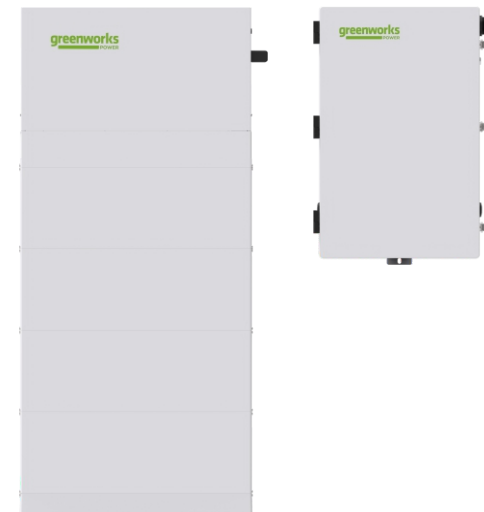


## QUICK INSTALLATION GUIDE

### GWU-GreenE SYSTEM



#### Copyright Declaration

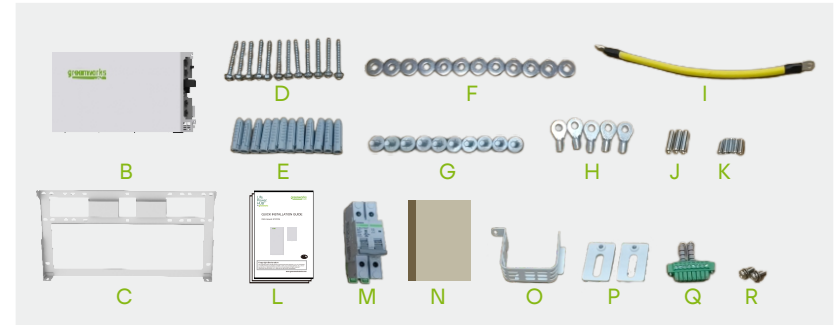
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# 1. Packing List

- Packing list of inverter



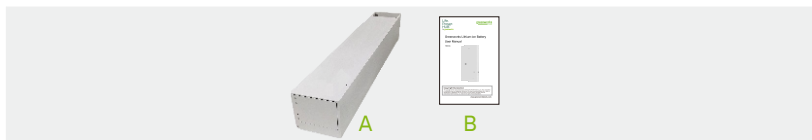
A



Item	Name	Description
A	Inverter X1	Product
B	Mental cover X1	Protect the inverter
C	Bracket X1	Support the inverter
D	Self-tapping screwX12	Fix the bracket
E	Expansion boltX12	Fix the bracket
F	WasherX12	Fix the bracket
G	M5X10 screwX10	Fix the cover, cable protective guard and cover fixing plate
H	Grounding terminalX5	For grounding
I	PE cableX1	Grounding cable between inverter and BMS
J	8 AWG ferrules X3	For AC cable
K	10 AWG ferrules X6	For PV cable
L	DocumentsX3	User manual, installation guide and quick installation guide
M	Circuit breakerX1	Mount it on the BI
N	Communication dongleX1 (Optional)	For communication
O	Cable protective guardX1	Protect the cable between inverter and BMS
P	Fixing plate of coverX2	Connect the cover and the bracket
Q	8-pin female terminal block with terminating resistorX1	Additional 8-pin female terminal block with terminating resistor
R	M4X10 screwX2	Fix the fixing plate between inverter bracket and BMS

• **Packing list of battery**

BMS (TBMS-MCS60060)



Item	Name and Quantity	Description
A	BMS	Product
B	User ManualX1	Guide the installation and maintenance

One Battery Module (TP-HS50×1):



