

GOODWE



Quick Installation Guide

Grid-tied PV Inverter

UT Series

(GW320K-UT | GW320KH-UT | GW350K-UT | GW350KH-UT)

V1.1-2023-11-30

General Disclaimer

- The information in this guide is subject to change due to product updates or other reasons. This guide cannot replace the product labels or the safety precautions in the user manual unless otherwise specified. All descriptions here are for guidance only.
- Before installations, read through the quick installation guide. For additional information, please see the user manual.
- All operations should be performed by trained and knowledgeable technicians who are familiar with local standards and safety regulations.
- Check the deliverables for correct model, complete contents, and intact appearance. Contact after sales service if any damage is found or any component is missing.
- Use insulating tools and wear personal protective equipment when operating the equipment to ensure personal safety. Wear anti-static gloves, clothes, and wrist strips when touching electronic devices to protect the inverter from damage.
- Strictly follow the installation, operation, and configuration instructions in this guide. The manufacturer shall not be liable for equipment damage or personal injury if you do not follow the instructions. For more warranty details, please visit <https://www.goodwe.com/support-service/warranty-related>

Safety Disclaimer



Warning

DC Side:

1. Ensure the component frames and the bracket system are securely grounded.
2. Connect the DC cables using the delivered PV connectors. The manufacturer shall not be liable for the equipment damage if other connectors or terminals are used.
3. Ensure the DC cables are connected tightly, securely and correctly. Inappropriate wiring may cause poor contacts or high impedances, and damage the inverter.
4. Measure the DC cable using the multimeter to avoid reverse polarity connection. Also, the voltage should be under the permissible range. The manufacturer shall not be liable for the damage caused by reverse connection and extremely high voltage.
5. The PV modules used with the inverter must have an IEC61730 class A rating.
6. Ensure that the positive or negative poles of the PV string do not short-circuit to the ground. Otherwise, severe damage might happen, which is beyond the manufacturer's liability.
7. Do not connect one PV string to more than one inverter at the same time. Otherwise, it may cause damage to the inverter.
8. The two input strings per MPPT should be of the same type and number of modules. The manufacturer shall not be liable for the module damage if the number of modules in one string is 10% or more less than number of modules in other strings.

AC Side:

1. The voltage and frequency at the connecting point should meet the on-grid requirements.
2. Additional protective devices like circuit breakers or fuses are recommended on the AC side. Specification of the protective device should be at least 1.6 times the max AC output current.

- You are recommended to use copper cables as AC output cables. A copper to aluminum adapter terminal is required when an aluminum cable is used.

Product:

- PE cable of the inverter must be connected firmly. Make sure that all the grounding points on the enclosures are equipotential connected when there are multiple inverters.
- Do not apply mechanical load to the terminals, otherwise the terminals can be damaged.
- All labels and warning marks should be visible after the installation. Do not scrawl, damage, or cover any label on the device.
- Unauthorized dismantling or modification may damage the equipment, the damage is not covered under the warranty.
- Do not touch the running equipment to avoid being hurt as its temperature may exceed 60°C. Do not install the equipment at a place within children's reach.
- Install the product away from electromagnetic interference. If there are radio stations or wireless communication equipment below 30 MHz near the installation location, please install the equipment as follows:
 - Add a multi-turn winding ferrite core at the DC input line or AC output line of the inverter, or add a low-pass EMI
 - The distance between the inverter and the wireless EMI equipment is more than 30m.
- Warning labels on the inverter are as follows.

	DANGER High voltage hazard. Disconnect all incoming power and turn off the product before working on it.		Delayed discharge. Wait 5 minutes after power off until the components are completely discharged.
	Read through the user manual before any operations.		Potential risks exist. Wear proper PPE before any operations.
	High-temperature hazard. Do not touch the product under operation to avoid being burnt.		Do not dispose of the inverter as household waste. Discard the product in compliance with local laws and regulations, or send it back to the manufacturer.
	CE Mark		Grounding point.

Check Before Power ON

No.	Check Item
1	The product is firmly installed at a clean place that is well-ventilated and easy-to operate.
2	The PE, DC input, AC output, and communication cables are connected correctly and securely.
3	Cable ties are intact, routed properly and evenly.
4	Unused ports and terminals are sealed.
5	The voltage and frequency at the connection point meet the on-grid requirements.

EU Declaration of Conformity

GoodWe Technologies Co., Ltd. hereby declares that the inverter with wireless communication modules sold in the European market meets the requirements of the following directives:

- Radio Equipment Directive 2014/53/EU (RED)
- Restrictions of Hazardous Substances Directive 2011/65/EU and (EU) 2015/863 (RoHS)
- Waste Electrical and Electronic Equipment 2012/19/EU
- Registration, Evaluation, Authorization and Restriction of Chemicals (EC) No 1907/2006 (REACH)

You can download the EU Declaration of Conformity on <https://en.goodwe.com>.

GoodWe Technologies Co., Ltd. hereby declares that the inverter without wireless communication modules sold in the European market meets the requirements of the following directives:

- Electromagnetic compatibility Directive 2014/30/EU (EMC)
- Electrical Apparatus Low Voltage Directive 2014/35/EU (LVD)
- Restrictions of Hazardous Substances Directive 2011/65/EU and (EU) 2015/863 (RoHS)
- Waste Electrical and Electronic Equipment 2012/19/EU
- Registration, Evaluation, Authorization and Restriction of Chemicals (EC) No 1907/2006 (REACH)

You can download the EU Declaration of Conformity on <https://en.goodwe.com>.

LED Indicator

Indicator	Status	Description
		ON= EQUIPMENT POWER ON
		OFF= EQUIPMENT POWER OFF
		ON= THE INVERTER IS FEEDING POWER
		OFF= THE INVERTER IS NOT FEEDING POWER
		SINGLE SLOW FLASH= SELF CHECK BEFORE CONNECTING TO THE GRID
		SINGLE FLASH = CONNECTING TO THE GRID
		ON= WIRELESS IS CONNECTED/ACTIVE
		BLINK 1 = WIRELESS SYSTEM IS RESETTING
		BLINK 2 = WIRELESS ROUTER PROBLEM
		BLINK 4 = WIRELESS SERVER PROBLEM
		BLINK = RS485 IS CONNECTED
		OFF= WIRELESS IS NOT ACTIVE
		ON= A FAULT HAS OCCURRED
		OFF= NO FAULT

