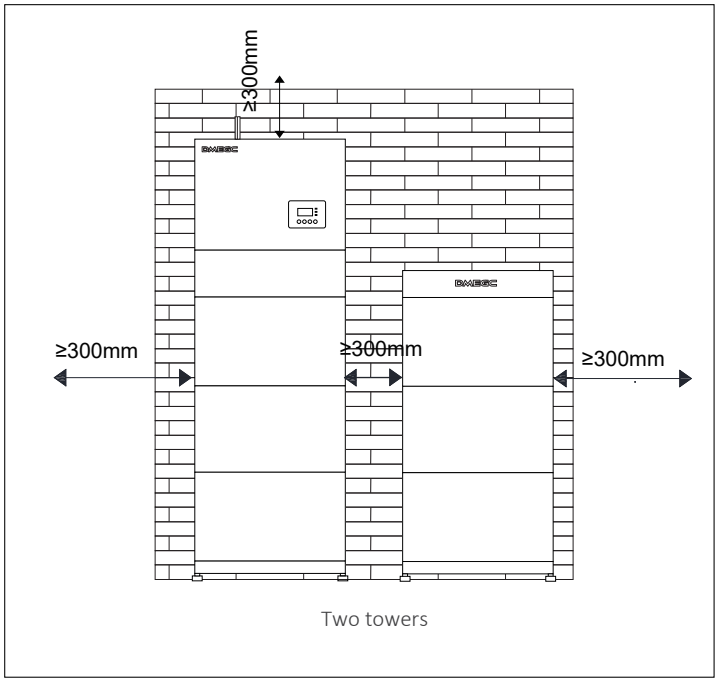
NOTICE	DM-INV-SPH(3.6-8)K/DM-INV-SPB5K inverter is only compatible with the H02 battery of DMEGC, independent installation is not supported.

5.3.5. Mounting space requirements

- Reserve sufficient clearance around the product to ensure sufficient space for installation, maintenance and heat dissipation.
- The side clearance is a recommendation. Keep the clearance as short as you can if there is no influence to the operation and maintenance.

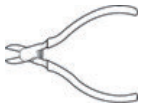
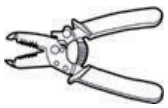


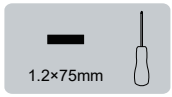
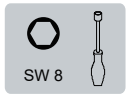
One tower



Two towers

5.4. Preparing tools and instruments

Category	Tools and Instruments		
Installation			
	Hammer drill (with a Φ10 mm drill bit)	Torque socket wrench SW10	Multimeter (DC voltage range ≥ 1000 V DC)
			
	Diagonal pliers	Wire stripper	T20 screwdriver(torque range: 0-5 N m)L＜200mm
			
	Rubber mallet	Utility knife	Cable cutter
			
	Crimping tool (model: PV-CZM-22100)	Cord end terminal crimper	Disassembly and Assembly Tool of PV connector
			
	Vacuum cleaner	Heat shrink tubing	Heat gun

			
	Marker	Measuring tape	Bubble or digital level
Personal Protective Equipment			
	Safety gloves	Safety goggles	Anti-dust respirator
			
	Safety shoes	Flat-Head Screwdriver	Socket Wrench

5.5. Mounting the product

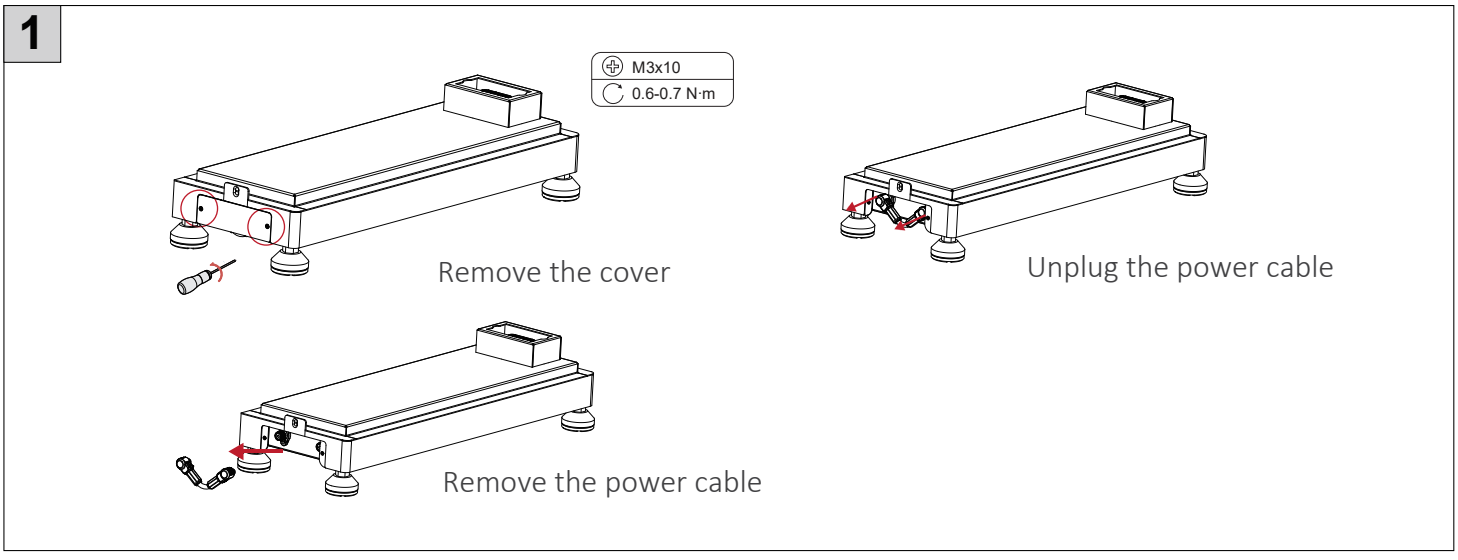
5.5.1. Mounting the battery

5.5.1.1. Mounting the battery H02

NOTICE

The mode of floor mounting is given priority for installation.
Take the installation procedure Option B (With 3 battery modules) as an example.

Step1: Remove the left side cover of the base, then remove and disconnect the power cable.

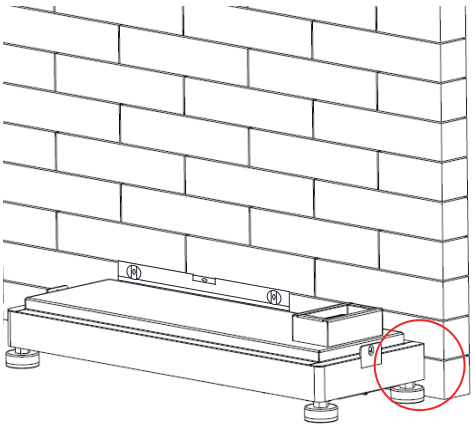


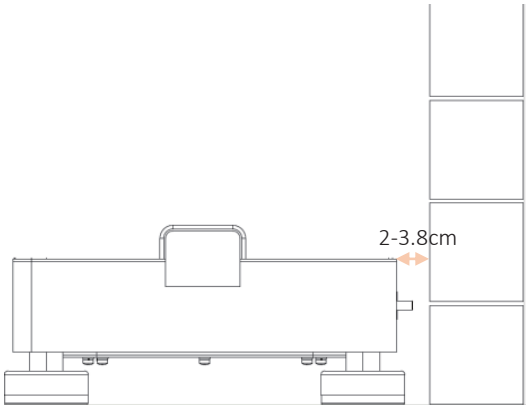
WARNING

Before installing the base, be sure to remove and disconnect the power cable to avoid accidental electric shock during battery installation.

Step 2: Place a spirit level to check whether the base is even. If yes, refer to the Step 4; if no, refer to the Step 3. The side with "square corner" shall be against the wall, locate the base 20 mm away from the wall.

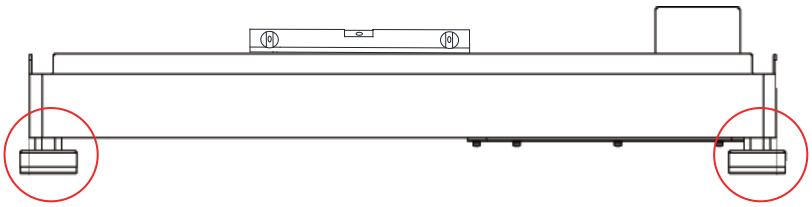
2





Step 3: Rotate the adjustment screws clockwise to ensure that it is even.
Turn clockwise to lower the base, and turn anticlockwise to raise the base.

3

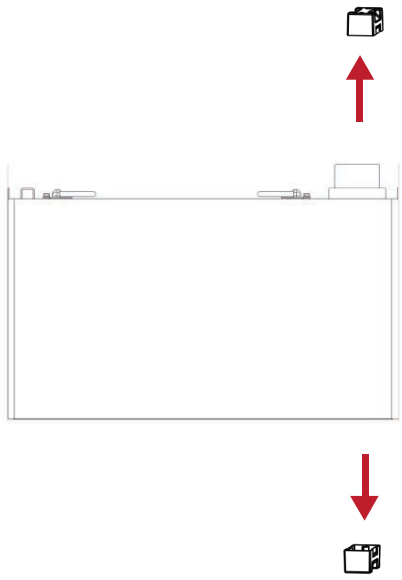


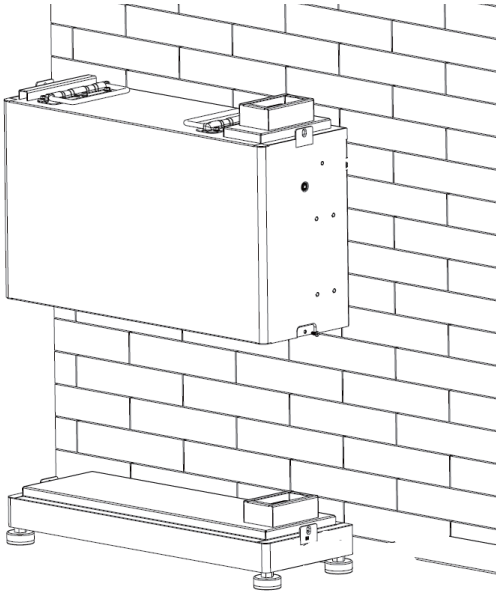
⚠ NOTICE

Use a spirit level to measure both side of the base to ensure that the base is even. If not, please rotate the adjustment screws by a hand to ensure that the base is even.

Step 4: Place a slave module on the base. Remove dustproof covers from the slave module before conducting installation.

4



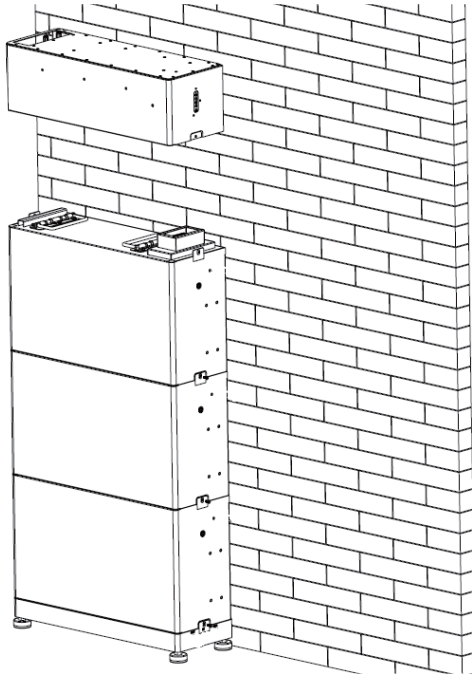


⚠ NOTICE

The dust cover can only be removed during installation and must be reattached after removing the battery.
Do not touch the terminals during installation or removal of the battery.
At least two persons are required to move the slave module.
Please ensure that the side with "square corner" shall be lean against the wall.

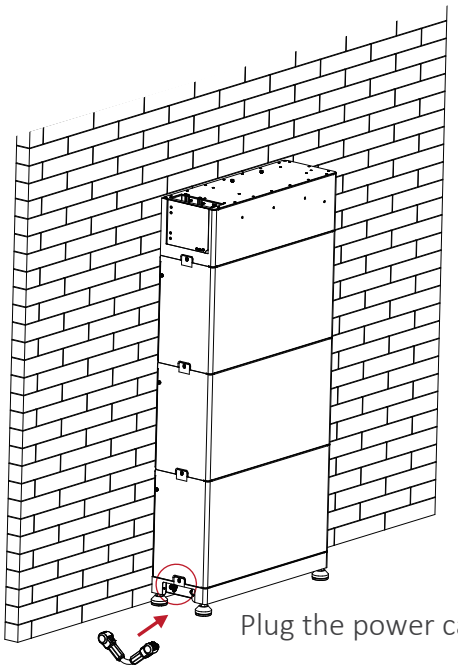
Step 5: Place the second and third slave modules, place the master module, and make sure that the corners and edges of the modules are aligned.

5

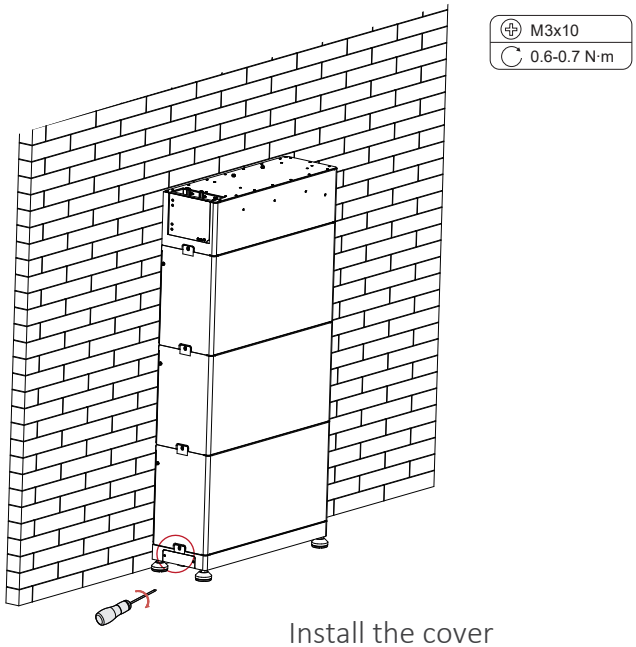


Step 6: Install the power cable, then install the left side cover.

6



Plug the power cable



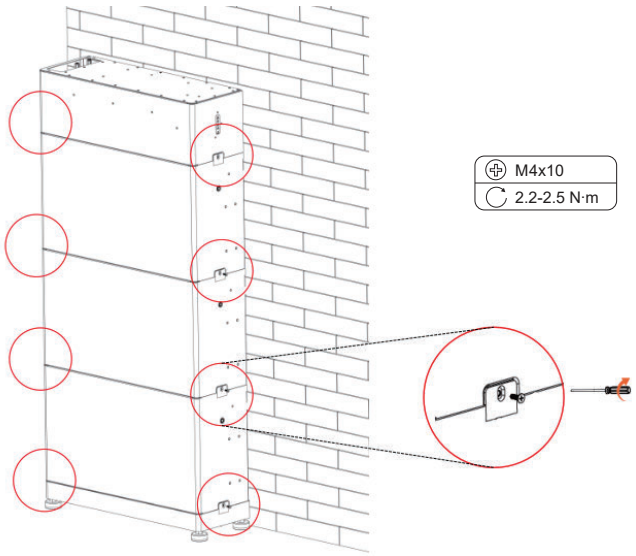
Install the cover

⚠ WARNING

Please ensure the battery is powered off before connecting or disconnecting the power cable.

Step 7: Insert and tighten M4×10 screws on both sides(torque: 2.2-2.5 N·m).

7

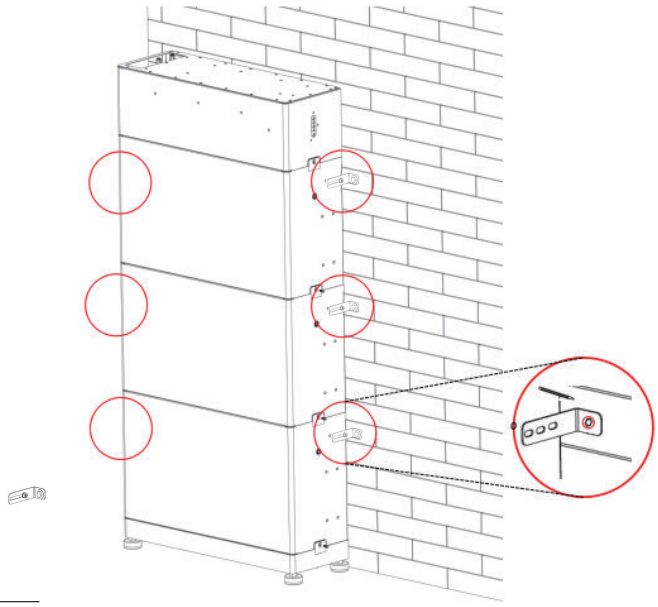


NOTICE

Please make sure that the corners and edges of the base and slave module are aligned before tightening screws.

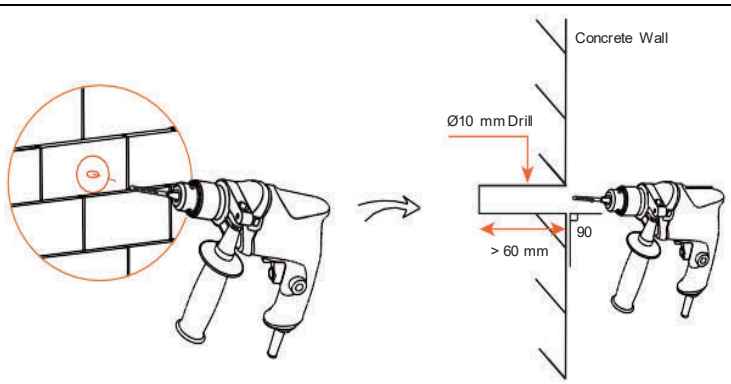
Step 8: Place the adjustable bracket on the wall, align the hole to the hole on the battery module; and mark the position of the mounting holes. Brackets on both sides of battery modules need to be installed.

8



Step 9: Remove the bracket, and then drill two holes at a depth of more than 60 mm in the concrete wall by using a Drill (Ø10 mm).

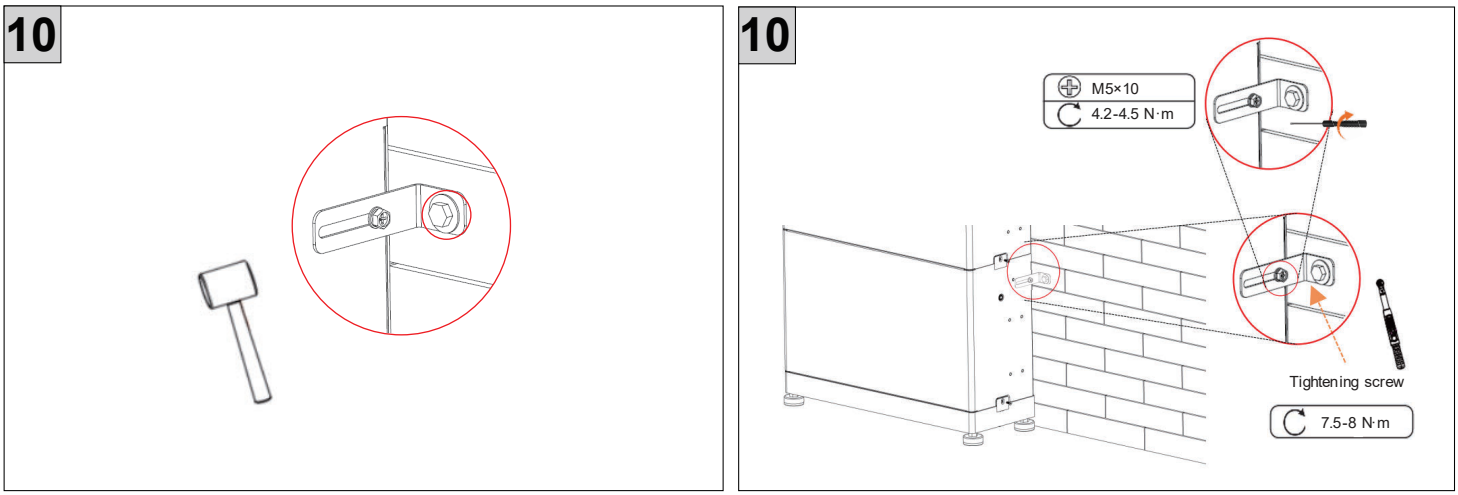
9



NOTICE

An electric drill dust collector is recommended.
When drilling holes, make sure the already installed part is covered to prevent dust from falling onto the device.

Step 10: Insert the expansion screws into two holes, tighten the screws to secure the bracket on the wall (torque: 7.5-8 N·m), and then tighten M5×12 screws on both sides (torque: 4.2-4.5 N·m).



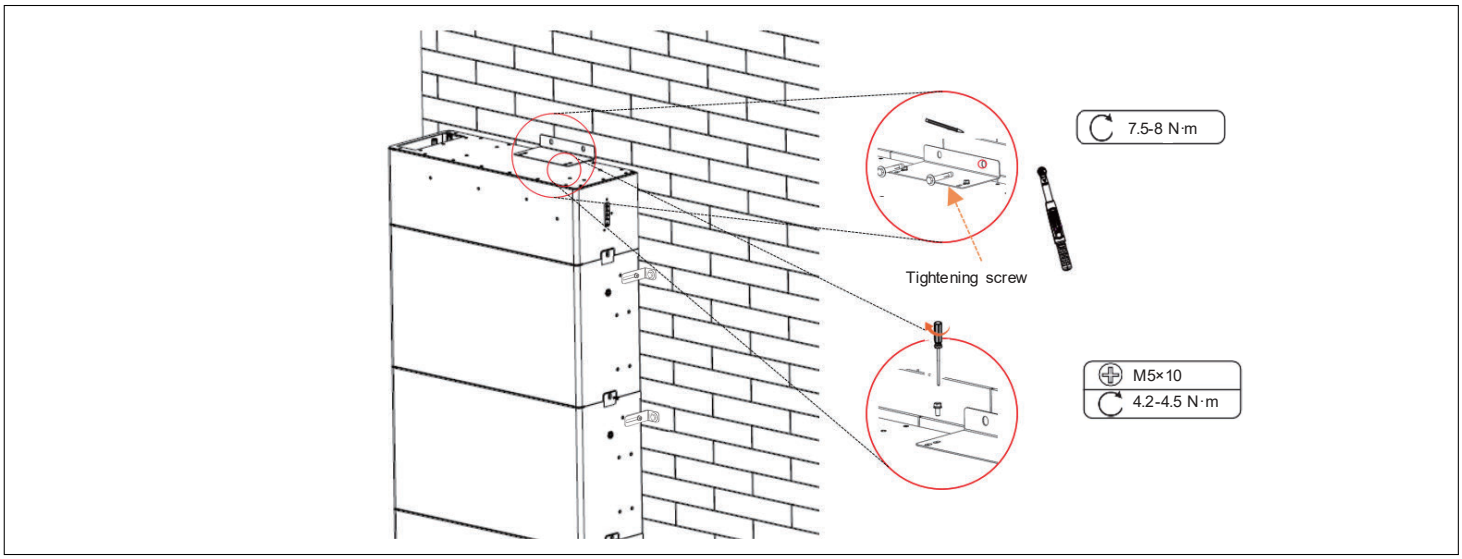
NOTICE

If the product is shifted before securing bracket, move it to its original location according to the mark previously drawn.

Step 11: Install the bracket of the top master module, place the bracket on the wall, align the hole to the hole on the master module; and mark the position of the mounting holes.

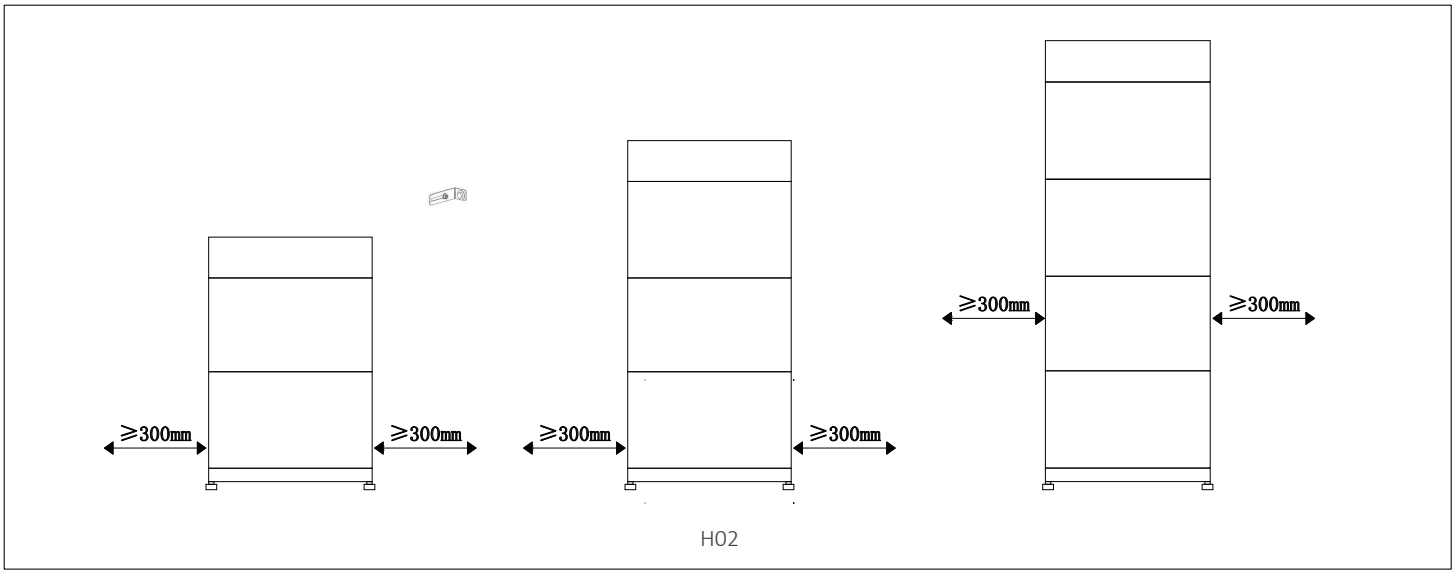
Remove the bracket, and then drill two holes at a depth of more than 60 mm in the concrete wall by using a Drill (Ø10 mm).

Insert the expansion screws into two holes, tighten the screws to secure the bracket on the wall (torque: 7.5-8 N·m), and then tighten M5×12 screws on the top of master module (torque: 4.2-4.5 N·m).



(a) This recommended value is for the location which is the middle hole of the wall bracket for the bottom battery.

