

# Quick Installation Guide

Hybrid inverter



## Disclaimer


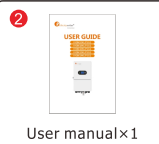
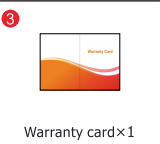

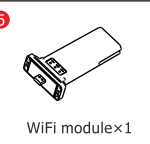
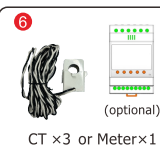


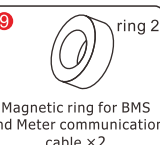


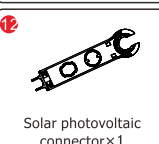


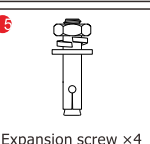
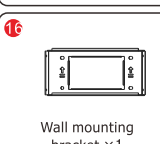
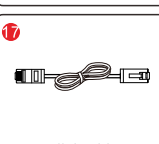
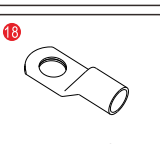
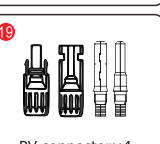

- Please read the user's manual carefully before performing all operations; this installation guide does not supersede the use of the product's user's manual;
- Product information is subject to change without notice. This manual is frequently updated, please contact your salesperson for the latest version.
- After unpacking, please check the product for damages and missing parts.
- Do not open the battery to repair or disassemble. Only FelicitySolar is allowed to carry out any such repairs. Only qualified personnel can install this device with battery.
- In case of fire, use only dry powder fire extinguisher. Liquid extinguishers should not be used.
- Before using the inverter, please read the instructions and warning signs of the battery and corresponding sections in the instruction manual. Improper reassembly may result in electric shock or fire.
- To reduce risk of electric shock, disconnect all wires before attempting any maintenance or cleaning. Turning off the unit will not reduce this risk.
- Never charge a frozen battery.
- Never cause AC output and DC input short circuited. Do not connect to the mains when DC input short circuits.

## Installation Video


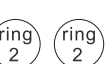



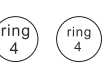



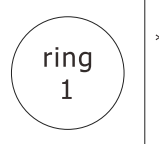
You can watch the installation video by scanning the QR code to the right



## Packing List











 Inverter×1	 User manual×1	 Warranty card×1	 Quick installation guide×1	 WiFi module×1
 CT ×3 or Meter×1 (optional)	 ring 1	 ring 5	 ring 2	 ring 4
 ring 3	 Solar photovoltaic connector×1	 OT terminals×1	 NTC×1	 Expansion screw ×4
 Wall mounting bracket ×1	 Parallel cable×1	 M8 terminal×4	 PV connector×4	 M6 Combination screw×4PCS

## Packing box of magnetic ring

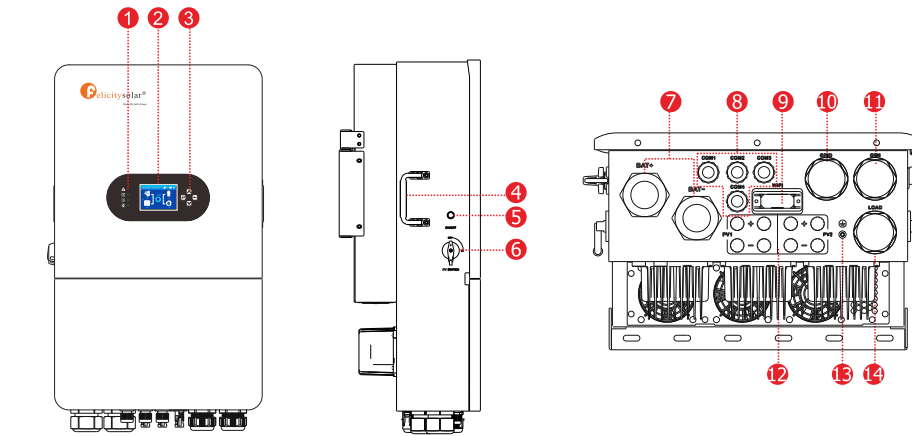
 ring 5	 ring 2	 ring 2	 ring 5
 ring 4	 ring 4	 ring 4	 ring 3
 ring 1	 ring 1	*ring1:78x51x22 mm ring2:33x23x15 mm ring3:25.9x28x13 mm ring4:31x29x19 mm ring5:55.5x33x23 mm	

