

HICONICS

A member of Midea group

Quick Guide

Please scan the following QR code for Single Phase RESS User Manual



Please scan the following QR code to download the Solarman Smart and Solarman Business APP



SOLARMAN Business APP



SOLARMAN Smart APP

Before installing the Single Phase RESS, please read through the user manual in order to learn the product information and safety precautions. The Company does not provide warranty services for any damage caused by the failure in storing, handling, installing and using the equipment according to this document and user manual. We may update this document irregularly due to product version upgrading or other reasons. This document is used for use guidance, and all statements, information and suggestions contained herein do not constitute any guarantee, either expressly or in an implied manner, unless otherwise specified.

STATEMENT

Follow local laws and regulations when installing, operating, or maintaining the equipment. The safety instructions in this manual are only supplements to local laws and regulations. HICONICS will not be liable for any consequence caused by the violation of general safety requirements or design, production, and usage safety standards.

PERSONNEL REQUIREMENTS

- Personnel who plan to install or maintain HICONICS equipment must receive thorough training, understand all necessary safety precautions, and be able to correctly perform all operations.
- Only qualified professionals are allowed to install, operate, and maintain the equipment.
- Personnel who will operate the equipment, including operators, trained personnel, and professionals, should possess the local national required qualifications in special operations such as high-voltage operations, working at heights, and operations of special equipment.

Professionals: personnel who are trained or experienced in equipment operations and are clear of the sources and degree of various potential hazards in equipment installation, operation, and maintenance.

The following types of safety instructions and general information appear in this document as described below:



Danger!

Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.



Warning!

Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.



Caution

Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.



Notice

Indicates actions of which, if not avoided, could result in material damage.

01 Important Safety Instructions

- Danger to life due to high voltages in the inverter! All work must be carried out by qualified electrician. The appliance is not to be used by children or persons with reduced physical sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.



Danger!

- The accessories which are shipped with the inverter are only recommended, otherwise may result in a risk of fire, electric shock, or injury to person.
- Do not disassemble any parts of inverter which are not mentioned in installation guide. It contains no user-serviceable parts. See Warranty for instructions on obtaining service. Attempting to service the inverter yourself may result in a risk of electric shock or fire and will void your warranty.

- Do not operate the inverter when the device is running.
- Ensure input DC voltage \leq Max. DC voltage. Over voltage may cause permanent damage to inverter or other losses, which will not be included in warranty!
- Risk of electric shock!
- Authorized service personnel must disconnect both AC and DC power from inverter before attempting any maintenance or cleaning or working on any circuits connected to inverter.
- Make sure that existing wiring is in good condition and that wire is not undersized.
- PV modules shall have an IEC 61730 Class A or Class II rating.
- Authorized service personnel must use insulated tools when installing or working with this equipment.
- Keep away from flammable, explosive materials to avoid fire disaster.
- Danger of burn injuries due to hot enclosure parts!

During operation, the upper of the enclosure and the enclosure body may become hot. Only touch the lower enclosure lid during operation.



Warning!

- The installation place should be away from humid or corrosive substance.
- The equipment should be installed in areas away from liquids and must not be installed below water pipes, air outlets, or other locations prone to condensation; it must not be installed below air conditioning vents, ventilation outlets, or cable entry windows in machine rooms, which are prone to water leakage, to prevent liquids from entering the equipment and causing malfunctions or short circuits.
- When the device is operating, do not block the ventilation openings, cooling system, or cover it with other items to prevent overheating, damage to the device, or fire.
- The unit contains capacitors that remain charged to a potentially dangerous voltage after the MAINS, battery and PV supply has been disconnected.
- Never touch either the positive or negative pole of PV connecting device. Strictly prohibit touching both of them at the same time.
- Hazardous voltage will present for up to 5 minutes after disconnection from power supply
- When accessing the internal circuit of inverter, it is very important to wait 5 minutes before operating the power circuit or demounting the electrolyte capacitors inside the device. Do not open the device beforehand since the capacitors require time sufficiently discharge!
- CAUTION-RISK of electric shock from energy stored in capacitor, never operate on the inverter couplers, the MAINS cables, Battery cables, PV cables or the PV generator when power is applied. After switching off the PV, battery and Mains, always wait for 5minutes to let the intermediate circuit capacitors discharge before unplug DC, battery plug and MAINS couplers.
- The inverter can only start normally when there is direct current



Caution

- Measure the voltage between terminals DC+ and DC- with a multi-meter (impedance at least 1Mohm) to ensure that the device is discharged before beginning work (35VDC) inside the device.
- Possible damage to health as result of the radiation! Do not stay closer than 20cm to inverter for any length of time.



Notice

- Prior to the application, please read this section carefully to ensure correct and safe application. Please keep the user manual properly.
- Grounding the PV generator.
Comply with the local requirements for grounding the PV modules and the PV generator. It is recommended connecting the generator frame and other electrically conductive surfaces in a manner which ensures continuous conduction and ground these in order to have optimal protection of system and persons.

Anti-Islanding Effect

- The islanding effect is a unique phenomenon that occurs when a grid-connected PV system continues to supply power to the local grid despite voltage loss in the power system. This can be dangerous for maintenance personnel and the public. The HiEnergy series inverter provides Active Frequency Drift (AFD) to prevent the islanding effect.

PE Connection and Leakage Current



Warning!

- High leakage current!
- Earth connection essential before connecting supply.
- Incorrect grounding can cause physical injury, death or equipment malfunction and increase electromagnetic.
- Make sure that grounding conductor is adequately sized as required by safety regulations.
- Do not connect the ground terminals of the unit in series in case of a multiple installation. This product can cause current with a DC component, where a residual current operated protective (RCD) or monitoring (RCM) device is used for protection.
- If local regulation or the grid company request a separate RCD, a residual current device RCD type A can be used for all HiEnergy series inverter.



Caution



Notice

The end-use application shall monitor the protective conductor by residual current operated protective device (RCD) with rated fault current $I_{fn} \leq 240\text{mA}$ which automatically disconnects the device in case of a fault.

For United Kingdom



Caution

- The installation that connects the equipment to the supply terminals shall comply with the requirements of BS 7671.
- No protection settings can be altered.
- User shall ensure that equipment is so installed, designed and operated to maintain at all times compliance with the requirements of ESQCR22(1)(a).

Battery Safety Instructions



Notice

- HiEnergy Series inverter should be worked with high voltage battery, for the specific parameters such as battery type, nominal voltage and nominal capacity etc., please refer to the parameters list.
- The system detects a thermal runaway (Venting of gaseous electrolyte; Burning of the cell, spark formation and ignition of vented gas mixtures; Explosion of the cell), it wirelessly sends a thermal runaway signal to the user's alarm system to inform the user that a thermal runaway has occurred. Users need to configure buzzer alarm products at home. (The alarm light is red, and the alarm buzzer has a sound level greater than 85dB but less than 110dB, with a frequency below 3.5kHz.)

As energy storage batteries may contain potential electric shock and short-circuit current danger, to avoid accidents that might be thus resulted, the following warnings should be observed during battery replacement:

1. Do not wear watches, rings or similar metallic items.
2. Use insulated tools.
3. Put on rubber shoes and gloves.
4. Do not place metallic tools and similar metallic parts on the batteries.
5. Switch off load connected to the batteries before dismantling battery connection terminals.
6. Only personal with proper expertise can carry out the maintenance of accumulator batteries.

Recycling and Treatment



Notice

- Data Erasure: The product's storage is already encrypted. It is recommended that customers restore the factory settings before removal to clear all user configurations and data.
- Secure disposal: Physically destroy storage media that cannot have data cleared, and dispose of equipment in compliance with environmental regulations.
- Disconnect the product from the power grid or power source and ensure it is completely turned off.
- Confirm if there is still power in the product. If so, place it in a safe location until the power is completely drained.
- If the battery leaks or is damaged, please contact technical support or a battery recycling company for disposal.
- Faulty batteries are prohibited from being reused. Contact the battery recycling company for disposal in a timely manner to avoid environmental pollution.
- Avoid exposing used batteries to high temperatures or direct sunlight, high humidity, or corrosive environments.
- Before disposal, please carefully read the product manual or consult the manufacturer to learn more detailed safety disposal guidelines.
- Please be sure to dispose of it safely in accordance with local laws and regulations. Improper battery disposal may cause environmental pollution or explosion.

Channel for Handling Security Issues



Notice

- After-sales service: Get assistance via phone, email, or online customer service.
- Reporting channel: Report security issues through the after-sales service channel.
- Issue tracking: Track the progress of problem resolution through after-sales service channels.

Network Security



Warning!

Install the gateway. Please do not configure this product in an untrusted network environment.



Caution

Please call the product company's after-sales service number and wait for the after-sales service personnel to come and collect it, and reset this product; If the mobile phone cannot control this product, please reset this product in a secure network environment.

Security Update

- Regularly check the battery pack and its connectors for looseness, corrosion, etc., and address any issues promptly.
- Avoid overcharging or over-discharging, as it can affect battery life and may even cause battery damage. This situation should be avoided.
- When installing home energy storage products, follow the instructions in the manual to ensure correct and secure installation.
- Although the product has lightning protection functions, attention should also be paid to avoid lightning strikes and other situations.
- Regular maintenance should be carried out, such as cleaning and checking the battery status, to ensure the normal operation and safety of the product. Specific operations should be performed according to the product manual and the guidance of professionals.