Cable Specifications

No.	Cable	Type		Cable Specification	
				Outside Diameter (mm)	Conductor Cross Sectional Area(mm ²)
1	DC cable	PV cable that meets 1500V standard.		4.7-6.4 or 6.4-8.4 (optional)	4-6
2	AC cable	Multi-core outdoor copper or aluminum cable ^[1]	For inverters with single row of AC terminals	35-75	<ul style="list-style-type: none"> Copper cable: $70 \leq S \leq 400$ Aluminum cable: $150 \leq S \leq 400$ $S_{PE} \geq S/2$
			For inverters with double rows of AC terminals	48.5-53	<ul style="list-style-type: none"> Aluminum cable: 185 or 240 $S_{PE} \geq S/2$
		Single-core outdoor copper or aluminum cable ^[1]		<ul style="list-style-type: none"> Single core cable: 20-38 PE cable: 16-28 	<ul style="list-style-type: none"> Copper cable: $70 \leq S \leq 400$ Aluminum cable: $150 \leq S \leq 400$ $S_{PE} \geq S/2$
3	PE cable	Outdoors Cable		-	$S_{PE} \geq S/2$
4	RS485 communication cable	Outdoor shielded twisted pair cable that meets local requirements. ^[2]		8-11	-

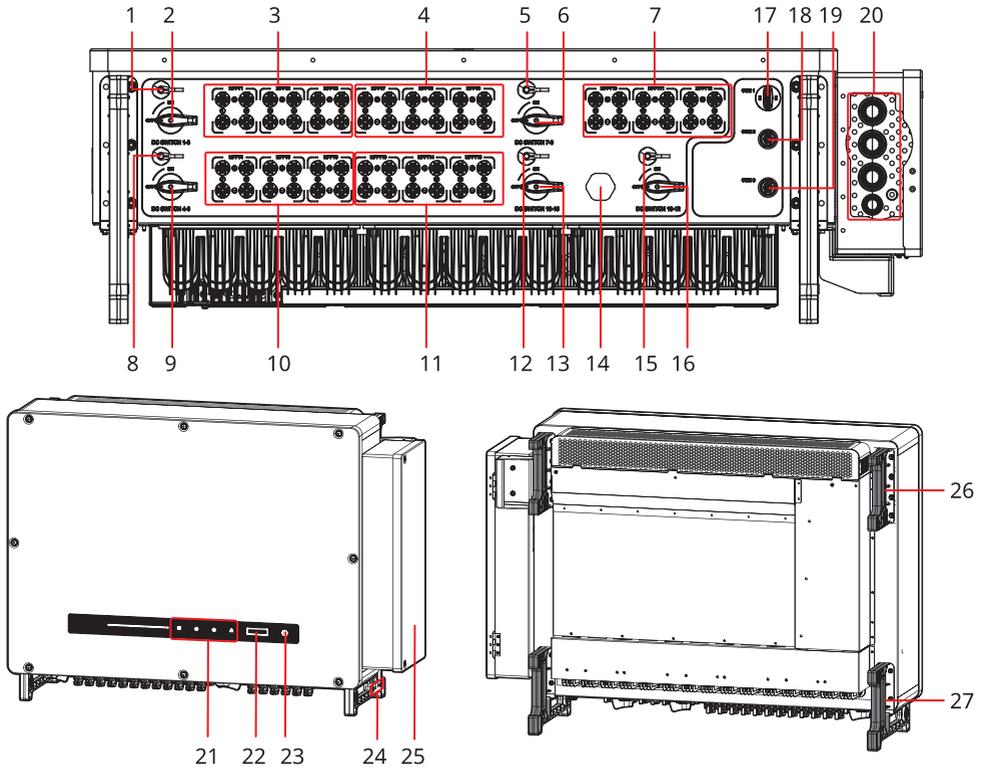
Note

[1] A copper to aluminum wiring terminal is required when using an aluminum cable.

[2] Cable length of the RS485 communication cable: $\leq 1000\text{m}$.

The values in this table are valid only if the external protective earthing conductor and the phase conductors are the same material. Otherwise, the cross-sectional area of the external protective earthing conductor is to be determined in a manner which produces a conductance equivalent to that which results from the application of this table.

Parts



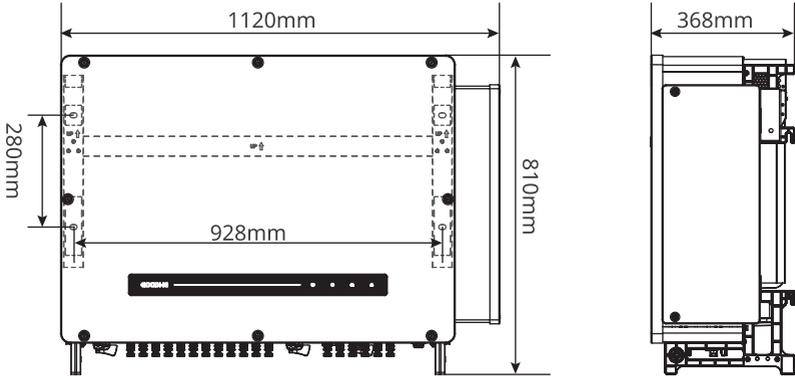
- | | | |
|---|--|--|
| 1. DC switch reset button 1 ^[1] | 2. DC switch 1-3 (DC SWITCH 1-3) | 3. PV input terminal 1-3 (MPPT1-3) |
| 4. PV input terminal 7-9 (MPPT7-9) | 5. DC switch reset button 3 ^[1] | 6. DC switch 7-9 (DC SWITCH 7-9) |
| 7. PV input terminal 10-12 (MPPT10-12) | 8. DC switch reset button 2 ^[1] | 9. DC switch 4-6 (DC SWITCH 4-6) |
| 10. PV input terminal 4-6 (MPPT4-6) | 11. PV input terminal 13-15 (MPPT13-15) ^[2] | 12. DC switch reset button 5 ^{[1][2]} |
| 13. DC switch 13-15 (DC SWITCH 13-15) ^[2] | 14. Ventilation valve | 15. DC switch reset button 4 ^[1] |
| 16. DC switch 10-12 (DC SWITCH 10-12) | 17. COM Port for module (COM1) | 18. RS485 COM port (COM2) |
| 19. Remote shutdown or emergency power off COM port (COM3) ^[3] | 20. AC cable outlet hole | 21. LED indicator |
| 22. LCD (optional) | 23. Button (optional) | 24. Grounding point |
| 25. AC cable wiring box | 26. Mounting handles | 27. Bottom handles |

[1] DC switch reset button 1 controls DC switch 1-3, DC switch reset button 2 controls DC switch 4-6, DC switch reset button 3 controls DC switch 7-9, DC switch reset button 4 controls DC switch 10-12, DC switch reset button 5 controls DC switch 13-15.

[2] Only for GW320K-UT.