No.	Name	Description	Quantity
1	Inverter	Inverter	1
2	User manual	User manual	1
3	Warranty card	Warranty Card	1
4	Quick installation guide	Quick Installation Guide	1
5	WiFi module	For installing the WFI module	1
6	Meter or CT	Meter and anti backflow	/
7	Ring 1	Magnetic ring for battery	2
8	Ring 5	Magnetic ring for AC wires	2
9	Ring 2	Magnetic ring for BMS and Meter communication cable	2
10	Ring 4	Magnetic ring 4 for parallel operation*2 and DRMS	3
11	Ring 3	Magnetic ring for external temperature sensor	1
12	Solar Photovoltaic Connector Special Spanner	Used for installing and disassembling photovoltaic systems	1
13	OT terminals	For external ground connection	1
14	NTC	Battery Temperature sensor	1
15	Expansion screw	Used for securing the product's wall mount	4
16	Wall mounting bracket	Used to fix the inverter to the wall	1
17	Parallel cable	Used for parallel wiring	1
18	M8 terminal	For crimping BAT cables	4
19	PV connector	PV Port connectors	4
20	Screws	M6 Combination screw	4

## Explanation of the Symbols

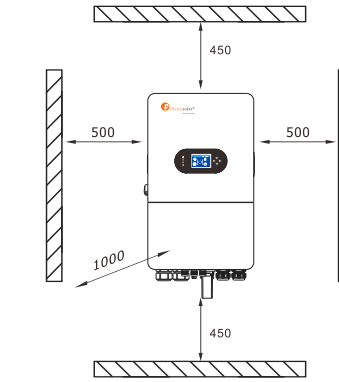
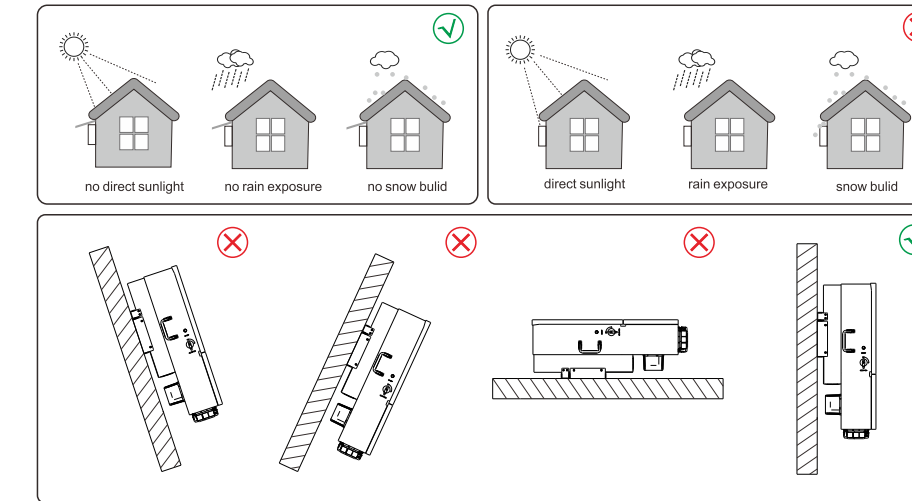
	Danger: Serious physical injury or even death may occur if not follow the relative requirements		Instruction manual:Read the instruction manual before starting installation and operation.
	Warning: Physical injury or damage to the devices may occur if not follow the relative requirements		EU WEEE mark: Product should not be disposed as household waste.
	Hot surface: Sides of the device may become hot. Do not touch!	<b>NOTE</b>	Note: The procedures taken for ensuring proper operation.
	Electrostatic sensitive: Damage may occur if not follow the relative requirements		CE mark: The inverter complies with the CE directive.
	Directive on the restriction of the use of certain hazardous components in electrical and electronic equipment		Earth terminal:The inverter must be reliably grounded.
	Caution: Ensure that DC and AC side circuit breakers have been disconnected and wait at least 5 minutes before wiring and checking.		

