Hybrid Inverter

SUN-5K-SG01HP3-EU-AM2

SUN-6K-SG01HP3-EU-AM2

SUN-8K-SG01HP3-EU-AM2

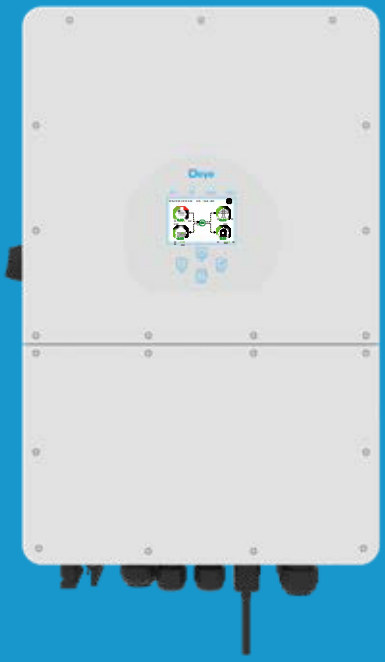
SUN-10K-SG01HP3-EU-AM2

SUN-12K-SG01HP3-EU-AM2

SUN-15K-SG01HP3-EU-AM2

SUN-20K-SG01HP3-EU-AM2

User Manual



Contents

About This Manual

The manual mainly describes the product informa□on, guidelines for installa□on, opera□on and maintenance. The manual cannot include complete informa□on about the photovoltaic (PV) system.

How to Use This Manual

Read the manual and other related documents before performing any opera□on on the inverter. Documents must be stored carefully and be available at all □mes.

Contents may be periodically updated or revised due to product development. The informa□on in this manual is subject to change without no□ce. The latest manual can be acquired via service@deye.com.cn

1. Safety Introduc□ons

Safety signs

The DC input terminals of the inverter must not be grounded.

Surface high temperature, Please do not touch the inverter case.

The AC and DC circuits must be disconnected separately, and the maintenance personnel must wait for 5 minutes before they are completely powered off before they can start working.

Prohibit disassembling inverter case, there exis□g shock hazard, which may cause serious injury or death, please ask qualified person to repair.

Please read the instruc□ons carefully before use.

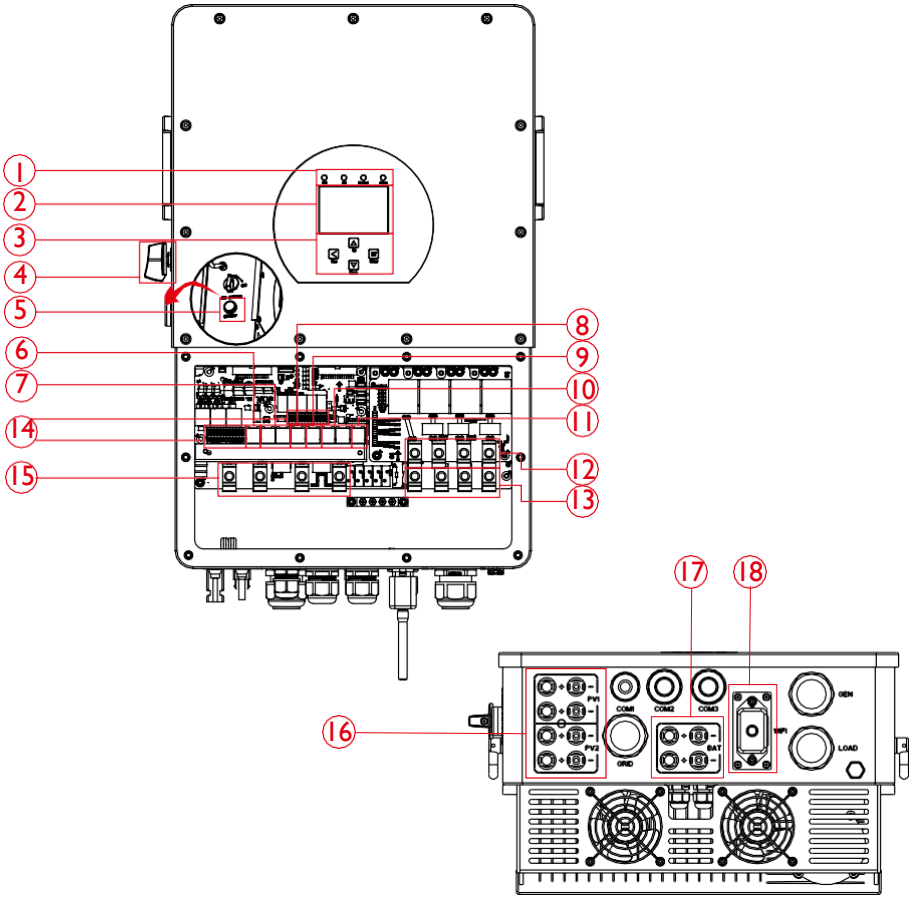
Do Not put it in the waste bin! Recycle it by licensed professional!

- This chapter contains important safety and opera□g instruc□ons. Read and keep this manual for future reference.
- Before using the inverter, please read the instruc□ons and warning signs of the ba□ery and corresponding sec□ons in the instruc□on manual.
- Do not disassemble the inverter. If you need maintenance or repair, take it to a professional service center.
- Improper reassembly may result in electric shock or fire.
- To reduce risk of electric shock, disconnect all wires before a□emp□ng any maintenance or cleaning. Turning off the unit will not reduce this risk.
- Cau□on: Only qualified personnel can install this device with ba□ery.
- Never charge a frozen ba□ery.
- For op□mum opera□on of this inverter, please follow required specifica□on to select appropriate cable size. It is very important to correctly operate this inverter.
- Be very cau□ous when working with metal tools on or around ba□eries. Dropping a tool may cause a spark or short circuit in ba□eries or other electrical parts, even cause an explosion.
- Please strictly follow installa□on procedure when you want to disconnect AC or DC terminals. Please refer to "Installa□on" sec□on of this manual for the details.
- Grounding instruc□ons - this inverter should be connected to a permanent grounded wiring system. Be sure to comply with local requirements and regula□on to install this inverter.
- Never cause AC output and DC input short circuited. Do not connect to the mains when DC input short circuits.

2. Product Introduc[illegible]ons

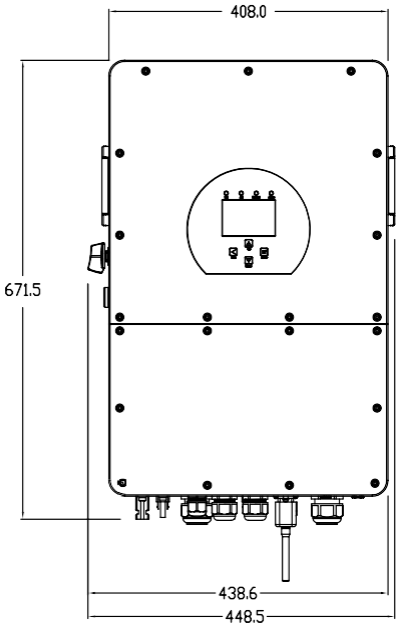
This is a mul[illegible]unc[illegible]nal inverter, combining func[illegible]ons of inverter, solar charger and ba[illegible]ery charger to offer uninterrup[illegible]le power support with portable size. Its comprehensive LCD display offers user configurable and easy accessible bu[illegible]on opera[illegible]on such as ba[illegible]ery charging, AC/solar charging, and acceptable input voltage based on different applica[illegible]ns.

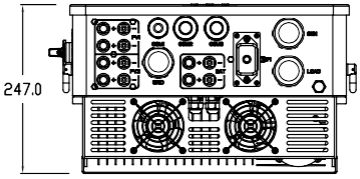
2.1 Product Overview



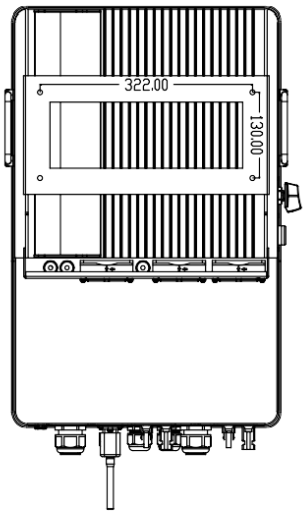
1: Inverter indicators
2: LCD display
3: Func[illegible]on bu[illegible]ons
4: DC switch
5: Power on/off bu[illegible]on
6: Meter port
7: Parallel port
8: CAN port
9: DRM port
10: BMS port
11: RS485 port
12: Generator input
13: Load
14: Func[illegible]on port
15: Grid
16: PV input with two MPPT
17: Ba[illegible]ery input
18: WiFi Interface

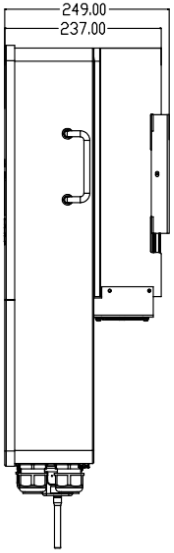
2.2 Product Size





Inverter Size





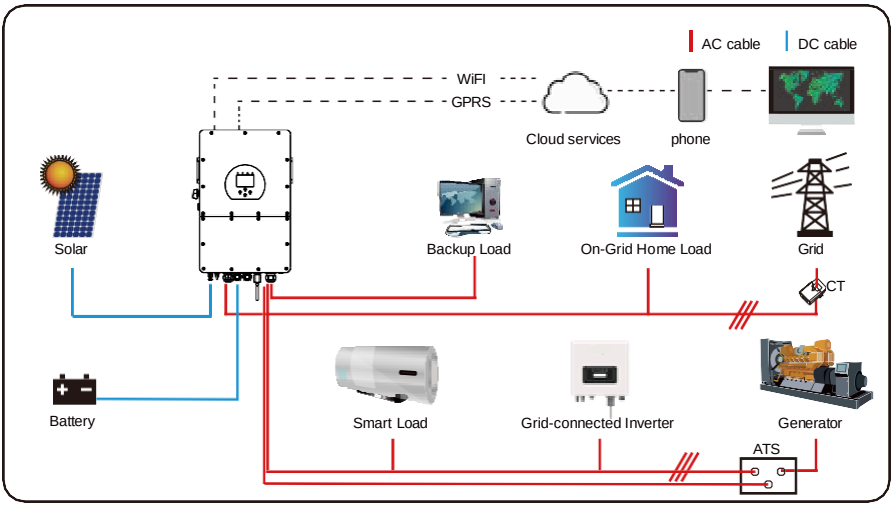
2.3 Product Features

- 230V/400V Three phase Pure sine wave inverter.
- Self-consump﷽n and feed-in to the grid.
- Auto restart while AC is recovering.
- Programmable supply priority for ba﷽ery or grid.
- Programmable mul﷽le opera﷽n modes: On grid, off grid and UPS.
- Configurable ba﷽ery charging current/voltage based on applica﷽ns by LCD se﷽g.
- Configurable AC/Solar/Generator Charger priority by LCD se﷽g.
- Compa﷽le with mains voltage or generator power.
- Overload/over temperature/short circuit protec﷽n.
- Smart ba﷽ery charger design for op﷽nized ba﷽ery performance
- With limit func﷽n, prevent excess power overflow to the grid.
- Suppor﷽g WIFI monitoring and build-in 2 strings for 1 MPP tracker, 1 string for 1 MPP tracker.
- Smart se﷽le three stages MPPT charging for op﷽nized ba﷽ery performance.
- Time of use func﷽n.
- Smart Load Func﷽n.

2.4 Basic System Architecture

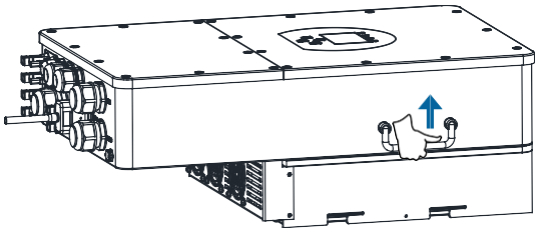
The following illustra﷽n shows basic applica﷽n of this inverter.
It also includes following devices to have a complete running system.
- Generator or U﷽ity
- PV modules

Consult with your system integrator for other possible system architectures depending on your requirements.
This inverter can power all kinds of appliances in home or office environment, including motor type appliances such as refrigerator and air condi﷽ner.



2.5 Product handling requirements

Two people stand on both sides of the machine, holding one handles to li the machine.

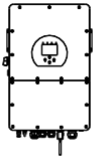
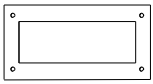
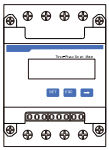
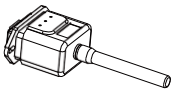
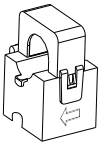
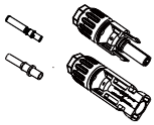
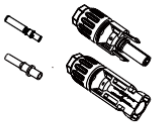


transport

3. Installa on

3.1 Parts List

Check the equipment before installa on. Please make sure nothing is damaged in the package. You should have received the items in the following package:

 Hybrid inverter x1	 Wall moun g bracket x1	 Stainless steel an collision bolt M6×60 x4	 Parallel communica on cable x1
 L-type Hexagon wrench x1	 Meter(op nal) x 1	 User manual x1	 Wi-Fi-Plug(op nal) x1
 Sensor Clamp x 3	 Ba ery Plug connectors including metal terminal x2(blue)	 DC+/DC- Plug connectors including metal terminal xN(black)	

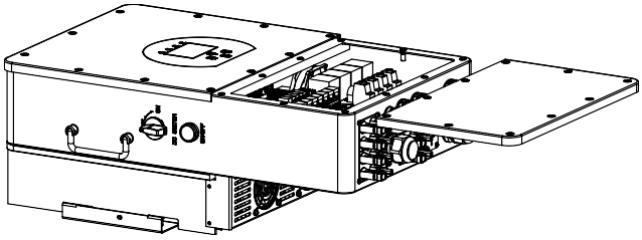
3.2 Moun[illegible]g instruc[illegible]ons

Installa[illegible]on Precau[illegible]on

This Hybrid inverter is designed for outdoor use(IP65), Please make sure the installa[illegible]on site meets below condi[illegible]ons:

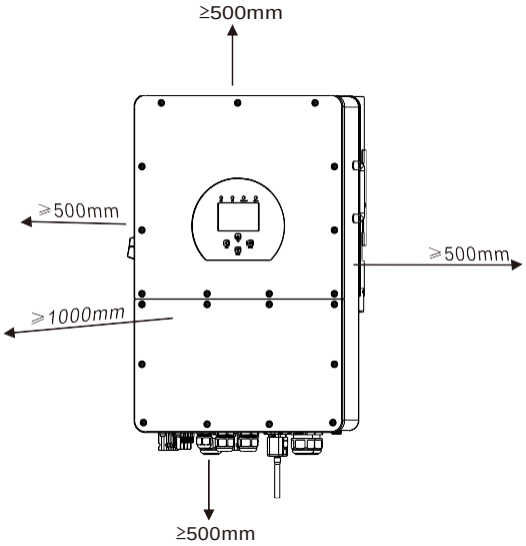
· Not in direct sunlight
· Not in areas where highly flammable materials are stored.
· Not in poten[illegible]al explosive areas.
· Not in the cool air directly.
· Not near the television Antenna or antenna cable.
· Not higher than al[illegible]ude of about 2000 meters above sea level.
· Not in environment of precipita[illegible]n or humidity(>95%)

Please AVOID direct sunlight, rain exposure, snow laying up during installa[illegible]n and opera[illegible]n. Before connec[illegible]g all wires, please take off the metal cover by removing screws as shown below:



Considering the following points before selec[illegible]g where to install:

· Please select a ver[illegible]al wall with load-bearing capacity for installa[illegible]n, suitable for installa[illegible]n on concrete or other non-flammable surfaces,installa[illegible]n is shown below.
· Install this inverter at eye level in order to allow the LCD display to be read at all [illegible]mes.
· The ambient temperature is recommeded to be between -40~60℃ to ensure op[illegible]mal opera[illegible]n.
· Be sure to keep other objects and surfaces as shown in the diagram to guarantee sufficient heat dissipa[illegible]n and have enough space for removing wires.