Equipment Installation

HiEnergy series is designed for outdoor installation (IP65). Make sure the installation site meets the following conditions:



Notice

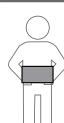
- Not in direct sunlight.
- Not in areas where highly flammable materials are stored.
- Not in potential explosive areas.
- Not in the cool air directly.
- Not near the television antenna or antenna cable.
- Not higher than altitude of about 2000m above sea level.
- Suggested installation environment humidity \leq 95% RH.
- Under good ventilation condition.
- The ambient temperature in the range of -20°C to +55°C.
- The slope of the wall should be within $\pm 5^\circ$.
- The wall hanging the inverter should meet conditions below.
- The surface should be strong and flat.
 1. Solid brick/concrete, or strength equivalent mounting surface;
 2. Inverter must be supported or strengthened if the wall's strength isn't enough (Such as wooden wall, the wall covered by thick layer of decoration)

Battery Maintenance

1. Before operating or maintaining the battery system, be sure to carefully read the user manual and strictly follow the requirements of the manual.
2. Regularly inspect the battery terminals (positive and negative) carefully:
 - Check for any looseness or corrosion.
 - Check whether the connection is secure and reliable to avoid overheating or sparking caused by loose connections.
 - Keep terminals clean and dry, and use specialized terminal protectants if necessary.
3. Regularly inspect the battery condition:
 - Appearance: Check for swelling, deformation, cracks, or leakage on the battery casing.
 - Cleanliness: Ensure the battery surface and top are clean and dry, avoiding dust, dirt, and metal debris accumulation that may cause short circuits.
 - Connection wires: Inspect the connection wires between batteries and those connected to equipment to ensure they are intact, without damage, aging, or overheating marks, and that connections are secure.
 - Charging state (SOC): Regularly monitor the battery voltage or charge status to prevent deep discharge and prolonged overcharging.
 - Environmental temperature: Ensure the battery operates within the temperature range recommended by the manufacturer, avoiding extreme high or low temperatures.

NOTE:

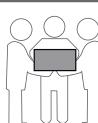
- During any battery maintenance operation, strictly adhere to the safety operation procedures and maintenance guidelines for batteries and charging equipment.
- Ensure that warning labels on the battery and in the operation area remain clear and intact.
- Wear appropriate personal protective equipment (PPE), such as safety goggles and gloves, especially when handling lead-acid batteries or other batteries containing electrolytes, to prevent electrolyte contact with skin or eyes.
- Prevent short circuits: Do not place metal tools or conductors simultaneously on the positive and negative terminals of the battery.
- Routine maintenance: Includes regular cleaning, checking connection tightness, monitoring voltage and temperature, and ensuring good ventilation.



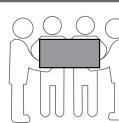
< 18 kg
(< 40 lbs)



18-32 kg
(40-70 lbs)



32-55 kg
(70-121 lbs)



55-68 kg
(121-150 lbs)



> 68 kg
(> 150 lbs)



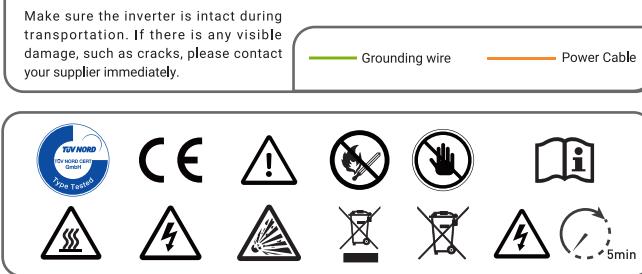
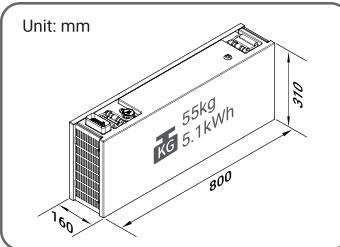
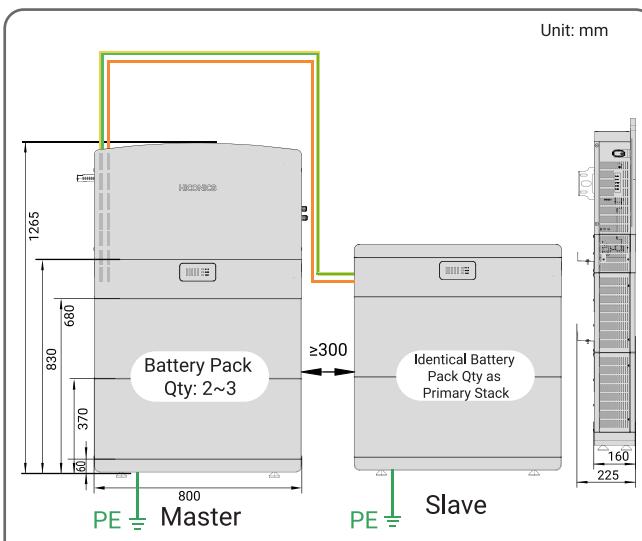
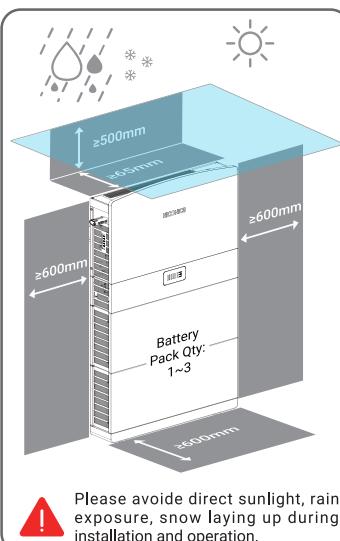
Notice

When carrying heavy objects, you should be prepared to bear the weight to avoid being crushed or sprained by heavy objects.



When multiple people carry heavy objects at the same time, it is necessary to consider the height and other conditions, and do a reasonable job of personnel matching and division of labor to ensure a balanced weight distribution

02 Installation Overview



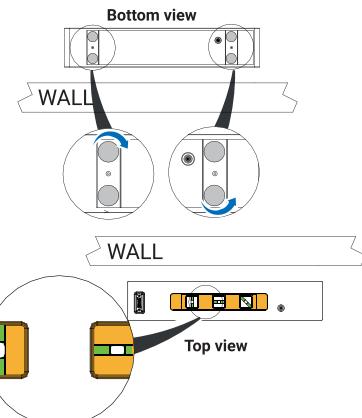
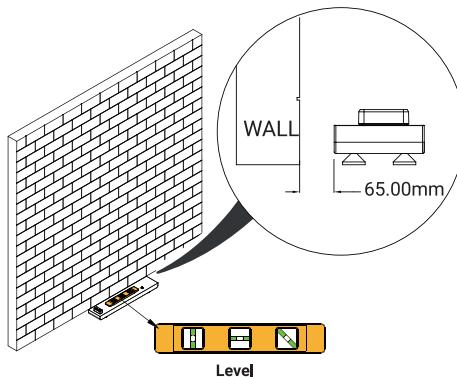
03 Drilling Holes for Battery Pack Positioning



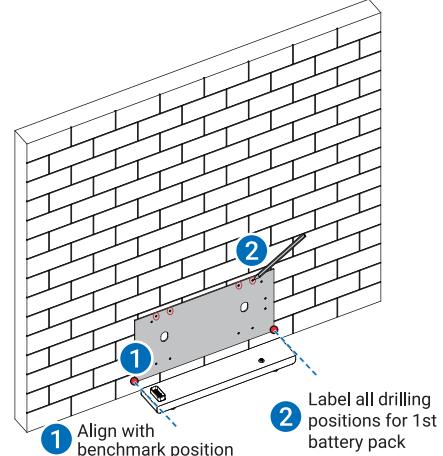
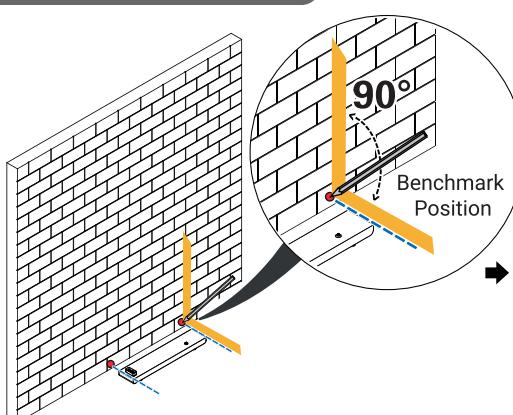
Notice

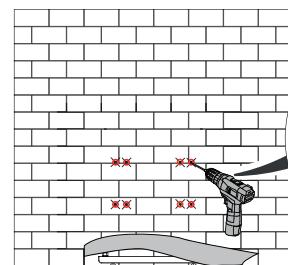
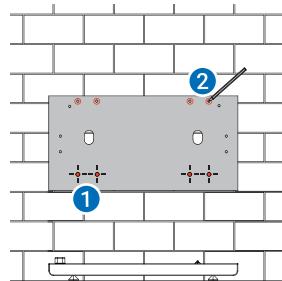
Quick installation provides theoretical installation, and the battery mounting bracket can choose to only install the top pair of brackets.

