SOLINTEG
INTEGRATE SOLAR INTELLIGENTLY

INTEG M HYBRID INVERTER

MHT-25/30/36/40/50K-100
MHT-40/50K-100-P



User Manual

ENGLISH VERSION


SOLINTEG
INTEGRATE SOLAR INTELLIGENTLY

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1 About This Manual

products.

not constitute any express or implied guarantee.

1.1 How To Use This Manual

latest manual can be found at www. solinteg.com.

1.2 Target Groups

This manual is applicable to electrical installers with professional qualifications and

① with hazards.

② Knowledge of the manual and other related documents.

③ Knowledge of the local regulations and directives.

1.3 Symbols

DANGER	Indicates a hazard with a high level of risk that, if not avoided, will result in death or serious injury.
WARNING	Indicates a hazard with a medium level of risk that, if not avoided, could result in death or serious injury.

CAUTION	Indicates a hazard with a low level of risk that, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates a situation that, if not avoided, could result in equipment or property damage, data loss, equipment performance degradation.
NOTE	Indicates additional information, emphasized contents or tips that may be helpful, e.g., to help you solve problems or save time.

2 Safety Instructions

2.1 Safety Notes

① c A A A A A A A A A A A A A manual strictly.

② Installers need to undergo professional training or obtain electrical related professional A

③ A A A A A A A A A A A AB A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A the warranty.

④ All electrical installations must conform to local electrical safety standards.

⑤ 6A A A A A A A A A A A A A system installation and maintenance.

⑥ A A A A A A A A A A A A A A A A authority.

⑦ A A A A A A A A A A AdA A A A A A A A A A A A A A A A A A A A

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A2.2 Statement

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② j A A A A A A A

③ Damages caused by installation and use of equipment by non-professionals or untrained personnel.

④ Damages caused by failure to comply with the instructions and safety warnings in this document.

⑤ Damages of running in an environment that does not meet the requirements stated in this document.

⑥ j A A A A A A A A A A A A

⑦ j A A A A A A A A A A A A
software codes.

⑧ j A A A A A A A A A A A A A A A A

⑨ Any damages caused by the process of installation and operation which don't follow the local standards and regulations.

⑩ Products beyond the warranty period.

3 Product Description

3.1 System Introduction

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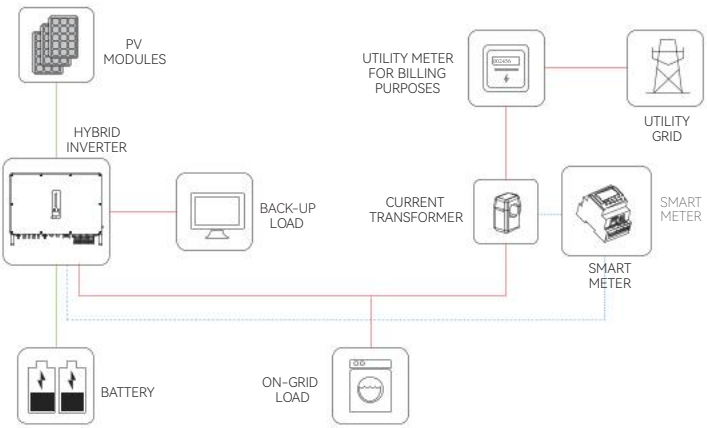


Figure 3-1 Schematic diagram of hybrid system

NOTICE

The system is not suitable for supplying life-sustaining medical devices. It cannot guarantee backup power in all circumstances.

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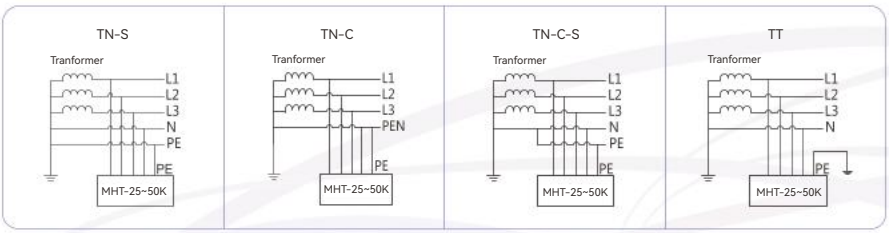


Figure 3-2 Applicable grid types

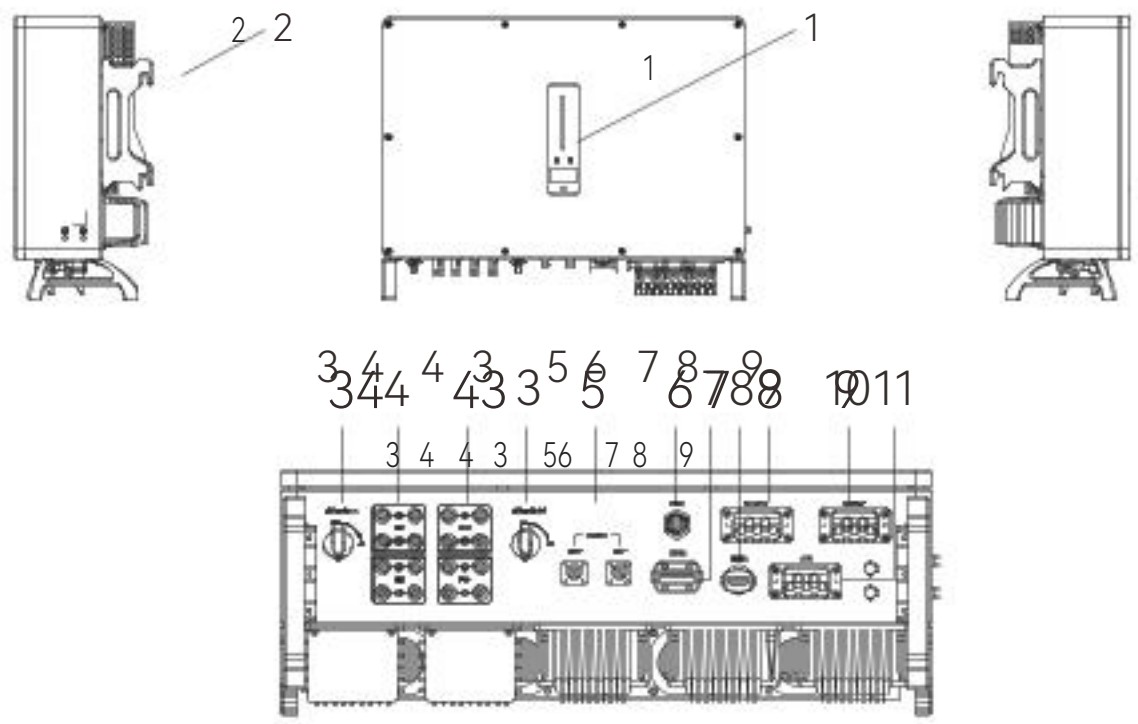
3.2 Product Introduction

A A" 3 : A A A A A A A A A A A -
A A A A A A A A A A A A A A A A
to realize intelligent power management and dispatching.

3.2.1 Models

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A" 3 :

3.2.2 Appearance

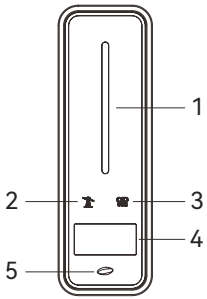


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Item	Terminal	Note
1	Display and LED panel	Display the operation information and working states of the inverter.
2	Hanger	Used to hang the inverter on the wall-mounting bracket.
3	DC switch	Used to safely disconnect the DC circuit.
4	DC input terminal	PV connector(MHT-25~50K 8 pairs / MHT-40~50K-P 6 pairs)
5	Battery input terminal	Battery connector
6	COM1 port	WiFi/LAN/4G module connector
7	COM2 port	Meter/BMS/RS485/DRED/DO Connector
8	COM3 port	DO/0-10V AO/4-20mA AO Connector
9	On-grid output terminal	Used for On-grid output cable connection
10	Back-up output terminal	Used for Back-up output cable connection
11	Generator input terminal	Generator connector(This function is temporarily unavailable. Please contact Solinteg if necessary)

3.2.3 Indicator



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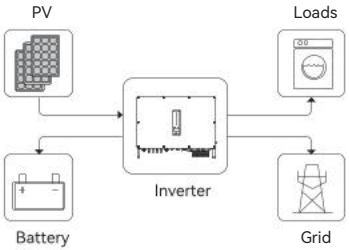
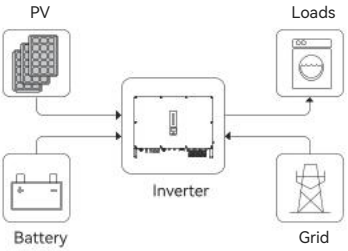
Item	Indicator	Status		Description
1	Power and Alarm Indicator	Off		No power.
		Blue	Quick flashing	Inverter entered self-test status.
			Slow flashing	Inverter entered waiting status.
			Breathe flashing	Inverter works normal.
		Orange	Breathe flashing	Low battery warning, the battery power is about to reach the SOC protection value.
		Red	Always on	An alarm or fault is detected, view the fault info on the display.
2	Grid Indicator	Off	Grid lost.	
		Slow flashing	Inverter detected grid but not running in on-grid mode.	
		Always on	Inverter works in on-grid mode.	
3	Communication Indicator	Green	Always on	The inverter communication is running normally.
		Green	Flashing	The inverter communicates with EMS or Master inverter through RS485 or CAN.
		Orange	Always on	The inverter isn't communicating with Solinteg smart meter.
		Red	Always on	The inverter isn't communicating with the BMS.
4	Display	Display off to save power, press the button to wake up the display.		
5	Button	Switch display information and set parameters by short press or long press.		

3.3 Symbols On the Inverter

Symbol	Description
	To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end-users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.
	Please read the instructions carefully before installation.
	Do not touch any internal parts of the inverter within 10 minutes of disconnecting the power,battery and PV input.
	CE mark, the inverter complies with the requirements of the applicable CE guidelines.
	Danger. Risk of electric shock!
	The surface is hot during operation and do not touch.
	Additional grounding point.
	Lightning protection marking
	TÜV mark of conformity.
	RCM mark：The Regulatory Compliance Mark (RCM) is a trade mark owned by the electrical regulator (Regulatory Authorities (RAs)) and Australian Communications Media Authority (ACMA).

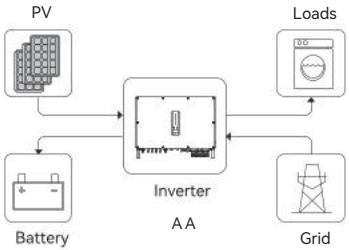
3.4 Operation Modes

ure the operation mode as per your preference in the App.

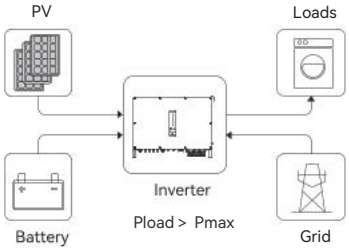
General Mode	
In this working mode, when the power from the PV array is sufficient, PV power will supply the loads, battery, and grid in the order of loads first, battery second, and grid last. (You can set the power to the grid to 0W when the local grid doesn't allow inverter power to feed to the grid).	
When the PV power is insufficient, the battery will discharge to supply loads, and the grid will join in if the battery is not enough to supply loads.	

Peak load Shifting (Load Shifting)

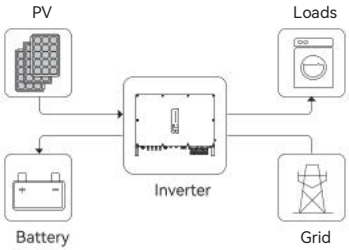
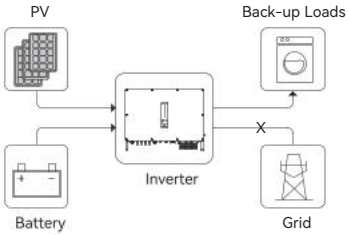
Set the maximum power Pmax (kVA) contracted with the grid.
When the load consumption is less than the Pmax, the PV will charge the battery first, and the grid supplies the load. When the battery is full, PV will supply the load together with the grid, but the battery doesn't.

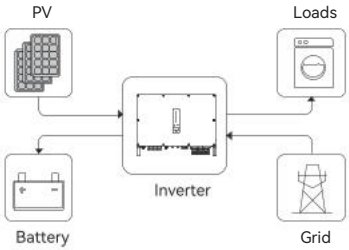
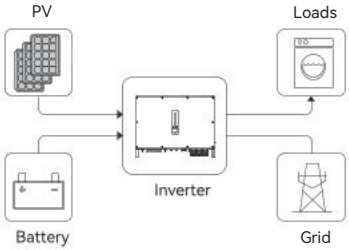


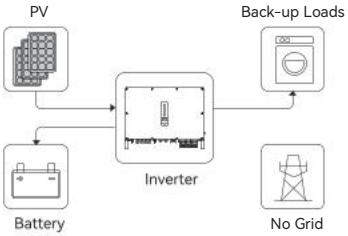
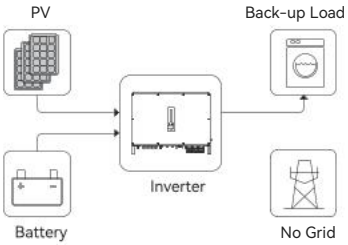
When the load consumption exceeds the Pmax, the inverter will take power from the battery and PV to supply power to the load to compensate for the power that exceeds the Pmax.



*To realize the "Peak load Shifting" function, the load power that exceeded Pmax has to be within the inverter max output power, otherwise, the inverter will only output the max power which allowed.

UPS Mode	
In this working mode, the inverter will use the power from PV or grid to charge the battery until it is fully charged, and as long as the grid is there, the battery won't discharge.	
When the grid fails, power from PV and battery will supply loads connected on the back-up side (UPS).	

Economic Mode	
In this working mode, you can set charge/discharge power and time in the App, inverter will use the power from PV or grid (whether to use can be set in the App) to charge the battery in the predetermined period.	
Inverter will use power from PV and battery to supply loads in the predetermined period and the insufficient part will be supplied by the grid.	

Off-grid Mode	
In the purely off-grid mode, power from PV will supply the back-up loads first and then charge the battery if there's surplus power.	
When the power from PV isn't enough, the battery will discharge to supply back-up loads together with PV.	

3.5 Back-Up and Off-Grid Output

NOTICE

It cannot be used as a substitute for a conventional UPS.

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using the Back-Up function smoothly are as follows for your awareness.

① Do not connect loads that are dependent on a stable energy supply for a reliable operation.

② Do not connect the loads whose total capacity is greater than the maximum Back-Up capacity.

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surges.

3.6 Unpacking and Storage

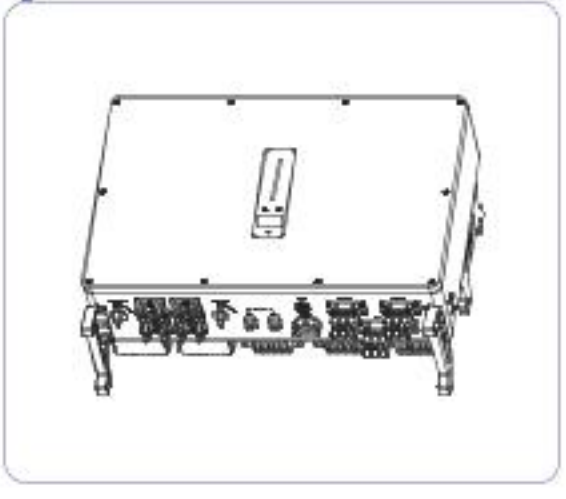
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after receiving the device.

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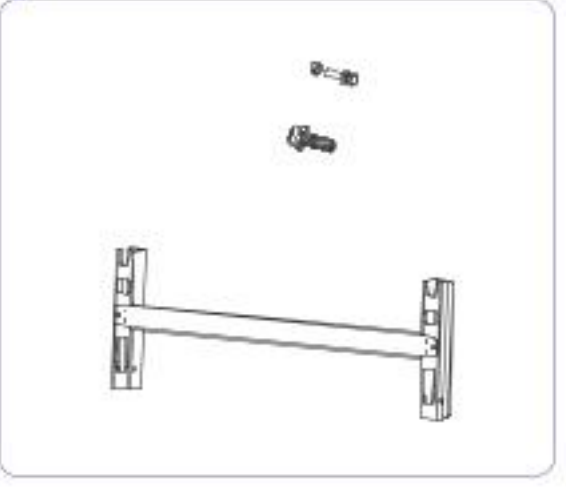
3.6.1 Packing List

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accessories in the packing box are complete when receiving the goods.

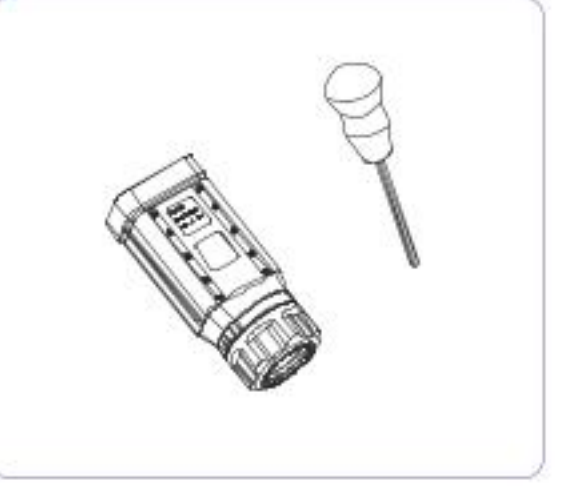
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B



C



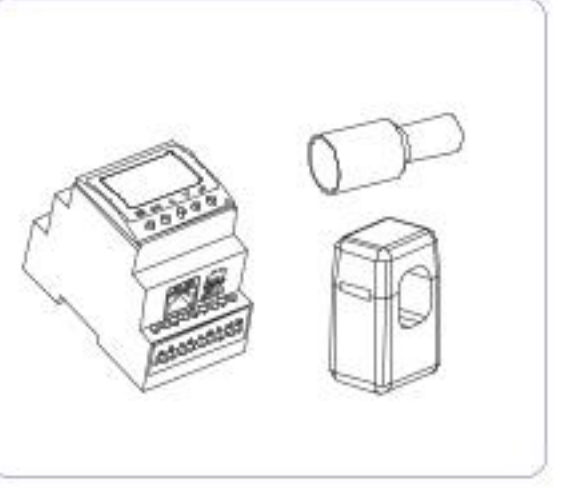
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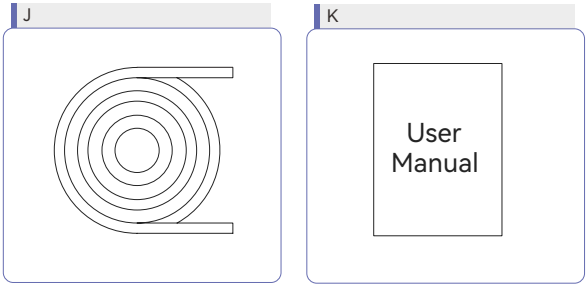


Figure 3-5 Packing list

Item	Name and Quantity
A	Inverter (1pcs)
B	Inverter bracket (1pcs), Bolt assembly (4pcs), M6 screws (2pcs)
C	AC connector set (3 pcs)
D	PV terminal (MHT-25~50K 8 pairs)
E	Battery terminal (1 pairs)
F	Meter with 3 CTs (1pcs)
G	COM2 connector set (1pcs)
H	COM3 connector set (1pcs)
I	Monitoring device (1pcs)
J	10m meter communication cable (1pcs), 3m battery communication cable (1pcs)
K	User guide

▼ A6 A

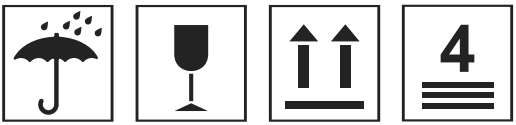
① Do not dispose of the original packing case. It is recommended to store the device in the original packing case when the device is decommissioned.

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③A6A A A A A A A A A A A A A A A A A A A A A A than 4 levels.

3.7 Safe Transport Instruction

① Observe the caution signs on the packaging of inverter before transportation.



② Pay attenting to the weight of inverter. Be cautious to avoid injury when carrying MHT-25-50K inverter (gross weight: 86 kg). Transport according to the personnel quantity required by local regulations.
③ Please use the original box of the inverter when transporting.

3.8 Safe Handling Instruction

① Two people stand on both sides of the machine, holding two handles to lift the machine.
② Wear protective gloves when carrying the equipment by hand to prevent injuries.
③ When lifting up the inverter, hold the handle position and the bottom position of the inverter. Keep the inverter horizontal in case of falling down.

4 Installation

4.1 Location

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A
⑥A A A A A A A A A A A A A A A A A A A
A A A A A A A A A A A A A A A A A
children.

4.1.1 Installation location

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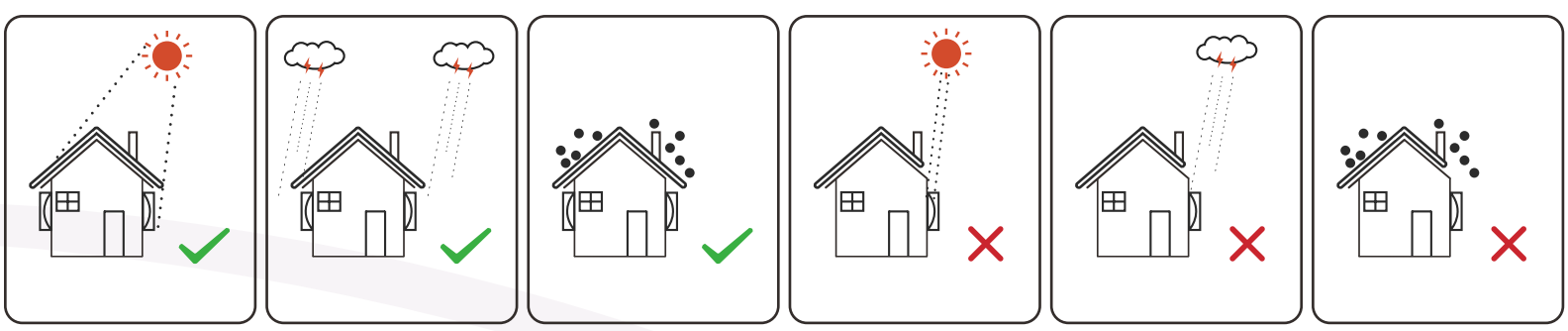


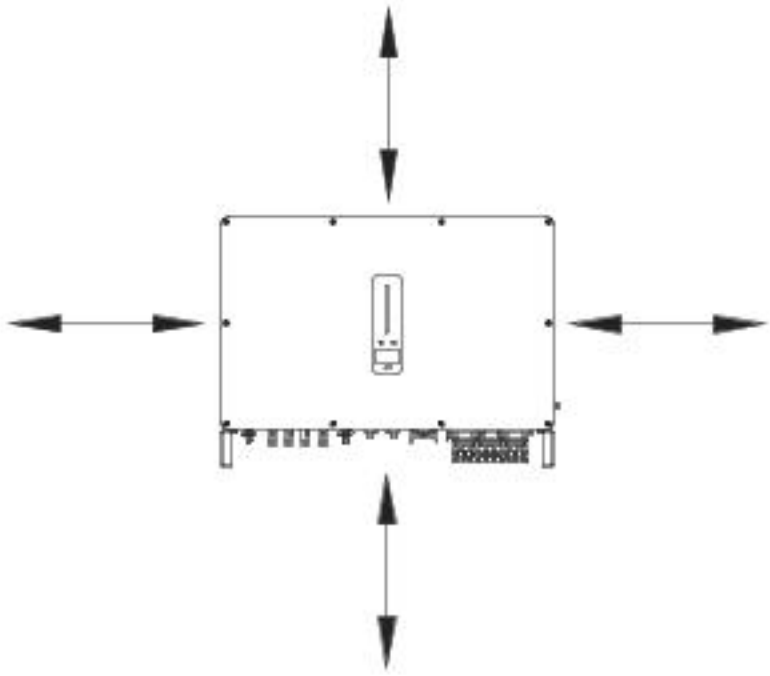
Figure 4-1 Recommended installation location

WARNING

Do not put flammable and explosive articles around the inverter.