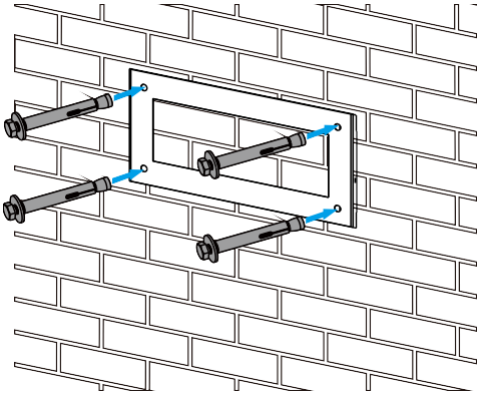


For proper air circula﷯n to dissipate heat, allow a clearance of approx. 50cm to the side and approx. 50cm above and below the unit. And 100cm to the front.

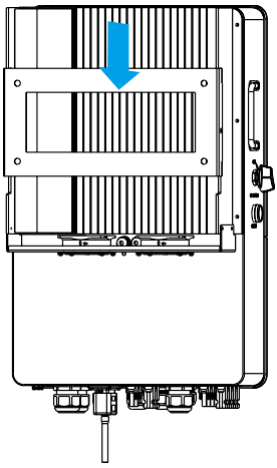
Moun﷯g the inverter

Remember that this inverter is heavy! Please be careful when li﷯g out from the package. Choose the recommend drill head(as shown in below pic) to drill 4 holes on the wall, 62-70mm deep.

1. Use a proper hammer to fit the expansion bolt into the holes.
2. Carry the inverter and holding it, make sure the hanger aim at the expansion bolt,fix the inverter on the wall.
3. Fasten the screw head of the expansion bolt to finish the moun﷯g.

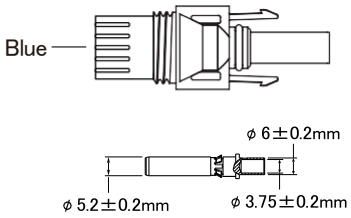


Inverter hanging plate installa﷯n

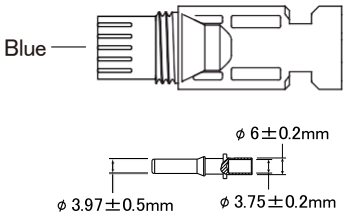


3.3 Ba◆ery connec◆on

For safe opera◆on and compliance, a separate DC over-current protector or disconnect device is required between the ba◆ery and the inverter. In some applica◆ons, switching devices may not be required but over-current protectors are s◆ required. Refer to the typical amperage in the table below for the required fuse or circuit breaker size.



Pic 3.1 DC+ male connector



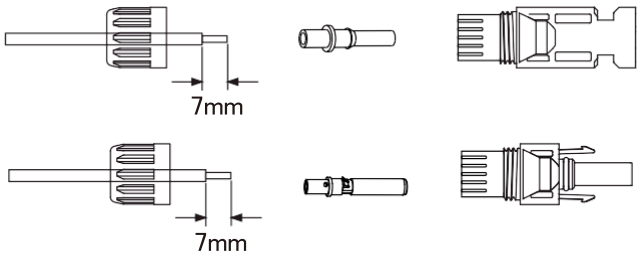
Pic 3.2 DC- female connector

Safety Hint:
Please use approved DC cable for ba◆ery system.

Model	*Cross section* (mm^2)	
	Range	*Recommended value*
5/6/8/10/12/15/20KW	6~10 (10~8AWG)	10(8AWG)

Chart 3-2

The steps to assemble the DC connectors are listed as follows:
a) Strip off the DC wire about 7mm, disassemble the connector cap nut (see picture 3.3).

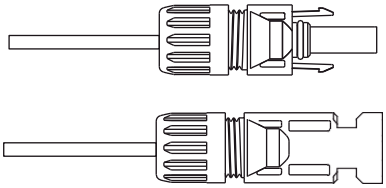


Pic 3.3 Disassemble the connector cap nut

b) Crimping metal terminals with crimping pliers as shown in picture 3.4.

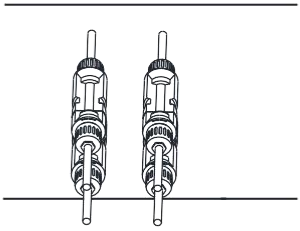
Pic 3.4 Crimp the contact pin to the wire

c) Insert the contact pin to the top part of the connector and screw up the cap nut to the top part of the connector. (as shown in picture 3.5).



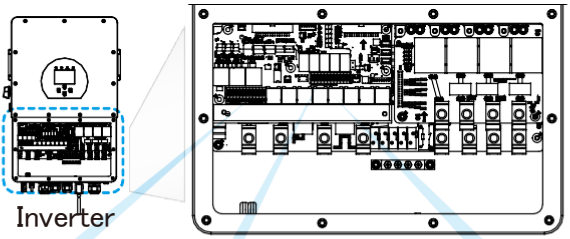
Pic 3.5 connector with cap nut screwed on

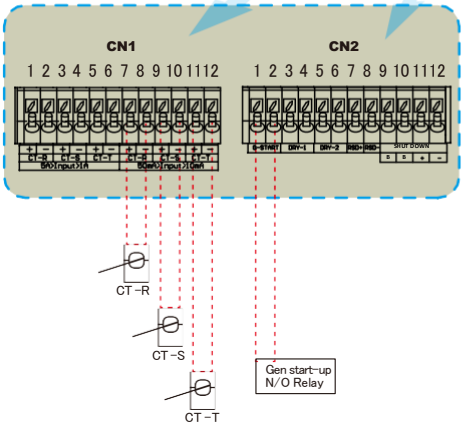
d) Finally insert the DC connector into the posi◆e and nega◆e input of the inverter, shown a picture 3.6

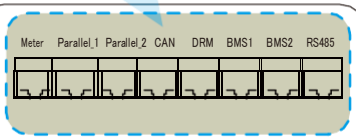


Pic 3.6 DC input connec◆n

3.3.2 Func[illegible]n port defini[illegible]n



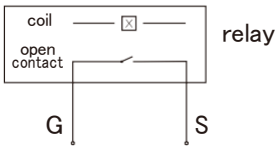




Meter: for energy meter communica[illegible]n.
Parallel_1: Parallel communica[illegible]n port 1.
Parallel_2: Parallel communica[illegible]n port 2 .
CAN: reserved.
DRM: Logic interface for AS/NZS 4777.2:2020.
BMS1: BMS port for ba[illegible]ery communica[illegible]n port 1
BMS2: BMS port for ba[illegible]ery communica[illegible]n port 2.
RS485: RS485 port.

CN1:
CT-R (1,2,7,8): current transformer (CT-R) for"zero export to CT"mode clamps on L1 when in three phase system.
CT-S (3,4,9,10): current transformer (CT-S) for"zero export to CT"mode clamps on L2 when in three phase system.
CT-T (5,6,11,12): current transformer (CT-T) for"zero export to CT"mode clamps on L3 when in three phase system.

CN2:
G-start (1,2): dry contact signal for startup the diesel generator.
When the "GEN signal" is ac[illegible]e, the open contact (GS) will switch on (no voltage output).
DRY-1 (3,4): Dry contact output. When the inverter is in off-grid mode and the "signal island mode" is checked, the dry contact will switch on.
DRY-2 (5,6): reserved.
RSD (7,8): When ba[illegible]ery is connected and the inverter is in "ON" status, it will provide 12Vdc.



GS (diesel generator startup signal)

3.4 Grid connec[illegible]n and backup load connec[illegible]n

· Before connec[illegible]g to the grid, a separate AC breaker must be installed between the inverter and the grid, and also between the backup load and the inverter. This will ensure the inverter can be securely disconnected during maintenance and fully protected from over current. For the 5/6/8/10/12/15/20KW model, the recommended AC breaker for backup load is 100A. For the 5/6/8/10/12/15/20KW model, the recommended AC breaker for grid is 100A.

· There are three terminal blocks with "Grid" "Load"and "GEN" markings. Please do not misconnect input and output connectors.

All wiring must be performed by a qualified personnel.It is very important for system safety and efficient opera[illegible]n to use appropriate cable for AC input connec[illegible]n. To reduce risk of injury, please use the proper recommended cable as below.

backup load connec[illegible]n

Model	*Wire Size*	*Cable(mm²)*	*Torque value(max)*
5/6/8/10Kw	8AWG	10	2.5Nm
12/15/20Kw	4AWG	25	2.5Nm

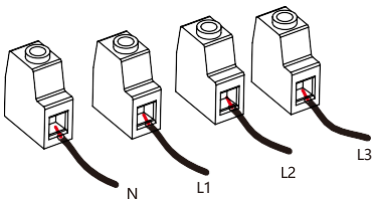
Grid connec[illegible]n

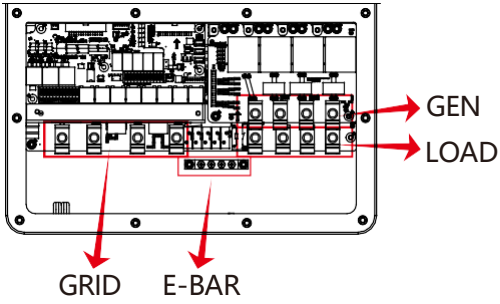
Model	*Wire Size*	*Cable(mm²)*	*Torque value(max)*
5/6/8/10Kw	8AWG	10	2.5Nm
12/15/20Kw	4AWG	25	2.5Nm

Chart 3-3 Recommended Size for AC wires

Please follow below steps to implement Grid, load and Gen port connec[illegible]n:

1. Before making Grid, load and Gen port connec[illegible]n, be sure to turn off AC breaker or disconnector first.
2. Remove insula[illegible]n sleeve 10mm length, insert the wires according to polari[illegible]s indicated o the terminal block. Make sure the connec[illegible]n is complete.





Be sure that AC power source is disconnected before a[illegible]mp[illegible]g to wire it to the unit.

3. Then, insert AC output wires according to polari[illegible]s indicated on the terminal block and [illegible]ghten terminal. Be sure to connect corresponding N wires and PE wires to related terminals as well.
4. Make sure the wires are securely connected.
5. Appliances such as air condi[illegible]oner are required at least 2-3 minutes to restart because it is required to have enough [illegible]me to balance refrigerant gas inside of circuit. If a power shortage occurs and recovers in short [illegible]me, it will cause damage to your connected appliances. To prevent this kind of damage, please check manufacturer of air condi[illegible]oner if it is equipped with [illegible]me-delay func[illegible]on before installa[illegible]on. Otherwise, this inverter will trigger overload fault and cut off output to protect your appliance but some[illegible]mes it s[illegible] causes internal damage to the air condi[illegible]oner

3.5 PV Connec[illegible]on

Before connec[illegible]ng to PV modules, please install a separately DC circuit breaker between inverter and PV modules. It is very important for system safety and efficient opera[illegible]on to use appropriate cable for PV module connec[illegible]on.

To avoid any malfunc[illegible]on, do not connect any PV modules with possible leakage current to the inverter. For example, grounded PV modules will cause leakage current to the inverter. When using PV modules, please ensure the PV+ & PV- of solar panel is not connected to the system ground bar.

It is requested to use PV junc[illegible]on box with surge protec[illegible]on. Otherwise, it will cause damage on inverter when lightning occurs on PV modules.

3.5.1 PV Module Selec□n:

When selec□g proper PV modules, please be sure to consider below parameters:
1) Open circuit Voltage (Voc) of PV modules can not exceed max. PV array open circuit voltage of inverter.
2) Open circuit Voltage (Voc) of PV modules should be higher than min. start voltage.
3) The PV modules used to connected to this inverter shall be Class A ra□g cer□ied according to IEC 61730.

Inverter Model	*5KW*	*6KW*	*8KW*	*10KW*	*12KW*	*15KW*	*20KW*
PV Input Voltage	600V (180V~1000V)						
PV Array MPPT Voltage Range	150V-850V						
No. of MPP Trackers	2						
No. of Strings per MPP Tracker	1				2+1		2

Chart 3-5

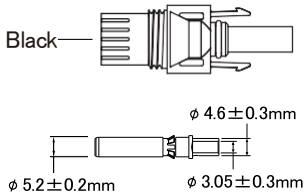
3.5.2 PV Module Wire Connec□n:

1. Switch the Grid Supply Main Switch(AC)OFF.
2. Switch the DC Isolator OFF.
3. Assemble PV input connector to the inverter.

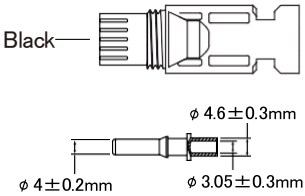
Safety Hint:
When using PV modules, please ensure the PV+ & PV- of solar panel is not connected to the system ground bar.

Safety Hint:
Before connec□n, please make sure the polarity of PV array matches the "DC+" and "DC-" symbols.

Safety Hint:
Before connec□g inverter, please make sure the PV array open circuit voltage is within the 1000V of the inverter.



Pic 5.1 DC+ male connector



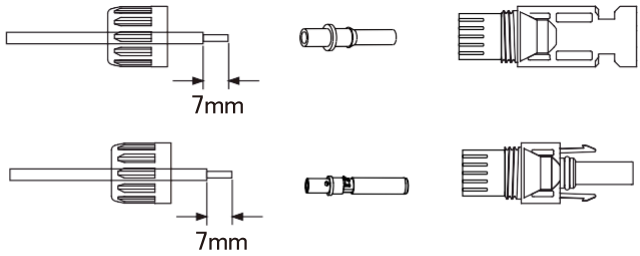
Pic 5.2 DC- female connector

Safety Hint:
Please use approved DC cable for PV system.

Cable type	*Cross section* (mm^2)	
	Range	*Recommended value*
Industry generic PV cable (model: PV1-F)	2.5-6 (12~10AWG)	6(10AWG)

Chart 3-6

The steps to assemble the DC connectors are listed as follows:
a) Strip off the DC wire about 7mm, disassemble the connector cap nut (see picture 5.3).

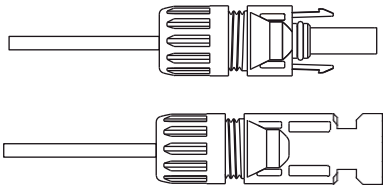


Pic 5.3 Disassemble the connector cap nut

b) Crimping metal terminals with crimping pliers as shown in picture 5.4.

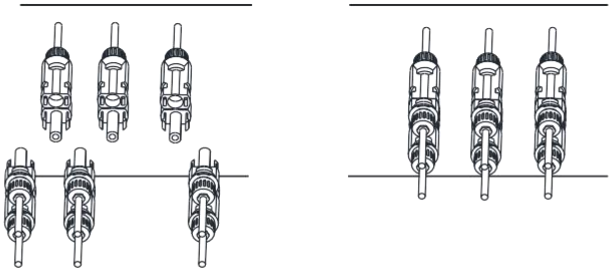
Pic 5.4 Crimp the contact pin to the wire

c) Insert the contact pin to the top part of the connector and screw up the cap nut to the top part of the connector. (as shown in picture 5.5).