Adjust the Base

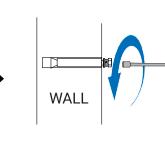
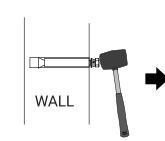
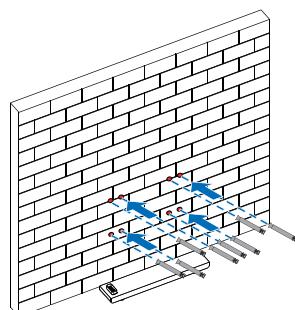


Drilling positioning





Attention!
1. Cover it to prevent dust;
2. Wear goggles and protective gloves
when drilling holes.

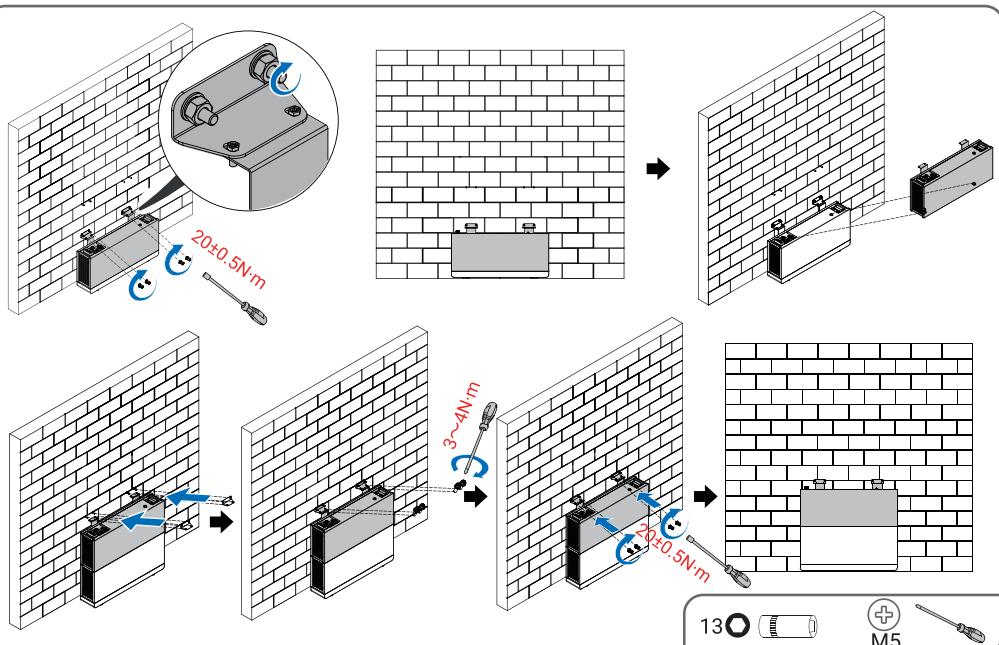
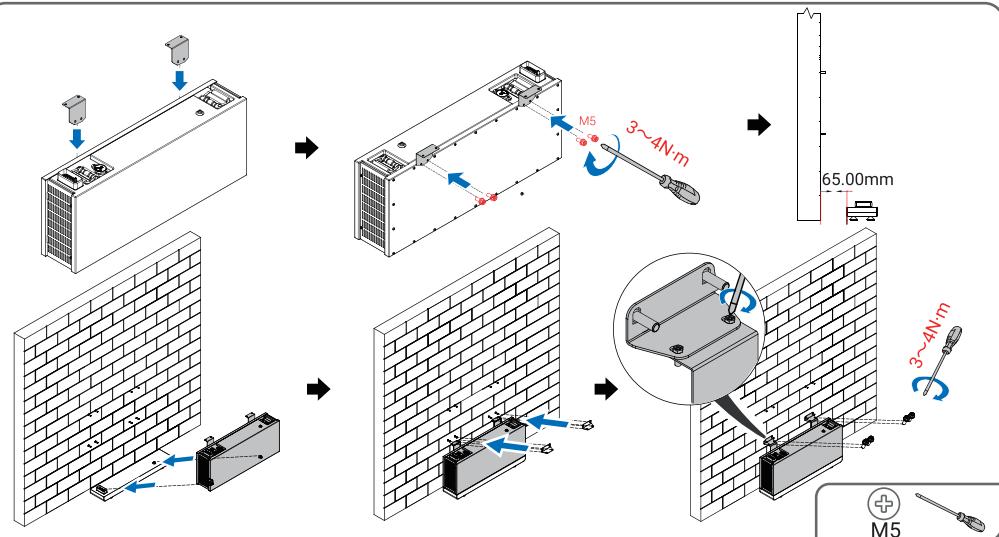


Note that the expansion bolts are tightened clockwise first; then the nuts are unscrewed counterclockwise.

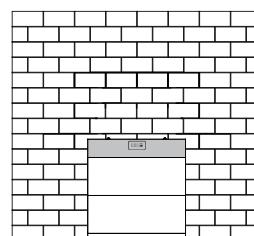
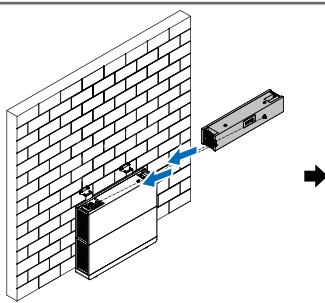
1 Align with
benchmark position 2 Label all drilling positions
for 2nd battery pack



04 Installing Battery Pack



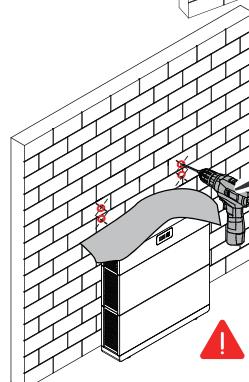
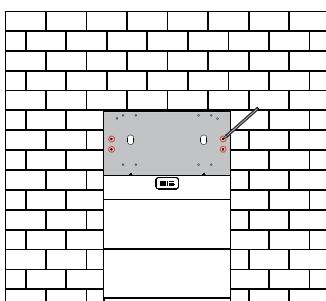
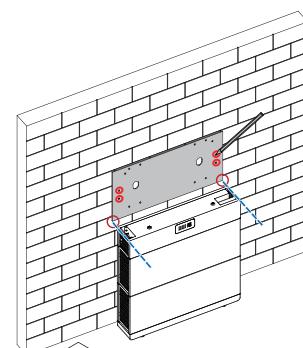
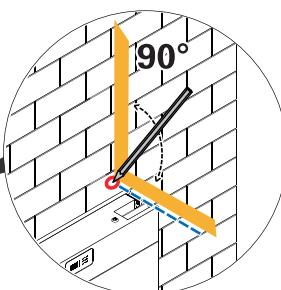
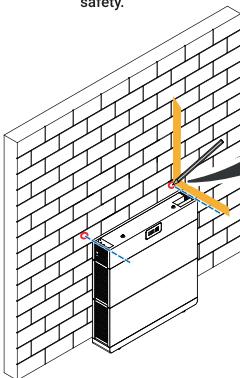
05 Installing BMS Control Box



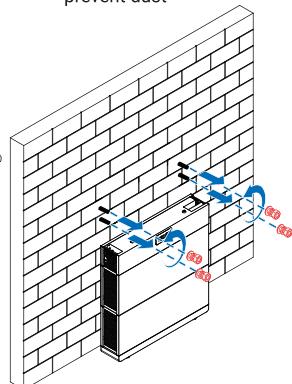
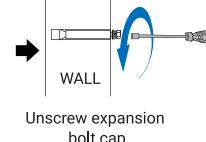
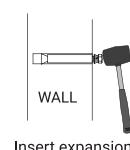
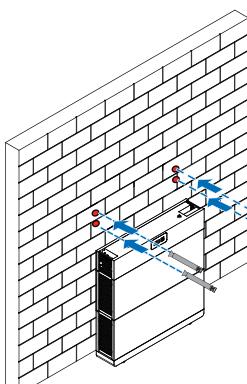
06 Drilling Holes for Inverter Positioning



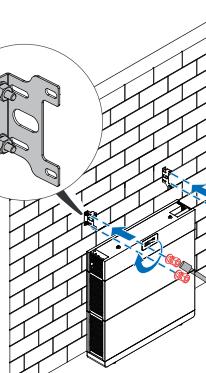
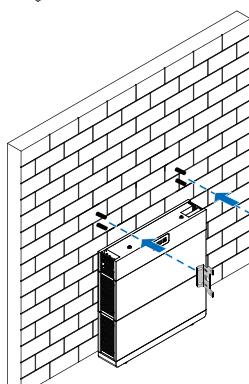
This product is not designed for wall mount installation. Please do not wall mount the inverter if the product is used individually. Supporting material which weighs 3 times of inverter is required underneath the inverter for installation safety.



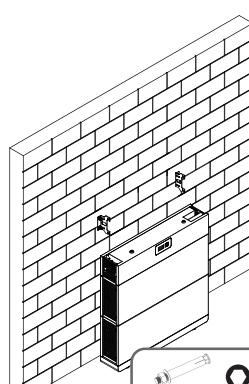
Attention: Cover it to prevent dust



Note that the expansion bolts are tightened clockwise first; then the nuts are unscrewed counterclockwise.