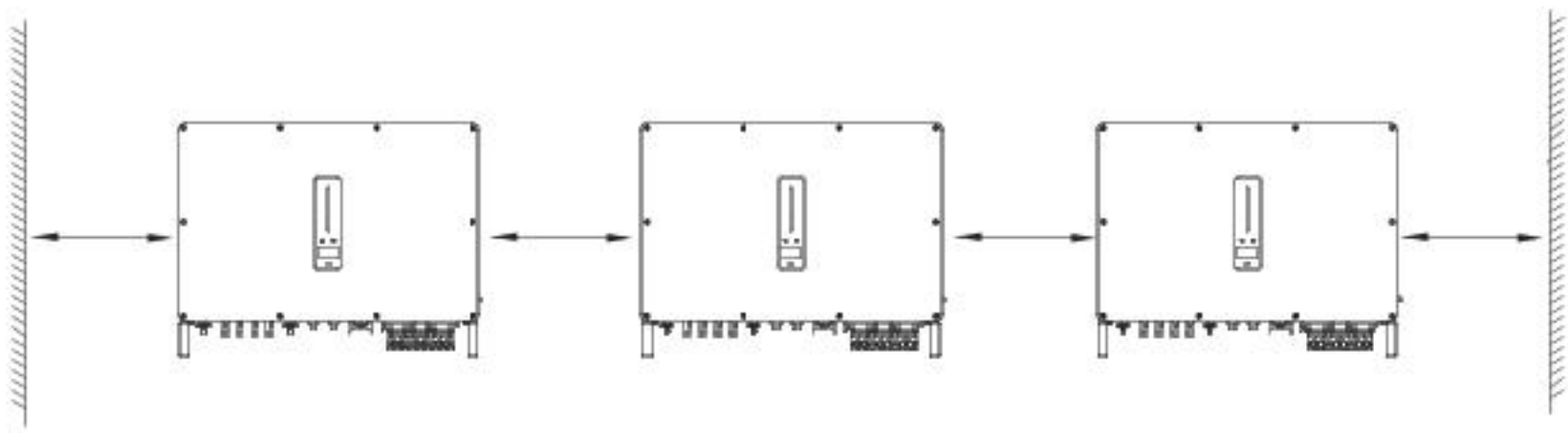
4.1.2 Installation Spacing

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at least 600 mm.

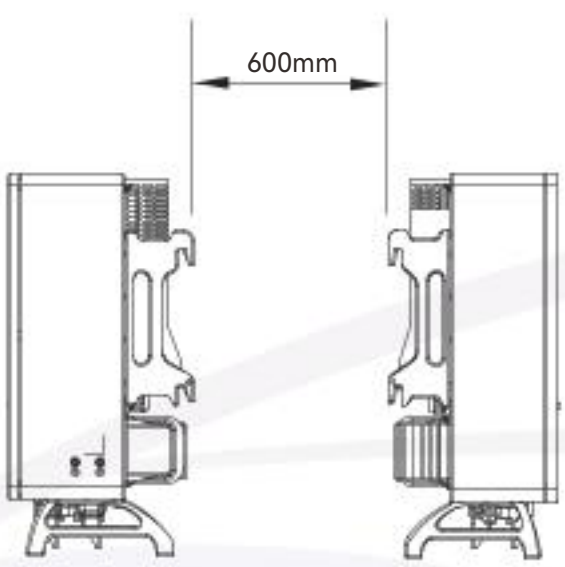


Figure 4-2C Spacing for Back to Back Installation

4.1.3 Installation Angle

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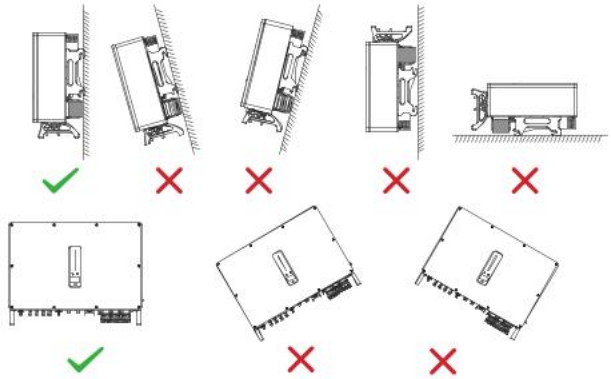


Figure 4-3 Permitted and prohibited mounting positions

4.2 Mounting the Inverter

4.2.1 Bracket Installation

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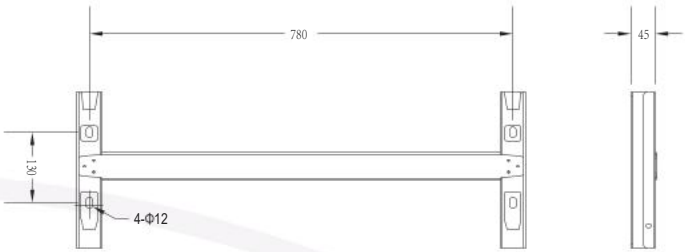


Figure 4-4 Dimensions of bracket

①A A A A A A A A A A A A A A

drilling holes on the mounting bracket. Drill the holes by using a hammer drill.

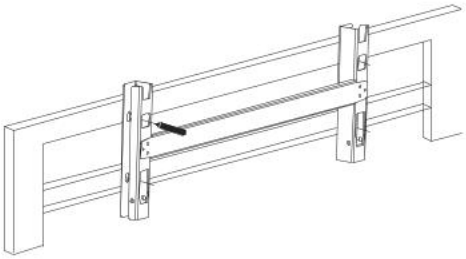


Figure 4-5 Marking hole position using installation bracket

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” AB A A .

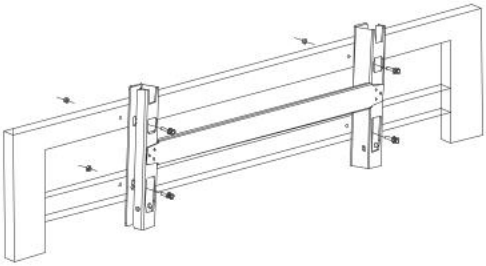
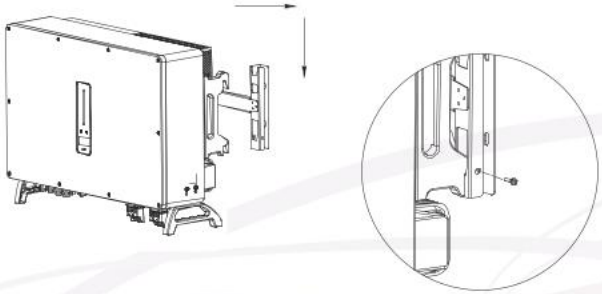


Figure 4-6 Fixing the bracket

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4.2.3 External Ground Connection

d A A A A A A AnA A A A A A A A A protection. Please always remember wiring the PE wire before wiring other wires.

DANGER

Do not connect the N-wire as a protective ground wire to the inverter casing. Otherwise, it may cause electric shock.

NOTICE

Reliable grounding is good for resisting surge voltage shock and improving EMI performance.
Inverters must be well-grounded.
For a system with only one inverter, just ground the PE cable.
For a multi-inverter system, all inverters PE wire need to be connected to the same grounding copper bar to ensure equipotential bonding.

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①A A A A A A A A A A A A A A

② Fix the grounding terminal to the PE wire with a proper tool and lock the grounding ter-
A A A A A A A A A A A A A

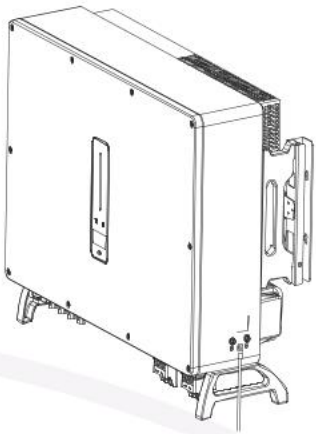


Figure 4-8 Grounding terminal connection

5 Electrical Connection

DANGER	A high voltage in the conductive part of the inverter may cause an electric shock. When installing the inverter, make sure that the AC and DC sides of the inverter are completely de-energized.
DANGER	Do not connect the N-wire as a protective ground wire to the inverter casing. Otherwise, it may cause electric shock.
WARNING	Do not ground the positive or negative pole of the PV string, otherwise it will cause serious damage to the inverter.
WARNING	The inverter is not suitable for functional grounded PV arrays as mentioned in the AS/NZS 5033 standard.
WARNING	Static may cause damage to the electronic components of the inverter. Anti- static measures should be taken during installation and maintenance.
NOTICE	Do not use other brands or other types of terminals other than the terminals in the accessory package. Solinteg has the right to refuse all damages caused by the mixed-use of terminals.
NOTICE	Moisture and dust can damage the inverter, ensure the cable gland is securely tightened during installation. The warranty claim will be invalidated if the inverter is damaged as a result of a poorly connected cable connector.

5.1 Electrical Wiring Diagram

A A A Ä 3 A : A A A A A A A - A A A A A A A A A A A A A A A A local standards.

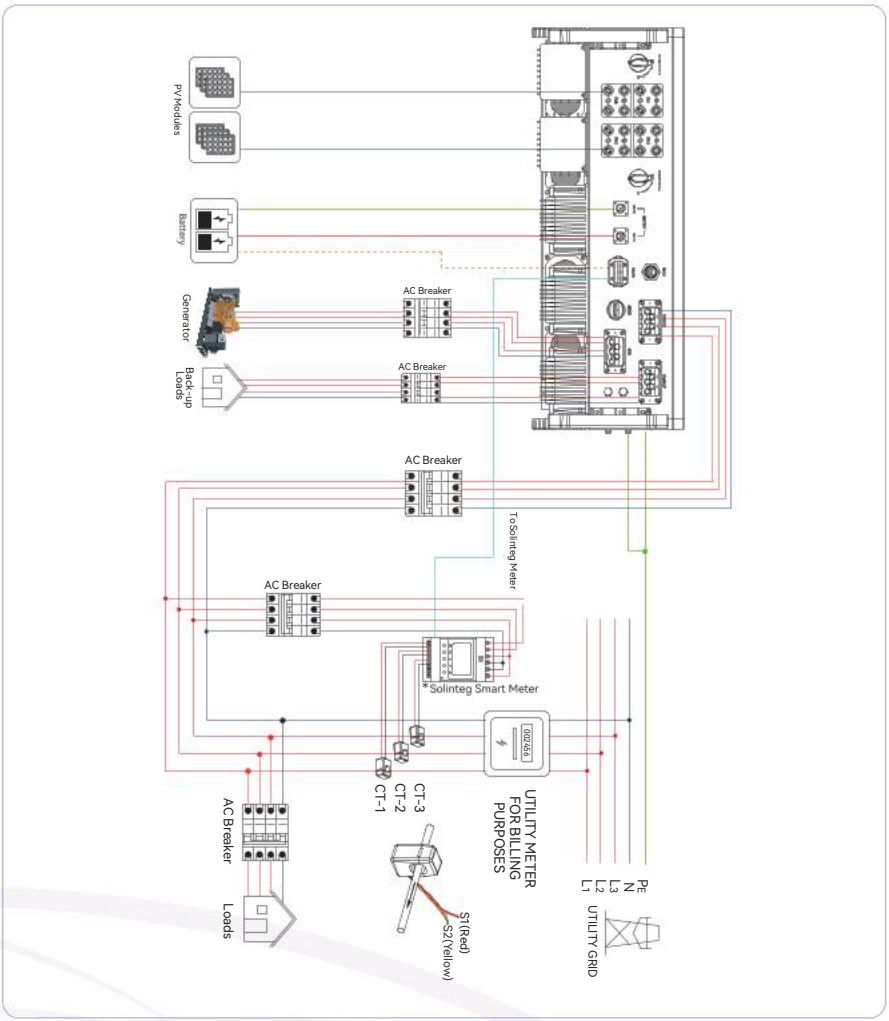


Figure 5-1 Electrical wiring diagram

*Solinteg Smart Meter consists of ACR10R and RMM. Define the cable connections for the meter based on the actual meter model and refer to Section 5.4. This cable diagram is for reference only.

A A A

This diagram is an example without special requirement on electrical wiring connection. Neutral line of AC supply can be isolated or switched.

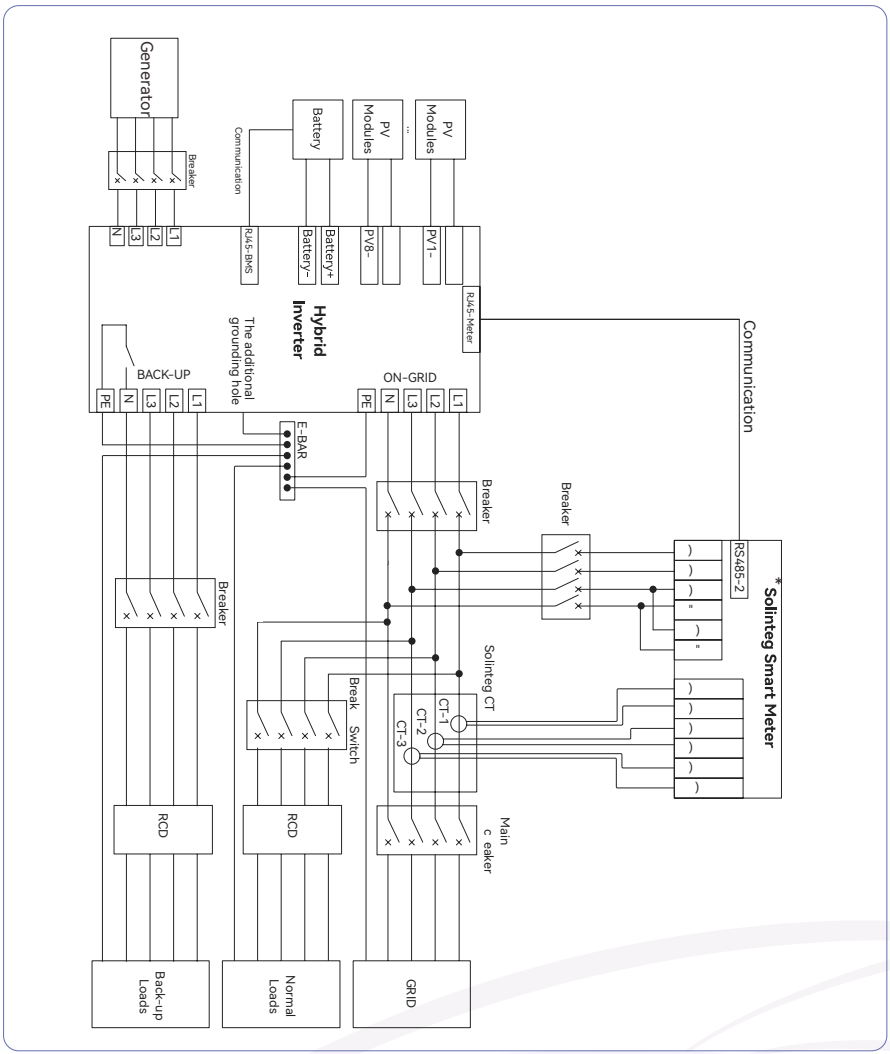


Figure 5-2 Standard wiring diagram

*Solinteg Smart Meter consists of ACR10R and RMM. Define the cable connections for the meter based on the actual meter model and refer to Section 5.4. This cable diagram is for reference only.

This diagram is an example for Australia and New Zealand. Neutral line of AC supply must A A A A A A A A A Av ǵ A A Ac Bd: A A A A A A A AB " A- Ac Bd: A - tion will not work.

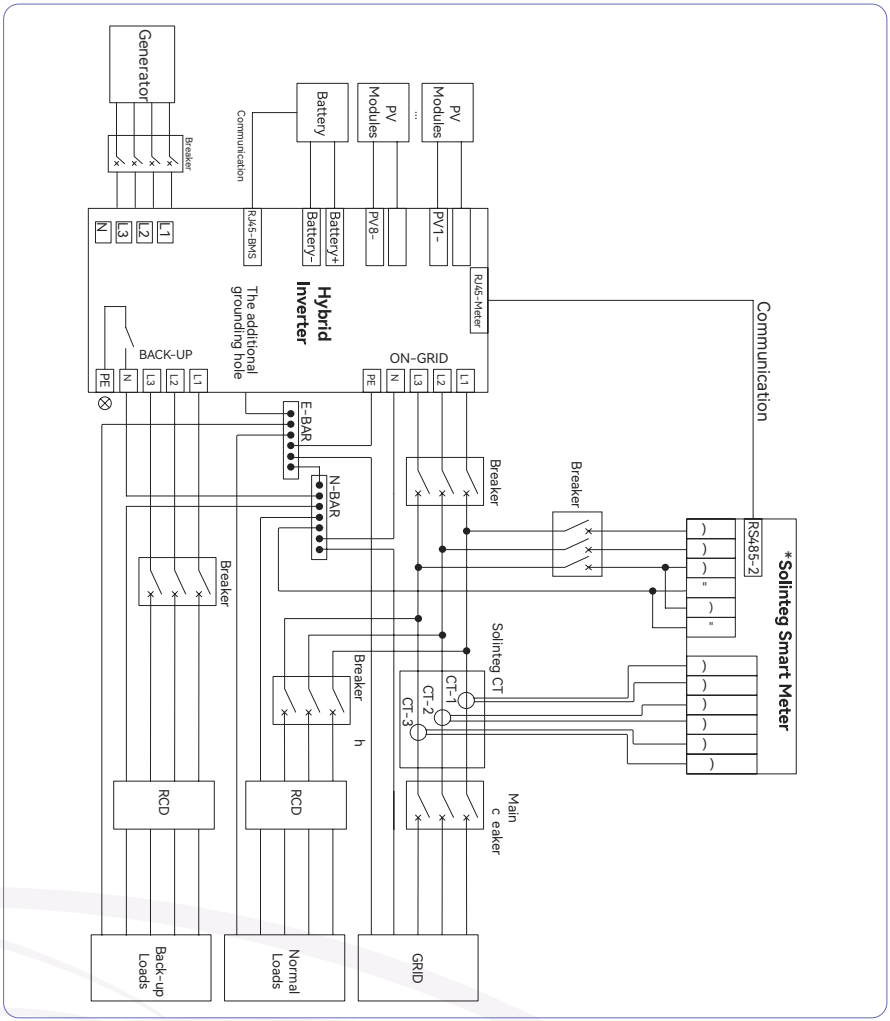


Figure 5-3 Australia wiring diagram

*Solinteg Smart Meter consists of ACR10R and RMM. Define the cable connections for the meter based on the actual meter model and refer to Section 5.4. This cable diagram is for reference only.

5.2 AC Connection

5.2.1 AC Side Requirements

NOTICE

① An independent AC breaker is required in both on-grid and back-up output side, and any loads cannot be connected with inverter directly.

② Before making the connection of AC cable, please confirm all DC & AC power source are disconnected from the inverter.

③ The Solinteg MHT 25~50K series three-phase high voltage hybrid inverter applies to the three-phase power grid with a voltage of 230/400V and a frequency of 50/60Hz.

④ Connect the inverter to the grid only after getting an approval from the local electric power company.

A three-phase AC breaker needs to be installed on the AC side of the MHT 25~50K. To ensure that the MHT 25~50K can safely disconnect itself from the power grid when an excep-

A A AA A A A AA A A A

A A A A A A A 3 A : AdA

The allowable AC cable of wire diameter and cross-sectional area for Solinteg MHT 25~50K

A A A A A AA

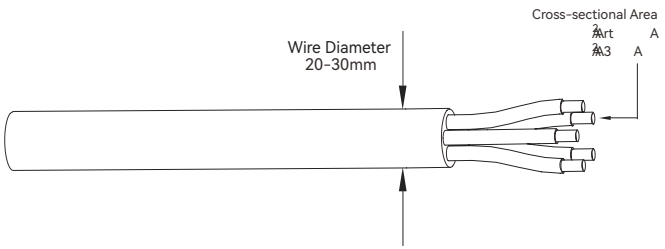


Figure 5-4

NOTICE

Determine whether an AC circuit breaker with greater overcurrent capacity is required based on actual conditions.

Residual Current Monitoring Device

A A A A A A A A A A A
immediately from the mains once a fault current with a value exceeding the limit is detected.
3 AA A A A A A dj A ABA A A A –
A A A A A A A A A A dj A A A A A
also be used according to local standard. The recommended residual current is as follows.

Inverter	Recommended residual current
MHT-25K-100	300mA
MHT-30K-100	
MHT-36K-100	360mA
MHT-40K-100	400mA
MHT-40K-100-P	
MHT-50K-100	500mA
MHT-50K-100-P	

5.2.2 Installing the AC Connector

DANGER

High voltage may be present in inverter!
Ensure all cables are voltage-free before electrical connection.
Do not connect the AC circuit breaker until all inverter electrical connections are completed.

ABdA A A A A A A A A A A

① A A
The recommended outer diameter of the cable is 20-24 mm and 24.5~30mm.
6A A A A A A A A A A A A A

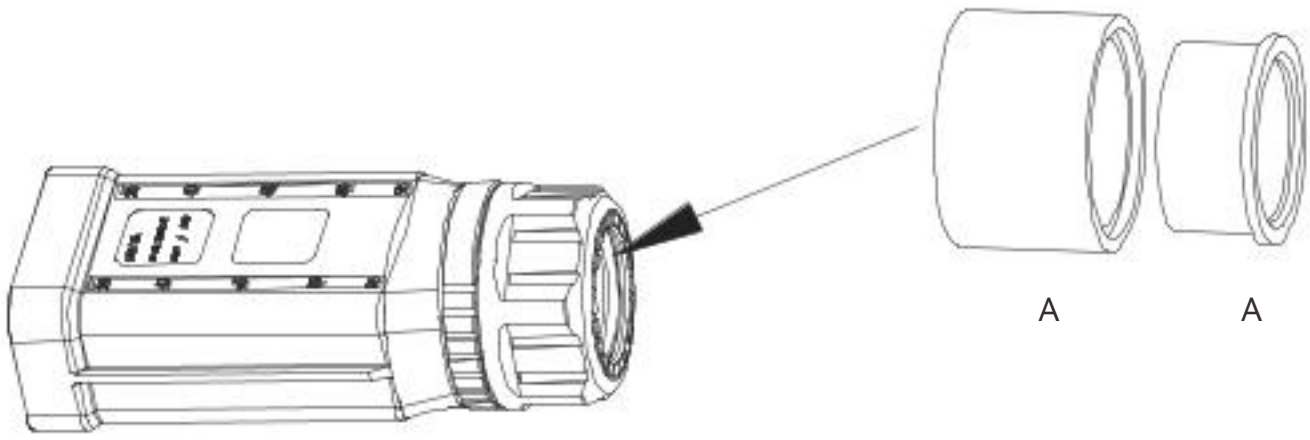


Figure 5-5

② B A A A A A A A A A A A A A A
BdA A A A A A A A A A A) A nAA' A A A



Figure 5-6

③ A A A A A A A A A A A A A A A A
A A A A A A A A A A A A

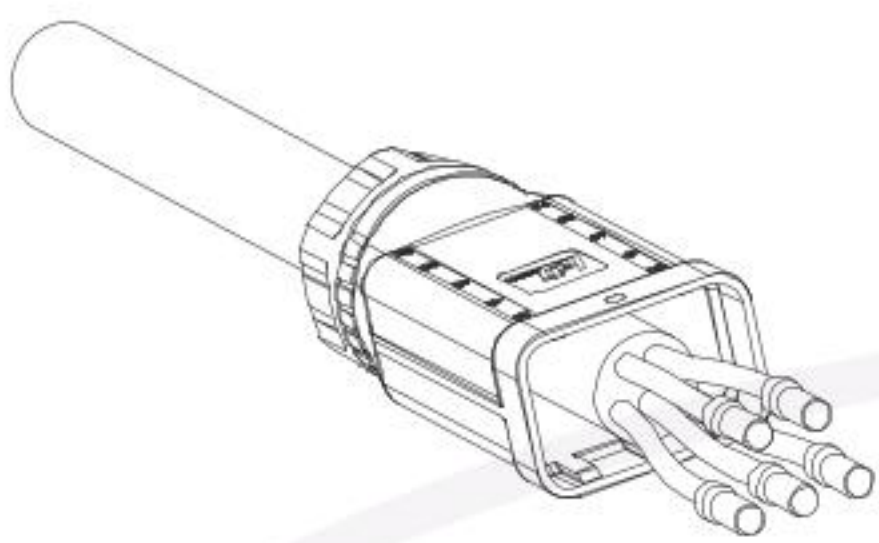


Figure 5-7

④ 6 A A A A A A A A A A A A A -
A A A A A A A A A A A A A A A A A "

WARNING

The cord end terminals must be locked tightly, and make sure it won't be loose after a long period of use.