Pic 5.5 connector with cap nut screwed on

d) Finally insert the DC connector into the posi◆e and nega◆e input of the inverter, shown as picture 5.6



Pic 5.6 DC input connec◆n

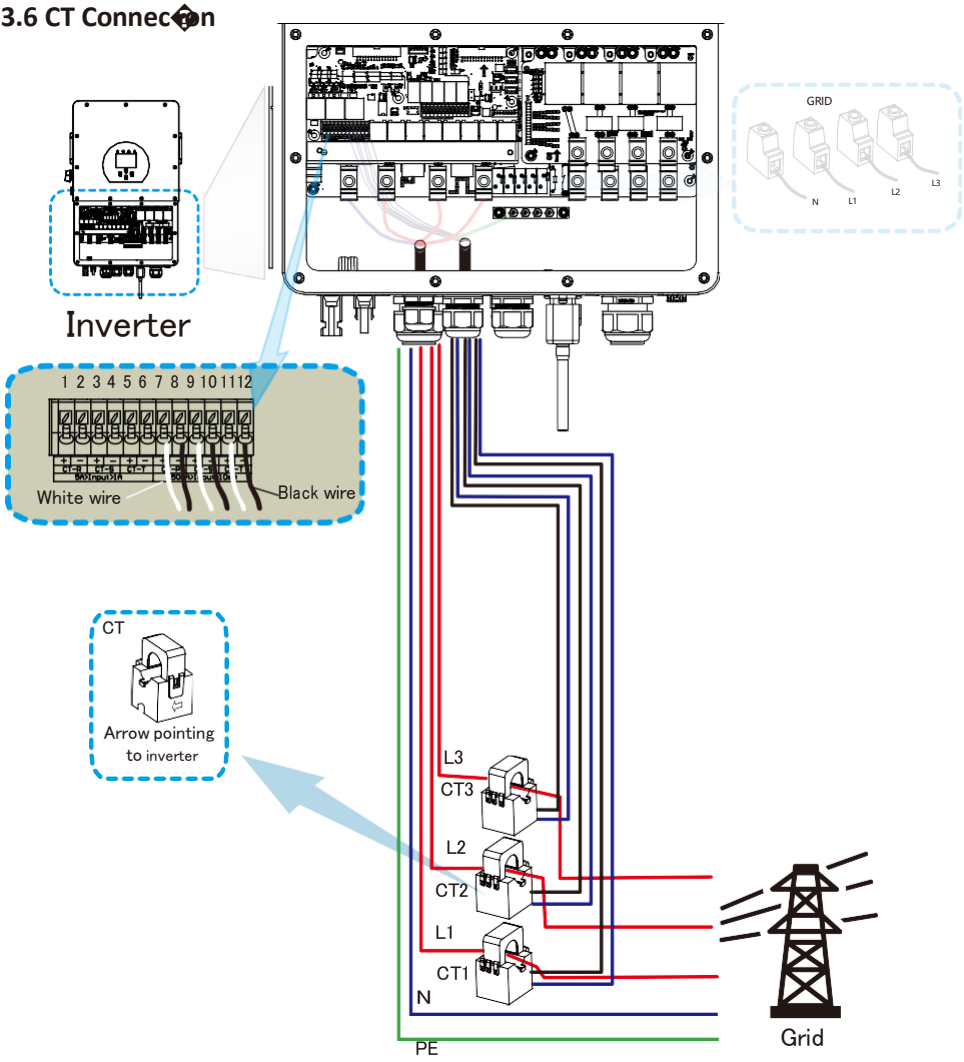
Warning:

Sunlight shines on the panel will generate voltage, high voltage in series may cause danger to life. Therefore, before connec◆g the DC input line, the solar panel needs to be blocked by the opaque material and the DC switch should be 'OFF', otherwise, the high voltage of the inverter may lead to life-threatening condi◆ns. Please do not switch off DC isolator when the DC current when there is high voltage or current.Technicians need to wait un◆ night to keep safety.

Warning:

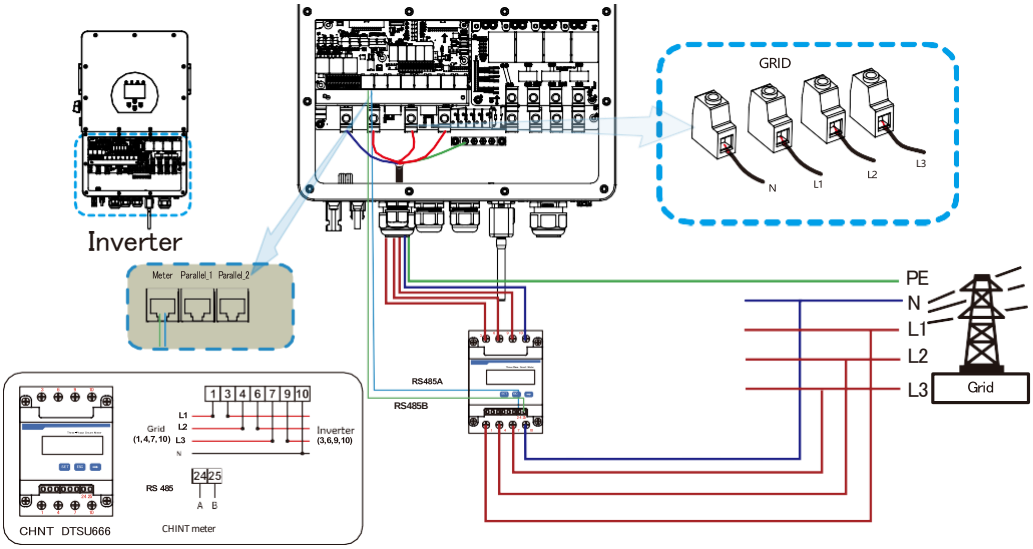
Please use its own DC power connector from the inverter accessories. Do not interconnect the connectors of different manufacturers.Max. DC input current should be 20A. if exceeds, it may damage the inverter and it is not covered by Deye warranty.

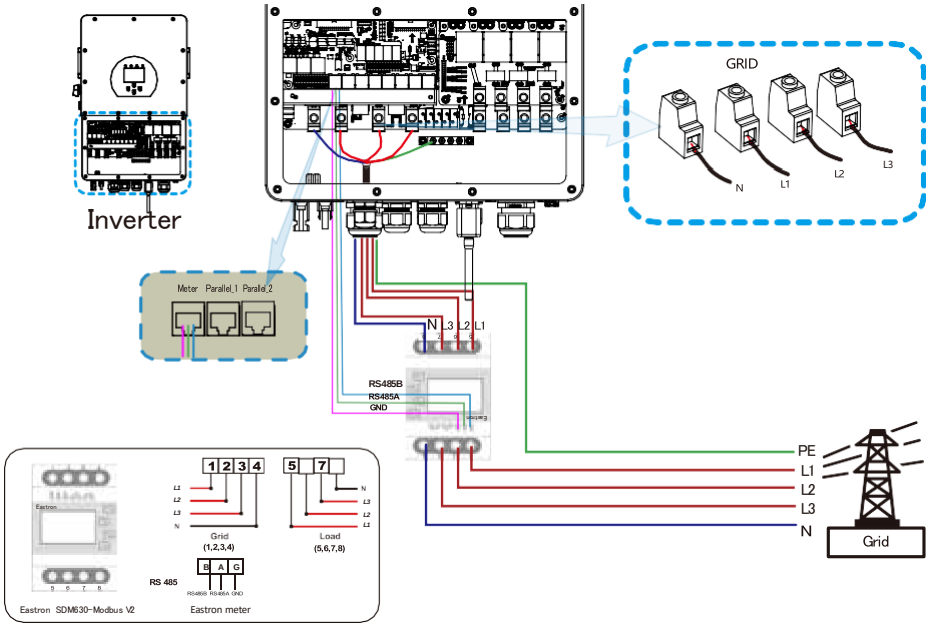
3.6 CT Connection

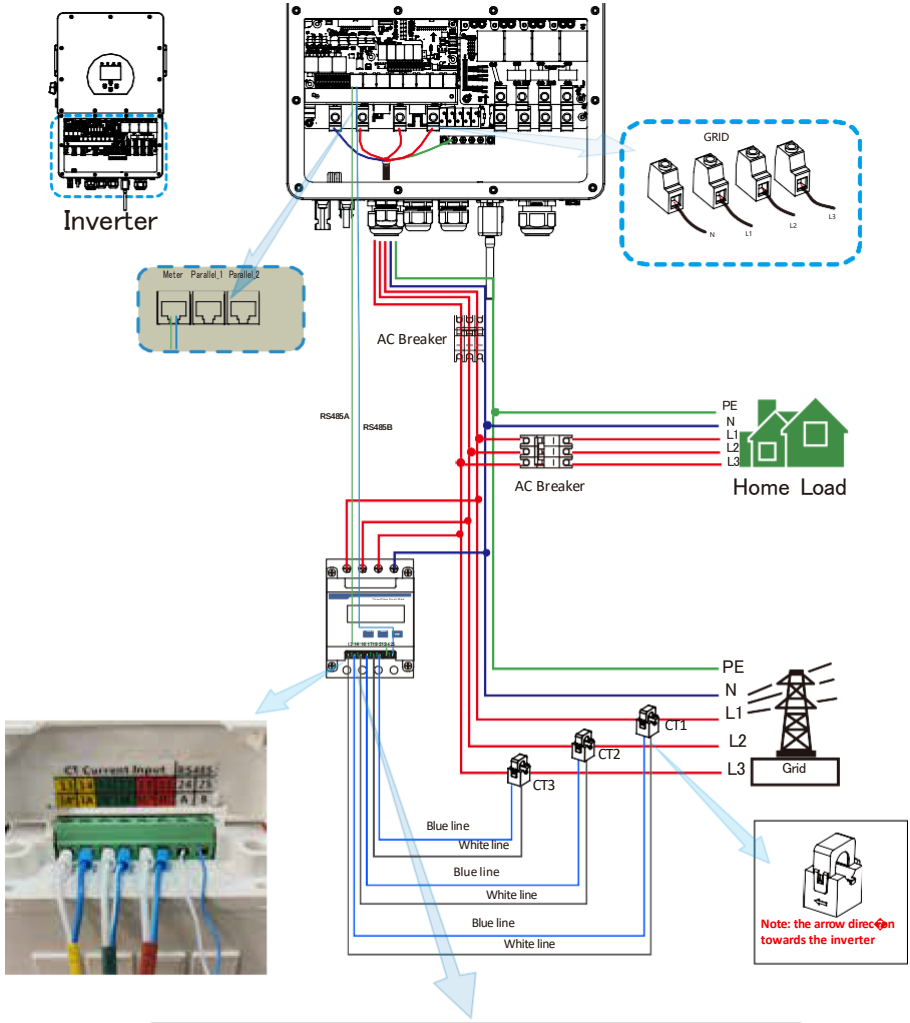


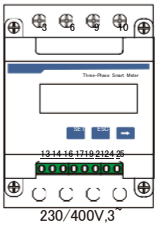
***Note : when the reading of the load power on the LCD is not correct, please reverse the CT arrow.**

3.6.1 Meter Connec



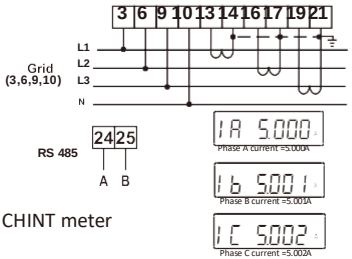






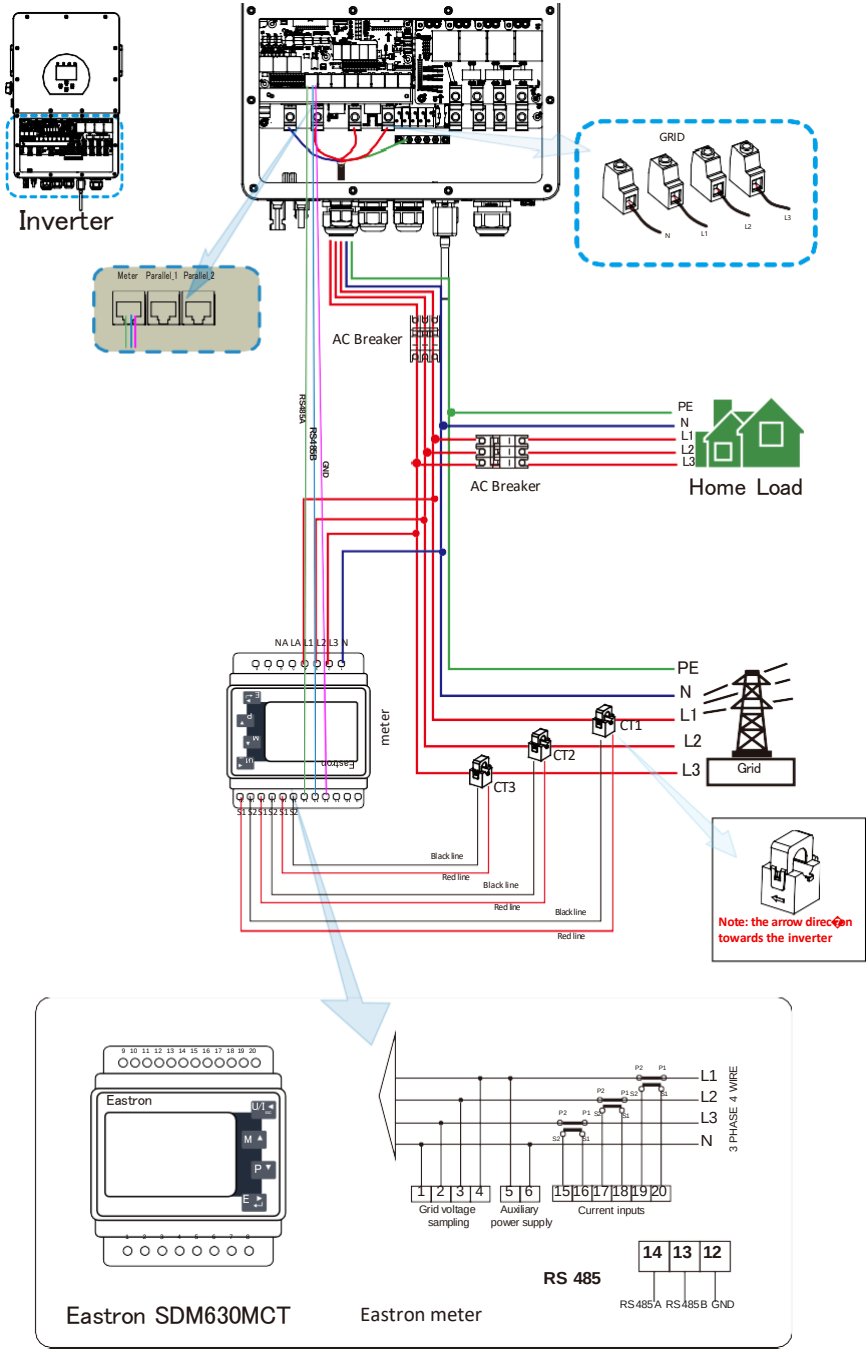
230/400V,3~
250A/50mA
50/60Hz

CHNT DTSU666



CHINT meter

PIN 13,16,19 : White cable of the CT
PIN 14,17,21: Blue cable of the CT

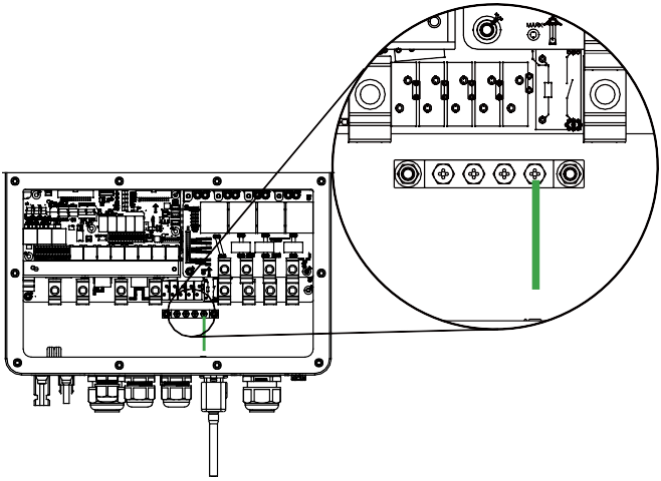

Inverter
GRID
N
L1
L2
L3
Meter
Parallel_1
Parallel_2
AC Breaker
RS485A
RS485B
GND
PE
N
L1
L2
L3
AC Breaker
Home Load
NA LA L1 L2 L3 N
meter
Eastron
S1 S2 S1 S2 S1 S2
PE
N
L1
L2
L3
CT1
CT2
CT3
Grid
Black line
Red line
Black line
Red line
Black line
Red line
Note: the arrow direction towards the inverter
Eastron
U/I
M
P
E
Eastron SDM630MCT
L1
L2
L3
N
3 PHASE 4 WIRE
1 2 3 4
Grid voltage sampling
5 6
Auxiliary power supply
15 16 17 18 19 20
Current inputs
RS 485
14 13 12
RS485A RS485B GND
Eastron meter

Note:
When the inverter is in the off-grid state, the N line needs to be connected to the earth.