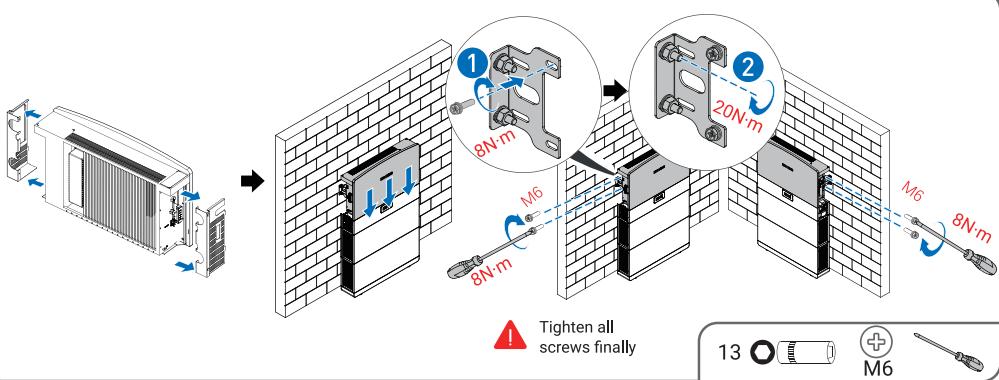


Pre-tightening

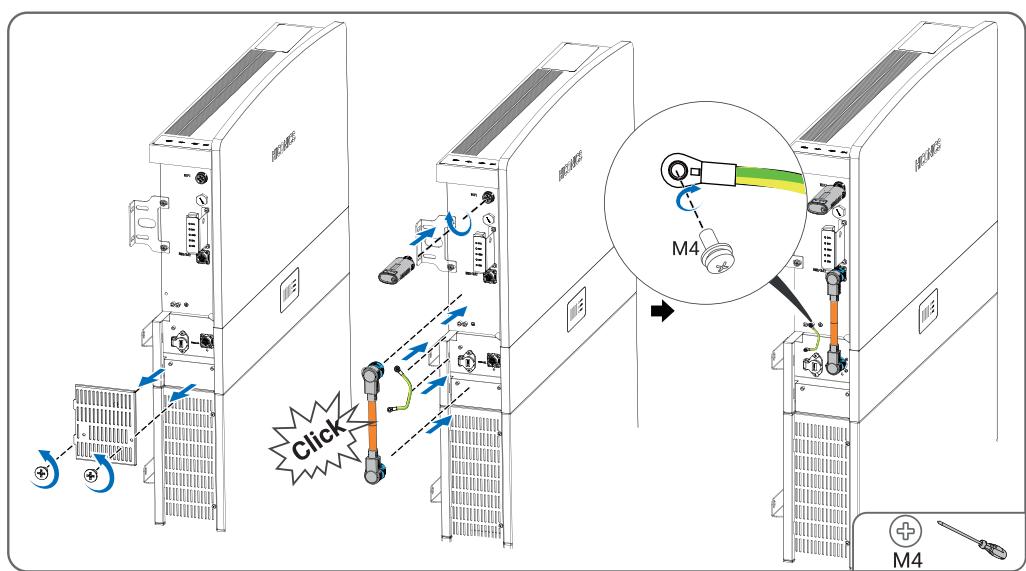


M 8 *60

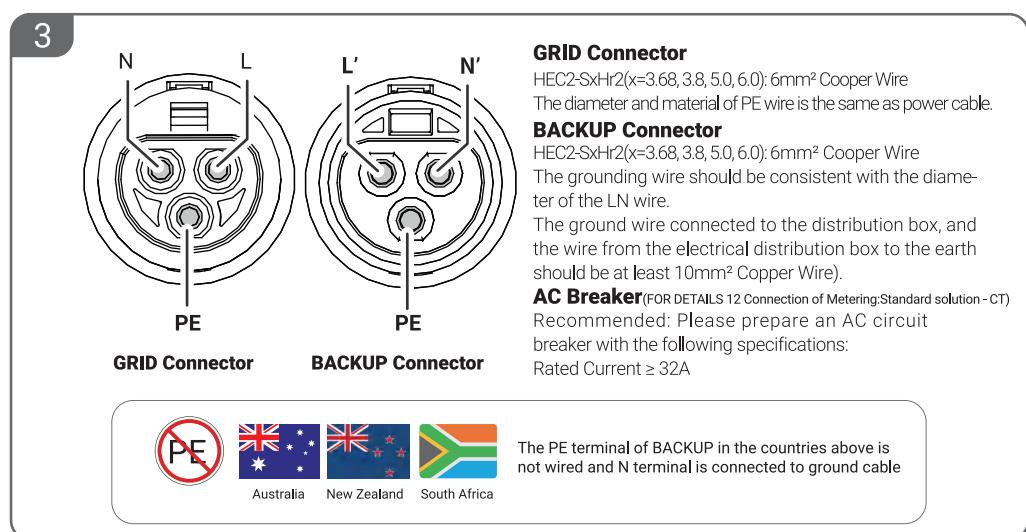
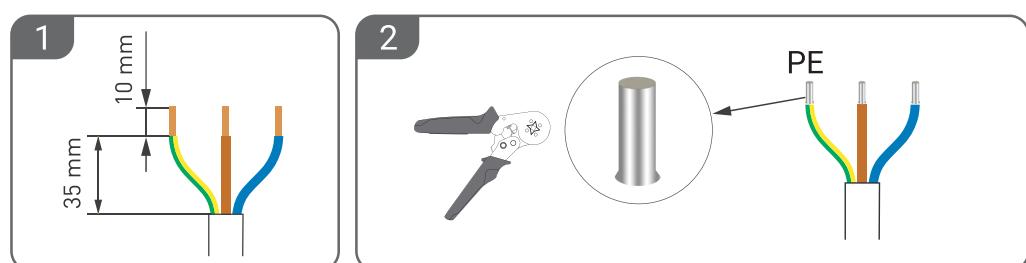
07 Installing Inverters



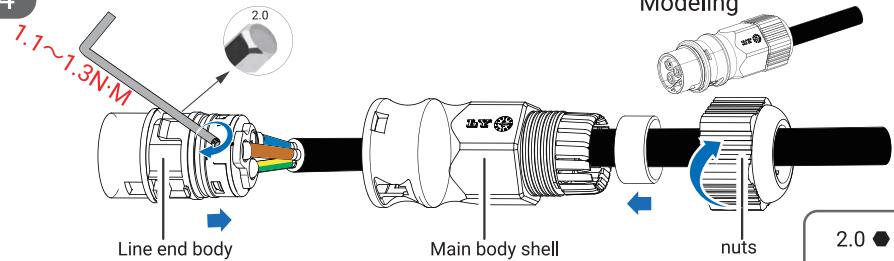
08 Connection of BMS Control Box and Inverter



09 AC Connection



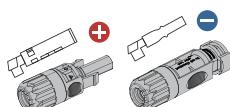
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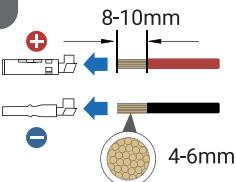
Modeling

10 PV Connection

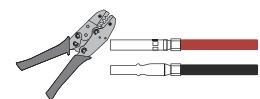
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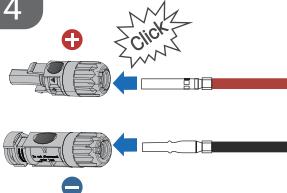
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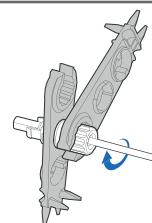
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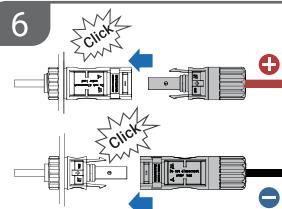
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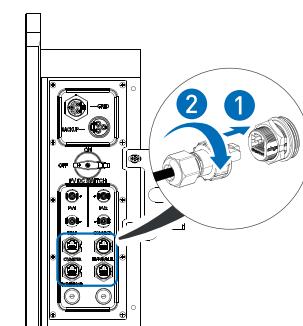
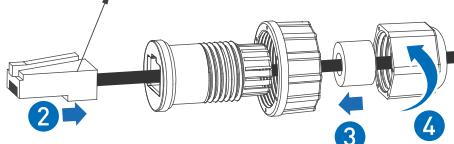
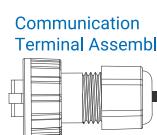
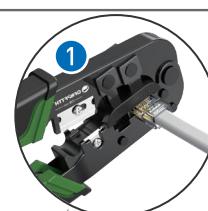
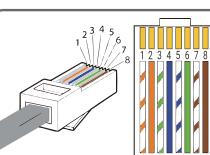
5



6



11 Connection of Communication Cable



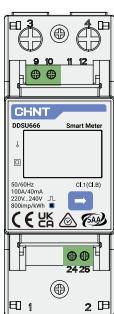
12 Meter / CT Wiring Instructions



Notice

Please ensure that the installation of the electricity meter/CT complies with the wiring diagram requirements, paying attention to the installation position and direction. If installed incorrectly, it may result in abnormal power and energy.