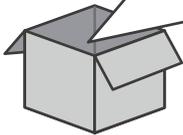
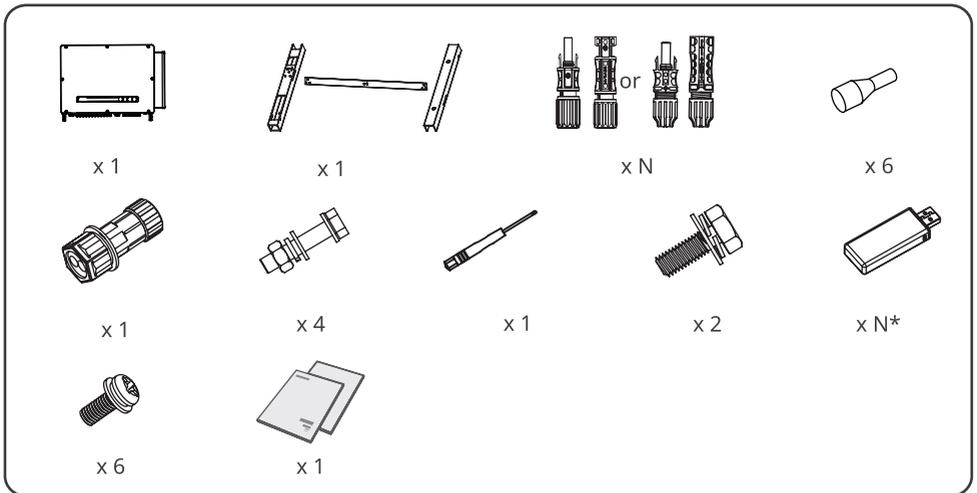
[3] Remote shutdown for Europe. Emergency power off for India.

Dimensions



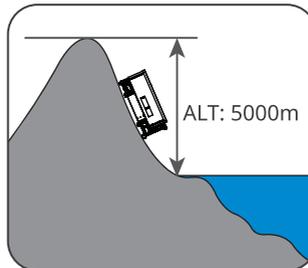
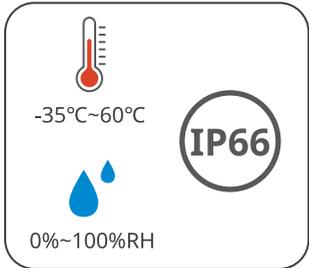
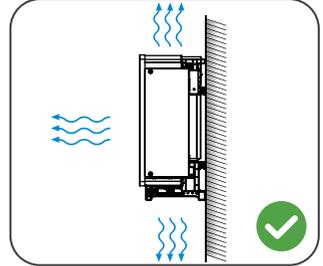
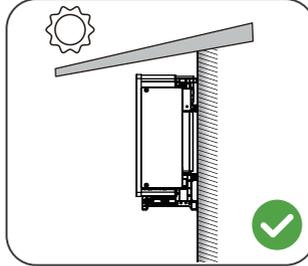
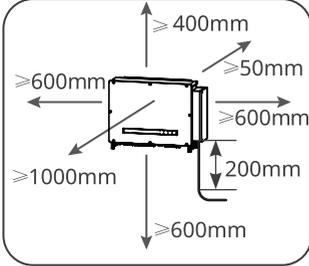
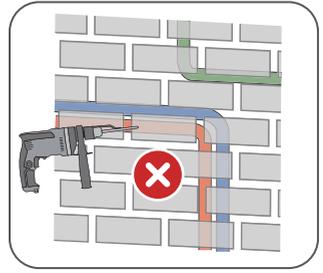
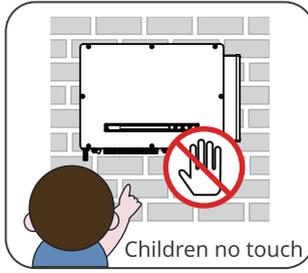
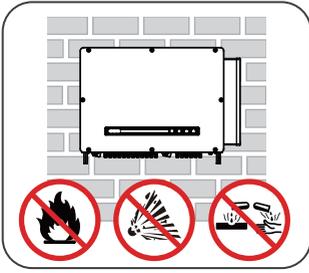
03 Installing the Inverter

Packing List

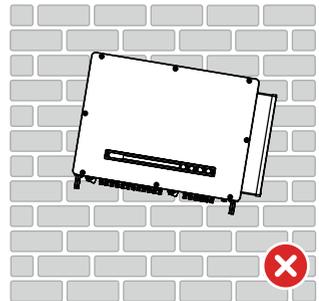
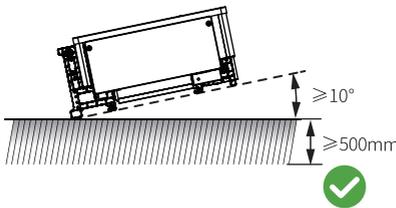
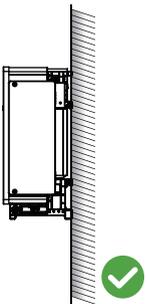


- N = Quantity depends on the inverter model.
- Bluetooth module is optional and delivered separately.

