HM Series Household Inverter
User Guide & Installation Manual

(ESYSUNHOME HM10-H/ESYSUNHOME HM15/ESYSUNHOME HM20)
(v01)

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Made in China

CE **RoHS**

With over two decades of experience, ESYSUNHOME has swiftly gained prominence as a leading player in the energy storage industry, specializing in lithium battery technology and Battery Management Systems (BMS). Trusted by global giants such as Huawei, Dell, and Toshiba, ESYSUNHOME is renowned for its innovative solutions. Supported by advanced AI functionalities, protection systems and a highly skilled R&D team, the company's development of the HM series All-in-One residential energy storage systems marks a significant milestone in its pursuit of excellence.

With offices strategically located in Sydney, Australia, and Munich, Germany, ESYSUNHOME is well-positioned for global expansion, aiming to establish a significant international footprint. The company's unwavering commitment to making clean energy accessible drives its mission to empower communities worldwide in embracing sustainable solutions for a brighter future.

Mission:

To provide safe and high-quality new energy products (batteries and power supplies) for every family.

Vision:

Make clean energy available to every family.

Core Values:

Unity and hard work;
Pragmatic and far-reaching;
Innovative research and development;
Scientific and intelligent manufacturing;
Creating value for customers;
Creating opportunities;
Contributing to society.

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1 Precautions

1.1 General Statement

Statement

This manual applies to the HM10-H ENERGY STORAGE SYSTEM/HM15 ENERGY STORAGE SYSTEM/HM20 ENERGY STORAGE SYSTEM. Please read this manual carefully and strictly adhere to all safety instructions during installation, operation, and maintenance. ESYSUNHOME will not be liable for any consequences arising from noncompliance with the general safety requirements or safety standards of design, production and use.

It is crucial to use this product under the specified design conditions, as any damage to parts, personal injury, or property loss resulting from improper usage will not be covered by the warranty. In addition, during installation, usage, and maintenance, all local laws and regulations must be observed. The safety instructions in this manual are supplementary to local laws and regulations.

ESYSUNHOME reserves the right not to assume any responsibility for consequences arising from the following:

- Expiation of free warranty of the product and its parts;
- Damage caused during transportation;
- Noncompliance with the installation, modification or use of national standards;
- Noncompliance with the installation and use instructions outlined in this manual;
- Operation under harsh conditions that are not specified in this manual;
- Failure or damage caused by installation, repair, modification, or disassembly by non-authorized service personnel;
- Energy storage system failure or damage caused by the use of non-standard components or software or those that are not provided by our company;
- Noncompliance with relevant international standards for design, installation and use;
- Equipment damage caused by abnormal natural conditions (force majeure such as lightning strikes earthquakes, fire and storms).

1.2 Requirements for Installation and Maintenance Personnel

- The personnel to be dispatched for installing or maintaining ESYSUNHOME 's equipment are fully trained and knowledge able of all safety precautions and capable of performing all operations correctly.
- Equipment installation, operation and maintenance must be carried out by professionals or trained personnel.
- Safety facilities must be dismantled and inspected by professionals.
- Equipment or components (including software) may be replaced by professionals or authorized personnel.

NOTE

Professionals: refer to the personnel who have received training or are experienced in equipment operation and have professional knowledge about the sources and extents of potential hazards during device installation, operation, and maintenance.

Trained personnel: refer to the personnel who have received technical training or have the necessary experience, and are aware of possible hazards in some operations and able to take protective measures to minimize hazards to themselves and others.

Operators: refer to the personnel who have access to equipment except trained personnel and professionals.

1.3 Important Safety Information

- Before equipment installation, operation and maintenance, please read this manual carefully.
- Make sure that the product is effectively grounded before operation. The grounding resistance should be less than 0.1Ω.
- Install all terminals of the energy storage system in accordance with the instructions in this manual.
- Follow the corresponding signs and symbols on equipment during operation.
- The grid-connected electricity selling of the energy storage system must be approved by the local power department, or compliant with the relevant provisions of national and local laws and regulations. It must be done by qualified personnel.
- Use a dry powder extinguisher in case of fire. Do not use a liquid extinguisher.

Danger signs

	**Danger!** Unauthorized removal, improper use or incorrect installation or operation may result in serious personal injury or device damage. The transportation, loading and unloading, installation, start-up and maintenance must be carried out by qualified or trained personnel.
	**Danger!** Prior to attempting any repair, electrical installation, or accessing any live parts, make sure that the equipment is cut off and wait for 5 min until internal capacitors are discharged to a safe voltage.
	**Danger!** Do not connect the backup load cable to the grid port, or the grid cable to the load port. Incorrect wiring can cause severe damage.
	**Danger!** The external CT must be connected to the inverter properly and securely before use. Failure to do so may result in high voltage at the CT ports.

Warning signs

	**Warning!** Installation must fully comply with national and local laws and regulations.
	**Warning!** Since the non-isolated topology is applied on the PV and grid side of the inverter, please use monocrystalline silicon or polysilicon battery panels (the negative PV must not be grounded).
	**Warning!** When exposed to sunlight, the PV array will generate a high DC voltage. For installation safety, please make sure that the entire PV panel is covered with an opaque cover before it is connected.

1.4 Safe Transportation and Storage

- When transporting the inverter, it must be packed in the original packaging to ensure the safety of the equipment during transportation.
- Upon receiving the goods, please inspect the external packaging of the inverter and then open the box for a comprehensive inspection.
- If any damage to the inverter occurs during transportation, please notify the shipping company. The shipping company is responsible for any equipment damage caused during transportation. If necessary, seek assistance from the installer or manufacturer.
- When handling inverters weighing 35kg or more, please use appropriate equipment or work together with multiple people.
- When storing the equipment, please use the original packaging and store it in a cool, dry, and well-ventilated area to prevent damage caused by moisture.

1.5 Safety Symbols Description

The symbols that may be found in this product are defined as follows:

MODEL: ESYSUNHOME HM10-H MODEL: ESYSUNHOME HM15 MODEL: ESYSUNHOME HM20	Brand: ESYSUNHOME ESYSUNHOME HM10-H: indicating the inverter specification is 10 kW. ESYSUNHOME HM15: indicating the inverter specification is 15 kW. ESYSUNHOME HM20: indicating the inverter specification is 20 kW.
	Stay safe.
	Beware of hot surfaces.
	Caution: Risk of electric shock.
	Prior to attempting any repair, electrical installation, or accessing any live parts, make sure that the inverter is switched off and wait for 5 minutes until internal capacitors are discharged to a safe voltage.
	Professional recycling and reuse are required.
	Please read this manual before using the product.
	Compliant with CE safety certification standards.

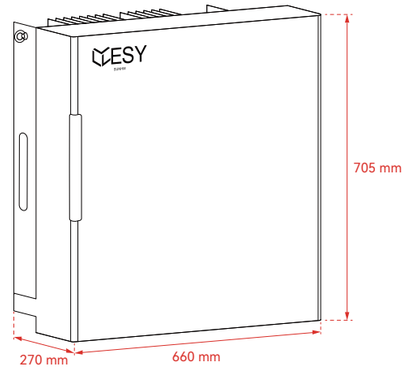
2 Product Introduction

2.1 Inverter Parameters

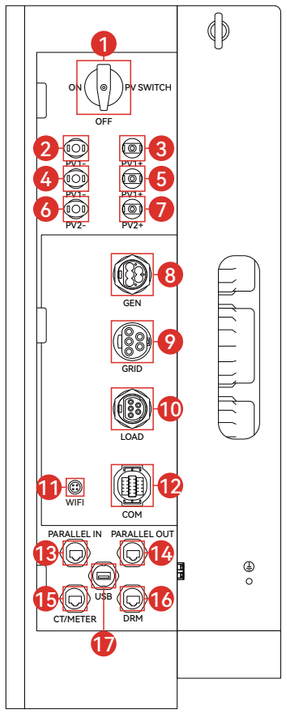
MODEL	ESYSUNHOME HM10-H	ESYSUNHOME HM15	ESYSUNHOME HM20
PV input			
Max. input power	20 kW	30 kW	30 kW
Rated input voltage	650 Vd.c.		
Max. input voltage	1000 Vd.c.		
MPPT voltage range	160 ~ 950 Vd.c.		
Min. operating voltage	160 Vd.c.		
Starting voltage	180 Vd.c.		
Max. input current	16 A/16 A	16 A/32 A	16 A/32 A
Max. short-circuit current	24 A/24 A	24 A/48 A	24 A/48 A
MPPT quantity	2		
PV input backfeed short circuit current	0 Ad.c.		
Battery input/output rating			
Battery type	Lithium-ion		
Rated voltage	450 Vd.c.		
Grid charging	YES		
Max D.C Volts	150 Vd.c. ~ 600 Vd.c.		
Max. charging power	10 kW	15 kW	20 kW
Max. charging current	25 Ad.c.	37.5 Ad.c.	50 Ad.c.
Max. discharging power	10 kW	15 kW	20 kW
Max. discharging current	25 Ad.c.	37.5 Ad.c.	50 Ad.c.
Battery output short circuit current	80 A		
Battery input backfeed short circuit current	80 A		
Grid rating			
Rated voltage	230/400 Va.c. 3L/N/PE		
Rated frequency	50 / 60 Hz		
Rated input power	10 kW	15 kW	20 kW
Rated output power	9.999 kW	15 kW	20 kW
Rated apparent power	9.999 kVA	15 kVA	20 kVA
Max. input apparent power	15 kVA	22.5 kVA	30 kVA
Max. output apparent power	9.999 kVA	16.5 kVA	22 kVA
Current inrush	95 A		
Rated input/output current	14.4 Aa.c.	21.7Aa.c.	28.9 Aa.c.
Max. input current	21.7 Aa.c.	32.6 Aa.c.	40.0 Aa.c.
Max. output current	14.4 Aa.c.	23.8 Aa.c.	31.8 Aa.c.
Max. output fault current	260 A		
Power factor range	0.8 leading~0.8 lagging		
THDI(@Range power)	≤ 3%		
Max. output overcurrent protection	95 A		
Grid Mains output short circuit current	260 A		
Grid input backfeed short circuit current	260 A		
Backup load output rating			
Rated output voltage	230/400 Va.c. 3L/N/PE		
Rated output frequency	50 / 60 Hz		
Rated output power	10 kW	15 kW	20 kW
Rated apparent power	10 kVA	15 kVA	20 kW
Max. apparent output power	10 kVA	15 kVA	20 kVA
Rated current	14.4 Aa.c.	21.7 A a.c.	28.9 Aa.c.
Current inrush	95 A		
Max. output current	14.4 Aa.c.	21.7 A a.c.	28.9 Aa.c.
Max. output fault current	260 A		
Power factor range	1.0		
THDV	≤ 3% (linear load)		
Overload capacity	105%, 60 s/120%, 30 s		
Switching time	≤ 10 ms		
Load output short circuit current	260 A		

MODEL	ESYSUNHOME HM10-H	ESYSUNHOME HM15	ESYSUNHOME HM20
Generator input			
Max. input power	10 kW	15 kW	20 kW
Max. input current	14.4 Aa.c.	21.7 Aa.c.	28.9 Aa.c.
Nominal voltage	3L/N/PE, 230/400 Va.c.		
Rated current (maximum continous)	14.4 Aa.c.	21.7Aa.c.	28.9 Aa.c.
Power factor range	1.0		
Nominal frequency	50/60 Hz		
Efficiency			
Max. efficiency (PV to Grid)	98.2%		
MPPT efficiency	99.9%		
General parameter			
Dimensions (LxWxH)	660 mm×270 mm×705 mm		
Net weight	49.2 kg	51.2 kg	51.2 kg
Gross weight	55.4 kg	57.4 kg	57.4 kg
Install method	Floor mounting/ Wall mounting		
Operation temperature	-25 ~ 60 ℃		
Storage temperature	-25 ~ 70 ℃		
Altitude	≤ 3000 m		
Noise level at 1m	≤ 45 dB		
Relative humidity	5~95% (No Condensation)		
Cooling method	Natural cooling	Intelligent air cooling	Intelligent air cooling
Environmental category	Outdoor		
Environment pollution degree	External: PD 3, Internal: PD 2		
Communication method	WiFi/Ethernet/GPRS (optional), USB/RS485/CAN		
Ingress protection rating	IP 66		
Protection rating	Class I		
Anti-islanding method	Active Anti-Islanding: Frequency Shift (Method a)		
Topology	Non-isolated		
Over voltage category	OVC II (for DC); OVC III (for AC)		
Protection	Over/Under-voltage; Over/Under-frequency; Overload; Short Circuit; Over-temperature; Reverse Polarity of Photovoltaic Modules and Batteries; Leakage Current; Insulation Resistance; Anti-island Protection		
Country of Manufacture	China		
Warranty	120 months		

2.2 Dimensions



2.3 Inverter Port Descriptions

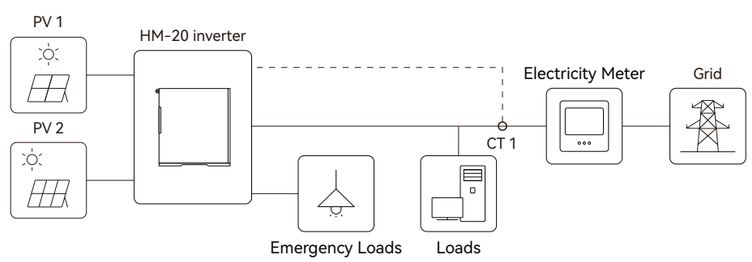


Purpose of each port on the inverter enclosure

S/N	Mark	Purpose
1	PV SWITCH	PV OFF/ON switch
2	PV1-	PV1 (1) Negative Input
3	PV1+	PV1 (1)Positive Input
4	PV1-	PV1 (2) Negative Input
5	PV1+	PV1 (2) Positive Input
6	PV2-	PV2 Negative Input
7	PV2+	PV2 Positive Input
8	GEN	Generator terminal connection
9	GRID	Grid connection
10	LOAD	Load connection
11	WIFI	WiFi-IoT Max port (optional)
12	COM	Communication port connection
13	PARALLEL IN	Parallel in port (optional)
14	PARALLEL OUT	Parallel out port (optional)
15	CT/METER	CT/METER port
16	DRM	DRM port (for Australia)
17	USB	USB port

2.4 Application Scenarios

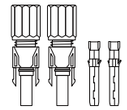
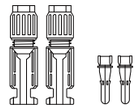
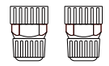
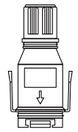
2.4.1 Used as A Photovoltaic (PV) Inverter

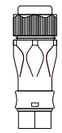
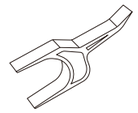
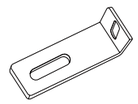
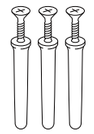
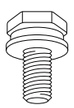


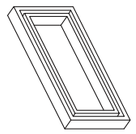
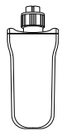
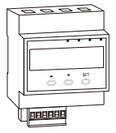
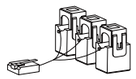
3 Preparation Before Installation

3.1 Packing List

3.1.1 Packing List of Inverter

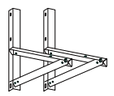
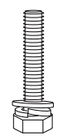
Item	Specifications	Quantity	Diagram
Inverter	HM10-H/HM15/HM20	1	
PV+ Connector	VP-D4B-CHSM4 external terminal casing, including metal terminal	3	
PV- Connector	VP-D4B-CHSF4 internal terminal casing, including metal terminal	3	
LAN Port Connector	RJ45; Assembly type; Line diameter ϕ3.0 mm²~ϕ6.0 mm²	4	
COM Port Connector	16 Pin, core diameterϕ0.5 mm²~0.75 mm²	1	
COM Port Waterproof Ring	External diameter Φ18.6 mm²; Line diameter ϕ4 mm²~ϕ6.1 mm², 4 holes	1	
COM Port Nylon Screw Plug	Diameterϕ5 mm², height 17 mm	4	
Load Output Terminal	RBH100-32-5P-W-M-26-BK	1	
Generator Port Connector	RBH100-32-5P-W-F-26-BK	1	

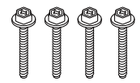
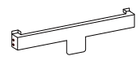
Grid Port Connector	AC5C Connector I 5PCF	1	
Connector Removal Tool	Used for Load/Generator/Grid port connector	1	
Insulated Cord End Terminal 4mm²	E4012, gray, used for load/generator port connector	20	
Insulated Cord End Terminal 6mm²	E6010, black, used for grid port connector	10	
Insulated Cord End Terminal 0.75mm²	E7512, red, used for COM port connector	16	
Angle Iron	L79.5×65×25 mm	1	
Expansion Tubes with Screws	M6*40 mm, used for angle iron	1	
Angle Iron Screws	M4*12 mm	1	
Ring-Shaped Crimp Cable lug	RNB5.5-6, 48A, Φ=6.5 mm, 5.6×23 mm	1	
Ground Wire Screw	M6*12 mm	1	

RJ45 Waterproof Ethernet Network Cable Connector (Spare)		1	
Waterproof Gasket (Spare)	Silicone, black, matte, 104.5x50.3x10.6 mm	1	
Smart Dongle (Optional)	WiFi IoT Max	1	
Smart electricity Meter (Optional)	DTSD3366M-4-W1-A, CT*6 pcs, 1-to-3*2 pcs adapters	1	
CTs Components (Optional)	CT*3 with cable and RJ45 terminal	1	

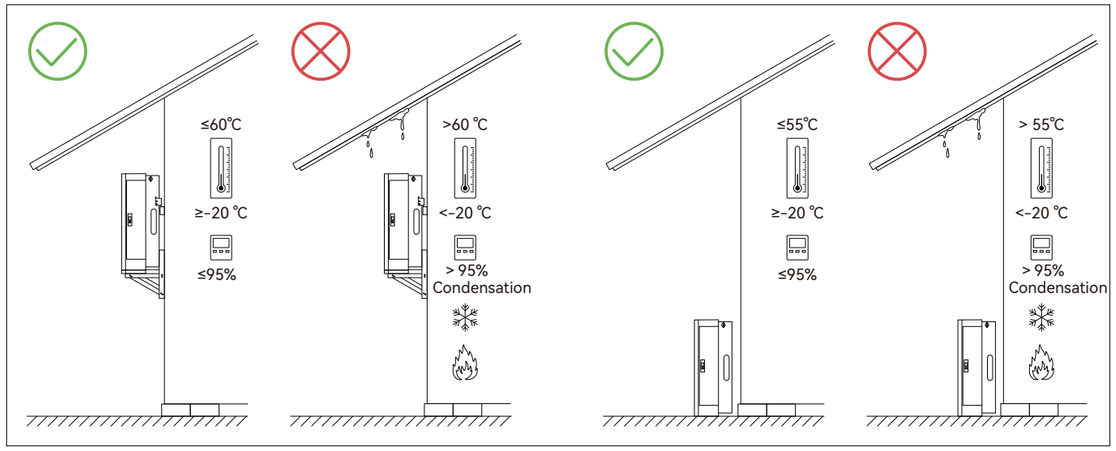
3.1.2 Packing List of Wall Mounting Accessories

Only applicable for wall-mount installation.