Types of smart meters-1



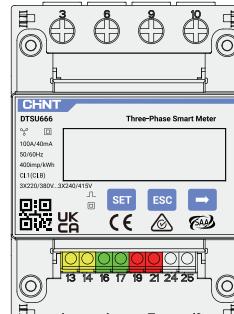
01

Meter Model:
DDSU666
/230V 100A(40mA)
2P 1CT



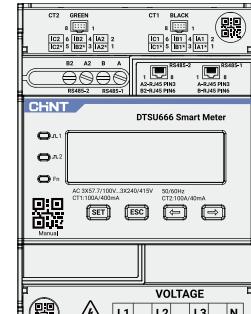
02

Meter Model:
DDSU666
/230V 100A/40mA
2P 2CT



03

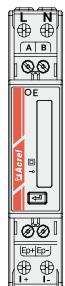
Meter Model:
DTSU666
/3X230/400V 100A(40mA)
4P 3CT



04

Meter Model:
DTSU666
/3X230/400V 100A(40mA)
4P 3CT

Types of smart meters-2



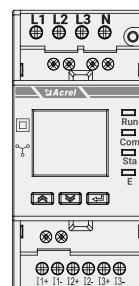
01'

Meter Model:
ADL200N-CT
/D10/230V
/80A 1CT



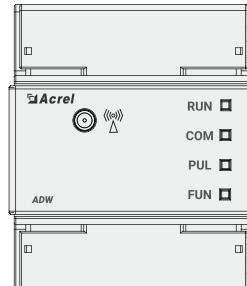
02'

Meter Model:
ADL200N-CT
/D16-2/230V 120A
/40mA 2CT



03'

Meter Model:
ADL400N-CT
/D16/3x230/400V 120A
/40mA 3CT

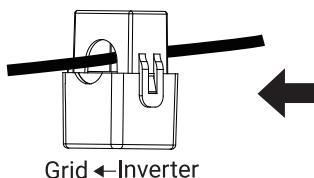


04'

Meter Model:
ADW200-16-2S
/3X230/380V 100A
/20mA 6CT

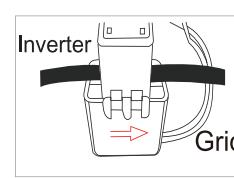
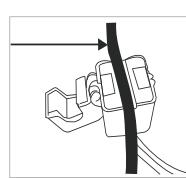
General Installation Example

CT universal wiring



Grid ← Inverter

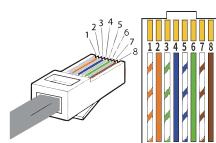
CT shall be subject to
the actual product!



Open the CT cap, place it on the grid main line "L" cable so that the arrow of the CT points towards the direction of the power grid, and then close the cap.

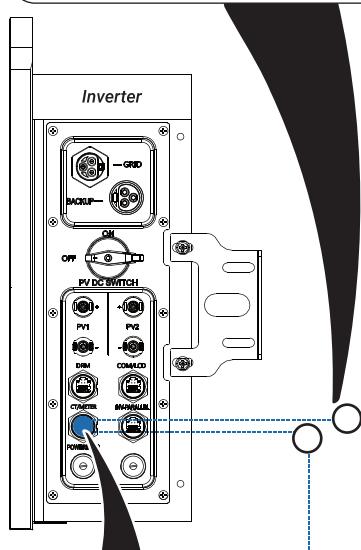
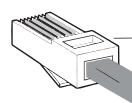
Definition of Inverter and electric meter RS485 communication interface

RS485 Communication Header Production



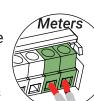
Color

- 1 White-Orange (485A)
- 2 Orange (485B)
- 3 White-Green
- 4 Blue
- 5 White-Blue
- 6 Green
- 7 White-Brown(CT-)
- 8 Brown(CT+)



Meter pin definition-1

The communication interface of the meter is the "Phoenix terminal", which is converted into a network port by means of an adapter.



01' Meter Model: DDSU666 /230V 100A(40mA) 2P 1CT

02' Meter Model: DDSU666 /230V 100A/40mA 2P 2CT

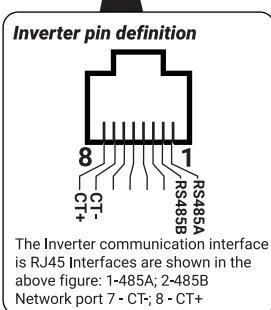
03' Meter Model: DDSU666 /3X230 /400V 100A(40mA) 4P 3CT

04' Meter Model: DDSU666 /3X230 /400V 100A(40mA) 4P 6CT

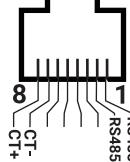
01' Meter Model: ADL200N-CT/D10/230V/80A 1CT

03' Meter Model: ADL400N-CT/D16 /3X230/380V 100A/20mA 3CT

04' Meter Model: ADW200-16-2S /3X230/380V 100A/20mA 6CT

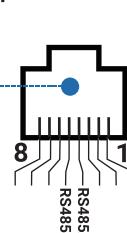


Inverter pin definition



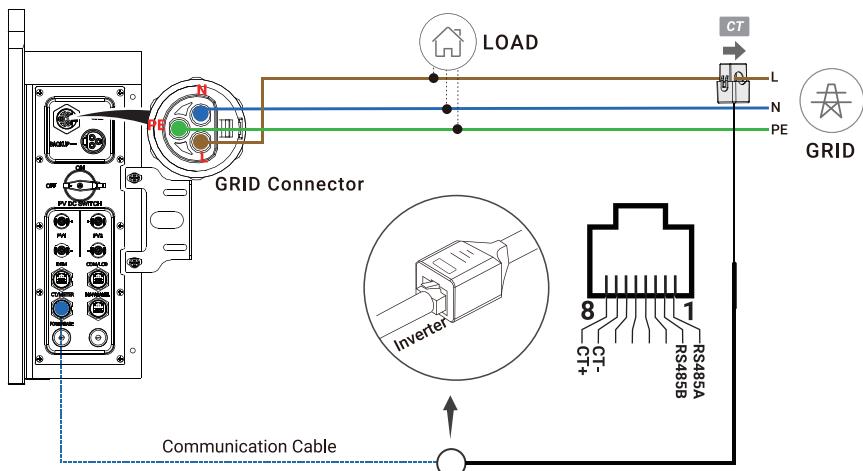
The Inverter communication interface is RJ45 Interfaces are shown in the above figure: 1-485A; 2-485B
Network port 7 - CT-; 8 - CT+

Meter pin definition-2



02' Meter Model: ADL200N-CT/D16-2 /230V 120A/40mA 2CT

Single Phase Grid + DC couple + CT

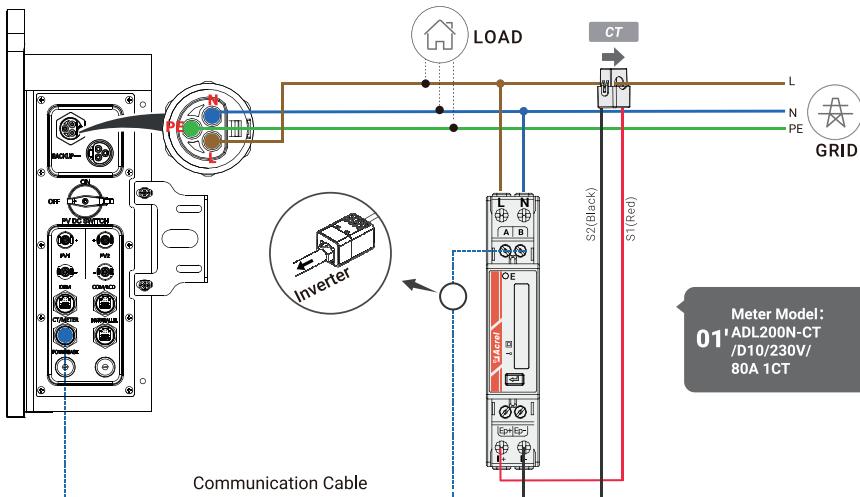


Single Phase ESS Product

Single Phase Grid + DC couple + Single Phase CHINT or ACREL Meter (1 CT)

Single phase ACREL Meter (1 CT)

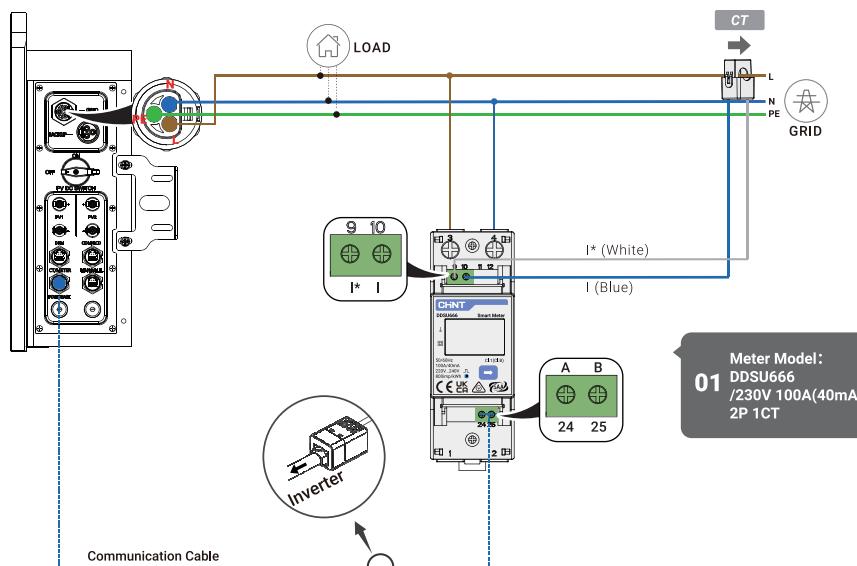
Single Phase ESS Product



Meter Model:
01 ADL200N-CT
/D10/230V/
80A 1CT

Single Phase CHINT Meter (1 CT)