Space Requirements

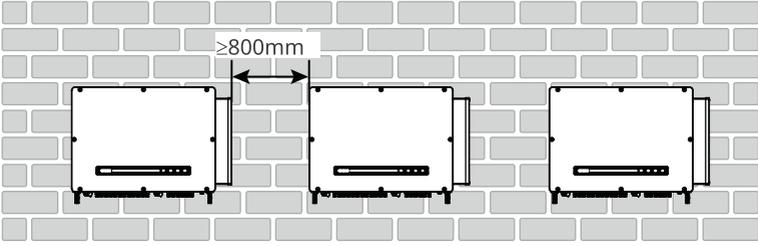


Angle Requirements

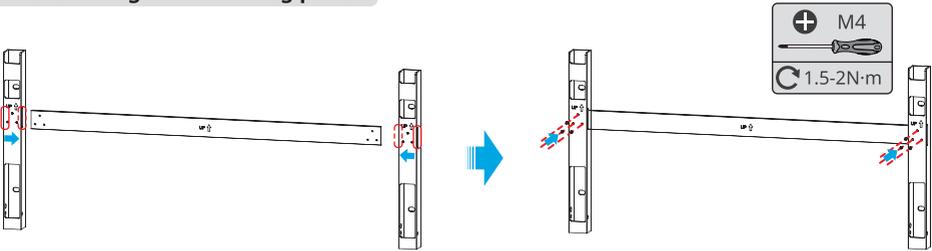


Space Requirements

- Horizontal Installation



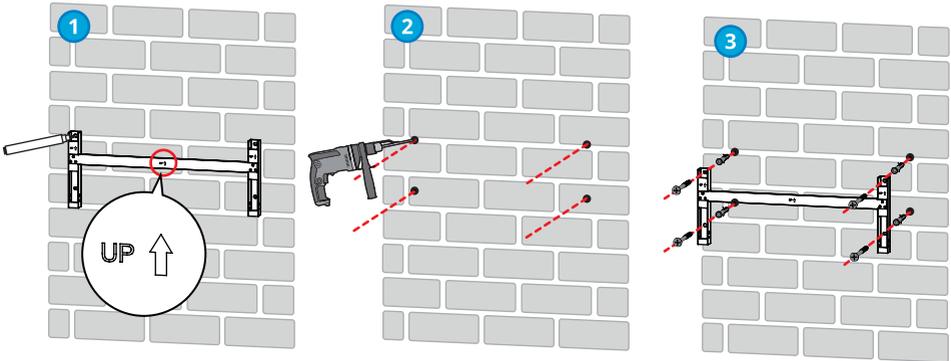
Assembling the mounting plate



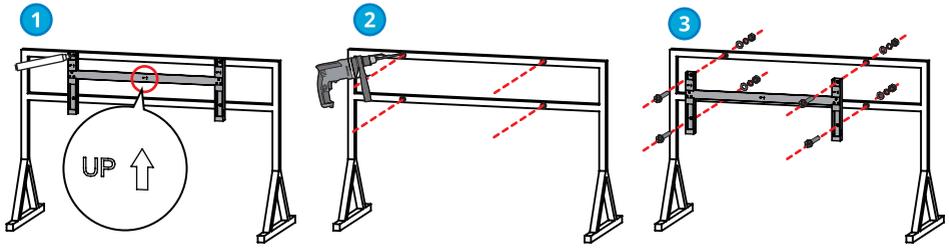
Installing the mounting bracket

Wall mounting

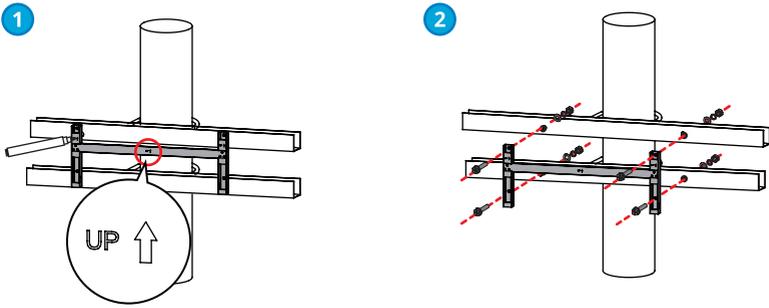
The M10 expansion bolts should be prepared by customers.



Bracket mounting

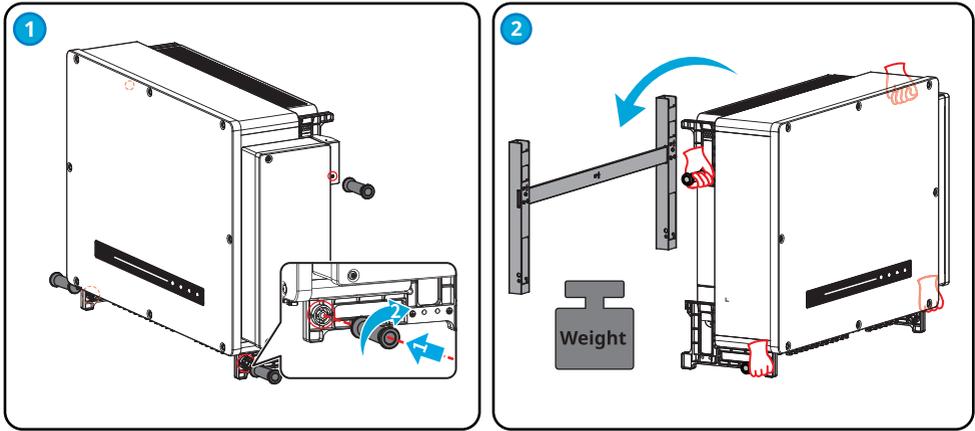


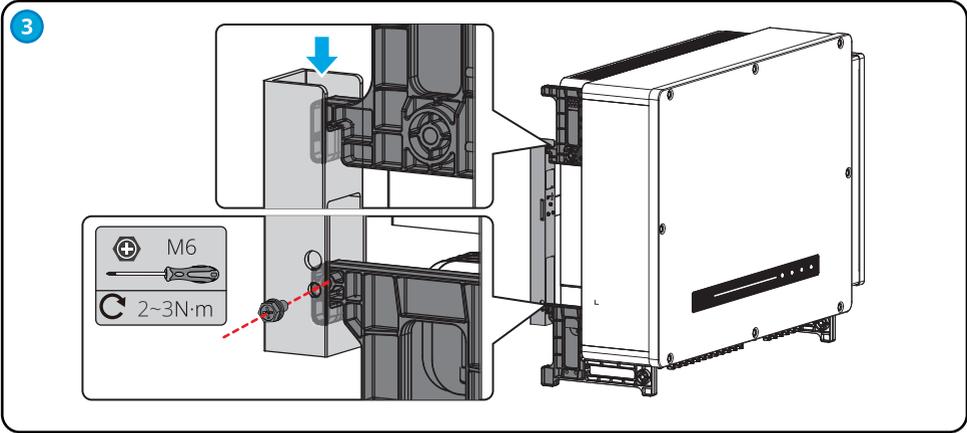
Pole mounting



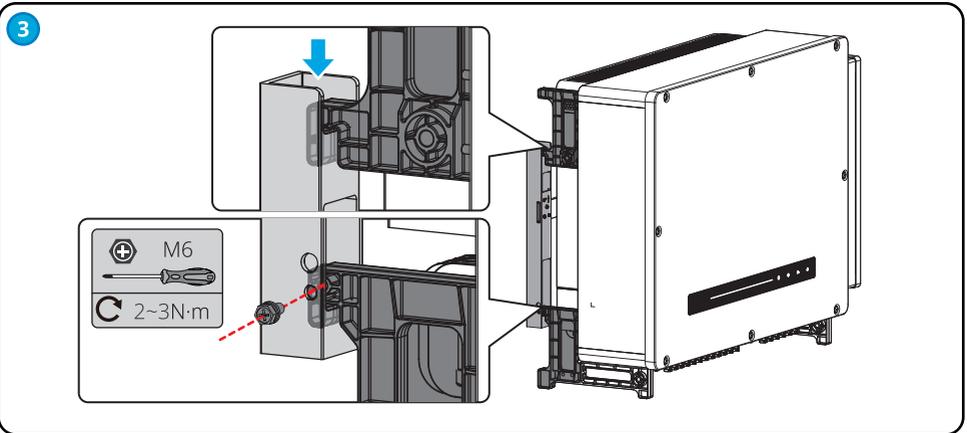
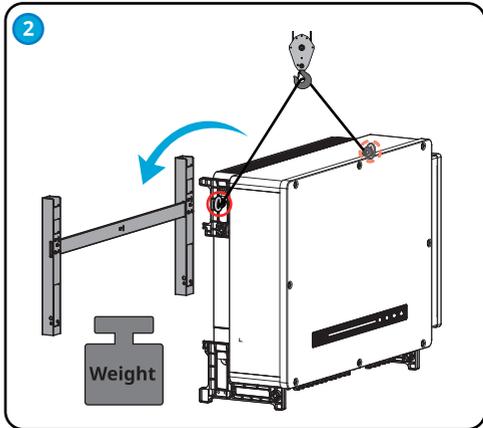
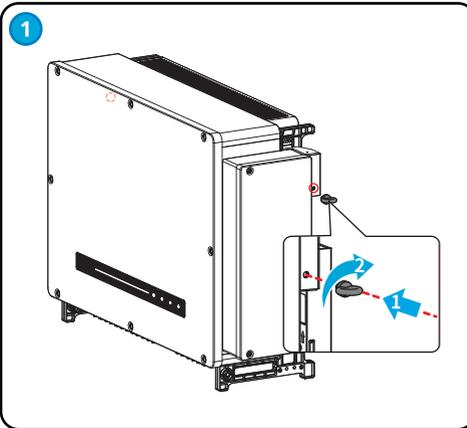
Installing the Inverter