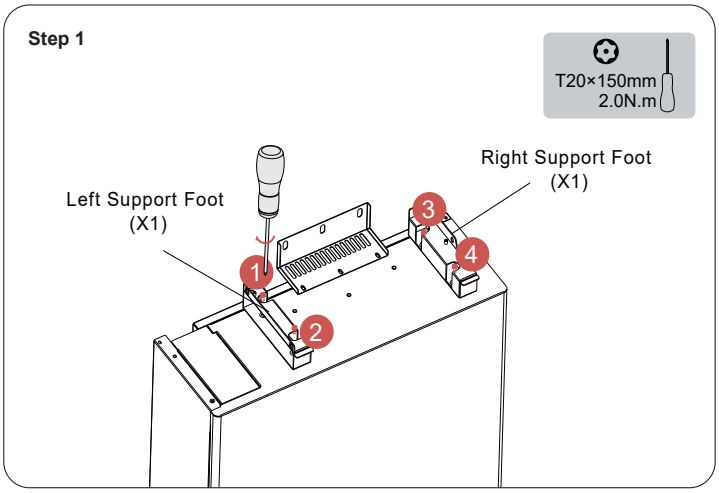
For mounting multiple batteries, please follow as above steps.
If you will install extra batteries by side, please keep the distance between two batteries greater than 300mm. You can install extra batteries up to 12 batteries in a system.

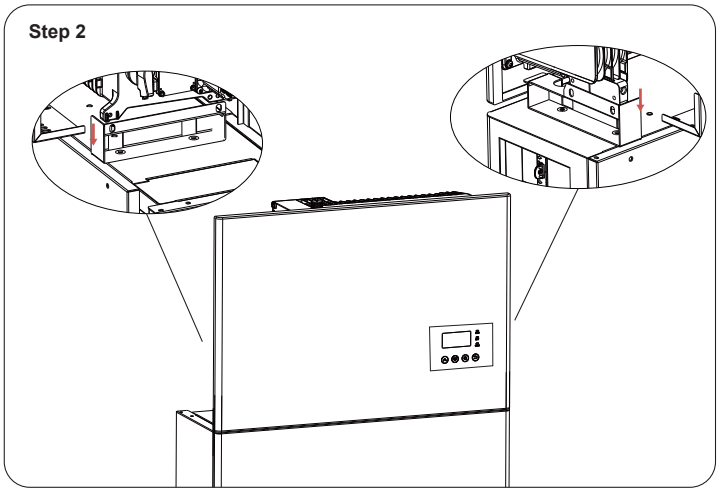


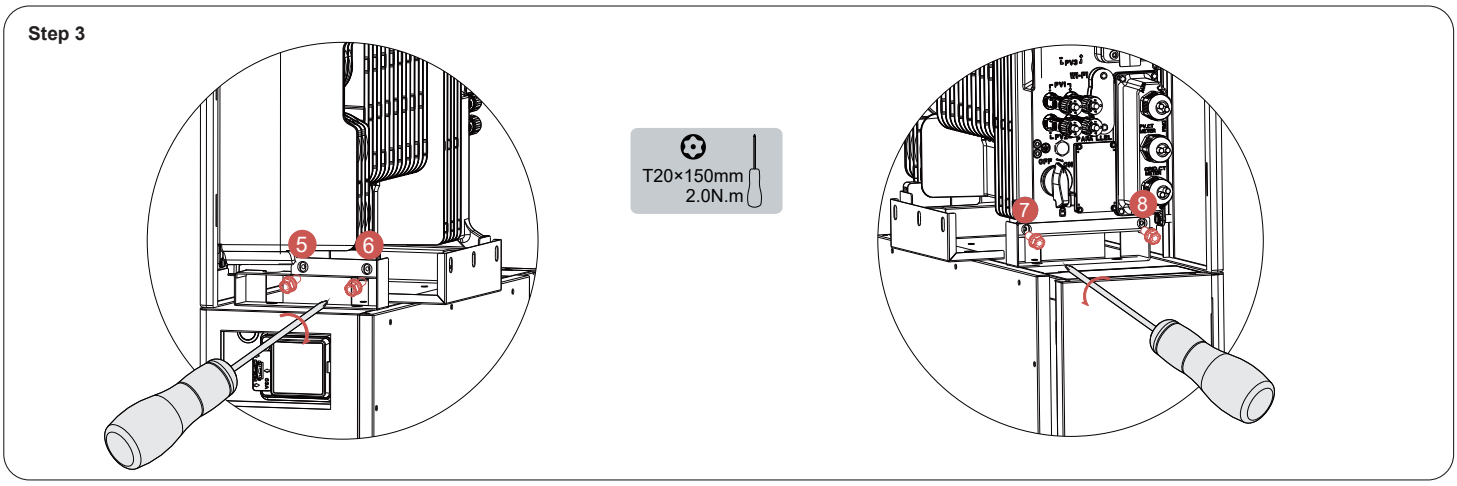
H02

5.5.2. Mounting the inverter

a.Fit the left and right side brackets onto the top of the battery.
b.Attach the inverter to the mounting bracket. Mount the supporting bracket at the bottom of the inverter.







NOTICE

DM-INV-SPH(3.6-8)K / DM-INV-SPB5K inverter is only compatible with the H02 battery of DMEGC, independent installation is not supported.

06 ELECTRICAL CONNECTION

Precautions

⚠ DANGER	Before connecting cables, ensure that all breakers of the inverter and the battery packs and all the switches connected to inverters and the battery packs are set to OFF. Otherwise, the danger voltage of the energy storage system may result in electric shocks.
⚠ WARNING	• The energy storage system damage caused by incorrect cable connections is not covered under any warranty. • Only certified electricians are allowed to connect cables. • Operation personnel must wear proper PPE when connecting cables.
NOTICE	• The cable colors shown in the electrical connection diagrams provided in this chapter are for reference only. • Select cables in accordance with local cable specifications (green-and-yellow cables are only used for PE).

6.1. Cable requirements for connection

No.	Cable	Type	Conductor Cross Section Area Range	Outer Diameter	Source
1	Battery power cable	Standard PV cable in the industry (reommended type:PV1-F)	H02-10mm2	N/A	Delivered with the battery
2	Battery communication cable	Standard network cable in the industry (recommended type: Cat5e, UTP, UV-resistant for outdoor use)	0.12-0.2 mm^2 (AWG26-AWG24)	N/A	Delivered with the battery
3※1	Signal cable	Standard network cable in the industry (recommended type: Cat5e, FTP, UV-resistant for outdoor use)	0.12-0.2 mm^2 (AWG26-AWG24)	N/A	Delivered with the inverter
4	PV Power cable	Standard PV cable in the industry (recommended type: PV1-F)	4-6 mm^2	5.5-9 mm	Purchased by the installer
5※2	Signal cable	Standard network cable in the industry (recommended type: Cat5e, FTP, UV-resistant for outdoor use)	0.12-0.2 mm^2 (AWG26-AWG24)	4-6 mm	Purchased by the installer
6※3	Signal cable	Multiple-core outdoor shielded twisted pair cable	0.1-1.3 mm^2	4-6 mm	Purchased by the installer
7	AC power cable for backup	Three-core (L, N and PE) outdoor copper cable	6-10 mm^2	12-18 mm	Purchased by the installer

No.	Cable	Type	Conductor Cross Section Area Range	Outer Diameter	Source
8	AC power cable for grid	Three-core (L, N and PE) outdoor copper cable	6-10 mm^2	12-18 mm	Purchased by the installer
9	PE cable	Single-core outdoor copper cable	6-10 mm^2	N/A	Purchased by the installer

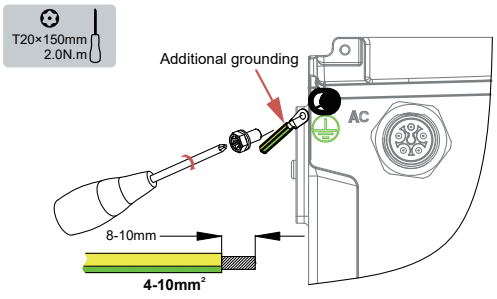
※1 For CT communication connection with inverter.
※2 For CAN/RS485, LAN, Meter, DRM communication connection with inverter.
※3 For AUX communication connection with inverter.

6.2. Connecting additional grounding

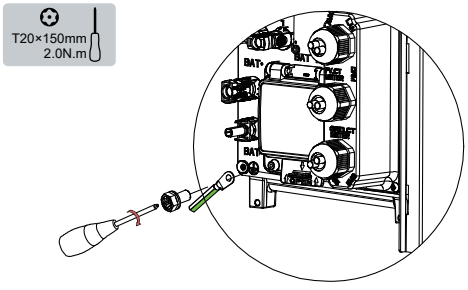
NOTICE	Electric Shock Hazard
Before doing electrical connection, please ensure the PV switch & all AC and BAT circuit breakers in the energy storage system are switched OFF and cannot be reactivated.	

External grounding points are provided at the left side of the inverter.
Prepare M5 OT terminals, strip the grounding cable insulation, insert the stripped part of the grounding cable into the ring terminal lug and crimp using a crimping tool.
Connect the OT terminal to grounding point using the torque 2.5 N.m with T20 screwdriver.
Additional grounding connection for inverter.

Step 1: Additional grounding connection

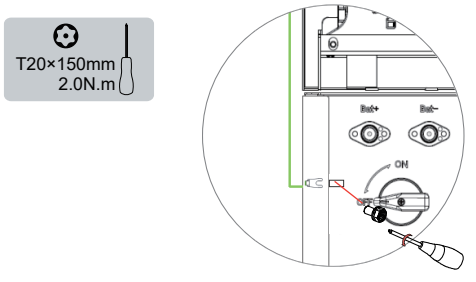


Step 2: Inverter grounding point with battery



Grounding connection between inverter and battery.

Step 3: Grounding connection for series battery



H02

6.3. AC connection

6.3.1. Requirements for the AC connection

NOTICE	Residual-current monitoring unit: If local regulations require the use of a residual-current device, or Hybrid-coupled storage system with big coupling capacity from the PV array and PV inverter, the following must be observed: The inverter is compatible with type B residual-current devices with a rated residual current of 30mA or less. Each inverter in the system must be connected to the utility grid via a separate residual-current device.
⚠ DANGER	You must protect each inverter with an individual grid/backup circuit breaker in order to ensure that the inverter can be disconnected safely.

Grid connection recommendation for INV-3.6K			
Description	Max. Current	Breaker Type for 3.6K	Recommend cable cross section
Grid Side	32 A	50 A	6 ~ 10 mm²
Backup Side	16 A	32 A	4 ~ 6 mm²

Grid connection recommendation for INV-5K			
Description	Max. Current	Breaker Type for 5K	Recommend cable cross section
Grid Side	43.5 A	63 A	10 mm²
Backup Side	21.7 A	32 A	4 ~ 6 mm²

Grid connection recommendation for INV-6K			
Description	Max. Current	Breaker Type for 6K	Recommend cable cross section
Grid Side	50 A	63 A	10 mm²
Backup Side	50 A	63 A	10 mm²

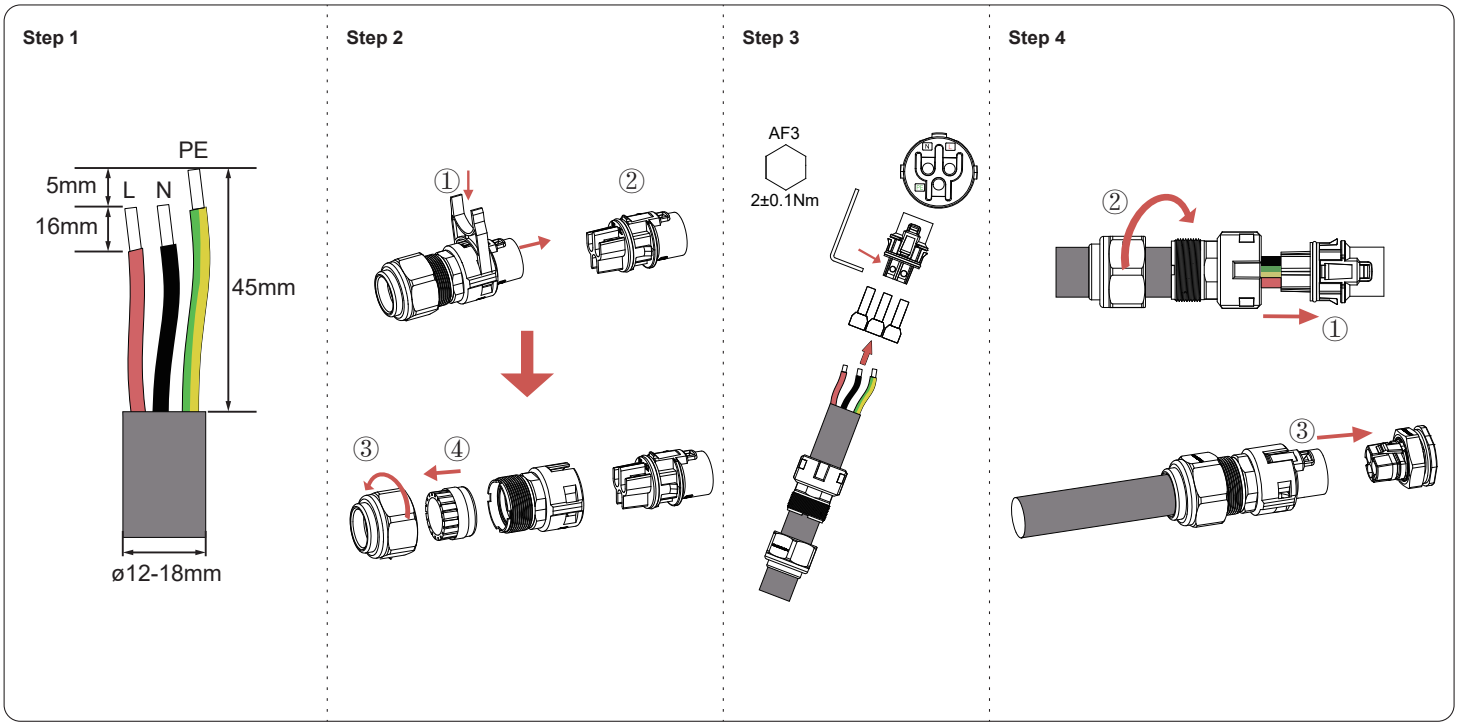
Grid connection recommendation for INV-8K			
Description	Max. Current	Breaker Type for 8K	Recommend cable cross section
Grid Side	50 A	63 A	10 mm²
Backup Side	50 A	63 A	10 mm²

⚠ WARNING	Selecting a circuit breaker and copper conductor cross section
For INV-6K/8K, the maximum allowable grid circuit breaker specification is 50A at the same time the copper conductor cross section for grid connection must be 10mm². You should use APP or cloud to do the right setting for example when selecting grid circuit breaker specification 50A and suitable copper conductor cross section, otherwise it increases the danger of the circuit breaker tripping under normal operating conditions.	

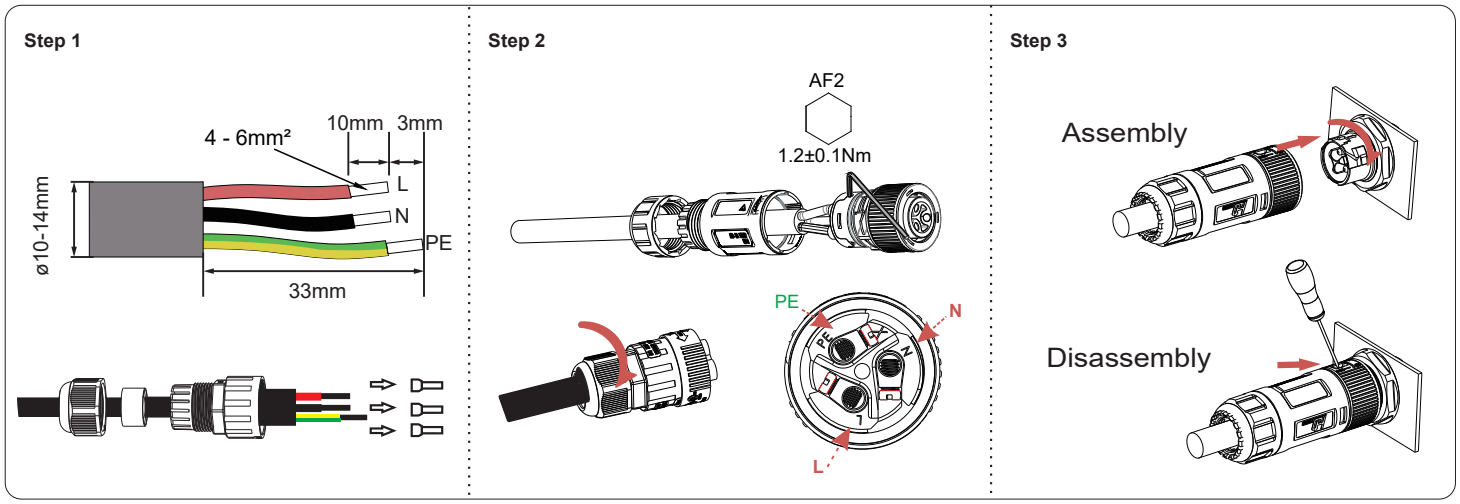
6.3.2. Grid and backup connection

Connecting grid/backup power cable

The wiring steps are also suitable for backup connection of INV-6K/8K.
Bush insert of backup connector of the INV-6K/8K is blue.
Bush insert of AC connector of the INV-6K/8K is black.



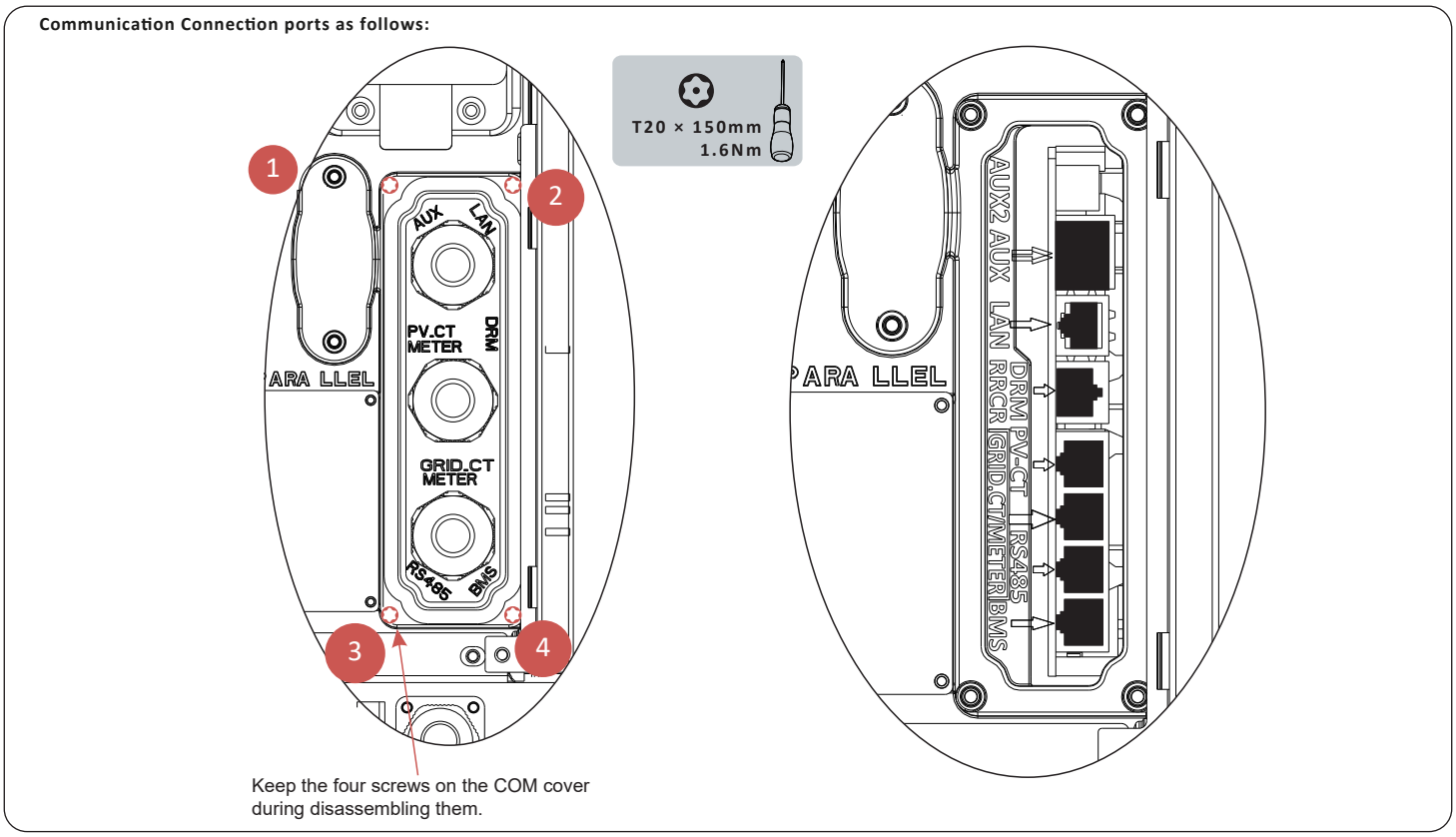
The wiring steps are only suitable for backup connection of INV-3.6K/5K.



6.3.3. CT & Electricity meter connection

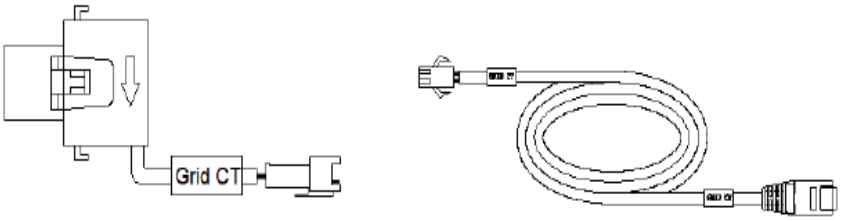
Model	Description	Current	Scenarios
CTSA016	100A/33.33mA	100A	CT

Loosen the swivel nuts of the cable glands on the COM connection cover of Inverter, and unscrew the 4 screws on the corners, then you will see the grid CT, PV CT and meter communication ports.

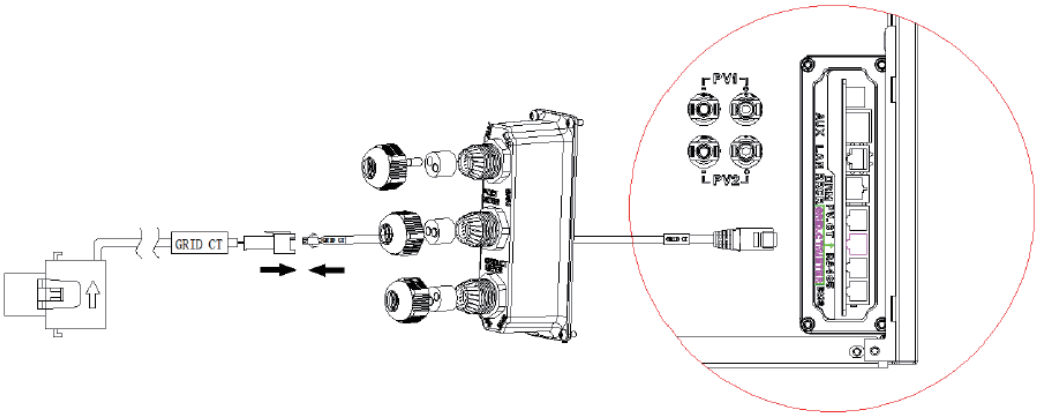


6.3.4. CT Connection

The Grid CT & cable and PV CT & cable are standard accessories, which are provided by inverter.
For hybrid-coupled or AC-coupled storage system application, installer needs to use Grid CT & cable and PV CT & cable.
For DC-coupled storage system application, installer only needs to use Grid CT & cable.



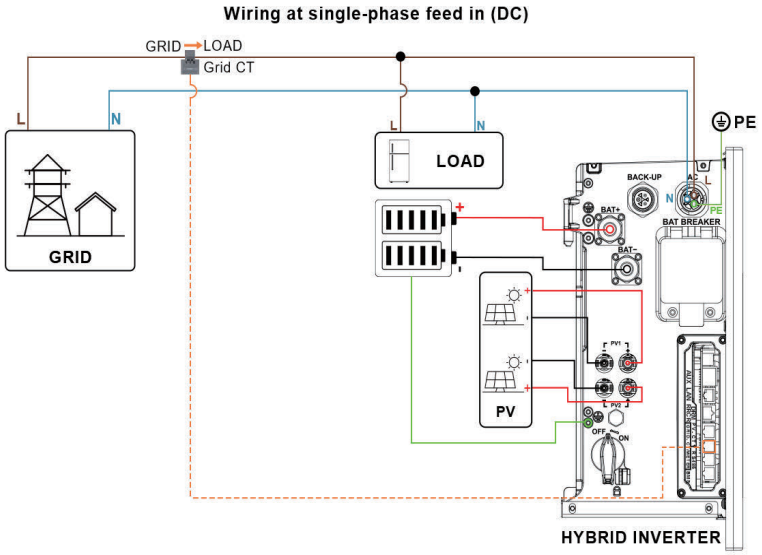
Please take out CT(s) from the package.
For DC-coupled storage system application
Step 1: Please take out Grid CT & cable from the package.
Step 2: Lead the grid CT cable through the cable gland of the COM connection cover, don't tighten the swivel nut of the cable gland.
Insert the RJ45 plug to the relative RJ45 socket with symbol "Grid CT".
Step 3: Buckle the magnetic buckle of the Grid CT on the house-service live cable.
The arrow on the magnetic buckle of the Grid CT should point to the Grid port of the inverter. Plug the two connectors of Grid CT and its cable.



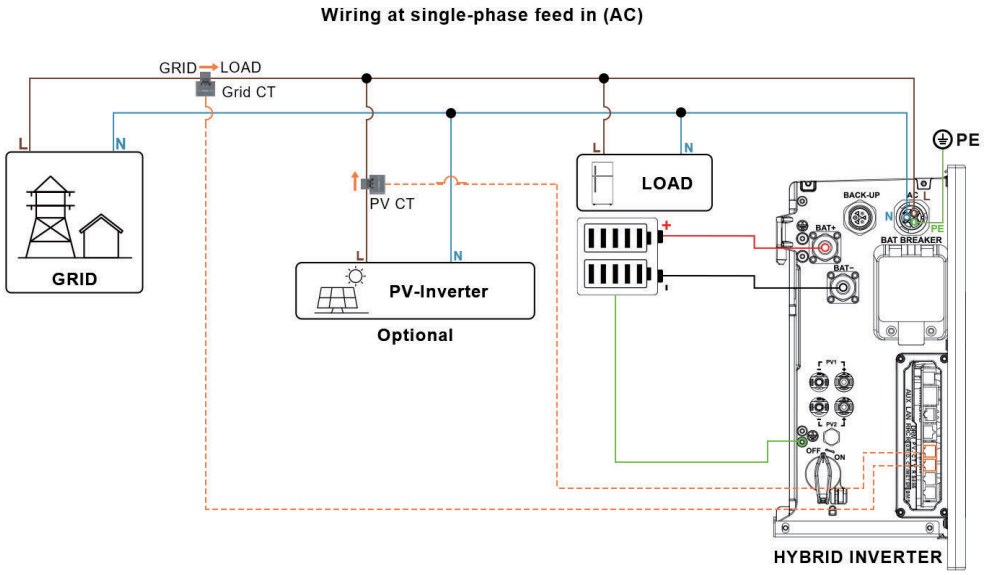
For AC-coupled storage system application
Step 1: Please take out Grid CT & cable and PV CT & cable from the package.
Step 2: For Grid CT connection, please do it as above steps.
Step 3: For PV CT connection, please do it as follows.
Lead the PV CT cable through the cable gland of the COM connection cover, don't tighten the swivel nut of the cable gland.
Insert the RJ45 plug to the relative RJ45 socket with symbol "PV CT".
Step 4: Buckle the magnetic buckle of the PV CT on the live cable of the installed PV inverter. The arrow on the magnetic buckle of the PV CT should point to the mains grid.
Plug the two connectors of PV CT and its cable.