Note:
In final installa﷽n,breaker cer﷽ied according to IEC 60947-1 and IEC 60947-2 shall be installed with the equipment.

3.7 Earth Connec﷽n(mandatory)

Ground cable shall be connected to ground plate on grid side this prevents electric shock if the original protec﷽e conductor fails.



Earth connec﷽n(Copper wires)

Model	*Wire Size*	*Cable(mm²)*	*Torque value(max)*
5/6/8/10/ 12/15/20K	5AWG	16	12.4Nm

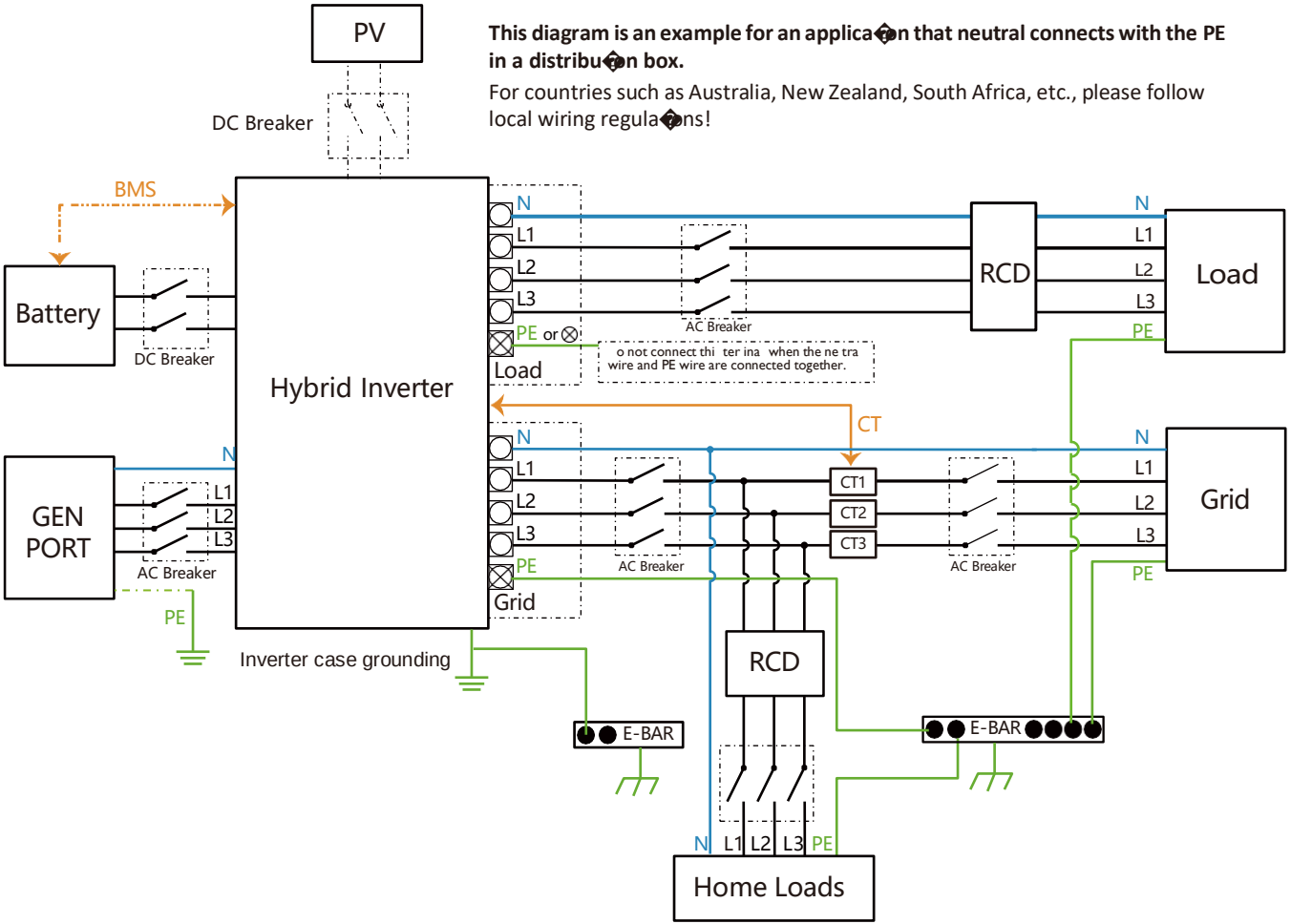
The conductor should be made of the same metal as the phase conductors.

3.8 WIFI Connec﷽n

For the configura﷽n of Wi-Fi Plug, please refer to illustra﷽ns of the Wi-Fi Plug. The Wi-Fi Plug is not a standard configura﷽n, it's op﷽nal.

This diagram is an example for an applica□n that neutral connects with the PE in a distribu□n box.

For countries such as Australia, New Zealand, South Africa, etc., please follow local wiring regula□ns!

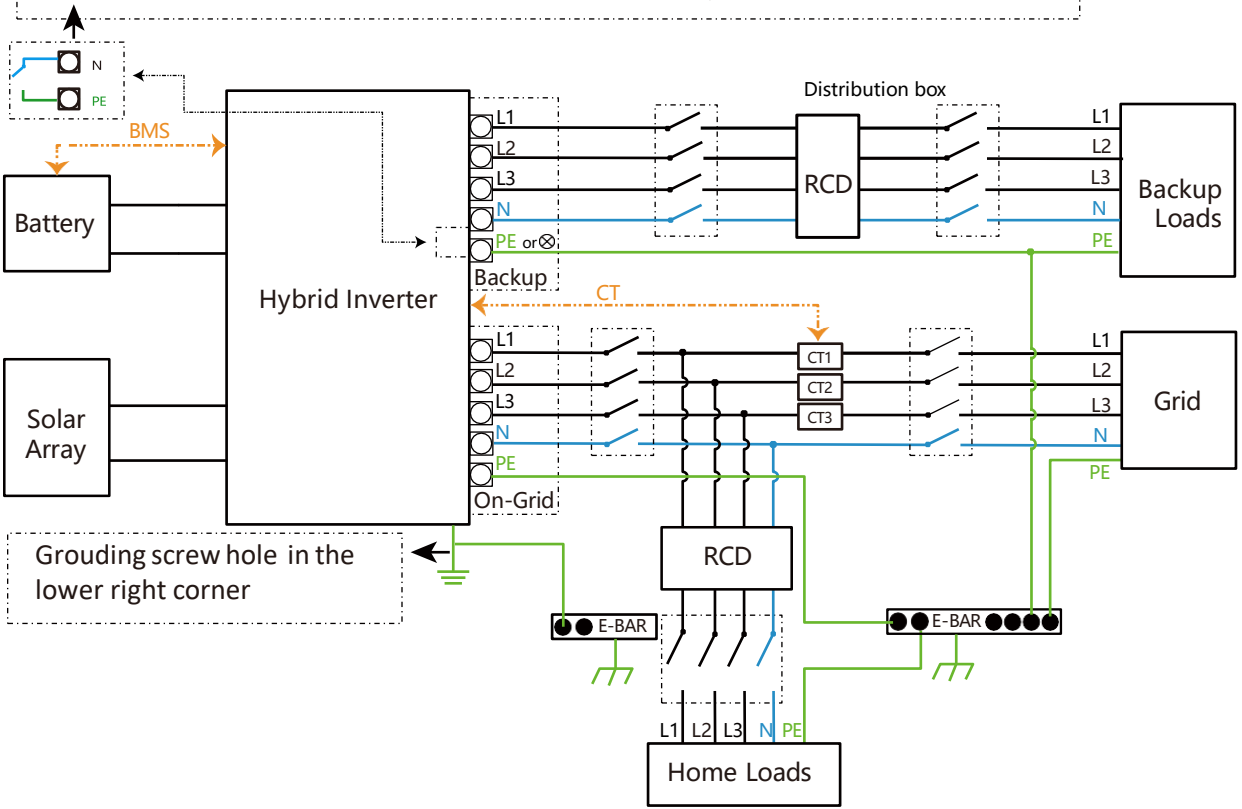


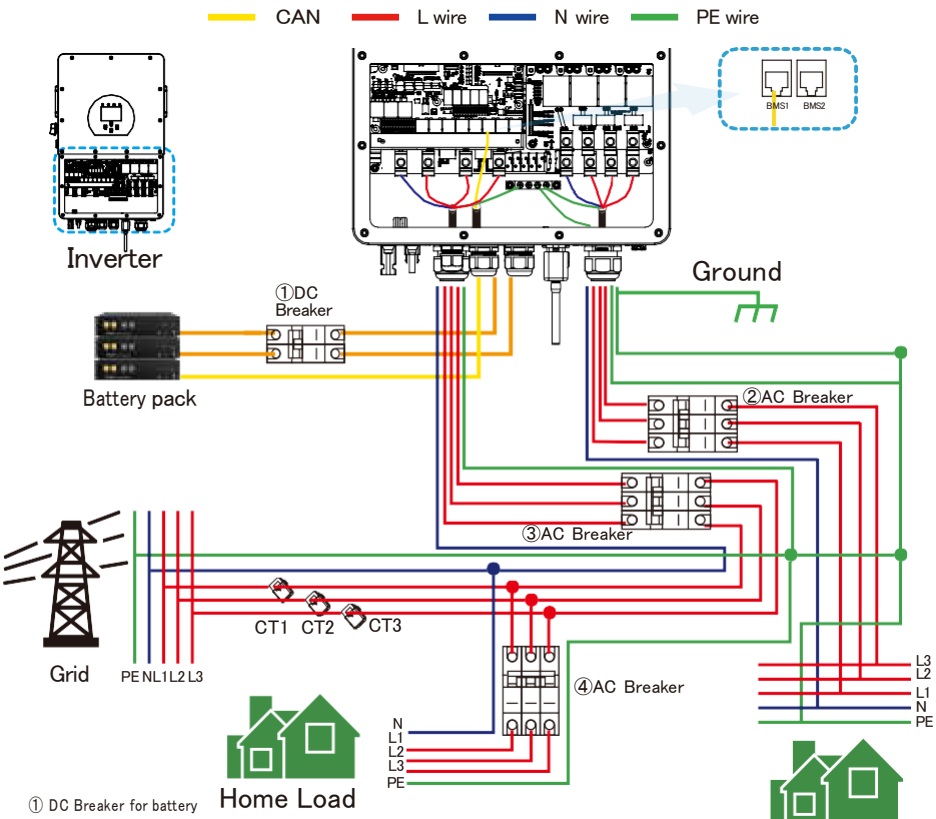
This diagram is an example for an applica□n in which neutral is separated from the PE in the distribu□n box.

For countries such as China, Germany,the Czech Republic, Italy, etc., please follow local wiring regua□ns!

Note:Backup func□n is op□nal in German market.please leave backup side empty if backup func□n is unavailable in the inverter.

When the inverter is working in backup mode, neutral and PE on the backup side are connected via the internal relay. Also,this internal relay will be open when the inverter is working in grid □ed mode.





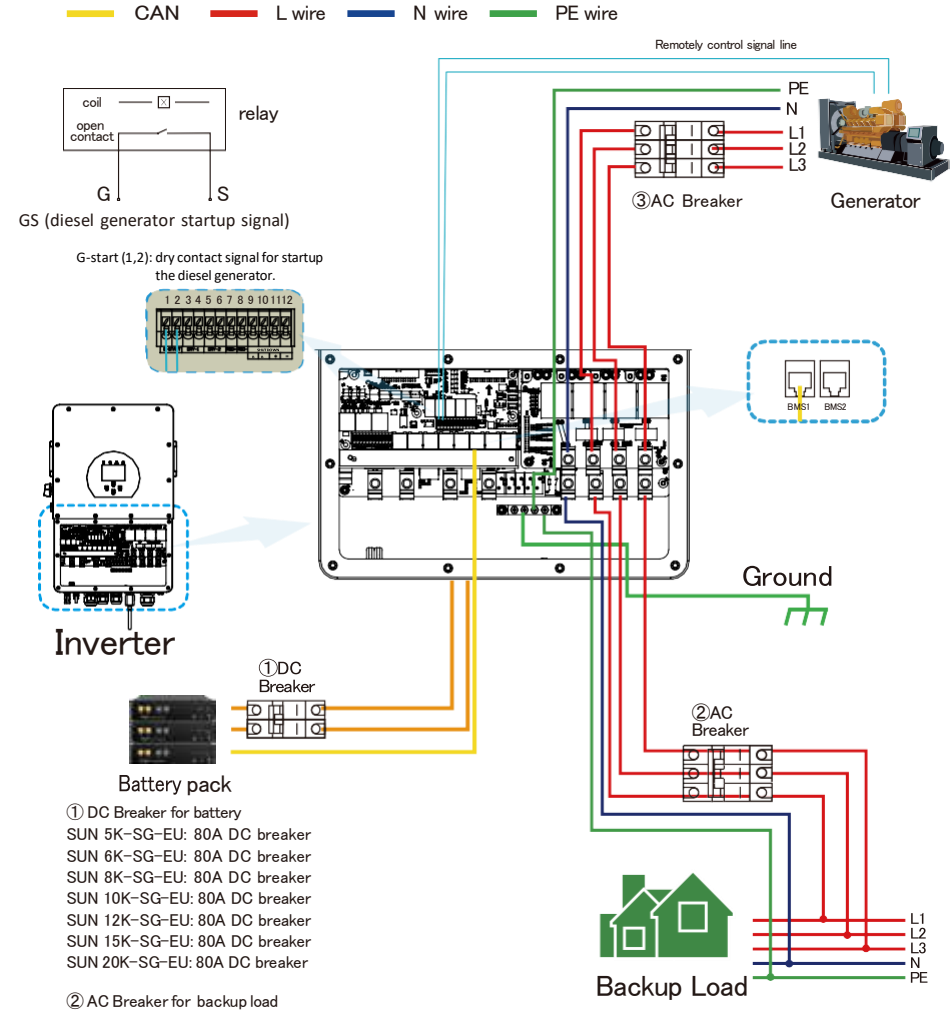
① DC Breaker for battery
SUN 5K-SG-EU: 80A DC breaker
SUN 6K-SG-EU: 80A DC breaker
SUN 8K-SG-EU: 80A DC breaker
SUN 10K-SG-EU: 80A DC breaker
SUN 12K-SG-EU: 80A DC breaker
SUN 15K-SG-EU: 80A DC breaker
SUN 20K-SG-EU: 80A DC breaker

② AC Breaker for backup load
SUN 5K-SG-EU: 100A AC breaker
SUN 6K-SG-EU: 100A AC breaker
SUN 8K-SG-EU: 100A AC breaker
SUN 10K-SG-EU: 100A AC breaker
SUN 12K-SG-EU: 100A AC breaker
SUN 15K-SG-EU: 100A AC breaker
SUN 20K-SG-EU: 100A AC breaker

③ AC Breaker for grid
SUN 5K-SG-EU: 100A AC breaker
SUN 6K-SG-EU: 100A AC breaker
SUN 8K-SG-EU: 100A AC breaker
SUN 10K-SG-EU: 100A AC breaker
SUN 12K-SG-EU: 100A AC breaker
SUN 15K-SG-EU: 100A AC breaker
SUN 20K-SG-EU: 100A AC breaker

④AC Breaker for home load
Depends on household loads

3.11 Typical application diagram of diesel generator



① DC Breaker for battery

SUN 5K-SG-EU: 80A DC breaker
SUN 6K-SG-EU: 80A DC breaker
SUN 8K-SG-EU: 80A DC breaker
SUN 10K-SG-EU: 80A DC breaker
SUN 12K-SG-EU: 80A DC breaker
SUN 15K-SG-EU: 80A DC breaker
SUN 20K-SG-EU: 80A DC breaker