Lifting the Inverter



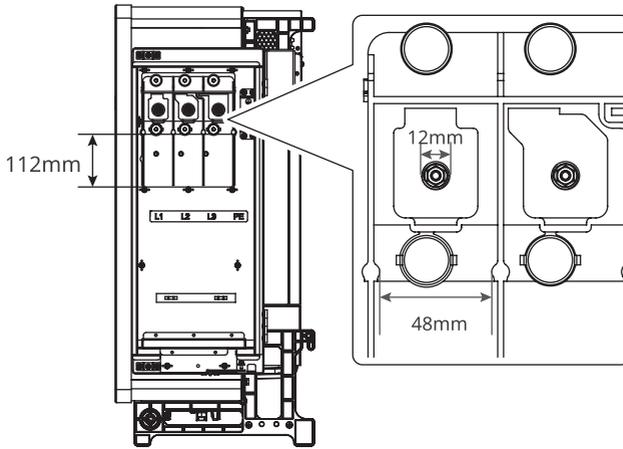


Hoisting the Inverter

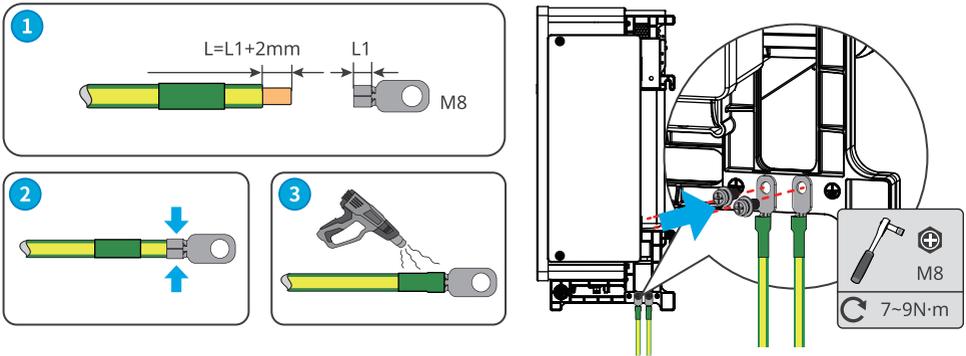


04 Electrical Connection

Recommended dimensions of the copper to aluminum wiring terminal and rubber wall:

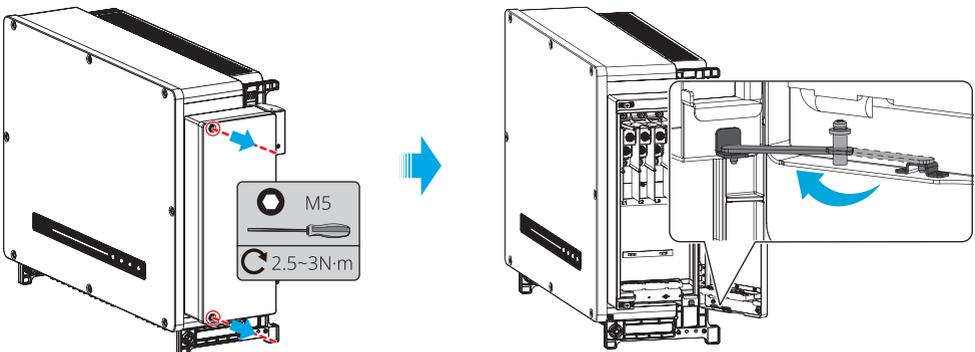


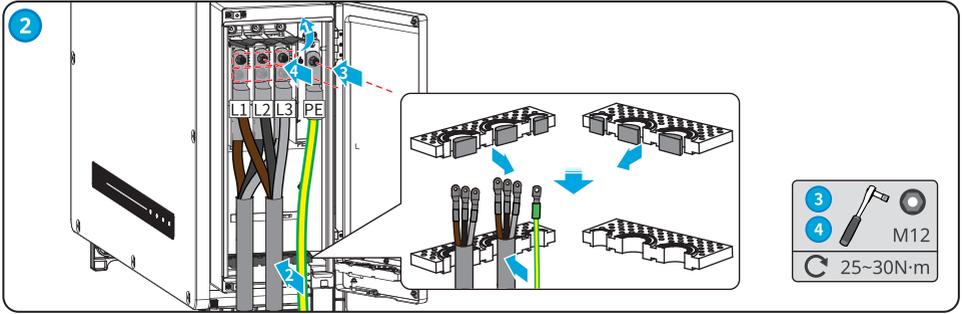
PE Cable



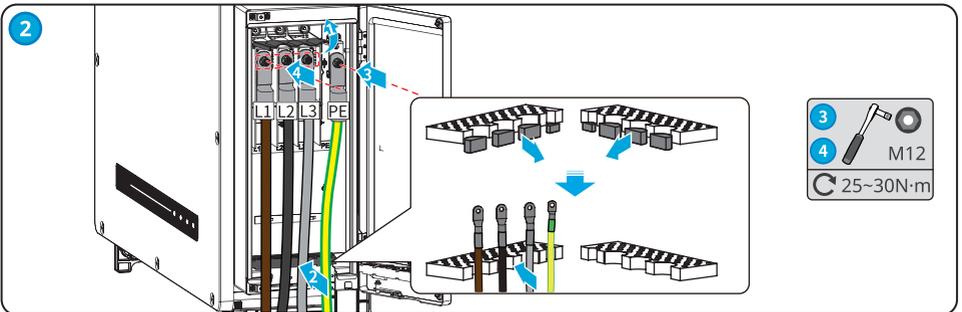
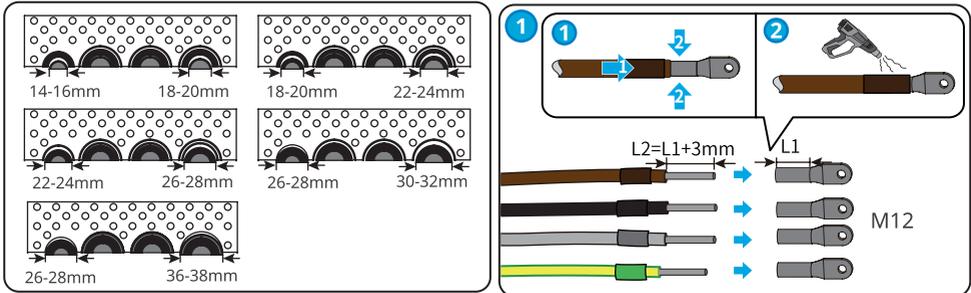
AC Cable