NOTICE	The CT cable marked Grid CT should be connected to the Grid CT, and the CT cable marked PV CT should be connected to the PV CT.

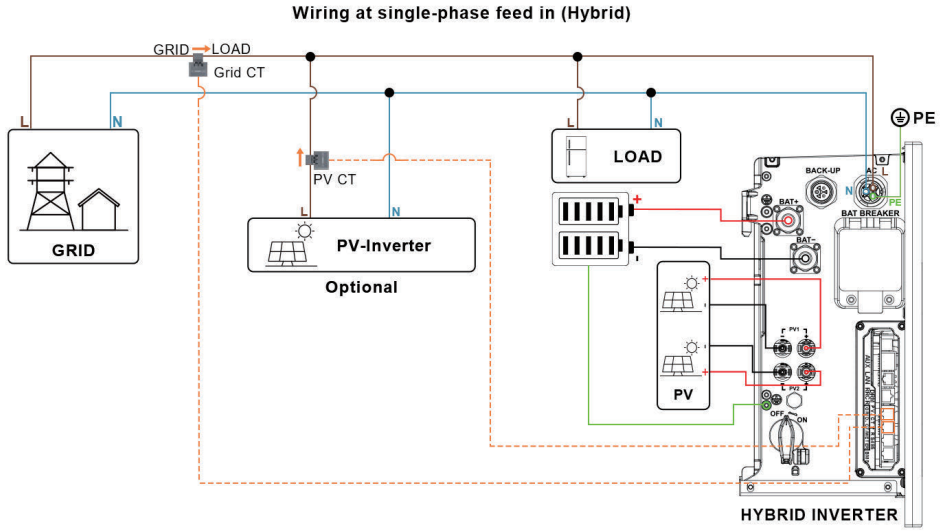
1.Wiring at single-phase feed in:



DC-coupled storage system

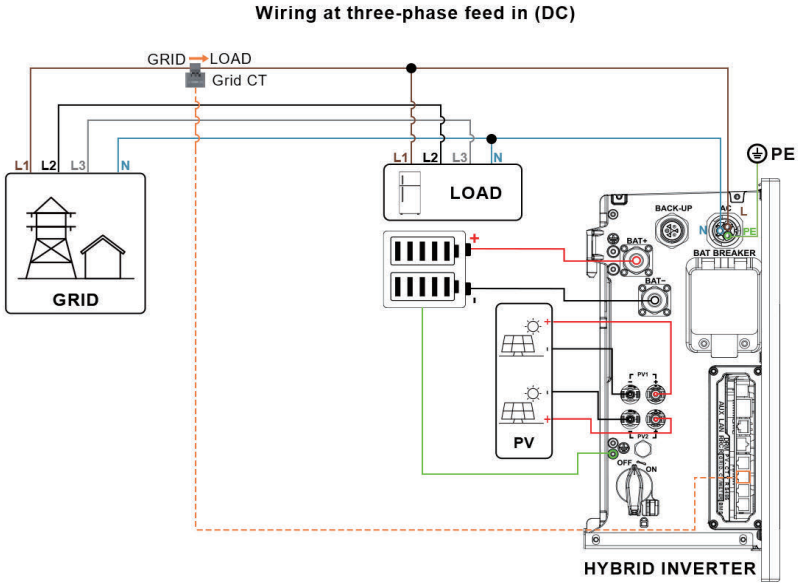


AC-coupled storage system

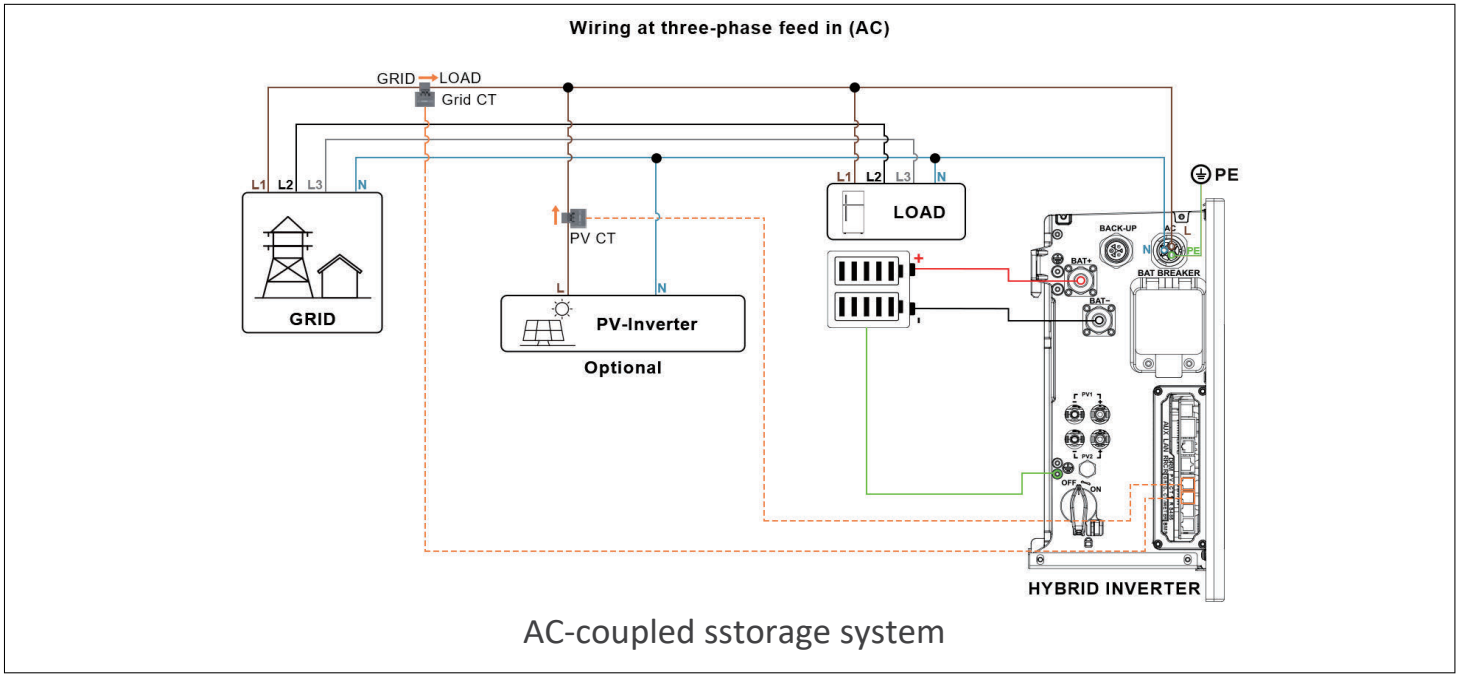


Hybrid-coupled storage system

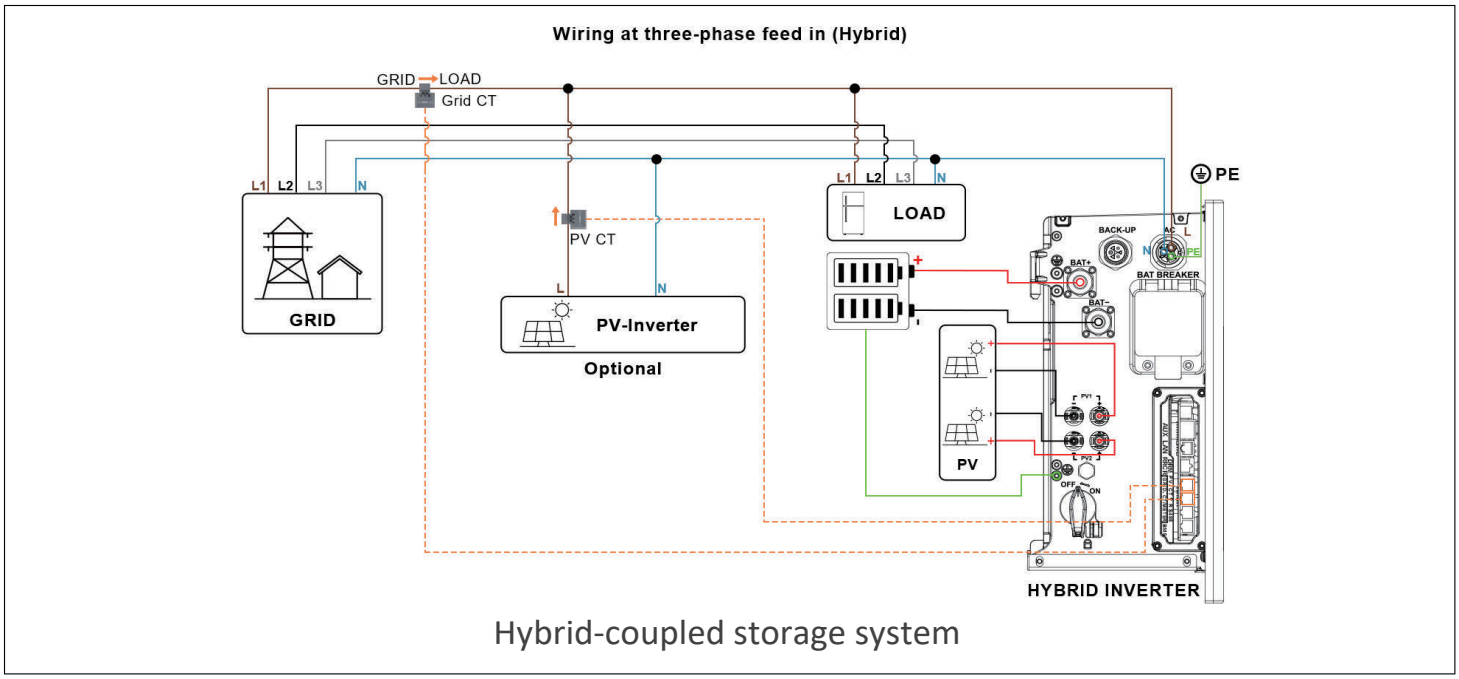
2.Wiring at three-phase feed in:



DC-coupled storage system



AC-coupled sstorage system



Hybrid-coupled storage system

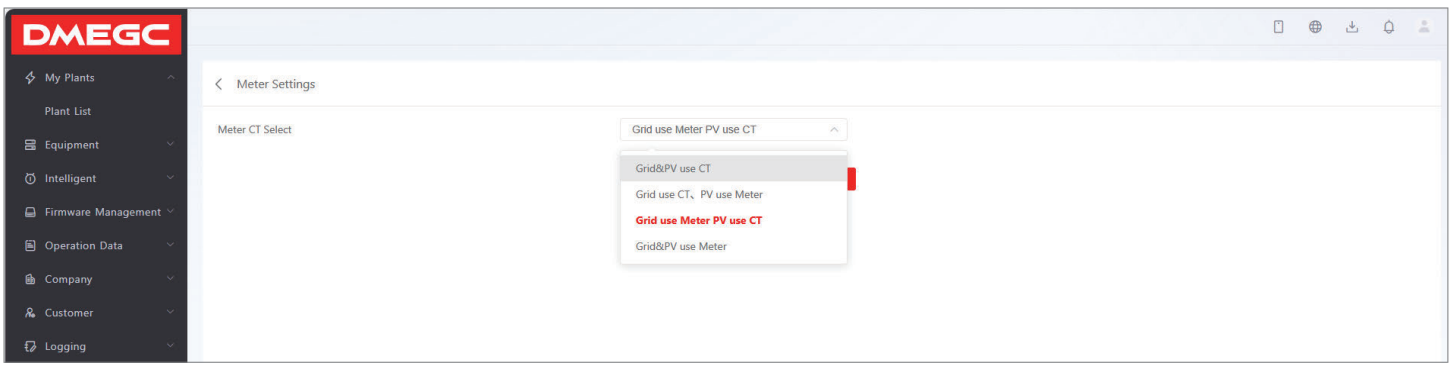
Meter Setting on DMEGC Cloud

Step 1:

If the inverter uses CT to monitor the power on the grid or PV inverter side, click"Grid&PV use CT".
If the inverter uses Meter to monitor the power on the grid or PV inverter side, click"Grid&PV use Meter".

Step 2:

Click "Save" and wait a few minutes to refresh the page.

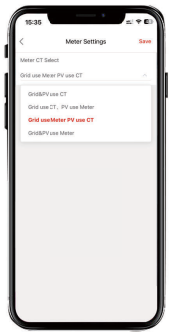


Meter Setting on "DMEGC" APP

Step 1:

If the inverter uses CT to monitor the power on the grid or PV inverter side, click"Grid&PV use CT".

If the inverter uses Meter to monitor the power on the grid or PV inverter side, click"Grid&PV use Meter".



Step 2:

Click "Save", the setting is successful.

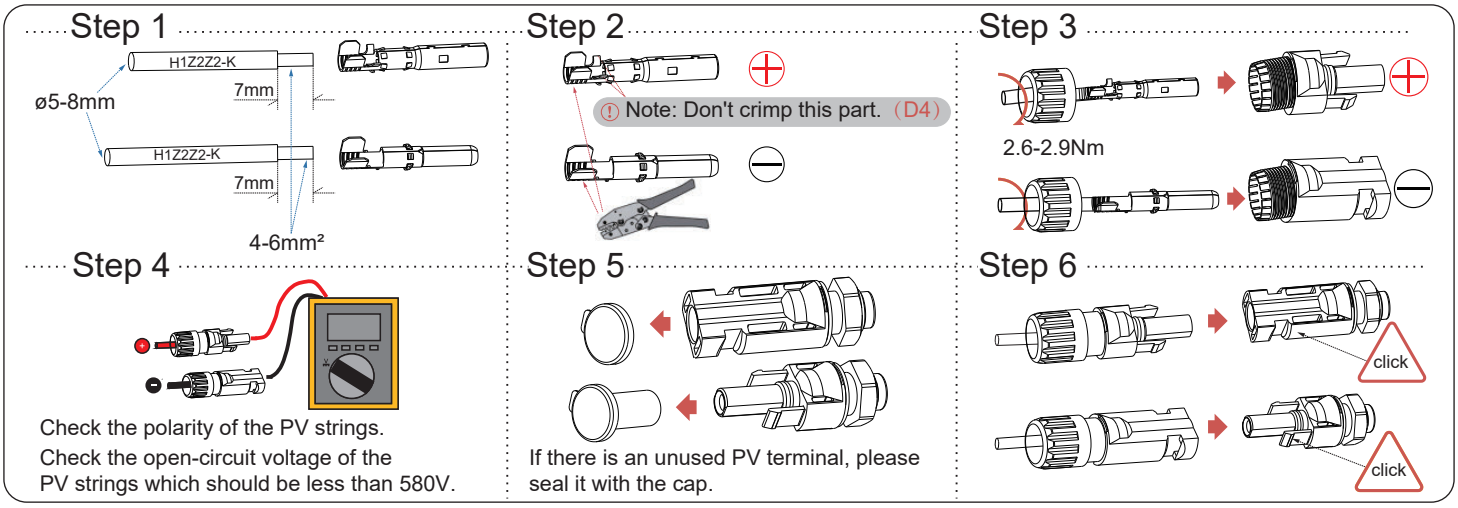
6.4. PV connection

Please ensure the follows before connecting PV strings to the Hybrid inverter:

- Make sure the open voltage of the PV strings will not exceed the max. DC input voltage (580-Vdc). Violating this condition will void the warranty.
- Make sure the polarity of the PV connectors is correct.
- Make sure the PV-switch, breakers of battery, AC-BACKUP and AC-Grid are all in their off-states.
- Make sure the PV resistance to ground is higher than 200k ohm.

The inverter uses the Vaconn D4/MC4(optional) PV connectors. Please follow the picture below to assemble the PV connectors.

PV conductor cross section requirements: 4-6 mm^2.

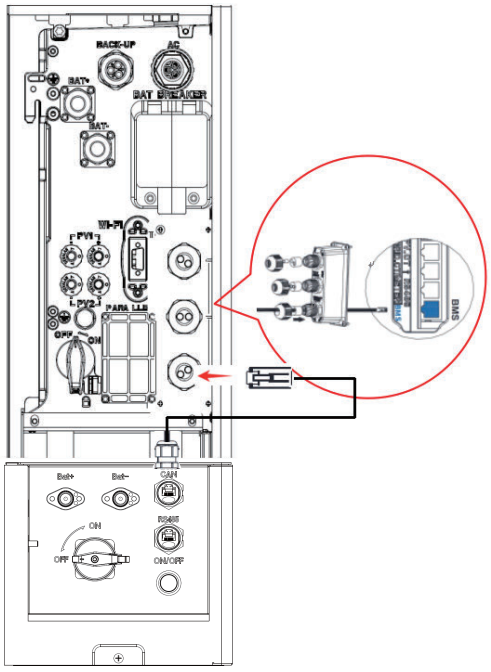


6.5. Electrical connection between the inverter and battery packs

6.5.1. Electrical connection between the inverter and battery

Communication cable connection:

a. Take out the battery communication cable from the battery package.
b. Lead the battery communication cable through the cable gland of the COM connection cover of inverter, don't tighten the swivel nuts of the cable glands, insert the RJ45 plugs to the BMS communication port.
c. The battery communication ports of Battery series are on the side of the battery, unscrew the 4 screws of the communication panel and remove it.
d. Loosen the swivel nut of the cable gland on the battery communication panel, lead the battery communication cable through the cable gland, insert the RJ45 plugs to the BMS communication port of Battery series.
e. Tighten the 4 screws of the communication panel, then tighten swivel nut of the cable gland.

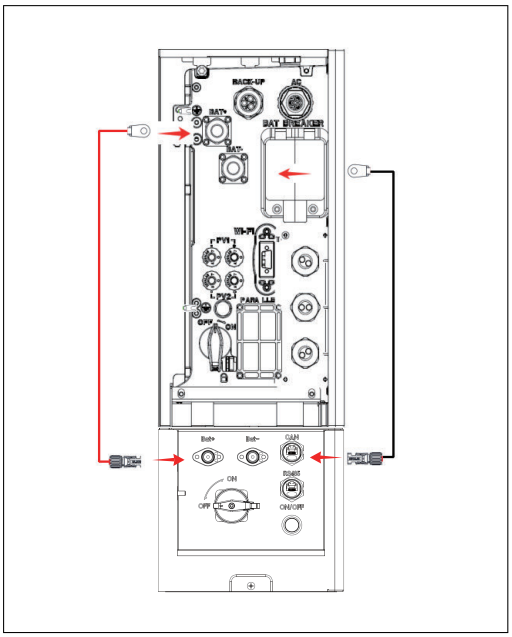


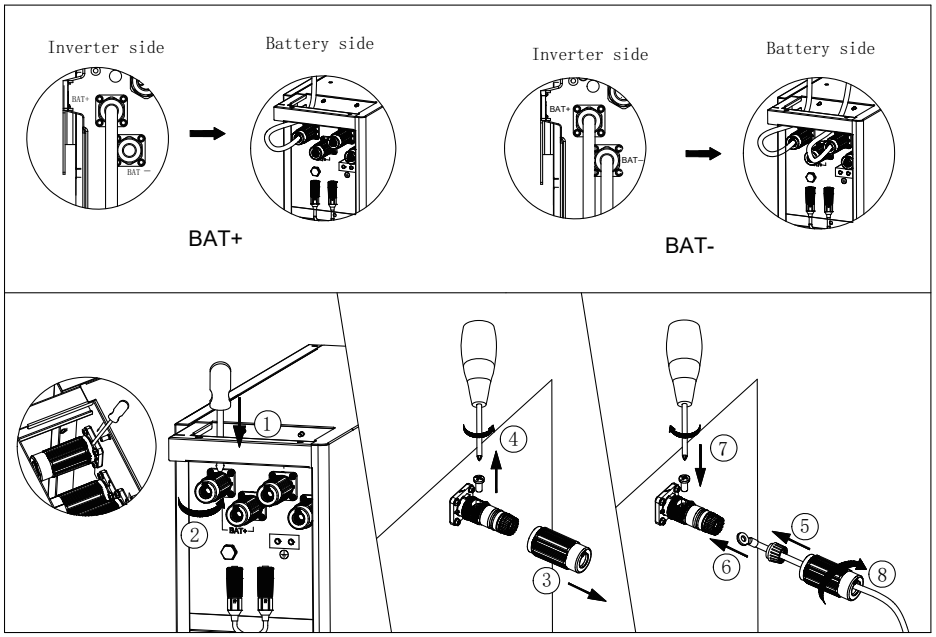
DANGER Danger to life due to short-circuiting of the battery

Touching the short circuit connection of the battery results in death or lethal injuries due to electric shock and massive energy release. Switch off the battery breaker which is located at the top-right of the battery.
Please connect both ends of one battery power cable completely before connecting the next power cable to avoid short circuit of the positive and negative battery power cables.

Power cable connection:
a. Take out the battery power cables from the battery package.
b. Remove the protective caps from the battery power connectors.
c. Connect the battery power cables to the inverter and battery packs.
Please pay attention to the cable polarity, red cable is for battery positive.

NOTE Before connecting the battery power cables,Replace the connector terminal at one end of the power cable in the attachment with the Amphenol H4P connector.





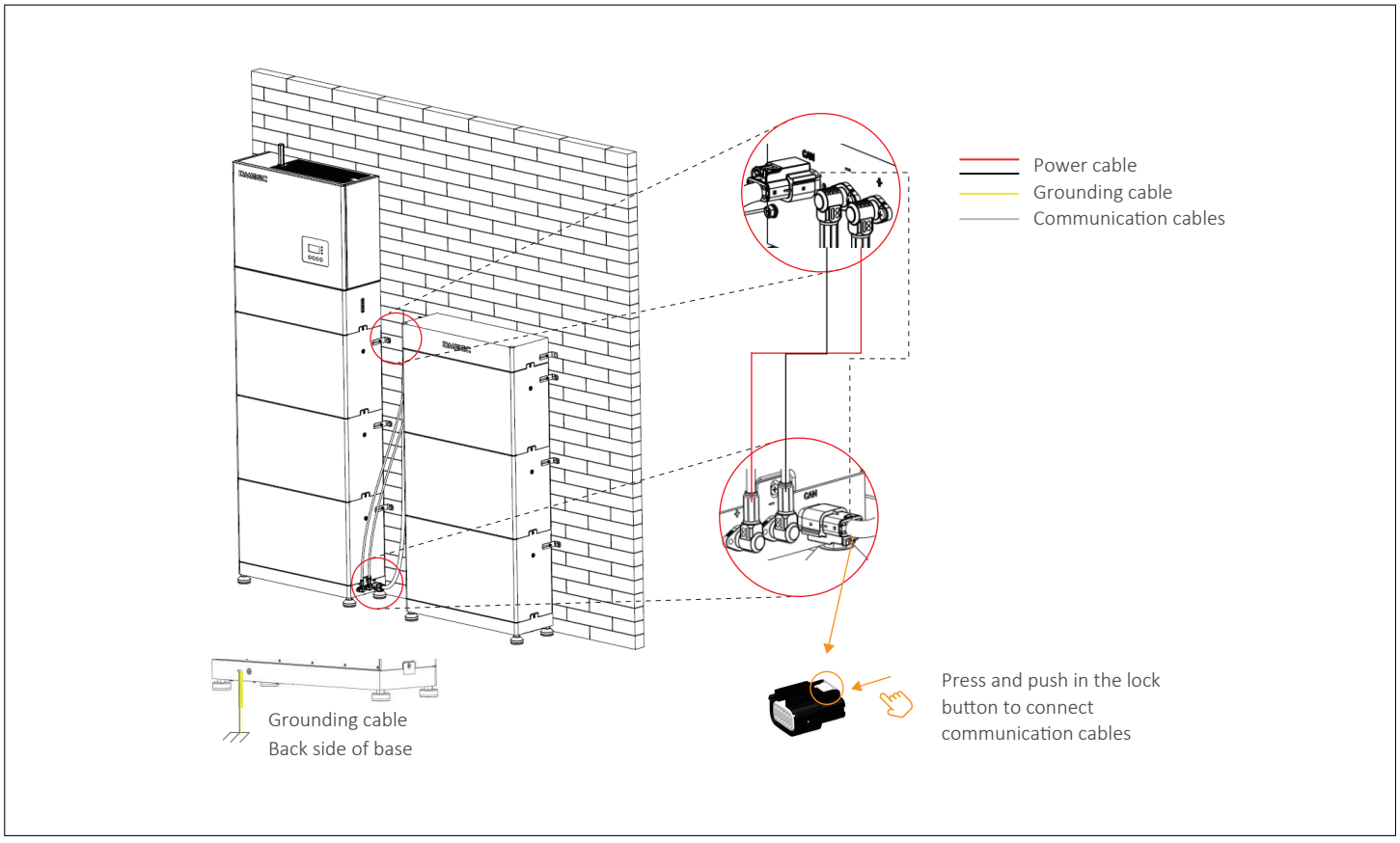
6.5.2. Electrical connection between batteries

For electrical connection between multiple battery packs, please follow steps as chapter 6.5.1. Electrical Connection between the Inverter and First Battery.
For grounding connection between batteries, please refer to Chapter 6.2. Grounding Connecting.
You can install extra batteries up to 6 batteries in a system. Please install extra batteries by side.

NOTICE

- Connect the cables between the batteries, route them from the rear side of the battery when two batteries mounting side by side.
- In the case of one tower, the base does not need to conduct wiring.
- The wiring procedure for both floor mounting and wall mounting is the same.
- Take the wiring procedure of two towers in floor mounting as an example.

Connect + of the series base to + of the series box;
Connect - of the series base to - of the series box;
Connect CAN port of the series base to CAN port of the series box;
Connect the grounding port of the base to the ground.