② AC Breaker for backup load

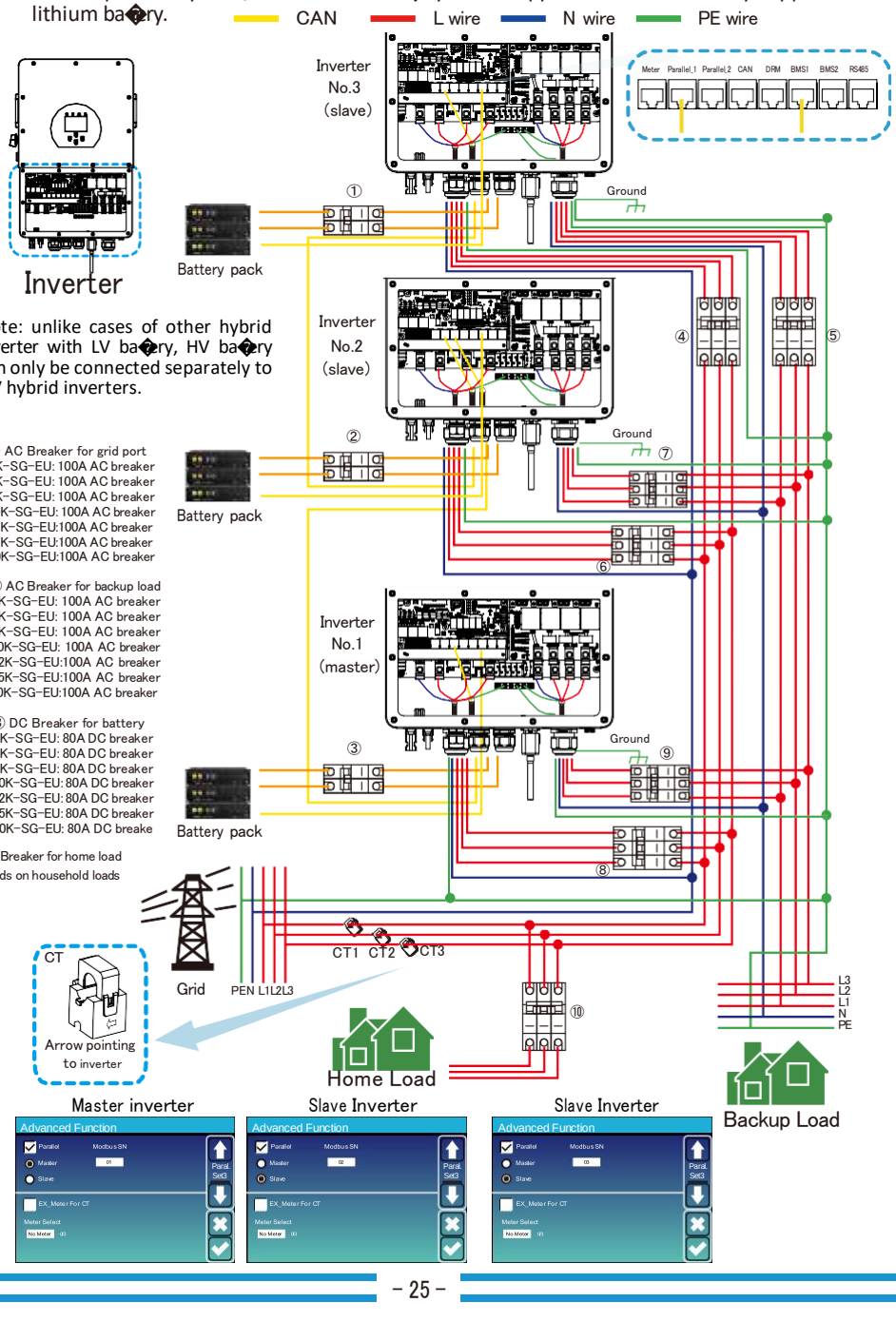
SUN 5K-SG-EU: 100A AC breaker
SUN 6K-SG-EU: 100A AC breaker
SUN 8K-SG-EU: 100A AC breaker
SUN 10K-SG-EU: 100A AC breaker
SUN 12K-SG-EU: 100A AC breaker
SUN 15K-SG-EU: 100A AC breaker
SUN 20K-SG-EU: 100A AC breaker

③ AC Breaker for Generator port

SUN 5K-SG-EU: 100A AC breaker
SUN 6K-SG-EU: 100A AC breaker
SUN 8K-SG-EU: 100A AC breaker
SUN 10K-SG-EU: 100A AC breaker
SUN 12K-SG-EU: 100A AC breaker
SUN 15K-SG-EU: 100A AC breaker
SUN 20K-SG-EU: 100A AC breaker

3.12 Three phase parallel connec[illegible]on diagram

Note: The func[illegible]on of Mul[illegible]le units work in parallel mode will be avaiable in Q1 2023.
For the parallel system, the lead-acid ba[illegible]ery is not supported. Please use Deye approved lithium ba[illegible]ery.



Note: unlike cases of other hybrid inverter with LV ba[illegible]ery, HV ba[illegible]ery can only be connected separately to HV hybrid inverters.

④⑥⑧ AC Breaker for grid port
SUN 5K-SG-EU: 100A AC breaker
SUN 6K-SG-EU: 100A AC breaker
SUN 8K-SG-EU: 100A AC breaker
SUN 10K-SG-EU: 100A AC breaker
SUN 12K-SG-EU:100A AC breaker
SUN 15K-SG-EU:100A AC breaker
SUN 20K-SG-EU:100A AC breaker

⑤⑦⑨ AC Breaker for backup load
SUN 5K-SG-EU: 100A AC breaker
SUN 6K-SG-EU: 100A AC breaker
SUN 8K-SG-EU: 100A AC breaker
SUN 10K-SG-EU: 100A AC breaker
SUN 12K-SG-EU:100A AC breaker
SUN 15K-SG-EU:100A AC breaker
SUN 20K-SG-EU:100A AC breaker

①②③ DC Breaker for battery
SUN 5K-SG-EU: 80A DC breaker
SUN 6K-SG-EU: 80A DC breaker
SUN 8K-SG-EU: 80A DC breaker
SUN 10K-SG-EU: 80A DC breaker
SUN 12K-SG-EU: 80A DC breaker
SUN 15K-SG-EU: 80A DC breaker
SUN 20K-SG-EU: 80A DC breake

⑩ AC Breaker for home load
Depends on household loads

4. OPERATION

4.1 Power ON/OFF

Once the unit has been properly installed and the ba□eries are connected well, simply press On/Off bu□on(located on the le□side of the case) to turn on the unit. When system without ba□ery connected, but connect with either PV or grid, and ON/OFF bu□on is switched off, LCD will s□l light up(Display will show OFF), In this condi□on, when switch on ON/OFF bu□on and select NO ba□ery,system can s□l working.

4.2 Opera□on and Display Panel

The opera□on and display panel, shown in below chart, is on the front panel of the inverter. It includes four indicators, four func□on keys and a LCD display, indica□ng the opera□ng status and input/output power informa□on.

LED Indicator		*Messages*
DC	Green led solid light	PV Connec□on normal
AC	Green led solid light	Grid Connec□on normal
Normal	Green led solid light	Inverter opera□g normal
Alarm	Red led solid light	Malfunc□on or warning

Chart 4-1 LED indicators

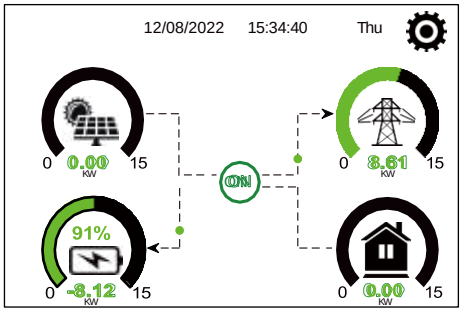
Function Key	*Description*
Esc	To exit se□g mode
Up	To go to previous selec□on
Down	To go to next selec□on
Enter	To confirm the selec□on

Chart 4-2 Func□on Bu□ons

5. LCD Display Icons

5.1 Main Screen

The LCD is touchscreen, below screen shows the overall informa on of the inverter.



1. The icon in the center of the home screen indicates that the system is Normal opera on. If it turns into "comm./F01~F64" , it means the inverter has communica on errors or other errors, the error message will display under this icon(F01-F64 errors, detail error info can be viewed in the System Alarms menu).

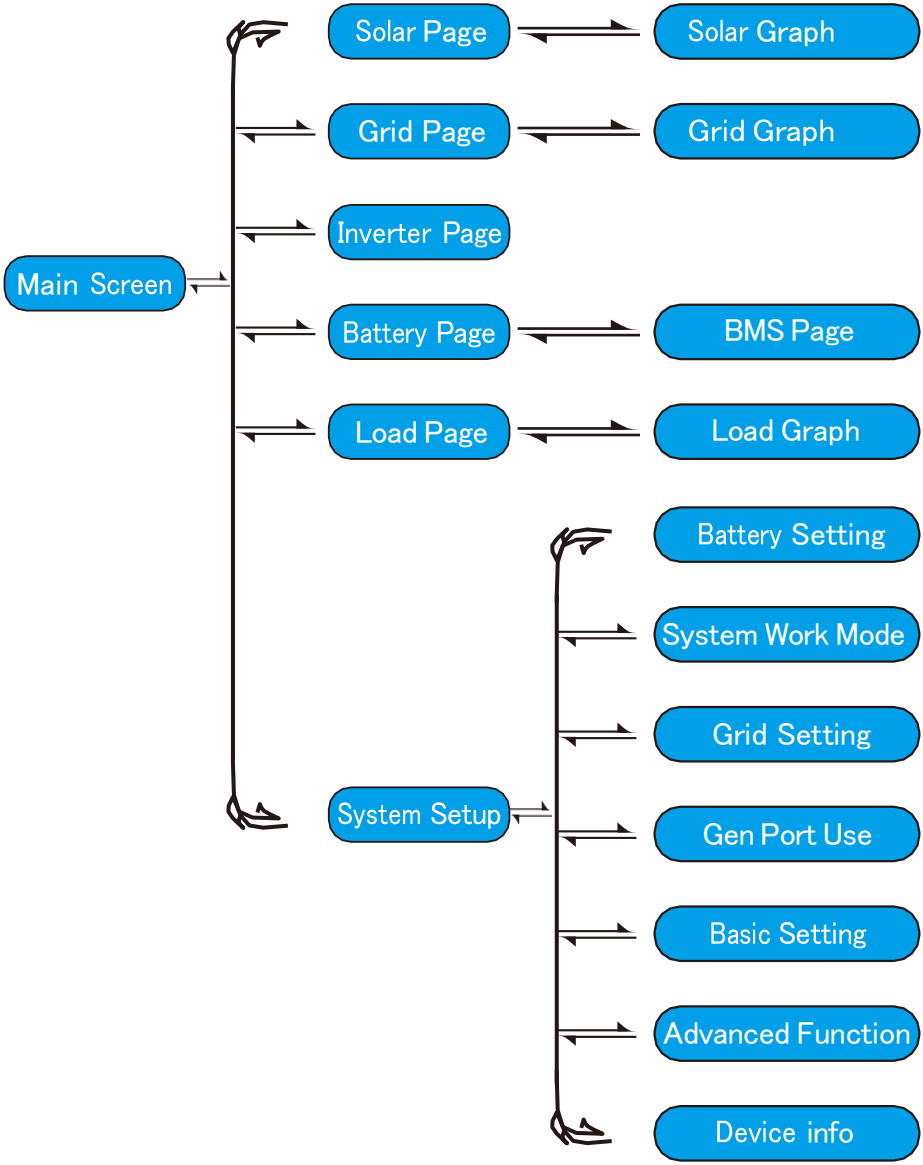
2. At the top of the screen is the me.

3. System Setup Icon, Press this set bu on,you can enter into the system setup screen which including Basic Setup, Ba ery Setup, Grid Setup, System Work Mode, Generator port use, Advanced func on and Li-Ba info.

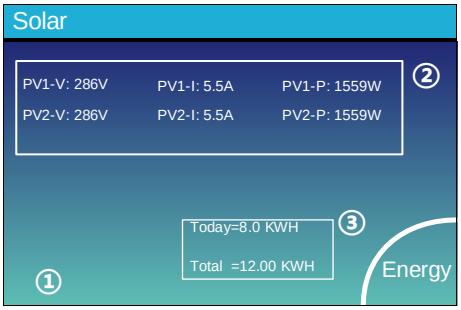
4. The main screen showing the info including Solar, Grid, Load and Ba ery. Its also displaying the energy flow direc on by arrow. When the power is approximate to high level, the color on the panels will changing from green to red so system info showing vividly on the main screen.

· PV power and Load power always keep posi e.
· Grid power nega e means sell to grid, posi e means get from grid.
· Ba ery power nega e means charge, posi e means discharge.

5.1.1 LCD operation flow chart



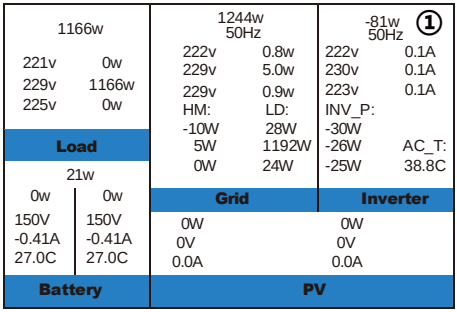
5.2 Solar Power Curve



This is Solar Panel detail page.

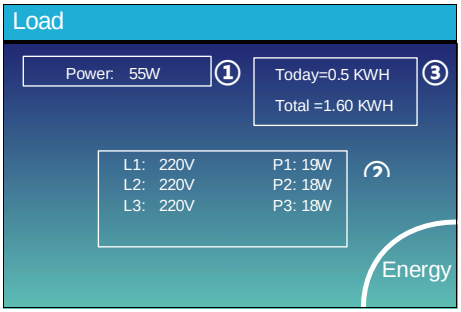
① Solar Panel Genera□n.
② Voltage, Current, Power for each MPPT.
③ Daily and total PV produc□n.

Press the "Energy "bu□n will enter into the power curve page.



This is Inverter detail page.

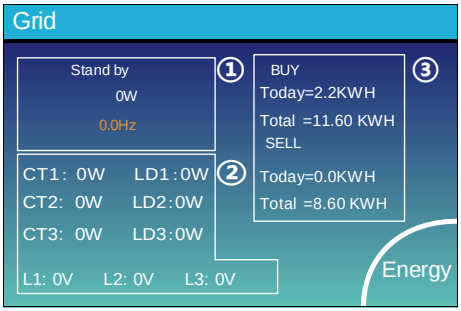
① Inverter Genera□n.
Voltage, Current, Power for each Phase.
AC-T: mean Heat-sink temperature.



This is Back-up Load detail page.

① Back-up Power.
② Voltage, Power for each Phase.
③ Daily and total backup consump□n .

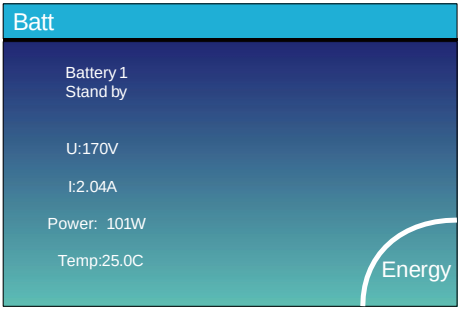
Press the "Energy " bu□n will enter into the power curve page.

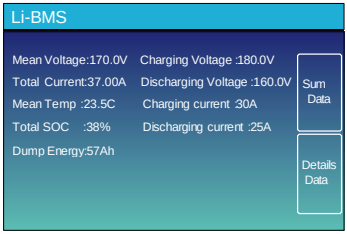


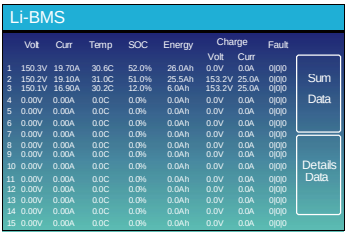
This is Grid detail page.