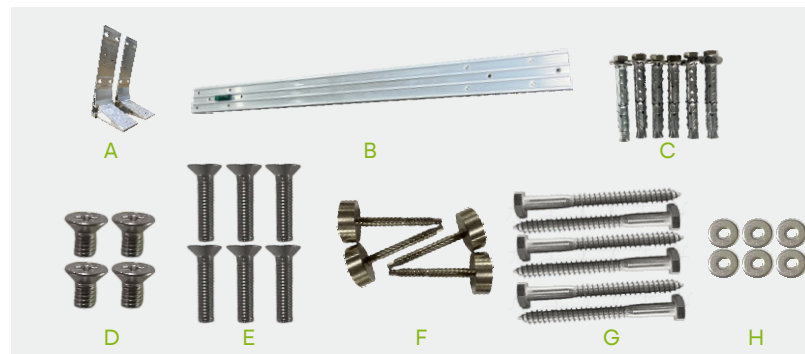
Item	Name and Quantity	Description
A	Battery moduleX1	Product
B	BracketX2	Support battery module to be mounted on the wall
C	Expansion boltX4	Fix the bracket
D	Expansion boltX2	Fix the bracket
E	WasherX2	Fix the bracket
F	Fixing plate (3 holes)X2	Connect two battery modules with bracket
G	Fixing plate (2 holes)X2	Connect two battery modules
H	M5*10 cross screwX10	Fix the fixing plate
I	Quick Installation GuideX1	Guide the installation



**NOTE!**

The above-mentioned accessories are only for one battery module.

**Accessories for Both Floor and Wall Mounting (Separate Accessory Box)**



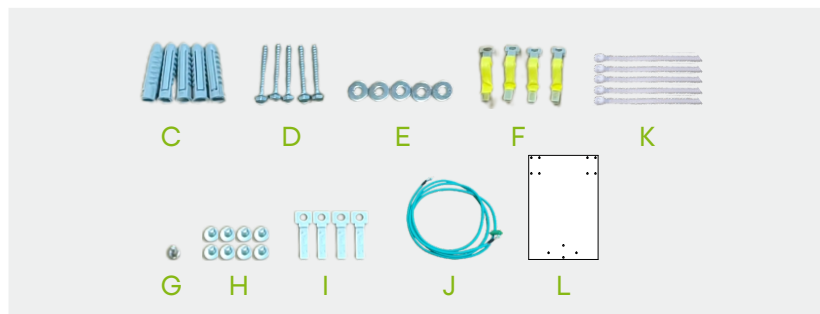
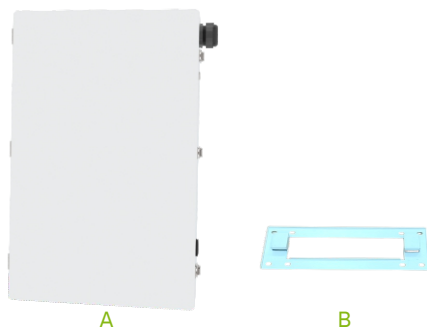
Item	Name and Quantity	Description
A	Base supportX2	Support the base
B	Transverse plateX1	Support the base
C	Expansion screwX6	Fix the base support in case of concrete wall
D	M5*8 countersunk screwX4	Fix the transverse plate with base support
E	M5*20 countersunk screwX6	Fix the two sides of base
F	Adjustment screwX2	Adjust the base to be leveled
G	Self-tapping screwX6	Fix the base support in case of wooden wall
H	WasherX6	Fix the base support in case of wooden wall

**Base for Battery:**



Item	Name and Quantity	Description
/	Base	Product

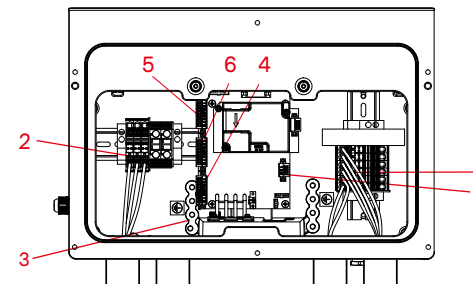
• Packing list of BI



Item	Name and Quantity	Description
A	Backup interfaceX1	Product
B	BracketX1	Support the BI to be mounted on the wall
C	Expansion boltX5	Four for fixing the bracket and one for fixing the BI
D	Self-tapping screwX5	Four for fixing the bracket and one for fixing the BI
E	WasherX5	Four for fixing the bracket and one for fixing the BI
F	55*13*23.7mm Copper barX4	For parallel connection with inverter
G	M4*12 cross screwX1	Fix the circuit breaker
H	M5*12 cross screwX8	Fix the part when parallel connection with inverter
I	40*13*7.9mm Copper barX4	For parallel connection with inverter
J	Communication cableX1	Communicate with inverter
K	Cable tieX5	Fix the cable
L	Punching reference paperX1	For hole location