## Product Overview











- |                        |                            |                        |
|------------------------|----------------------------|------------------------|
| 1. Inverter Indicators | 6. PV Switch               | 11. GEN Interface      |
| 2. LCD Display         | 7. Battery Input Interface | 12. PV Input Interface |
| 3. Function Buttons    | 8. COMM Interface          | 13. Grounding Point    |
| 4. Handle              | 9. WIFI Interface          | 14. LOAD Interface     |
| 5. Power on/off        | 10. GRID Interface         |                        |

## Installation Environment



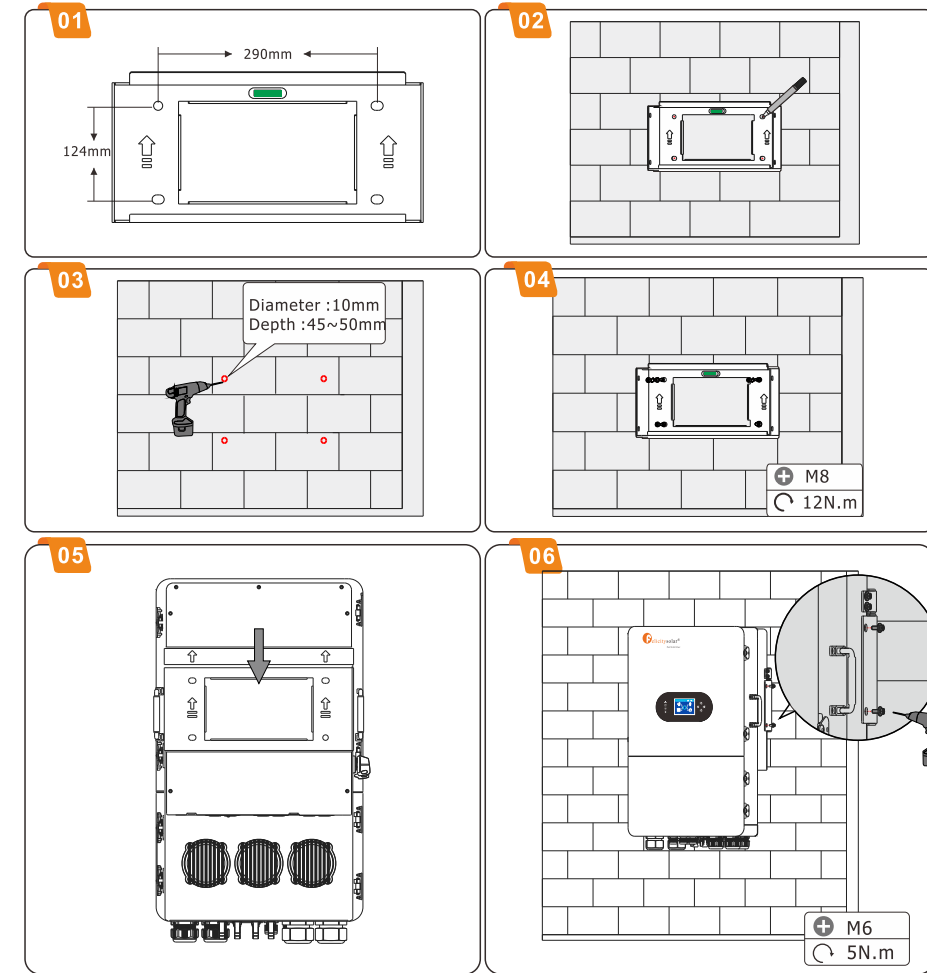
Space	Minimum clearance
Lateral	500mm
Top	450mm
Bottom	450mm
Front	1000mm