Single Phase ESS Product

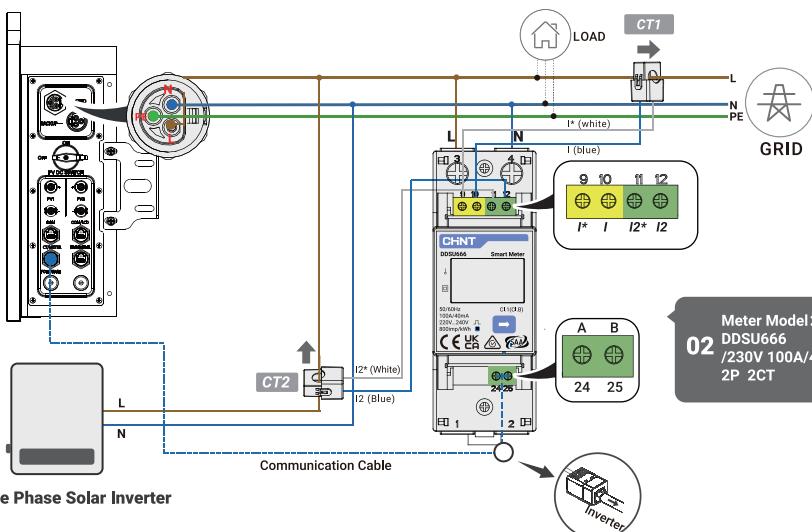


Meter Model:
01 DDSU666
/230V 100A(40mA)
2P 1CT

Single Phase Grid + AC couple (Single Phase Solar Inverter) + Single Phase CHINT or ACREL Meter (2 CT)

Single Phase CHINT Meter (2 CT)

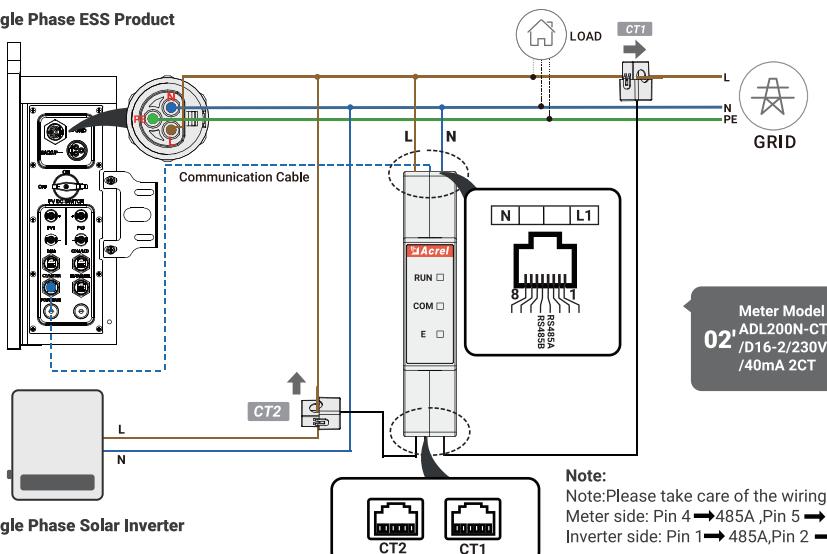
Single Phase ESS Product



Single Phase Solar Inverter

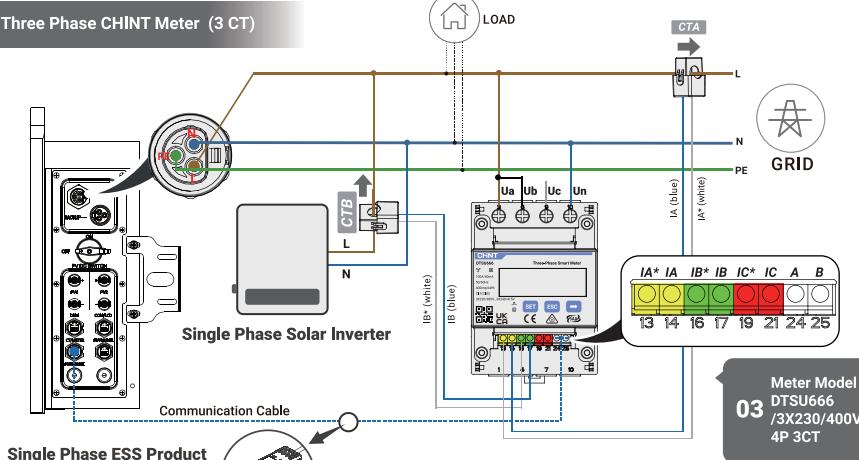
Single Phase ACREL Meter (2 CT)

Single Phase ESS Product



Single Phase Grid + AC Couple (Single Phase Solar Inverter) + Three Phase CHINT or ACREL Meter (3 CT)

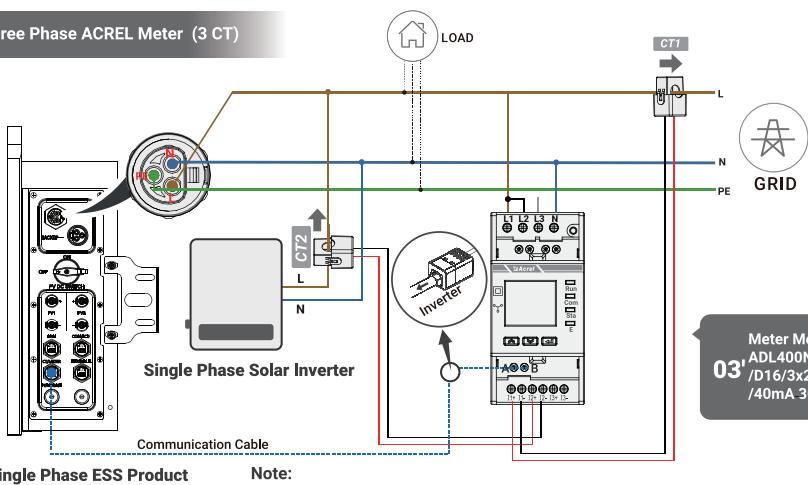
Three Phase CHINT Meter (3 CT)



Single Phase ESS Product

Note:
1. ESS product only can connect to grid phase A
2. CTA need to connect to grid phase A

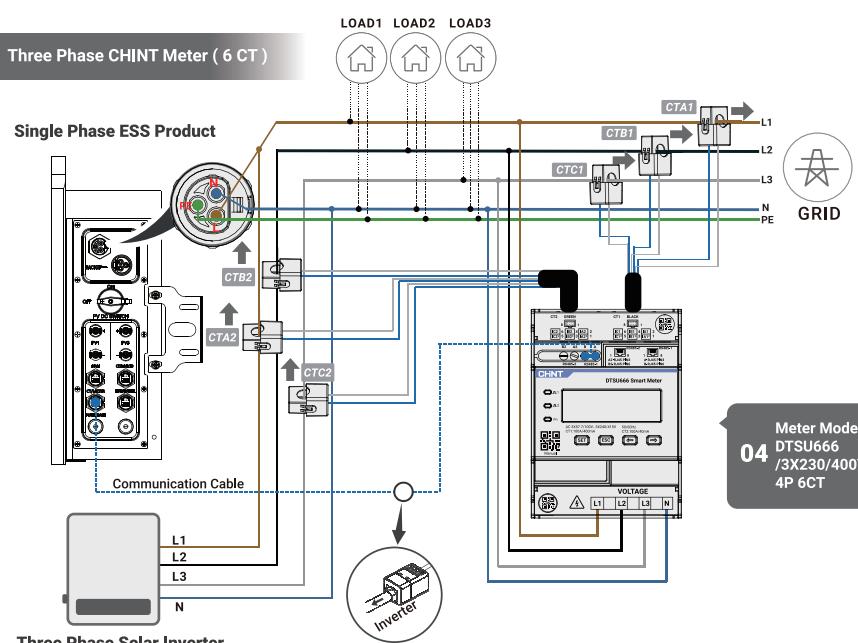
Three Phase ACREL Meter (3 CT)



Meter Model:
03' ADL400N-CT
/D16/3x230/400V 120A
/40mA 3CT

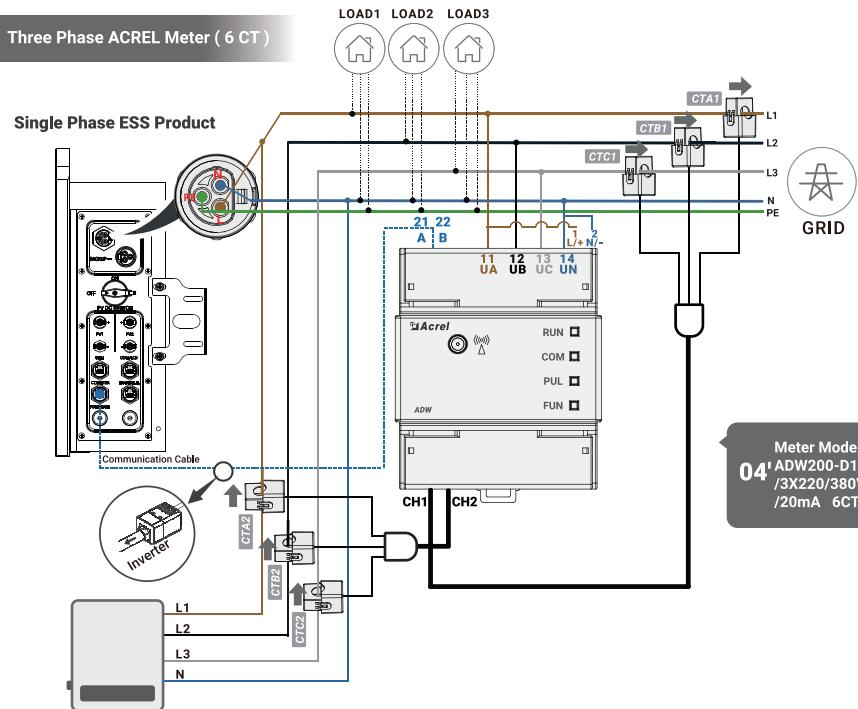
Three Phase Grid + AC Couple (Three Phase Solar Inverter) + Three Phase CHINT or ACREL Meter (6 CT)