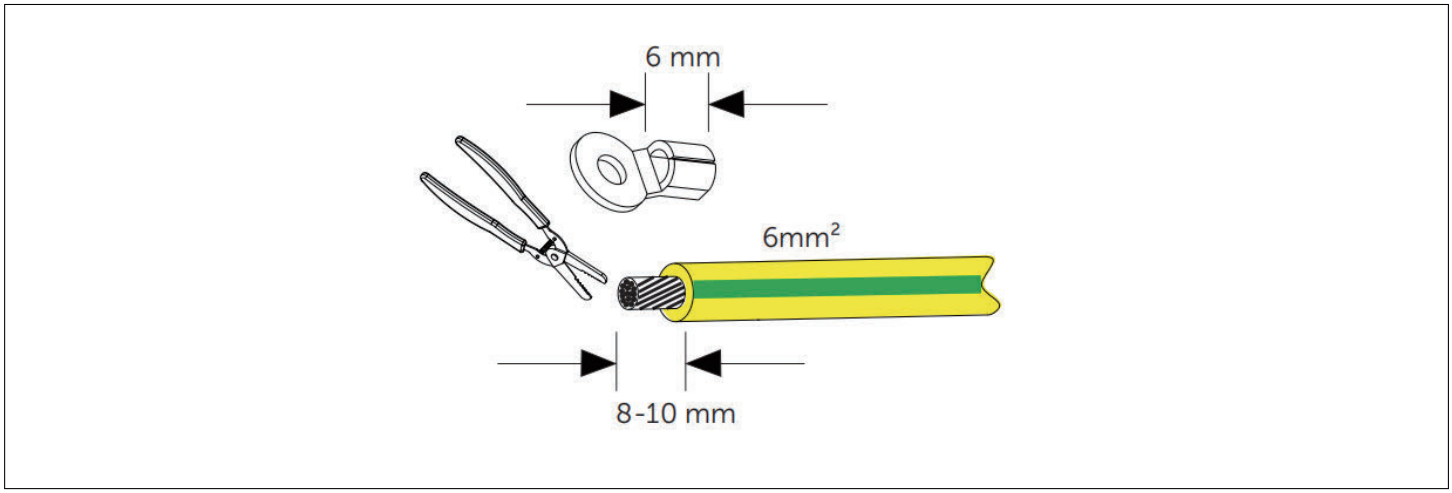


6.5.3 PE Connection

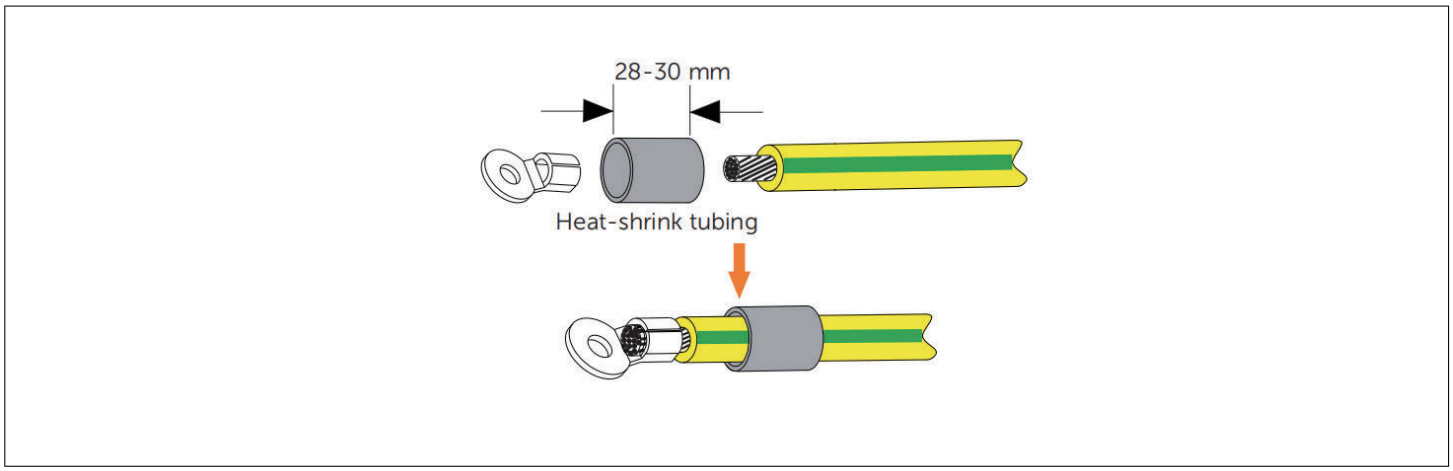
The battery must be reliably grounded. The PE connection point has been marked with ⏚ It is recommended to connect the battery to a nearby grounding point. For a system with multiple battery towers connected in series, connect the ground points of all battery towers to ensure equipotential connections to ground cables.

PE Connection Procedures

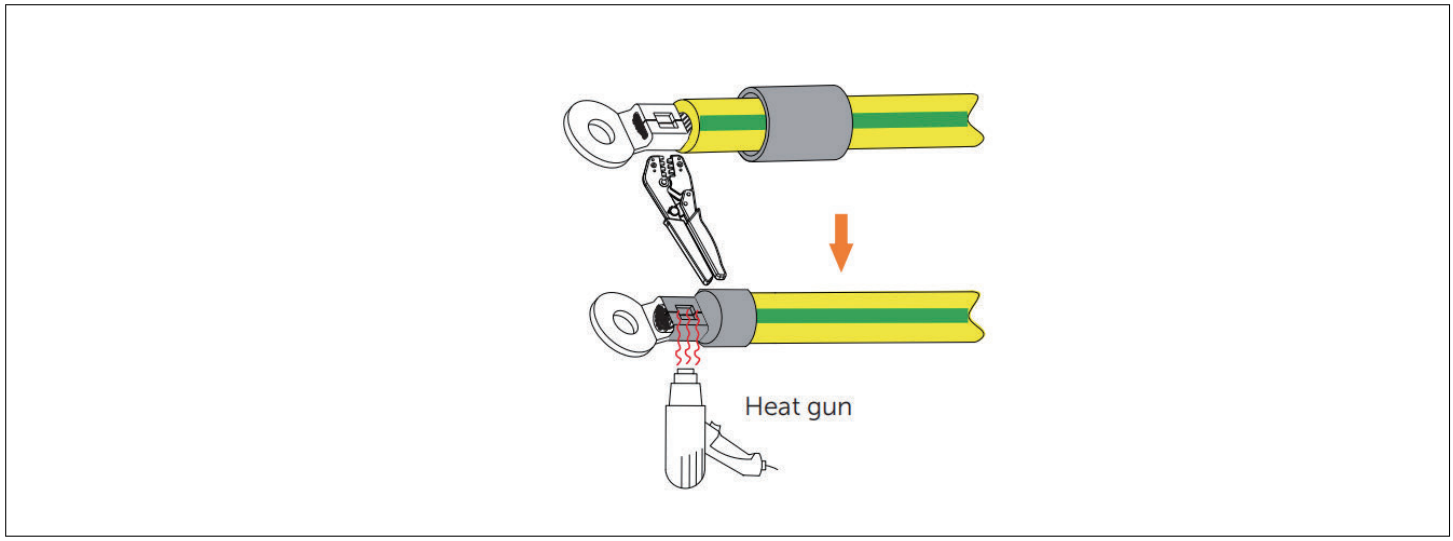
Step 1: Strip the PE cable by wire stripper;



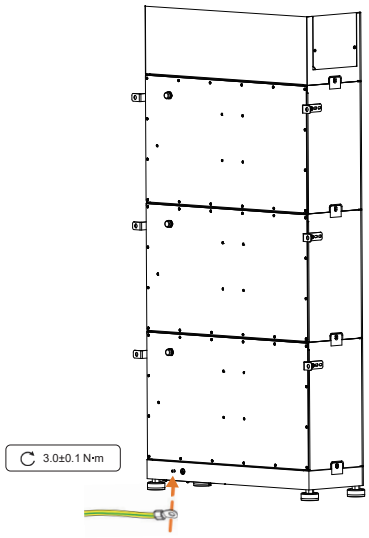
Step 2: Pull the heat-shrink tubing over the PE cable and insert the stripped section into OT terminal;



Step 3: Crimp OT terminal with crimping tool, pull the heat-shrink tubing over the stripped section of the OT terminal and use a heat gun to shrink it so that it can be firmly contacted with the terminal;



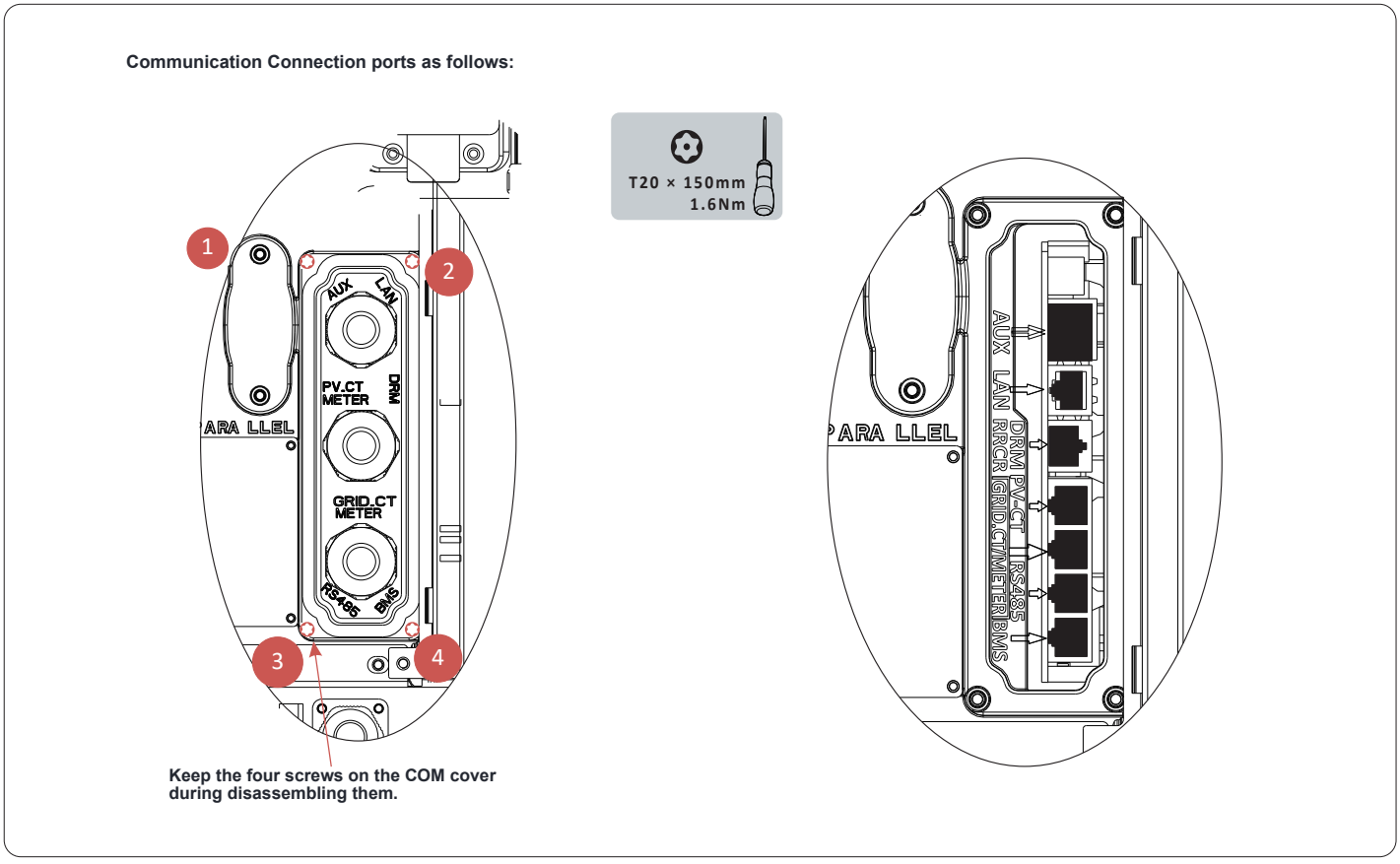
Step 4: Connect the PE cable to the battery base of each tower, and secure the M5 nut (Torque: 3.0±0.1 N·m).



Back side of the battery

6.5.4. AUX/LAN/PV-CT/DRM、RRCR/GRID-CT、Meter and RS485 connection

For other communication (AUX, DRM, PV-CT,RRCR/Grid-CT, Meter and RS485) connection, please follow the below steps.

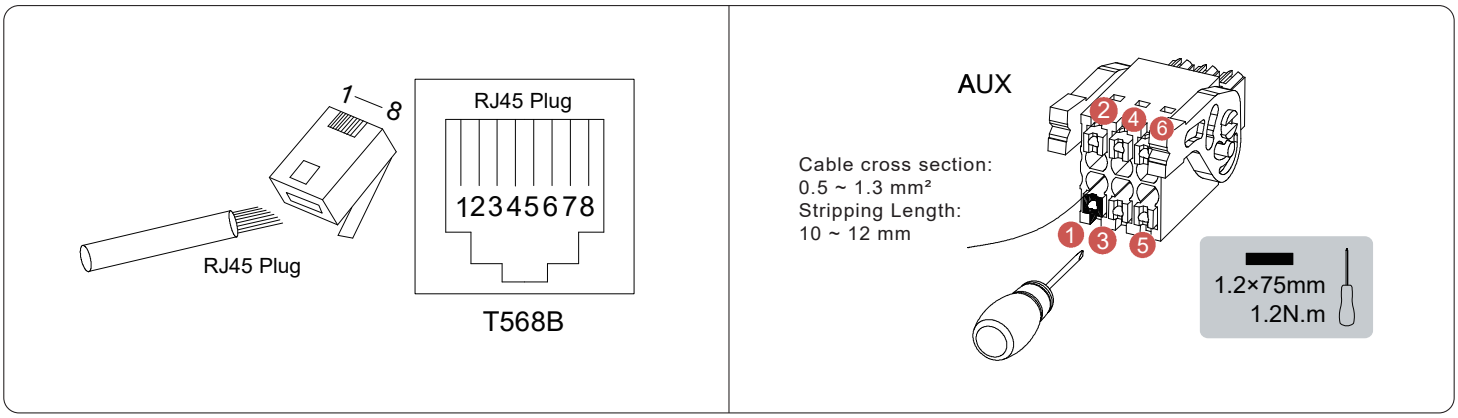


1. Loosen the cable glands on the COM connection cover, and then unscrew the 4 screws on the COM connection cover.

2. Lead the communication cables through the cable glands of the COM connection cover, don't tighten the swivel nuts of the cable glands.
   Insert the RJ45 plugs to the relative RJ45 sockets.

1) For meter wiring, refer to Chapter 6.3.5 for Meter Connection.
2) If DRM support is specified, the system may only be used in conjunction with a Demand Response Enabling Device (DRED). This ensures that the system implements the commands from the grid operator for active power limitation at all times. The system and the Demand Response Enabling Device (DRED) must be connected in the same network.

   Only DRM0 is available for Inverter.
3) Take out 6 pin terminal block for AUX connection. To do wiring connection, insert a screwdriver (blade width: 1.2 mm) into the relative connection position side.
   For AUX position definition, please see the AUX wiring documentation.



3. Place the COM connection cover against the inverter housing and tighten the 4 screws, at last secure the swivel nut of the cable glands.

The pin definition of the communication ports:

AUX	1	2	3	4	5	6		
	DO1_N	DO1_COM	DO1_NC	DI_negative	DI_positive	GND		
DRM	1	2	3	4	5	6	7	8
	DRED 1/5	DRED 2/6	DRED 3/7	DRED 4/8	REF GEN/0	COM LOAD/0	/	/
PV_CT	1	2	3	4	5	6	7	8
	PV_CT-	PV_CT+	RS485_A7	NC	NC	RS485_B7	NC	NC
GRID_CT /METER	1	2	3	4	5	6	7	8
	GRID_CT-	GRID_CT+	RS485_A7	NC	NC	RS485_B7	NC	NC
RS485	1	2	3	4	5	6	7	8
	13.5V	DEBUG_RXD_COM	GND	RS485_B5	RS485_A5	NC	DEBUG_TXD_COM	NC
BMS	1	2	3	4	5	6	7	8
	NC	RS485_A4	NC	CAN1_H	CAN1_L	NC	RS485_B4	NC

07 INSTALLER ACCOUNT REGISTER AND INSTALL NEW SYSTEM

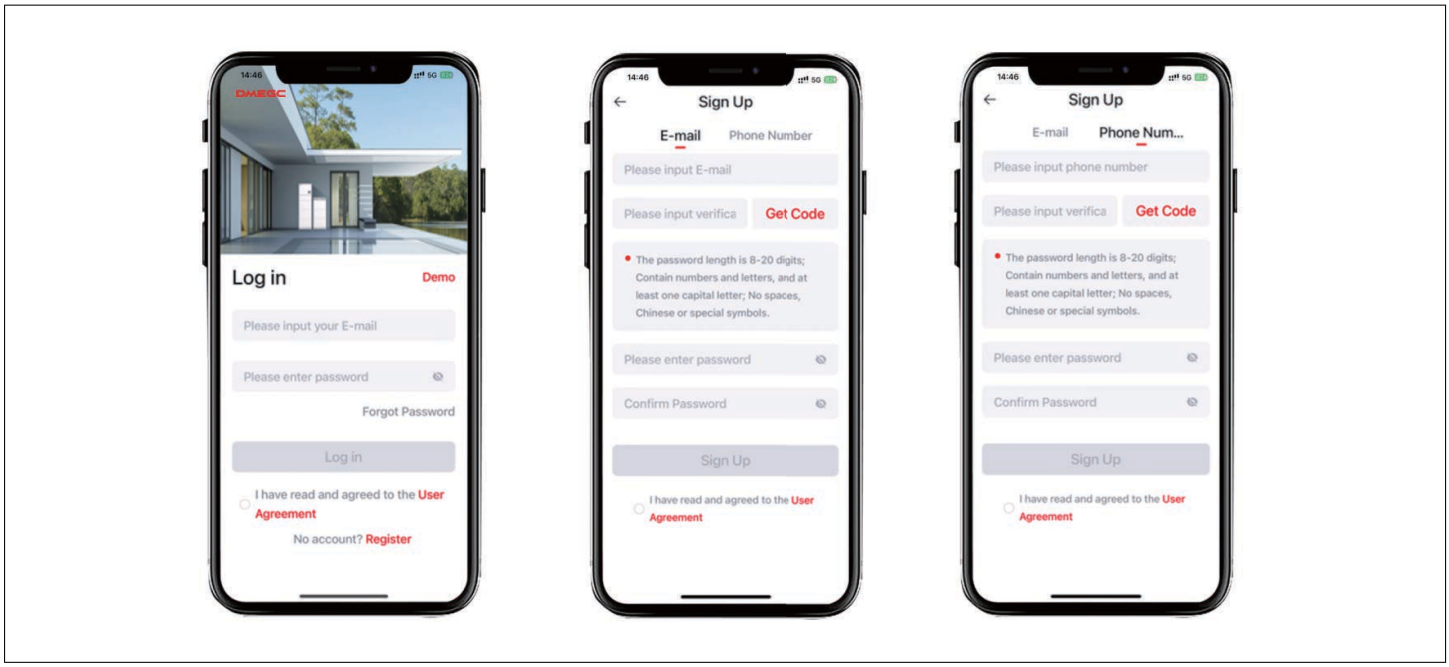
7.1. Register on app

7.1.1. Download and install app

1. Android device users can download the"DMEGC" App through major Android application markets such as Google Play.
2. IOS device users can search for "DMEGC" in App Store and download the App.

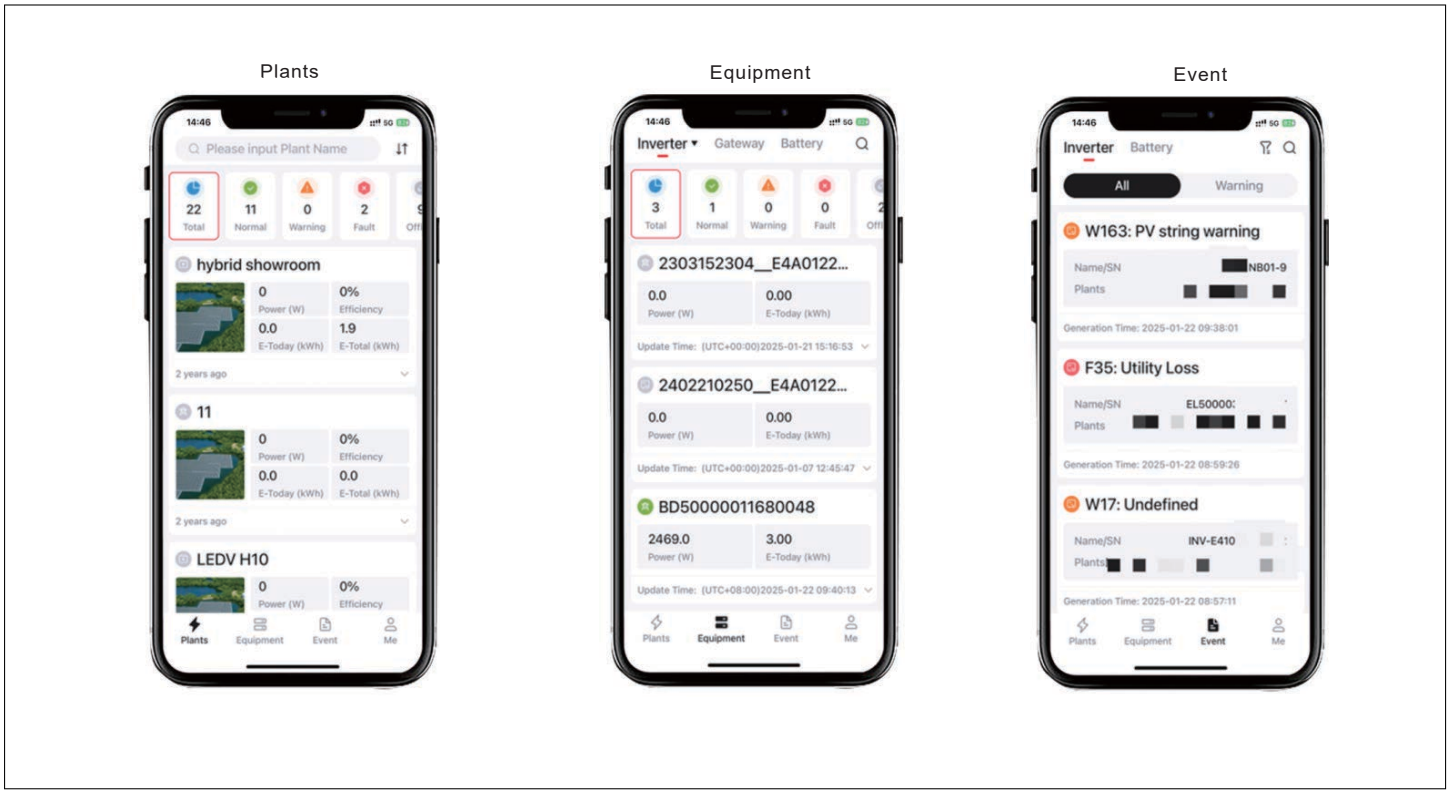
7.1.2. Register as installer account

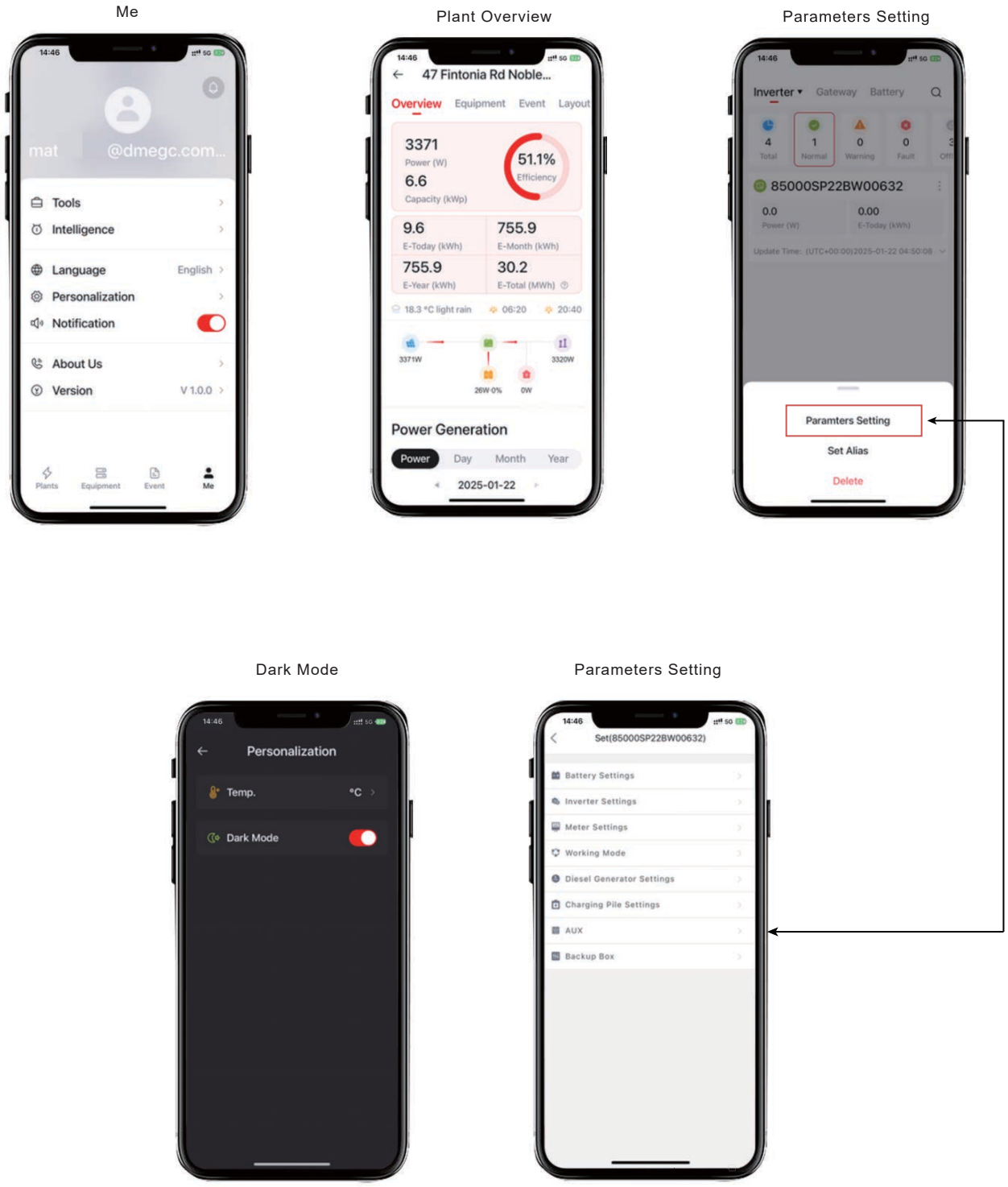
If you don’t have an installer account, please register firstly.



If you already have an installer account, please log in directly.

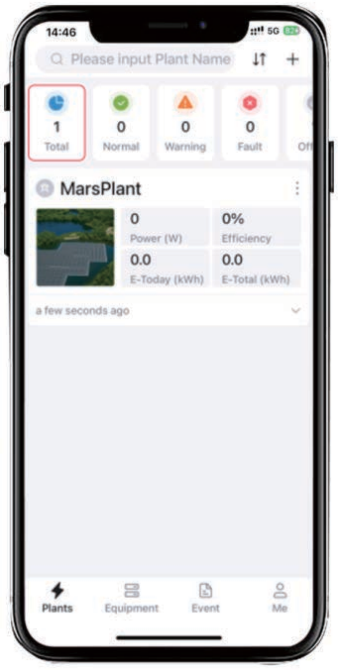
7.1.3. Overview of functions for installer account





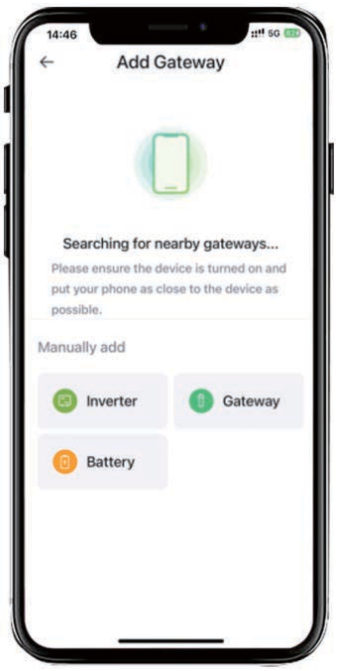
7.1.4. Create plant and Configure network

After logging in to DMEGC you can create your own power station and monitor the power station operating status and power generation data in real time.