2. Overview of Terminals

• Terminals and breaker of inverter



Inverter power terminal (Purchased by customer)

No.	Terminals	Type	Cross-sectional Area Range	Strip Length
1	PV terminals	90°C(194°F), 600 V, copper	10-8 AWG	0.47 in / 12 mm
2	AC terminals	90°C(194°F), 600 V, copper	12-8 AWG (3.8KW), 10-8 AWG (5/6/7.6KW)	0.47 in / 12 mm
3	Ground terminals	90°C(194°F), 600 V, copper	8 AWG	0.47 in / 12 mm

Inverter communication terminal (Purchased by customer)

No.	Terminals	Port Pin	Type	Range	Strip Length	Torque (in-lbs)
4	AUX terminal	Pin 1: RS485_METER_A	CAT5 or better	24-18 AWG	0.24 in / 6 mm	1.8
		Pin 2: RS485_METER_B				
		Pin 3: GND				
		Pin 4: +12V_RELAY_OUT				
		Pin 5: DRM0				
		Pin 6: +12V_COM				
		Pin 7: STOP_NO+				
		Pin 8: STOP_NO-				

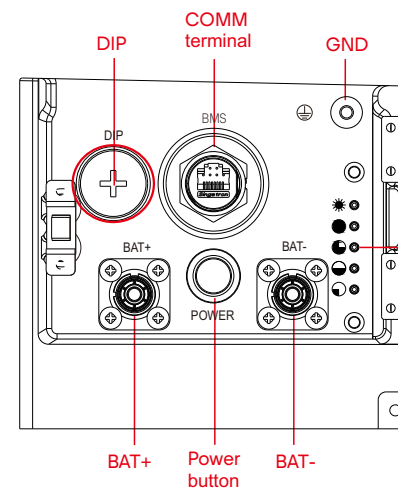
Inverter communication terminal (Purchased by customer)

No.	Terminals	Port Pin	Type	Range	Strip Length	Torque (in-lbs)
5	COMM in terminal	Pin 1: SYSR_L	CAT5 or better	24-18 AWG	0.24 in / 6 mm	1.8
		Pin 2: SYSR_H				
		Pin 3: CAN_L				
		Pin 4: CAN_H				
		Pin 5: RS485_BI_A				
		Pin 6: RS485_BI_B				
		Pin 7: +12V	18-16 AWG			
		Pin 8: GND				
6	COMM out terminal	Pin 1: SYSR_L	CAT5 or better	24-18 AWG	0.24 in / 6 mm	1.8
		Pin 2: SYSR_H				
		Pin 3: CAN_L				
		Pin 4: CAN_H				
		Pin 5: RS485_BI_A				
		Pin 6: RS485_BI_B				
		Pin 7: +12V	18-16 AWG			
		Pin 8: GND				
7	MLPE terminal	Pin 1: GND	CAT5 or better	24-18 AWG	0.24 in / 6 mm	1.8
		Pin 2: RS485_MLPE_A				
		Pin 3: RS485_MLPE_B				

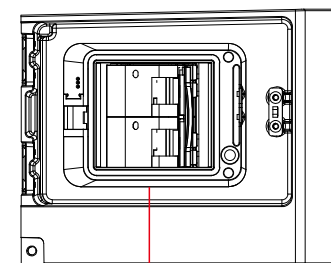
Inverter breaker and switch

No.	Component	Description	Source
1	AC Breaker	3.8 KW: Noark # B1N2C20: 20 A Circuit Breaker; 2-Pole, 240 V, 10 kAIC 5 KW: Noark # B1N2C30: 30 A Circuit Breaker; 2-Pole, 240 V, 10 kAIC 6 KW: Noark # B1N2C35: 35 A Circuit Breaker; 2-Pole, 240 V, 10 kAIC 7.6 KW: Noark # B1N2C40: 40 A Circuit Breaker; 2-Pole, 240 V, 10k AIC	Can be purchased from the manufacturer
2	Emergency stop switch	Normally closed (NC) contact The UL certification is required for the emergency stop switch.	Purchase by customer