## LCD Display Icons

Function Key	Icon	Description
ESC		Hold on the "ESC" button last for 3S to turn off the inverter
UP		To go to previous selection
DOWN		To go to next selection
ENTER		Hold on the "ENTER" button last for 3S to turn on the inverter
LED Indicator	Icon	Description
Battery		Charging the battery, the LED light flash. If battery is full, the LED light will always-on. The battery is not charged, the LED light will go out.
Utility		Inverter running in utility mode, the LED will always-on. Inverter is not running in utility mode, the LED will go out.
Inverter		Inverter running in off-grid mode, the LED light will always-on. Inverter is not running in off-grid mode, the LED light will go out.
Fault		If inverter in fault event, the LED light will always-on. If inverter in warning event, the LED light will flash. Inverter work normally, the LED light will go out.
Buzzer Information		
Buzzer beep		Turn on/off the inverter, the buzzer will last for 2.5s. Press any button, the buzzer will last for 0.1s. Hold on the "ENTER" button, the buzzer will last for 3s. If in fault event, the buzzer will keep going. If in warning event, the buzzer will beep discontinuous (Check more information on the chapter of "Warning Code Table").

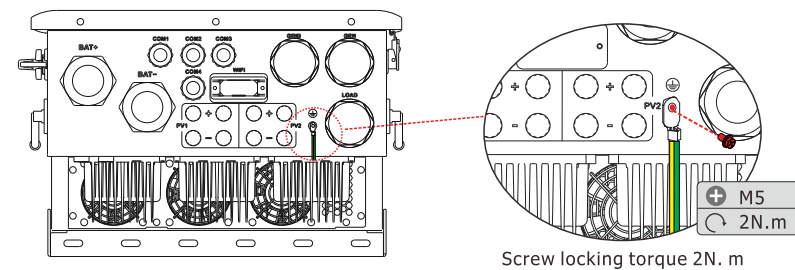
## Installation Procedure

The inverter is suitable for mounting on concrete or other non-combustible surface only.



## External Grounding Connection

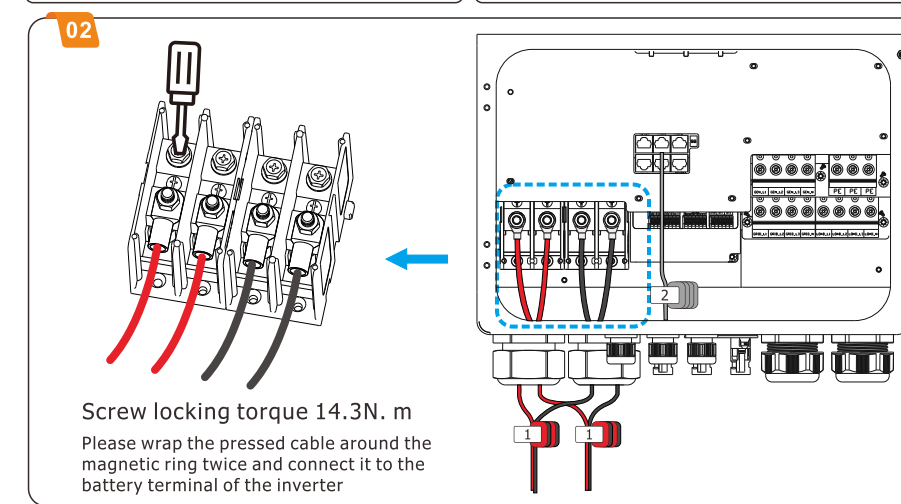
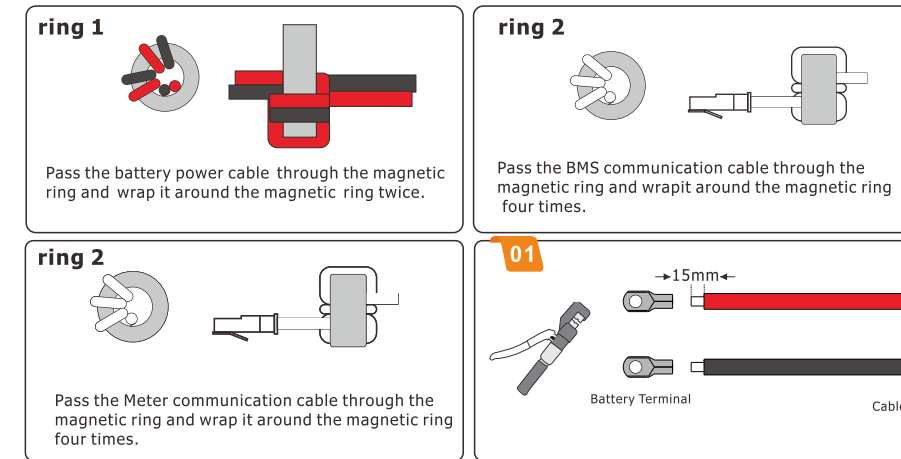
Ground cable shall be connected to ground plate on grid side, this prevents electric shock if the original protective conductor fails.