Opening the AC wiring box

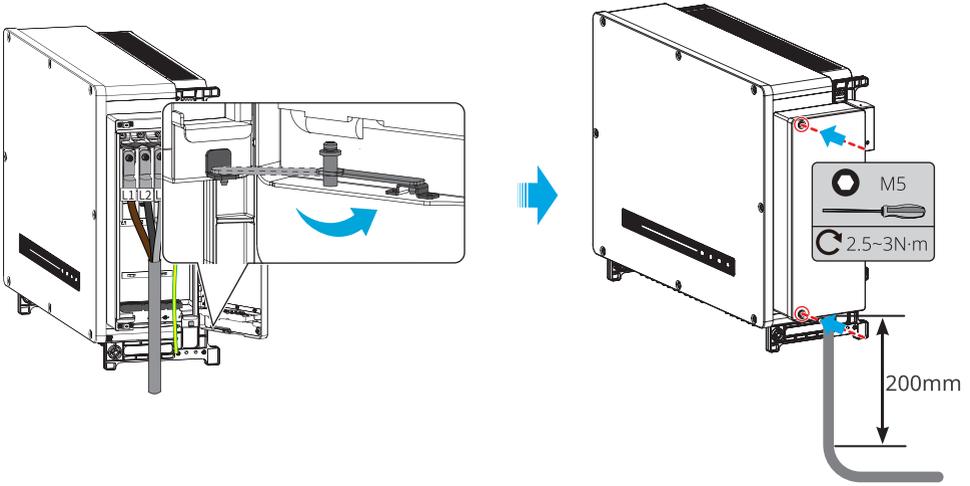




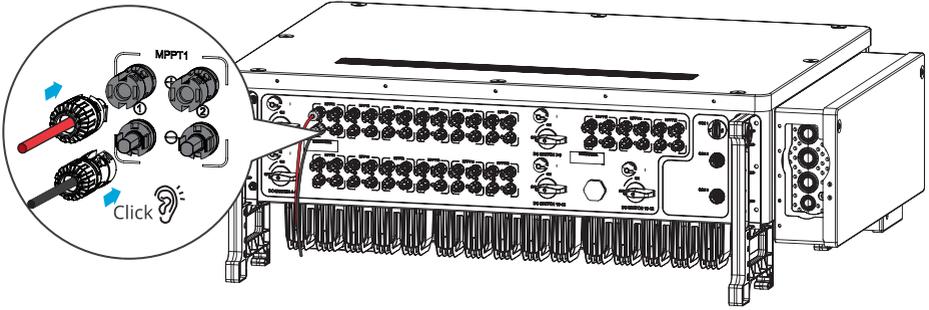
Single-core AC cable



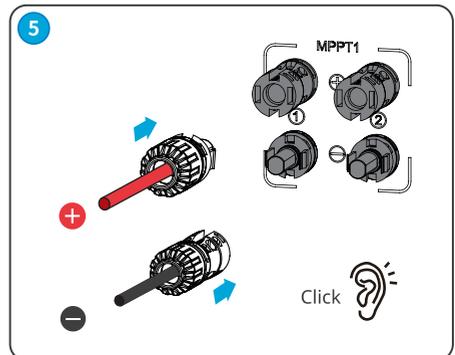
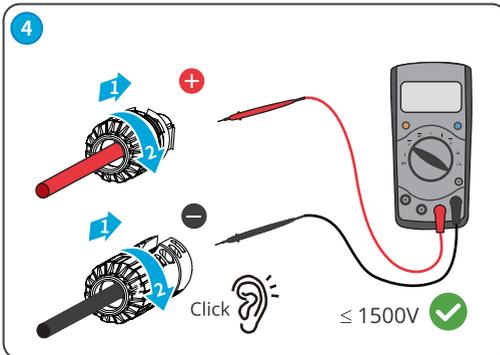
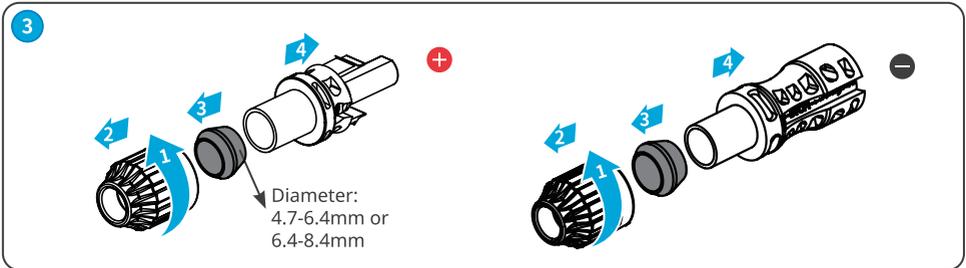
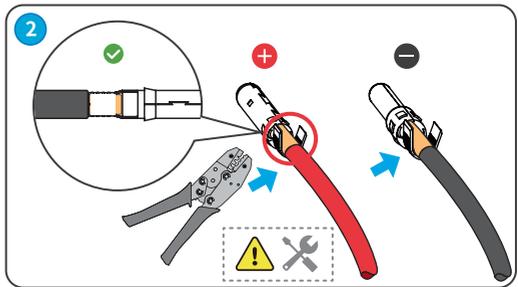
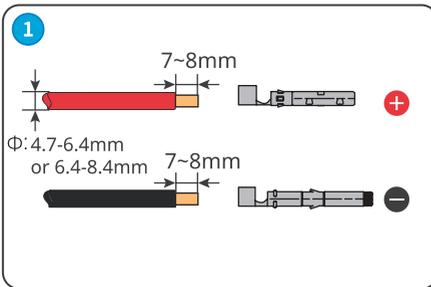
Closing the AC wiring box