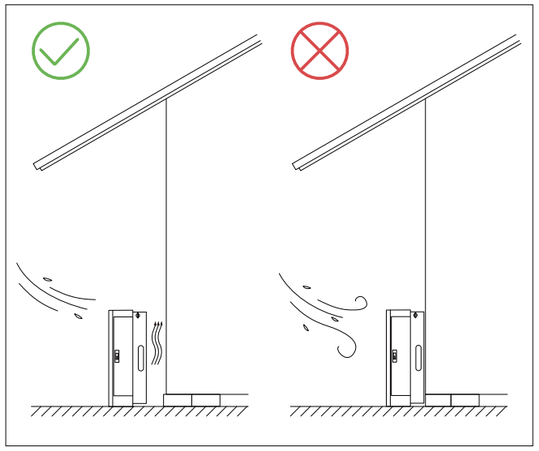
Item	Specifications	Quantity	Diagram
Triangular Bracket	340 mm×280 mm×35 mm	2	
Bracket Base	660 mm×170 mm×45 mm	1	
Bracket Screws	M6×169, SUS304	12	
Bracket Base Screws	M5*12, SUS304	4	

Expansion Bolt	YPm6*70 mm, SUS304	12	
Handlebar Screws	M4*35 mm	4	
Rear Panel	510 mm×112 mm×42.5 mm	1	
Rear Panel Bracket	140 mm×60 mm×30 mm	1	
Rear Panel Screws	M6*16, SUS304	4	

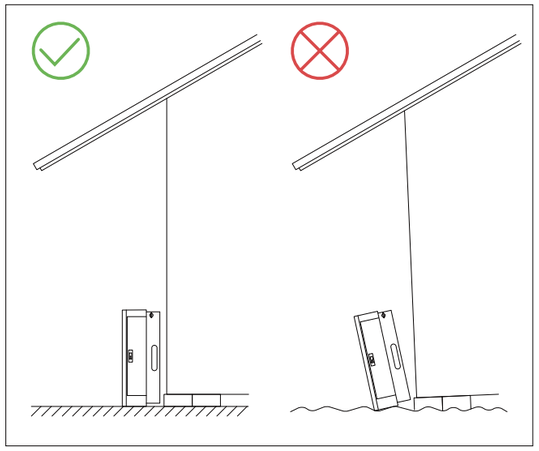
3.2 Selection of the Installation Environment



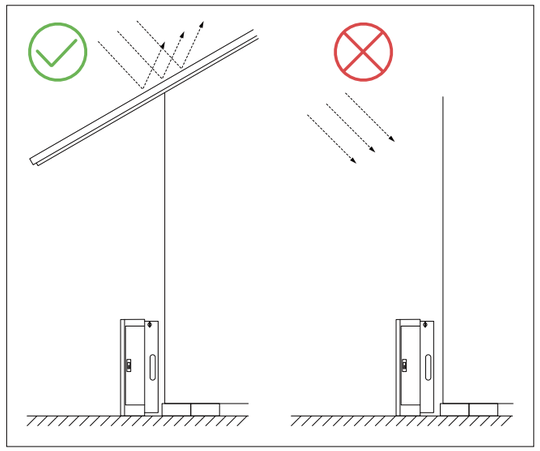
The ambient temperature range is -25 ℃ to 60 ℃, when the inverter is installed without batteries, and -20 ℃ ~ 55 ℃ when the inverter is installed with batteries. The relative humidity should be maintained between 5% to 95% (no condensation).



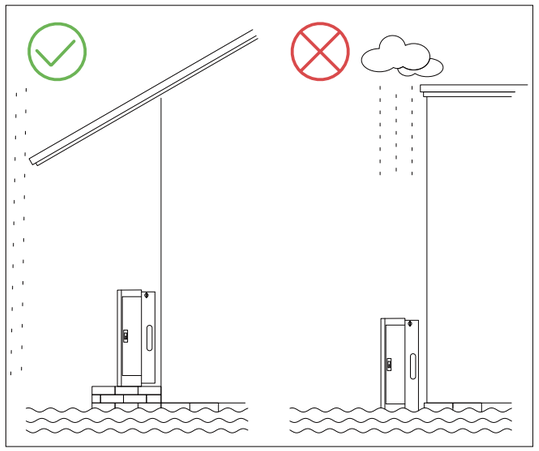
To ensure proper heat dissipation, please install it in a well-ventilated place.



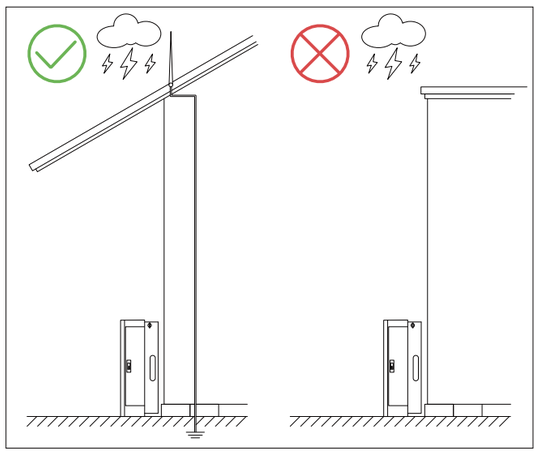
For stability, the product should be installed on solid and level ground.



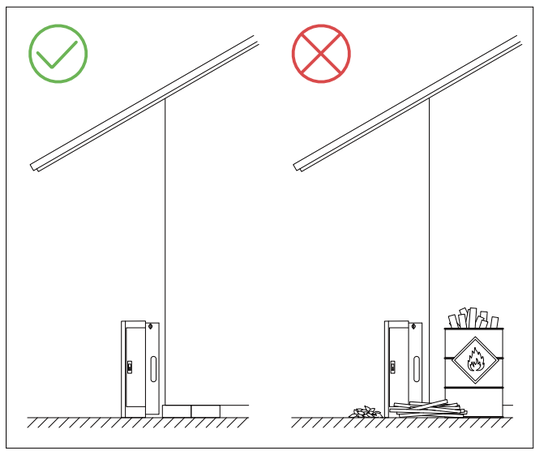
It can be installed outdoors, but must not be directly exposed to sunlight.



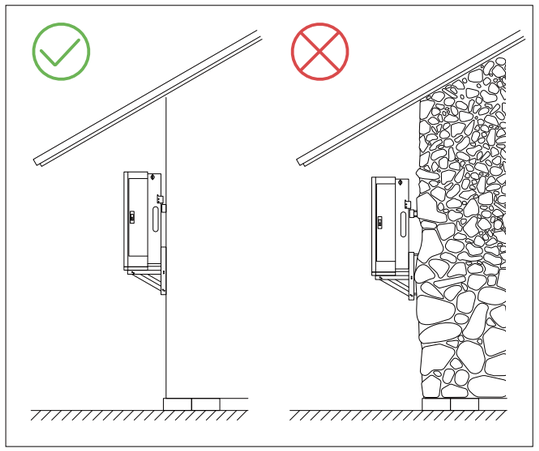
Do not install it in damp or submerged areas.



Do not install it in areas prone to lightning strikes.



Do not install it near combustibles.



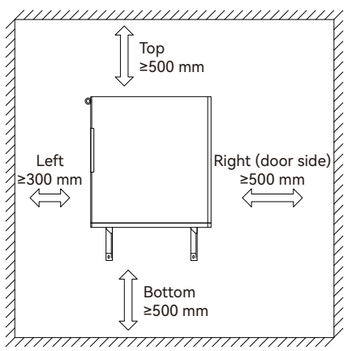
For stability, the product should be installed on solid and flat wall.

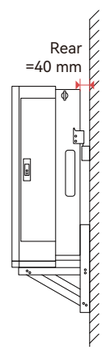
3.3 Selection of Installation Location

3.3.1 Selection of Wall Mounting Location

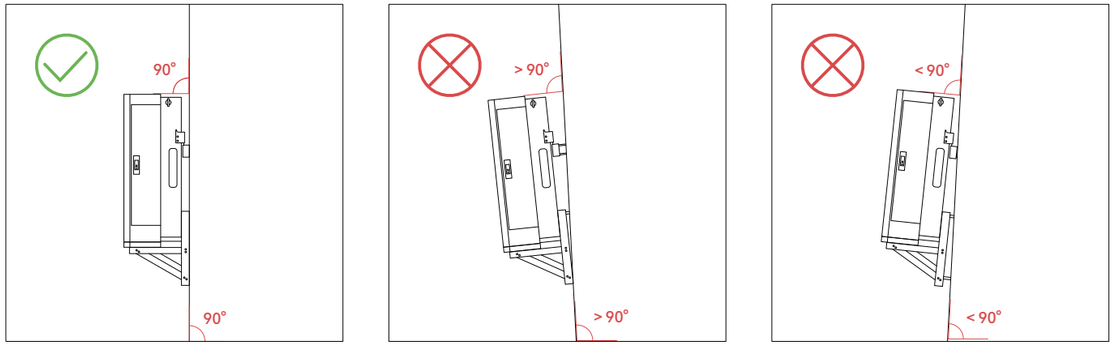
Applicable scenarios: When the inverter is used as a PV inverter.

The clearances around the inverter must not be less than the following:

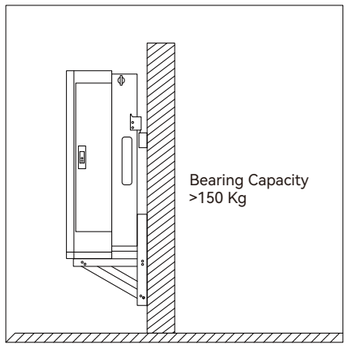




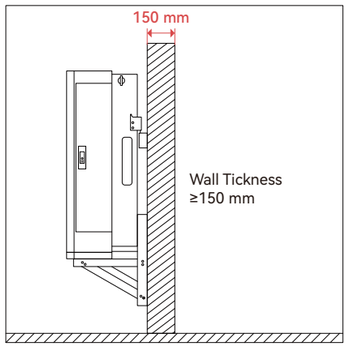
Top	500 mm
Bottom	500 mm
Right (door side)	500 mm
Left	300 mm
Rear	40 mm



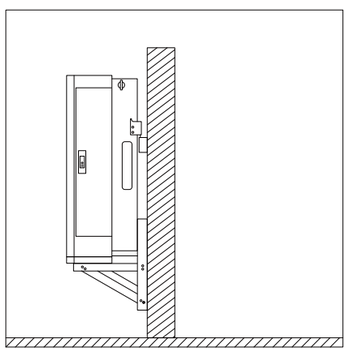
For vertical installation, ensure there is no forward or backward tilting.



The wall bearing capacity shall be greater than 150 Kg.

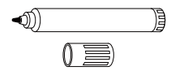
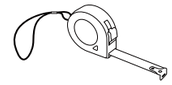
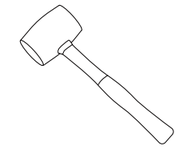
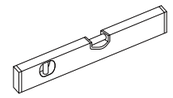
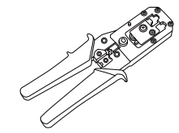
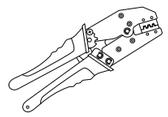
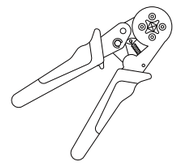
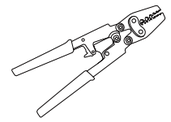
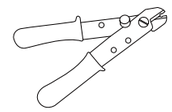
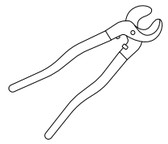
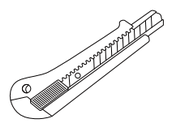
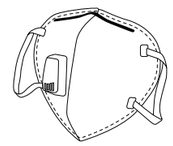


The wall thickness should not be less than 150 mm.



The inverter must be installed on a solid wall.

3.3 Preparation of Installation Tools

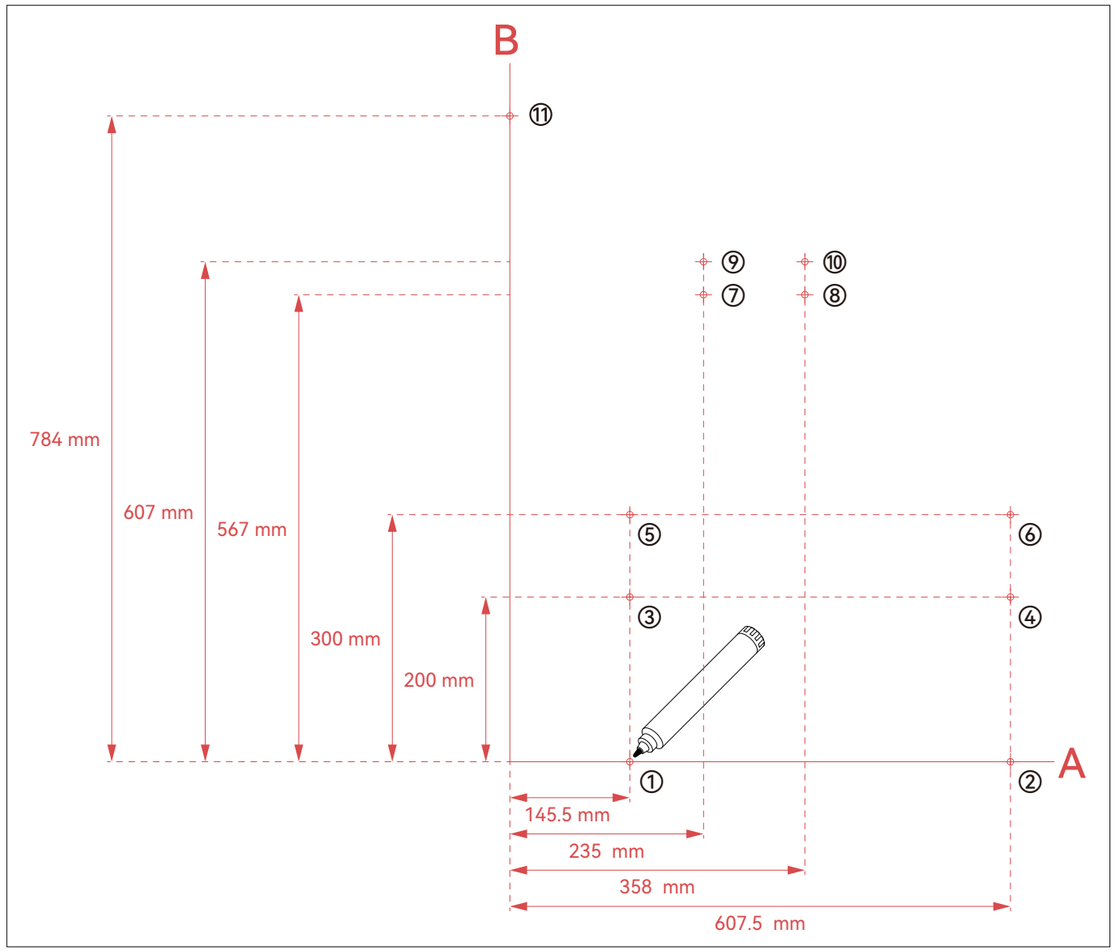
				
Power Drill ϕM6	Marker	Measuring Tape	Hammer	Open-end Wrench S=7mm
				
Phillips Screwdriver PH1	Allen Screwdriver S2 and S1.5	Level	Crimping Pliers for RJ45	Crimping Pliers for PV Terminals
				
Ferrule Crimping Pliers	Crimping Pliers	Stripping Pliers	Diagonal Pliers	Cable Cutting Pliers (wire cutter)
				
Utility Knife	Safety Gloves	Dust Mask	Goggles	Safety Boots

4 Installation

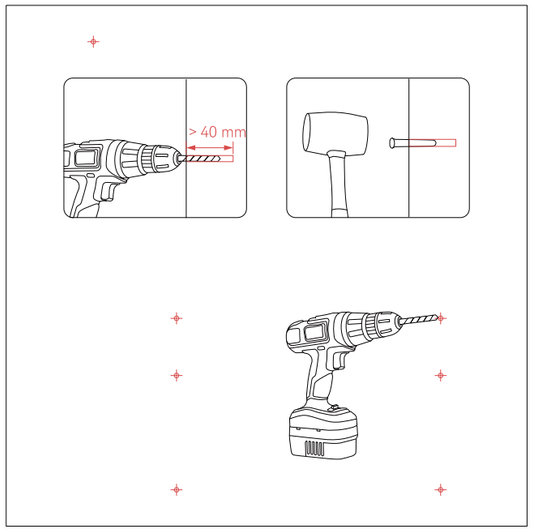
4.1 Wall-Mounted Installation

Tools and accessories required for this step:

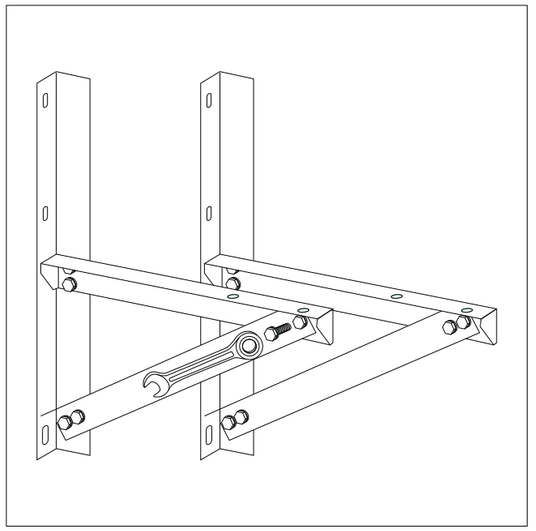
Packing List of Inverter	Inverter
Packing List of Wall Mounting Accessories	All Accessories
Tools	Power Drill ϕM6, Hammer, Phillips Screwdriver PH1, Marker



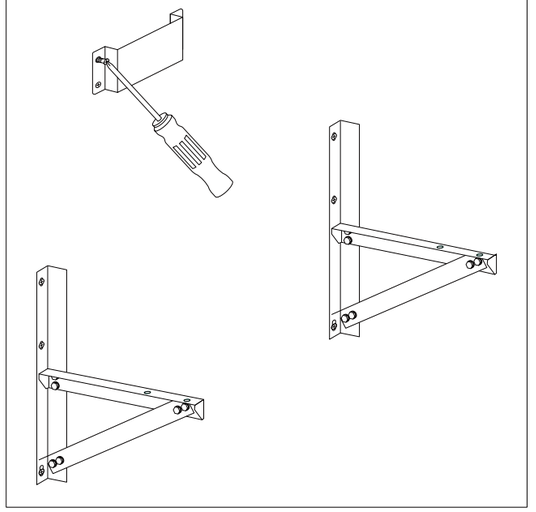
Step 1: Mark the positions of the angle irons holes on the wall with a marker.