## Battery Connection

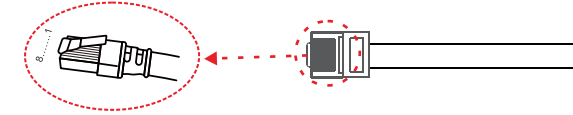
Please be careful about any electric shock or chemical hazard. Make sure there is an external DC breaker connected to the battery without build-in DC breaker. **The recommended wire diameter is single wire diameter.**

Inverter Model	DC Breaker specification	Wire Size	Cable
IVGM10KLP3G1 IVGM12KLP3G1	250A	1AWG	50mm <sup>2</sup>
IVGM14KLP3G1 IVGM15KLP3G1 IVGM16KLP3G1	300A	0AWG	50mm <sup>2</sup>
IVGM18KLP3G1 IVGM20KLP3G1	400A	3/0AWG	70mm <sup>2</sup>



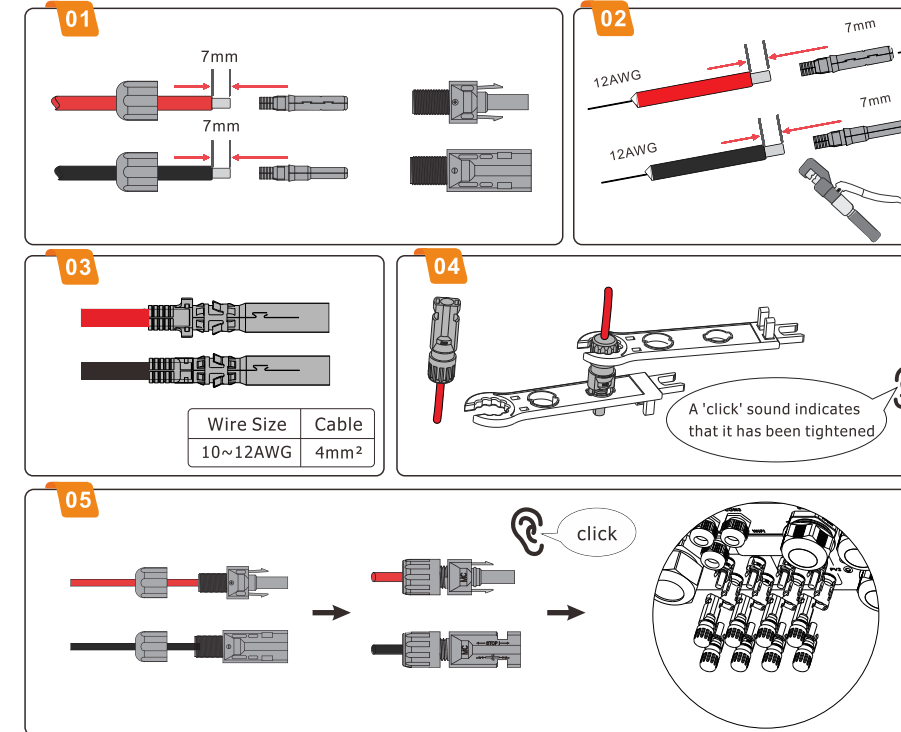
**! The polarity of battery cannot be connected reversely, otherwise the inverter could be damaged.**