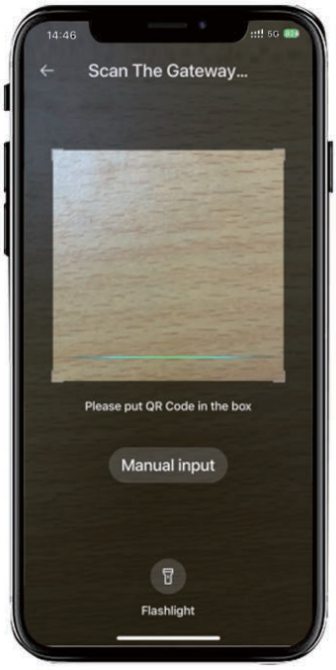
1

Click “+” to create a plant



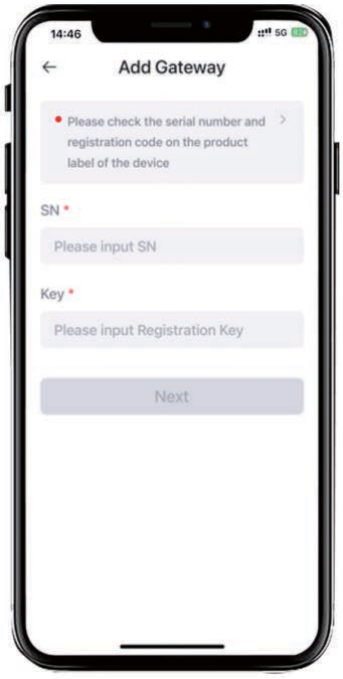
2

Click “Gateway”



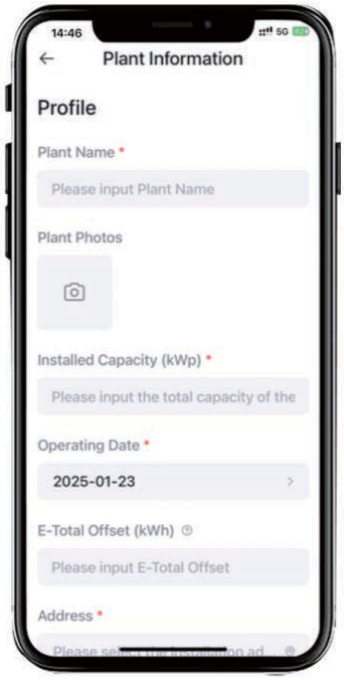
3

Scan QR code
of the Wi-Fi Stick



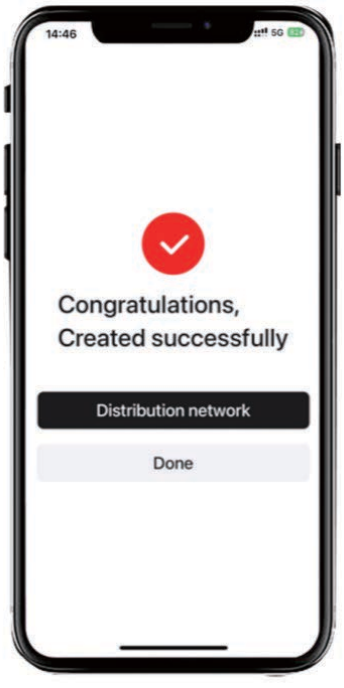
3

Or click “Manual input" to
input the information



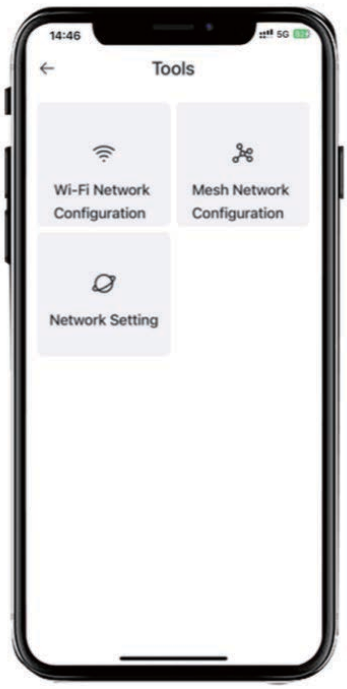
4

Enter plant information



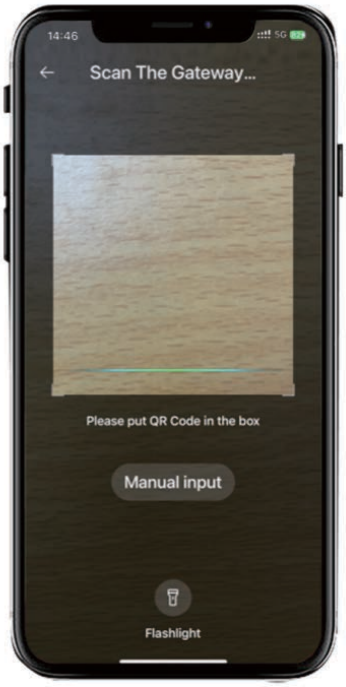
5

Click “Distribution network”



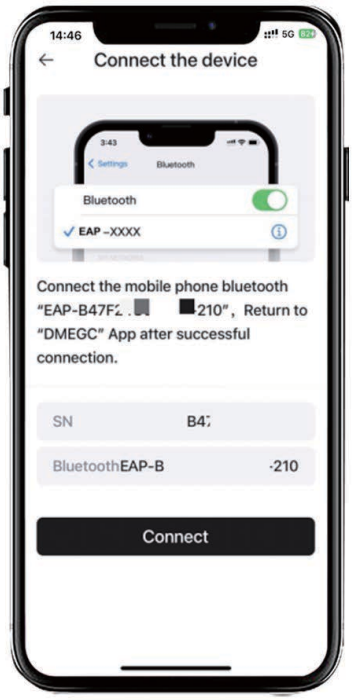
6

Click“Wi-Fi Network Configuration”



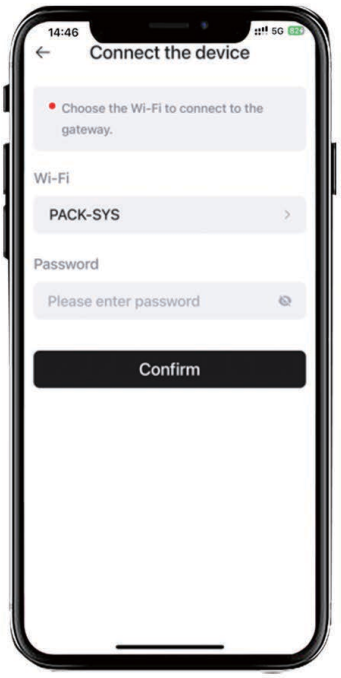
7

Scan QR code of the Wi-Fi Stick



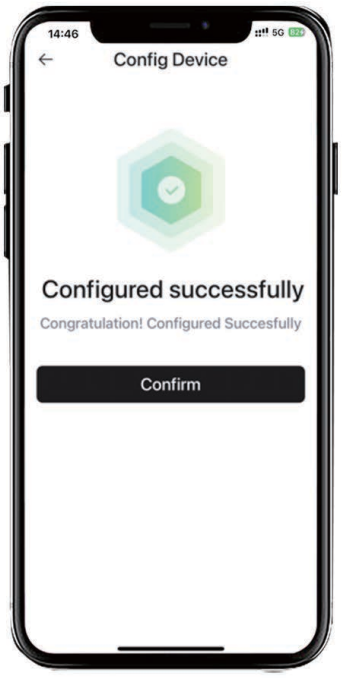
8

Bluetooth starting “withEAP-” will be automatically connected,click “Connect”



9

Connect to your Wi-Fi with normal internet access,click “Confirm”



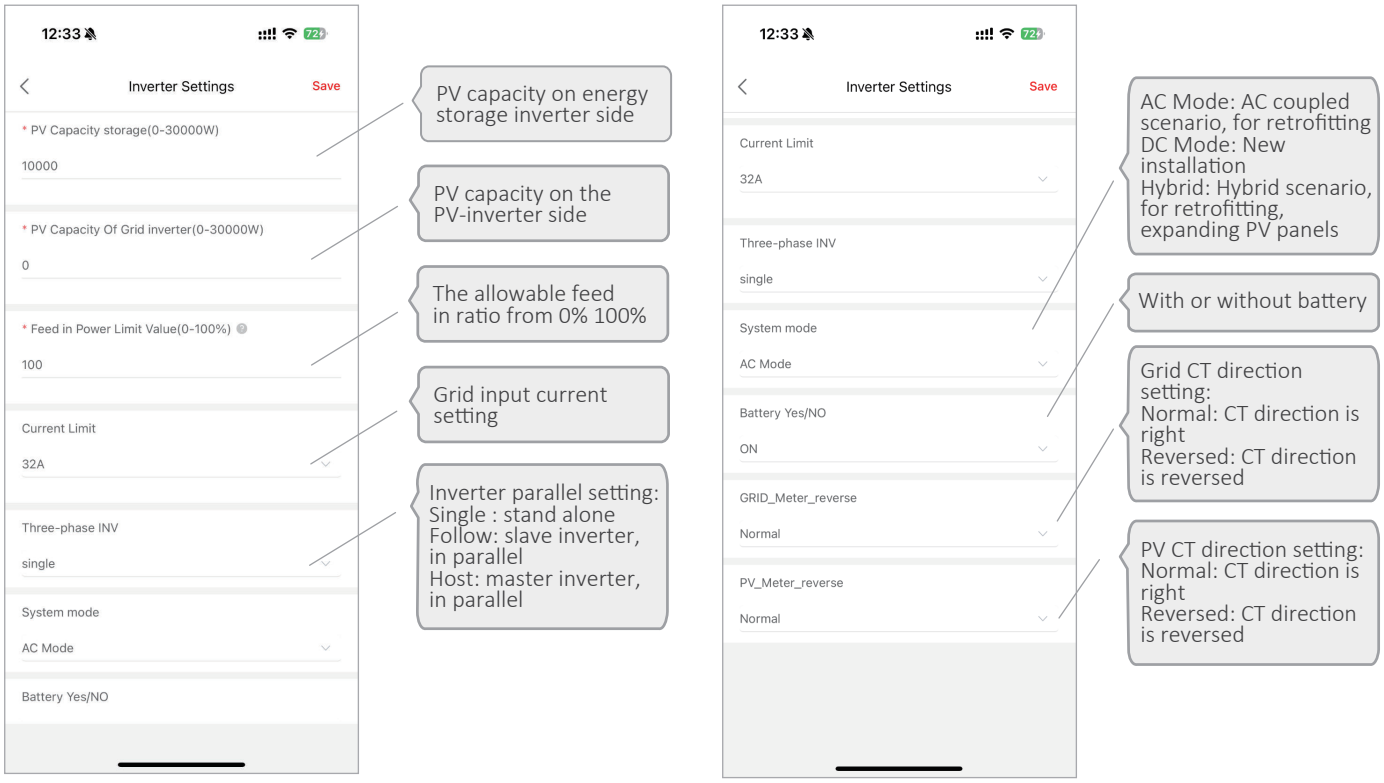
10

Configured successfully

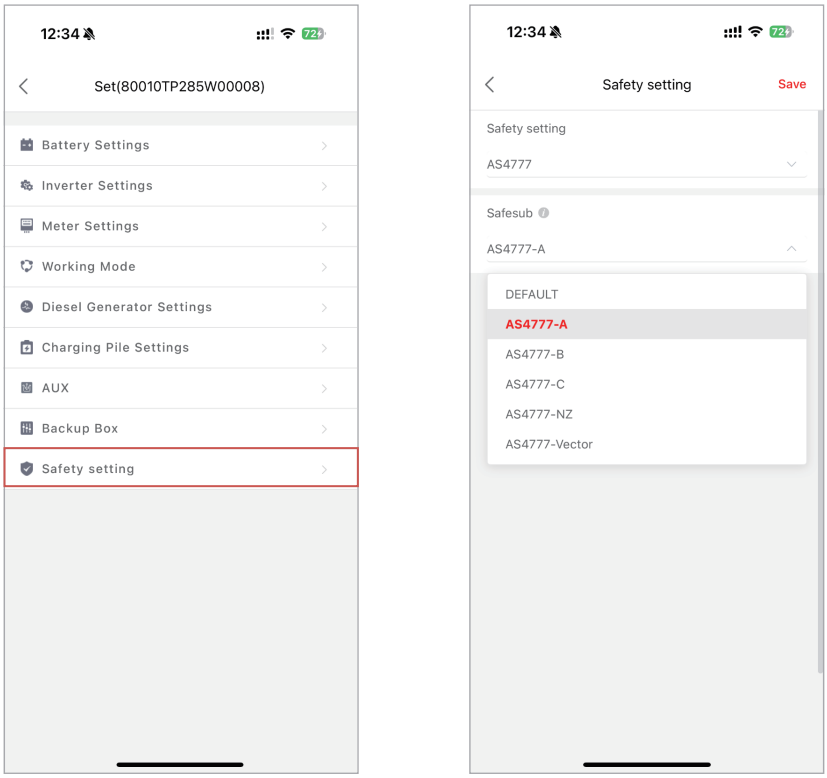
NOTICE

1. Prerequisites: Wi-Fi and location services must be enabled in advance. Please ensure that the device is powered on. When the device is powered on, the red LED lights around the device must be on.

7.1.5. Inverter setting



7.1.6. Safety setting



When the safety regulation is set as AS4777 (Australia and New Zealand), the secondary sub options can be selected according to the region or local grid company.

7.2. Register on cloud

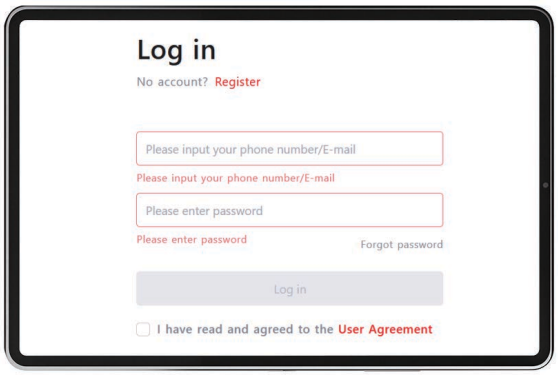
7.2.1. Register as installer account

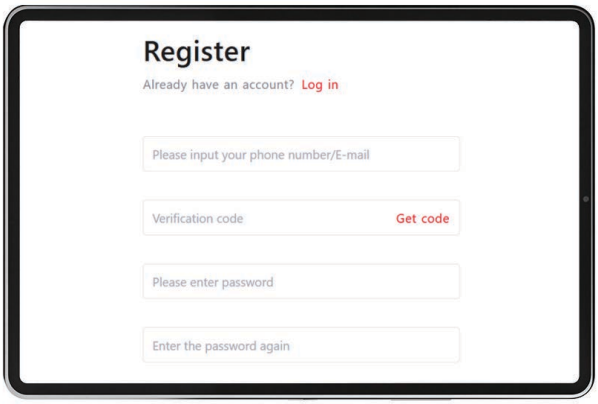
You can create a new account on our web server for the normal monitoring. In addition, a part of our warranty is based on this connection to our web server. The data produced prior to registration can be synchronized to the web server.

Step1: Please use the following steps: Open the portal: dmegc.inteless.com.

Step2: Please fill in "Username", "Password" and click "Log in" if you have already registered.

If not, please register by filling in the following web form:



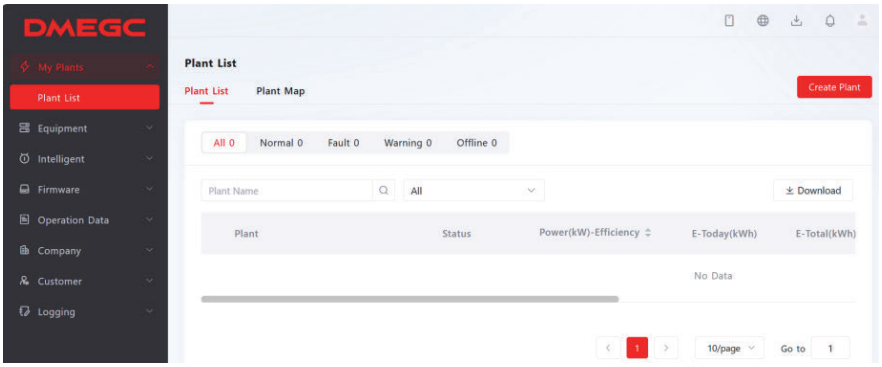


In this form, all fields with a red star are compulsory, and you can select the finally users or installation procedures.

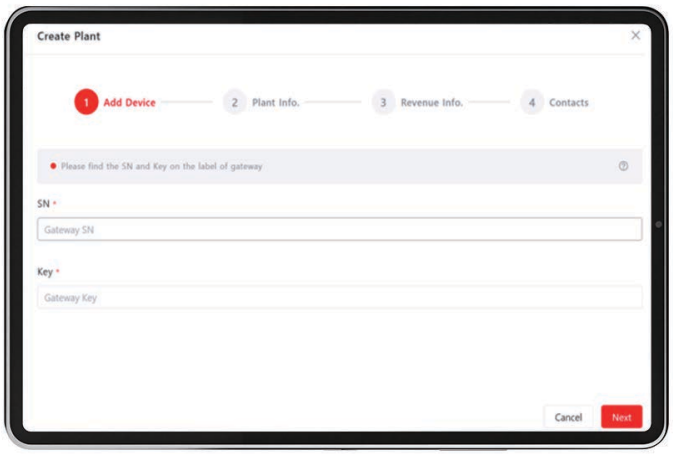
***Username:** Must be an email address.

***Password:** 8-20 digits in length, contain numbers and letters, and at least one capital letter, no spaces, Chinese or special symbols. More details are available in the Online Monitoring Web Sever Installers User Manual, which can be downloaded from DMEGC homepage.

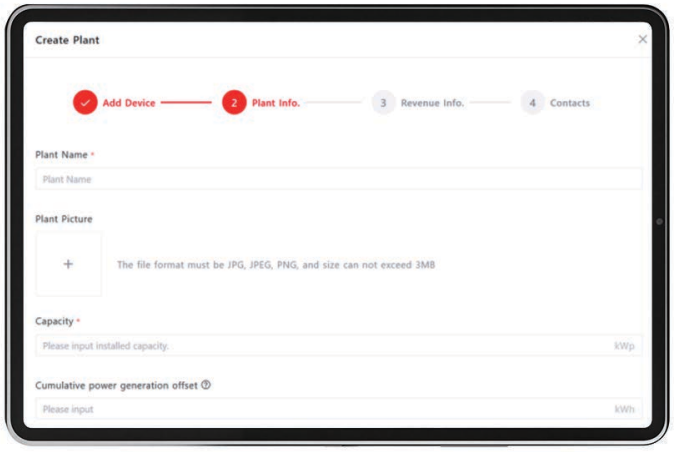
7.2.2. Create plant



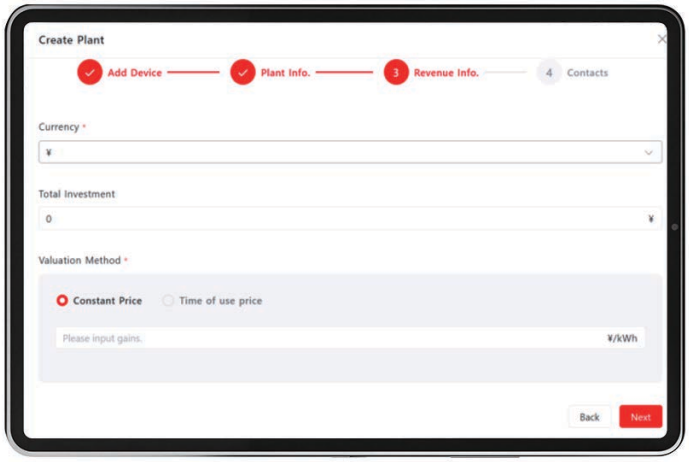
Log in to your account and choose My Plants > "Creat plant" to register new system at DMEGC Cloud.



Step1:Enter SN and Key of Wi-Fi Stick.

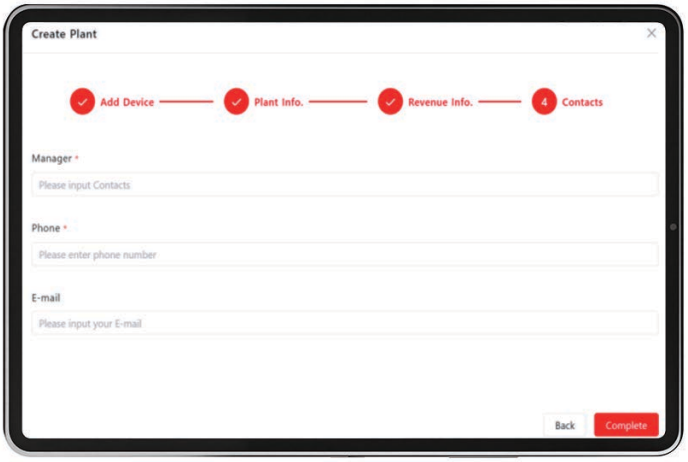


Step 2: Enter your plant information.



Step3: Enter Revenue information.

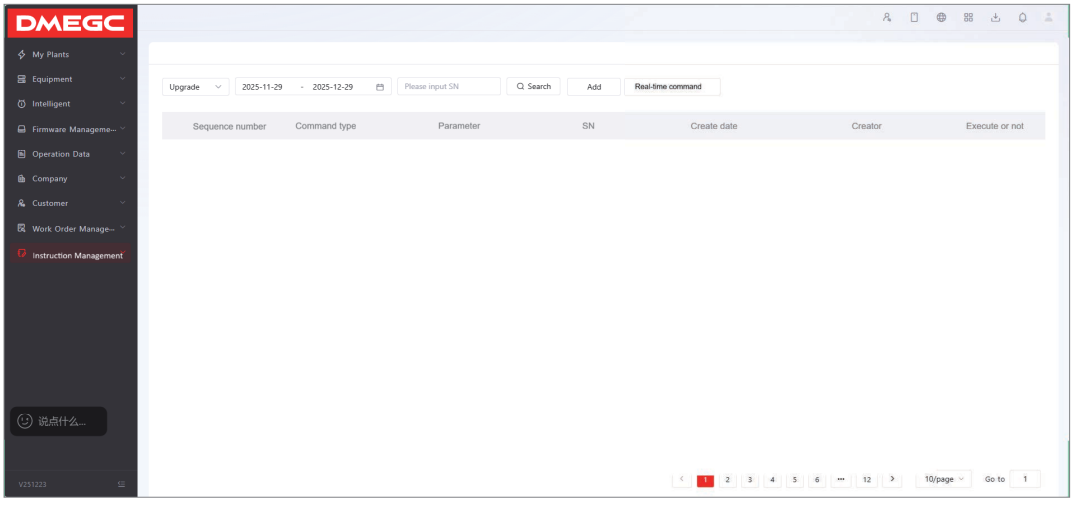
Step 4: Enter Contact information.



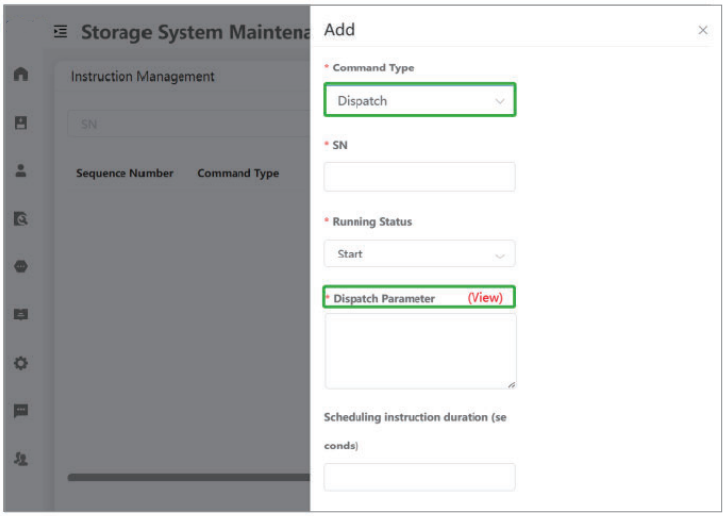
Enter the gateway S/N, gateway key, Plant information, Revenue information and Contacts, and click the Complete button. The red* in front of it is required.

7.2.3. Power quality response

The quality response fuction can be adjusted by the DMEGC Cloud system.
Step 1: Select <instruction management >, begin with the instrument setting.



Step 2: Select <Add>, to Determine the number of the instrument and the Management command.



Step 3: Select <dispatch> item for response setting.
Note: designed response mode as following:
-Acitve power - Frequency response.
-Active power - Voltage response.
-Reactive power - Voltage reponse.
-Reactive power - Power response.
-Power factor - Power response.

08 POWERING ON AND OFF THE SYSTEM

8.1. Powering on the system

Procedure
1) Switch on the battery breaker which is on the left side of the inverter.
2) Switch on the PV switch (if there is any) at the lower left of the inverter.
3) Switch on the battery breakers of all batteries.
4) Long press the battery power buttons for 3 seconds.
5) Switch on the AC breaker between the grid port of the inverter and the grid.
6) Switch on the AC breaker between the backup port of the inverter and the loads.
7) Switch on the AC breaker (if there is any) between the PV-inverter and the grid.

8.2. Powering off the system

⚠ WARNING	After the energy storage system is powered off, the remaining electricity and heat may still cause electric shocks and body burns. Therefore, put on protective gloves and operate the product 5 minutes after the power-off.

Procedure
1) Switch off the AC breaker between the inverter and the loads.
2) Switch off the PV switch (if there is any) at the lower left of the inverter.
3) Switch off the PV switch between the PV string and the inverter if there is any.
4) Shortly press the power button.
5) Switch off the battery breakers of the batteries.
6) Switch off the battery breaker which is on the left side of the inverter.
7) Switch off the AC breaker between the inverter and the grid.

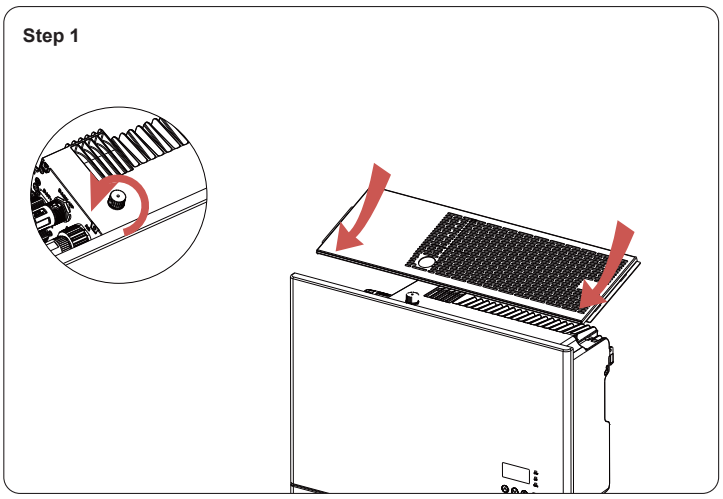
Turn on and off parallel systems refer to 10.6.