• Terminals breaker of battery



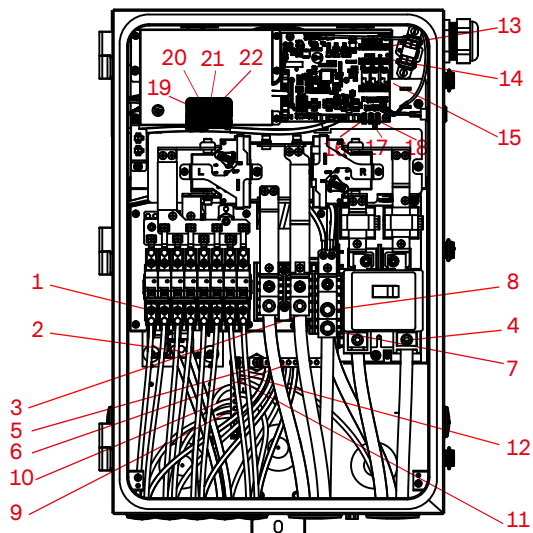
Right side view



Circuit breaker

Left side view

• Terminals breaker of BI



BI power terminal (Purchased by customer)

No.	Terminals	Cross-sectional Area Range	Strip Length	Torque (in-lbs)
1	INV terminals	12-8 AWG (3.8 KW), 10-8 AWG (5/6/7.6 KW)	0.67 in / 17 mm	30
2	GEN terminals	8-4 AWG	0.67 in / 17 mm	/
3	Load terminals	3 AWG-4/0 AWG	1.25 in / 32 mm	275
4	Grid terminals	3 AWG-4/0 AWG	1.25 in / 32 mm	275
5	INV Neutral terminals	12-8 AWG (3.8 KW), 10-8 AWG (5/6/7.6 KW)	0.79 in / 20 mm	275
6	GEN Neutral terminals	8-4 AWG	0.79 in / 20 mm	/
7	Load Neutral terminals	3 AWG-4/0 AWG	1.77 in / 45 mm	275
8	Main Neutral terminals	3 AWG-4/0 AWG	1.77 in / 45 mm	275
9	INV Ground terminals	8 AWG	0.79 in / 20 mm	30
10	GEN Ground terminals	8-6 AWG	0.79 in / 20 mm	30
11	Load Ground terminals	6-4 AWG	1.77 in / 45 mm	30
12	Main Ground terminals	6-4 AWG	1.77 in / 45 mm	30

\* The type of BI power cable shall be 90°C(194°F), 600 V, copper.

BI communication terminal (Purchased by customer)

No.	Terminals	Port Pin	Type	Range	Strip Length	Torque (in-lbs)
13	INV Communication terminal	Pin 1: RESERVE	CAT5 or better	24-18 AWG	0.24 in / 6 mm	1.8
		Pin 2: RESERVE				
		Pin 3: CAN_L				
		Pin 4: CAN_H				
		Pin 5: RS485_BI_A				
		Pin 6: RS485_BI_B				
		Pin 7: +12 V	18-16 AWG			
		Pin 8: GND				
14	AUX1 terminal	Pin 1: DRY_GEN		24-16 AWG	0.24 in / 6 mm	1.8
		Pin 2: GEND_GEN				
		Pin 3: RS485_RESERVE_A	CAT5 or better	24-18 AWG		
		Pin 4: RS485_RESERVE_B				
		Pin 5: RESERVE				
		Pin 6: RESERVE				
		Pin 7: STOP_NO+				
		Pin 8: STOP_NO-				
15	AUX2terminal	Pin 1: NO_1		24-16 AWG	0.24 in / 6 mm	1.8
		Pin 2: COM_1				
		Pin 3: NC_1				
		Pin 4: NO_2				
		Pin 5: CON_2/3				
		Pin 6: NC_2				
		Pin 7: NO_3				
		Pin 8: NC_3				
16	CT1 terminal	Pin 1: CT1+ Pin 2: CT1-	Shielded, twisted pair	/	/	/
17	CT2 terminal	Pin 1: CT2+ Pin 2: CT2-	Shielded, twisted pair	/	/	/
18	CT3 terminal	Pin 1: CT3+ Pin 2: CT3-	Shielded, twisted pair	/	/	/
19	CT L1A terminal	Pin 1: CT L1A+ Pin 2: CT L1A-	Shielded, twisted pair	/	/	/