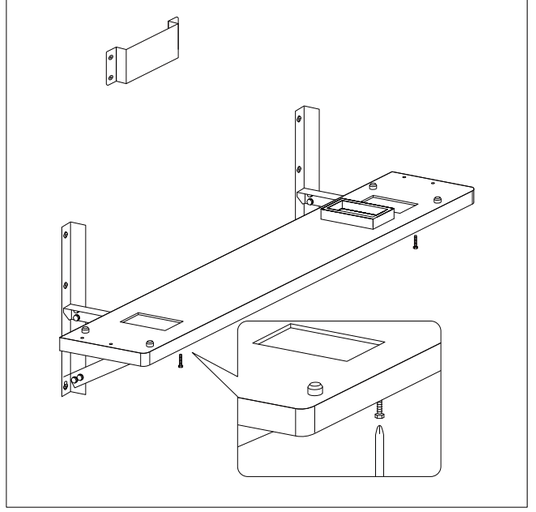
Step 2: Drill the angle iron holes with the power drill, and hammer the expansion bolts into the holes.



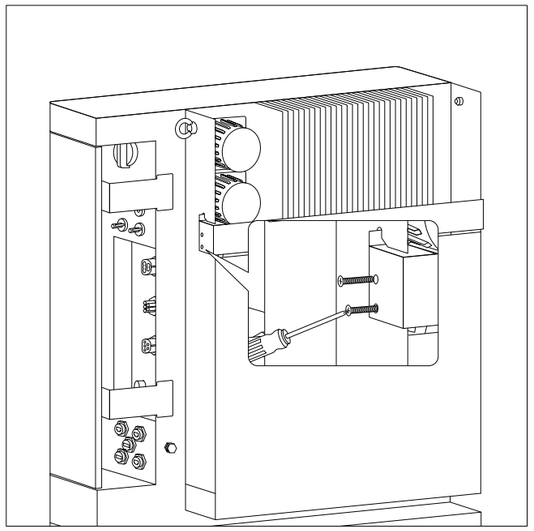
Step 3: Assemble the triangular brackets with bracket screws.



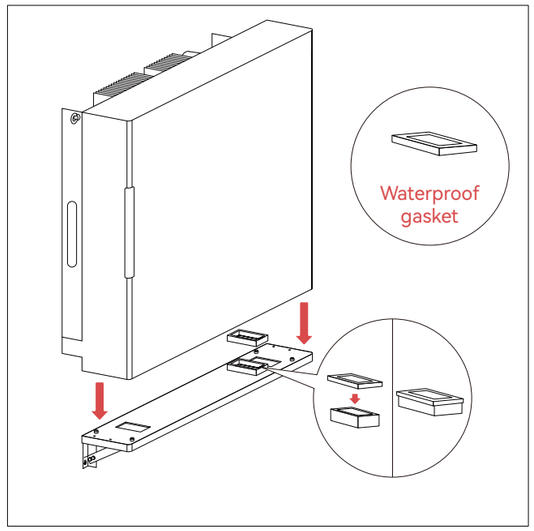
Step 4: Secure the triangular bracket and rear panel to the wall with the nuts of the expansion bolts.



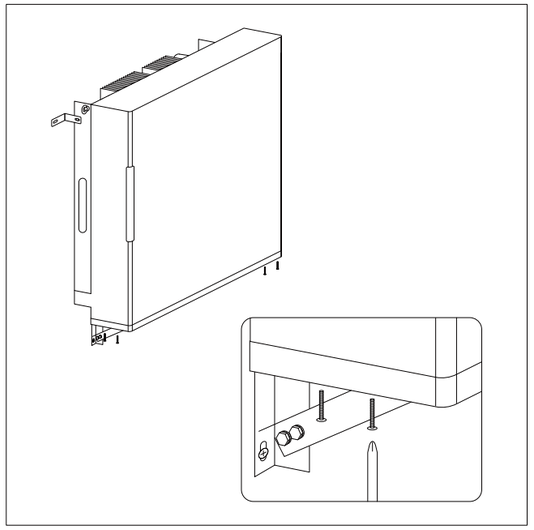
Step 5: Place the bracket base on the triangular bracket and secure it with the bracket base screws.



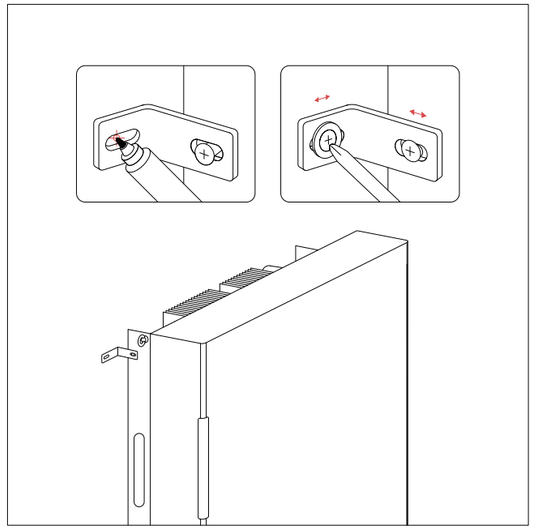
Step 6: Secure the rear panel to the heat sink of the inverter with the rear panel screws.



Step 7: Place the waterproof gasket on top of the bracket base. Then, carefully position the inverter so that it sits firmly and securely onto the base with the gasket in place. Ensure the inverter is tightly seated to maintain a proper seal and ensure waterproof performance.

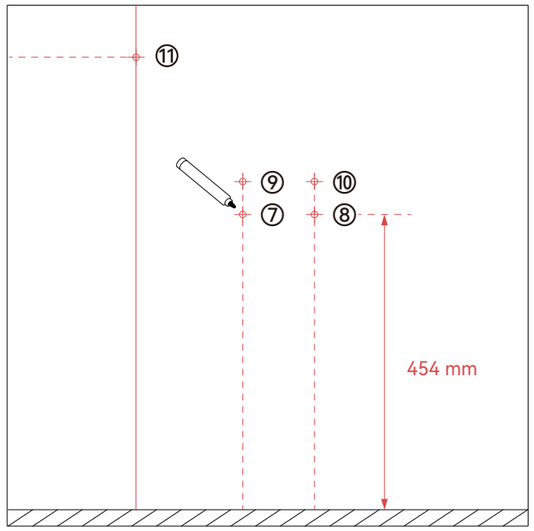


Step 8: Align the screw holes at the bottom of the inverter with the corresponding holes on the bracket base, ensuring the base fully covers the underside of the inverter. Then, tighten the screws to secure the base. Use M4x12mm screws and tighten them with a standard torque of 2.98 Nm (dry, steel, Grade 8.8).

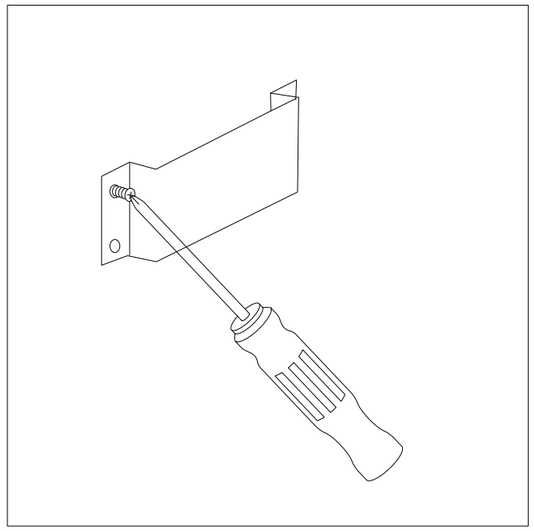


Step 9: Assemble the angle iron and ensure it is securely fastened to the wall. Make sure all connections are tight and stable to provide firm support for the inverter.

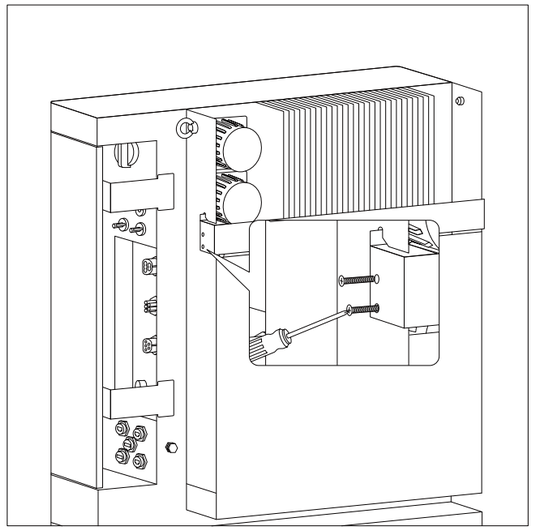
4.2 Floor Standing Installation



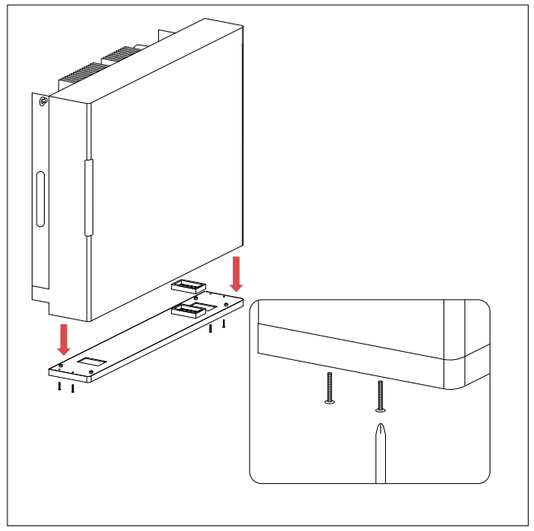
Step 1: Mark the positions of the angle irons holes on the wall wit h a marker. (Screw holes for angle iron and rear plate, with screws 7 and 8 454mm away from the bottom surface)



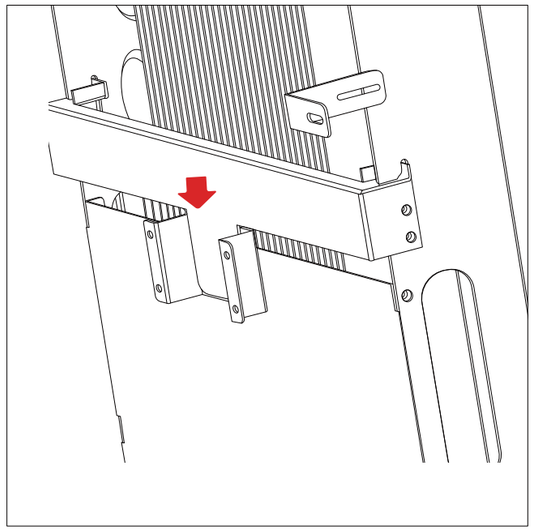
Step 2: Secure the rear panel to the wall with the nuts of the expansion bolts.



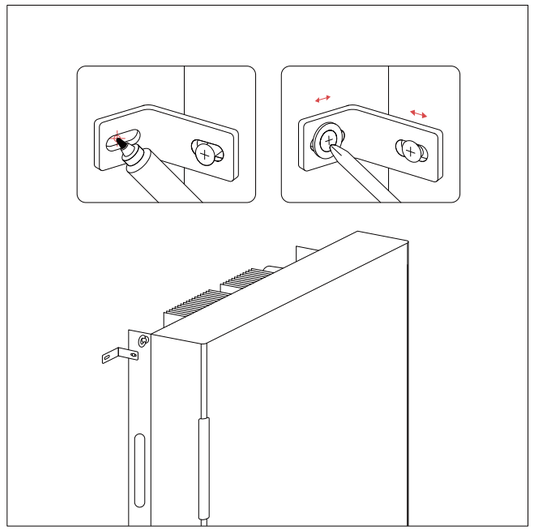
Step 3: Secure the rear panel to the heat sink of the inverter with the rear panel screws



Step 4: Align the screw holes at the bottom of the inverter with the corresponding holes on the bracket base, ensuring the base fully covers the underside of the inverter. Then, tighten the screws to secure the base. Use M4x12mm screws and tighten them with a standard torque of 2.98 Nm (dry, steel, Grade 8.8).



Step 5: Step 5: Place the inverter in the installation position and insert the back cover into the back panel.



Step 6: Install angle iron.

5 Wiring

5.1 RCD Wiring Diagram

Installers should refer to local standards and the following table when selecting cables. The cable length is generally 2-10m. Cables that are too long may cause deviation from the rated voltage. In this case, the cross-sectional area of the cables should be increased accordingly. An external type B RCD is required on the ports of the inverter. See the following table.

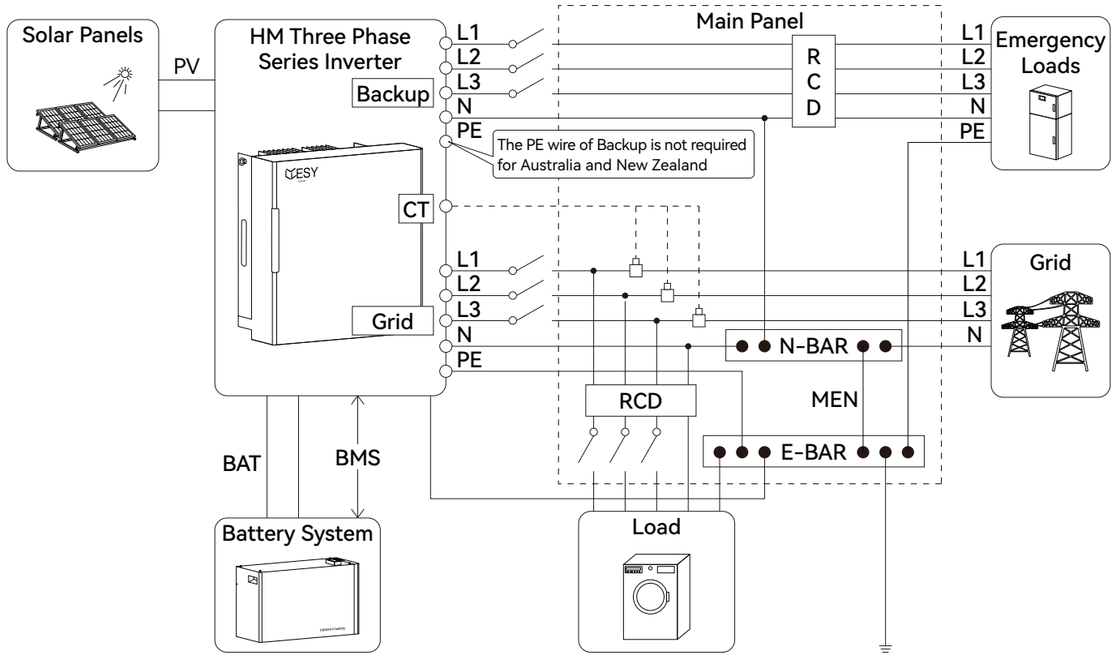
ESYSUNHOME HM15/HM20			
Category	Cable Size	Type of Circuit Breaker	RCD
Grid/ AC Input (L1. L2. L3. N. PE)	6 mm²	400 V.a.c /50 A	30 mA/Type B
EPS/Load Output (L1. L2. L3. N. PE)	6 mm²	400 V.a.c /40 A	30 mA/Type B
Generator (GEN) / AC Input (L1. L2. L3. N. PE)	6 mm²	400 V.a.c /40 A	30 mA/Type B
PV1/PV2/PV Input (+. -)	4~6 mm²	/	/

ESYSUNHOME HM10-H			
Category	Cable Size	Type of Circuit Breaker	RCD
Grid/ AC Input (L1. L2. L3. N. PE)	6 mm²	400 V.a.c /40 A	30 mA/Type B
EPS/Load Output (L1. L2. L3. N. PE)	4 mm²	400 V.a.c /32 A	30 mA/Type B
Generator (GEN) / AC Input (L1. L2. L3. N. PE)	4 mm²	400 V.a.c /32 A	30 mA/Type B
PV1/PV2/PV Input (+. -)	4~6 mm²	/	/

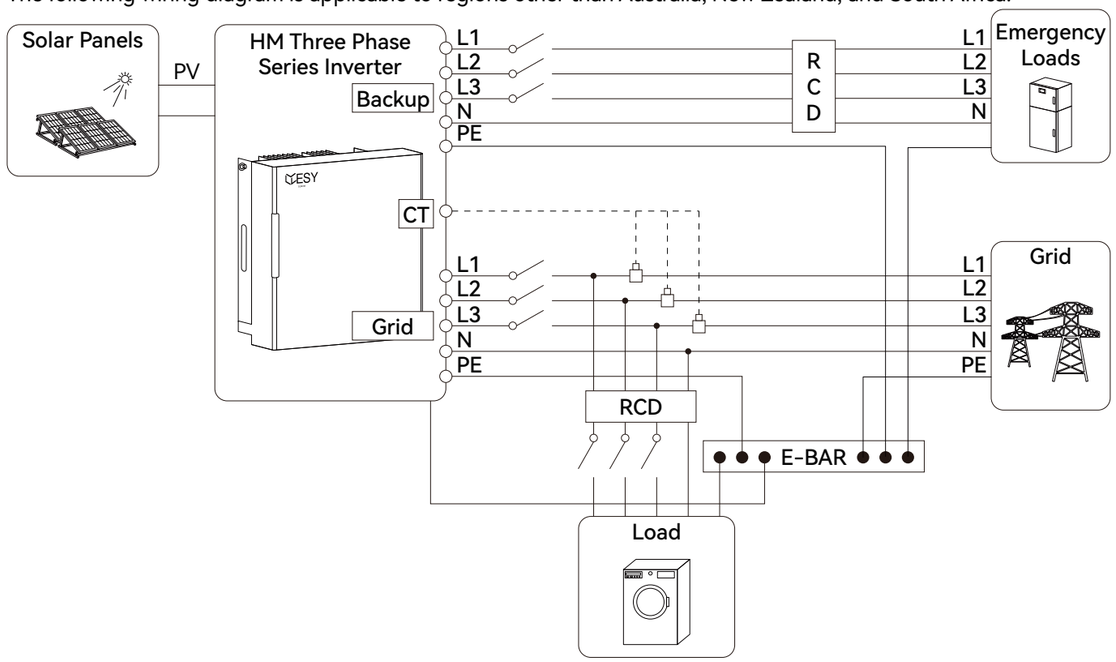
The following wiring diagram is applicable to Australia, New Zealand, South Africa and other regions:

Warning

For Australia, New Zealand and South Africa, the neutral cable of ON-GRID side and BACK-UP side must be connected together. Otherwise BACK-UP function will not work.