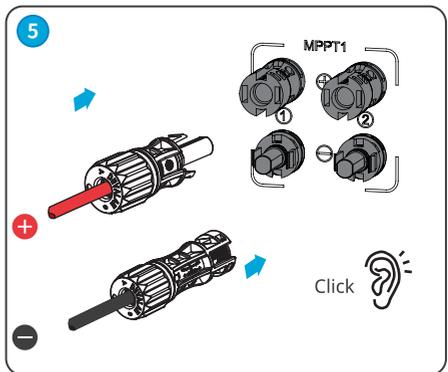
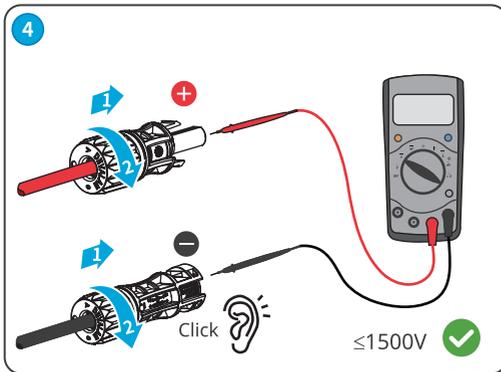
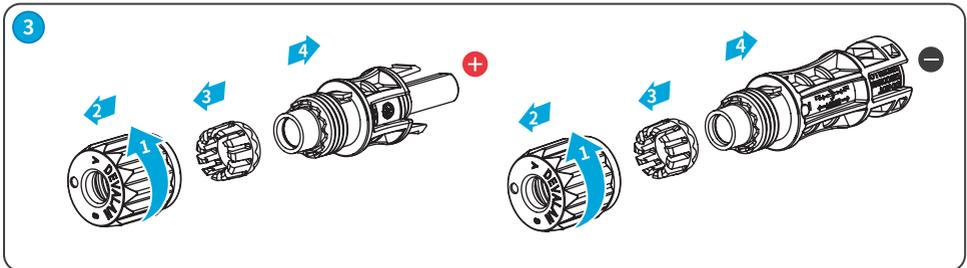
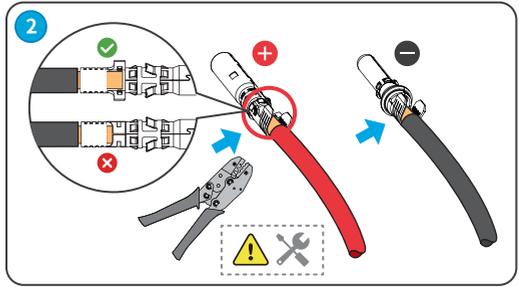
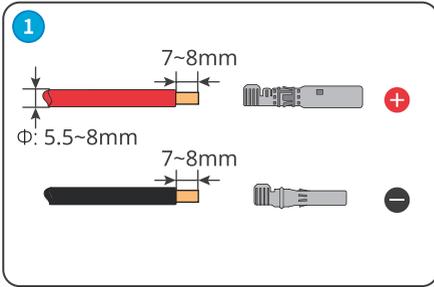
DC Cable (PV)



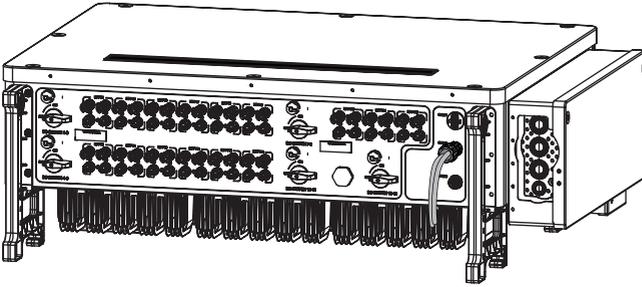
MC4 PV connector



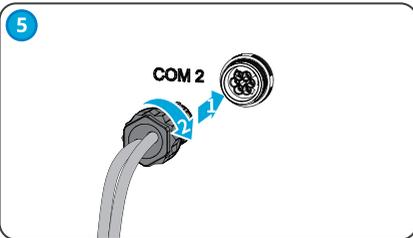
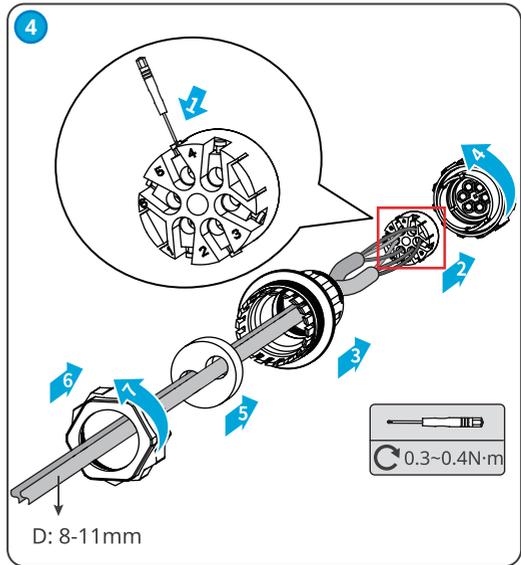
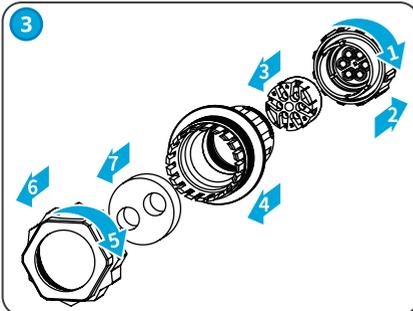
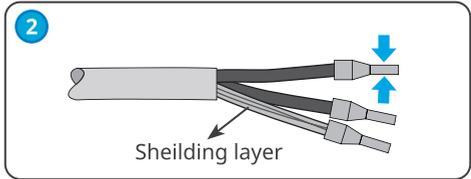
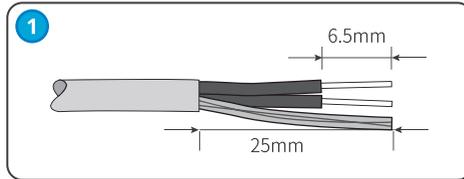
Vaconn PV connector



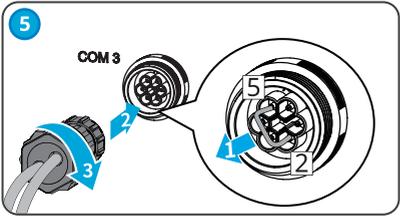
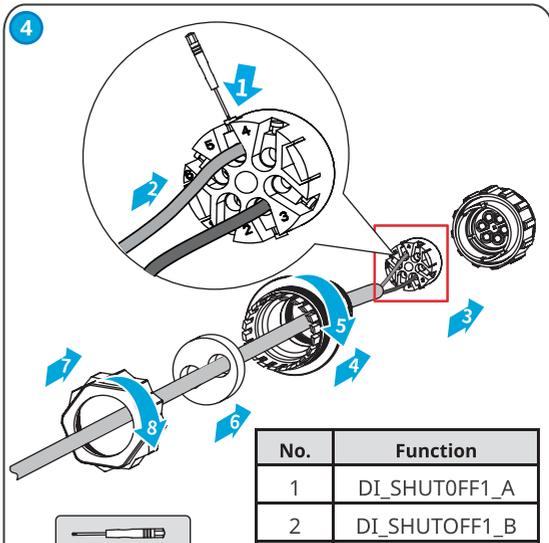
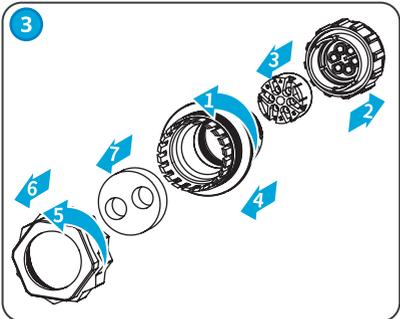
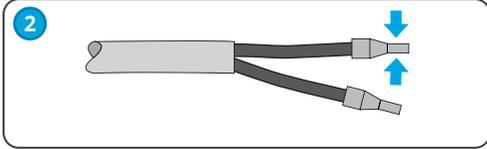
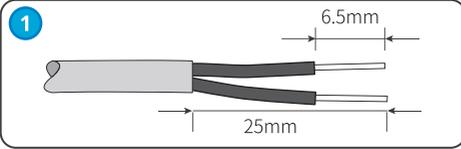
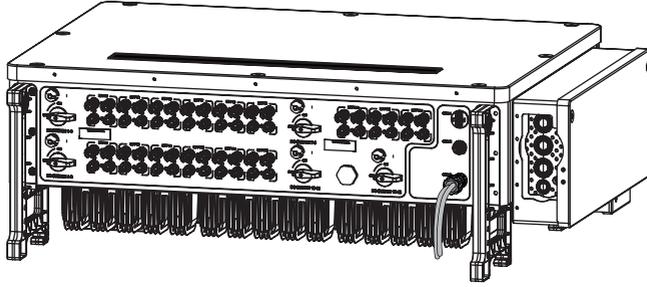
RS485 communication cable