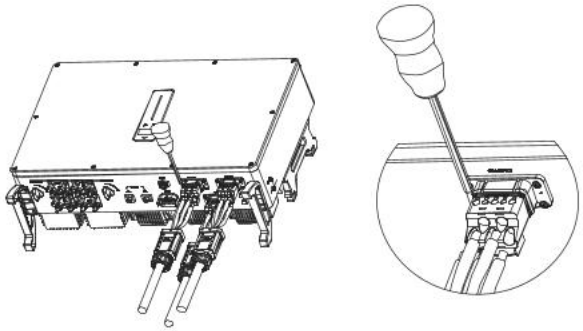


Figure 5-8A

⑤A6 A A A A A A A A A A A A A A A A A A A A A " A A A A A A A A A A A

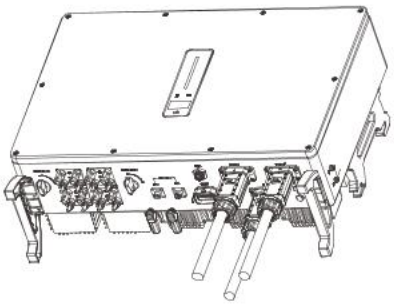


Figure 5-8B

▼ 5.2.3 Removal the AC Connector

①A8 A A A A A A A A A AA A A A A A A - tate the nut in the opposite direction with the other hand.

② AA A A A A A A A A A A A A A A A A A back to complete the removal.

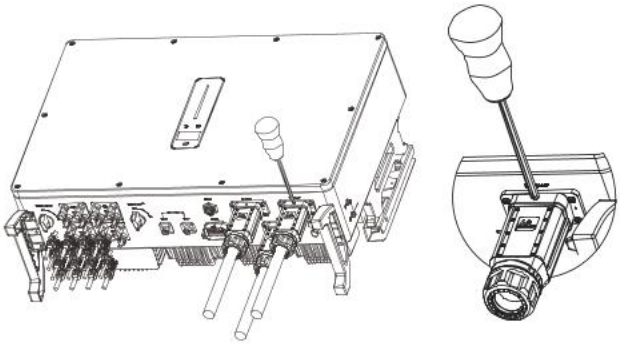


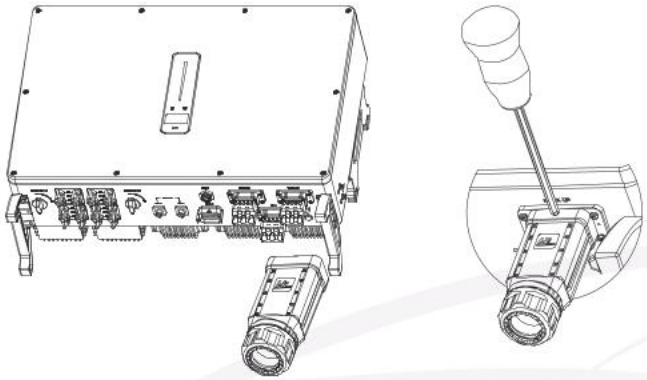
Figure 5-9

CAUTION

Please distinguish the on-grid and back-up port, and don't mix up the on-grid port and back-up port when making the connection.

▼ 5.2.4 Protection measures against live terminals for generator input terminal

In Australia, if you do not use the generator input port, please do not connect the AC cable and plug the multi-function connection shell into the generator input port. Use a screw-driver to lock the multi-function connector.



5.3 Monitoring Device Installation

Á' 3 : A A A A A 6t6A) B" A A rvA
A A 6t6A) B" A A rvA A A Ad~ " A A A A A A ABA A
A A A A A A A A A A A A

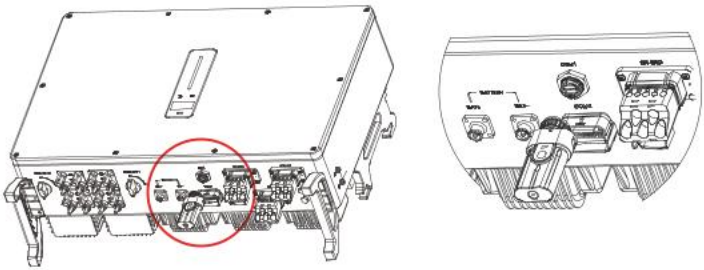


Figure 5-10 Monitoring device installation

NOTE

Refer to "8 Monitoring" for more information.

5.4 Meter and CT Connection

A A A A Ad A A A A A A) A A A A
house loads and the power grid.

The Meter can be installed in the AC combiner box or other places that are unable to be A A A Ad A A A A A A A A A A A A
Ad A A A A A A A A A A A A A A A
need to follow the wiring diagram in the Meter to connect CT.

Compatible Energy Meter	
Model	RMM-MA,RMM-5A
Manufacturer	Wuxi Solinteg Power Co.,Ltd.

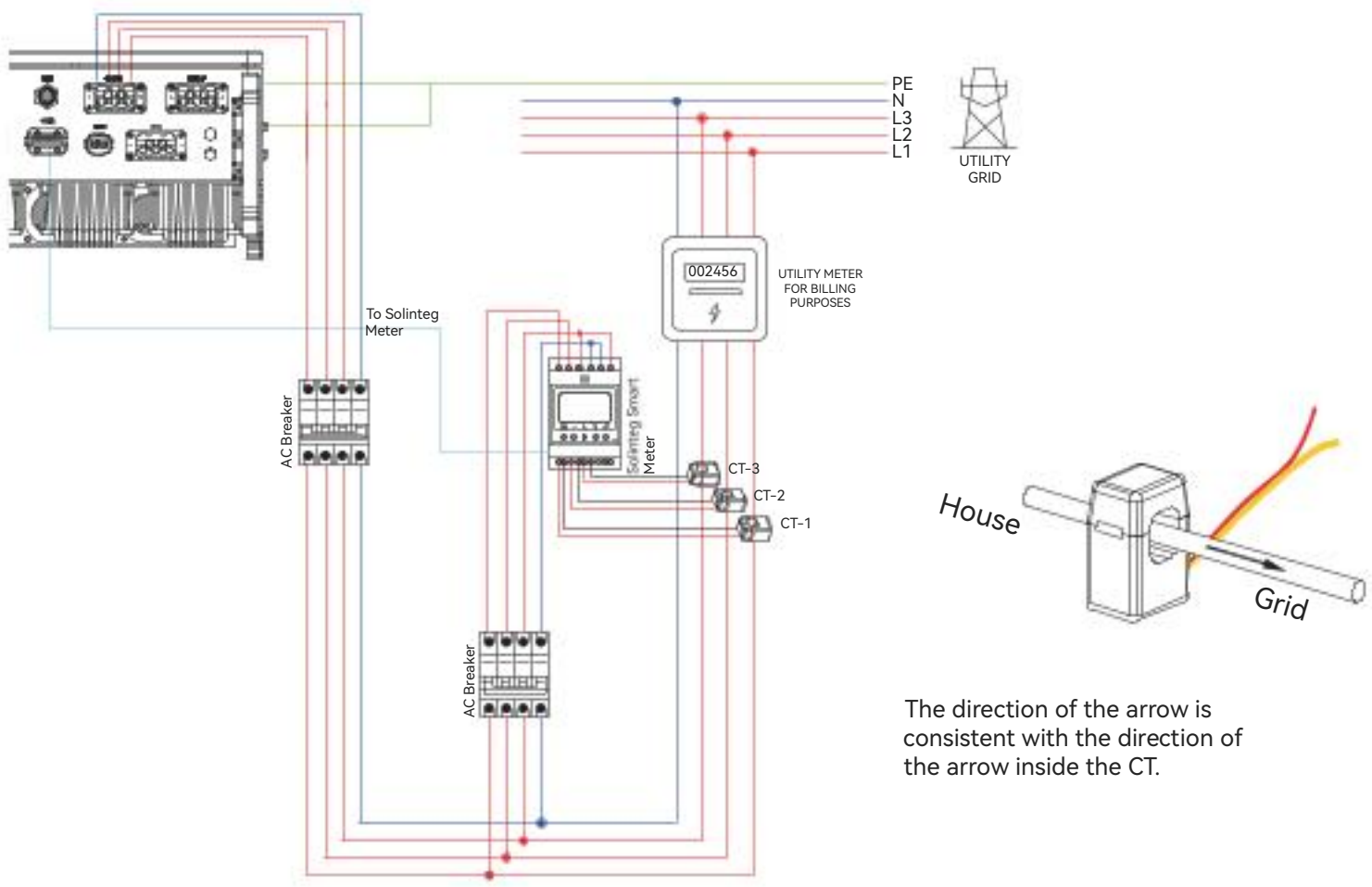


Figure 5-11

NOTICE

CT installation direction should strictly follow the instruction in the user manual, otherwise, the inverter may not be working normally.
The CT has to be corresponding with the port in the meter, and the connection between CT and Meter needs to be reliable, otherwise, the CT measurement accuracy may be affected.

NOTE

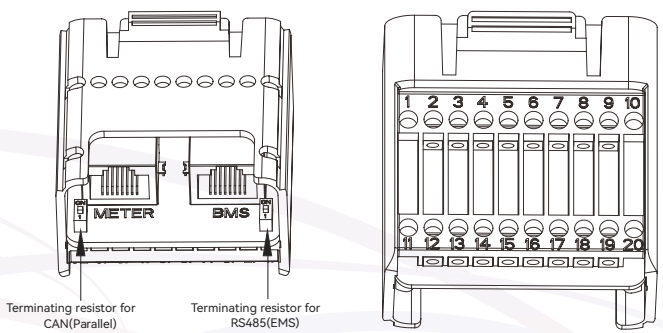
Please choose the appropriate CT size according to your needs.

” A A A A A A A

No.	Definition		Function
	ACR10R	RMM	
1	L1		L1/L2/L3/N connect to grid to detect power grid voltage
2	L2		
3	L3		
4	N		
5	L1-S1		To detect the CT current and direction
6	L1-S2		
7	L2-S1		
8	L2-S2		
9	L3-S1		
10	L3-S2		
11	/	PE	Ground connection
12	L	/	Power supplied from grid
13	N	/	
RS485	/	Reserve	
	RS485	RS485-2	Communicate with hybrid inverter
ANT	/	Reserve	
LAN	/	Reserve	
Type-C	/	Type-C	Specified Debug Interface. Do not use it by non-professionals

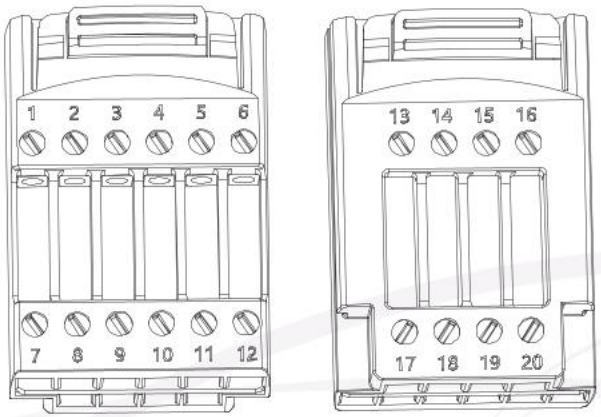
5.5 Communication Connection

All communication ports are in the multifunction communication Port at the bottom of A A A” A AdB" A Ac” A An” A AAj nj A Aj ~ A A AB~ A A BAB~ A



rt A BAd~ ” A

Pin	Definition	Function
METER（RJ45-1）	RS 485	Communicate with Meter
BMS（RJ45-1）	CAN	Communicate with BMS
1	COM	DO-1 (Multifunction Relay)
2	NO (Normally Open)	
3	/	Reserved
4	/	Reserved
5	DRM4/8	DRED For Australia and New Zealand RCR For Germany and some other European countries
6	DRM3/7	
7	DRM2/6	
8	DRM1/5	
15	COM D/0	
16	REF D/0	
11	Emergency stop +	Emergency stop
12	Emergency stop -	
13	485 B1	EMS
14	485 A1	
17	CANL_P	CAN for parallel connection of inverters
18	CANH_P	
19	/	Reserved
20	/	Reserved

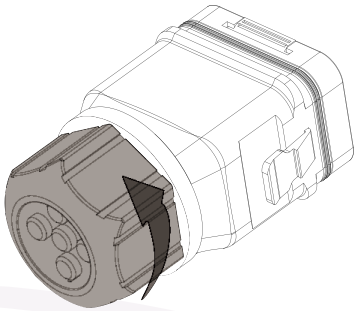


rt A cAd~ ” A

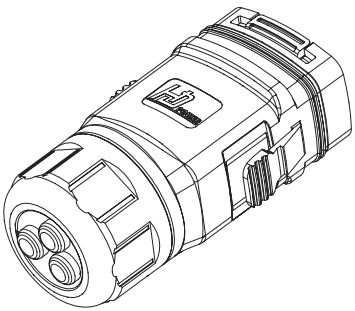
Pin	Definition	Function
1-6	/	Reserved
7	COM	DO-2 (Multifunction Relay)
8	NO	
9-10	/	Reserved
11	COM	DO-3 (Multifunction Relay)
12	NC	
13-16	/	Reserved
17	4-20mA_OUT	4-20mA analog output
18	GND	
19	GND	0-10V analog output
20	0-10V_OUT	

▼ 5.5.1 Assembling the Multi-com Connector

① Unscrew the swivel nut from the connector.



COM2



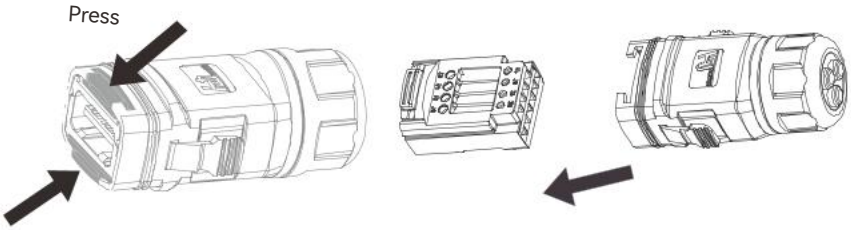
COM3

Figure 5-13

② Take out the terminal block.



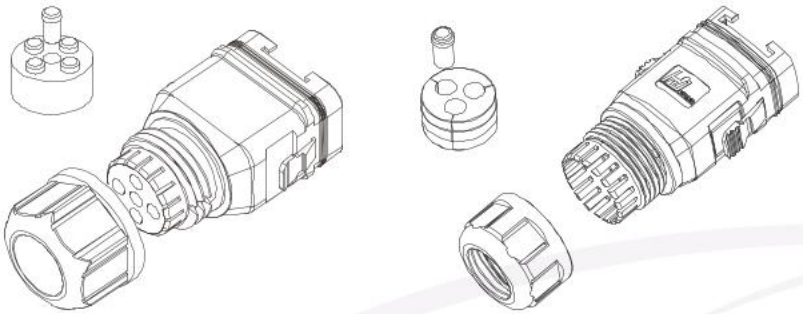
COM2



COM3

Figure 5-14

③ Remove the seal and lead the cable through the cable gland.



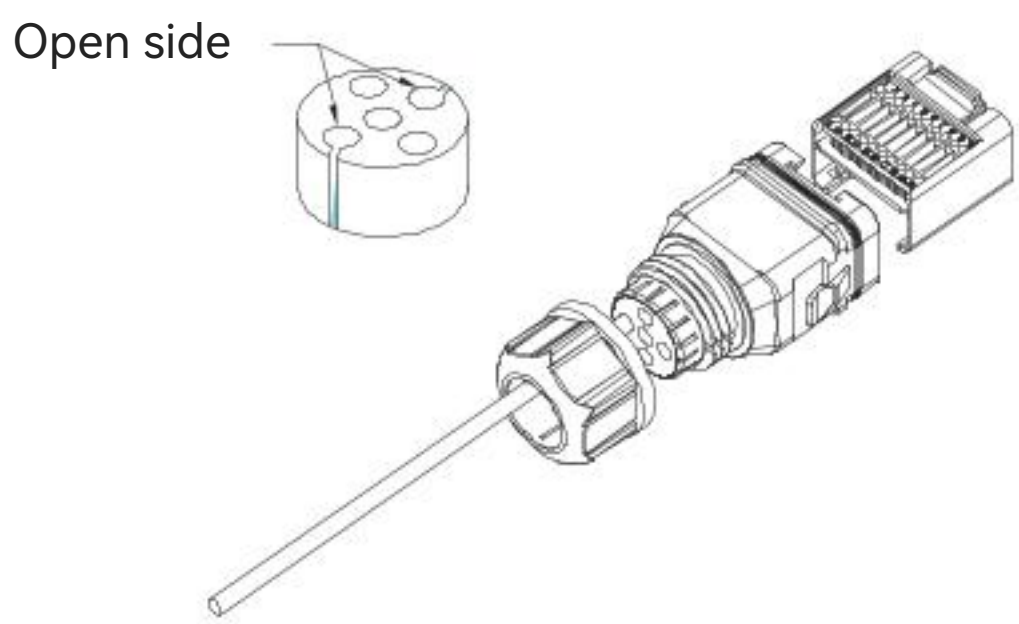
COM2 COM3

Figure 5-15

5.5.2 Connect the Meter and BMS Communication Cables

> **NOTE**
> The communication between meter/BMS and inverter is RJ45 interface cable.

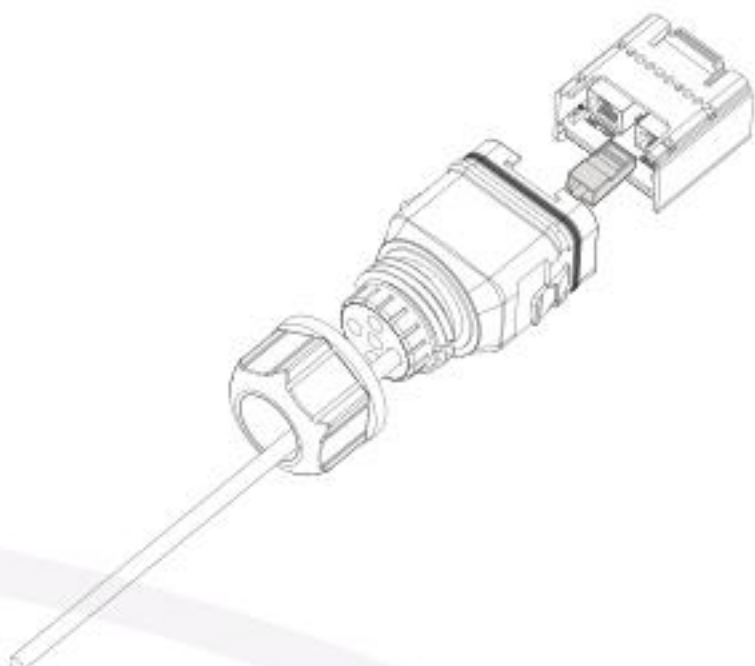
①A A A* A A A A A A A A A A A AA A A
open side of the rubber gasket.



COM2

Figure 5-16

②A6 A A A A A* A A A A* A A A A



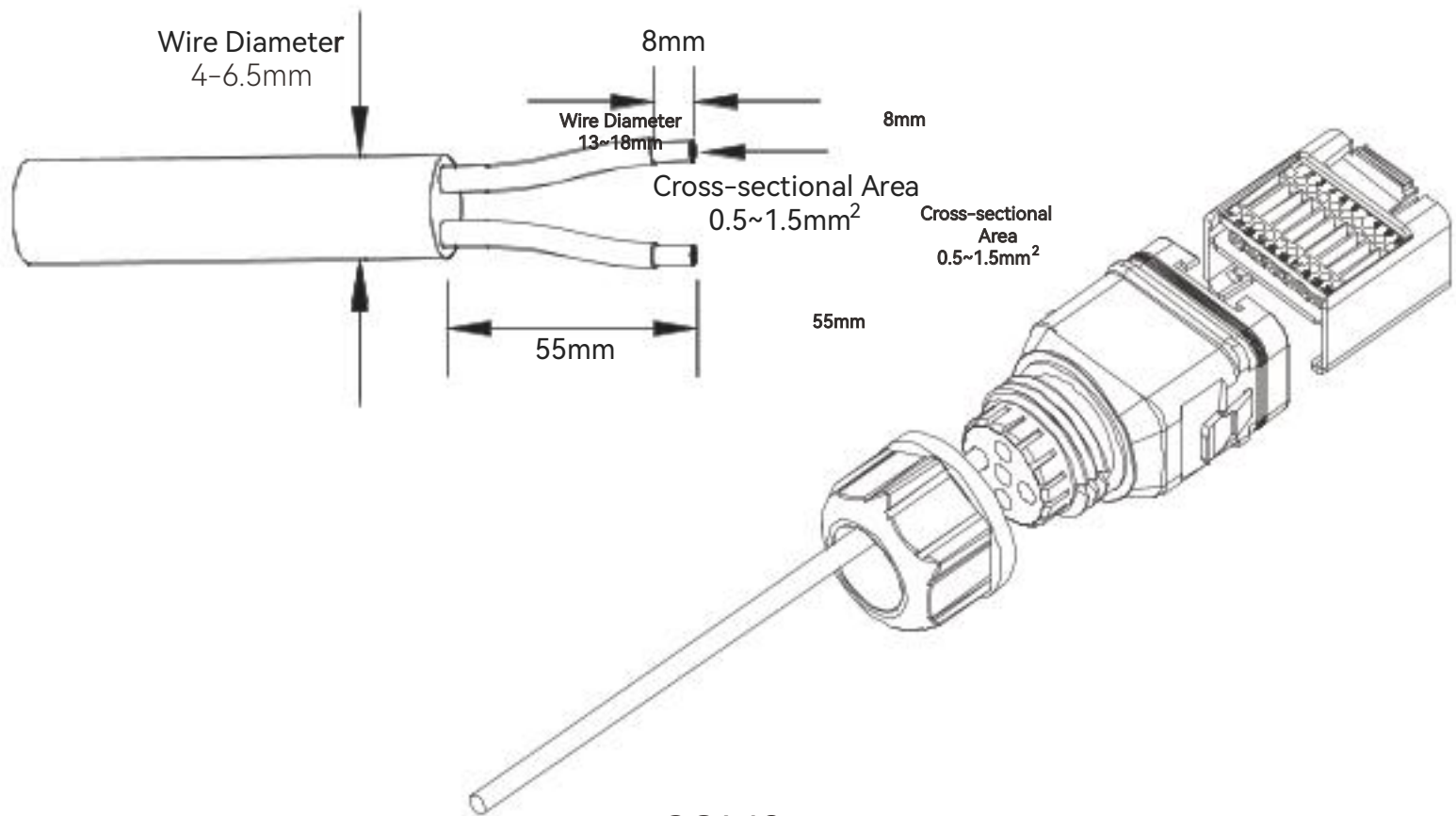
COM2

Figure 5-17

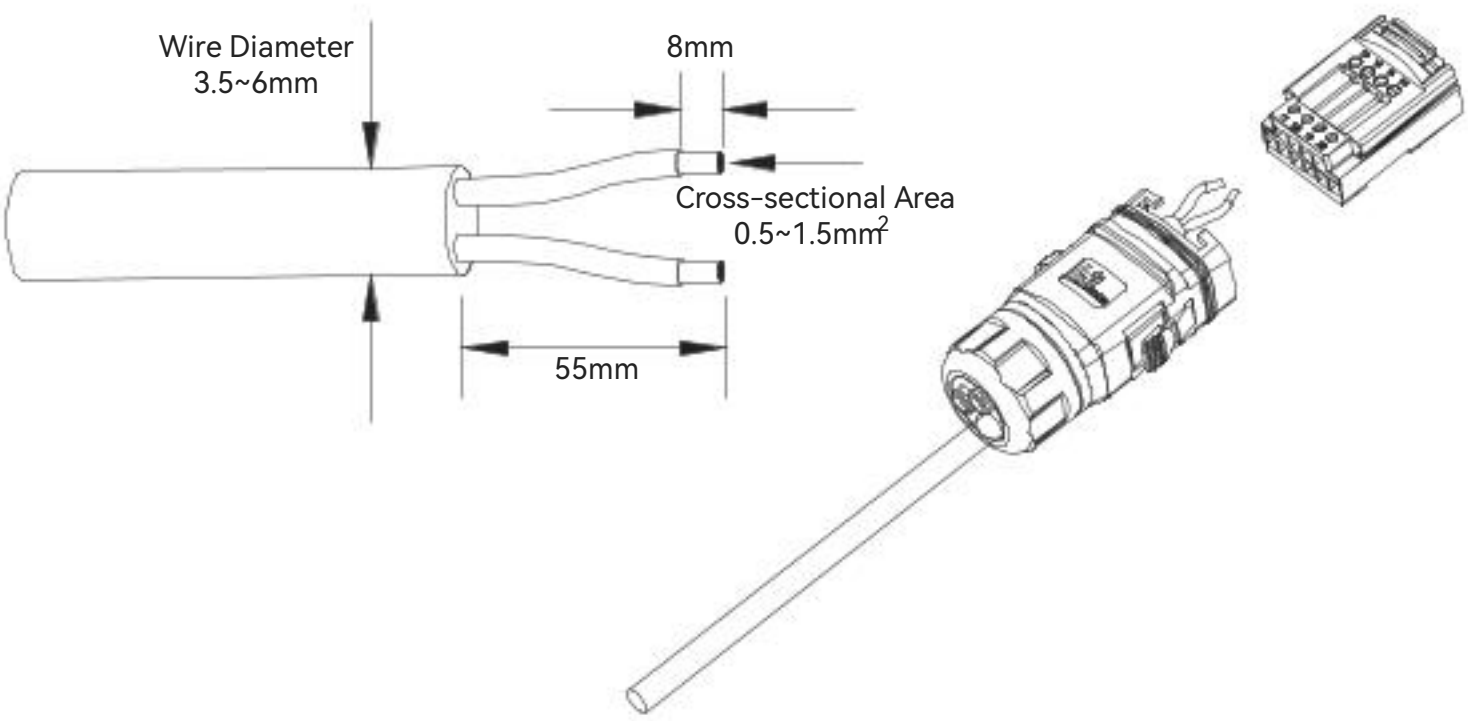
③A6 A A A A A A A A A A A A A c" A dB" A

▼ 5.5.3 Connect Other Cables

① Thread the cable of appropriate length through the swivel nut and the housing. Remove
A A A A A A A



COM2



COM3

Figure 5-18

②A~ A A AA A A A A A A ABdA A
A A A A A A A6 A A A A A A A A
step.