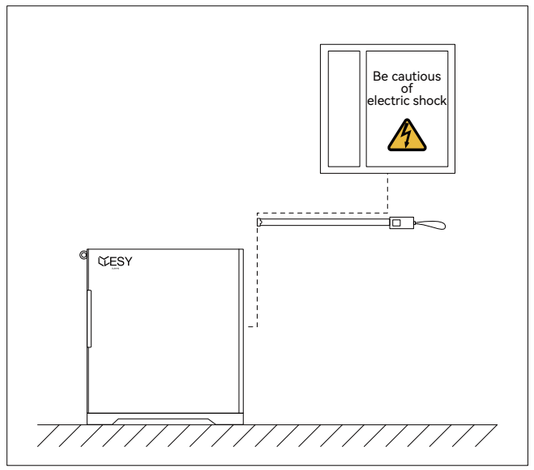
The following wiring diagram is applicable to regions other than Australia, New Zealand, and South Africa:



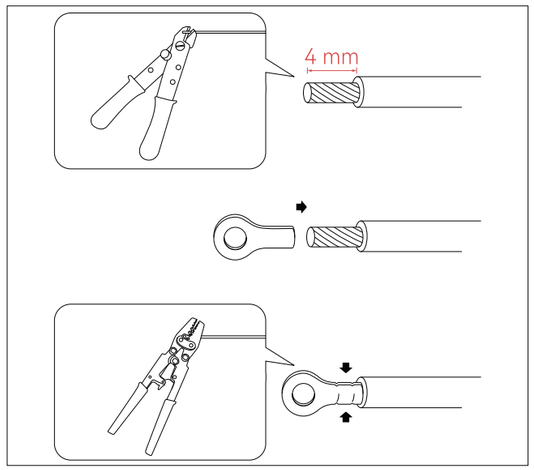
5.2 Grounding Connection

Tools and accessories required for this step:

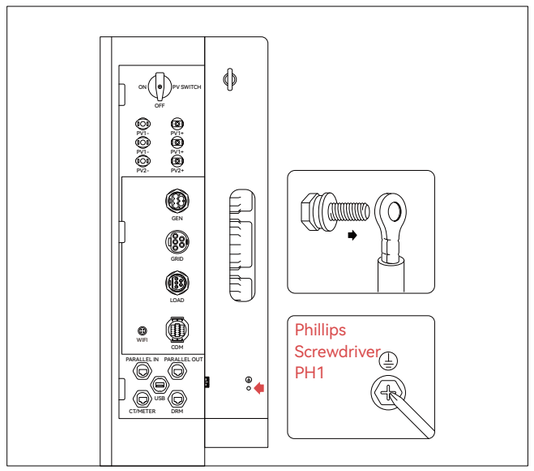
Packing list of inverter	Ring-Shaped Crimp Cable Lug, Ground Screw
Tools	Crimping Pliers, Diagonal Pliers, Stripping Pliers, Phillips Screwdriver PH1, Measuring Tape
Cable	Ground Cable ϕ6 mm²



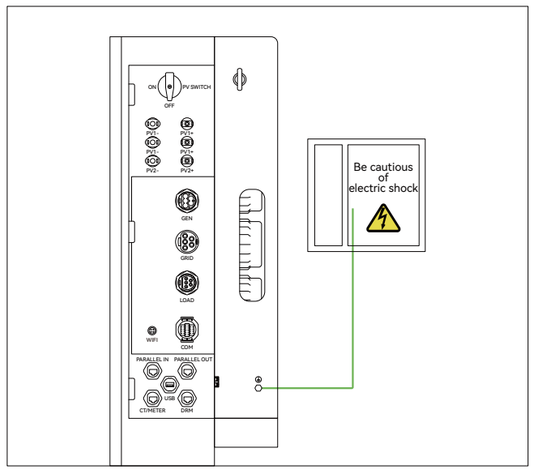
Step 1: Measure the distance between the ground wire connection aperture located on the side of the inverter and the combiner box using a measuring tape.



Step 2: Use stripping pliers to remove 4 mm of insulation from the grounding wire. Install the grounding wire terminal and crimp it tightly using crimping pliers.



Step 3: Attach the ring-shaped crimp cable lug to the right-side heat sink of the inverter using the ground wire screw.



Step 4: Properly ground the other end of the wire with a grounding impedance of 0.1 Ω or less to ensure safety in installation and operation.

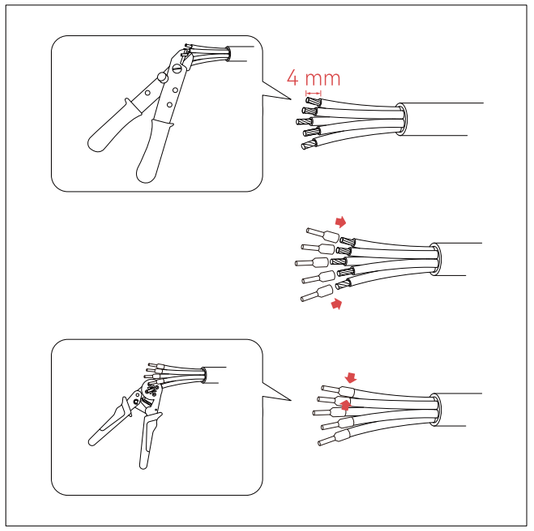
Note

The inverter is neutral continuity maintained externally. Please ensure correct external grounding connection for the inverter. If the inverter shows a 'ground fault' after system installation, please check if the grounding is compliant with the requirements.

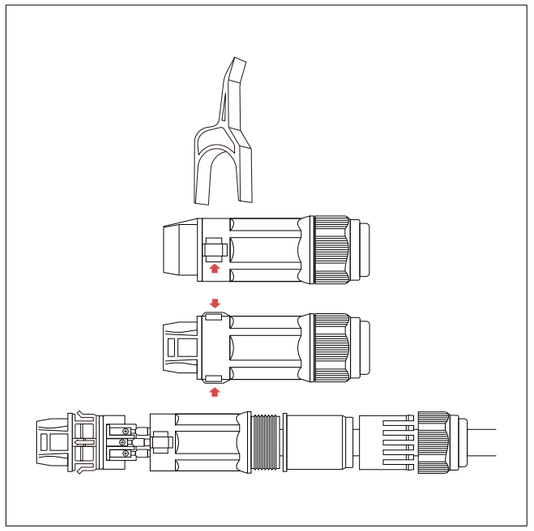
5.3 Load Connection

Tools and accessories required for this step:

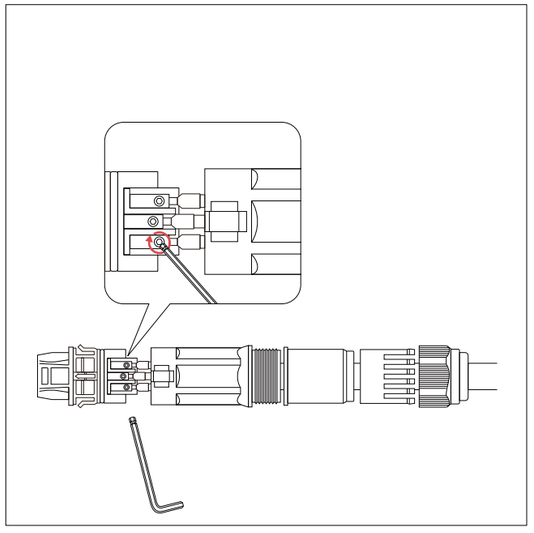
Packing List of Inverter	Load Output Terminal, Insulated Cord End Terminal 4 mm², Connector Removal Tool
Tools	Allen Screwdriver S1.5, Cable Cutting Pliers (wire cutter), Diagonal Pliers, Ferrule Crimping Pliers, Stripping Pliers
Cable	Five-Core Cable (copper) ϕ4 mm²/12 AWG
Breaker	Recommended Circuit Breaker Specification：40 A



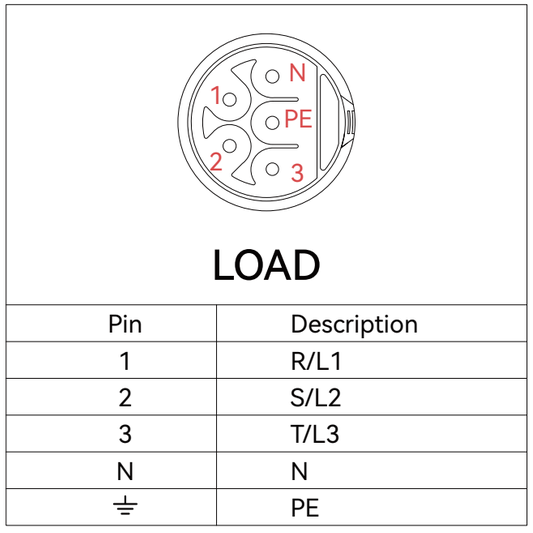
Step 1: Select an appropriate cable and use stripping pliers to remove the insulation. Use ferrule crimping pliers to crimp an insulated cord end terminal (4 mm²) onto the cable.



Step 2: Use the connector removal tool to disassemble the connector, and thread the cable through the connector as shown in the diagram.

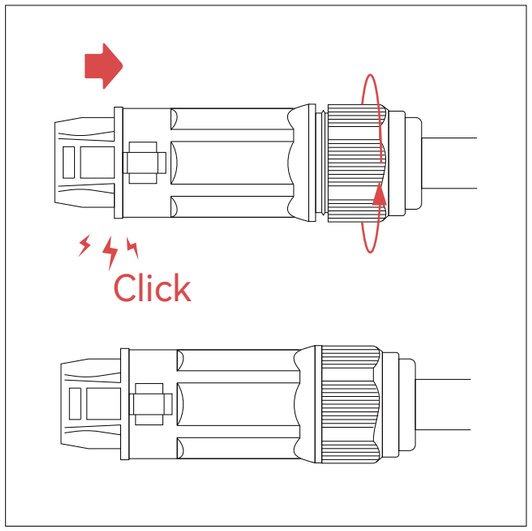


Step 3: Secure the terminal onto the connector using an Allen screwdriver S1.5. recommended torque: 0.8 N • m

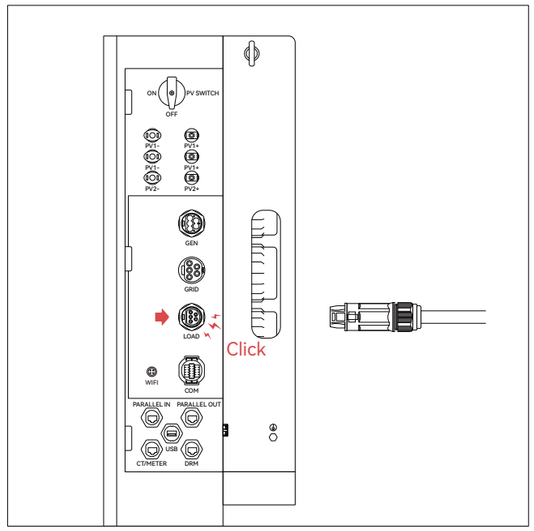


LOAD

Pin	Description
1	R/L1
2	S/L2
3	T/L3
N	N
⏚	PE

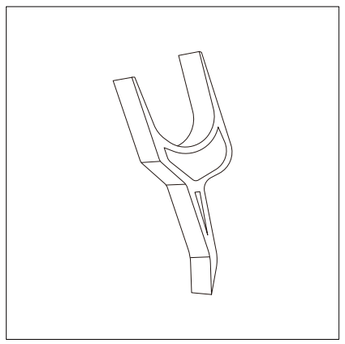


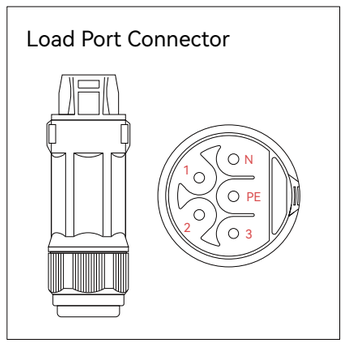
Step 4: Plug the connector head into the connector shell until a 'click' sound is heard, it indicates that the connector is securely in place. Tighten the connector tail end nut.

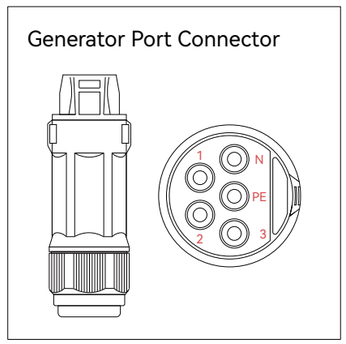


Step 5: Thread the connector through the slit of the inverter door and plug it into the LOAD port.

	Warning! When removing the connector from the inverter, please use the appropriate tools. Please keep the connector removal tool properly.
	Warning! Please make sure to distinguish between the connector for the load port and the connector for the generator port.
	Warning! On the load terminals of the inverter, ensure that each phase does not exceed 6.67 kW of connected load.
	Warning! 1. Inductive loads (e.g., air-conditioners, washing machines, and motors): Maximum individual power is 2.2 KVA, with a total maximum power of 20 KVA. 2. Capacitive loads (e.g., computers and switching power supplies): Total maximum power is 20 KVA.







5.4 Generator (GEN) Connection

Tools and accessories required for this step:

Packing List of Inverter	Generator Port Connector, Insulated Cord End Terminal 4 mm², Connector Removal Tool
Tools	Phillips Screwdriver PH1, Cable Cutting Pliers (wire cutter), Diagonal Pliers, Ferrule Crimping Pliers
Cable	Five-Core Cable (copper) ϕ4 mm²/12 AWG
Breaker	Recommended Circuit Breaker Specification: 40 A

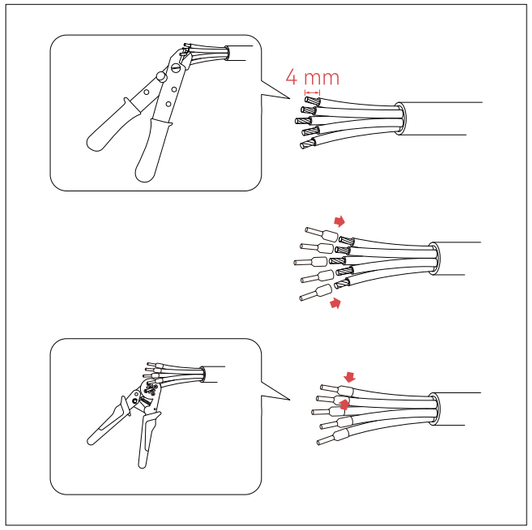
The steps for installing the generator port connector are the same as those for installing the load port connector.

	Warning! When installing the generator, it is essential to connect the wires to the COM-2/COM-3/COM-4 terminals on the COM port connector. Please refer to the instruction manual for the installation steps of the COM port.
COM	Pin Number: Definition 2: COM_ON 3: COM_GEN_NC 4: COM_GEN
	Warning! When the GEN port is connected to a generator or PV inverter, the energy storage system is in a micro grid state. Before performing any maintenance or inspection on the system, it is crucial to shut down the generator or PV inverter linked to the GEN port.
	Warning! The generator parameters must meet the requirements of the inverter parameters and include the Automatic Transfer Switch (ATS) function.
	Warning! Do not connect the load to the GEN port.
	Warning! The GEN port can also be used for PV inverter connection.

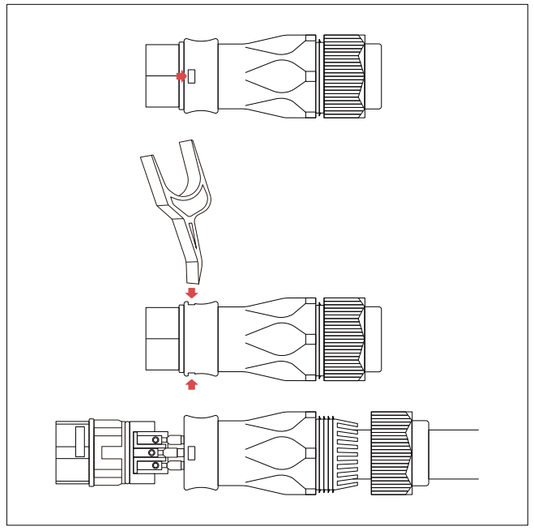
5.5 Grid Connection

Tools and accessories required for this step:

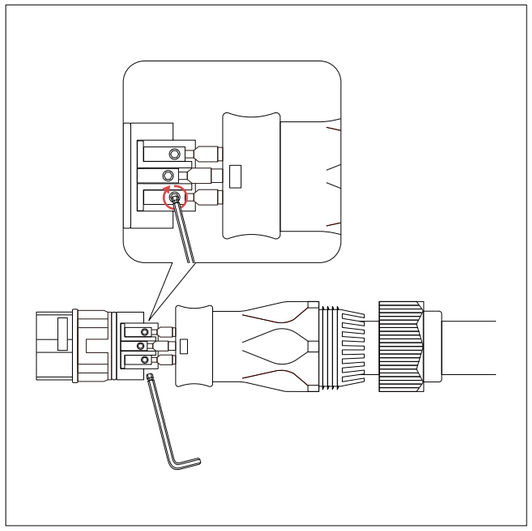
Packing List of Inverter	Grid Port Connector, Insulated Cord End Terminal 6 mm², Connector Removal tool
Tools	Allen Screwdriver S2, Cable Cutting Pliers (wire cutter), Diagonal Pliers, Ferrule Crimping Pliers
Cable	Five-Core Cable (copper) ϕ6 mm²/10 AWG
Breaker	Recommended Circuit Breaker Specification: 50 A



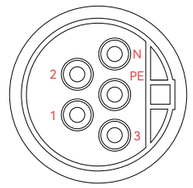
Step 1: Select an appropriate cable and use stripping pliers to remove the insulation. Use ferrule crimping pliers to crimp an insulated cord end terminal 6 mm² onto the cable.