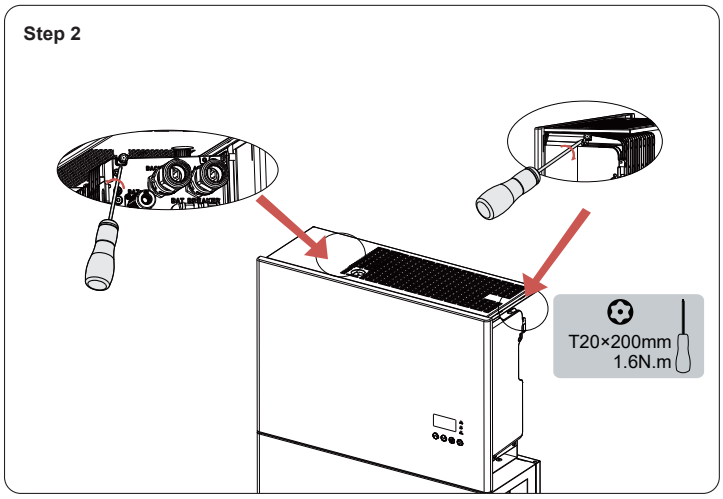
9.1. Checking before power-on

No.	Check Item	Acceptance Criteria
1	Mounting environment	The mounting space is proper, and the mounting environment is clean and tidy, without foreign objects.
2	Battery pack and inverter mounting	The battery pack and inverter are mounted correctly, securely, and reliably.
3	Wi-Fi mounting	The Wi-Fi module is mounted correctly, securely, and reliably.
4	Cable layout	Cables are routed properly as required by the customer.
5	Cable tie	Cable ties are secured evenly and no burr exists.
6	Grounding	The ground cable is connected correctly, securely, and reliably.
7	Switch and breakers status	The PV switch (if there is any) and battery breakers and all the breakers connecting to the product are OFF.
8	Cable connections	The AC cables, PV cables (if there is any), battery power cables, and communication cables are connected correctly, securely, and reliably.
9	Unused power terminals	Unused power ports and communication ports are blocked by watertight caps.

9.2. Mounting the covers of the Inverter

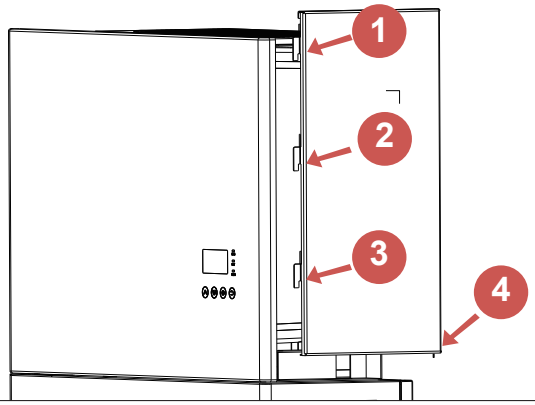
9.2.1. Mounting the top cover



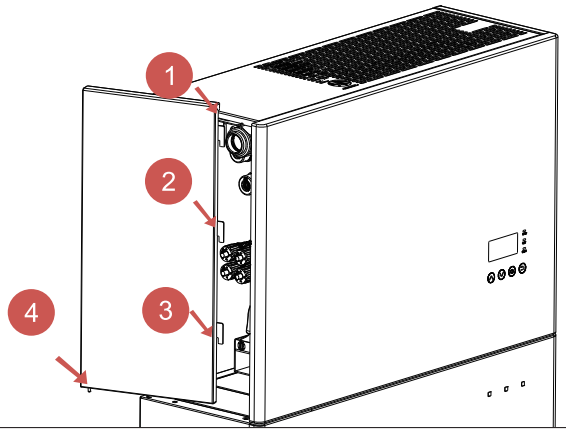


9.2.2. Mounting the side plate (installed on the battery)

Step 1

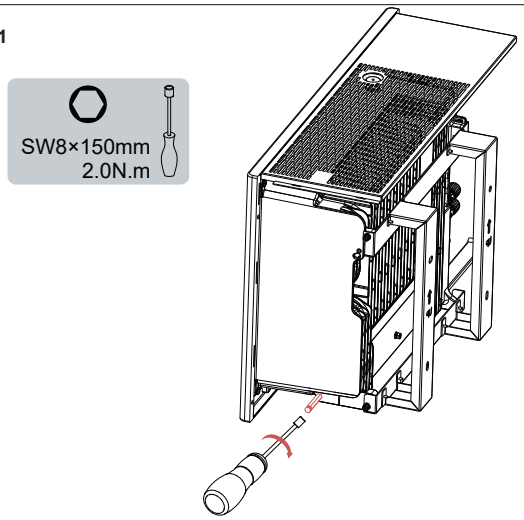


Step 2

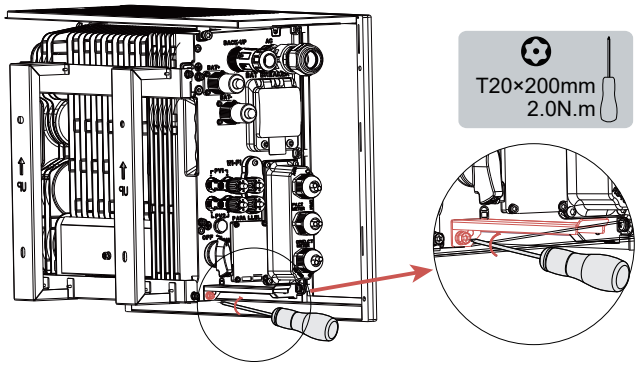


9.2.3. Mounting the side plate (wall bracket installation)

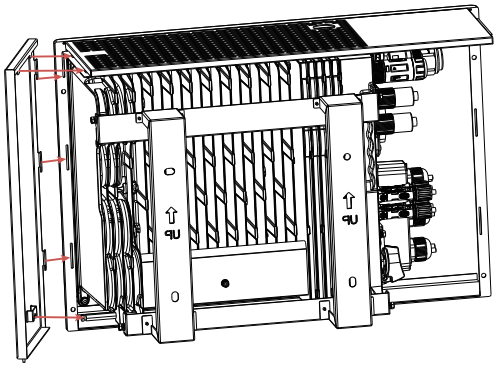
Step 1



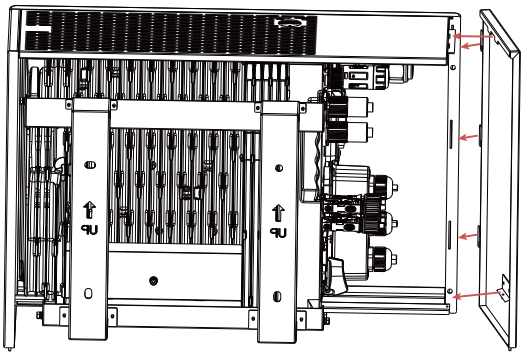
Step 2



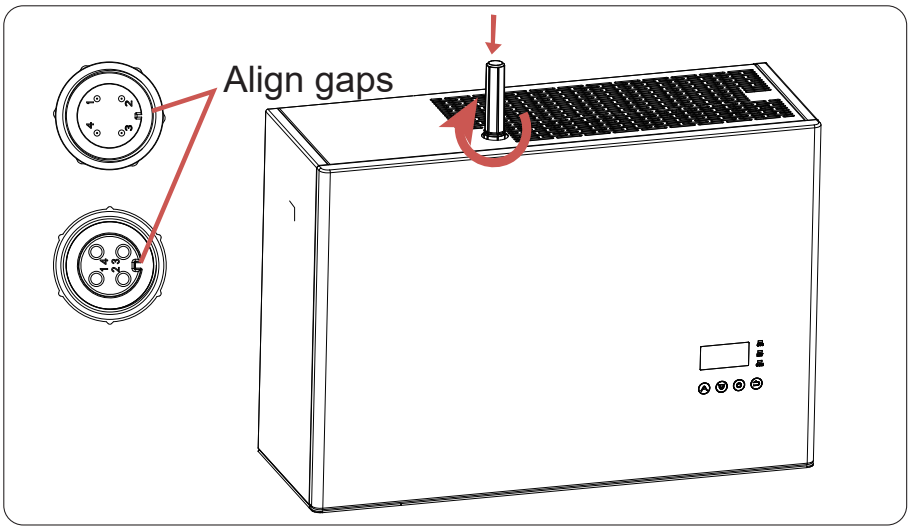
Step 3



Step 4



9.3. Mounting the Wi-Fi moudle

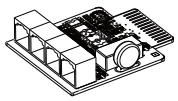
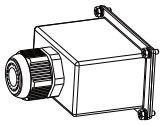
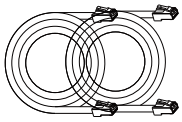
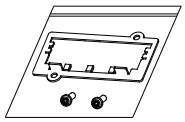
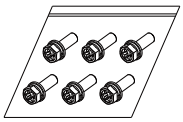


10 PARALLEL SETUP (FOR EUROPEAN)

10.1. Inverters Operation in Parallel Mounting

Inverters Operation in Parallel Mounting, the mount steps same as 05 and 9.2.

10.2. Scope of Delivery

 PARA Board(x1)	 Communication cover (x1)	 Parallel communication cables(x3)	 Parallel sheet metal(x1) 4-40 Screws（Additional）	 M3 ×10 Screws(x6)	 Label(x1)	 Documentation(×1)

10.3. AC Wiring to Grid and Backup Combiner Cabinet

Wiring sequence	From	Recommended Cable type*	To
1	Mains grid	Three-core (L, N and PE) outdoor copper cable, 25~35 mm²	Grid combiner cabinet
2	Grid combiner cabinet	Three-core (L, N and PE) outdoor copper cable, 6~10 mm²	Grid connection port of the host inverter
3	Grid combiner cabinet	Three-core (L, N and PE) outdoor copper cable, 6~10 mm²	Grid connection port of the follower inverter
4	Loads of backup side	Three-core (L, N and PE) outdoor copper cable, 16~35 mm²	Backup combiner cabinet
5	Backup combiner cabinet	Three-core (L, N and PE) outdoor copper cable, 6~10 mm²	Backup connection port of the host inverter
6	Backup combiner cabinet	Three-core (L, N and PE) outdoor copper cable, 6~10 mm²	Backup connection port of the follower inverter

10.4. Upgrade Firmware of the Inverters

Please comfirm the following connection

(1) BAT power connection and grounding connection between the batteries connected to each inverter have finished.

(2) BMS communication connection between the batteries connected to each inverter is completed.

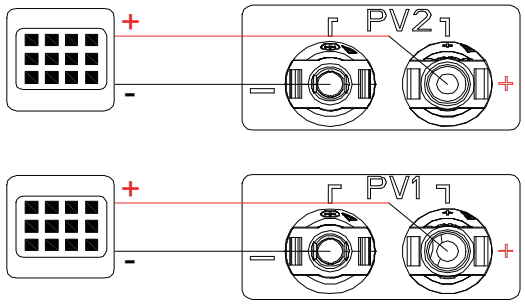
(3) BAT power connection and grounding connection between the inverter and the first battery (directly below the inverter) are completed.

(4) BMS communication connection between the inverter and the first battery (directly below the inverter) is completed.

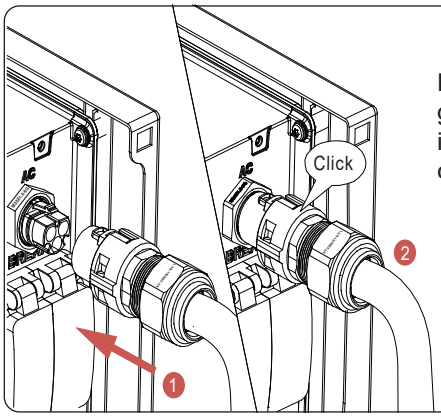
(5) Select one inverter which you want to set as host inverter later, finish meter communication connection between this inverter and meter, finish meter power supply connection between the meter and mains grid.

(6) Please finish PV arrays connection to the inverters, please refer to inverter Quick Installation Guide(As shown ①).
(7) Wiring grid connector plugs, then insert the grid connector plugs into the sockets for the grid connection. When doing so, make sure to align the key on the grid connection socket with the keyway on the grid connector plug (As shown ②).

①



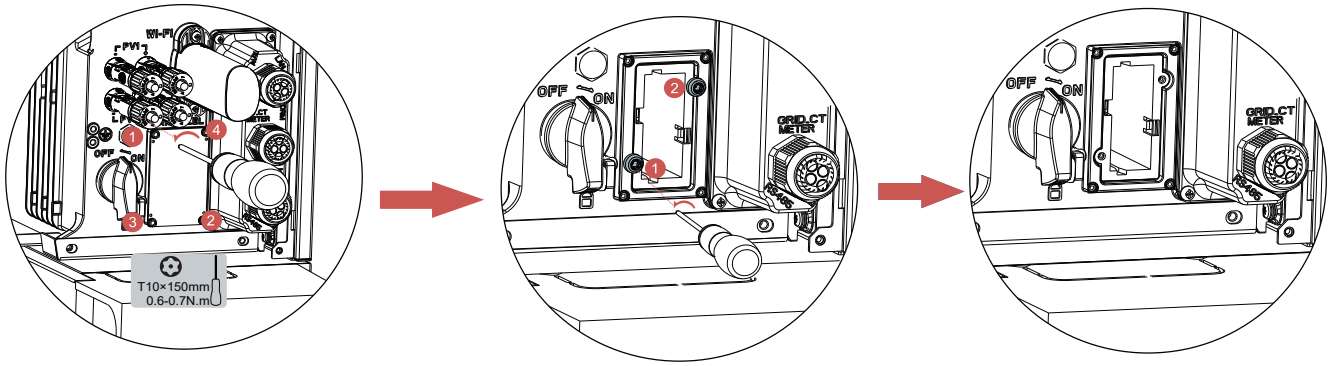
②



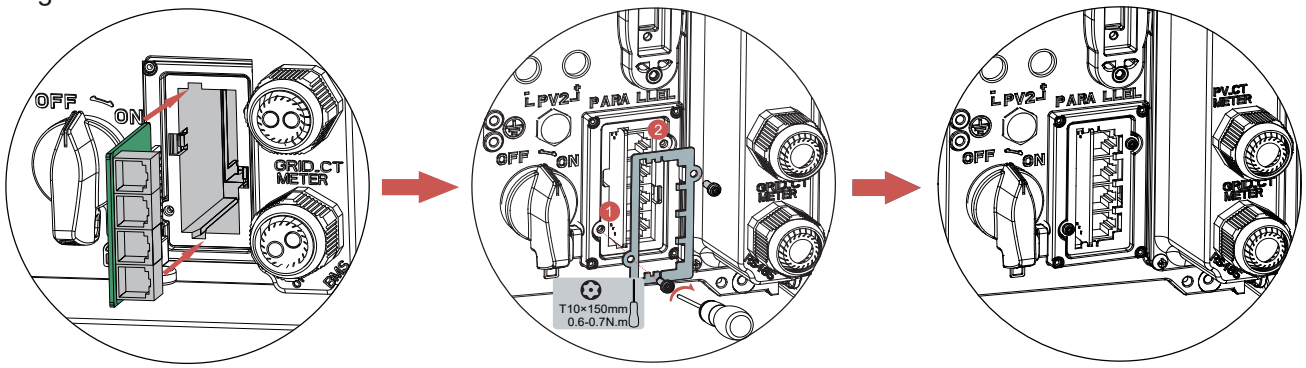
Electrical connection between grid connection ports of the inverters and grid combiner cabinet is completed.

(8) Backup disconnection between each inverter and backup combiner cabinet, at this moment only switching off the backup circuit breakers are not enough yet, please must unplug the backup connector plug from the backupconnector socket of each inverter.
(9) Mount the PARA boards to the inverters operating in parallel, then do communication connec -tions between these inverters, refer to the relative System Wiring Diagram of parallel installation.

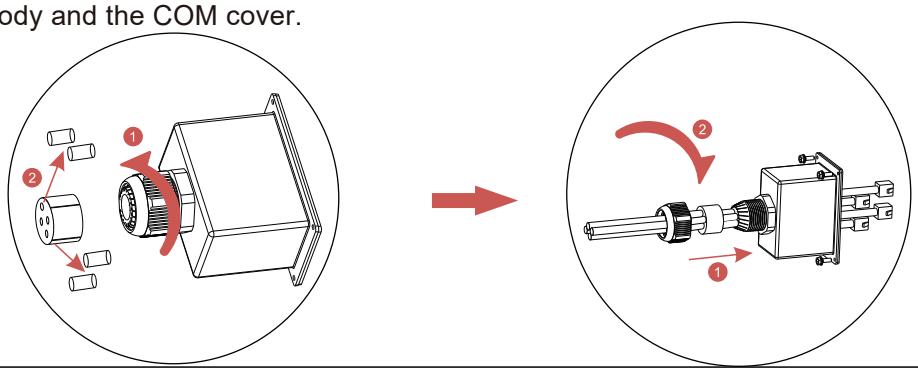
a. Disassemble the communication cover and Screws on the plastic card slot.



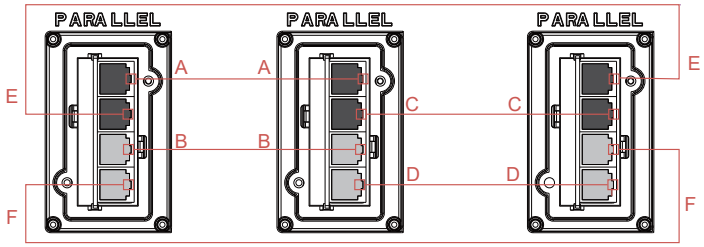
b. Plug in the PARA board and secure the Parallel sheet metal.



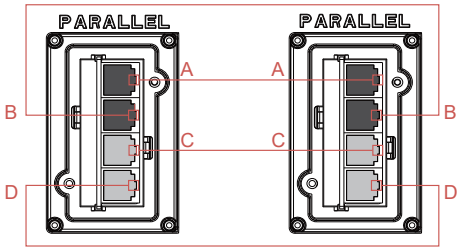
c. Take out the communication cables. Unscrew the swivel nut, remove the sealing ring and the sealing Please comfirm the following connection plugs. Pass the PARA COM cables through the swivel nut, cable gland body and the COM cover.



d. Wire the communication connection of inverters operating in parallel.



Parallel connection diagram for three inverters

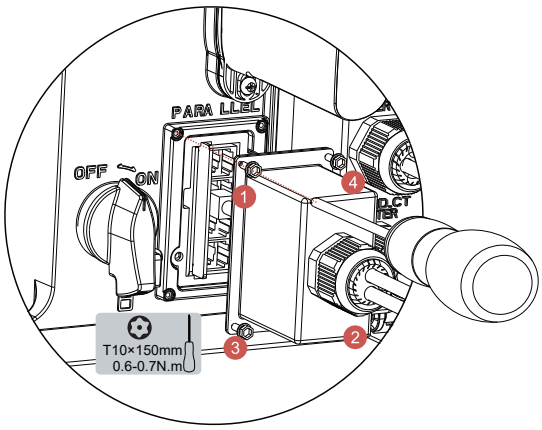


Parallel connection diagram for two inverters

NOTICE

Attach two identical labels to both ends of one communication cable, to distinguish between different PARA COM cables.

e. When securing the COM cover over the communication ports, tighten the cover inplace and then lightly push the PARA COM cables into the cover as you tighten the strain relief nut onto PARA COM cables. This will ensure PARA COM cables are well-seated in the RJ45 sockets.



(10) Install the WiFi modules or LAN cables connection to the inverters.

(11) If the mains grid or PV power supply is stable, please perform the following actions:

a. Switch on the AC circuit breaker between grid connection ports of the inverters and the grid combiner cabinet;

b. Switch on the PV swiches at the lower left of the inverters;

c.Switch on the battery circuit breakers of the inverters;

d.Switch on the battery circuit breakers of all batteries and then shortly press the battery pow -er buttons of all batterie within 30 seconds (For series batteries, please skip this step.);

e. Configure the network and put the inverters online.

If only battery power is available, please switch on the battery circuit breakers of all inverters, then switch on the battery circuit breakers of all batteries and shortly press the battery power buttons of all parallel batteries within 30 seconds (For series batteries, please skip this step.).

Remarks:

Ensure that either a stable power supply from the grid or PV is available before upgrading the inver -ter firmware(including EMS and DSP) and battery firmware.If only battery power supply is available, only the inverter firmware (including EMS and DSP) upgrade can be performed.

(12) Contact the technical service team service to upgrade the firmware of the inverters and batter -ies supporting parallel operation. Check the LCD of all inverters to see whether the firmware version of the inverters and batteries is consistent with the reminders from service.

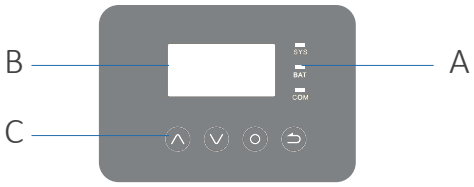
10.5. Commissioning

10.5.1 System Upgrade

Contact the technical service team service to upgrade the firmware of the inverters and bateries supporting parallel operationSwitch on the AC circuit breakers between grid connection ports of the inverters and the mains grid and check the LCD of allinverters to see whether the firmware.

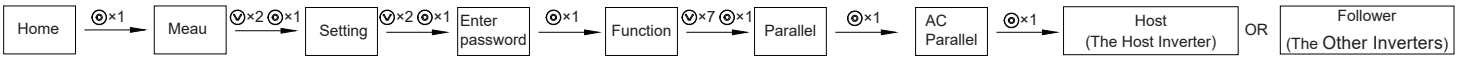
10.5.2.Set the Parallel Function

Inverter display interface introduction

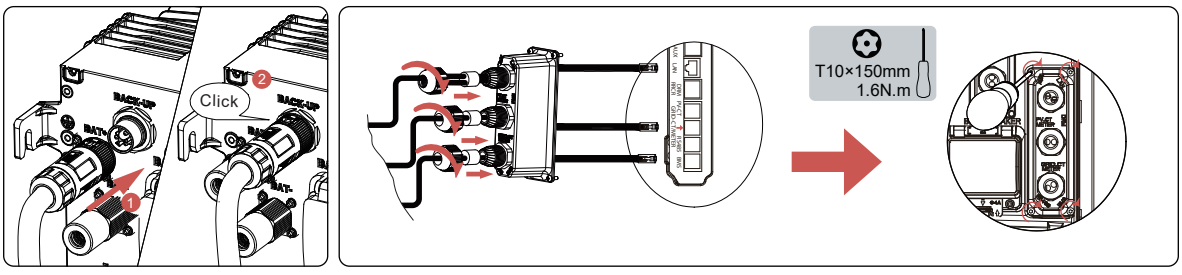


Object	Name	Description
A	SYS LED	Red: The inverter is in fault.
		White: The inverter is in normal state.
	BAT LED	White: The battery is in charging or discharging.
	COM LED	White: The inverter is in communication.
B	LCD Dispaly	Display the information of the energy storage system.
C	Button Function	Escape from current interface or function.
		Move cursor to upside or increase value.
		Move cursor to downside or decrease value.
		Confirm the selection.

(1) Installer should execute parallel setting on the LCD of the inverters.Refer to the flow chart below.



(2) Only set the local safety standard on the LCD of the host inverter.
(3) Switch off all battery circuit breakers of the inverters.
(4) Power off all batteries by pressing and holding the power button of each battery for 6 seconds, which is near battery circuit breaker. (For series batteries, please skip this step.).
(5) Switch off all battery circuit breakers of the batteries.
(6) Switch off the PV switches of all inverters.
(7) Switch off the AC circuit breakers between grid connection ports of the inverters and the grid combiner cabinet.
(8) Make sure that the AC circuit breakers between backup connection ports of the inverters and the backup combiner cabinet are off state.
(9) Insert the backup connector plugs into the sockets for the backup connection. When doing so, make sure to align the key on the backup connection socket with the keyway on the backup connector plug.
(10) Place the COM connection cover against the inverter enclosure and tighten the 4 screws. When securing the coverover the communication ports, tighten the cover in place and then lightly push the communication cables into the cover as you tighten the strain relief gland onto the cables. This will ensure the communication cables are well-seated in the RJ45 ports.



(11) Please refer to the Battery Quick Installation Guide to mount the cable covers.
Please refer to the Inverter Quick Installation Guide to mount all covers.

10.6. Power ON and OFF the Inverters in Parallel

10.6.1. Power ON the Inverters in Parallel

Procedure

Step 1: Switch on the AC breaker between backup connection port of the inverter and the house loads.
Step 2: Switch on the battery breakers of all inverters.
Step 3: Switch on the battery breakers on all batteries.
Step 4: Short press the battery power buttons. All power buttons should be short pressedwithin 10 seconds.
Step 5: After confirming that the system has entered UPS mode, switch on the AC breakerbetween the inverter and the grid.
Step 6: Switch on the PV switches on inverters.
Step 7: Switch on the AC breaker between the PV-inverter and the mains grid (if there is any).

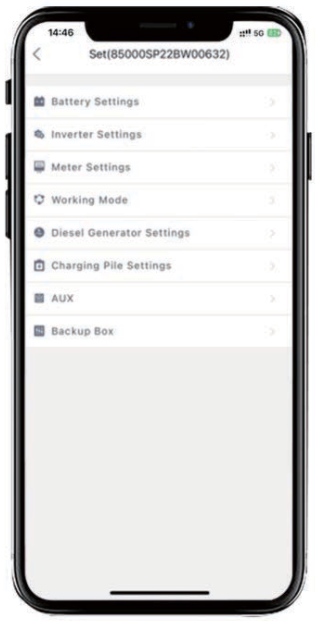
⚠ **Warning:** When the system is running normally, must not to directly turn off the PV Switch. If the PV Switch must be turned off, please first disconnect the wirings between the Inverters and the loads on the backup side.