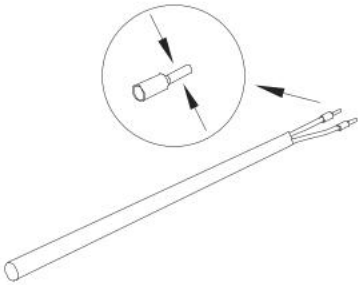


Figure 5-19

③ Fix all the wires to the terminal plug according to the assignment and tighten to a
A A " A AA

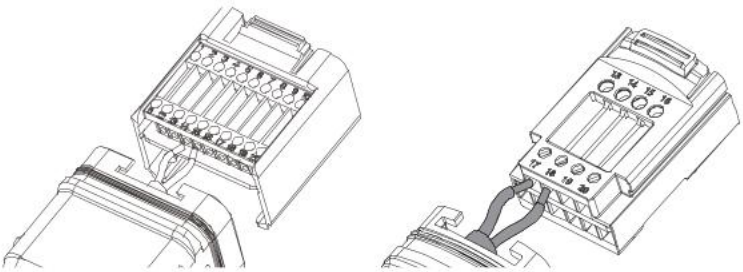


Figure 5-20

④A A A A A A A A A A A A
6 A A A A A A A A A A A A A A A A

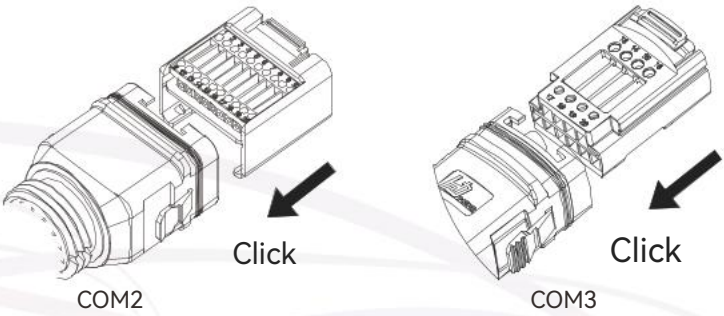


Figure 5-21

⑤ Fasten the swivel nut.

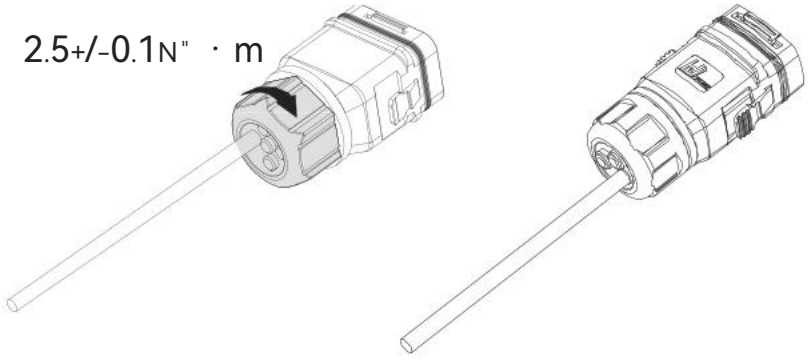


Figure 5-22

5.5.4 Installing the COM Connector

① Remove the waterproof lid from the COM terminal.

②A6 A Ad~ ” A A Ad~ ” A A A A A A A A A A A A A an audible click.

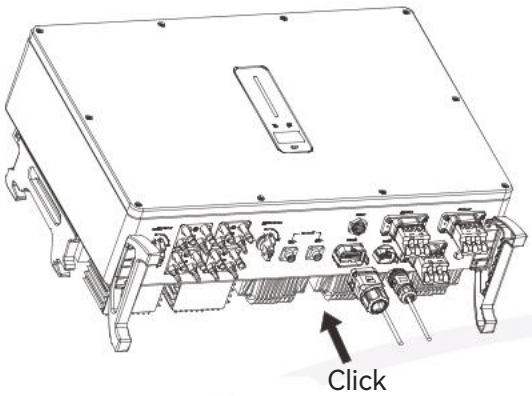


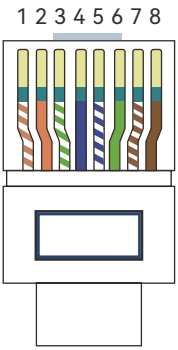
Figure 5-23

5.5.5 Meter and BMS Communication

NOTE

Before purchasing the battery, you need to make sure the battery you selected is in the battery approval list of Solinteg, otherwise, the system may not work properly. Please contact your installer or Solinteg service team for confirmation if you're not sure about it.

* A A A A A A A A



No.	Color	Meter Side	c A
1	Orange & White	/	RS485_A3
2	Orange	/	RS485_B3
3	Green & White	RS485_B2	/
4	Blue	/	CANH_B
5	Blue & White	/	CANL_B
6	Green	RS485_A2	/
7	Brown & White	RS485_B2	/
8	Brown	RS485_A2	/

rt A A* A A A A A

5.5.6 EMS Communication

An EMS communication cable needs to be connected when to control the operation of a

A A A An" A A A An" A A A A

5.5.7 DRED

j "A A Ad A A A A A A A A

DRM

j nj Aj A An Aj A A A A A AB A A' A

A A A A A A A A A A Aj nj A A

A A A A A A A A A A A A A A A -

AB " A A A A A AA A A A A AAA nj

j nj A A A A A A A

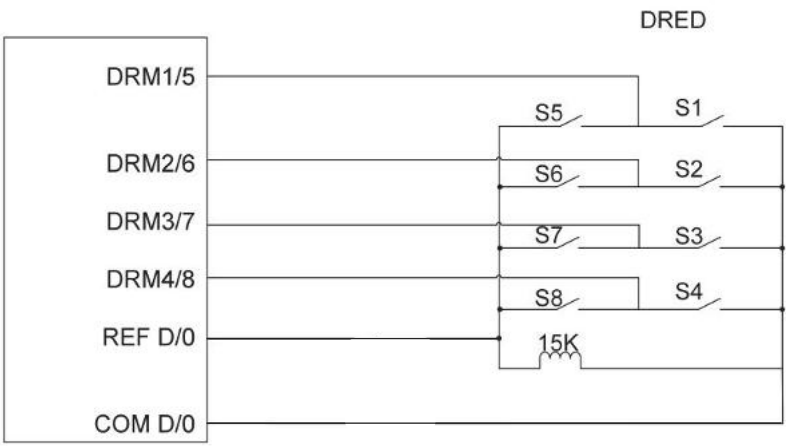


Figure 5-25

j nj A A A A A A A

Mode	Function
DRM 0	Operate the disconnection device
DRM 1	Do not consume power
DRM 2	Do not consume at more than 50% of rated power
DRM 3	Do not consume at more than 75% of rated power and source reactive power if capable
DRM 4	Increase power consumption (subject to constraints from other active DRMs)
DRM 5	Do not generate power
DRM 6	Do not generate at more than 50% of rated power
DRM 7	Do not generate at more than 75% of rated power and sink reactive power if capable.
DRM 8	Increase power generation (subject to constraints from other active DRMs
Priority	DRM1 > DRM2 > DRM3 > DRM4
	DRM5 > DRM6 > DRM7 > DRM8

NOTE

There is a resistor between15(COM D/0) and 16(REF D/0), do not move the resistor while wiring.

RCR

d A Ad A A A A A A Atv A A A An -
A A A A A A A A A A A A d A
device for the customer.
6 Atv A A An A A A A A A A A A A A A
A A A A A A A A A A A A A A A A
power grid dispatching signal.
d A A A A A A A

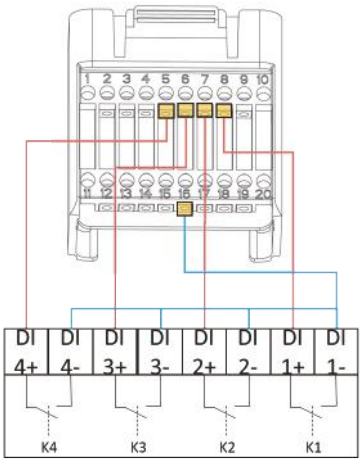


Figure 5-26

d A A A A A A A

Switch mode (External RCR device)	Feed-in output power (in % of the Rated AC output power)
K1 turn on	100%
K2 turn on	60%
K3 turn on	30%
K4 turn on	0%
RCR priority: K1<K2<K3<K4	

5.5.8 Multifunction Relay

A A A A A A A A A A A A A A A A A
A A A A A A A A A A A A A A A A A A A
A A A A A

NOTICE

Maximum voltage and current at DO dry contact port: 30VDC 1A. The signal of the external circuit of the DO dry contact is weak current.

NOTE

For more installation and setup information, please contact Solinteg.

SG Ready heat pump control

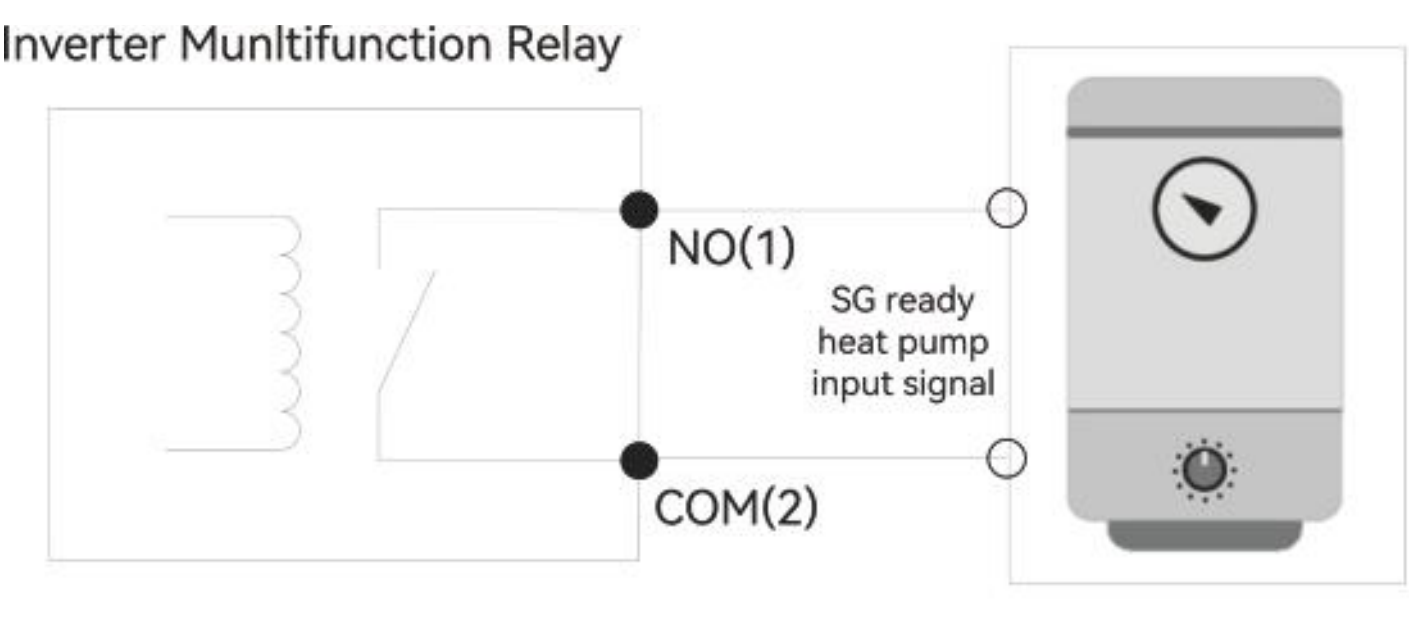


Figure 5-26 SG Ready heat pump controll connection diagram

A3 A6 A A A A A rv A A A A A A A
which can realize heat pump integrated energy system management.
” A A A A A A A A A A A rvA A A A
A A A A A A A A A A A A A A A -
A A A A A A A A A A A A A A

Mode	State	SG ready recommendation	Validity	DO-1 state
1	OFF	HP switched off	/	/
2	Normal	HP operates in normal energy efficient mode.	Yes	0
3	Recommended ON	HP is operating in an enhanced heating mode.	Yes	1
4	Forced ON	HP has to switch on.	/	/

NOTICE

Solinteg Hybrid Inverter only supports Mode 2 and Mode 3 of SG ready. Inverter switches between mode 2 and mode 3.

Load Management

3 A A A A A A A A A A A A A A A A A A

Work mode		Application description
Disable		Disable means not using the load management function.
Smart Mode	Feed-in Power Control	Set the feed-in power threshold for triggering the heat pump entering Mode3 or turn on smart load. When the meter detects the feed-in power equal to or greater than the set value, inverter relay will close and heat pump will enter heating mode or smart loads start working. This control mode is suggested to use in the system without power export limitation.
	Battery SOC Control	Set the battery SOC threshold for triggering the heat pump entering Mode3 or turn on smart load. When inverter detects the battery SOC value equal to or greater than the set value, inverter relay will close and heat pump will enter heating mode or smart loads start working. This control mode is suggested to use in the system with power export limitation.
	Time Control	Set the operation periods for heat pump mode three or smart load according to user habits or preferences. Up to 3 periods can be set. When this mode is enabled, a higher priority than other modes within the period. Outside the period, the heat pump or smart load operates according to the parameters set by the smart mode. If this mode is not enabled or no period is set, it operates according to the parameters set by the smart mode throughout the day.
Manual Mode		Manually control the heat pump entering Mode3 or start the smart load.

A A A A A A A A A A A A A A A A

Generator Control

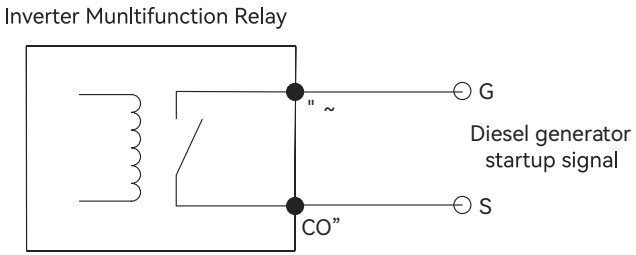
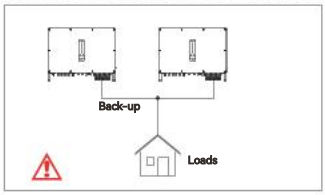


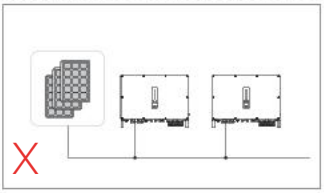
Figure 5-26 Generator Control connection diagram

A Arvn" A A A A A A A Arv A A A A A A A

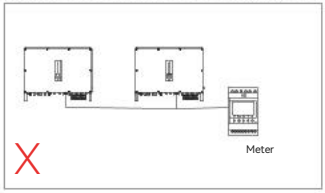
5.5.9 Parallel System



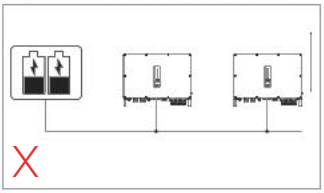
For the general version, back-up cannot connect in parallel. For advanced applications, please contact our after-sales department.



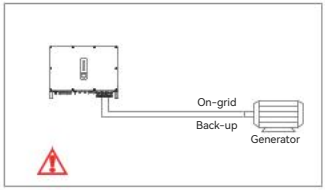
Single PV string cannot connect to multiple inverters.



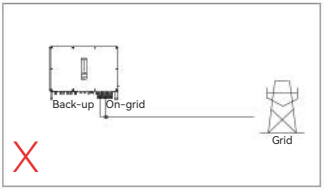
One meter cannot be connected to multiple inverters. Different CTs cannot connect to the same line cable.



One battery bank cannot be connected to multiple inverters.



The on-grid and back-up side cannot be connected to and generator directly.
For advanced applications, please contact our after-sales department.



The back-up side cannot be connected on-grid side or grid.

Figure 5-27

NOTE

For more installation and setup information about parallel system, please contact Solinteg.

NOTICE

Testing to AS/NZS 4777.2:2020 for multiple inverter combinations has not been conducted.
Multiple inverter combinations should not be used.

5.5.10 Emergency stop

Æ 3 A : A A A A A ÆEmergencyA A A A
you can use this function by connecting an external switch into the Emergency stop interface if it requires in the installation place. The external switch doesn't include in our acces-
A A

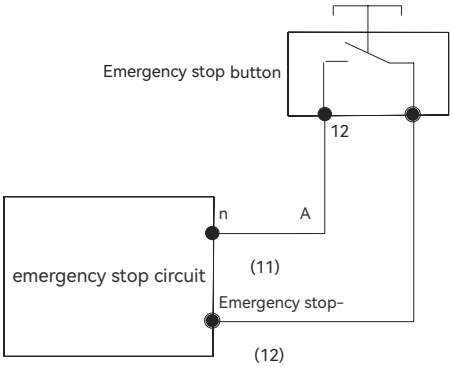


Figure 5-28 Emergency stop connection diagram

5.6 PV String Connection

DANGER

High voltage may be present in the inverter!
Ensure all cables are voltage-free before performing electrical operations.
Do not connect the DC switch and AC circuit breaker before finishing electrical connection.

NOTICE

For best practice, ensure PV modules of the same model and specifications are connected in each string.

WARNING

PV Max. Input voltage is 850V, otherwise inverter will be waiting.

5.6.1 PV Side Requirements

System Layout of Units with external DC Switch

①A A A A A A A A A A A A A A A dA A A
the DC side. The DC switch must be able to safely disconnect the open-circuit voltage of
A A A AA A A A A6 A A dA A A A A A A
A dA A A A
② A dA A A A A A AB A A AB " A6ndA A A
Australia and New Zealand market. The Max. current of the DC switch matching with MHT-
: A A A A A A BA A A A A A

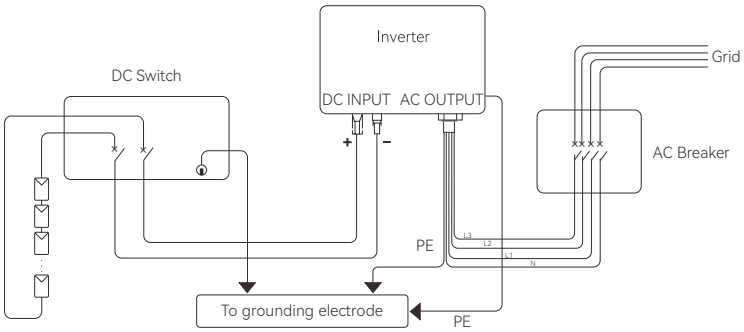


Figure 5-29

NOTICE

For MHT-40K-100-P and MHT-50K-100-P inverter, it requires a fuse (30A) should be installed in each PV string in the external PV combiner box.

Select the appropriate photovoltaic cable

Cable requirements		Cable stripping length
Outside diameter	Conductor core section	
5.9-8.8 mm	4 mm² (12AWG)	7 mm

5.6.2 Assembling the PV Connector

WARNING

Before assembling the DC connector, make sure that the cable polarity is correct.

①A A A Ą dA A A A AA

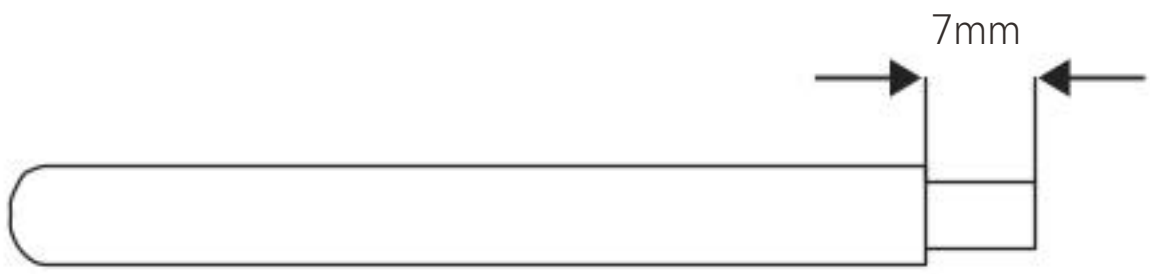


Figure 5-30

②Ą A A A A A A

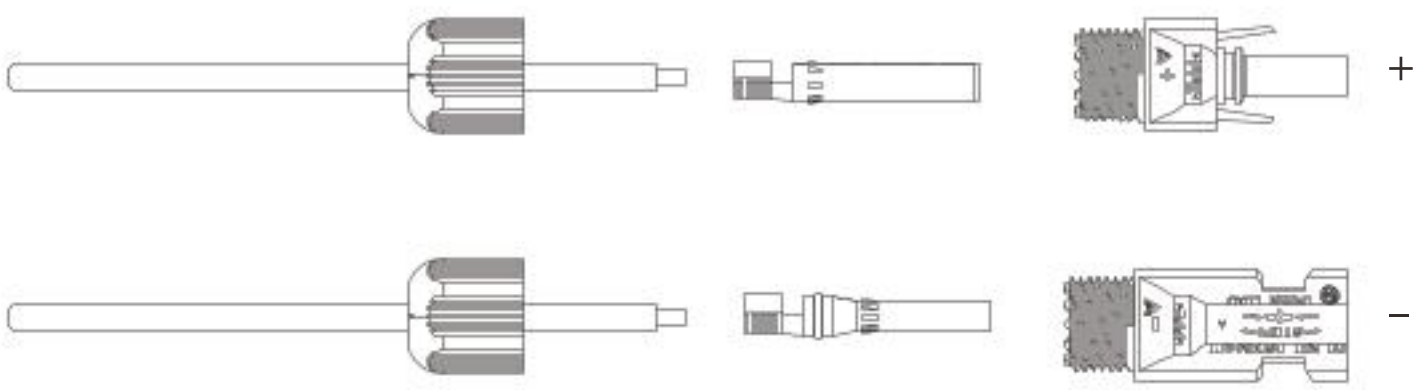


Figure 5-31

③A6 A Ą dA A A Ą dA A A A A A A A A A A AA A A A A A A A A A A A AA A AA A A A A A

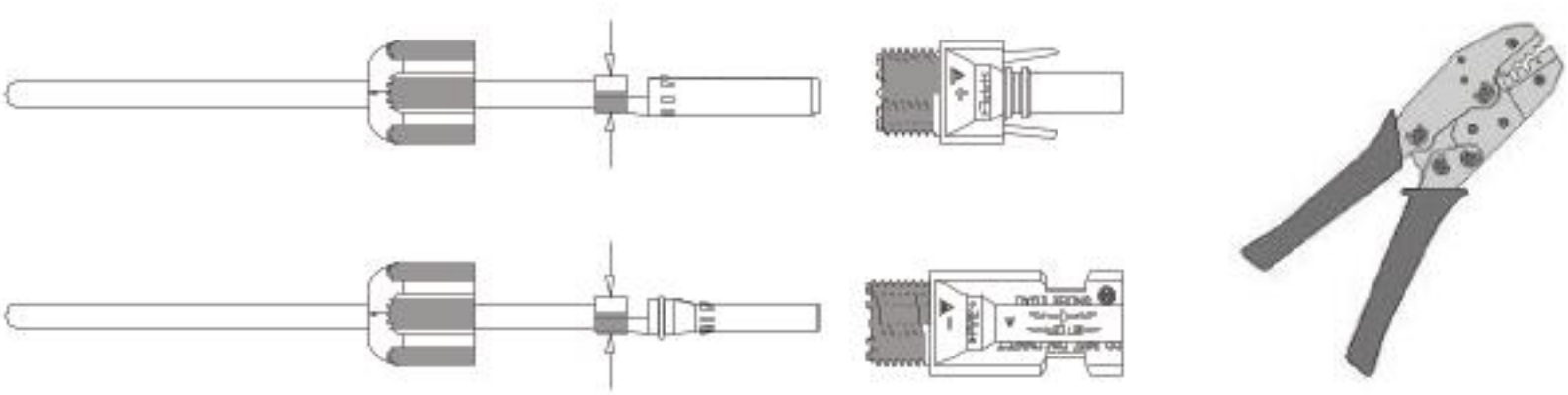


Figure 5-32

④ Insert the positive and negative cables into the corresponding positive and negative A A A Ą dA A A A A A AA A A A A connector.