Step 2: Use the connector removal tool to disassemble the connector, and thread the cable through the connector as shown in the diagram.



Step 3: Secure the terminal onto the connector using an Allen screwdriver S2. recommended torque: 1.0 N • m

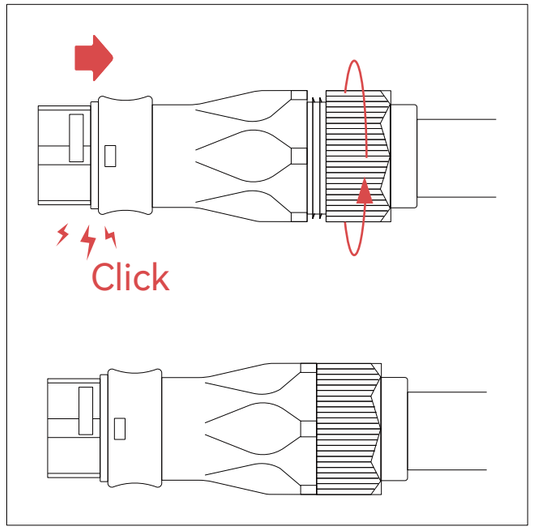


GRID

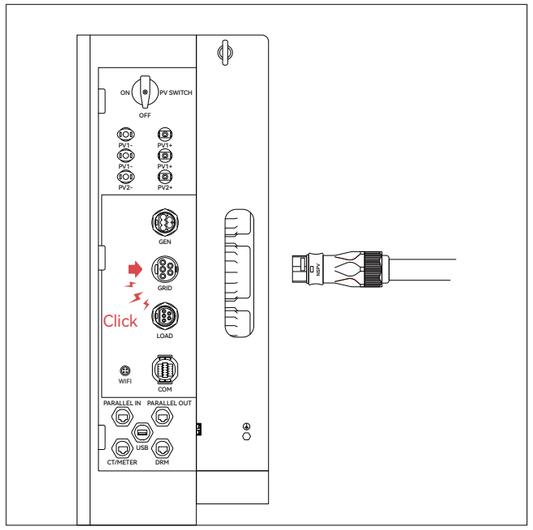
Pin	Description
1	R/L1
2	S/L2
3	T/L3
N	N
⏚	PE

Warning!

When locking the power grid cable into the external grid connector, it is necessary to mark the corresponding cables with RST, because when installing the CT (Current Transformer), the three CTs with RST identifications need to be attached to the corresponding RST line.



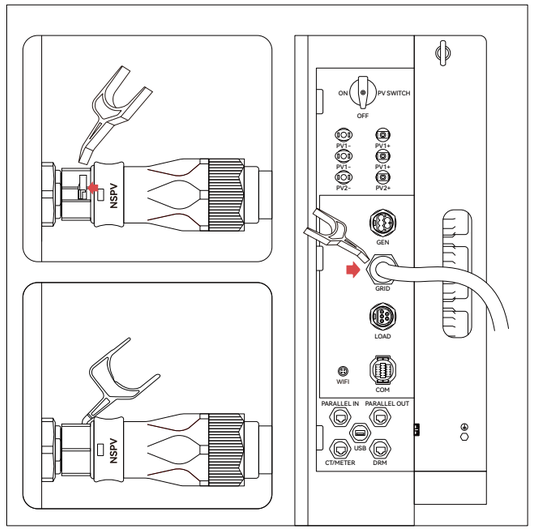
Step 4: Plug the connector head into the connector shell until a "click" sound is heard, indicating that the connector is securely in place. Tighten the connector tail end nut.



Step 5: Thread the connector through the slit of the inverter door and plug it into the Grid port.

5.6 Connector Removal

If the connector is already plugged into the inverter port, follow the steps below to remove it:



Use the supplied special tool. Insert the tip of the tool into the latch slot on the AC connector (Load / Generator / Grid), gently lift the latch to unlock it, and then hold the connector and pull it out steadily.

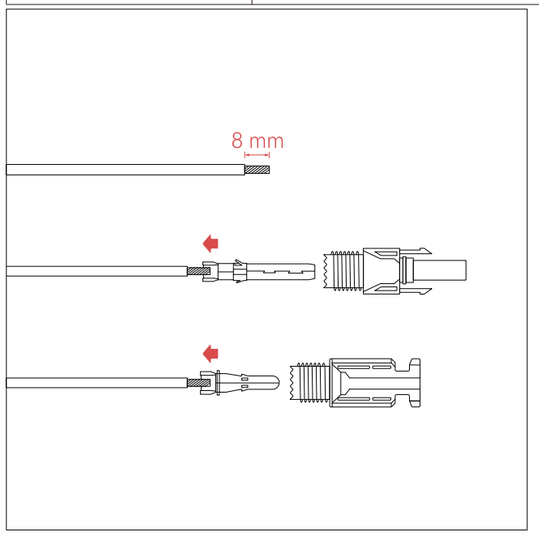
5.7 PV

5.7.1 PV Connection

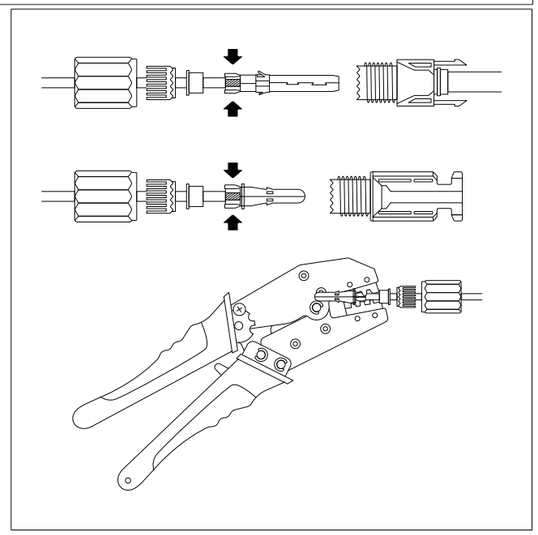
External DC isolators complied with AS 60947.3 are required to be installed for PV ports during the final installation as requested by Cl.7.3.4 from AS/NZS 4777.2. DC isolator shall also meet the requirement outlined in installation standard AS/NZS 5033.

Tools and accessories required for this step:

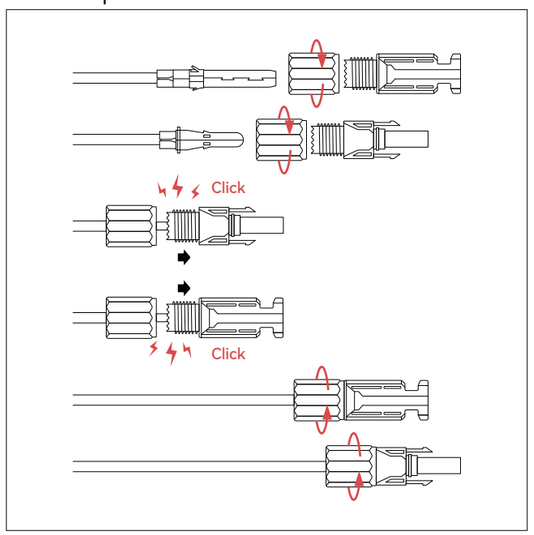
Packing List of Inverter	PV- Connector, PV+ Connector
Tools	Crimping Tool for PV Terminals, Wire Cutter
Cables	Specialized PV Cables ϕ4 mm²~6 mm² AWG 10~12
Breaker	/



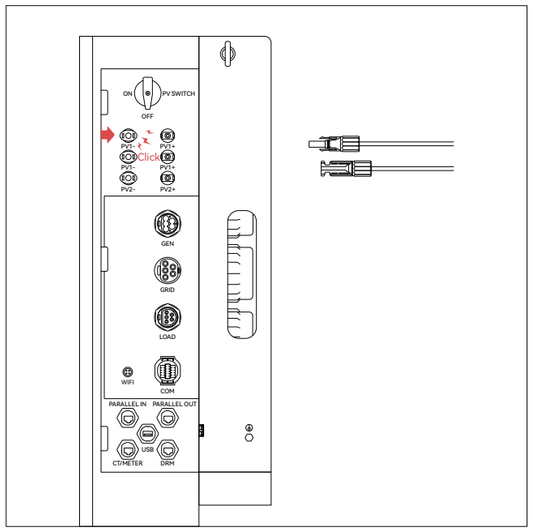
Step 1: Remove 8 mm of insulation from the PV cable, and insert the exposed end of the PV cable into the PV metal pin contacts.



Step 2: Crimp the PV terminal securely onto the the PV cable with an MC4 crimping tool .

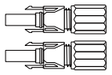
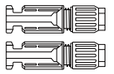


Step 3: Unscrew the connector at the rear of the PV connector slot in the PV terminals. Listen for a ‘click’ sound to confirm proper connection. Pull back on the cable to verify the terminals are securely inserted. Tighten the cover at the rear of the PV connector.



Step 4： Thread the connector through the slit of the inverter door and plug it into the PV ports.

	Warning! Please ensure that the polarity of the PV cables, PV terminals, PV connectors, and PV ports of the inverter are all aligned correctly.

Polarity	Cables	Terminals	Connectors	PV ports
Positive Pole +	Red			
Negative Pole -	Black			

	Warning! Please use the PV connectors provided by the manufacturer.
	Warning! Please confirm that all PV modules are of the same type and installation angle.
	Warning! Please verify that the input voltage and current range of the PV modules aligned with the parameter requirements of ESYSUNHOME.
	Warning! PV modules must be installed by professional personnel.
	Warning! Once the PV modules are installed, employ a voltmeter (with a DC voltage range of 1500V or higher) to verify the polarity of the cables connecting the PV array is correct. Ensure that the open-circuit voltage does not surpass the specified value.

5.7.2 PV Earth Fault Alarm

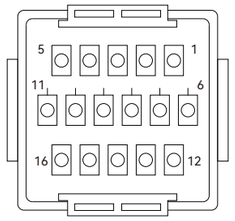
If an earth fault occurs on the PV side, the inverter will trigger an alarm to notify the user.

Alarm Indication:
The internal buzzer will emit a beeping sound.
The fault indicator light will turn red.

User Notification:
Detailed fault information will be displayed in the monitoring app, prompting the electrician to inspect the system wiring.

5.8 COM Connection

5.8.1 COM Port Connector Pin Definitions



COM

Pin Number	Definition	Description
1	COM	COM Dry Contact (Reserved)
2	COM_ON	
3	COM_GEN_NC	GEN Dry Contact (Reserved)
4	COM_GEN	
5	RS485_GPRS_A2	RS485 Upper Computer Communication
6	RS485_GPRS_B2	
7	RS485_EV_A	RS485 Charging Pile Communication
8	RS485_EV_B	
9	BAT_ON/OFF_1	Battery Activation Signal
10	BAT_ON/OFF_2	
11	EXT_CT2_BN	External CT Communication (Phase B)
12	EXT_CT2_BP	
13	EXT_CT2_CN	External CT Communication (Phase C)
14	EXT_CT2_CP	
15	EXT_CT2_AN	External CT Communication (Phase A)
16	EXT_CT2_AP	

5.8.2 Installation of COM Port Connector

Warning!

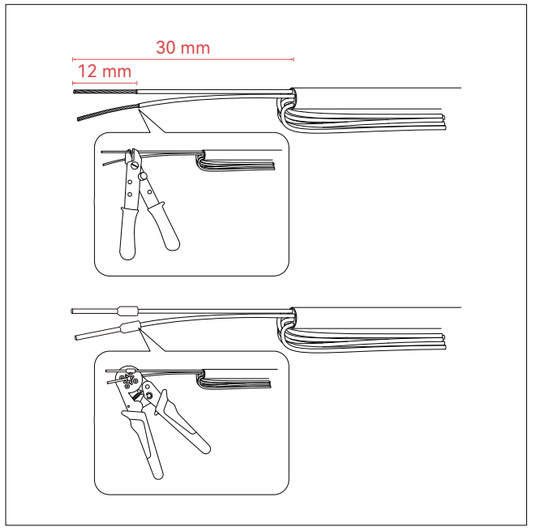
Please select the appropriate cable length and quantity based on the actual installation scenario.

Warning!

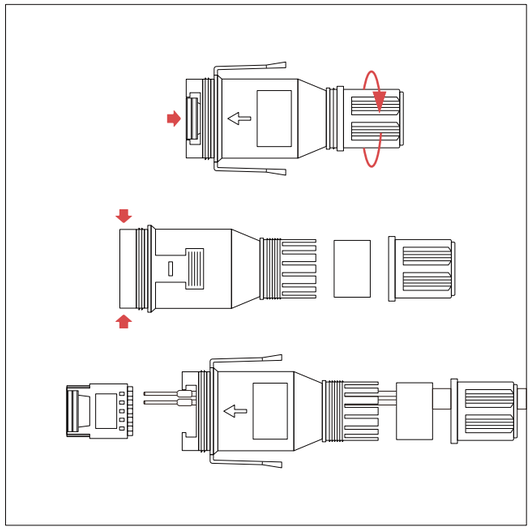
Please select the correct COM port pin according to the actual installation scenario.

Tools and accessories required for this step:

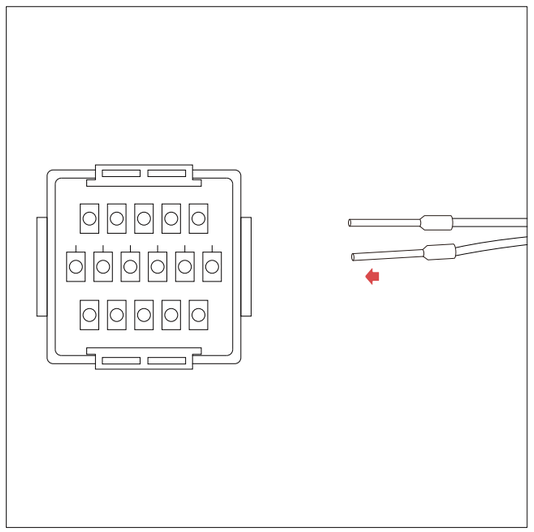
Packing List of Inverter	COM Port Nylon Screw Plug, COM Port Connector, Insulated Cord End Terminal 0.75 mm².
Tools	Ferrule Crimping Pliers, Stripping Pliers, Cable Cutting Pliers (wire cutter)
Cable	Multi-Strand Communication Cable, Core 0.5-0.75 mm², Cable Diameter 4-6 mm. The CAT5e network cable is recommended.



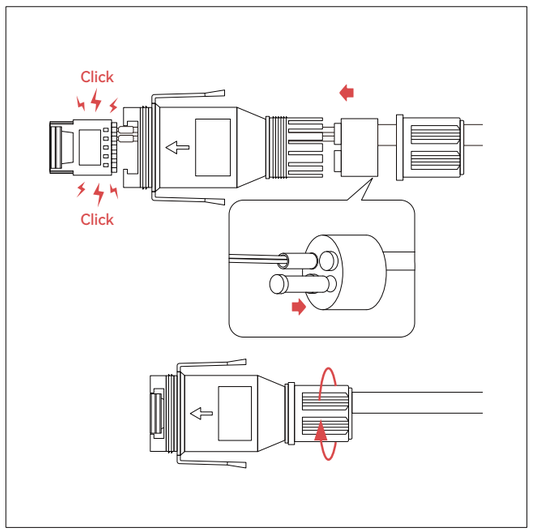
Step 1: Select the appropriate cable and strip off 12 mm of insulation using stripping pliers. Crimp insulated cord end terminal 0.75 mm² onto the cable using the ferrule crimping pliers.



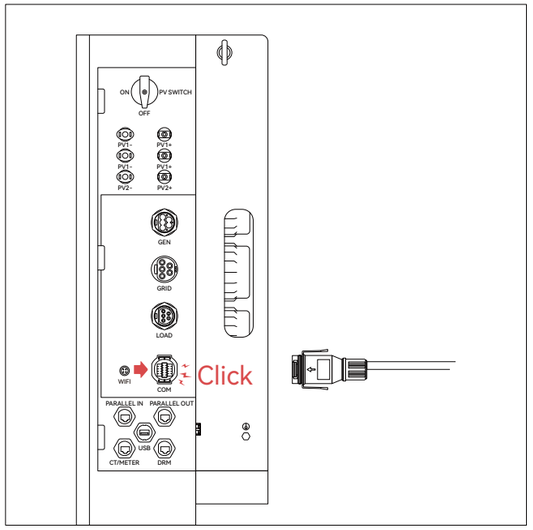
Step 2: Unscrew the nut at the connector end, and thread the cable through the connector following the diagram provided.



Step 3: Plug the cable terminal into the COM port connector, aligning it with the appropriate hole based on the pin definition of the COM port connector.



Step 4: Plug the connector head into the connector shell until a ‘click’ sound indicates it is locked in place. Seal any unused waterproof holes with the COM port nylon screw plug. Tighten the connector’s rear nut.



Step 5: Thread the connector through the slit of the inverter door and plug it into the COM port.

5.9 RJ45 Port Connection

5.9.1 RJ45 Port Connector Pin Definitions

CT/METER Port Connector Pin Definitions				
This port can be used to connect both the electric meter and CT components.	1	CT_R1	5	METER485B
	2	CT_S1	6	CT_T2
	3	CT_T1	7	CT_S2
	4	METER485A	8	CT_R2
DRM Port Connector Pin Definitions				
This interface is exclusively for Australian products and is designed for DRED control, applicable to Australia and New Zealand only. DRED stands for Demand Response Enabling Device. According to the AS/NZS 4777.2:2010 standard, users must support the Demand Response Mode (DRM), which is specifically for inverters meeting the RJ45 requirements outlined in the AS/NZS 4020 standard and is intended for DRMS connections.	1	DRM1/5	5	REF GEN/0
	2	DRM2/6	6	COM LOAD/0
	3	DRM3/7	7	Reserved V+
	4	DRM4/8	8	Reserved V-
Parallel In Port (Reserved)				
Parallel Out Port (Reserved)				

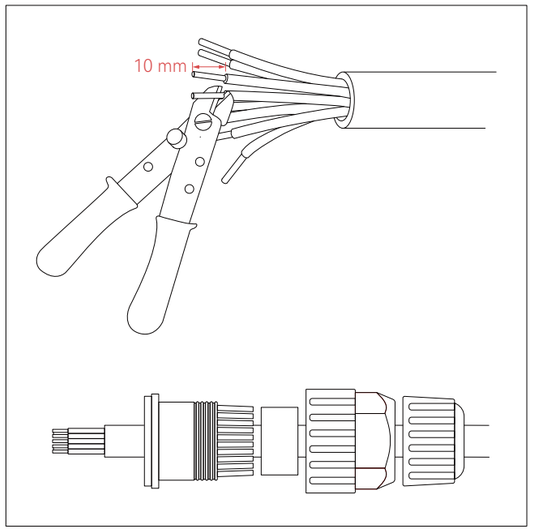
5.9.2 RJ45 Port Installation

Warning!