① Status, Power, Frequency.
② L: Voltage for each Phase
CT: Power detected by the external current sensors
LD: Power detected using internal sensors on AC grid in/out breaker
③ BUY: Energy from Grid to Inverter,
SELL: Energy from Inverter to grid.

Press the "Energy " bu□n will enter into the power curve page.



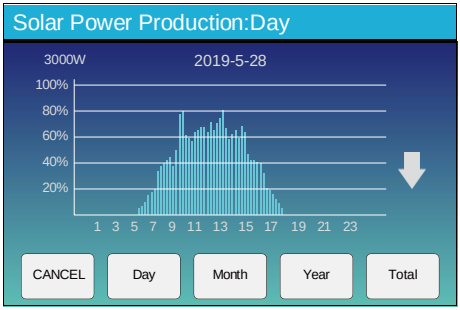


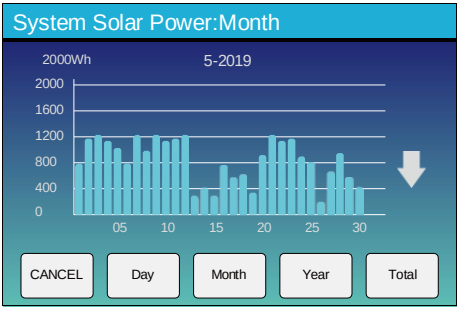


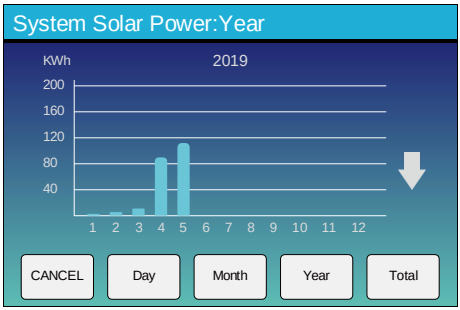
This is Ba[illegible]ery detail page.

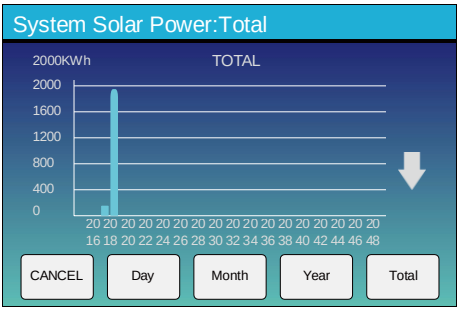
if you use Lithium Ba[illegible]ry, you can enter BMS page.

5.3 Curve Page-Solar & Load & Grid



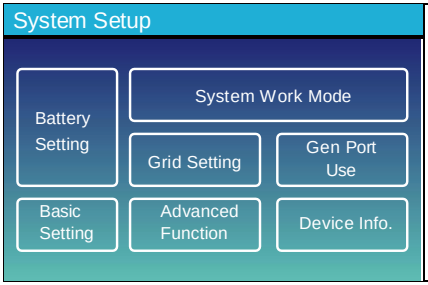






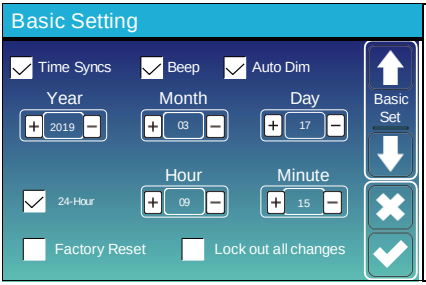
Solar power curve for daily, monthly, yearly and total can be roughly checked on the LCD, for more accuracy power genera[illegible]n, pls check on the monitoring system. Click the up and down arrow to check power curve of different period.

5.4 System Setup Menu

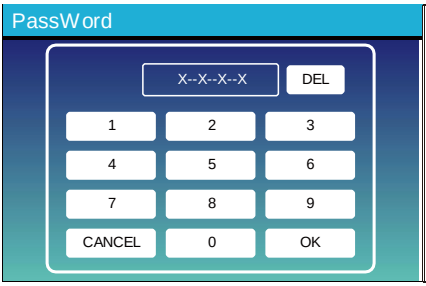


This is System Setup page.

5.5 Basic Setup Menu



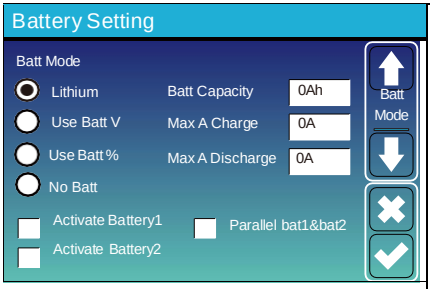
Factory Reset: Reset all parameters of the inverter.
Lock out all changes: Enable this menu for se□g parameters that require locking and cannot be set up. Before performing a successful factory reset and locking the systems, to keep all changes you need to type in a password to enable the se□g.
The password for factory se□gs is 9999 and for lock out is 7777.



Factory Reset Password: 9999

Lock out all changes Password: 7777

5.6 Ba[illegible]ery Setup Menu



Ba[illegible]ery capacity: it shows your ba[illegible]ery bank size to Deye hybrid inverter.

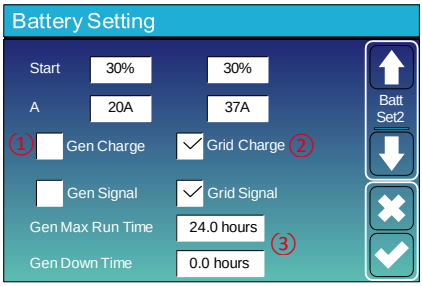
Use Ba[illegible]V: Use Ba[illegible]ery Voltage for all the se[illegible]gs (V).

Use Ba[illegible]%: Use Ba[illegible]ery SOC for all the se[illegible]gs (%).

Max. A charge/discharge: Max ba[illegible]ery charge/discharge current(0-37A for 5/6/8/10/12/15/20KW model).
For AGM and Flooded, we recommend Ah ba[illegible]ery size x 20%= Charge/Discharge amps.
. For Lithium, we recommend Ah ba[illegible]ery size x 50% = Charge/Discharge amps.
. For Gel, follow manufacturer' s instruc[illegible]ons.

No Ba[illegible]k this item if no ba[illegible]ery is connected to the system.

Ac[illegible]vate Ba[illegible]ery1/Ac[illegible]vate Ba[illegible]ery2: This feature will help recover a ba[illegible]ery that is over discharged by slowly charging from the solar array or grid.



This is Ba[illegible]ery Setup page. ① ③

Start =30%: Percent SOC below 30% system will AutoStart a connected generator to charge the ba[illegible]ery bank.

A = 20A: Charge rate of 20A from the a[illegible]ached generator in Amps.

Gen Charge: uses the gen input of the system to charge ba[illegible]ery bank from an a[illegible]ched generator.

Gen Signal: Normally open relay that closes when the Gen Start signal state is ac[illegible]e.

Gen Max Run Time: It indicates the longest [illegible]me Generator can run in one day, when [illegible]me is up, the Generator will be turned off. 24H means that it does not shut down all the [illegible]me.

Gen Down Time: It indicates the delay [illegible]me of the Generator to shut down a[illegible]er it has reached the running [illegible]me.

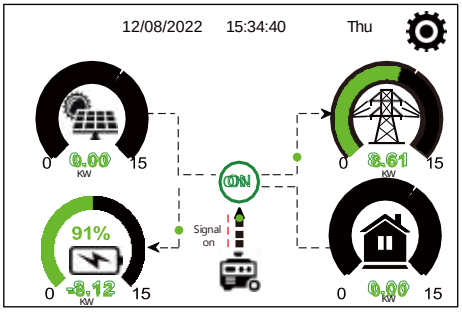
This is Grid Charge, you need select. ②

Start =30%: No use, Just for customiza[illegible]on.

A = 37A: It indicates the Current that the Grid charges the Ba[illegible]ery.

Grid Charge: It indicates that the grid charges the ba[illegible]ery.

Grid Signal: Disable.



This page tells the PV and diesel generator power the load and ba◆ery.

Generator

Power: 6000W

Today=10 KWH

Total =10 KWH

V_L1: 230V

V_L2: 230V

V_L3: 230V

P_L1: 2KW

P_L2: 2KW

P_L3: 2KW

This page tells generator output voltage, frequency, power. And, how much energy is used from generator.

Battery Setting

Lithium Mode 00

Shutdown 10%

Low Batt 20%

Restart 40%

Batt Set3

Lithium Mode: This is BMS protocol.Please reference the document(Approved Ba◆ery).

Shutdown 10%: It indicates the inverter will shutdown if the SOC below this value.

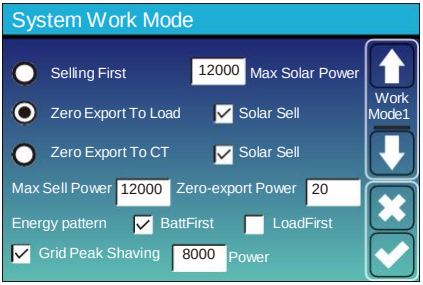
Low Ba◆20%: It indicates the inverter will alarm if the SOC below this value.

Restart 40%: Ba◆ery SOC at 40% AC output will resume.

Recommended ba□ery se□ngs

Battery Type	*Absorption Stage*	*Float Stage*	*Torque value (every 30 days 3hr)*
Lithium	Follow its BMS voltage parameters		

5.7 System Work Mode Setup Menu



Work Mode

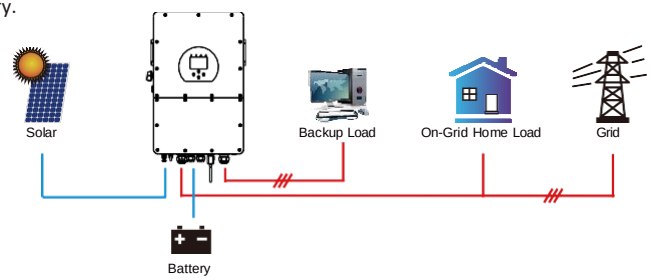
Selling First: This Mode allows hybrid inverter to sell back any excess power produced by the solar panels to the grid. If □ne of use is ac□e, the ba□ery energy will can be sold into grid.

The PV energy will be used to power the load and charge the ba□ery and then excess energy will flow to grid.

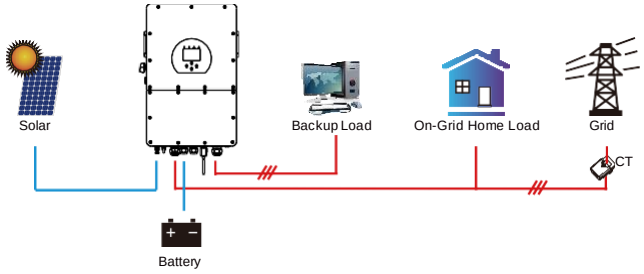
Power source priority for the load is as follows:

1. Solar Panels.
2. Grid.
3. Ba□eries (un□programable % discharge is reached).

Zero Export To Load: Hybrid inverter will only provide power to the backup load connected. The hybrid inverter will neither provide power to the home load nor sell power to grid. The built-in CT will detect power flowing back to the grid and will reduce the power of the inverter only to supply the local load and charge the ba□ery.



Zero Export To CT: Hybrid inverter will not only provide power to the backup load connected but also give power to the home load connected. If PV power and ba□ery power is insufficient, it will take grid energy as supplement. The hybrid inverter will not sell power to grid. In this mode, a CT is needed. The installa□on method of the CT please refer to chapter 3.6 CT Connec□on. The external CT will detect power flowing back to the grid and will reduce the power of the inverter only to supply the local load, charge ba□ery and home load.



Solar Sell: “Solar sell” is for Zero export to load or Zero export to CT: when this item is ac�ve, the surplus energy can be sold back to grid. When it is ac�ve, PV Power source priority usage is as follows: load consump�on and charge ba�ery and feed into grid.

Max. sell power: Allowed the maximum output power to flow to grid.

Zero-export Power: for zero-export mode, it tells the grid output power. Recommend to set it as 20-100W to ensure the hybrid inverter won' t feed power to grid.

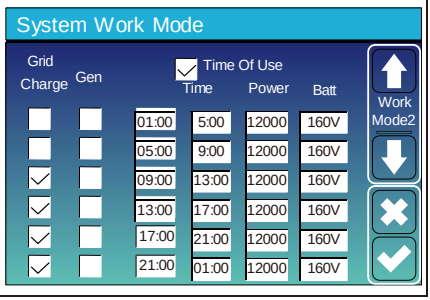
Energy Pa�ern: PV Power source priority.

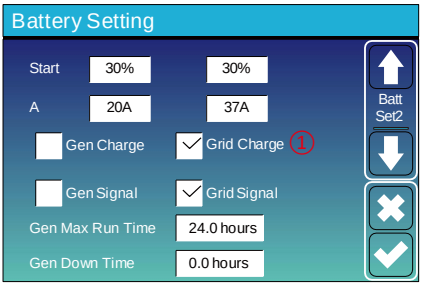
Ba�First: PV power is firstly used to charge the ba�ery and then used to power the load. If PV power is insufficient, grid will make supplement for ba�ery and load simultaneously.

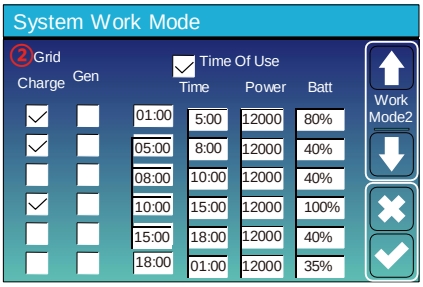
Load First: PV power is firstly used to power the load and then used to charge the ba�ery. If PV power is insufficient, Grid will provide power to load.

Max Solar Power: allowed the maximum DC input power.

Grid Peak-shaving: when it is ac�ve, grid output power will be limited within the set value. If the load power exceeds the allowed value, it will take PV energy and ba�ery as supplement. If s�l can’t meet the load requirement, grid power will increase to meet the load needs.







Time of use: it is used to program when to use grid or generator to charge the ba�ery, and when to discharge the ba�ery to power the load. Only ck "Time Of Use" then the follow items (Grid, charge, me, power etc.) will take effect.

Note: when in selling first mode and click me of use, the ba�ery power can be sold into grid.

Gen charge: u ze diesel generator to charge the ba�ery in a me period.

Time: real me, range of 01:00-24:00.

Note: when the grid is present, only the “me of use” is ked, then the ba�ery will discharge. Otherwise, the ba�ery won’t discharge even the ba�ery SOC is full. But in the off-grid mode (when grid is not available, inverter will work in the off-grid mode automa ally).

Power: Max. discharge power of ba�ery allowed. **Ba PV or SOC %):** ba�ery SOC % or voltage at when te ac on is to happen.

For example

During 01:00-05:00,
if ba�ery SOC is lower than 80%, it will use grid to charge the ba�ery un ba�ery SOC reaches 80%.

During 05:00-08:00,
if ba�ery SOC is higher than 40%, hybrid inverter will discharge the ba�ery un the SOC reaches 40%. At the same me, if ba�ery SOC is lower than 40%, then grid will charge the ba�ery SOC to 40%.

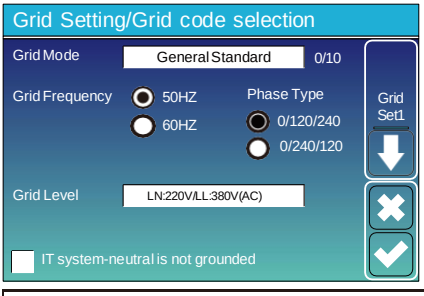
During 08:00-10:00,
if ba�ery SOC is higher than 40%, hybrid inverter will discharge the ba�ery un the SOC reaches 40%.

During 10:00-15:00,
when ba�ery SOC is higher than 80%, hybrid inverter will discharge the ba�ery un the SOC reaches 80%.

During 15:00-18:00,
when ba�ery SOC is higher than 40%, hybrid inverter will discharge the ba�ery un the SOC reaches 40%.