## BMS Cable Connection



NO.	1	2	3	4	5	6	7	8
Function	/	/	BMS_L	BMS_H	BMS_485B	BMS_485A	/	/

## PV Connection



## Grid, Load and Gen Port Connection

**! Make sure the inverter is totally isolated from any DC or AC power before connecting AC cable.**

An external AC breaker is needed for on-grid connection to isolate from grid when necessary. Recommended AC circuit breaker parameters are 30A/400V.

Inverter Model	Wire Size	Cable(mm <sup>2</sup> )
IVGM20KLP3G1 IVGM18KLP3G1 IVGM16KLP3G1 IVGM15KLP3G1 IVGM14KLP3G1	4AWG	16mm <sup>2</sup>
IVGM12KLP3G1 IVGM10KLP3G1	6AWG	10mm <sup>2</sup>

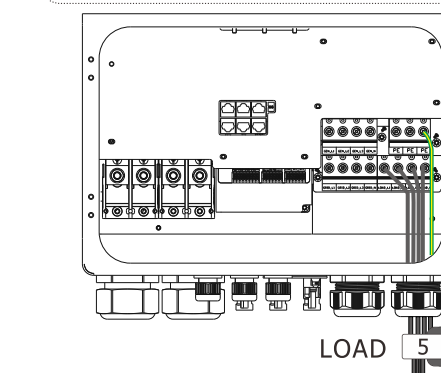
LOAD, GRID, GEN, PE: Please strip the cables to the dimensions shown in the following picture with professional tools before installation.



## Schematic diagrams of the magnetic rings for LOAD and GEN

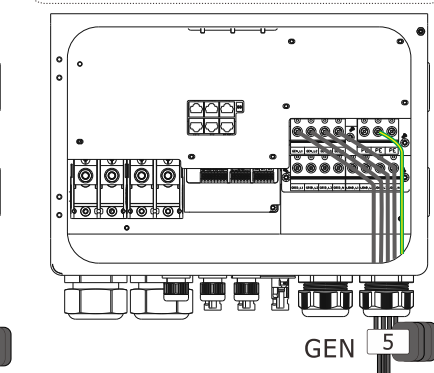
### ring 5

Wind the wire at the load port around the magnetic ring once, and then pass one end of the wire through the magnetic ring. The LOAD terminal and GEN terminal are connected to the inverter according to the silk-screen printing on the chassis.

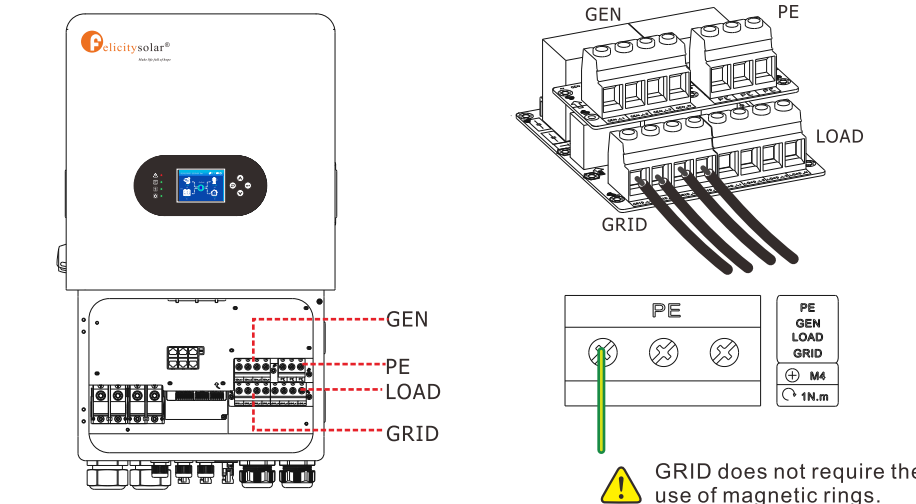


### ring 5

Wind the wire of the Gen port around the magnetic ring once, and then pass one end of the wire through the magnetic ring. The load terminals and GEN terminals are connected to the inverter according to the silk-screen printing on the chassis.