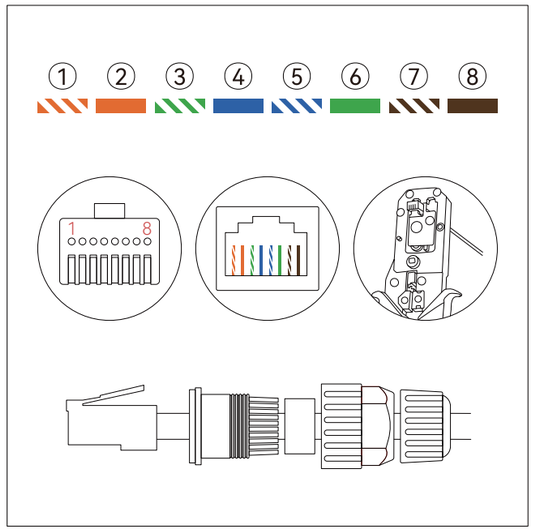
Please select the appropriate cable length and quantity based on the actual installation scenario.

Tools and accessories required for this step:

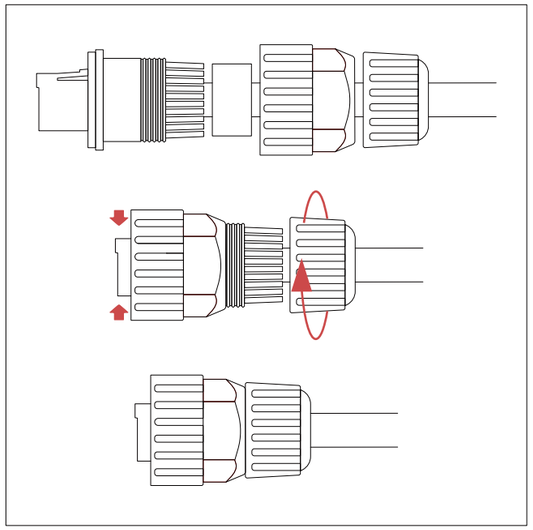
Packing List of Inverter	LAN Port Connector
Tools	Crimping Tool for RJ45, Stripping Pliers, Wire Cutter
Cable	8 strands of communication cable, core 0.5–0.75 mm^2, cable diameter 4–6 mm. The CAT5e network cable is recommended



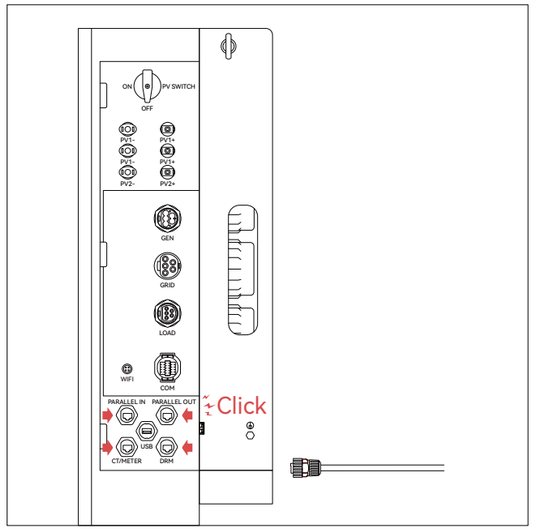
Step 1: Strip the network cable using the stripping pliers and install it through the parts as shown in the figure. Fit crystal head to the network cable according to the color sequence (1-8).



Step 2: Thread the cable through the RJ45 connector as shown in the figure.



Step 3: Tighten the connector end nut.

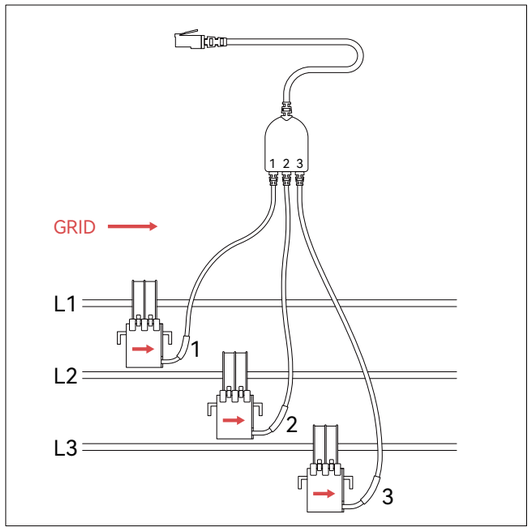


Step 4: Thread the connector through the slit of the inverter door and plug it into the correct RJ45 port.

5.10 CT Installation

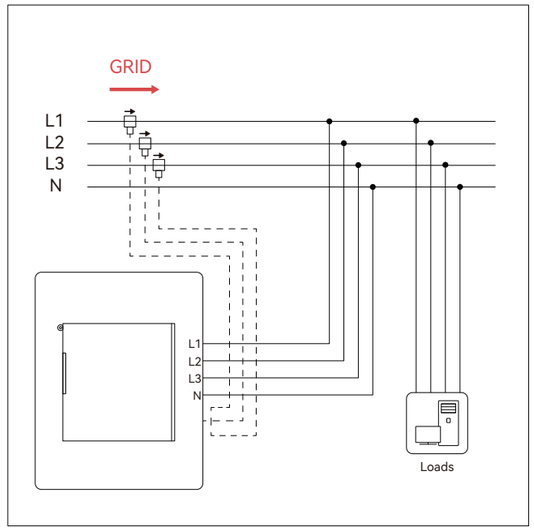
Tools and accessories required for this step:

Packing List of Inverter	LAN Port Connector
Tools	CTs Components (Optional)

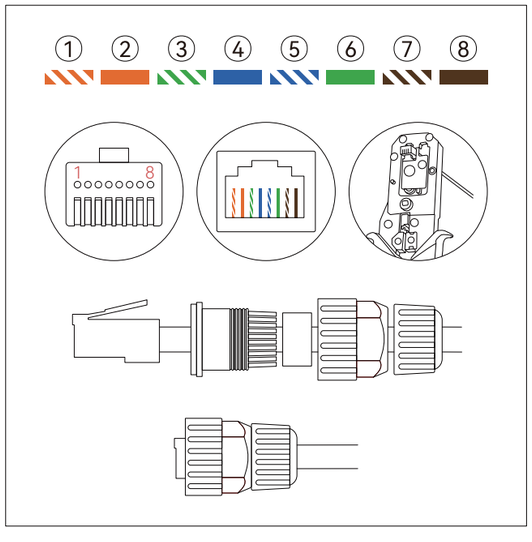


Step1：During the connection process, please ensure the following:

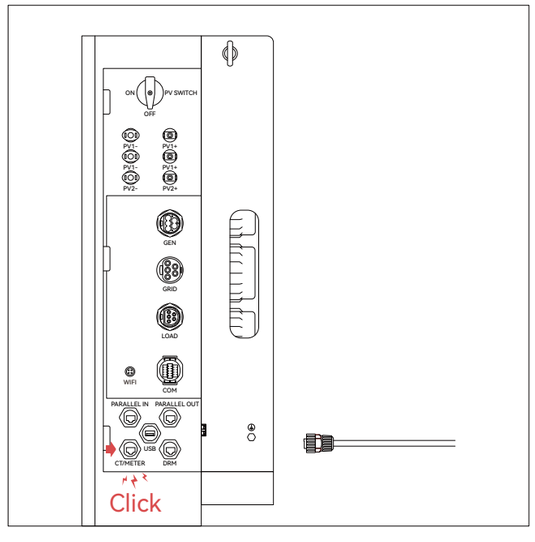
- Grid terminal L1 should connect to CT1
- Grid terminal L2 should connect to CT2
- Grid terminal L3 should connect to CT3



Step 2: Position the CT appropriately around the grid cable, ensuring correct alignment with the current flow direction.



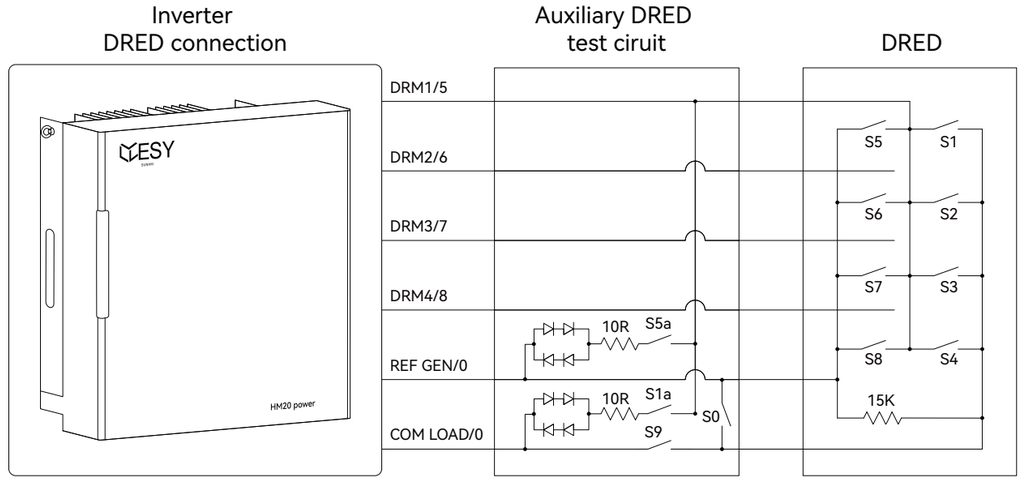
Step 3: Install the RJ45 connector onto the crystal head of the CT component.



Step 4: Plug the RJ45 connector of the CT component into the inverter CT/METER port.

5.11 DRM Connection

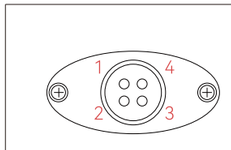
Illustration of the connection method between inverter DRM and DRED:



Please refer to the table below for DRM mode explanation. This product is only applicable to DRM0 mode.

Mode	Requirement.
DRM0	Operate the disconnection equipment.
DRM1	Do not consume power.
DRM2	Do not consume at more than 50% of rate power.
DRM3	Do not consume at more than 75% of rate power AND Source reactive power if capable.
DRM4	Increase power consumption (subject to constraints from other active DRMs).
DRM5	Do not generate power.
DRM6	Do not generate at more than 50% of rate power.
DRM7	Do not generate at more than 75% of rate power AND Sink reactive power if capable.
DRM8	Increase power generation (subject to constraints from other active DRMs).

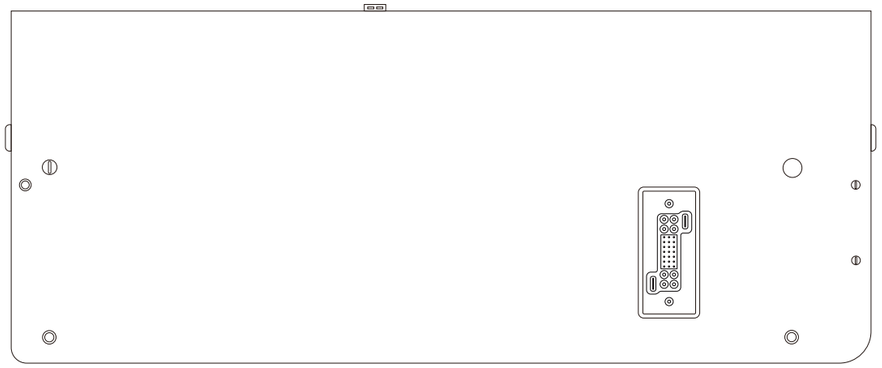
5.12 Communication Dongle Connection (Optional)



WiFi/Bluetooth Port Connector Pin Definitions	
1	VCC
2	GND
3	Data Communication A
4	Data Communication B

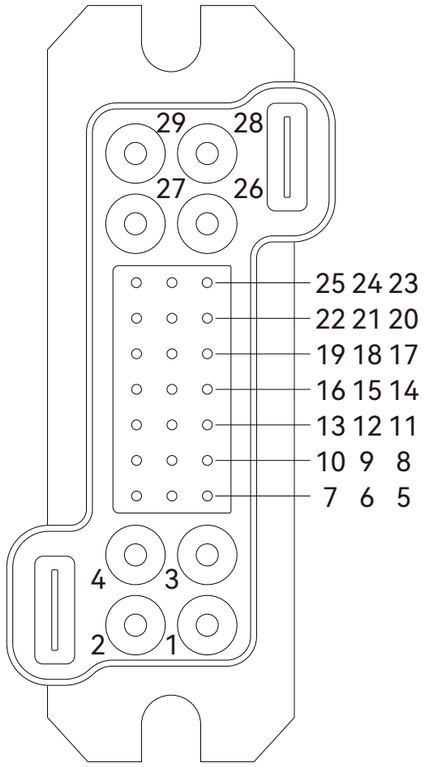
5.13 Connection with Battery System

5.13.1 Battery System Port Definitions



Schematic of the GP29Z port

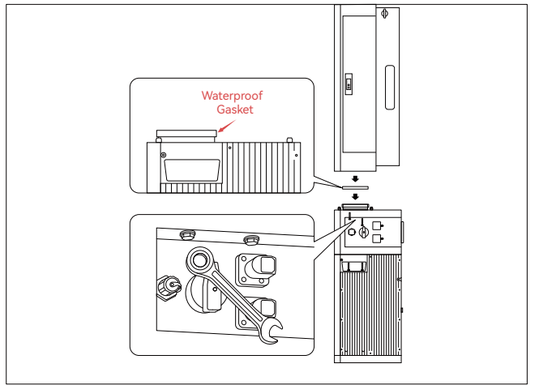
(10KWH+H Distributor Box)

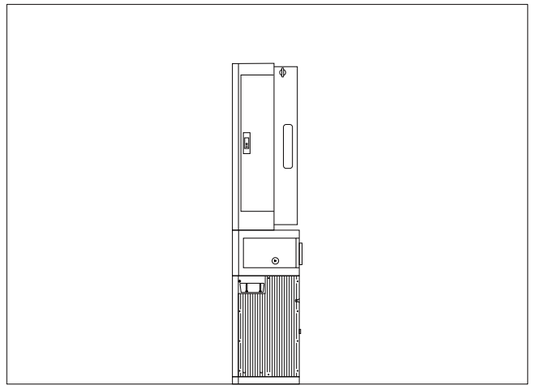


1	PACK-	26	NC
2	PACK-	27	PACK+
3	PACK-	28	PACK+
4	GND	29	PACK+
5	NC	16	CAN1-L
6	NC	17	NC
7	NC	18	NC
8	NC	19	NC
9	NC	20	NC
10	NC	21	NC
11	CAN1-H	22	+5V
12	CAN1-H	23	DI3+
13	CAN1-L	24	NC
14	NC	25	NC
15	NC		

5.13.2 DC Connection Procedure for Battery Terminals

The ESYSUNHOME battery is designed for stacked installation beneath the inverter, eliminating the need for additional wiring. The inverter and battery terminals are aligned for direct connection. Follow the steps below for a proper connection:





Align the screw holes at the bottom of the inverter with the corresponding screw holes on the distribution box. Ensure the distribution box fully covers the underside of the inverter. Then, tighten the screws to secure the connection. Use M4x12mm screws and apply a standard torque of 2.98 Nm (dry, steel, Grade 8.8).

1.Ensure Safety:

· Turn off the inverter and battery before making any connections.

· Verify that the battery and inverter are correctly positioned for stacking.

2.Battery Connector Preparation:

· Ensure the battery connector is clean and undamaged.

· Align the battery connector with the corresponding inverter port.

3.Connecting the Battery to the Inverter:

· Carefully stack the battery into place, ensuring the terminals align correctly.

· Secure the connection by firmly pressing the battery and inverter connectors together.

· Confirm that the connection is stable and fully engaged.

4.Final Checks:

· Check for any loose connections before operation.

5.13.3 Compatible Battery Types

This inverter is compatible only with ESYSUNHOME Lithium Iron Phosphate ($LiFePO_4$) batteries. Please refer to the ESYSUNHOME battery manufacturer's instructions for additional compatibility details.

5.13.4 Earth Fault Alarm (AS/NZS 5139 Compliance)

In accordance with AS/NZS 5139, the inverter is equipped with an earth fault detection system. If an earth fault occurs, the inverter will trigger an alarm to notify the user.

1.Alarm Indication:

· The internal buzzer will beep.

· The fault indicator light will turn red.

2.User Notification:

· The fault details will be displayed on the monitoring app, prompting the electrician to check the system wiring

Note

When the inverter is connected to other battery models, an isolation switch must be installed between the inverter and the battery. The recommended specification for the switch is 100A/500V, and it must comply with AS 60947.3 and AS 4777.2 standards.

5.14 Temperature Sensing Device

During the operation of the inverter, temperature monitoring and control can be remotely conducted using the backend management system. When the inverter is stacked with a battery, the inverter can communicate with the battery's BMS through the communication port below the inverter, and read and control the battery temperature according to instructions from the backend management system.

Note

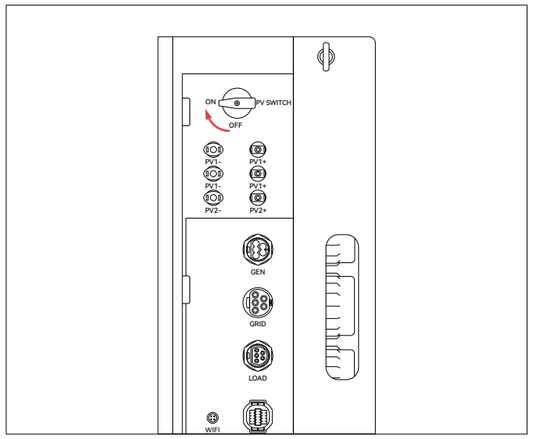
This function requires the use of a Wi-Fi communication dongle (optional).