⑤ Use an open-end wrench to screw the nut to the end to ensure that the terminal is well sealed.

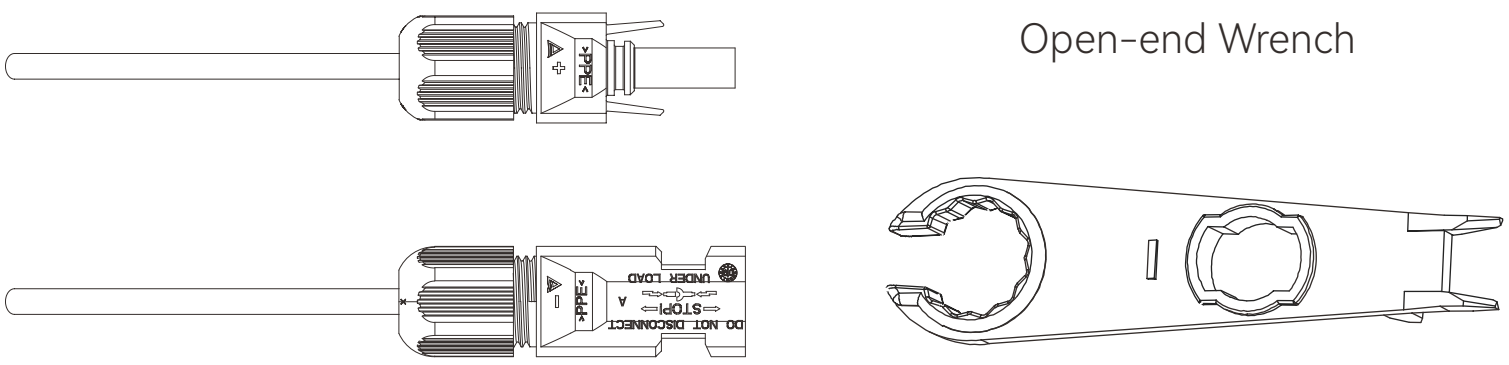


Figure 5-33

5.6.3 Installing the PV Connector

① Rotate the DC switch to “OFF” position.

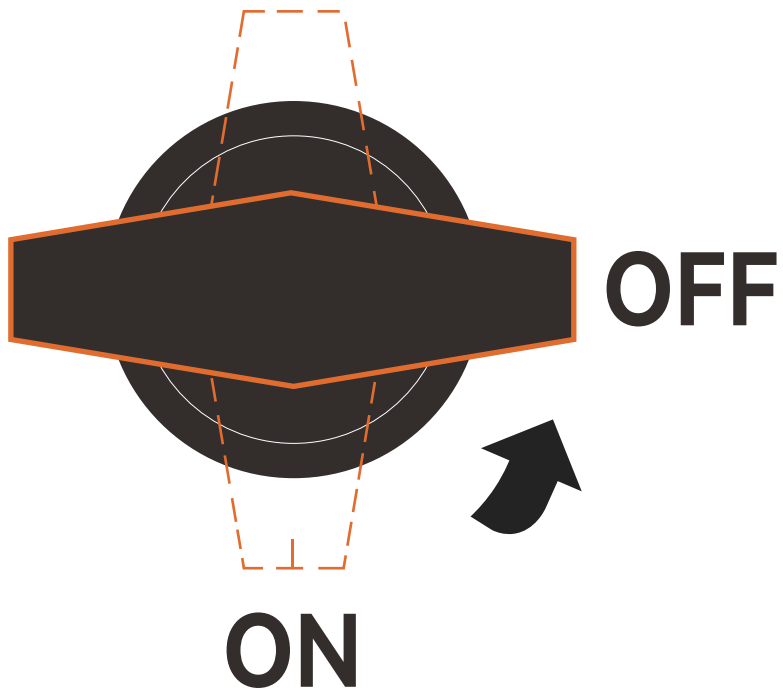


Figure 5-34

② Check the cable connection of the PV string for polarity correctness and ensure that the
A A A A A A A A A A A A A A A A A
6 A A A A A A A A

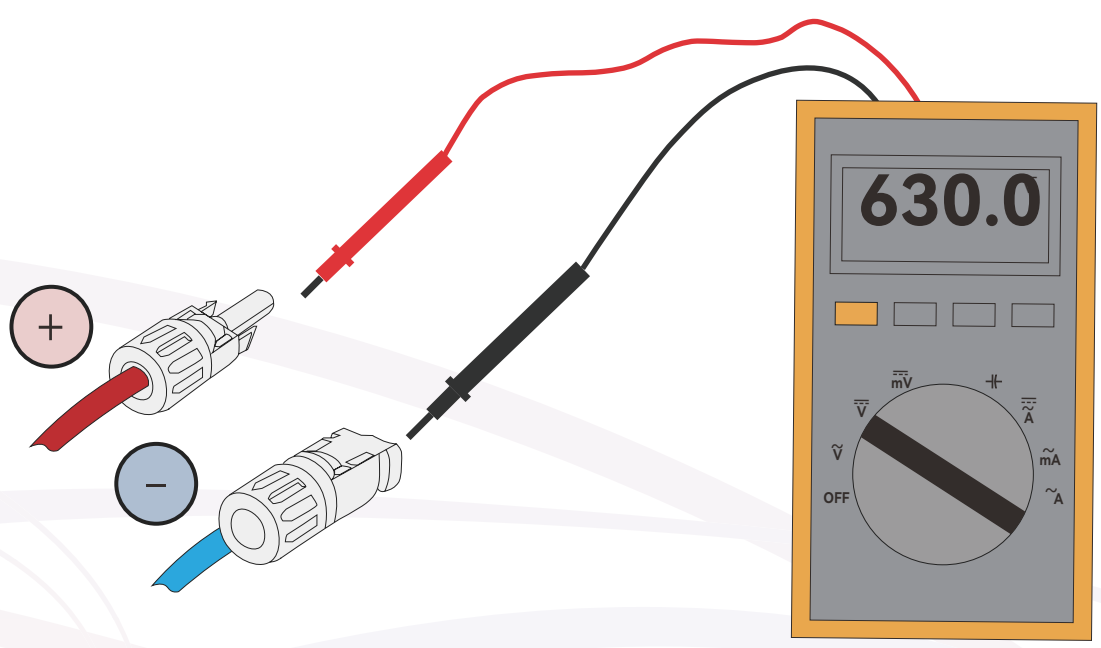


Figure 5-35

③A6 A A A A A A A A A dA A A -
AA A A A A AA A A A A

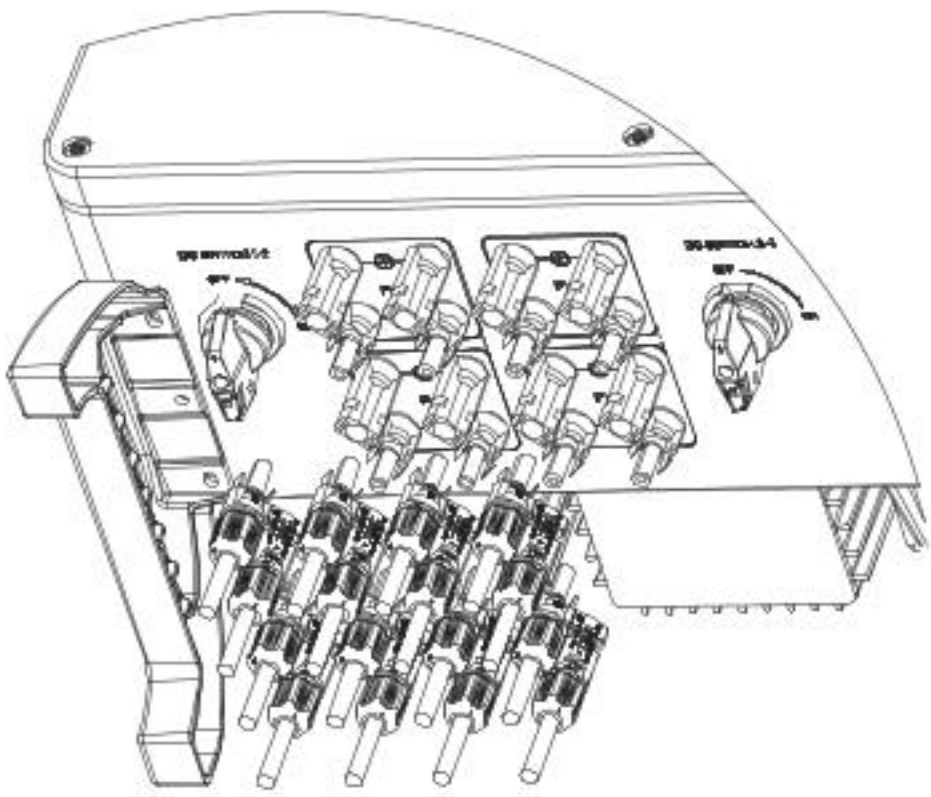


Figure 5-36

④ Seal the unused PV terminals with the terminal caps.

5.7 Power Cable of the Battery Connection

NOTICE

In the external battery circuit, fuses need to be installed on both the positive and negative terminals.

NOTE

Please contact your battery supplier for detailed battery installation information.

▼ A A A A A A A A A A A

① Disconnect the AC breaker on the grid side.
②A A A A A A A
③ A A A dA A A A~ rtrt A
④A A A A A A A A A A A A A

Select an appropriate DC cable

Cable requirements		Cable stripping length
Outside diameter	Conductor core section	
9.8±0.2 mm	25mm² (3AWG)	20 mm

CAUTION

If the conductor core of the battery cable is too small, which may cause poor contact between the terminal and the cable, please use the cable specified in the above table, or contact Solinteg to purchase terminals of other specifications.

① Peel off the battery cable insulation sleeve for 20 mm.



Figure 5-37

②j A A A A A A A A A A A A A -
A A A A A

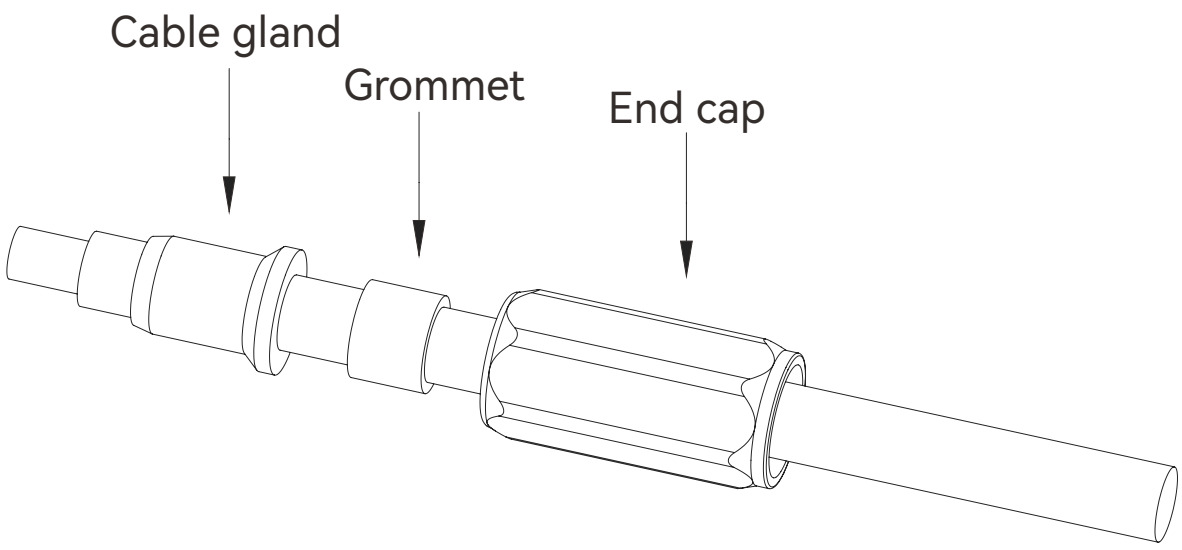


Figure 5-38

③ 6 A A A A A A A A A A A A A A A
A A A A A A A A A A A A A A A A A A
A A A A



Figure 5-39

④ B A A A A A A A A A A A A A A A
A A A A A A A A A A A A A A A

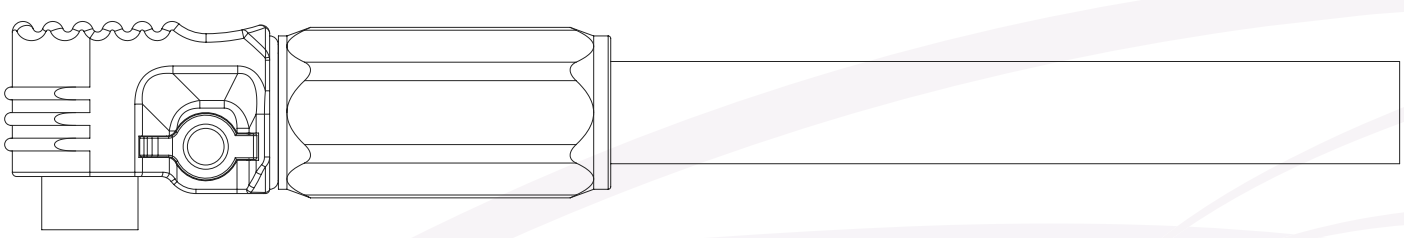


Figure 5-40

WARNING

① Before making the battery connector, please make sure the polarity of the cable is correct.

② Use a multimeter to measure the voltage of the battery pack and make sure the voltage is within the inverter limitation and the polarity is correct.

⑤ Insert the positive and negative connector into the inverter battery terminals A AA A A A A A A

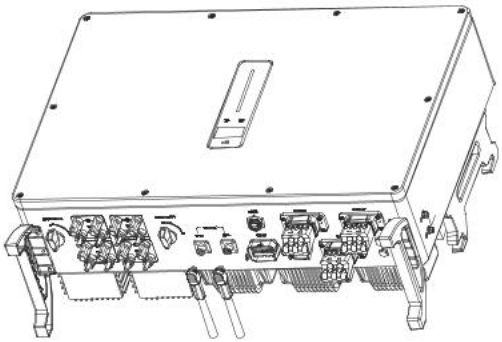


Figure 5-41

⑥ A A A A A A A A A A A A A A A A A plug out.

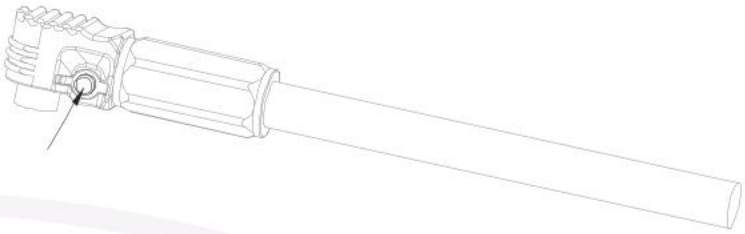


Figure 5-42

6 Commissioning

6.1 App Preparation

① A6 A A) A AB A Ad A AB A A A A A A Ad A AB A A A) A AB

② Register an account on the Cloud monitoring App. If you have got the account and A A A A A A A A

6.2 Inspection Before Commissioning

d A A A A A A A

① All equipment has been reliably installed.

② j dA A ABdA A A A A A~ rtrt A

③ The ground cable is properly and reliably connected.

④ The AC cable is properly and reliably connected.

⑤ The DC cable is properly and reliably connected.

⑥ The communication cable is properly and reliably connected.

⑦ The vacant terminals are sealed.

⑧ " A A A A A A A A A A A A A A A A A A A A A A

⑨ The AC circuit breaker is selected in accordance with the requirements of this manual and local standards.

⑩ All warning signs & labels are intact and legible.

6.3 Commissioning Procedure

6A A A A A A A A A A A A A A A A A A A A A A

① Turn on the AC breaker.

② A A A A A A A A A A A A A A A A A A A equipped.

③ A A A Aj dA A Aj dA A A A A A A A A A A the customer.

④ A A A A A A A A A Aj dA ABdA A A A A the weather and grid meet requirements. The time for entering the operating mode may A A A A A A

⑤ A~ A A) nj A A A A A A A A

⑥B A A AA A A A A A 6d: A nAv 6 n A AA A A
A A A A A A

NOTE

If the inverter does not work properly, check the country code and battery ID Settings.

① Select the safety code suitable for the country (region) where the inverter is installed at.

② Select the battery ID suitable for the battery is installed.

NOTE

CT AUTO TEST FUNCTION

MHT hybrid inverter has the function of detecting the installation direction and phase sequence of CT. The system is installed, this function can be enabled on the APP for detection.

NOTICE

SOC RESET FUNCTION

When the inverter is turned on for the first time, the battery will be automatically charged to calibrate the battery SOC. After the battery is charged, this function will be turned off automatically (If you confirm that it is not necessary, you can manually turn off the function. We recommend to enable this function.)

If you need to calibrate the SOC during system use, you can manually enable the function to calibrate the battery SOC on app or inverter screen. After the battery is fully charged, the function is automatically disabled again.

6.4 Stop the Inverter

A A A A A A A A A A

① A A A A A AB A A A A A A A

② Disconnect the breakers on the grid and load side.

③A A A A A A A A AjdA A A A A A A

④ A A A A A A A AjdA A A A~rtrt A AB A A A
A A A A A A A A A A A A A A A A A
completely de-energized before operating.

⑤A6A A A A A A A A A A A A A A A A
A A ABdA A A A A A AjdA A A A A A
A A

⑥ 6A A A A A A A A A A A A A ABdA A
DC cables.Please notice disconnection cables is only for disconnection and requires an
A A

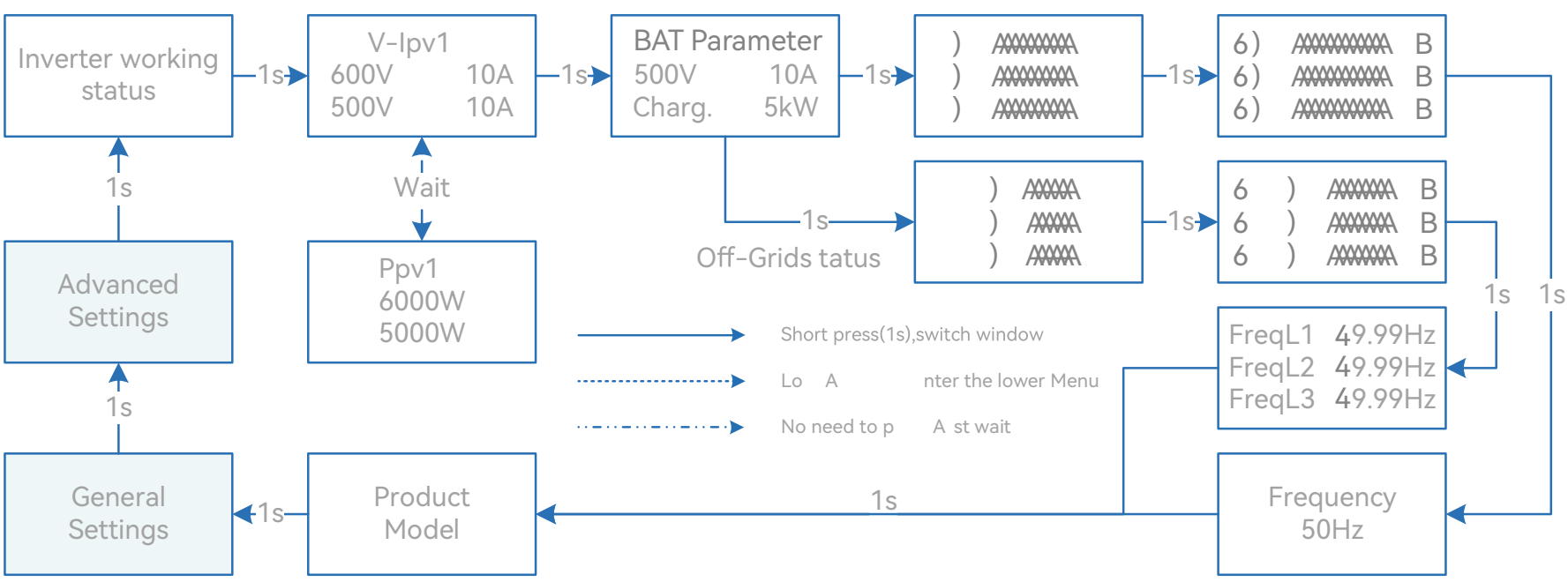
7 Operation

A A A A A A A A A A A A A A A⁓) nj A
A A A⁓) nj A A A A A A A A A A A
A A A A A A

NOTE

If the parameter is a number short press to change the number, long press to confirm the number and jump to the next number.
Please wait for 10 seconds and the inverter will automatically save your settings or modifications.