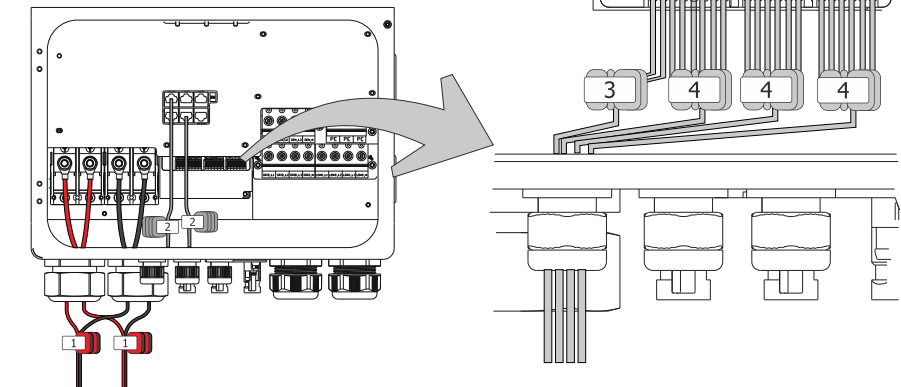


After the GRID and LOAD are connected, please connect the ground wire as shown in the schematic diagram



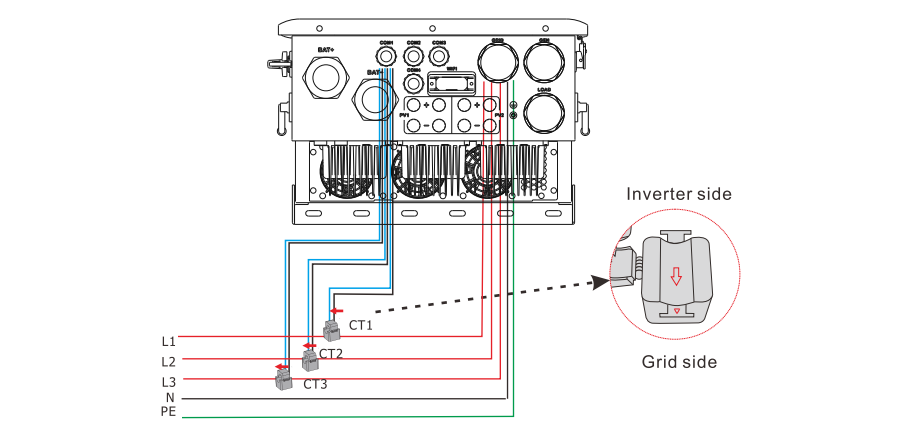
**! All wiring must be carried out by professionals!**

## CT Connection



Ring	Function port	Installation instructions
3	TEMP:CN3(1,2)	Wrap the wires three laps around the magnetic ring, then thread the end of wires through the magnetic ring.
4	CT:CN3(3,4,5,6,7,8)	Wrap the wires three laps around the magnetic ring, then thread the end of wires through the magnetic ring.
4	RSD:CN5(1,2,3,4,5,6)	Wrap the wires three laps around the magnetic ring, then thread the end of wires through the magnetic ring.
4	Dry Contact:CN4(1,2,3,4,5,6)	Wrap the wires three laps around the magnetic ring, then thread the end of wires through the magnetic ring.

## CT wiring method and CT direction:



## Installation of Wifi module

For detailed instructions on how to install WIFI Module, you can scan the QR code to the right to view the WIFI Module installation instructions.

## User Manual

User Manual in the QR code or at <https://www.felicitysolar.com/>