6 System Operation

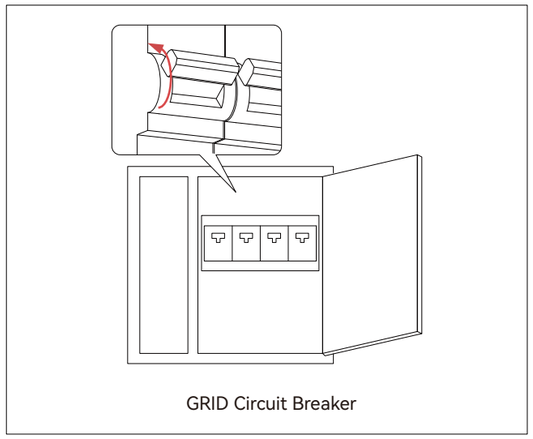
6.1 Power On

⚠	**Warning!** Please double-check that the installation to ensure it is correct and reliable before powering on.
⚠	**Warning!** If the backup load, generator, or PV inverter is not installed, do not place the connector into the port.
⚠	**Warning!** Please shield unused ports with waterproof caps.
⚠	**Warning!** After installation, please use the lock key to lock the door. Please take good care of the lock key.
⚠	**Warning!** Please keep the unused connectors and accessories properly.
⚠	**Warning!** After shutdown, please wait for at least 5 minutes before performing any other maintenance operations on the all-in-one equipment.
⚠	**Warning!** After the system is shut down, ensure that the system status is checked and that the lights on both the inverter are off.

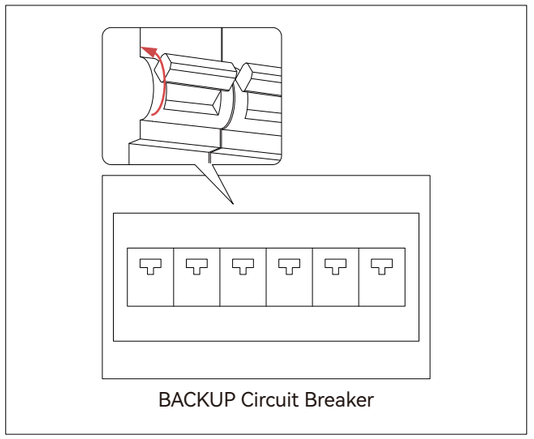
When powering on, please adhere to the following steps:



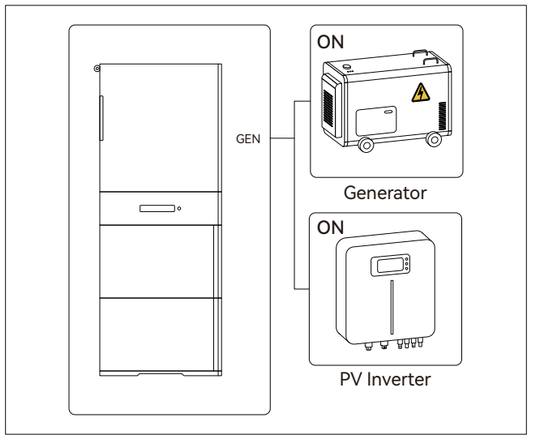
Step 1: Turn on the PV switch on the inverter.



Step 2: Switch the grid breaker to power on.



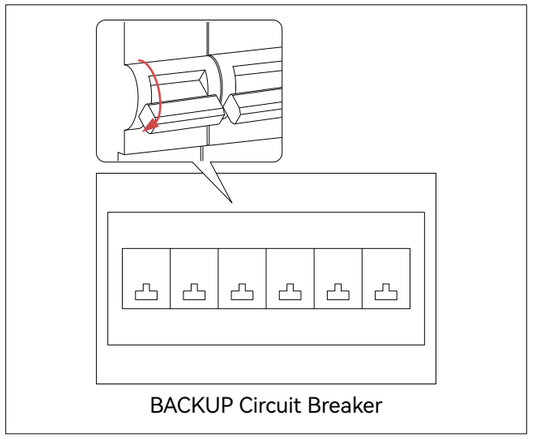
Step 3: Switch the backup load breaker to power on.



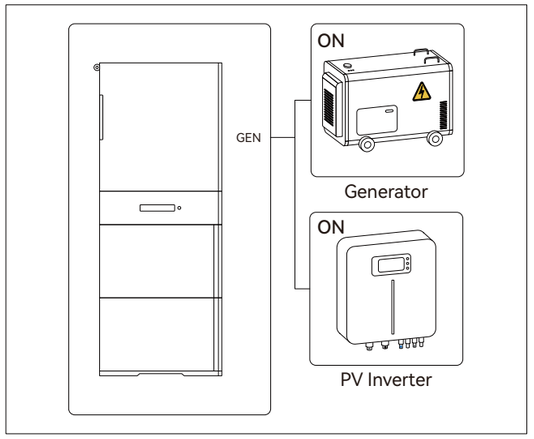
Step 4: If a generator or photovoltaic inverter is connected to the GEN port, power on the connected generator or PV inverter.

6.2 Power Off

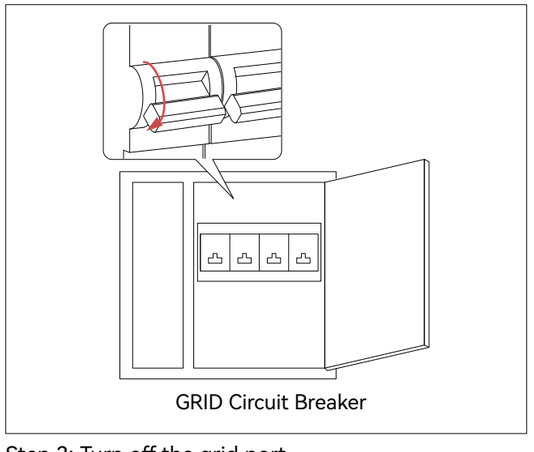
When powering off, please adhere to the following steps:



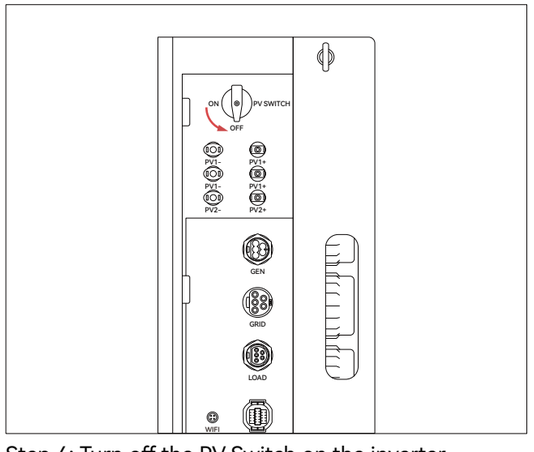
Step 1: Turn off the backup load.



Step 2: Turn off the generator or PV inverter connected to the GEN port.



Step 3: Turn off the grid port.



Step 4: Turn off the PV Switch on the inverter.

6.3 Switching Country Code

Factory default country code is set to Australia.
To switch, authorized personnel from the manufacturer or authorized personnel shouldduse the upper computer or management platform to change the country code. Countrycode table.

Country	Grid-connection standard
DE	DIN VDE V 0124-100:2020, VDE-AR-N 4105:2018
IT	CEI 0-21
BE	C10/11:2021
AUS	AS4777.2

WARNING

Ensure to select the correct country code after system installation.

Consult the local electrical safety department when selecting the country code.

7 ESYSUNHOME APP

7.1 ESYSUNHOME APP

7.1.1 Download Address

Please download it at www.esysunhome.com or Scan QR Code.

iOS

Android

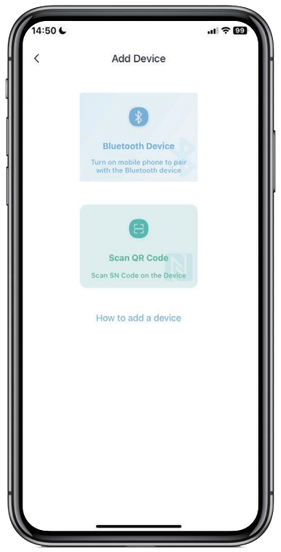
7.1.2 Registration and Installation

Download and install ESYSUNHOME, enter the APP, complete the registration with your email address, and log in.
An authorization code is required for operator registration. Contact the manufacturer to get the authorization code.
After registration, the user should contact the operator to confirm that the APP is installed before using the APP.

7.2 Network Configuration

7.2.1 Install New Device

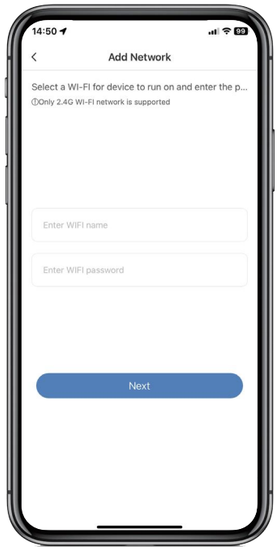
Please install the device according to the above instructions and ensure the device works properly.



7.2.2 Add New Device

Open the APP, tap "My Device" and "Add", and select Bluetooth or scan the SN code to pair the device.

You can scan the QR code of WiFi-IOT Pro to get the SN code.



7.2.3 Device Network Configuration

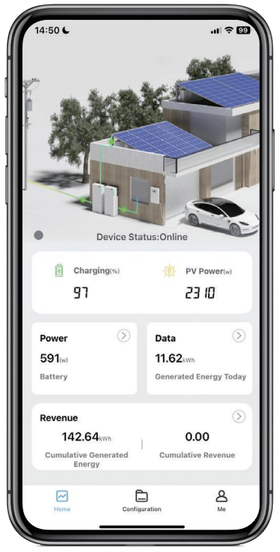
Open the APP, log in to the account, tap "Me", and configure the network for the device. The APP will request you to give Bluetooth permission. Once you have given the Bluetooth permission, tap "ESYSUNHOME_ + SN code" and enter your WiFi name and password in the pop-up interface. Tap "Next" to configure the network, as shown below.

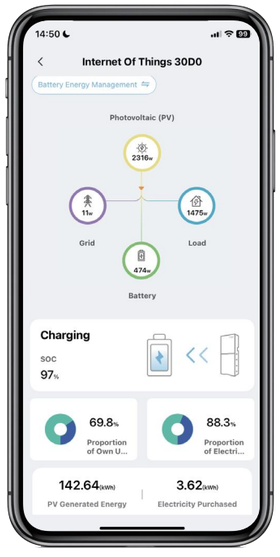
Return to the home page of the APP and wait for a moment to view the system data.

7.3 Data Monitoring

7.3.1 3D Scene Graph

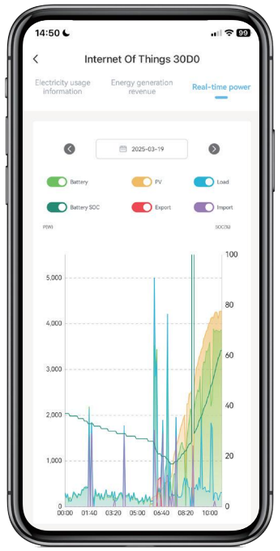
Once the device has been successfully paired, enter the home page of the APP to view the 3D scene graph, including the power grid, HM6 residential energy storage system and load. The direction in which the green cursor moves indicate the flow of energy, and you can monitor the real-time status of the entire system from this view.





7.3.2 Energy Flow Diagram

Tap the 3D scene graph to enter the energy flow interface, which shows the energy flow direction and real-time power of the PV module, power grid, battery and load, as well as other important information such as battery status, self-consumption ratio, and proportion of sold electricity.



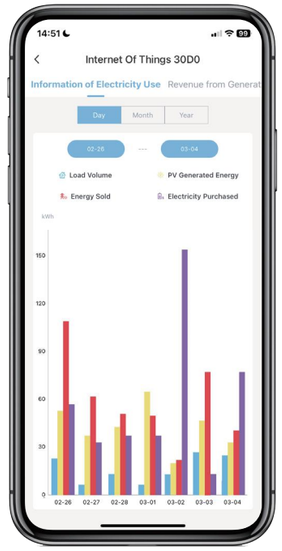
7.4 Data Statistics

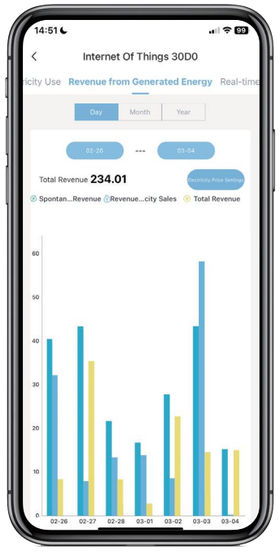
7.4.1 Real-time Power

Tap "Power" on the home page to enter the real-time power display interface. In the statistical chart, you can see the real-time power of the battery, PV module, load, sold power and purchased electricity in the curve form. You can also view the one-day real-time power curve.

7.4.2 Electricity Consumption Data

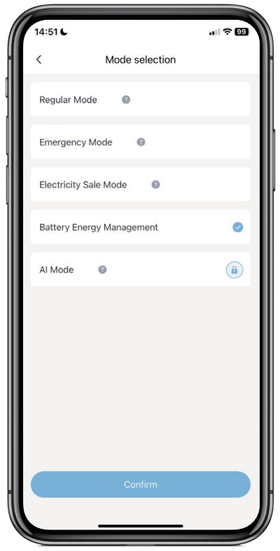
Tap “Data” on the home page to enter the electricity consumption data interface. The statistical chart displays bar graphs of daily, monthly, and yearly electricity consumption, load capacity, PV power generation, grid power sold, and purchased electricity. You can view the details by tapping on the respective items.





7.4.3 Revenue Data

Tap "Revenue" on the home page to enter the revenue display interface. In the statistical chart, you can view the daily, monthly, and yearly data, including the revenue of power generation, the revenue of sold electricity, and average revenue. Tap the bar charts to see the details. Tap the electricity price settings to set the electricity purchase and sales prices for different time periods in a day. If you do not change settings, the price will be 1 by default.



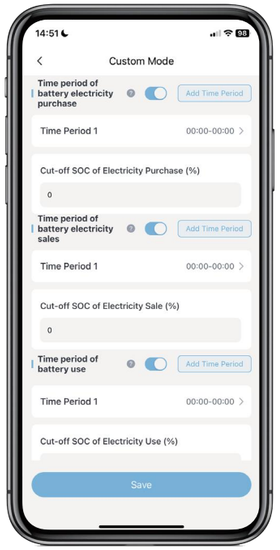
7.5 Power Supply Control

7.5.1 Mode Switching

Open the client APP, log in and enter the home page. Tap the 3D scene graph to enter the energy flow diagram page. The current working mode will be shown in the upper left corner. You can tap it to enter the mode list and select an appropriate mode.

7.5.2 Battery Energy Management

Tap the battery energy management options in the column of the mode list. You can set the battery's electricity purchase time, electricity selling time, and service time based on your electricity needs. The electricity purchase time of the battery refers to when electricity is bought from the power grid to recharge the battery when the PV is insufficient for battery charging. The electricity selling time of the battery refers to when the electricity of the battery is sold when the PV electricity is insufficient for sales at the maximum output power of the system.



7.5.3 Cold Resistance Mode（Cold Mode）

In the Cold Mode, the charging and discharging strategy specially designed by the manufacturer for the battery will enable the battery to work efficiently even in low temperature and cold weather.

7.5.4 Power-on/off

This function is used to remotely turn on and off the system. The system will be on standby if it is turned off.

7.6 Remote Monitoring

7.6.1 Alarm Information Monitoring

When the energy storage system sends an alarm, a reminder will pop up on the home page of the APP.

7.6.2 OTA Upgrade

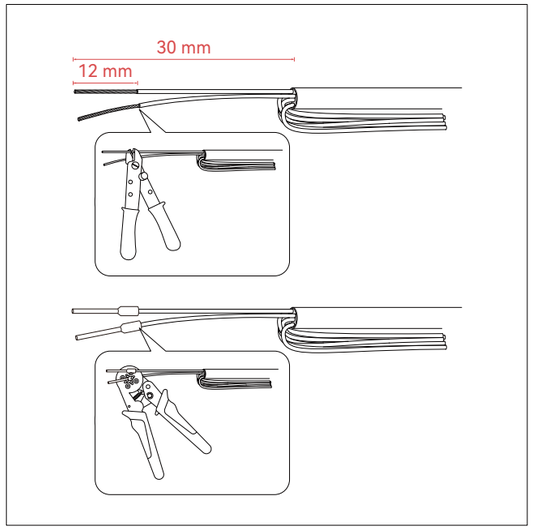
In the OTA upgrade state, the system will be in standby status without any output. Please use the power grid to supply power.

8 ESYSUNHOME Tool

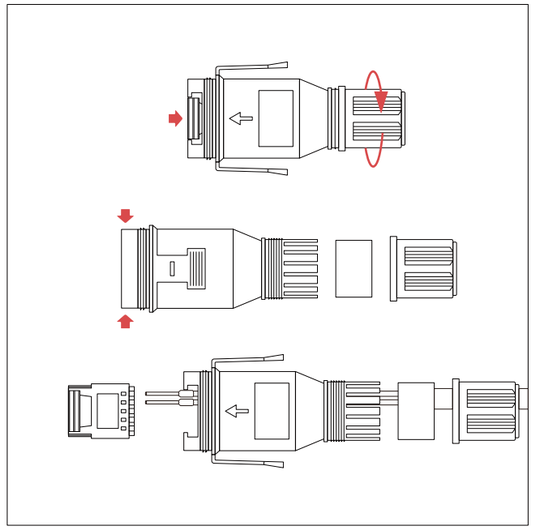
ESYSUNHOME Tool is an upper computer software designed for HM Series inverter. It includes functions such as inverter parameter viewing, inverter settings modification, fault alarm viewing, battery parameter and status viewing, etc.

User permission: Inverter manufacturers or authorized maintenance personnel.