7.1 Main Window

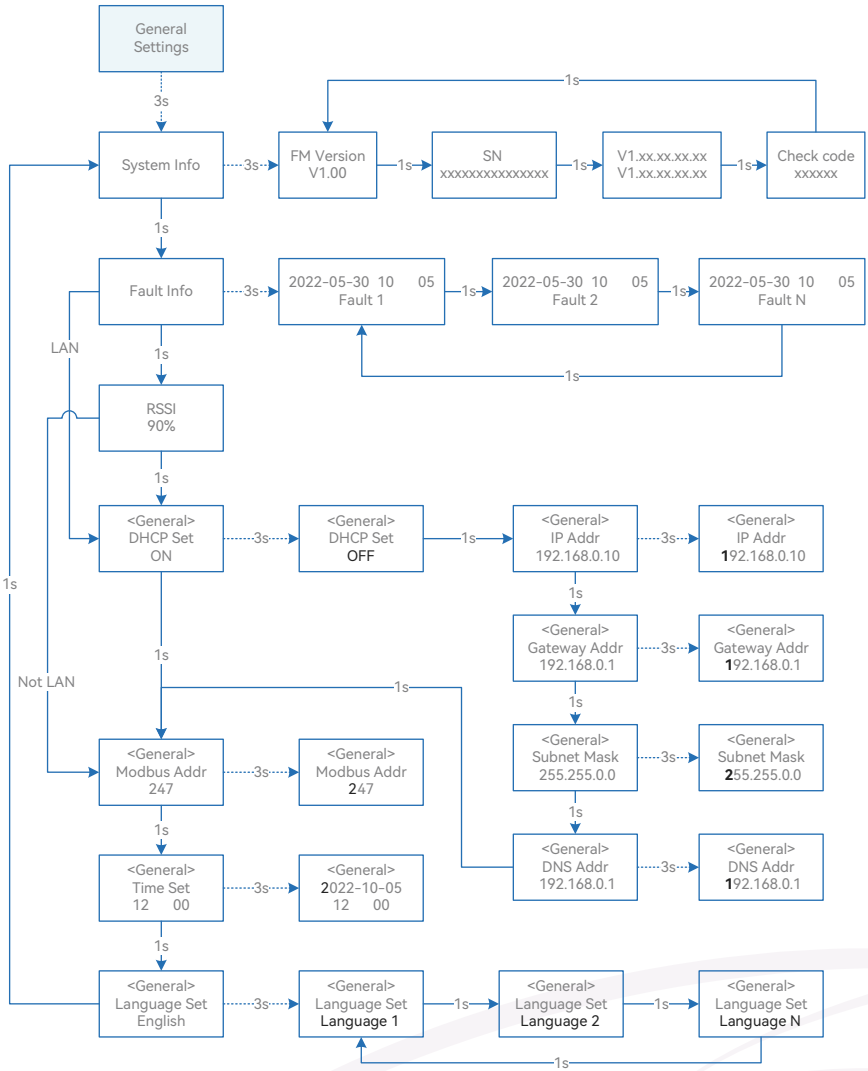


Inverter working status
Wa d ecki ~ Grid/Off rv rt t 6 rtW Updating

6 A AB A Ad A A A

Abbreviation	Complete Name
V-Ipv1/2	PV input voltage and current of each MPPT
Ppv1/2	PV input power of each MPPT
BAT Parameter	Battery Parameter
Charg.	Charge
Dischg.	Discharge
V_L1: / V_L2: / V_L3:	Three-phase AC voltage (On-Grid status)
VbakL1: / VbakL2: / VbakL3:	Three-phase AC voltage (Off-Grid status)
I_L1: / I_L2: / I_L3:	Inverter output current (On-Grid status)
IbakL1: / IbakL2: / IbakL3:	Inverter output current (Off-Grid status)
FreqL1: / FreqL2: / FreqL3:	Inverter output Frequency (Off-Grid status)
FW Updating	Firmware Updating

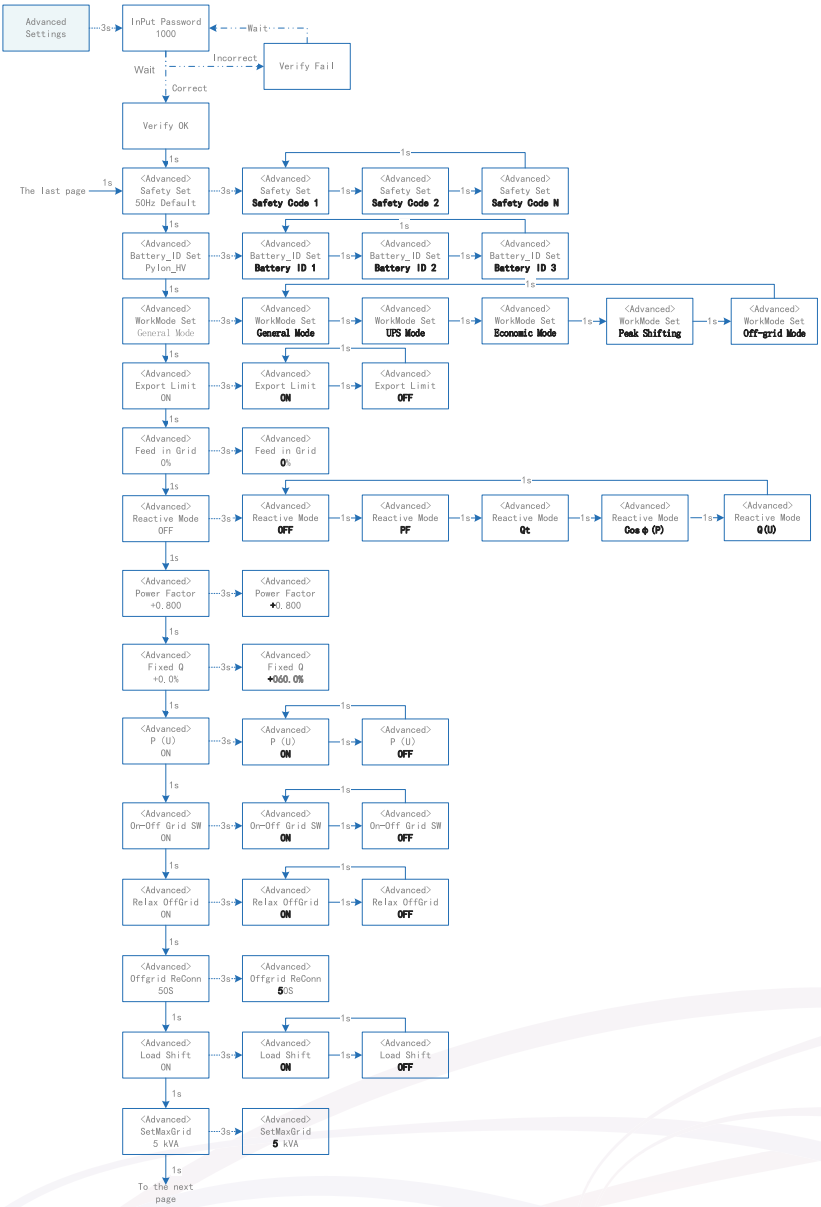
7.2 General Setting



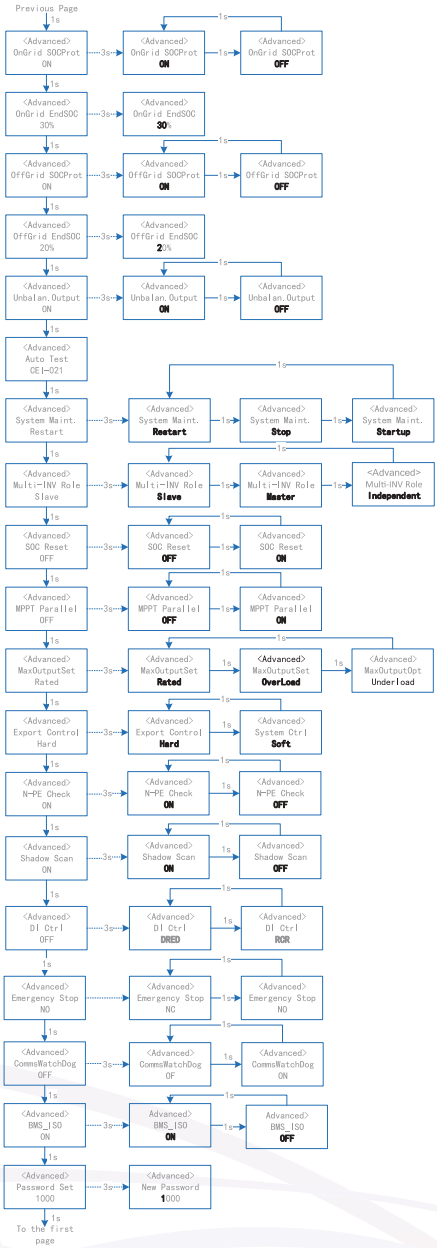
6 A AB A Ad A A A

Abbreviation	Complete Name
System Info	System information
FM Version	Firmware version
SN	Series number
Fault Info	Fault information
RSSI	Received signal strength indicator
DHCP Set	Enable or disable DHCP functionality
IP Addr	If DHCP is turned off, set the static IP address
Gateway Addr	If DHCP is turned off, set the Gateway IP address
Subnet Mask	If DHCP is turned off, set the subnet mask
DNS Addr	If DHCP is turned off, set the domain name server address
Modbus Addr	Modbus address

7.3 Advanced Setting



A A A A A A


Previous Page
1s
<Advanced> OnGrid SOCProt ON
3s
<Advanced> OnGrid SOCProt ON
1s
<Advanced> OnGrid SOCProt OFF
<Advanced> OnGrid EndSOC 30%
<Advanced> OnGrid EndSOC 30%
<Advanced> OffGrid SOCProt ON
<Advanced> OffGrid SOCProt ON
<Advanced> OffGrid SOCProt OFF
<Advanced> OffGrid EndSOC 20%
<Advanced> OffGrid EndSOC 20%
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<Advanced> Unbalan.Output ON
<Advanced> Unbalan.Output OFF
<Advanced> Auto Test CEI-021
<Advanced> System Maint. Restart
<Advanced> System Maint. Restart
<Advanced> System Maint. Stop
<Advanced> System Maint. Startup
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<Advanced> Multi-INV Role Slave
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<Advanced> Multi-INV Role Independent
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<Advanced> MaxOutputOpt Underload
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<Advanced> DI Ctrl DRED
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<Advanced> Emergency Stop NC
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<Advanced> CommsWatchDog ON
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<Advanced> BMS_ISO ON
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<Advanced> New Password 1000
To the first page

A A A A A A

6 A AB A Ad A A A

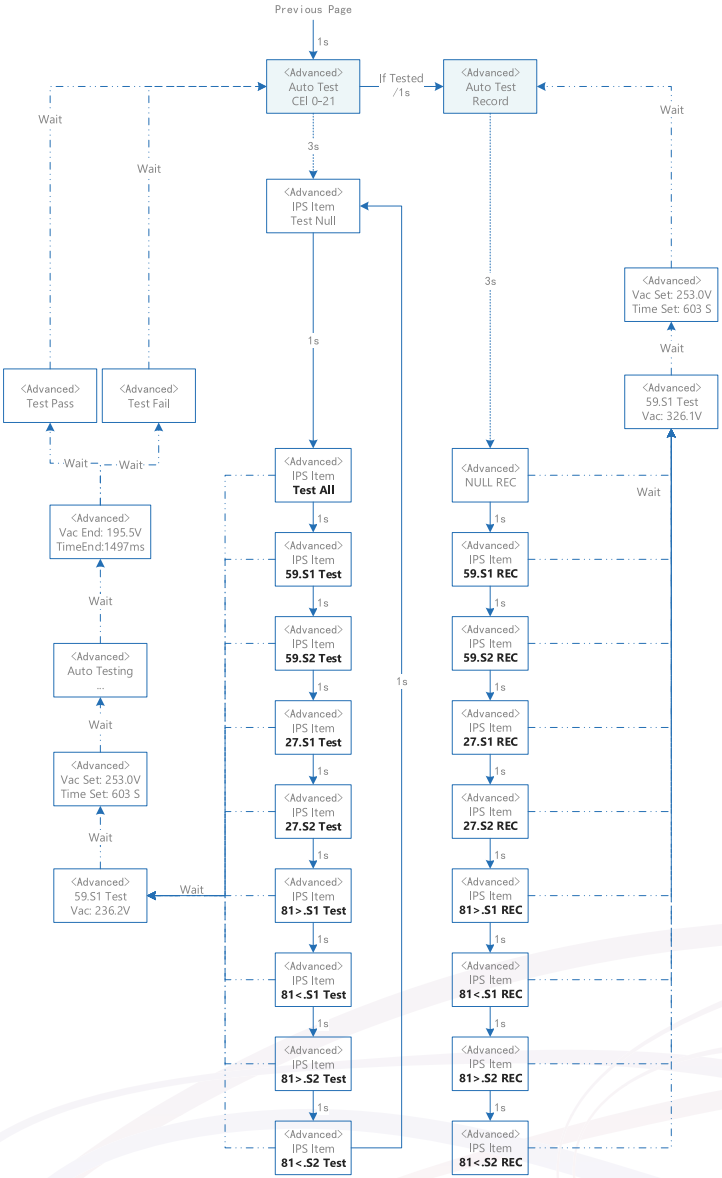
Abbreviation	Complete Name
Safety Set	Select the code that meet local regulatory requirements
Battery_ID Set	Select the battery model
Work Mode	Current work mode / work mode setting
Export Limit	On-grid export limit function switch
Feed in Grid	Set the percentage of the power that is allowed to feed to the grid
Reactive Modes	Reactive Power Mode
PF	"Under ""Reactive Mode" "The reactive power can be regulated by the parameter PF (Power Factor)."
Qt	"Under ""Reactive Mode" "The reactive power can be regulated by the parameter Q-Var limits (in %)."
Cosφ(P)	"Under ""Reactive Mode" "The PF changes with the output power of the inverter."
Q(U)	"Under ""Reactive Mode" "The reactive power changes with the grid voltage"
Fixed Q	The reactive power ratio when the "Reactive Mode" is Qt.
On-Off Grid SW	Off-grid function switch (If turn it on, the inverter will automatically switch to off-grid mode to ensure the back-up side power supply when the gird is abnormal or off, otherwise, there is no output on the back-up side)
Relax OffGrid	Reduce the switching sensitivity of the On/Off-grid (applied to the places where the grid is unstable or inverter always entered off-grid mode for some reasons)
Offgrid ReConn.	When inverter is operating without grid, it will stop backup output after overload protection, and restart within the set time.
Load Shifting	Peakload shifting function switch
SetMaxGrid	Set max allowed power from grid (under the condition of Peakload Shifting is on)
OnGrid SocProt.	On-grid battery SOC (State of Charge) Protection
OnGrid EndSOC	End-of-discharge SOC of on-grid
OffGrid SocProt.	Off-grid SOC Protection
OffGrid EndSOC	End-of-discharge SOC of off-grid
Unbalan. Output	3-Phase Unbalanced Output Switch when inverter work on On-grid state
System Maint.	System maintenance, includes inverter stop and run, system restart
Multi-INV Role	In the multi-inverter parallel system, set the role of one inverter as the master and the other inverter as the slave.

Abbreviation	Complete Name
SOC Reset	If turned it on, the battery will be automatically charged to calibrate the battery SOC. After the battery is charged, this function will be turned off automatically
MPPT Parallel	If MPPT is connected in parallel, enable this function.
MaxOutputSet	Select the maximum AC output power. Rated, Max. output power= Rated output power on the datasheet Overload, Max. output power= Max. output power on the datasheet Underload, Max. output power < Rated output power on the datasheet
Export Control	In the power export limit on mode, when the communication between the inverter and meter or the inverter and datalogger is interrupted, select the inverter operation mode from one of the follows: Hard, inverter stops Soft, inverter generates power as the “Feed in Grid” value set on the screen
N-PE Check	The N and PE shorting function on the BACK-UP side in the off-grid operation status.
DI Ctrl	DI Ctrl enable "DRM" or "RCR" function
DRM	Demand Response Modes
RCR	Ripple Control Receiver
Emergency Stop	Emergency stop switch device
NO	Normally open:Emergency Switch Normally Open, when switch closed, inverter stop.
NC	Normally closed: Emergency Switch Normally Closed, when switch open, inverter stop.
CommsWatchDog	When the function is turned on, the inverter stops working when communication with the master is lost.

7.4 Auto-Test

button 3 seconds to check the test results.

d A AdA A A A A A A A A A A A A A A A



7.5 Reactive Power

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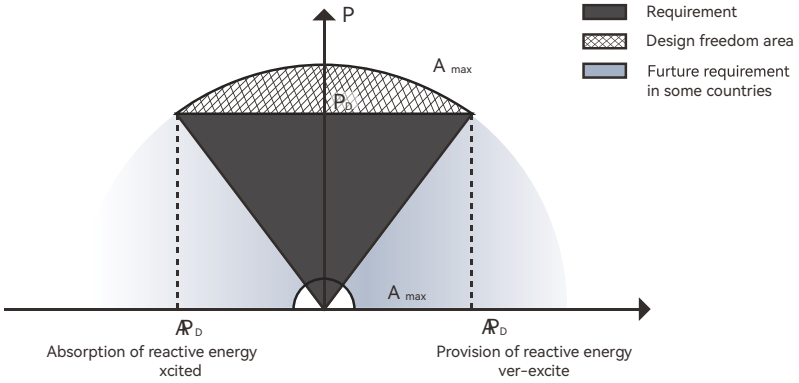


Figure 7-1 Capabilities

This mode can be enabled via configuration software. It is enabled by default in some
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Mode	Descriptions
Off	The PF is fixed at +1.000.
PF	The reactive power can be regulated by the parameter PF (Power Factor).
Qt	The reactive power can be regulated by the parameter fixed Q(in Pn%).
Cosφ(P)	The PF changes with the output power of the inverter.
Q(U)	The reactive power changes with the grid voltage.

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7.5.2 “PF” Mode

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power. The PF ranges from 0.8 leading to 0.8 lagging.
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) A A A A A A A A A

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6 A A A A A A A A A A A A A A A A A A according to the delivered reactive power ratio.

A A A A A A A A A A A A A A A A A inductive and capacitive reactive power regulation respectively.

7.5.4 “Cosφ ” Mode

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“Cosφ A A A

Parameter	Explanation	Range
Cosφ(P)_P1(Point A)	Output power at P1 on the Cosφ(P) mode curve (in percentage)	10% ~ 100%
Cosφ(P)_P2(Point B)	Output power at P2 on the Cosφ(P) mode curve (in percentage)	20% ~ 100%
Cosφ(P)_P3(Point C)	Output power at P3 on the Cosφ(P) mode curve (in percentage)	20% ~ 100%
Cosφ(P)_K1(Point A)	Power factor at P1 on the Cosφ(P) mode curve	0.8 ~1
Cosφ(P)_K2(Point B)	Power factor at P2 on the Cosφ(P) mode curve	
Cosφ(P)_K3(Point C)	Power factor at P3 on the Cosφ(P) mode curve	
Cosφ(P)_Enter-Voltage	Voltage percentage for Cosφ(P) function activation	100% ~ 110%
Cosφ(P)_Exit-Voltage	Voltage percentage for Cosφ(P) function deactivation	90% ~ 100%

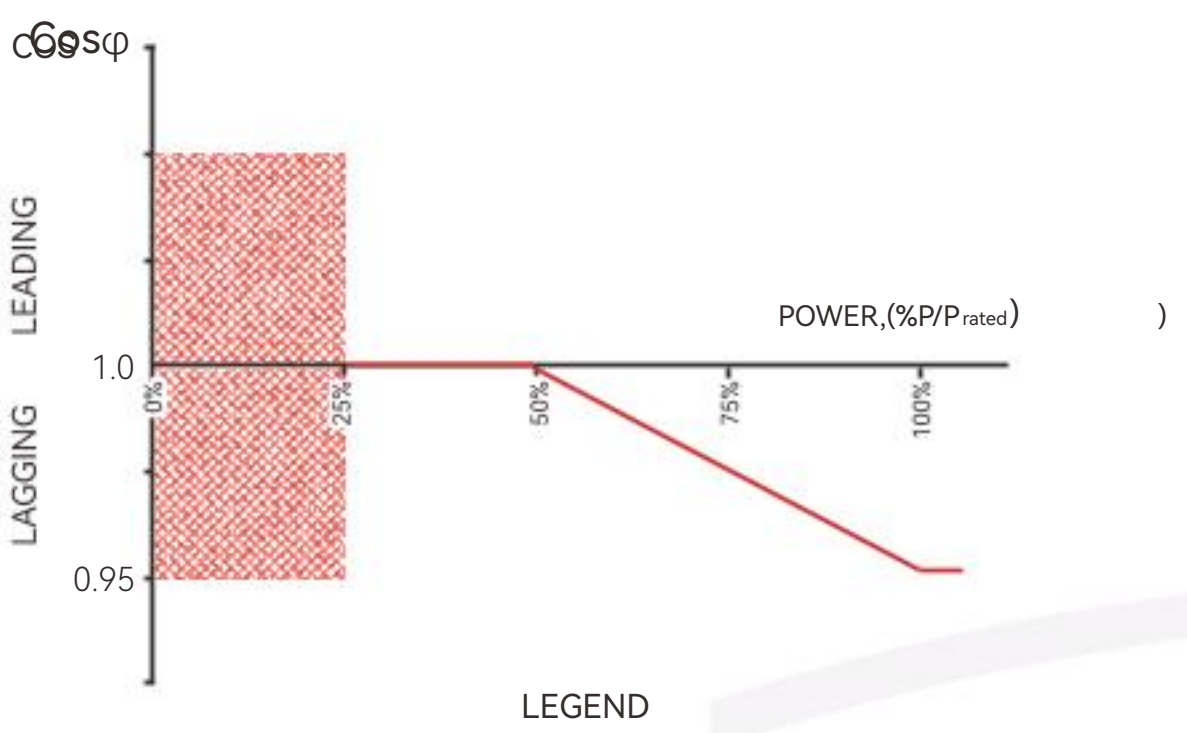
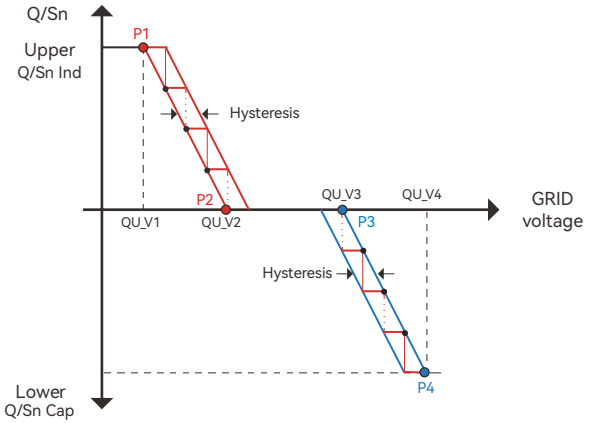


Figure 7-2 Cosφ A

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Parameter	Explanation	Range
QU_V1	Grid voltage limit at P1 on the Q(U) mode curve	80% ~ 100%
QU_Q1	Value of Q/Sn at P1 on the Q (U) mode curve	0 ~ 60%
QU_V2	Grid voltage limit at P2 on the Q(U) mode curve	80% ~ 100%
QU_Q2	Value of Q/Sn at P2 on the Q (U) mode curve	-60% ~ 60%
QU_V3	Grid voltage limit at P3 on the Q(U) mode curve	100% ~120%
QU_Q3	Value of Q/Sn at P3 on the Q (U) mode curve	-60% ~ 60%
QU_V4	Grid voltage limit at P4 on the Q(U) mode curve	100% ~120%
QU_Q4	Value of Q/Sn at P4 on the Q(U) mode curve	0 ~ -60%
QU_Enter-Power	Active power for Q(U) function activation	20% ~ 100%
QU_Exit-Power	Active power for Q(U) function deactivation	1% ~ 20%