10.6.2. Power OFF the Inverters in Parallel

Procedure

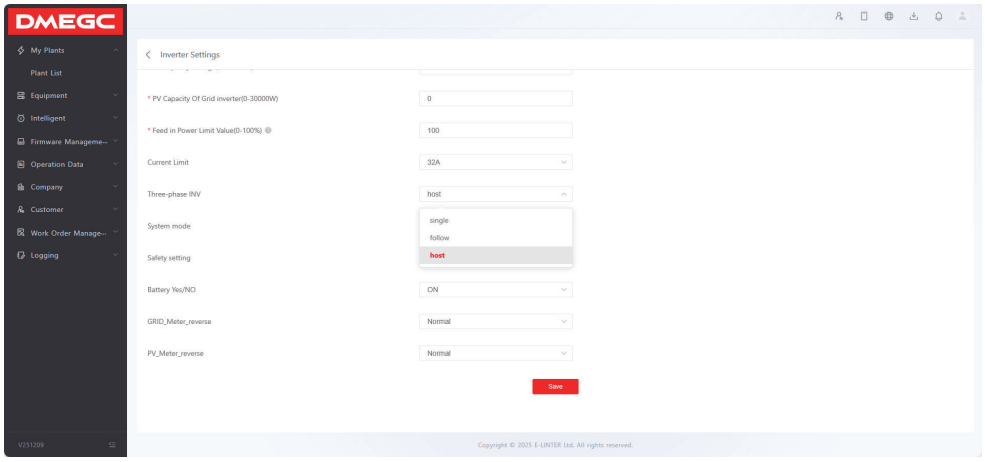
Step 1: Switch off the AC breaker between backup connection port of the inverter and the house loads.
Step 2: Switch off the AC breaker between AC connection port of the inverter and the mains grId.
Step 3: Switch off the PV switches of all inverters.
Step 4: Switch off the AC breaker between the PV-inverter and the mains grid (if there is any).
Step 5: Switch off the battery breakers on all inverters.
Step 6: Power off all the batteries by long pressing the power buttons of the batteries about 5 seconds which is near the battery breaker.
Step 7: Switch off the battery breakers of all batteries.

10.7. Overview of Functions for Installer Account



10.8. Parallel Setup on DMEGC Cloud

Please activate "Enable Parallel" button,and activate the hosPlease set the host mode for host inverter, and set the follow mode for follower inverter.t mode for host inverter,deactivate the host mode for follower inverter.



11 MAINTENANCE AND TROUBLESHOOTING

11.1. Routine maintenance

Normally, the energy storage system need no maintenance or calibration.

However, in order to maintain the accuracy of the SOC, it is recommended to perform a full charge calibration for SOC (charging battery until the charging power is 0) on the battery at regular intervals (such as two weeks).

Disconnect the system from all power sources before cleaning. Clean the housing, cover and display with a soft cloth.

To ensure that the energy storage system can operate properly in the long term, you are advised to perform routine maintenance on it as described in this chapter.

Maintenance checklist

Check Item	Acceptance Criteria	Maintenance Interval
Product cleanliness	The heatsink at the back of the product are free from obstacles or dust.	Once every 6 to 12 months
Product visible damage	The product are not damaged or deformed.	Once every 6 months
Product running status	1. The product operate with no abnormal sound. 2. All parameters of the product are correctly set. Perform this check when the product is running.	Once every 6 months
Electrical connections	1. Cables are securely connected. 2. Cables are intact, and in particular, the cable jackets touching the metallic surface are not scratched. 3. Unused cable glands are blocked by rubber sealing which are secured by pressure caps.	Perform the first maintenance 6 months after the initial commissioning. From then on, perform the maintenance once every 6 to 12 months.

⚠ CAUTION	Risk of burns due to hot heatsink and housing

The heatsink and housing of the inverter can get hot during operation.

- During operation, do not touch any parts other than the cover.
- Wait approx. 30 minutes before cleaning until the heatsink has cooled down.

11.2. Troubleshooting

11.2.1. Inverter error troubleshooting

Error No.	Error description	Troubleshooting
34	parallel_host_lost	Reset the parallel function to eliminate the fault, if still can not eliminate please contact after-sales.
35	parallel_form_lost	Reset the parallel function to eliminate the fault, if still can not eliminate please contact after-sales.
100007	Insulation_fault	1. Check whether PV cable connection is reliable. 2. Check whether PV cable is damaged.
100008	GFCI_fault	Restart system and check whether the fault is existing.
100009	Leakage current test failure	
100025	BAT_OVP	Check whether the actual battery voltage exceeds the battery charging cut-off voltage by more than 20V.
100026	BAT_UVP	Check whether the actual battery voltage is lower than the battery discharge cut-off voltage.
100042	Output_short_circuit	1. Use a multimeter to test the impedance of the off grid output. If it is small, check whether the wiring is correct. 2. Restart system, if error still exists, please call the service center.
100043	Output_overload	1. Check whether the load exceeds the rated power. 2. Restart system, if error still exists, please call the service center.
100043	Grid Load Reverse	1. Check whether cables are reversed (whether Grid cable is connected to the Backup side). 2. Restart system, if error still exists, please call the service center.
100144	LPE Reverse	1. Check whether the L cable is connected to the Grounding. 2. Restart system, if error still exists, please call the service center.
100160	DCI	Restart system to see if the fault still exists. If still exists, please call the service center.
100161	SW Consistency	Perform the remote upgrading again and ensure that the version of CPU1 and CPU2 upgrade files is the same.
100162	N-N Reverse Lost	1. The system installed in Australia needs to check whether N-N is short-circuited. 2. If not in Australia, set the safety standard correctly. 3. Restart system, if error still exists, please call the service center.
100213	Para_SW_Diff	Please contact the customer service to upgrade the software again.

100216	Para_Multi_Master	If multiple hosts appear in parallel,check the parallel function Settings,modify and restart to eliminate the fault.If it still cannot be eliminated,please contact the after-sales service.
100217	Para_TurnOn_Fault	Please contact after-sales service.
100220	inv_line_short	1. Check whether the load is short-circuited con connected. 2. Restart system, if error still exists, please call the service center.
110000	Bat over-voltage alarm	Check that the actual battery voltage is 10V higher than the battery charging cut off voltage.
110001	Bat under-voltage alarm	Check that the actual battery voltage is 10V higher than the battery discharging cut-off voltage.
110002	output_overload_ alarm	Check whether the load exceeds 0.95 of the rated power.
110019	Bat Reverse	Check whether battery positive and negative connections are reversed.
110021	Grid Loss	1. Wait for the Grid power return to normal. 2. If Grid is normal, check the connections to the grid terminal. 3. Restart system, if error still exists, please call the service center.
110022	Grid Volt	
110023	Grid Freq	
110024	10min Grid Volt	
110026	PE Loss	1. Check whether the grounding cable is disconect ed. 2. Restart system(This warning does not affect system running).
110027	LN Reverse	1. Check whether the Grid L/N cable are reversed connected. 2. Restart system, if error still exists, please call the service center.
110028	Low Temperature	1. Wait for the temperature to return to normal (above -20℃). 2. If temperature is normal, restart system, if error still exists, please call the service center.
110029	GFCI	1. Check whether there is leakage current in system cables. 2. If no abnormal connection, but still error frequently, please call the service center.
110033	Island	Normal protection mode, no action is required.
110034	Fan Abnormal	Restart system, if error still exists, please call the service center.
110035	N Loss	1. Check whether the Grid N cable is disconnected. 2. Restart system, if error still exists, please call the service center.

110039	Machine Type	Restart system, if error still exists, please call the service center.
110040	Inv Volt Low	1. Check whether the Backup load power exceeds the inverter rated power. 2. Restart system, if error still exists, please call the service center.
110047	Bus Under	1. Wait for the Grid power restore to normal. 2. Charge the battery and wait until the battery restore.
110051	Reduce PBy Over Freq	Wait for the Grid power restore to normal.
110052	Reduce PBy Over Volt	Wait for the Grid power restore to normal.
110053	Reduce PBy Over Temp	Wait for the inverter temperature returns to normal.
110054	HVRT	Wait for the Grid power restore to normal.
110055	LVRT	Wait for the Grid power restore to normal.
110056	Bat Open	Check the battery circuit breaker and the battery circuit breaker on the inverter are on.
110060	EMS CAN ALARM	Restart system, if error still exists, please call the service center.
110061	EMS SCI ALARM	Restart system, if error still exists, please call the service center.
110074	PV Over Volt	1. Check whether the configured voltage of the PV panel is greater than 580V(Use a multimeter to measure the PV terminal voltage). 2. Restart system, if error still exists, please call the service center.
110075	Para alarm	Reset the parallel function to eliminate the fault, if still can not eliminate please contact after-sales.
110076	Para error location	Please contact after-sales service.
110078	Para module addr same	Please contact after-sales service.
110079	Para online enter fail	Please contact after-sales service.
110082	N-N Reverse Lost	1. The system installed in Australia needs to check whether N-N is short-circuited. 2. If not in Australia, set the safety standard cor rectly. 3. Restart system, if error still exists, please call the service center.

110083	Bat_Num_Abnormal	Restart system, if error still exists, please call the service center.

11.2.2. Battery protection troubleshooting

LED Indicator	Error Code	Description	Troubleshooting
Yellow LEDs on or Yellow LEDs flash once per second.	1	Temperature difference	Wait for automatic recovery. If the problem is not be solved yet, please call the service center.
	3	High temperature	Stop discharging and charging until this code is eliminated and wait for the temperature to drop.
	4	Low-temperature discharge	Stop discharging until this code is eliminated and wait for the temperature to rise.
	5	Over-current charge	Wait for automatic recovery. If the problem is not be solved yet, please call the service center.
	6	Over-current discharge	
	8	Cell overvoltage	
	9	Cell undervoltage	Stop discharging and call the service immediately.
	11	Low-temperature charge	Stop discharging until this code is eliminated and wait for the temperature to rise.

⚠ NOTE	In the case of work mode, if the protection code 9 appears, please press the power button of the battery 5 times within 10 seconds, the BMS will be forced to turn on the MOSFET of discharge so that the inverter can detect the battery open voltage and charge the battery.

11.2.3. Battery error troubleshooting

LED Indicator	Error Code	Description	Troubleshooting
Yellow LEDs on or Yellow LEDs flash once per second.	Error 01	Hardware error	Wait for automatic recovery. If the problem is not be solved yet, please call the service center.
	Error 05	Hardware error	
	Error 06	Circuit breaker open	Switch on circuit breaker after powering off the battery.
	Error 08	LMU disconnect(slave)	Reconnect the BMS communication cable.
	Error 09	SN missing	Call for service.

Yellow LEDs on or Yellow LEDs flash once per second.	Error 10	LMU Disconnect(master)	Reconnect the BMS communication cable.
	Error 11	Software version inconsistent	Call for service.
	Error 12	Multi master	Restart all batteries.
	Error 13	MOS over temperature	Power off the battery and power on the battery after 30minutes.
	Error 14	Insulation fault	Restart battery and in case the problem is not resolved, call for service.
	Error 15	Total voltage fault	Restart battery and in case the problem is not resolved, call for service.

11.2.4. Earth fault alarm and troubleshooting

The earth fault alarm is enabled by default, if an abnormal earth connection occurs, the indicator on the front interface of the inverter will display a red light, and the fault will be sent to the DMEGC App to notify user.

1.Check whether the grounding cable is disconnected,or bad connected.

2.Restart system(This warning does not affect system running).

12 UNINSTALLATION & RETURN

12.1. Removing the product

Procedure

Step 1: Power off the energy storage system by following instructions in Chapter 8.2. Powering Off the System.

Step 2: Disconnect all cables from the product, including communication cables, PV power cables, battery power cables, AC cables, and PE cables.

Step 3: Remove the WiFi module.

Step 4: Remove the product from the wall bracket. Remove the expansion battery from the wall bracket.

Step 5: Remove the wall brackets.

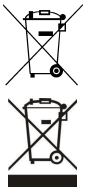
⚠ NOTE	If uninstalling electrical connection required, the special disassembly tools must be used and should be performed by qualified person.

12.2. Packing the product

If the original packaging is available, put the product inside it and then seal it using adhesive tape. If the original packaging is not available, put the product inside a suitable cardboard box and seal it properly.

12.3. Disposing of the product

- If the product service life expires, dispose of it according to the local disposal rules for electrical equipment and electronic component waste.
- Dispose of the packaging and replaced parts according to the rules at the installation site where the device is installed.
- Do not dispose the product with normal domestic waste.



13.1. Datasheet of inverter

Item	DM-INV-SPH3.6K	DM-INV-SPH5K	DM-INV-SPB5K	DM-INV-SPH6K	DM-INV-SPH8K
Input DC (PV side)					
Recommended max. PV power	7200W	10000W	N/A	10000W	10000W
Max. PV input voltage	580 V		N/A	580 V	
Rated Voltage	360 V		N/A	360 V	
Start-up Voltage	90 V		N/A	90 V	
DVC	DVC-C				
MPPT Voltage Range	100 ~ 550 V		N/A	100 ~ 550 V	
Max. Input Current Per MPPT	15 A / 15 A		N/A	15 A / 15 A	
Max. Short Circuit Current Per MPPT	18.7 A / 18.7 A		N/A	22.5 A / 22.5 A	
MPPT Number	2		N/A	2	
Max Input Strings Number Per MPPT	1		N/A	1	
Back Feed Current	0A				
Overvoltage Category	II				
Battery					
Battery Type	LFP ($LiFePO_4$)				
Battery Voltage Range	80 ~ 450 V			80 ~ 467.2 V	
DVC	DVC-C				
Max. Charging Power	3.6 kW	5 kW	5 kW	6 kW	8 kW
Max. Charge/ discharge current	60 A / 60 A				

Communication	CAN				
Overvoltage Category	II				
Back Feed Current	60A				
Output AC (Back-up)					
Rated Output Power	3.6 kW	5 kW	5 kW	6 kW	8 kW
Max Apparent Output Power	3.6 kVA	5 kVA	5 kVA	6 kVA	8 kVA
Back-up switch time	<20 ms				
Rated Output Voltage	L/N/PE，230V				
Rated Frequency	50/60 Hz				
Rated Output Current	15.7 A	21.7 A	21.7 A	26.0 A	34.7 A
Max Output Current	15.7 A	21.7 A	21.7 A	26.0 A	34.7 A
THDv(@linear load)	＜ 3%				
DVC	DVC-C				
Back Feed Current	37A				
Overvoltage Category	III				
Input AC (Grid side)					
Max. Input Power	7.2 kW	10 kW	10 kW	11.5 kW	11.5 kW
Max. Input Current	31.4 A	43.4 A	43.4 A	50.0 A	50.0 A
Output AC(Grid side)					
Rated Output Power	3.6 kW	5 kW	5 kW	6 kW	8 kW
Rated Output Apparent Power	3.6 kVA	5 kVA	5 kVA	6 kVA	8 kVA
Max. Apparent Output Power	3.6 kVA	5 kVA	5 kVA	6 kVA	8 kVA

Operation Phase	Single phase				
Rated Grid Voltage	L/N/PE，230V				
Grid Voltage Range	170 ~ 270 V				
Rated Grid Frequency	50 / 60 Hz				
Rated Grid Output Current	15.7 A	21.7 A	21.7 A	26 A	34.7 A
Max. Grid Output Current	15.7 A	21.7 A	21.7 A	26 A	34.7 A
Power Factor	0.8 Leading - 0.8 Lagging				
THDI	< 3%				
Protection Class	I				
Pollution Degree	II				
Overvoltage Category	III				
DVC	DVC-C				
Anti-islanding Protection Methond	Frequency shift				
Efficiency					
Max Efficiency	>97 %				
EU Efficiency	>96.2 %				
Protection					
Anti-Islanding Protection	Integrated				
Insulation Resistor Detection	Integrated				
Residual Current Monitoring Unit	Integrated				
Output Over Current Protection	Integrated				
Output Short Protection	Integrated				
Output Overvoltage Protection	Integrated				

DC Reverse Polarity Protection	Integrated				
PV Overvoltage Protection	Integrated				
PV Switch	Integrated				
Battery Breaker	Integrated				
General data					
Dimensions (W*H*D)	590*405*205 mm				
Weight	19.5 kg	19.5 kg	17.5 kg	20.5 kg	21 kg
Topology	Transformerless				
Operation Temperature Range	-25 ~ +60 °C (derating above 45℃)				
Ingress Protection	IP65				
Noise Emission	<30 dB				<45 dB
Cooling Concept	Natural convection				Fan cooling
Max. Operation Altitude	3000 m				
Grid Connection Standard	G98/G99, VDE-AR-N 4105, EN 50549-1,VDE 0126, RD 1699, CEI 0-21, C10/11, NRS 097-2-1,MEA, PEA, AS/NZS 4777.2				
Safety/ EMC Standard	IEC62109-1/-2 IEC/EN61000-6-1/2/3/4				
Features					
PV Connection	Vaconn D4 connectors				
Grid Connection	Plug in connector				
Back-up Connection	Plug in connector				
BAT Connection	Screw terminal				
Communication	LAN, Wi-Fi(optional)				
Warranty	120 months				

13.2. Datasheet of battery

Model	H02
Battery type	LFP (LiFePO4)
Weight	52 kg
Dimension (W*D*H)	590 * 333 * 204 mm
Ingress protection	IP65
Energy capacity	5.12 kWh
Usable capacity	5.12 kWh
DoD	100 %
Nominal voltage	51.2 V
Operating voltage range	45.6 ~ 57.6 V
Rated Charging / discharging current *	50 A/50 A
Operating temperature range	Charge: 0℃~52℃
	Discharge: -20℃~57℃
Monitoring parameters	System voltage, current, cell voltage, cell temperature, PCBA temperature
BMS communication	CAN
System	
Safety	IEC62619/IEC62040
Warranty	120 months
Transportation	UN38.3

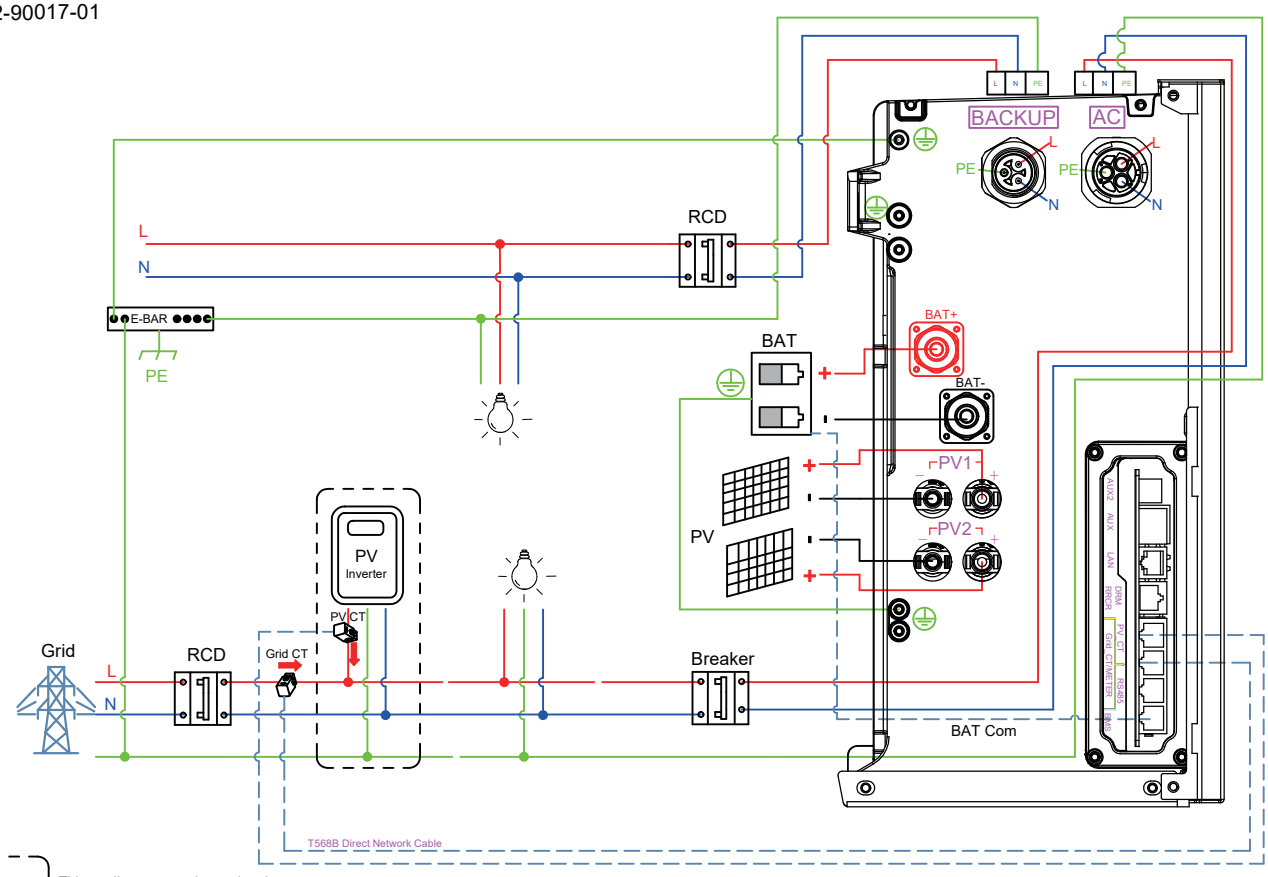
* Max. charge/discharge current derating will occur related to temperature and SOC.

Appendix 1: System overview

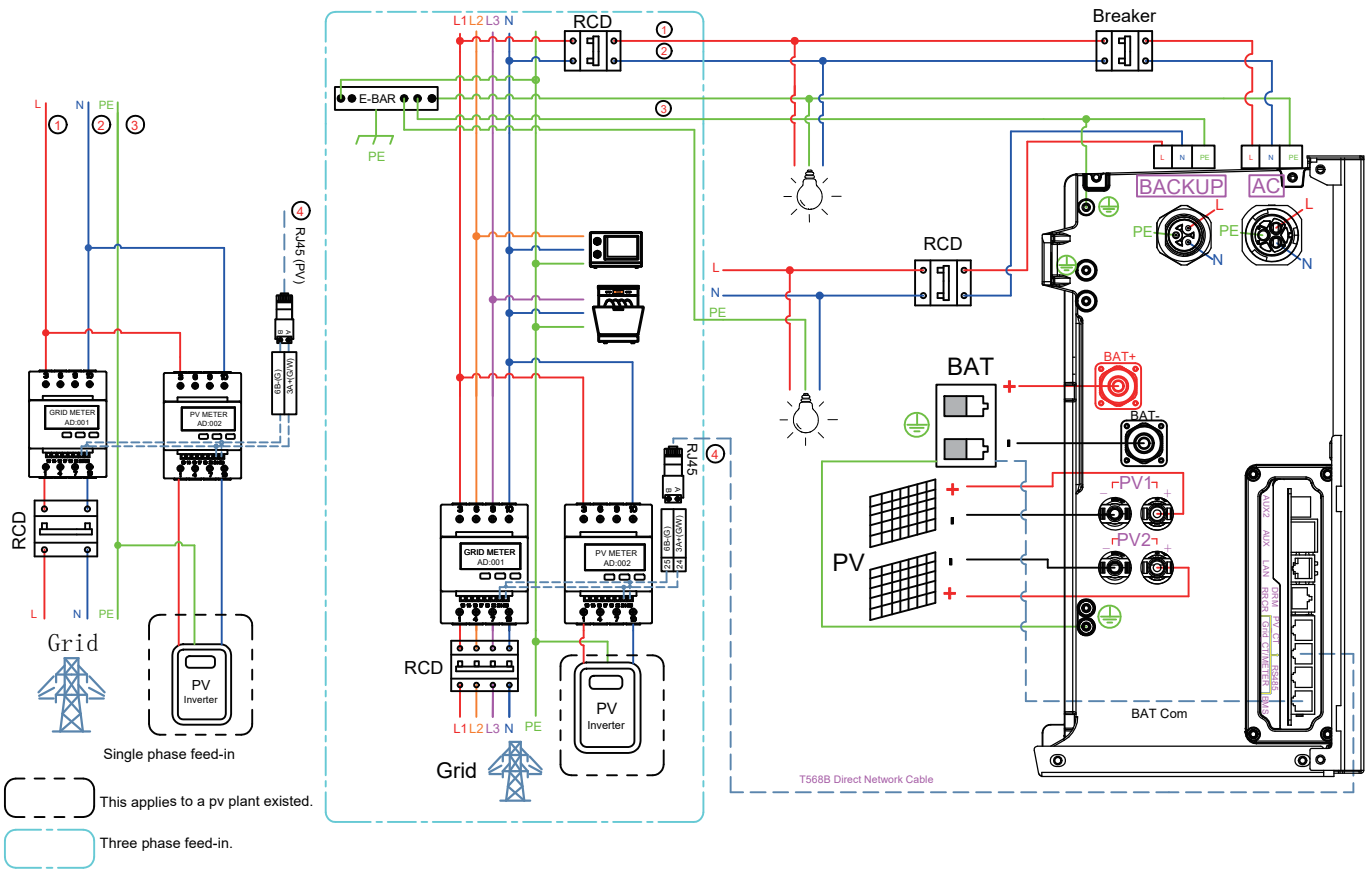
Please see the following wiring diagram of the system principle, divided into European versions.