During 18:00-01:00,
when ba�ery SOC is higher than 35%, hybrid inverter will discharge the ba�ery un the SOC reaches 35%.

5.8 Grid Setup Menu



Grid Mode: General Standard、UL1741 & IEEE1547、CPUC RULE21、SRD-UL-1741、CEI 0-21、Australia A、Australia B、Australia C、EN50549_CZ-PPDS(>16A)、NewZealand、VDE4105、OVE-Direc[illegible]e R25.

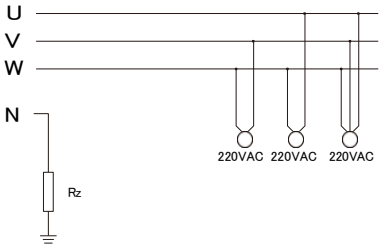
Please follow the local grid code and then choose the corresponding grid standard.

Grid level: there're several voltage levels for the inverter output voltage when it is in off-grid mode.

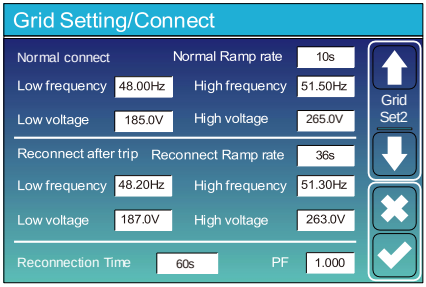
LN:230VAC LL:400VAC,LN:240VAC LL:420VAC,

LN:120VAC LL:208VAC, LN:133VAC LL:230VAC.

IT system: For the IT grid system, the Line voltage (between any two lines in a three-phase circuit) is 230Vac, and the diagram is as follow.If your grid system is IT system, please enable "IT system" and [illegible]k the "Grid level" as 133-3P as below picture shows.



Rz: Large resistance ground resistor. Or the system doesn't have Neutral line



Normal connect: The allowed grid voltage/frequency range when the inverter first [illegible]me connect to the grid.

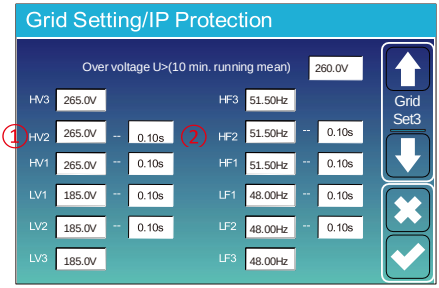
Normal Ramp rate: It is the startup power ramp.

Reconnect a[illegible]r trip: The allowed grid voltage /frequency range for the inverter connects the grid a[illegible]r the inverter trip from the grid.

Reconnect Ramp rate:It is the reconnec[illegible]n power ramp.

Reconnec[illegible]n [illegible]me: The wai[illegible]g [illegible]me period fo the inverter connects the grid again.

PF: Power factor which is used to adjust inverter reac[illegible]e power.



HV1: Level 1 overvoltage protec[illegible]n point;

① **HV2:** Level 2 overvoltage protec[illegible]n point; ② 0.10s—Trip [illegible]e

HV3: Level 3 overvoltage protec[illegible]n point.

LV1: Level 1 undervoltage protec[illegible]n point;

LV2: Level 2 undervoltage protec[illegible]n point;

LV3: Level 3 undervoltage protec[illegible]n point.

HF1: Level 1 over frequency protec[illegible]n point;

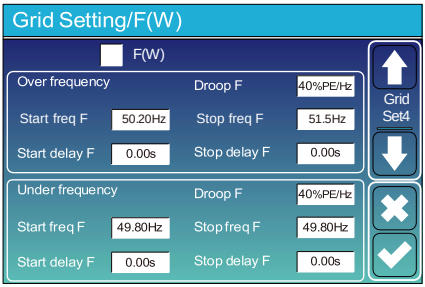
HF2: Level 2 over frequency protec[illegible]n point;

HF3: Level 3 over frequency protec[illegible]n point.

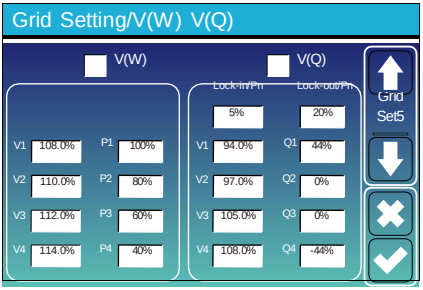
LF1: Level 1 under frequency protec[illegible]n point;

LF2: Level 2 under frequency protec[illegible]n point;

LF3: Level 3 under frequency protec[illegible]n point.



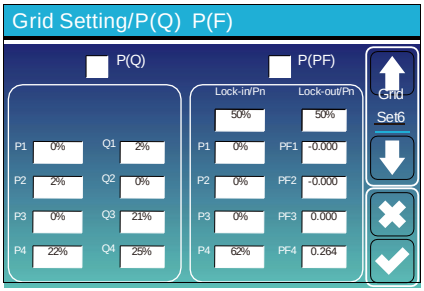
FW: this series inverter is able to adjust inverter output power according to grid frequency.
Droop F: percentage of nominal power per Hz
For example, “Start freq F＞50.2Hz, Stop freq F＜51.5, Droop F=40%PE/Hz” when the grid frequency reaches 50.2Hz, the inverter will decrease its ac﹞e power at Droop F of 40%. And then when grid system frequency is less than 50.1Hz, the inverter will stop decreasing output power.
For the detailed setup values, please follow the local grid code.



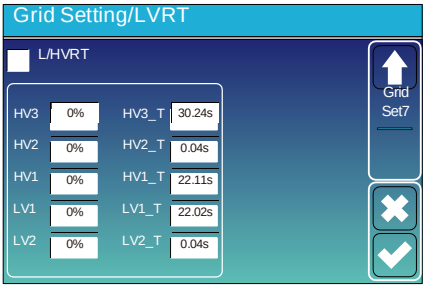
V(W): It is used to adjust the inverter ac﹞e power according to the set grid voltage.
V(Q): It is used to adjust the inverter reac﹞e power according to the set grid voltage.
This func﹞n is used to adjust inverter output power (ac﹞e power and reac﹞e power) when grid voltage changes.

Lock-in/Pn 5%: When the inverter ac﹞e power is less than 5% rated power, the VQ mode will not take effect.
Lock-out/Pn 20%: If the inverter ac﹞e power is increasing from 5% to 20% rated power, the VQ mode will take effect again.

For example: V2=110%, P2=80%. When the grid voltage reaches the 110% ﹞nes of rated grid voltage, inverter output power will reduce its ac﹞e output power to 80% rated power.
For example: V1=94%, Q1=44%. When the grid voltage reaches the 94% ﹞nes of rated grid voltage, inverter output power will output 44% reac﹞e output power.
For the detailed setup values, please follow the local grid code.

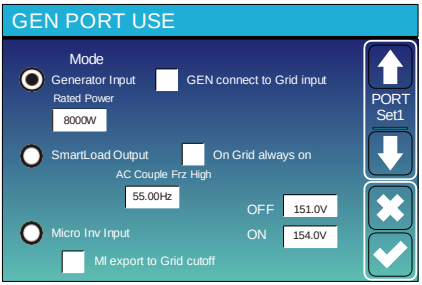


P(Q): It is used to adjust the inverter reac﹞e power according to the set ac﹞e power.
P(PF): It is used to adjust the inverter PF according to the set ac﹞e power.
For the detailed setup values, please follow the local grid code.
Lock-in/Pn 50%: When the inverter output ac﹞e power is less then 50% rated power, it won't enter the P(PF) mode.
Lock-out/Pn 50%: When the inverter output ac﹞e power is higher then 50% rated power, it will enter the P(PF) mode.
Note : only when the grid voltage is equal to or higher than 1.05﹞nes of rated grid voltage, then the P(PF) mode will take effect.



Reserved: This func﹞n is reserved.It is not recommended.

5.9 Generator Port Use Setup Menu



Generator input rated power: allowed Max. power from diesel generator.
GEN connect to grid input: connect the diesel generator to the grid input port.
Smart Load Output: This mode u□zes the Gen input connec□on as an output which only receives power when the ba□ery SOC is above a user programmable threshold.
e.g. ON: 100%, OFF: 95%: When the ba□ery bank SOC reaches 100%, Smart Load Port will switch on automa□ally and power the load connected. When the ba□ery bank SOC < 95% , the Smart Load Port will switch off automa□ally.

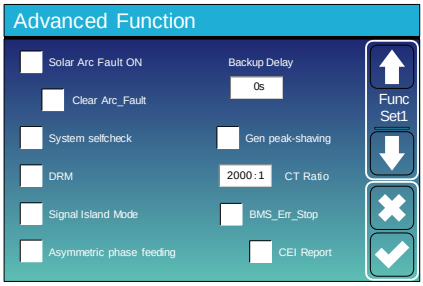
Smart Load OFF Ba□
• Ba□ery SOC at which the Smart load will switch off.
Smart Load ON Ba□
• Ba□ery SOC at which the Smart load will switch on. simultaneously and then the Smart load will switch on.
On Grid always on: When click "on Grid always on" the smart load will switch on when the grid is present.
Micro Inv Input: To use the Generator input port as a micro-inverter on grid inverter input (AC coupled), this feature will also work with "Grid-Tied" inverters.

∗ **Micro Inv Input OFF**: when the ba□ery SOC exceeds se□g value, Microinveter or grid-□d inverter will shut down.
∗ **Micro Inv Input ON**: when the ba□ery SOC is lower than se□g value, Microinveter or grid-□d inverter will start to work.

AC Couple Frz High: If choosing"Micro Inv input", as the ba□ery SOC reaches gradually se□g value (OFF), during the process, the microinverter output power will decrease linear. When the ba□ery SOC equals to the se□g value (OFF), the system frequency will become the se□g value (AC couple Frz high) and the Microinverter will stop working.
MI export to grid cutsoff: Stop expor□g power produced by the microinverter to the grid.

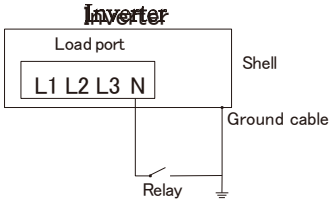
∗ **Note**: Micro Inv Input OFF and On is valid for some certain FW version only.

5.10 Advanced Func□on Setup Menu

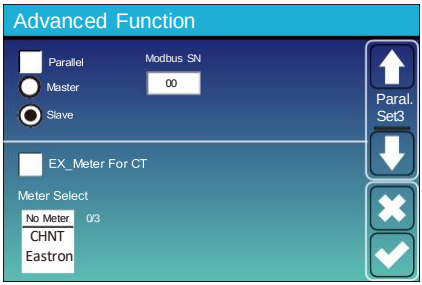


Solar Arc Fault ON: This is only for US.
System selfcheck: Disable. this is only for factory.
Gen Peak-shaving: Enable When the power of the generator exceeds the rated value of it, the inverter will provide the redundant part to ensure that the generator will not overload.
DRM: For AS4777 standard
Backup Delay: Reserved
BMS_Err_Stop: When it is ac□e, if the ba□ery BMS failed to communicate with inverter, the inverter will stop working and report fault.

Signal island mode: If "Signal island mode" is checked and When inverter is in off-grid mode, the relay on the Neutral line (load port N line) will switch ON then the N line (load port N line) will bind to inverter ground.

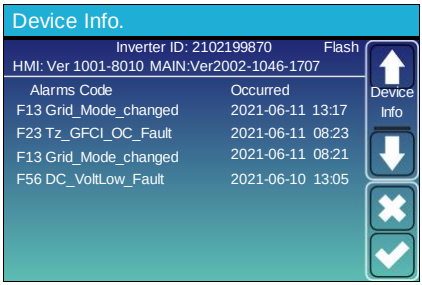


Asymmetric phase feeding: If it was checked, the excess PV energy that feeds into the grid will be balanced on the three phase.



Ex_Meter For CT: when using zero-export to CT mode, the hybrid inverter can select EX_Meter For CT function and use the different meters.e.g.CHNT and Eastron.

5.11 Device Info Setup Menu



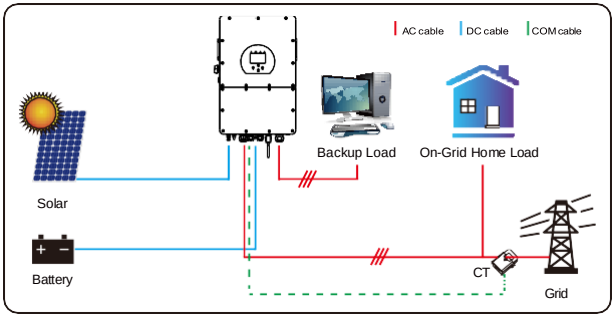
This page show Inverter ID, Inverter version and alarm codes.

HMI: LCD version

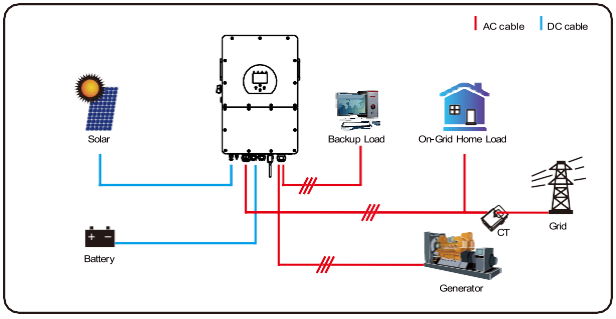
MAIN: Control board FW version

6. Mode

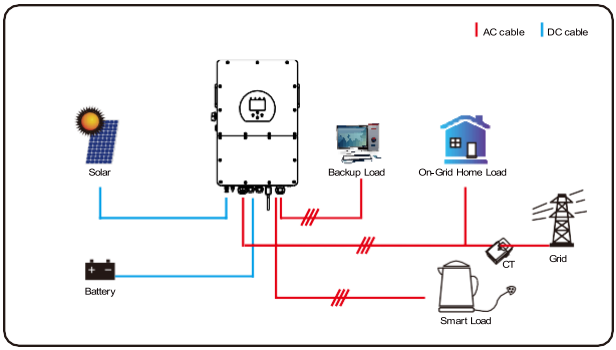
Mode I:Basic



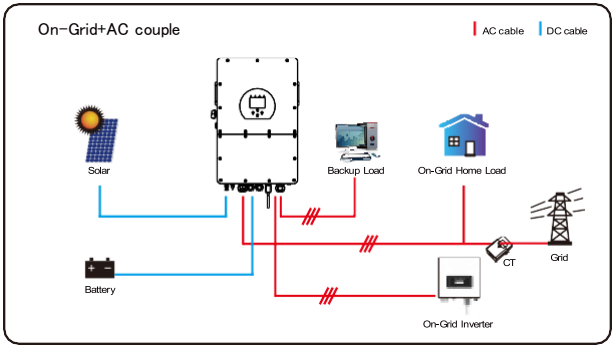
Mode II: With Generator



Mode III: With Smart-Load



Mode IV: AC Couple



The 1st priority power of the system is always the PV power, then 2nd and 3rd priority power will be the ba□ery bank or grid according to the se□gs. The last power backup will be the Generator if it is available.

7. Limita□n of Liability

In addi□n to the product warranty described above, the state and local laws and regula□ns provide financial compensa□n for the product's power connec□n (including viola□n of implied terms and warran□s). The company hereby declares that the terms and condi□ns of the product and the policy cannot and can only legally exclude all liability within a limited scope.