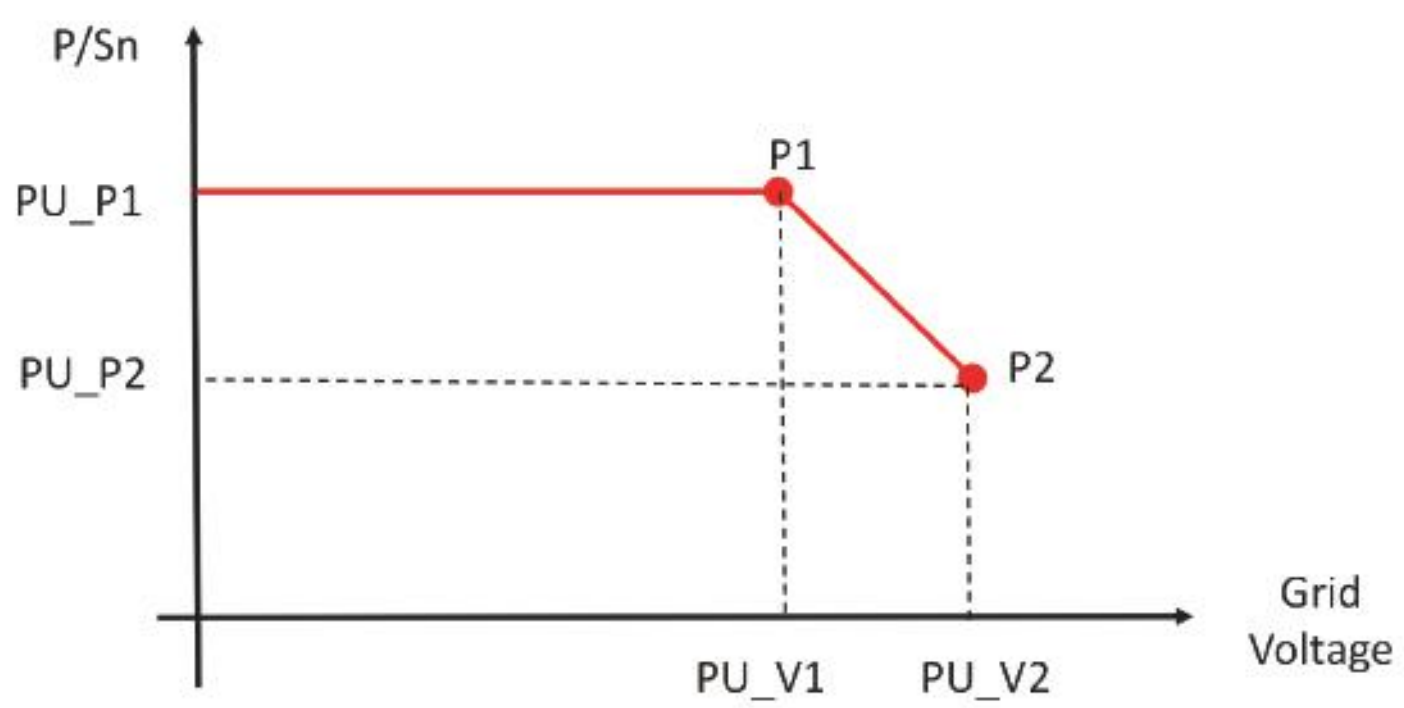


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7.6 Active Power

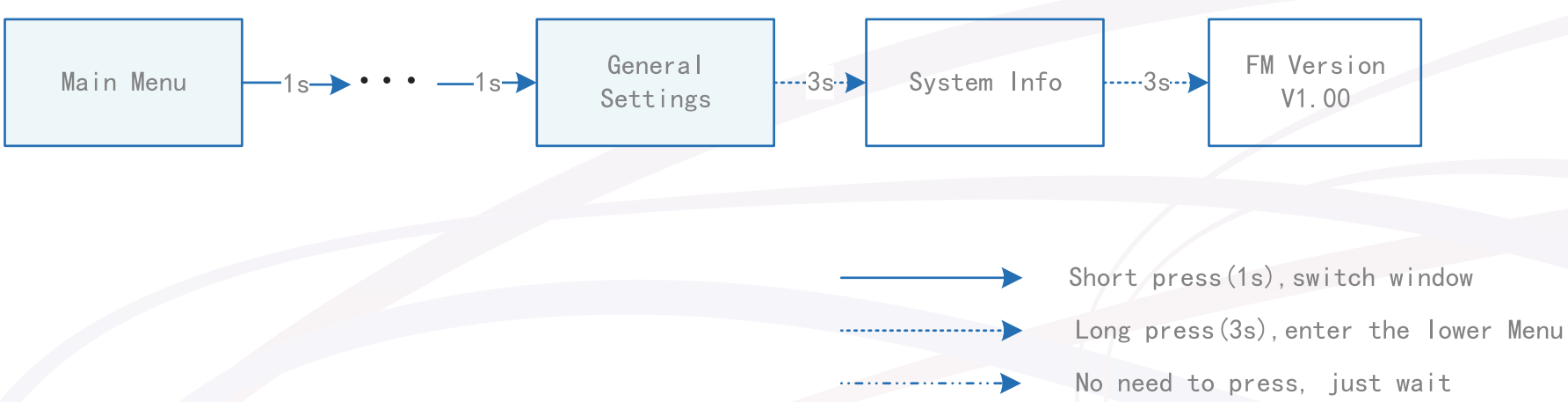
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Parameter	Explanation	Range
PU_V1	Grid voltage limit at P1 on the P(U) mode curve	100%~120%
PU_P1	Value of P/Sn at P1 on the P (U) mode curve	0~100%
PU_V2	Grid voltage limit at P2 on the P(U) mode curve	100%~120%
PU_P2	Value of P/Sn at P2 on the P (U) mode curve	0~100%
PU(τ)	Time constant of the P(U) mode curve	0~60s



7.7 Check Firmware Version

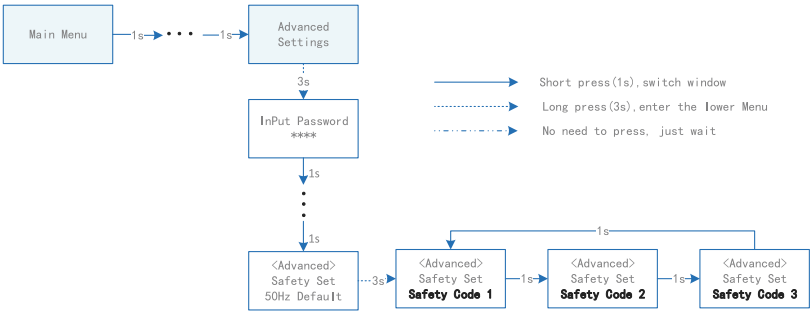
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7.8 Grid Parameter

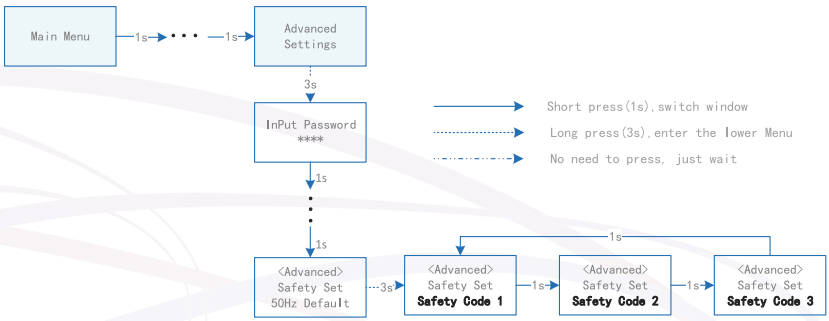
7.8.1 Check Grid Code via OLED Display

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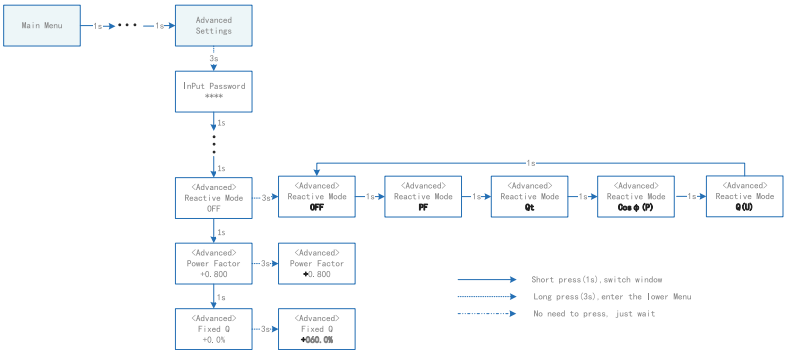
7.8.2 Select Grid Code via OLED Display

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Solinteg. Once Grid Code have been selected at commissioning these settings will be
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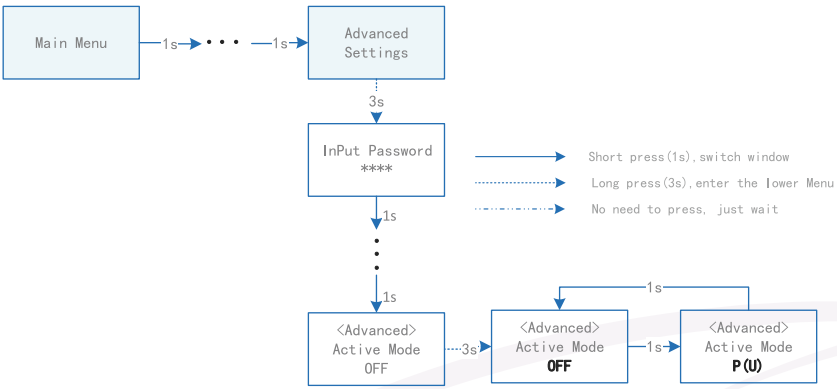


7.8.3 Check Reactive and Active Modes via OLED Display

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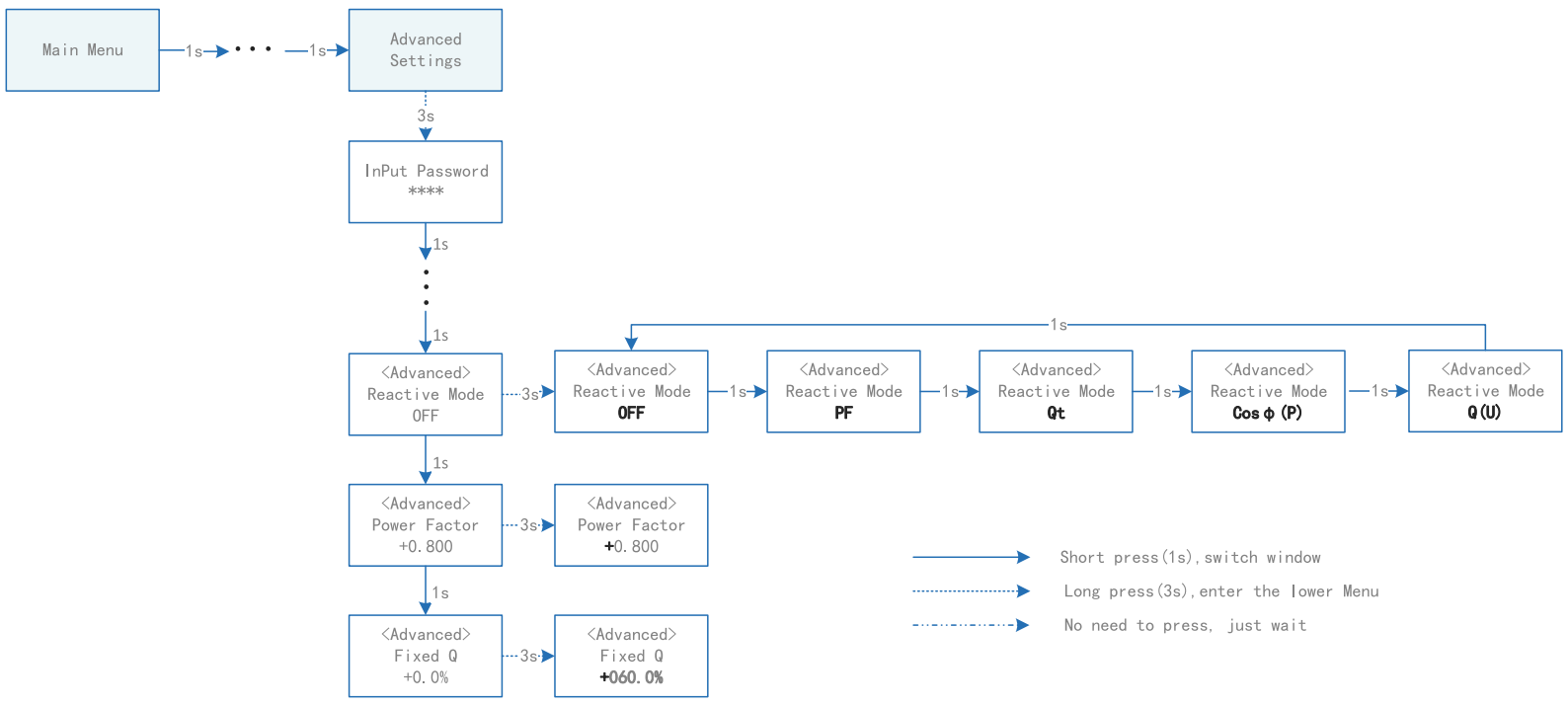


A A A A A ÆB Æ" A A A A A~)nj A A A following.

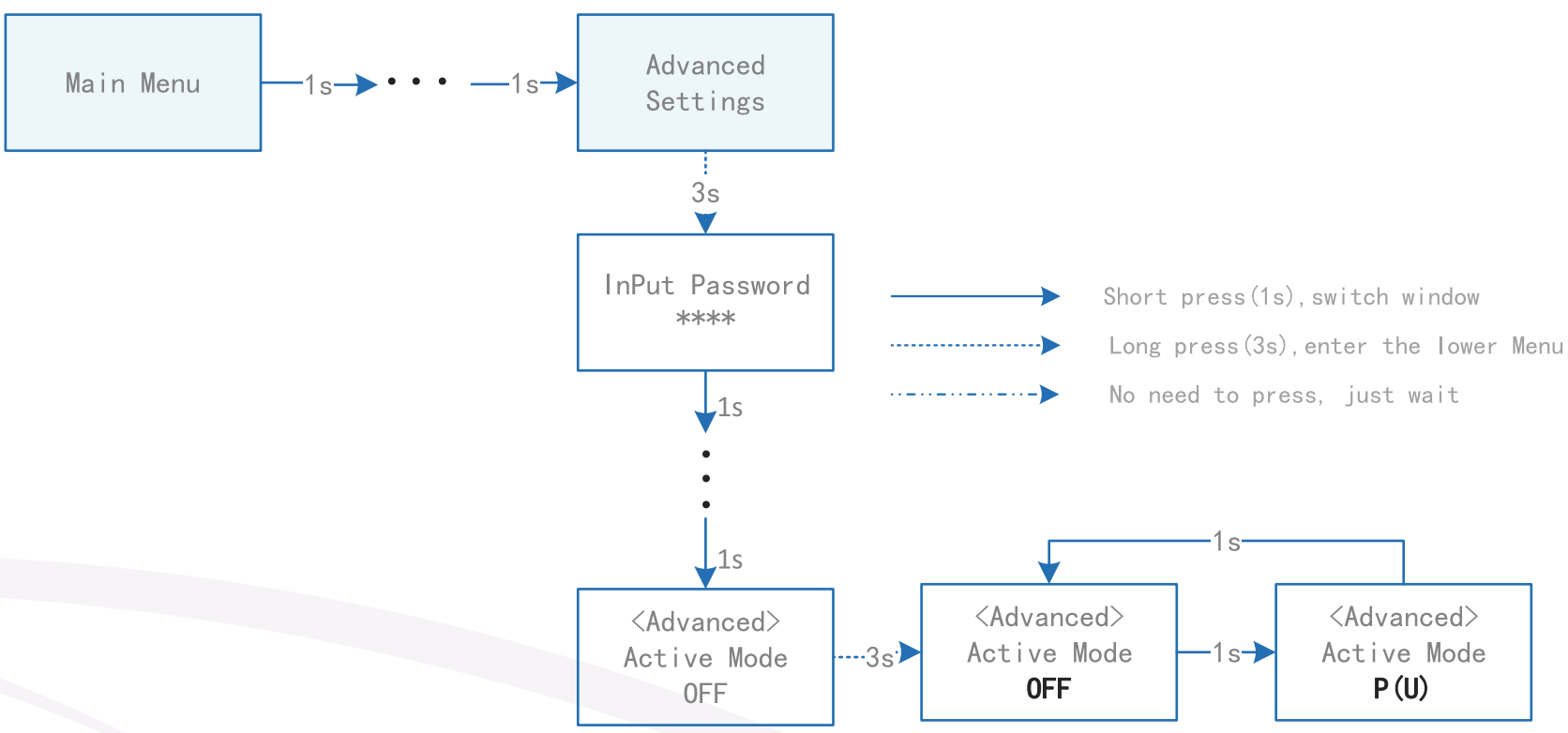


7.8.4 Select Reactive and Active Modes via OLED Display

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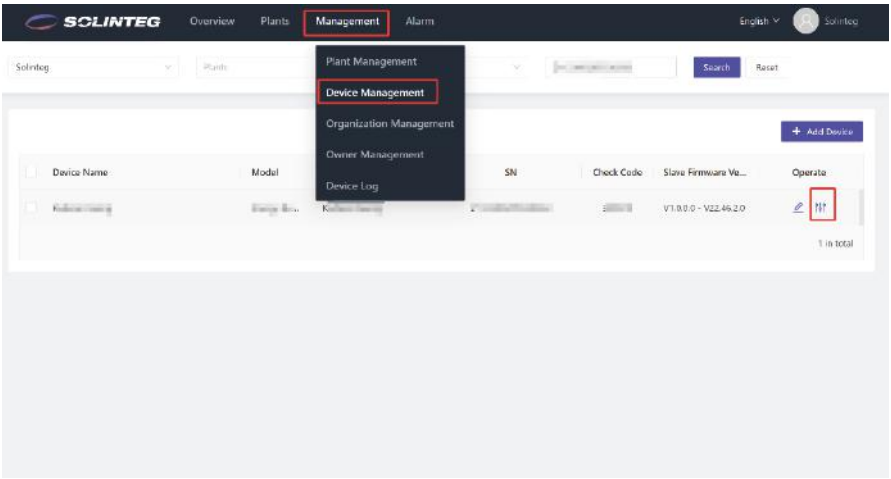
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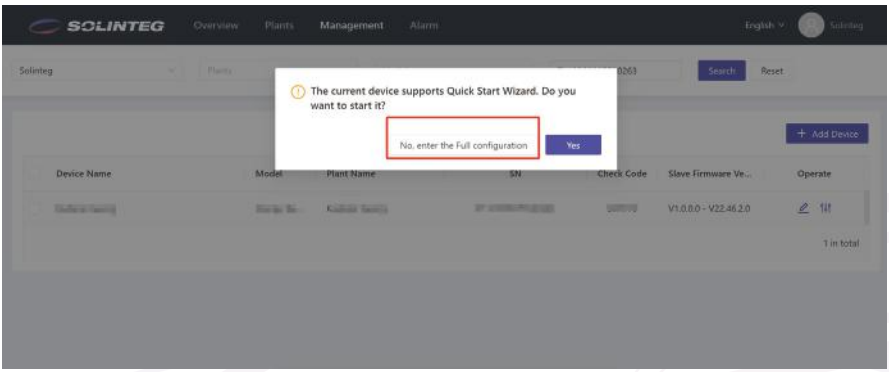
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monitoring platform.

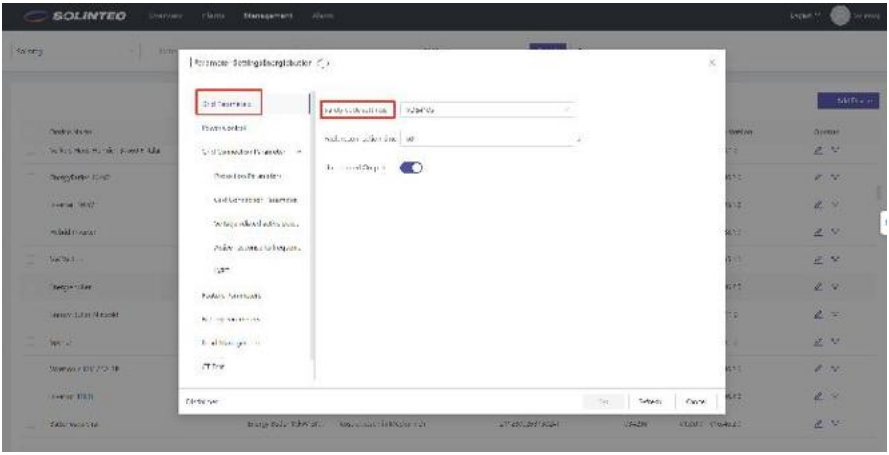
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① ~ A A A A Aj A" A A A" A
down menu. Click “Parameter Settings” in “Operate” in the column of the device set.



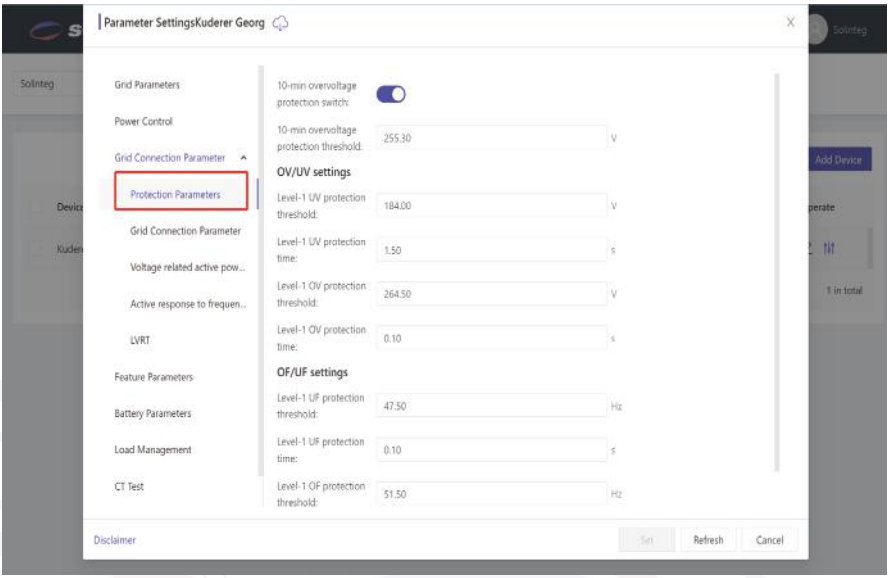
② Click”No,enter the Full configuration”.

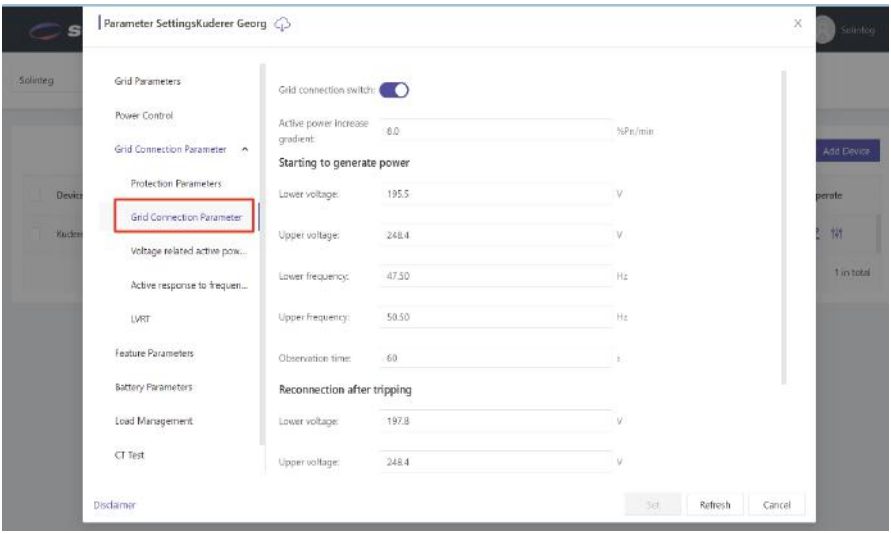


③ Enter "Grid Parameters" menu and check "Safety code settings" (Grid Code).

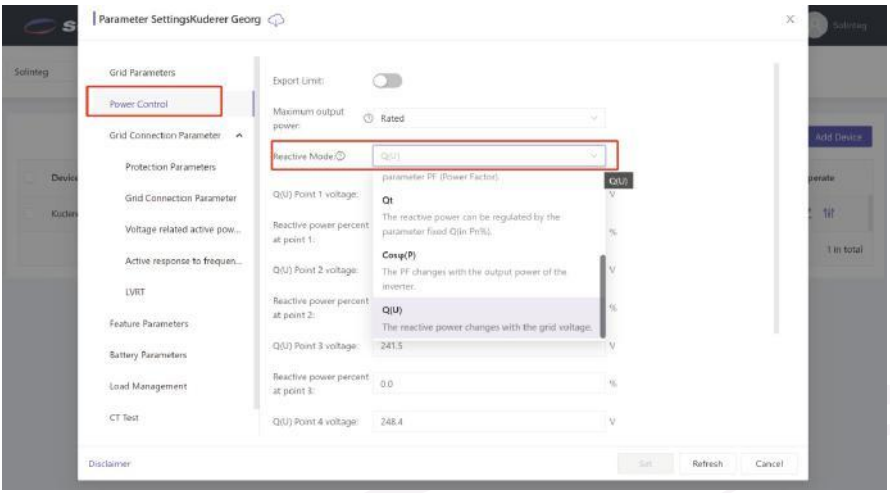


④ Enter “Protection Parameters” and “Grid Connection Parameter” menu under “Grid Connection Parameter” and check grid protection settings setpoints.

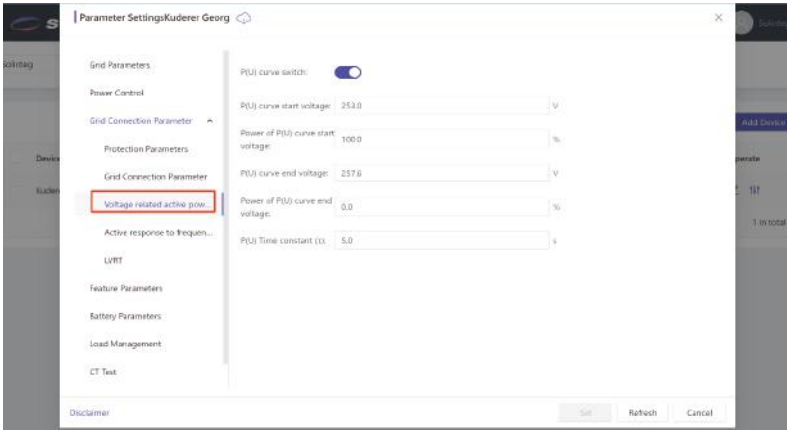




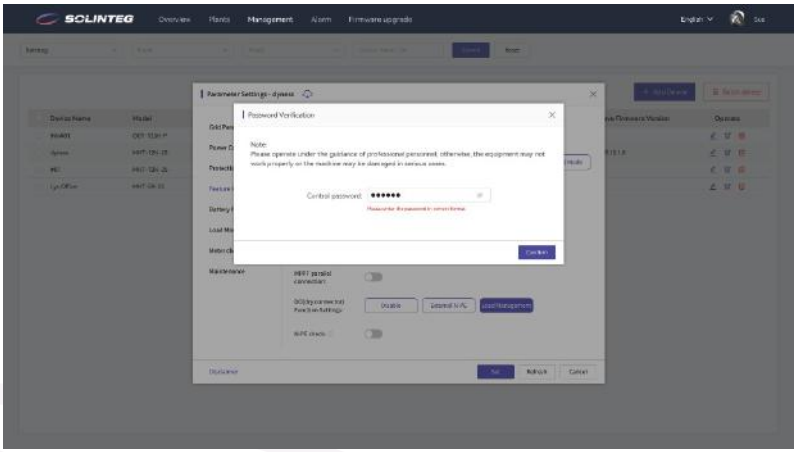
⑤ Enter “Reactive Mode” menu under “Power Control” menu and check reactive mode setpoints.