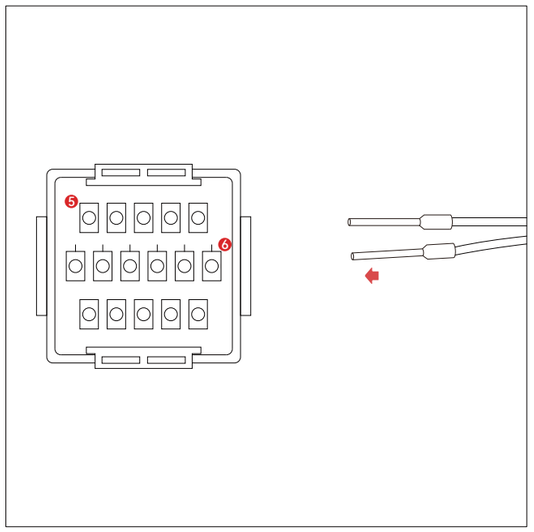
8.1 ESYSUNHOME Tool Connection



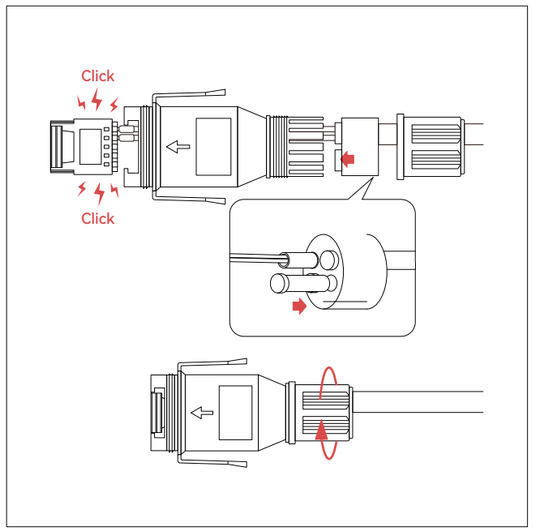
Step 1: Select the appropriate cable and strip off 12 mm of insulation using stripping pliers. Crimp insulated cord end terminal 0.75 mm² onto the cable using the ferrule crimping pliers.



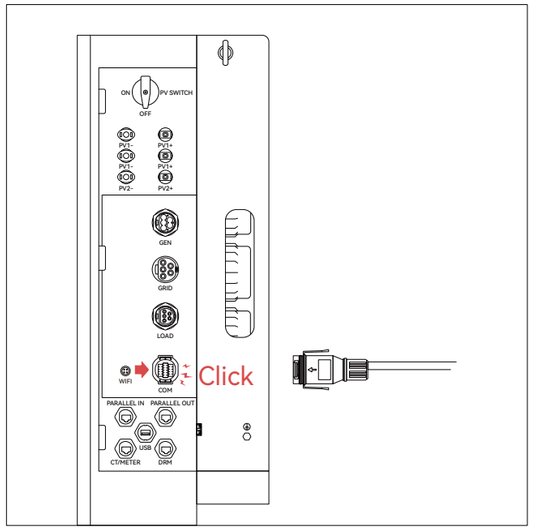
Step 2: Unscrew the nut at the connector end, and thread the cable through the connector following the diagram provided.



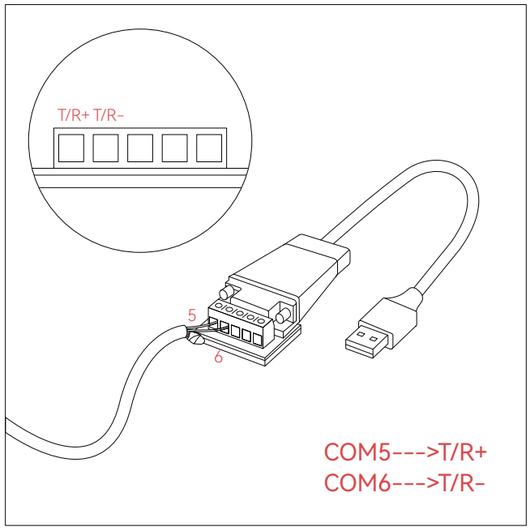
Step 3: Plug the cable terminals into the 5th and 6th ports of the COM port connector.



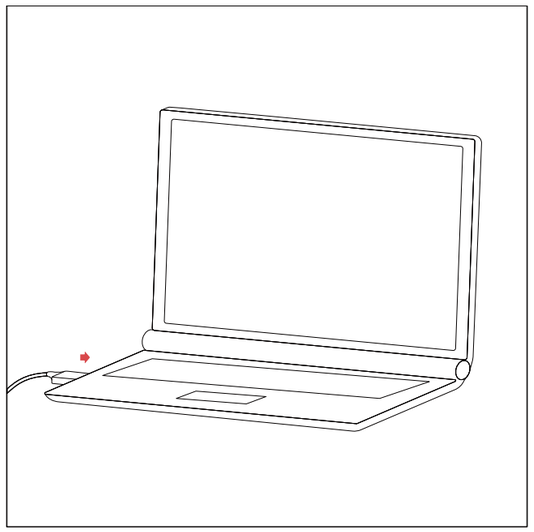
Step 4: Plug the connector head into the connector shell until a ‘click’ sound indicates it is locked in place. Seal any unused waterproof holes with the COM port nylon screw plug. Tighten the connector’s rear nut.



Step 5: Thread the connector through the slit of the inverter door and plug it into the COM port.

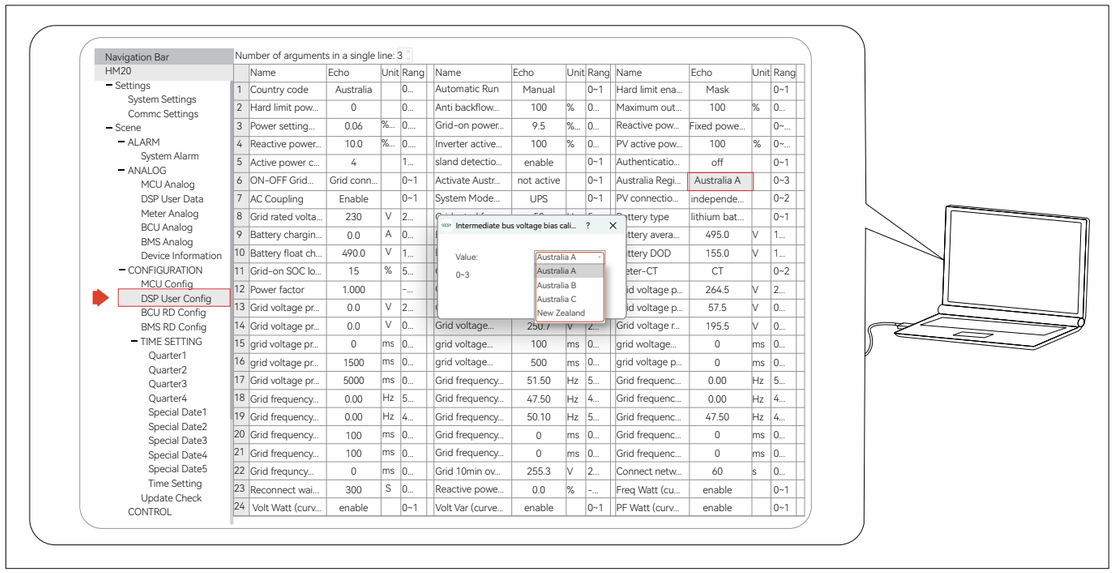


Step 6: On the other end of the Ethernet cable, strip the insulation layer of com port wire by 10 mm. Connect the 5th port of the COM port connector to the A (T/R+) port of the RS485 TO USB connector, and connect the 6th port of the COM port connector to the B (T/R-) port of the RS485 TO USB connector.

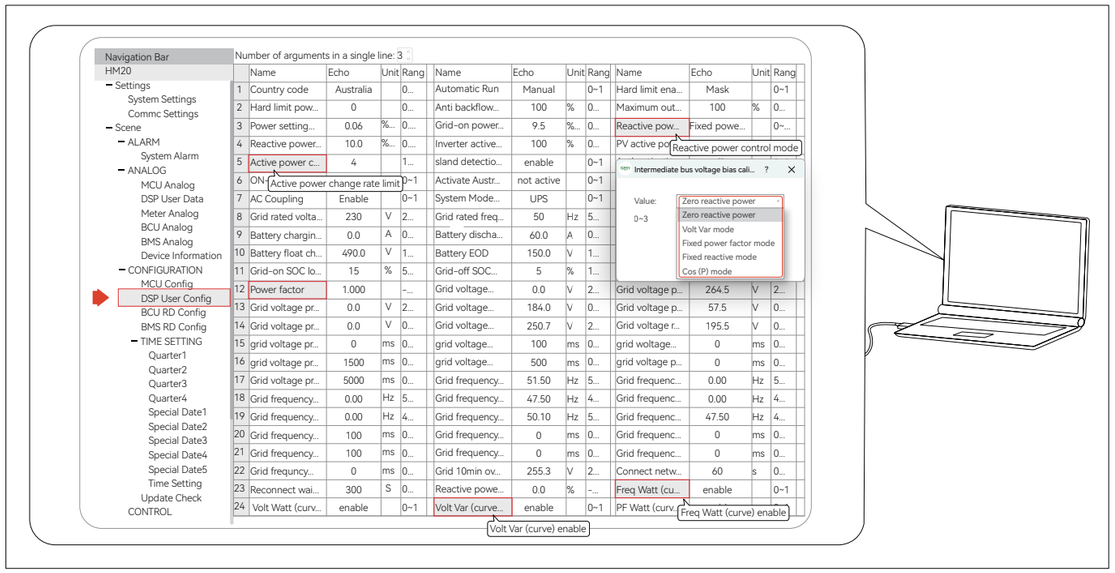


Step 7: Connect the USB interface of the adapter to the computer. Use the ESYSUNHOME Tool software provided with the inverter to operate.

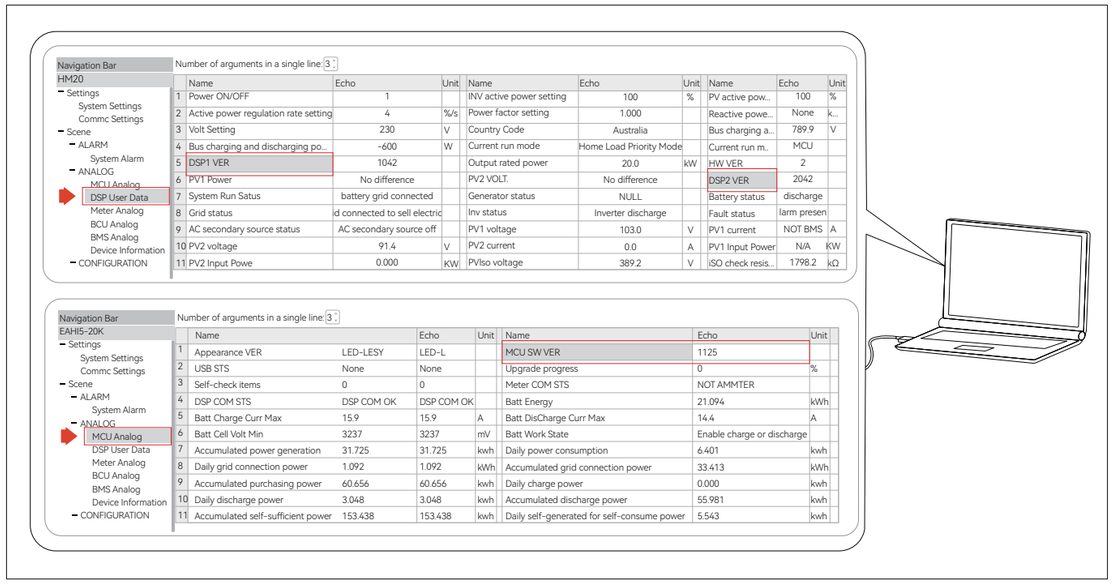
8.2 ESYSUNHOME Tool Functions



On the CONFIG page of the upper computer software, modify the value of "Australia Region" and select Australia Region A,B,C and New Zealand for power quality response modes.



Please refer to the above picture to adjust power quality response modes settings.



View Firmware Version: On the ANALOG page of the upper computer, check the MCU SW Ver. and DSP SW Ver. to obtain Firmware Version information.

Installer permissions: only inverter manufacturers or authorized maintenance personnel can access ESYSUNHOME Tool to view or modify the setting parameters.

User permissions: end-user can view the settings and cannot change the settings.

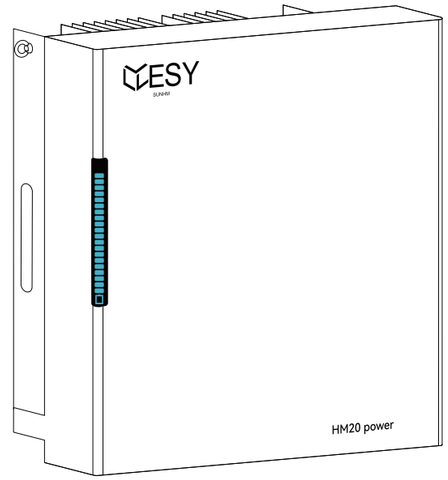
Country Code: On the ANALOG page of the upper computer, check the country code to obtain country code information.

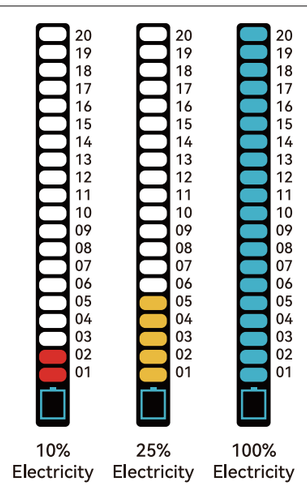
Generation Limit Control: On the CONFIG page of the upper computer software, modify the value of Max Output Power Percent to be (Generation limit/Rated power) %.

Export Limit Control: On the CONFIG page of the upper computer software, set ON-OFF Grid Mode to ANTI, then modify the value of Backflow Prevent Power Percent to be (Export limit/Rated power) %.

9 Light Bar Indication

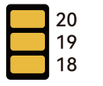
9.1 Inverter LED Display



	The "▯" symbol located at the bottom of the light bar signifies the electricity level. It comprises 20 segments, each representing 5% of electricity. Whenever the power fluctuates by 5%, the light will remain ON for 60 seconds before turning OFF.
	The symbol "ϟ " at the bottom of the light bar indicates the power level. It consists of 20 segments, each representing 5% of the power. Whenever the power changes by 5%, the corresponding segment will be ON for 60 seconds and then turn OFF.

9.2 Alarm Status

When the indicator at the bottom of the light bar is OFF and the top three indicators are ON, it means that the equipment has an alarm or fault. If the equipment is faulty, please promptly seek assistance from professional personnel to resolve the issue.

Alarm Level	Definition	Buzzer	Light	Schematic Diagram	Alarm Signal Recovery Condition
1	Emergency	Buzzing by default	Top three red indicators ON		Troubleshooting
2	Major	Silent	Top two red indicators ON		Troubleshooting
3	Minor	Silent	Top three yellow indicators ON		60 s
4	Upgrading	Silent	Top three blue indicators ON		Upgrade Completed

Note

The inverter employs visual signals (LED lights) to comply with earth fault alarm requirements as per AS/NZS 5033.

The "Earth Fault" alarm is classified as a Level 2 critical alarm. When the inverter is not properly grounded, the top two red indicator lights will remain illuminated. Please ensure proper grounding to resolve the alarm.

This product should be installed in a high-traffic area where the alarm would be easily noticed.

10 System Maintenance

10.1 Start Up Procedure

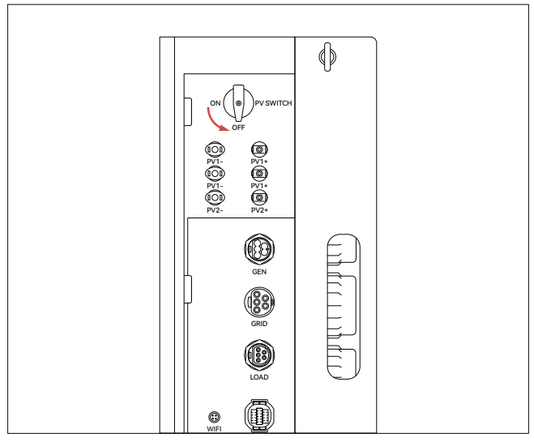
Startup Procedure:

Step 1: Turn on the battery switch on the battery system.
Step 2: Turn on the photovoltaic (PV) isolator.
Step 3: Turn on the grid circuit breaker to power up the system.
Step 4: Turn on the load circuit breaker and ensure the load is operating normally.

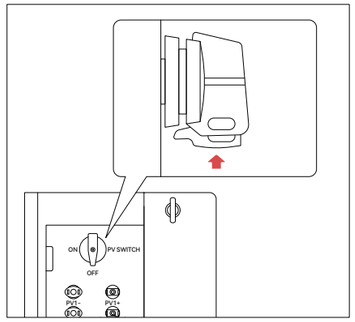
10.2 Shutdown Procedure and Periodic Maintenance

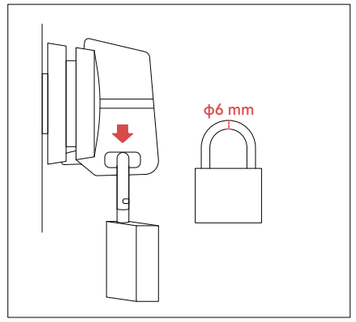
To ensure reliable and long-term service of the system, perform the following steps to check and power off the system once a month:

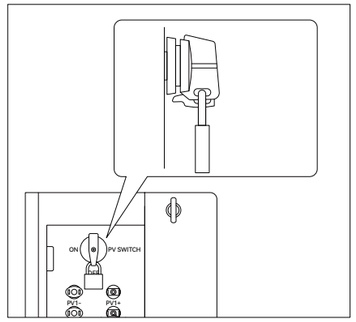
Step1: Turn off the load circuit breaker.
Step2: Turn off the grid circuit breaker of the inverter.
Step3: Turn off the photovoltaic (PV) isolator on the inverter. (Please refer to the illustration below.)
Step4: Turn off the battery switch on the inverter.



During maintenance, please lock the isolator in the OFF position as per the instructions.







10.3 Precautions for Long-Term Non-Use

If the inverter is not used for more than 7 days, please disconnect the circuit breakers for the battery, photovoltaic system, grid, and load.

If the inverter is equipped with a battery and the system is not used for more than 3 months, please switch the circuit breakers for the grid and battery and start the system to charge the battery once.

11 After-sales Service

Service email: support@esysunhome.com
Or, contact the local installer.