Three Phase CHINT Meter (6 CT)



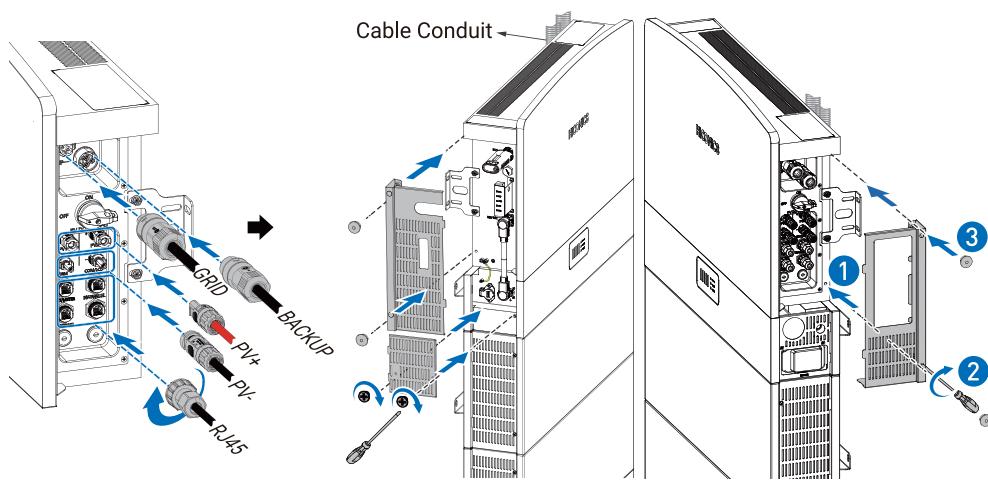
Meter Model:
04' DTSU666
/3X230/400V 100A(40mA)
4P 6CT

Three Phase ACREL Meter (6 CT)

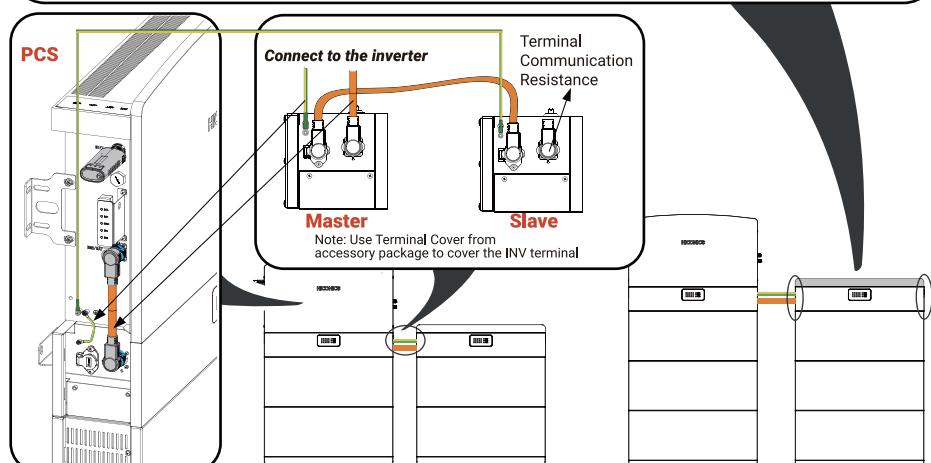
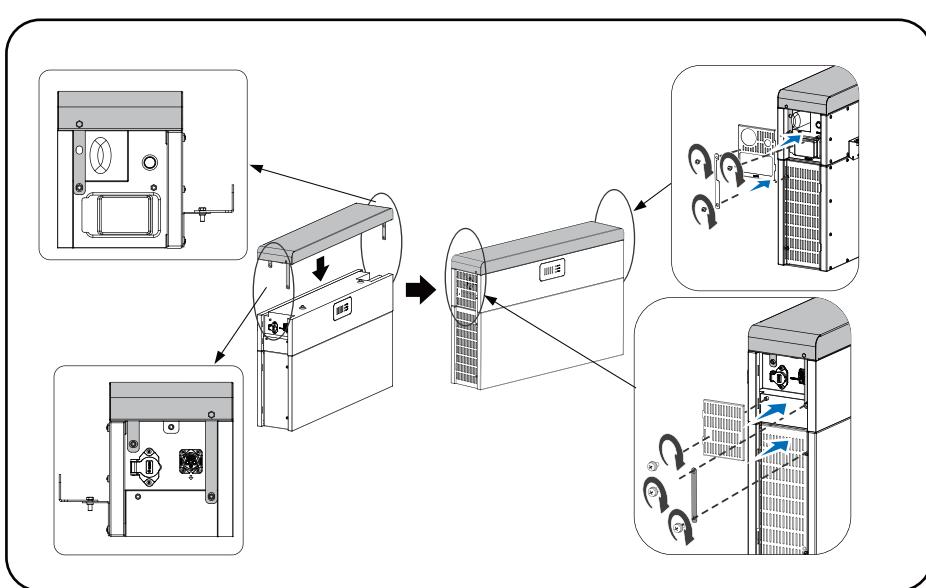


Meter Model:
04' ADW200-D16-2S
/3X220/380V 100A
/20mA 6CT

13 Overall Cable Connection



14 Parallel Operation

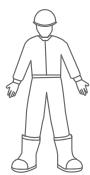


Grounding wire Power Cable Connecting plate*2 Connecting plate*2

These accessories are only required when installing multiple stacks of batteries



15 Power On/Off Operations

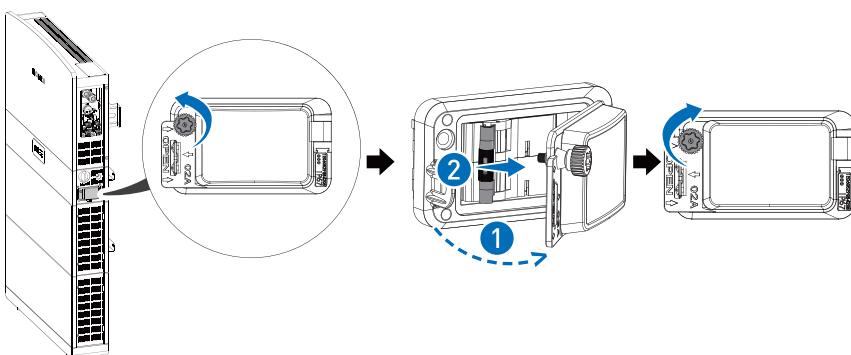


Warning!



Please check the Wiring of cables again before turning on the system.

1



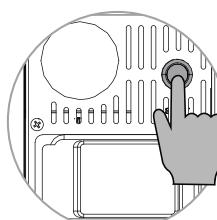
2



Lights On: Startup done

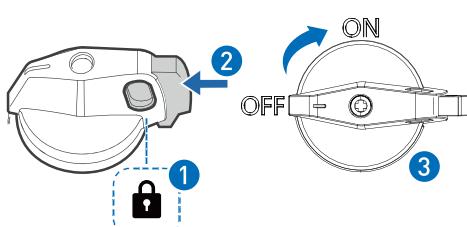


Lights Not On: Press and hold the button until it is on

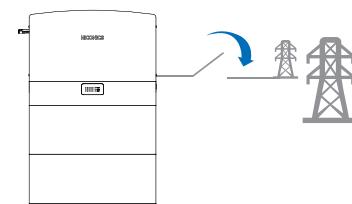


⚠ The fault information of the LED light can be viewed by scanning the QR code in the manual on the homepage

3



4



Please scan the following QR code for commissioning process



Commissioning Guide
for Midea Hiconics Solar Inverter



Notice

The battery system have a non-resettable function to stop operation. If the voltage, current, temperature and other information reach the system lock threshold, the system will enter the system lock state. In this state, the system cannot be restored by restarting the system or any other operation. Please contact the professional operating system of his product and then ask them to exit the system lock state.