Single-phase System Wiring Diagram with CT (EU)

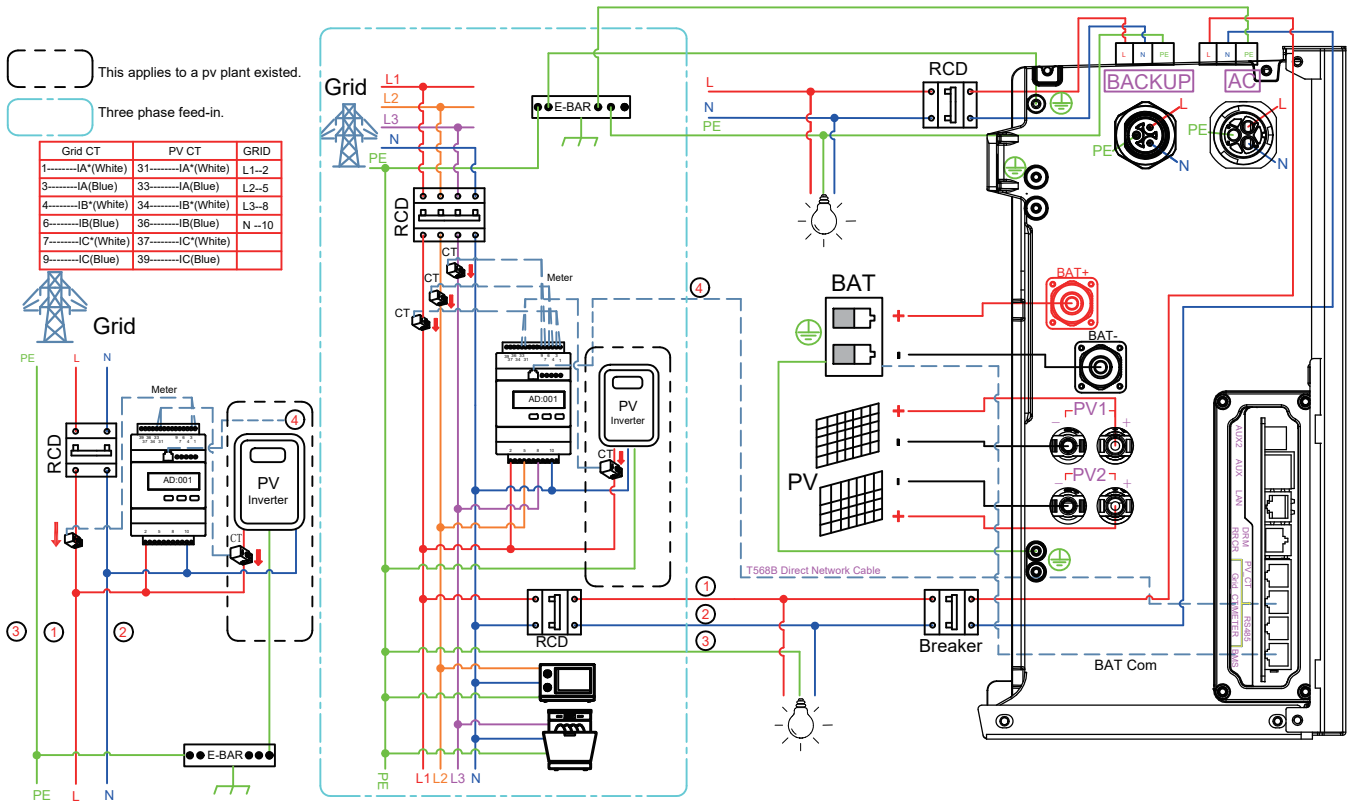
412-90017-01



Single-phase System Wiring Diagram with CHINT Electricity Meter DTSU666 (Without CT)(EU)



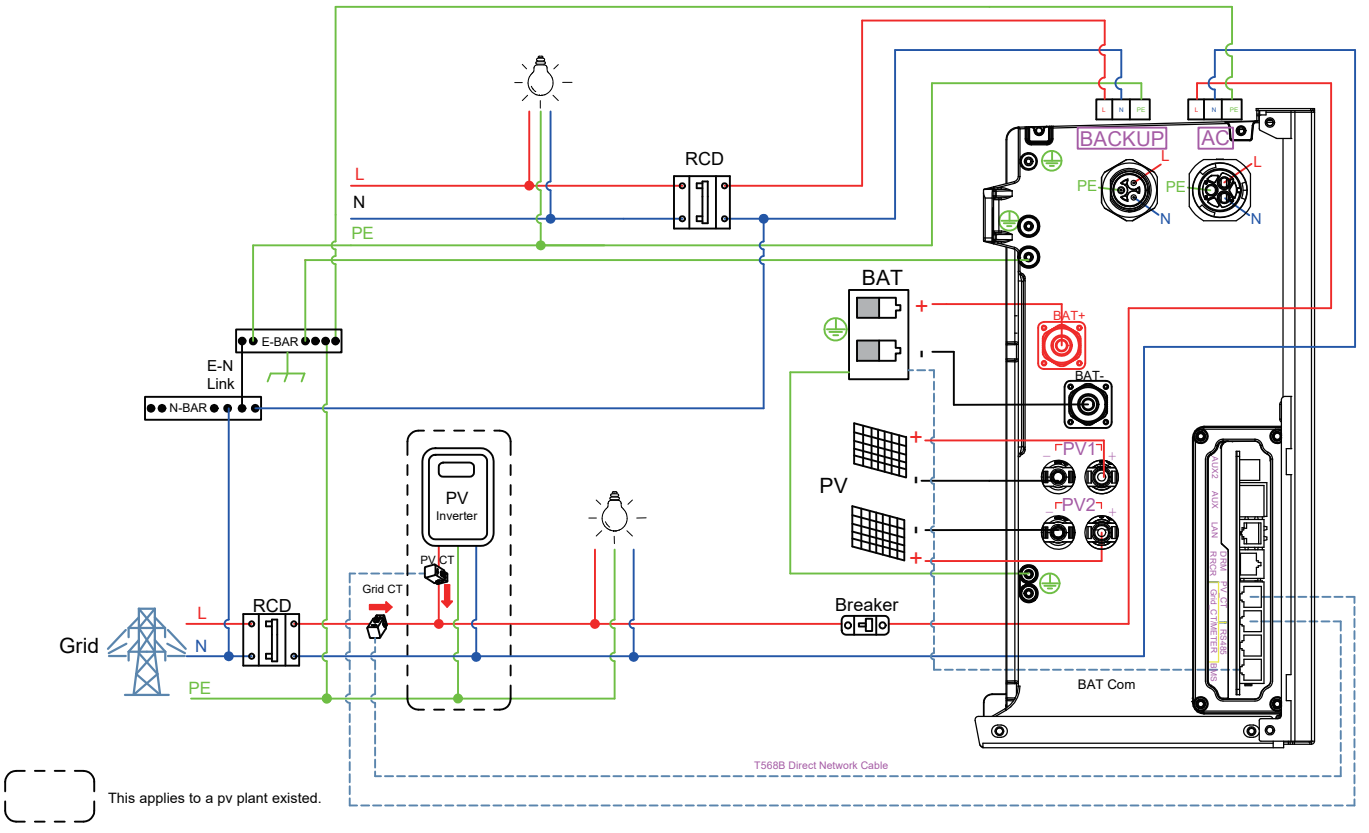
Single-phase System Wiring Diagram with CHINT Electricity Meter DTSU666 (With 3CT or 6CT)(EU)



Single-phase System Wiring Diagram with CT

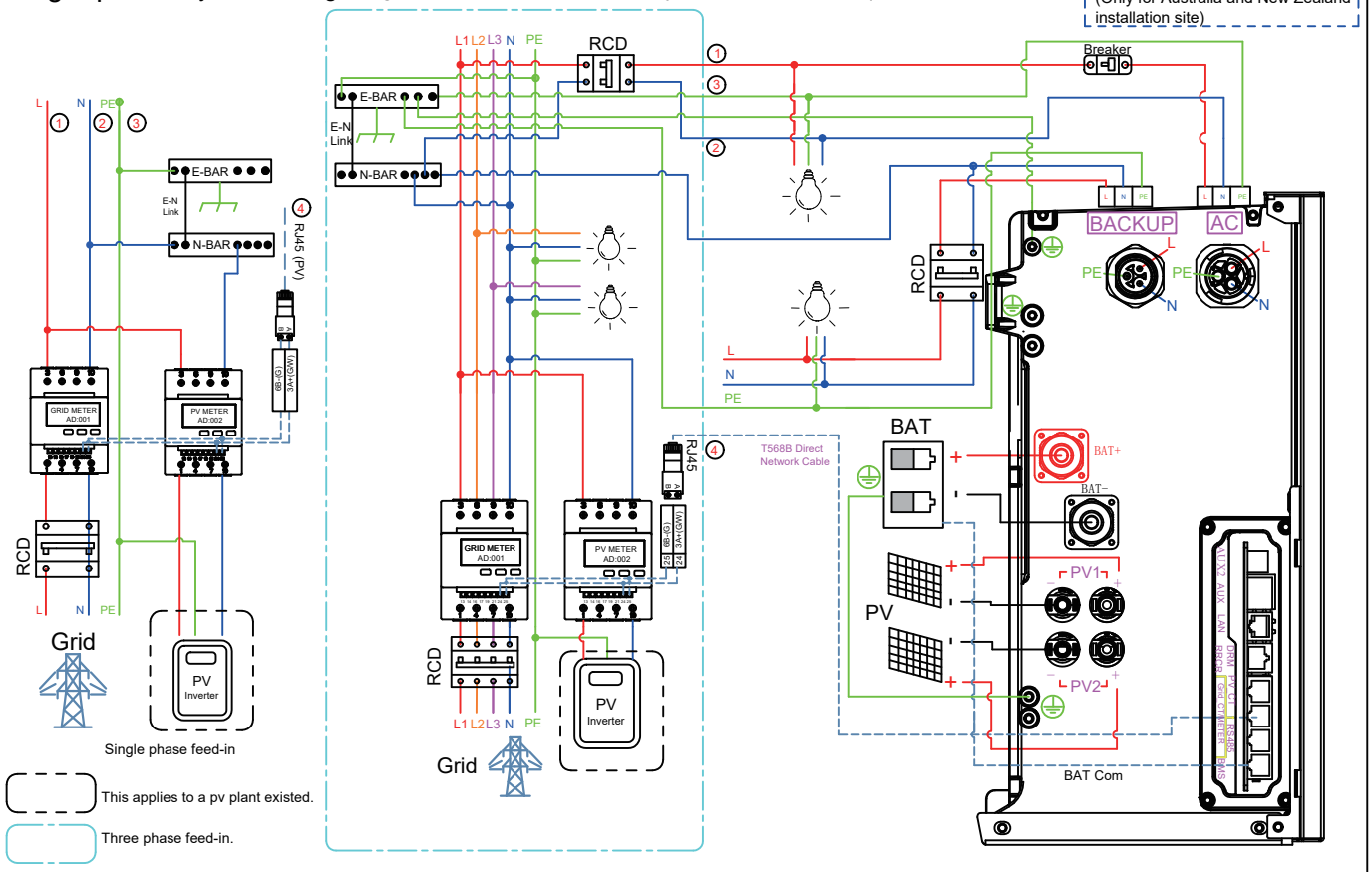
412-90017-01

⚠ NOTICE
(Only for Australia and New Zealand installation site)



Single-phase System Wiring Diagram with CHINT Electricity Meter DTSU666 (Without CT)

NOTICE
(Only for Australia and New Zealand installation site)



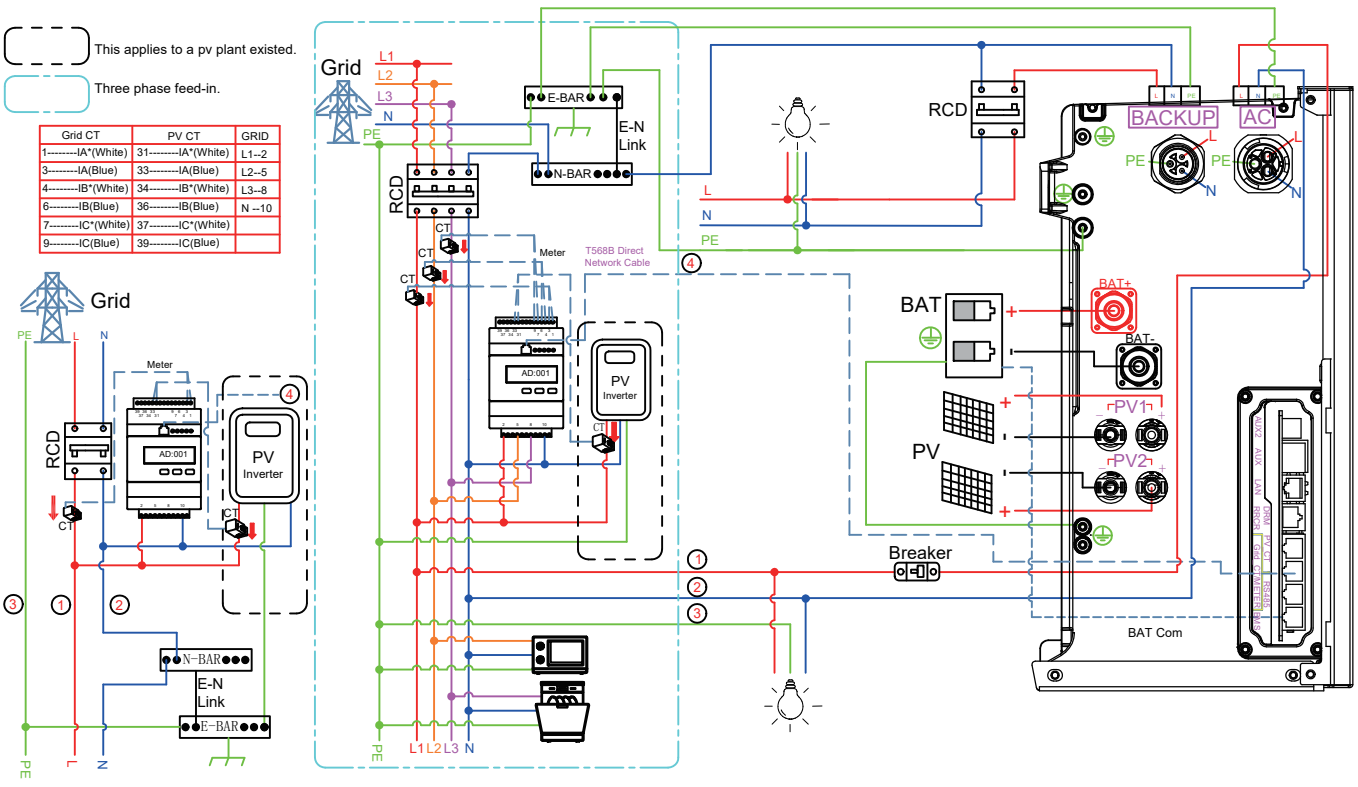
Single-phase System Wiring Diagram with CHINT Electricity Meter DTSU666 (With 3CT or 6CT)

NOTICE
(Only for Australia and New Zealand installation site)

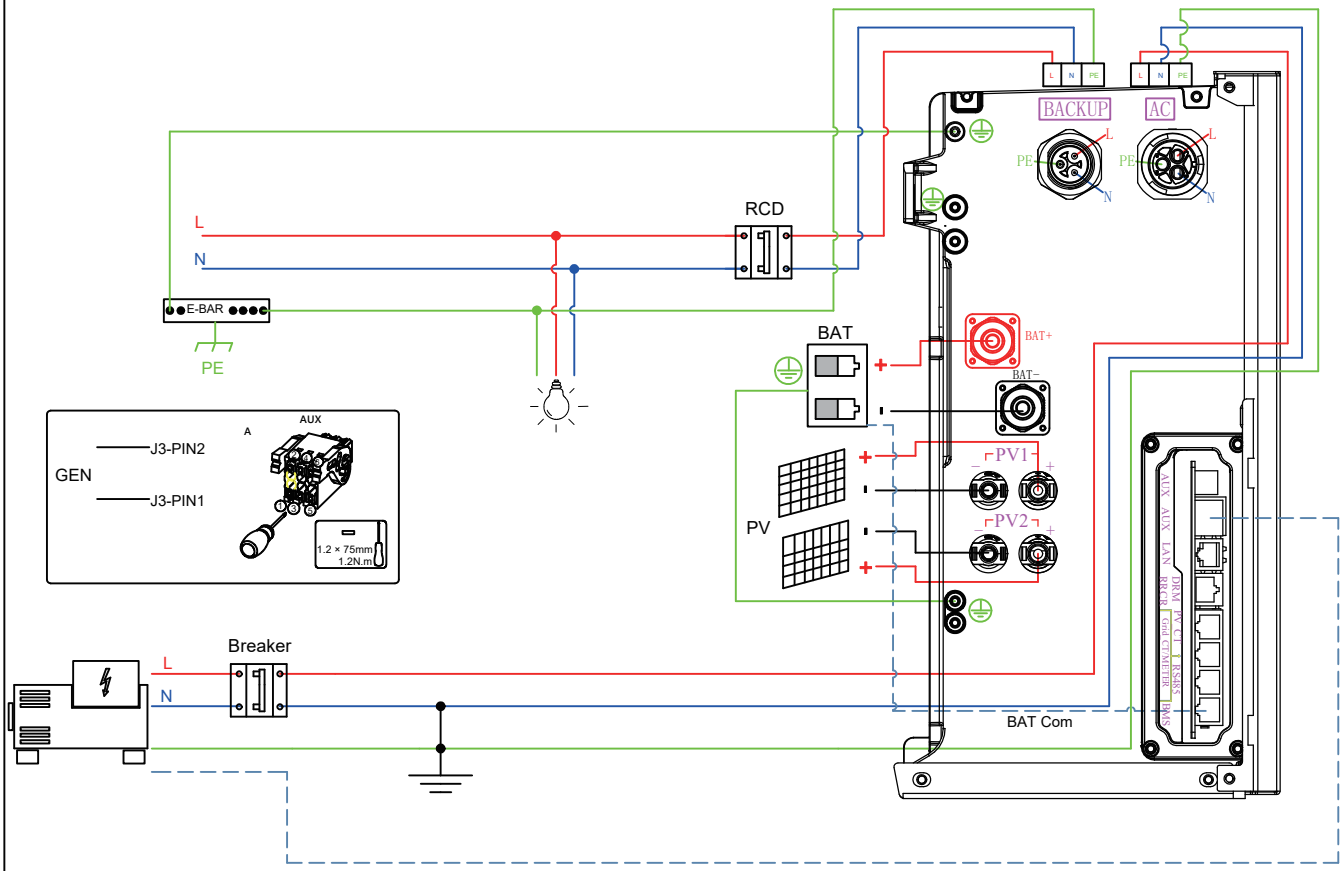
This applies to a pv plant existed.

Three phase feed-in.

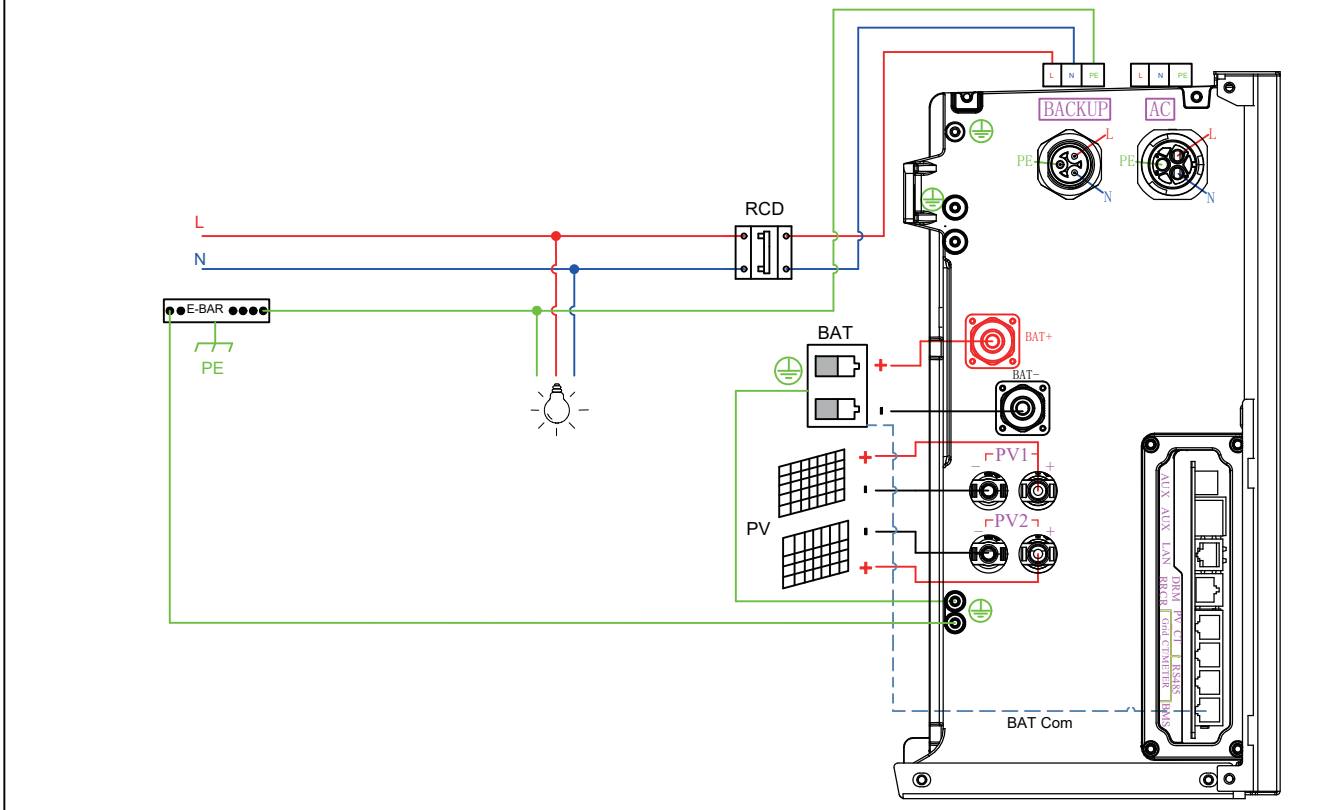
Grid CT	PV CT	GRID
1--------IA*(White)	31--------IA*(White)	L1--2
3--------IA(Blue)	33--------IA(Blue)	L2--5
4--------IB*(White)	34--------IB*(White)	L3--8
6--------IB(Blue)	36--------IB(Blue)	N --10
7--------IC*(White)	37--------IC*(White)	
9--------IC(Blue)	39--------IC(Blue)	



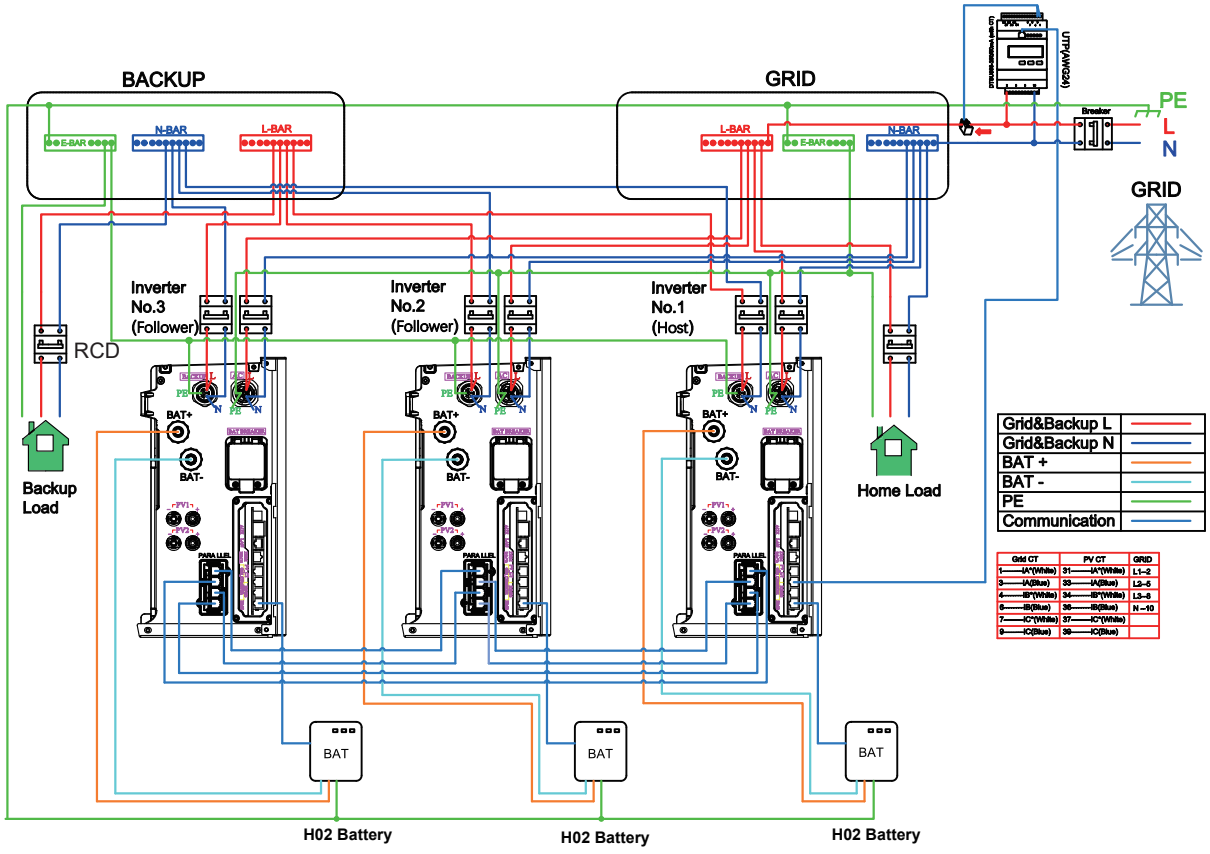
Diesel engine pure off-grid system wiring diagram



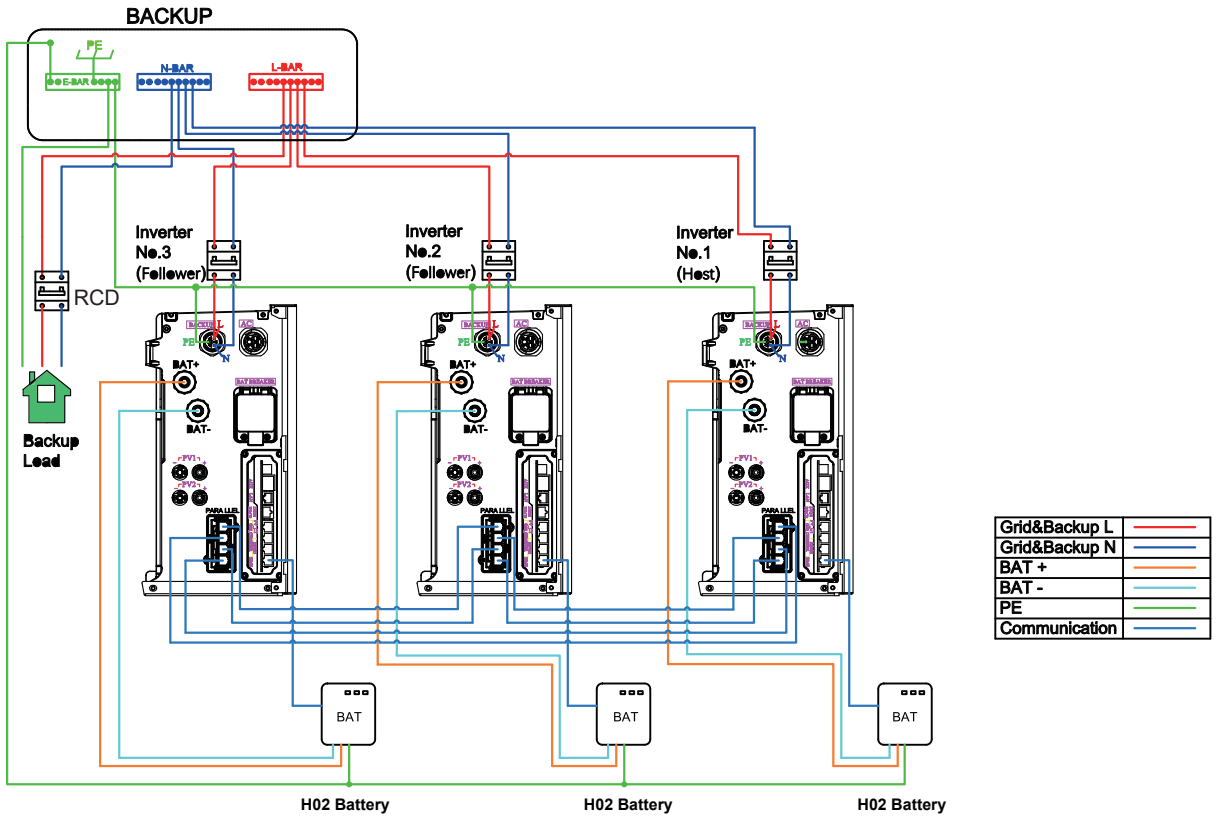
Pure off-grid system wiring diagram



Single-phase Parallel System Wiring Diagram
412-90027-00



Single-phase Parallel System Wiring Diagram (Off-Grid, without Generator)



⚠ NOTE	The inverter has not been tested to AS/NZS 4777.2:2020 for multiple inverter combinations and/or multiple phase inverter combinations, so combinations should not be used (for the products installed in the Australian market).

Appendix 2: Regional application standard

Please check with your local grid company and choose the correspond Regional Application Standard, the power quality modes Volt-var and Volt-Watt will be running automatically. (Only for regions with AS/NZS 4777.2 safety regulations).

Regional Application Standard	Electric Company	Standard Code Name
Australia A	N/A	AS4777.2-A
Australia B	N/A	AS4777.2-B
Australia C	N/A	AS4777.2-C
New Zealand	N/A	AS4777.2-New Zealand

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