⑥ Enter “Voltage related active power P(U)” menu and check active mode setpoints.



⑦ When the installer or operator need to adjust Grid Code, Protection Parameters setpoints,Grid Connection Parameter setpoints and Reactive and Active Modes setpoints, adjust these parameters setpoint and enter a password after clicking "Set".And please contact Solinteg or installer for password.



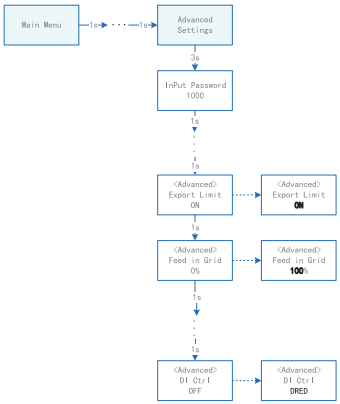
NOTICE

Please enter the password to adjust Grid Code,Protection Parameters setpoints, Grid Connection Parameter setpoints, Reactive Modes and Active Modes setpoints. To obtain the password, please contact Solinteg. Once the Grid Code and setpoints have been set at commissioning these settings will be locked from editing (unless with Password).

7.9 DI Ctrl

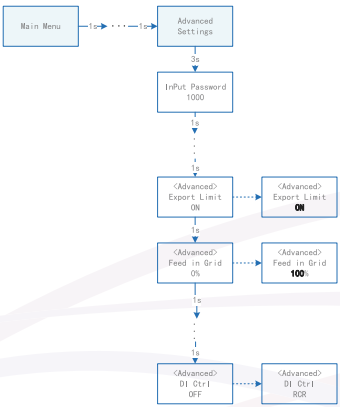
7.9.1 DRED

DRED function needs to be enabled via the OLED display.
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Then set "DI Ctrl" to "DRED".



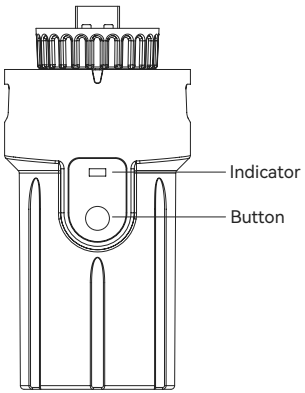
7.9.2 RCR

RCR function needs to be enabled via the OLED display.
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Then set "DI Ctrl" to "RCR".



8 Monitoring

8.1 Monitoring Device



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Indicator Status	Description
Off	Connection abnormal
Always On	Communicate with the server normally
Slow flashing	The monitoring device is not connected to the router or is not connected to the base station.
Quick flashing	The monitoring device is connected to the router or connected to the base station but not connected to the server.

Button	Description
Press 1 second	Reset device, the indicator goes off for 2 seconds, then flashes normally.
Press 5 second	Restore factory default settings, the indicator goes off for 2 seconds, then flashes once every 2 seconds, until the factory restore is completed.

> **NOTE**
>
> The WiFi module needs to be configured to the router for the first installation. If the router name or password are changed, the WiFi devices will need to be reconfigured. For details, please refer to the [QUICK USE GUIDE] which is attached to the accessory bag.
> If DHCP is enabled on the router, the LAN version module does not need to be configured. Otherwise, please refer to the [QUICK USE GUIDE] which is attached to the accessory bag.

8.2 Cloud Monitoring

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the product nameplate on side of enclosure to get the monitoring application. If download
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8.3 Local Configuration App

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Please refer to the product nameplate on side of enclosure to get the application. If
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9 Troubleshooting

9.1 Error Message

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series of rigorous tests to ensure it runs sustainably and reliably before shipment.
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A A A A A

Error Message	Description	Solution
Mains Lost	Grid power outage, AC switch or circuit is disconnected.	1. Check whether the mains supply is lost. 2. Check whether the AC breaker and terminal are well connected.
Grid Voltage Fault	Inverter detects that the gird voltage exceeds the limit of selected safety set range.	1. Check whether the safety code is correct. 2. Check whether the AC cable wiring is correct. 3. Check whether the voltage increased cause by large AC cable impedance. In this case we could replce with a thicker AC cable. 4. Extend the voltage protection limit with the permission of the Electricity Authority.
Grid Frequency Fault	Grid over frequency or underfrequency, the grid frequency is higher or lower than the set protection value.	1. Check whether the AC cable is correct and well connected. 2. Change to another country with wider protection range if it's allowed by the local electricity company.
DCI Fault	Inverter detects that the the direct current injection value exceeds the range.	1. Restart the inverter. 2. Seek for help from the installer or manufacture.

Error Message	Description	Solution
ISO Over Limitation	Inverter detects that DC side's insulation impedance to the ground is too low.	1. Check whether PV panels, cables, and connectors are waterlogged or damaged. 2. Use a megger to measure ground resistance on the DC sidel, and the measured value should not be less than 500 KΩ. 3. Seek help from the installer or manufacture.
GFCI Fault	The inverter detects that the ground leakage current exceeds the limitation.	1. Restart the inverter. 2. Check whether the PV panels, cables, and connectors are waterlogged or damaged. 3. Seek help from the installer or manufacture.
PV Over Voltage	PV input voltage exceeds the upper limit.	Reduce the number of PV panels to make sure that the open-circuit voltage of each string is lower than the inverter maximum allowed input voltage.
Bus Voltage Fault	The voltage of bus circuit is too high	1. Check whether the input voltage exceeds the limit. 2. Restart the inverter. 3. Seek help from the installer or manufacture.
Inverter Over Temperature	The inverter detects its high internal temperature	1.Check whether the inverter installation location is well ventilated. 2.Try to turn it off for a while, and then power it back on when it cools down. 3.Seek help from the installer or manufacture.
N-PE Check Fault	The ground cable is losse or in poor connection	Check whether the ground cable wiring is correct.
SPI Fault	Internal communication got failed. Caused by a strong external magnetic field etc.	1. Restart the inverter. 2. Seek help from the installer or manufacture.

Error Message	Description	Solution
E2 Fault	Internal storage got abnomal. Caused by a strong external magnetic field etc.	1. Restart the inverter. 2. Seek help from the installer or manufacture.
GFCI Device Fault	GFCI device got abnormal	1. Restart the inverter. 2. Seek for help from the installer or manufacture.
AC Transducer Fault	AC transducer got abnomal	1. Restart the inverter. 2. Seek for help from the installer or manufacture.
Relay Check Fail	Self-checking of internal relay got failed. Neutral & ground cable are in poor connection on AC side.	1. Use multimeter to measure the voltage between N&PE cable on AC side. If the voltage is higher than 10V, which means the neutral or ground connection is abnormal. 2. restart the inverter. 3. Seek help from the installer or manufacture.
Internal Fan Fault	Inverter's internal fan got failed	1. Restart the inverter. 2. Seek for help from the installer or manufacture.
External Fan Fault	Inverter's external fan got failed	1. Check whether the fan is blocked by foreign matters, clean them if necessary.
Bat OV	Battery protection got triggered	1. Check working status of battery. 2. Check if battery is alarming.

Error Message	Description	Solution
Backup OV	Abnormal voltage exists on the back-up side	Turn off inverter and remove the back-up connector. Use a multimeter to measure whether there is voltage existing on the back-up connector.
Bus Volt Low	Abnormal power schedduling	Check whether the battery voltage or PV input voltage is normal
Hard Fault	Hardware protection got triggered	1. Restart the inverter. 2. Seek help from the installer or manufacture.
Backup OP	Output power over limitation on back-up side	Check whether the load power on back-up side exceeds the maximum output power of inverter.
Inverter OV	The load power exceeds the range of its limit of inverter in off-gird mode	1. Check whether there is an impact load on the back-up side and whether the load power is too high. 2. Check whether back-up side is short circuit.
Inverter OF	The load power exceeds the range of its limit of inverter in off-gird mode	1. Check whether there is an impact load on the back-up side and whether the load power is too high. 2. Check whether back-up side is short circuit.
Inverter OC	The load power exceeds the range of its limit of inverter in off-gird mode	1. Check whether there is an impact load on the back-up side and whether the load power is too high. 2. Check whether back-up side is short circuit.

Error Message	Description	Solution
SCI Fault	Internal communication got failed. Caused by a strong external magnetic field etc.	1. Restart the inverter. 2. Seek for help from the installer or manufacture.
FLASH Fault	Internal storage anomaly. Caused by a strong external magnetic field etc.	1. Restart the inverter. 2. Seek for help from the installer or manufacture.
Meter Comm Fault	Abnormal communication between meter and inverter.	1. Check whether the communication connection between inverter and meter is reliable 2. Comfirm whether the meter model is compatible
BMS Comm Fault	Abnormal communication between inverter and battery BMS.	1. Check whether the battery ID selection is correct. 2. Check whether the communication connection between inverter and BMS is reliable 3. Check the working status of battery.

9.2 Inverter Maintenance

DANGER

Incorrect operation do cause the risk of inverter damage or personal injury.

Please strictly follow the steps below.

① select 'stop' option on inverter screen or monitoring app to shut down inverter.

② Turn off the AC breaker on utility grid side.

③ Turn off inverter DC switch.

④ Turn off the battery switch, and disconnect the DC breaker on the battery side (if any).

⑤ Wait for 10 minutes to ensure the energy of capacitor is fully dissipated.

⑥ Confirm all the indicator lights are off.

CAUTION

Keep unprofessional person away.

A temporary alarm sign or barrier must be posted to keep unprofessional person away while performing electrical connection and maintenance.

NOTICE

Any Arbitrary replacement of internal components is forbidden.

Please seek help from Solinteg for maintenance support. Otherwise, we will not take any responsibility.

NOTE

Please remember not to do the self-maintenance before being familiar with the proper instruction of the whole process.

Items	Methods	Period
System clean	Check dust or foreign matter on the heat-sink, air inlet and outlet.	Once 6-12 months
Electrical connection	Check whether the cables are in good connection.	Once 6-12 months
Sealing	Check whether all the terminals and ports are properly sealed. Re-seal the cable hole if it is aging or not sealed.	Once a year

9.3 Battery Maintenance

Installation and maintenance of batteries should be performed or supervised with professional knowledge about batteries.

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information.

CAUTION	Do not dispose battery in fire, or it may explode. Do not dismantle or break the battery. The electrolyte inside would be harmful to your body.

CAUTION	The battery has risk of electrical shock, the following scenario should be noticed during the operation. a) Remove metal items from your body. b) Use insulated tools. c) Remove metal items from battery. d) Turn off the DC breaker of the battery before assembling or disassembling battery terminals. f) There is a risk of electrical shock if battery is unexpectedly grounded. Remove the grounding cable to avoid the electrical shock.

9.4 Earth Fault Alarm

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2. The monitoring platform and APP will show warning messages. Users can set up to receive alarm information via E-Mail.

NOTICE	Please ensure the inverter is installed in a high traffic area where the visual alarm(warning indicator) will be noticed.

10 Appendix

10.1 Technical Parameters

Model	MHT-25K-100	MHT-30K-100
PV Input		
Start-up voltage (V)	135	135
Max. DC input voltage (V)*	1000*	1000*
Rated DC input voltage (V)	620	620
MPPT voltage range (V)*	200-850*	200-850*
Minimum operating DC voltage (V)	200	200
No. of MPP trackers	4	4
No. of DC inputs per MPPT	2	2
Max. input current (A)	30*4	30*4
Max. short-circuit current (A)	40*4	40*4
Backfeed current to the array (A)	0	0
Battery Side		
Battery type	Lithium Battery (with BMS)	
Battery communication mode	CAN	CAN
Battery voltage range (V)	135-750	135-750
Maximum charging current (A)	100	100
Maximum discharge current (A)	100	100
Short circuit current rating for the Battery input*** (A)	120	120
Grid Side		
Rated output power (kW)	25.0	30.0
Max. output power (kW)	27.5	33.0/30.0 ①
Rated output apparent power (kVA)	25.0	30.0
Max. output apparent power (kVA)	27.5	33.0/30.0 ②
Max. input apparent power (kVA)	30.0	36.0
Max. charging power of battery (kW)	25.0	30.0
Rated AC voltage (V)	3L/N/PE, 230/400V; 240/415V	
Rated AC frequency (Hz)	50/60	50/60
Rated output current (A)	38.0	43.5

Model	MHT-25K-100	MHT-30K-100
Grid Side		
Max. output current (A)	42.0	50.0/43.5③***
Max. input current (A)	43.5	52.2
The measured inrush current(A)	16.5A@25us	16.5A@25us
Max.output fault current(A)	114.0	114.0
Max. output overcurrent protection (A)	114.0	114.0
Power factor	0.8 leading …0.8 lagging	
Max. total harmonic distortion	<3% @Rated output power	
DCI	<0.5%In	<0.5%In
Back-up Side		
Rated output power (kW)	25.0	30.0
Max. output power (kW)	27.5	33.0
Rated output apparent power (kVA)	25.0	30.0
Max. output apparent power (kVA)	27.5	33.0
Rated output current (A)	38.0	43.5
Max. output current (A)	42.0	50.0
UPS switching time	<20ms	<20ms
Rated output voltage (V)	3L/N/PE, 230/400V; 240/415V	
Rated output frequency (Hz)	50/60	50/60
Peak output apparent power (kVA)	30, 60s	36, 60s
Voltage harmonic distortion	<3% @Linear load	
Generator Side		
Max. input apparent power (kVA)	30.0	36.0
Max. charging power of battery (kW)	25.0	30.0
Rated AC voltage (V)	3L/N/PE, 230/400V; 240/415V	
Rated AC frequency (Hz)	50/60	50/60
Max. input current (A)	43.5	52.2
Efficiency		
Max. efficiency	98.8%	98.8%
European efficiency	98.3%	98.3%

Model	MHT-25K-100	MHT-30K-100
Protection		
DC reverse polarity protection	Integrated	
Battery input reverse connection protection	Integrated	
Insulation resistance protection	Integrated	
Surge protection	Integrated	
Over-temperature protection	Integrated	
Residual current protection	Integrated	
Islanding protection	Integrated (Frequency shift)	
AC over-voltage protection	Integrated	
Overload protection	Integrated	
AC short-circuit protection	Integrated	
General Data		
Over voltage category	II(PV+Battery), III(Mains)	
Dimensions (mm)	800*620*300 (W*H*D)	
Weight (KG)	72	72
Protection degree	IP65	IP65
Standby self-consumption (W)	<15	<15
Topology	Transformerless	
Operating Temperature Range (℃)	-30~60	-30~60
Relative Humidity (%)	0~100	0~100
Operating Altitude (m)	3000	
Cooling	Smart fan	
Noise Level (dB)	<50	<50
Display	OLED & LED	
Communication	CAN, RS485, WiFi/LAN (Optional)	

Model	MHT-36K-100	MHT-40K-100
PV Input		
Start-up voltage (V)	135	135
Max. DC input voltage (V)*	1000*	1000*
Rated DC input voltage (V)	620	620
MPPT voltage range (V)*	200-850*	200-850*
Minimum operating DC voltage (V)	200	200
No. of MPP trackers	4	4
No. of DC inputs per MPPT	2	2
Max. input current (A)	30*4	30*4
Max. short-circuit current (A)	40*4	40*4
Backfeed current to the array (A)	0	0
Battery Side		
Battery type	Lithium Battery (with BMS)	
Battery communication mode	CAN	CAN
Battery voltage range (V)	135-750	135-750
Maximum charging current (A)	100	100
Maximum discharge current (A)	100	100
Short circuit current rating for the Battery input*** (A)	120	120
Grid Side		
Rated output power (kW)	36.0	40.0
Max. output power (kW)	39.6	44.0
Rated output apparent power (kVA)	36.0	40.0
Max. output apparent power (kVA)	39.6	44.0
Max. input apparent power (kVA)	43.5	48.0
Max. charging power of battery (kW)	36.0	40.0
Rated AC voltage (V)	3L/N/PE, 230/400V; 240/415V	
Rated AC frequency (Hz)	50/60	50/60
Rated output current (A)	52.0	60.0
Max. output current (A)	60.0	66.0
Max. input current (A)	63.0	69.6
The measured inrush current(A)	16.5A@25us	21.5A@25us
Max.output fault current(A)	114.0	175.0
Max. output overcurrent protection (A)	114.0	175.0

Model	MHT-36K-100	MHT-40K-100
Grid Side		
Power factor	0.8 leading …0.8 lagging	
Max. total harmonic distortion	<3% @Rated output power	
DCI	<0.5%In	<0.5%In
Back-up Side		
Rated output power (kW)	36.0	40.0
Max. output power (kW)	39.6	44.0
Rated output apparent power (kVA)	36.0	40.0
Max. output apparent power (kVA)	39.6	44.0
Rated output current (A)	52.0	60.0
Max. output current (A)	60.0	66.0
UPS switching time	<20ms	<20ms
Rated output voltage (V)	3L/N/PE, 230/400V; 240/415V	
Rated output frequency (Hz)	50/60	50/60
Peak output apparent power (kVA)	43.5, 60s	48, 60s
Voltage harmonic distortion	<3% @Linear load	
Generator Side		
Max. input apparent power (kVA)	43.5	48.0
Max. charging power of battery (kW)	36.0	40.0
Rated AC voltage (V)	3L/N/PE, 230/400V; 240/415V	
Rated AC frequency (Hz)	50/60	50/60
Max. input current (A)	63.0	69.6
Efficiency		
Max. efficiency	98.8%	98.8%
European efficiency	98.3%	98.3%
Protection		
DC reverse polarity protection	Integrated	
Battery input reverse connection protection	Integrated	
Insulation resistance protection	Integrated	
Surge protection	Integrated	

Model	MHT-36K-100	MHT-40K-100
Protection		
Over-temperature protection	Integrated	
Residual current protection	Integrated	
Islanding protection	Integrated (Frequency shift)	
AC over-voltage protection	Integrated	
Overload protection	Integrated	
AC short-circuit protection	Integrated	
General Data		
Over voltage category	II(PV+Battery), III(Mains)	
Dimensions (mm)	800*620*300 (W*H*D)	
Weight (KG)	72	72
Protection degree	IP65	IP65
Standby self-consumption (W)	<15	<15
Topology	Transformerless	
Operating Temperature Range (℃)	-30~60	-30~60
Relative Humidity (%)	0~100	0~100
Operating Altitude (m)	3000	
Cooling	Smart fan	
Noise Level (dB)	<50	<50
Display	OLED & LED	

Model	MHT-50K-100	MHT-40K-100-P	MHT-50K-100-P
PV Input			
Start-up voltage (V)	135	135	135
Max. DC input voltage (V)*	1000*	1000*	1000*
Rated DC input voltage (V)	620	620	620
MPPT voltage range (V)*	200-850*	200-850*	200-850*
Minimum operating DC voltage (V)	200	200	200
No. of MPP trackers	4	2	2
No. of DC inputs per MPPT	2	3	3
Max. input current (A)	30*4	60*2	60*2
Max. short-circuit current (A)	40*4	80*2	80*2
Backfeed current to the array (A)	0	0	0
Battery Side			
Battery type	Lithium Battery (with BMS)		
Battery communication mode	CAN	CAN	CAN
Battery voltage range (V)	135-750	135-750	135-750
Maximum charging current (A)	100	100	100
Maximum discharge current (A)	100	100	100
Short circuit current rating for the Battery input*** (A)	120	120	120
Grid Side			
Rated output power (kW)	50.0	40.0	50.0
Max. output power (kW)	55.0	44.0	55.0
Rated output apparent power (kVA)	50.0	40.0	50.0
Max. output apparent power (kVA)	55.0	44.0	55.0
Max. input apparent power (kVA)	60.0	48.0	60.0
Max. charging power of battery (kW)	50.0	40.0	50.0
Rated AC voltage (V)	3L/N/PE, 230/400V; 240/415V		
Rated AC frequency (Hz)	50/60	50/60	50/60
Rated output current (A)	75.0	60.0	75.0
Max. output current (A)	83.0	66.0	83.0
Max. input current (A)	87.0	69.6	87.0
The measured inrush current(A)	21.5A@25us	21.5A@25us	21.5A@25us
Max.output fault current(A)	175.0	175.0	175.0
Max. output overcurrent protection (A)	175.0	175.0	175.0

Model	MHT-50K-100	MHT-40K-100-P	MHT-50K-100-P
Grid Side			
Power factor	0.8 leading …0.8 lagging		
Max. total harmonic distortion	<3% @Rated output power		
DCI	<0.5%In	<0.5%In	<0.5%In
Back-up Side			
Rated output power (kW)	50.0	40.0	50.0
Max. output power (kW)	55.0	44.0	55.0
Rated output apparent power (kVA)	50.0	40.0	50.0
Max. output apparent power (kVA)	55.0	44.0	55.0
Rated output current (A)	75.0	60.0	75.0
Max. output current (A)	83.0	66.0	83.0
UPS switching time	<20ms	<20ms	<20ms
Rated output voltage (V)	3L/N/PE, 230/400V; 240/415V		
Rated output frequency (Hz)	50/60	50/60	50/60
Peak output apparent power (kVA)	60, 60s	48, 60s	60, 60s
Voltage harmonic distortion	<3% @Linear load		
Generator Side			
Max. input apparent power (kVA)	60.0	48.0	60.0
Max. charging power of battery (kW)	50.0	40.0	50.0
Rated AC voltage (V)	3L/N/PE, 230/400V; 240/415V		
Rated AC frequency (Hz)	50/60	50/60	50/60
Max. input current (A)	87.0	69.6	87.0
Efficiency			
Max. efficiency	98.8%	98.8%	98.8%
European efficiency	98.3%	98.3%	98.3%
Protection			
DC reverse polarity protection	Integrated		
Battery input reverse connection protection	Integrated		
Insulation resistance protection	Integrated		
Surge protection	Integrated		

Model	MHT-50K-100	MHT-40K-100-P	MHT-50K-100-P
Protection			
Over-temperature protection	Integrated		
Residual current protection	Integrated		
Islanding protection	Integrated (Frequency shift)		
AC over-voltage protection	Integrated		
Overload protection	Integrated		
AC short-circuit protection	Integrated		
General Data			
Over voltage category	II(PV+Battery), III(Mains)		
Dimensions (mm)	800*620*300 (W*H*D)		
Weight (KG)	72	72	72
Protection degree	IP65	IP65	IP65
Standby self-consumption (W)	<15	<15	<15
Topology	Transformerless		
Operating Temperature Range (℃)	-30~60	-30~60	-30~60
Relative Humidity (%)	0~100	0~100	0~100
Operating Altitude (m)	3000		
Cooling	Smart fan		
Noise Level (dB)	<50	<50	<50
Display	OLED & LED		
Communication	CAN, RS485, WiFi/LAN (Optional)		

① VDE-AR-N 4105: 30.0kW
② VDE-AR-N 4105: 30.0kVA
③ VDE-AR-N 4105: 43.5A
* PV Max. DC Input voltage and MPPT Max. voltage is 850V. The inverter will stop working when voltage between 850V to 1000V. The inverter will cause damage when voltage higher than 1000V.
** In some countries and areas, Max. Power of inverter "MHT-30K-100" can not exceed 30 kW or kVA via setting the "Underload" mode.
*** Rated current of built-in Fuse.
**** Max .input current of each string of PV should not exceed 20A; Max.input current of each MPPT should not exceed 40A.

10.2 Contact Information

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- Model of the device
- Serial number of the device
- Date of the device

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- Brief description of the problem

China (HQ)

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