Error code	Description	Solutions
F01	DC_Inversed_Failure	1, Check the PV input polarity 2, Seek help from us, if can not go back to normal state.
F07	DC_START_Failure	1, The BUS voltage can t be built from PV or battery. 2 , Restart the inverter, If the fault still exists, please contact us for help
F13	Working_Mode_change	1. When the grid type and frequency changed it will report F13; 2. When the battery mode was changed to "No battery" mode,it will report F13; 3. For some old FW version, it will report F13 when the system work mode changed; 4, Generally, it will disappear automatically when shows F13; 5. If it remains same, turn on DC and AC switch for one minute, then turn on the DC and AC switch.; 6. Seek help from us, if can not go back to normal state.
F15	AC_OverCurr_SW_Failure	AC side over current fault 1. Please check whether the backup load power and common load power are within the range; 2. Restart and check whether it is normal; 3. Seek help from us, if can not go back to normal state.
F16	GFCI_Failure	Leakage current fault 1, Check the PV side cable ground connection 2, Restart the system 2-3 times 3, if the fault still existing, please contact us for help.
F18	Tz_Ac_OverCurr_Fault	AC side over current fault 1. Please check whether the backup load power and commonload power are within the range; 2. Restart and check whether it is normal; 3. Seek help from us, if cannot go back to normal state.
F20	Tz_Dc_OverCurr_Fault	DC side over current fault 1. Check PV module connection and battery connection; 2. When in the off-grid mode, the inverter startup with big power load, it may report F20. Please reduce the load power connected; 3. If it remains same, turn on DC and AC switch for one minute, then turn on the DC and AC switch.; 4. Seek help from us, if can not go back to normal state.

Error code	Description	Solutions
F21	Tz_HV_Overcurr_fault	BUS over current. 1, Check the PV input current and battery current setting 2. Restart the system 2~3 times. 3. If the fault still exists, please contact us for help.
F22	Tz_EmergStop_Fault	Remotely shutdown 1, it tells the inverter is remotely controlled.
F23	Tz_GFCI_OC_Fault	Leakage current fault 1. Check PV side cable ground connection. 2. Restart the system 2~3 times. 3. If the fault still exists, please contact us for help.
F24	DC_Insulation_Fault	PV isolation resistance is too low 1. Check the connection of PV panels and inverter is firmly and correctly; 2. Check whether the PE cable of inverter is connected to ground; 3. Seek help from us, if can not go back to normal state.
F26	BusUnbalance_Fault	1. Please wait for a while and check whether it is normal; 2. When the load power of 3 phases is big different, it will report the F26. 3 .When there's DC leakage current, it will report F26 4. Restart the system 2~3 times. 5. Seek help from us, if can not go back to normal state.
F29	Parallel_Comm_Fault	1. When in parallel mode, check the parallel communication cable connection and hybrid inverter communication address setting; 2. During the parallel system startup period, inverters will report F29.But when all inverters are in ON status, it will disappear automatically; 3. If the fault still exists, please contact us for help.
F34	AC_Overload_Fault	1, Check the backup load connection, make sure it is in allowed power range 2, If the fault still exists, please contact us for help
F41	Parallel_system_Stop	1, Check the hybrid inverter work status. If there's 1pcs hybrid inverter shutdown, all hybrid inverters will report F41 fault. 2, If the fault still exists, please contact us for help
F42	Parallel_Version_Fault	Grid voltage fault 1. Check whether the AC voltage is within grid standard protection limits.; 2. Check whether grid AC cables are firmly and correctly connected; 3. Seek help from us, if can not go back to normal state.

Error code	Description	Solutions
F47	AC_OverFreq_Fault	Grid frequency out of range 1. Check the frequency is in the range of specification or not; 2. Check whether AC cables are firmly and correctly connected; 3. Seek help from us, if can not go back to normal state.
F48	AC_UnderFreq_Fault	Grid frequency out of range 1. Check the frequency is in the range of specification or not; 2. Check whether AC cables are firmly and correctly connected; 3. Seek help from us, if can not go back to normal state.
F52	DC_VoltHigh_Fault	BUS voltage is too high 1. Check whether battery voltage is too high; 2. check the PV input voltage, make sure it is within the allowed range; 3. Seek help from us, if can not go back to normal state.
F53	DC_VoltLow_Fault	BUS voltage is too low 1. Check whether battery voltage is too low; 2. If the battery voltage is too low, using PV or grid to charge the battery; 3. Seek help from us, if can not go back to normal state.
F54	BAT2_VoltHigh_Fault	1. Check the battery 2 terminal voltage is high; 2. Restart the inverter 2 times and restore the factory settings; 3. Seek help from us, if can not go back to normal state.
F55	BAT1_VoltHigh_Fault	1. Check the battery 1 terminal voltage is high; 2. Restart the inverter 2 times and restore the factory settings; 3. Seek help from us, if can not go back to normal state.
F56	BAT1_VoltLow_Fault	1. Check the battery 1 terminal voltage is low; 2. Restart the inverter 2 times and restore the factory settings; 3. Seek help from us, if can not go back to normal state.
F57	BAT2_VoltLow_Fault	1. Check the battery 2 terminal voltage is low; 2. Restart the inverter 2 times and restore the factory settings; 3. Seek help from us, if can not go back to normal state.
F58	Battery_comm_Lose	1, It tells the communication between hybrid inverter and battery BMS disconnected when "BMS_Err-Stop" is active; 2, If don't want to see this happen, you can disable "BMS_Err-Stop" item on the LCD; 3, If the fault still exists, please contact us for help
F62	DRMs0_stop	1, the DRM function is for Australia market only; 2, Check the DRM function is active or not; 3, Seek help from us, if can not go back to normal state after restart the system.
F63	ARC_Fault	1. ARC fault detection is only for US market; 2. Check PV module cable connection and clear the fault; 3. Seek help from us, if can not go back to normal state
F64	Heatsink_HighTemp_Fault	Heat sink temperature is too high 1. Check whether the working environment temperature is too high; 2. Turn off the inverter for 10mins and restart; 3. Seek help from us, if can not go back to normal state.

Chart 7-1 Fault information

Under the guidance of our company, customers return our products so that our company can provide service of maintenance or replacement of products of the same value. Customers need to pay the necessary freight and other related costs. Any replacement or repair of the product will cover the remaining warranty period of the product. If any part of the product or product is replaced by the company itself during the warranty period, all rights and interests of the replacement product or component belong to the company.
Factory warranty does not include damage due to the following reasons:

· Damage during transporta□n of equipment;
· Damage caused by incorrect installa□n or commissioning;
· Damage caused by failure to comply with opera□n instruc□ns, installa□n instruc□ns or maintenance instruc□ns;
· Damage caused by a□empts to modify, alter or repair products;
· Damage caused by incorrect use or opera□n;
· Damage caused by insufficient ven□a□n of equipment;
· Damage caused by failure to comply with applicable safety standards or regula□ns;
· Damage caused by natural disasters or force majeure (e.g. floods, lightning, overvoltage, storms, fires, etc.)

In addi□n, normal wear or any other failure will not affect the basic opera□n of the product. Any external scratches, stains or natural mechanical wear does not represent a defect in the product.

8. Datasheet

Model	SUN-5K-SG01HP3-EU-AM2	SUN-6K-SG01HP3-EU-AM2	SUN-8K-SG01HP3-EU-AM2	SUN-10K-SG01HP3-EU-AM2	SUN-12K-SG01HP3-EU-AM2	SUN-15K-SG01HP3-EU-AM2	SUN-20K-SG01HP3-EU-AM2
Battery Input Date							
Ba□ery Type	Li-Ion						
Ba□ery Voltage Range(V)	160~700						
Max. Charging Current(A)	37						
Max. Discharging Current(A)	37						
Number of ba□ery input	1						
Charging Strategy for Li-Ion Ba□ery	Self-adap□on to BMS						
PV String Input Data							
Max. DC Input Power(W)	6500	7800	10400	13000	15600	19500	26000
Max. DC Input Voltage (V)	1000						
MPPT Range(V)	150-850						
Start-up Voltage(V)	180						
Full Load DC Voltage Range (V)	195-850	195-850	260-850	325-850	340-850	420-850	500-850
Rated DC Input Voltage (V)	600						
PV Input Current(A)	20+20	20+20	20+20	20+20	26+20	26+20	26+26
Max.PV Isc(A)	30+30	30+30	30+30	30+30	39+30	39+30	39+39
No. of MPPT Trackers	2						
No. of Strings Per MPPT Tracker	1	1	1	1	2+1	2+1	2
AC Output Data							
Rated AC Output and UPS Power(W)	5000	6000	8000	10000	12000	15000	20000
Max. AC Output Power(W)	5500	6600	8800	11000	13200	16500	22000
Peak Power(off grid)	1.5 □me of rated power, 10 S						
AC Output Rated Current(A)	7.6/7.3	9.1/8.7	12.2/11.6	15.2/14.5	18.2/17.4	22.8/21.8	30.4/29.0
Max. AC Current(A)	8.4/8.0	10/9.6	13.4/12.8	16.7/16	20/19.2	25/24	33.4/31.9
Max. Three-phase Unbalanced Output Current（A）	13	13	18	22	25	30	35
Max. Con□uous AC Passthrough(A)	40				80		
Power Factor	0.8 leading to 0.8 lagging						
Output Frequency and Voltage	50/60Hz; 3L/N/PE 220/380, 230/400Vac						
Grid Type	Three Phase						
Total Harmonic Distor□on (THD)	<3% (of nominal power)						
DC current injec□on	<0.5% In						
Efficiency							
Max. Efficiency	97.60%						
Euro Efficiency	97.00%						
MPPT Efficiency	>99%						
Protection							
PV Input Lightning Protec□on	Integrated						
An□islanding Protec□on	Integrated						
PV String Input Reverse Polarity Protec□on	Integrated						
Insula□on Resistor Detec□on	Integrated						
Residual Current Monitoring Unit	Integrated						
Output Over Current Protec□on	Integrated						
Output Shorted Protec□on	Integrated						
Over Voltage Category	DC Type II / AC Type III						
Ba□ery Over Current Protec□on	Fuses						

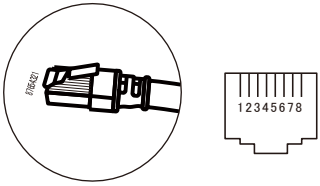
Certifications and Standards	
Grid Regula□n	VDE4105,IEC61727/62116,VDE0126,AS4777.2,CEI 0 21,EN50549-1, G98,G99,C10-11,UNE217002,NBR16149/NBR16150
EMC/Safety Regula□n	IEC62109-1/-2, NBT32004-2018, EN61000-6-1,EN61000-6-2, EN61000-6-3, EN61000-6-4
General Data	
Opera□g Temperature Rande(℃)	-40~60℃, >45℃ Dera□g
Cooling	Smart cooling
Noise(dB)	≤55 dB
Communica□n with BMS	RS485; CAN
Weight(kg)	30.5
Cabinet size(mm)	408W×638H×237D (Excluding connectors and brackets)
Protec□n Degree	IP65
Installa□n Style	Wall-mounted
Warranty	5 years

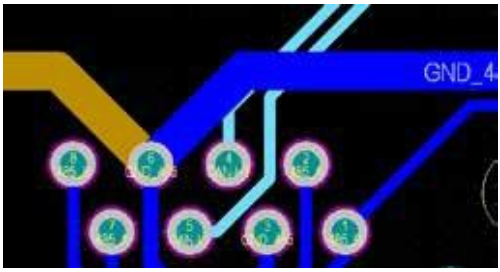
9. Appendix I

Definition of RJ45 Port Pin for BMS1

No.	RS485 Pin
1	485_B
2	485_A
3	GND_485
4	CAN-H1
5	CAN-L1
6	GND_485
7	485_A
8	485_B

BMS1 Port

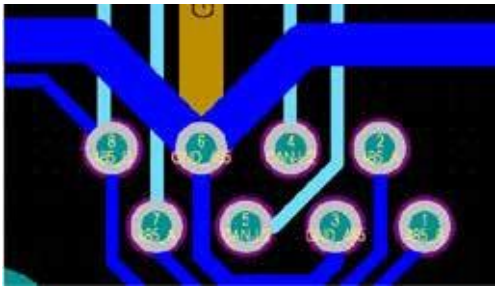




Definition of RJ45 Port Pin for BMS2

No.	RS485 Pin
1	485_B
2	485_A
3	GND_485
4	CAN-H2
5	CAN-L2
6	GND_485
7	485_A
8	485_B

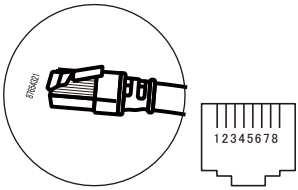
BMS2 Port

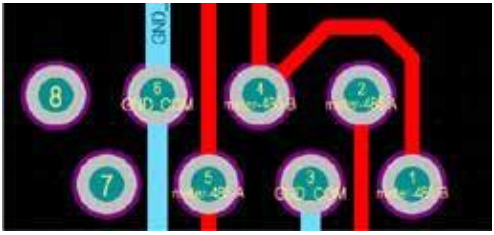


Definition of RJ45 Port Pin for Meter

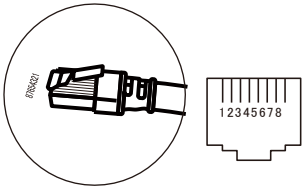
No.	Meter-485 Pin
1	METER-485_B
2	METER-485_A
3	GND_COM
4	METER-485_B
5	METER-485_A
6	GND_COM
7	--
8	--

Meter Port



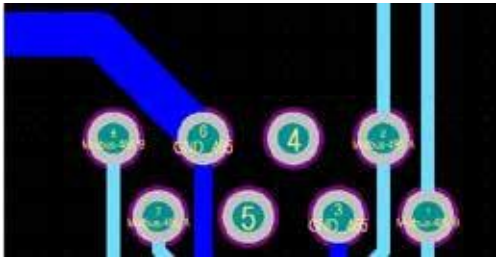


Definition of RJ45 Port Pin for RS485



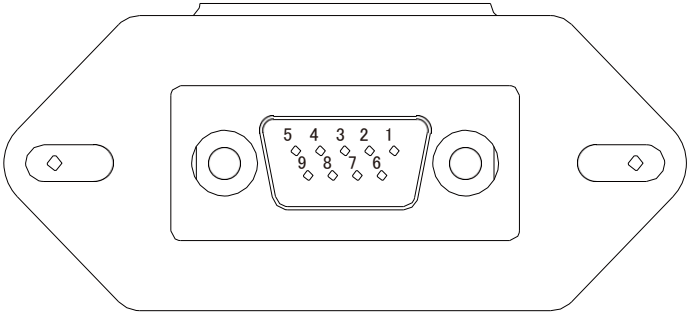
No.	RS485 Pin
1	Modbus-485_B
2	Modbus-485_A
3	GND_485
4	--
5	--
6	GND_485
7	Modbus-485_A
8	Modbus-485_B

RS485 Port



RS232

No.	WIFI/RS232
1	
2	TX
3	RX
4	
5	D-GND
6	
7	
8	
9	12Vdc

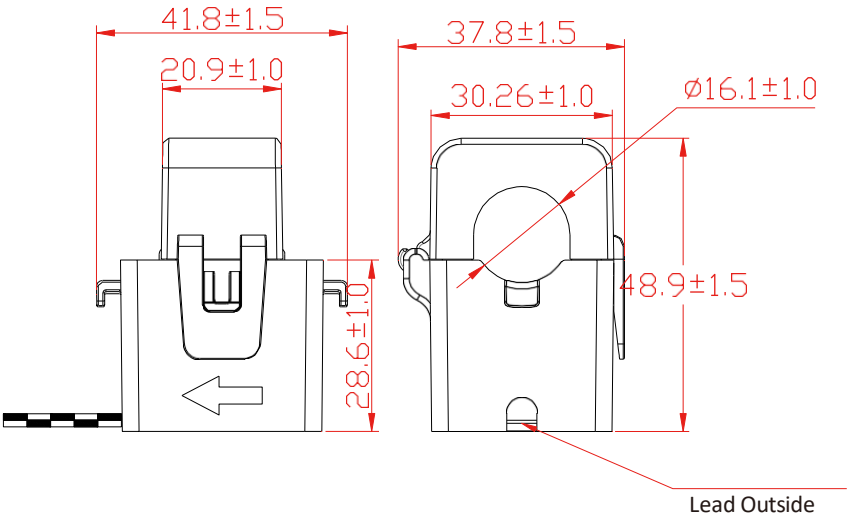


WIFI/RS232

This RS232 port is used to connect the wifi datalogger

10. Appendix II

1. Split Core Current Transformer (CT) dimension: (mm)
2. Secondary output cable length is 4m.



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