No.	COM2 (RS485)
1	RS485 A
2	RS485 B
3	RS485 A
4	RS485 B
5	Grounding
6	Grounding



Remote Shutdown/Emergency Power Off Cable

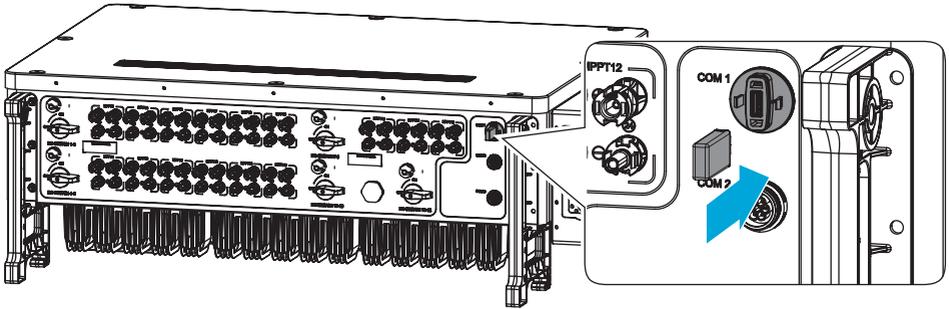


No.	Function
1	DI_SHUTOFF1_A
2	DI_SHUTOFF1_B
3	Reserved
4	Reserved
5	DI_SHUTOFF2_A
6	DI_SHUTOFF2_B

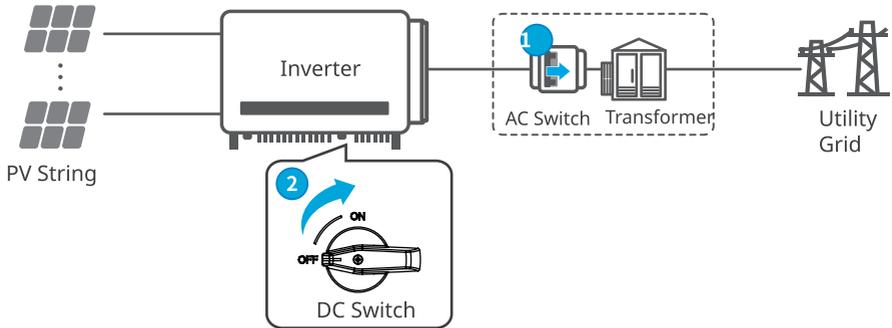
NOTICE

The COM3 communication port is installed with a short circuit wire. Remove the short circuit wire and keep it properly when enabling the function. Install the short circuit wire in PIN2 and PIN5 of the COM3 port when disabling the remote shutdown function.

Communication Module



05 Power ON and OFF



Power ON

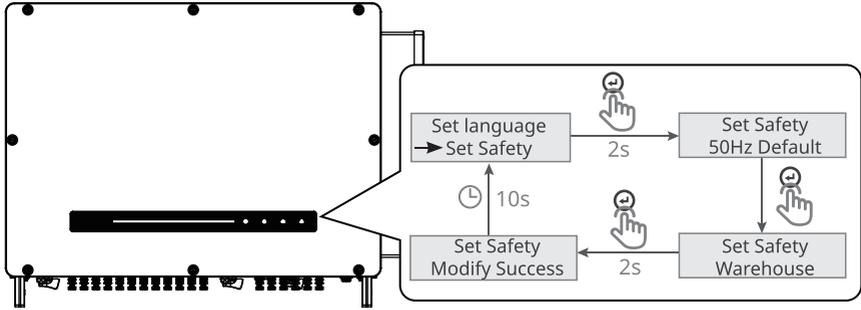
Turn on 1 → 2

Power OFF

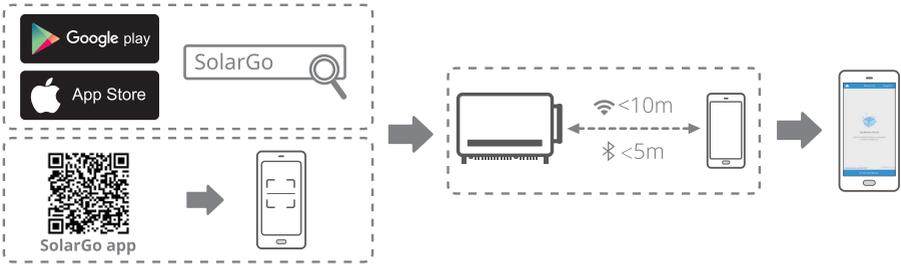
Turn off 1 → 2

Commissioning via LCD

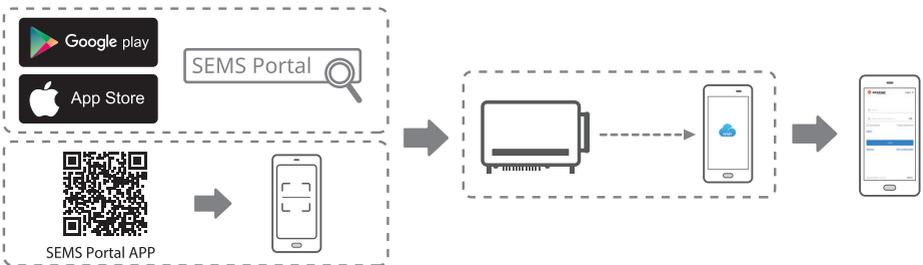
Set country code.



Commissioning via SolarGo APP



Monitoring via SEMS Portal App



For more detailed instructions, scan the QR code below.





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