Power Off Procedure:

4

3

1

16 Product Parameter

Inverter Parameter Table

Technical Data	HEC2-S6.0Hr2	HEC2-S5.0Hr2	HEC2-S3.8Hr2	HEC2-S3.68Hr2 ^[7]
PV Input				
Max.PV Array Power		3750 W/3750 W		
Max.DC Voltage		600 V ^[3]		
Nominal DC Operating Voltage		360 V		
MPPT Voltage Range		100 V-540 V		
MPPT Voltage Range For Nominal Power ^[5]	225 V-480 V	185 V-480 V	141 V-480 V	137 V-480 V
Start Up Voltage		120 V		
Max.Input Current(A/B)		15 A/15 A		
Max.Short Circuit Current(A/B)		18 A/18 A		
No.of MPP Tracks/String Per MPP Tracker		2/1		
Max. inverter backfeed current to the array		0 A		
BAT Side				
Battery Voltage Range		85V ^[4] - 400V		
Battery Voltage Range For Nominal Power	250 V-400 V	225 V-400 V	170 V-400 V	160 V-400 V
Recommended Battery Voltage		300 V		
Max.Charge/Discharge Current ^[2]		25 A/25 A		
Communication Interfaces		RS485/CAN		
Reverse Connect Protection		Yes		
AC Grid Side(On-Grid)				
Nominal AC Output Power	6000 W ^[1]	5000 W ^[1]	3800 W	3680 W
Max.Output Power	6000 W ^[1]	5000 W ^[1]	3800 W	3680 W
Nominal Apparent Power Output To Utility Grid	6000 VA ^[1]	5000 VA ^[1]	3800 VA	3680 VA
Max. Apparent Power Output To Utility Grid	6000 VA ^[1]	5000 VA ^[1]	3800 VA	3680 VA
Nominal Apparent Power From Utility Grid	6000 VA	5000 VA	3800 VA	3680 VA
Max. Apparent Power From Utility Grid	6000 VA	6000 VA ^[6]	6000 VA ^[6]	6000 VA ^[6]
Nominal Grid Voltage		L/N/PE 230V		
Grid Voltage Range		180 V-280 V		
Nominal Grid Frequency		50 Hz		
AC Grid Frequency Range		50 Hz±5 Hz		
Max. Output AC Current To Utility Grid	26.1 A	21.7 A	16.5 A	16 A
Rate Output AC Current To Utility Grid	26.1 A	21.7 A	16.5 A	16 A
Rated AC Current From Utility Grid	26.1 A	21.7 A	16.5 A	16 A
Max. AC Current From Utility Grid	26.1 A	26.1 A ^[6]	26.1 A ^[6]	26.1 A ^[6]
Power Factor		~1 (Adjustable from 0.8 leading to 0.8 lagging)		
I.Thd		<3%@Rated power		<5%@Rated power
EPS Side				
Back-UP Nominal Apparent Power	6000 VA	5000 VA	3800 VA	3680 VA
Nominal Power	6000 W	5000 W	3800 W	3680 W
Max. Output Apparent Power Without Grid		7500VA@10sec		
Max. Output Apparent Power With Grid		7500VA@10sec		
Nominal Output Voltage		L/N/PE 230V		
Nominal Output Frequency		50 Hz		
Nominal Output Current	26.1 A	21.7 A	16.5 A	16 A
Max.output Current	26.1 A	21.7 A	16.5 A	16 A
Max.output Overcurrent Protection		32.6A@10sec		
Switching From Grid Connected Mode To Backup Mode		<20 ms		
Output Thd		<5%@Linear Load		
EFFICIENCY				
MPPT Efficiency	99.9%	99.9%	99.9%	99.9%
Euro Efficiency	95.2%	95.2%	95.0%	95.0%
Max.Efficiency	96.8%	96.7%	96.5%	96.5%
Battery Charge/Discharge Efficiency	97.6%(PV-BAT)	97.6%(PV-BAT)	97.6%(PV-BAT)	97.6%(PV-BAT)
	96.0%(BAT-AC)	96.3%(BAT-AC)	95.4%(BAT-AC)	95.4%(BAT-AC)
ENVIRONMENT LIMIT				
Ingress Protection		IP65		
Protection Class		Class I		
Pollution Degree		PD3		
Over Voltage Category		III (MAINS), II (DC)		

Operating Temperature Range	-20°C~+60°C(derating at +45)				
Max.Operation Altitude	<2000m				
Humidity	0-100%				
Cooling	Natural Convection				
User Interface	LED,APP				
Communication With BMS	CAN/485				
Communication With Meter	RS485				
Communication With Portal	WIFI				
Typical Noise Emission	<40dB				
Dimension (W*h*d)	800 (±20) *450 (±20) *160 (±20) mm				
Weight	34±3KG				
Topology	Non-isolated				
Self-consumption At Night	<25 W				
DC Connector	MC4 (4~6 mm ²)				
AC Connector	Quick Plug				
Storage Temperature	-40°C to +85°C				
Standard Warranty	5 years				
STANDARD					
Safety	IEC/EN 62109-1&2, IEC 62477				
EMC	IEC 61000-6-1, IEC 61000-6-3				
Environment	IEC 60529, IEC 60068				
Efficiency	IEC 61683				
Certification	EN 50549-1, G99, G98, CEI 021, VDE 4105, AS/NZS 4777.2				

Remark:

- [1] The grid feed in power for VDE4105 is limited 4600VA.
- [2] Battery charging current is limited 25A and power is limited 6000W.
- [3] The machine may be damaged if PV port exceeds this voltage, full power operation voltage should be less than 480V, 480V-540V for limited power operation.
- [4] Battery port boot voltage must be greater than 95V.
- [5] The power is 6000W according to the grid port.
- [6] The value will appear when the grid is charging battery and support EPS load.
- [7] 3.68kw UK and Italy only.

Battery Parameters

Mode	HEC2-BHP50r2	HEC2-BHP100r2	HEC2-BHP150r2	HEC2-BHP200r2-A	HEC2-BHP300r2
Component	Base+BMS + 1*Module	Base+BMS + 2*Module	Base+BMS +3*Module	2*(Base+BMS +2*Module)	2*(Base+BMS +3*Module)
Nominal Voltage	102.4 V	204.8 V	307.2 V	204.8 V	307.2 V
Maximum Protection Voltage	116.8 V	233.6 V	350.4 V	233.6 V	350.4 V
Minimum Protection Voltage	89.6 V	179.2 V	268.8 V	179.2 V	268.8 V
Number Of Battery Modules	1	2	3	4	6
Nominal Capacity	50 Ah	50 Ah	50 Ah	100 Ah	100 Ah
Total Energy	5.1 kWh	10.2 kWh	15.3 kWh	20.4 kWh	30.6 kWh
Nominal Power	2.56 kW	5.12 kW	7.68 kW	10.24 kW	15.36 kW
Nominal Charge/discharge Current	25A	25A	25A	50A	50A
Maximum Charge/discharge Current	25 A	25 A	25 A	50 A	50 A
Cycle Life	6000 Cycles (@0.5C, 90%DOD, 25°C, 60%SOH)				
Expected Life Time	10 Years (60%SOH)				
Operating Ambient Temperature Range	-20°C to 55°C (derating above 45°C) -20°C to 55°C (1 month)				
Storage Temperature	-20°C to 45°C (3 months) -20°C to 35°C (1 year)				
Humidity	0~95%				
Altitude	Below 2000 m				
Ingress Protection	IP65				
System To Inverter	RS485/CAN2.0				
Battery To Battery/bms	Daisy chain				
Display Interface	LED				
Switch On/off	Button*1 +Breaker*1	Button*1 +Breaker*1	Button*1 +Breaker*1	2* (Button*1 +Breaker*1)	2* (Button*1 +Breaker*1)
Certificate	CE, IEC 62619, IEC 62040, IEC 60529, IEC 61000, UN 38.3				
Hazardous Materials Classification	Class 9				
Weight	69±4 kg	124±6 kg	179±8 kg	248±12 kg	358±16 kg
External Dimension(W*h*d)	800±20*530±30*160±20 mm	800±20*840±30*160±20 mm	800±20*1150±30*160±20 mm	1600±20*840±30*160±20 mm	1600±20*1150±20*160±20 mm
Remark	1 Series 2 Series Parallel				

17 Packaging, Transportation, Storage

- The system cabinet is packed in cardboard packaging and the internal PE packaging bag is moisture-proof and waterproof.

- Use EPE pearl cotton foam pad in the middle to prevent damage to the system during handling and transportation.
- Transportation must comply with UN3480's dangerous goods transportation and local laws and regulations.
- The system is heavy and must use the mechanical handling.
- Transportation temperature: -10 ° C ~ 40 ° C.
- The equipment and packaging cannot be sprayed, so it cannot be transported in the open air.

Storage temperature:

- ◆ -20 ° C ~ 35 ° C, 12months;
- ◆ -20 ° C ~ 45 ° C, 3months;
- ◆ -20 ° C ~ 55 ° C, 1month;

(The SOC before storage is kept in the range of 30% to 60%)

- Suggested storage humidity: 0%~95%RH (No condensation)
- The storage room should be kept ventilated, the room should be clean and dry, and it should be protected from dust and moisture.
- The storage time can be up to 3 months. It is recommended to charge and discharge the system for more than the time.
- Storage room sunlight cannot be directly exposed to the system.

Warranty Registration Form

For Customer (Compulsory)

Name _____ Country _____
 Phone Number _____ Email _____
 Address _____
 State _____ Zip Code _____
 Product Serial Number _____
 Date of Commissioning _____
 Installation Company Name _____
 Installer Name _____ Electrician License No. _____

For Installer

Module (If Any)
 Module Brand _____
 Module Size(W) _____
 Number of String _____ Number of Panel Per String _____
Battery (If Any)
 Battery Type _____
 Brand _____
 Number of Battery Attached _____
 Date of Delivery _____ Signature _____

Please visit our warranty website: www.hiconics-global.com

For more detailed warranty terms, please visit Hiconics official Website: www.hiconics-global.com

Hiconics Eco-energy Drive Technology Co., Ltd.

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