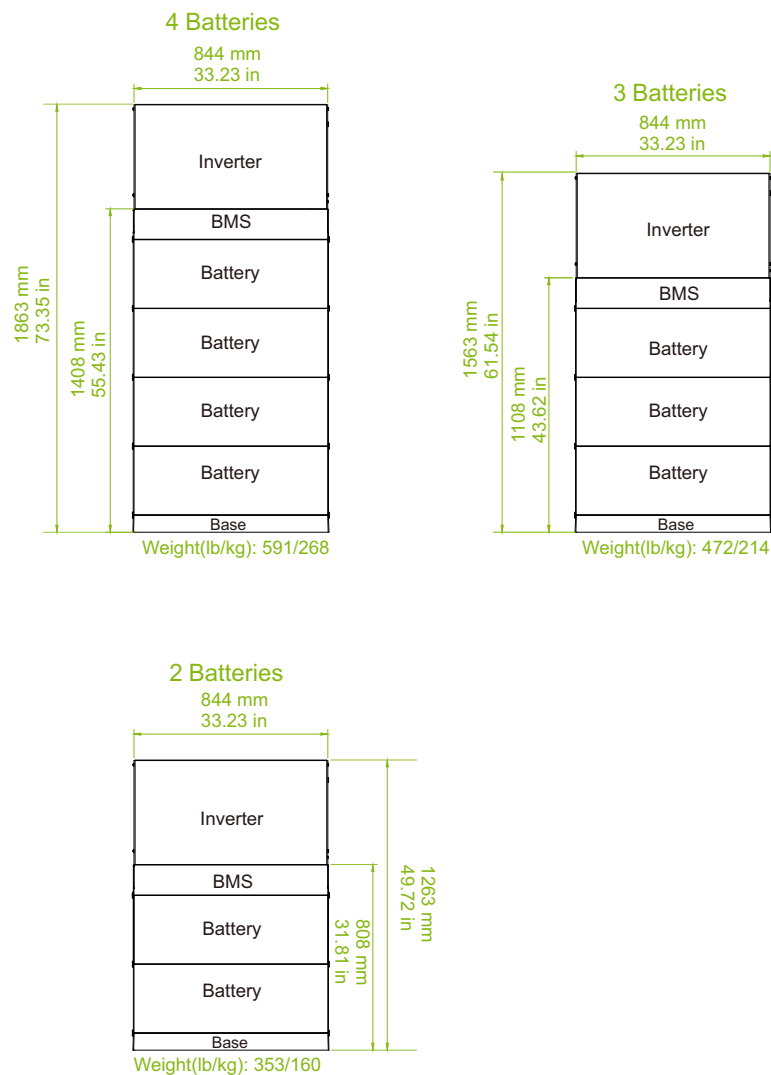
No.	Terminals	Port Pin	Type	Range	Strip Length	Torque (in-lbs)
20	CT L1B terminal	Pin 1: CT L1B+	Shielded, twisted pair	/	/	/
		Pin 2: CT L1B-				
21	CT L2A terminal	Pin 1: CT L2A+	Shielded, twisted pair	/	/	/
		Pin 2: CT L2A-				
22	CT L2B terminal	Pin 1: CT L2B+	Shielded, twisted pair	/	/	/
		Pin 2: CT L2B-				

BI breaker and switch (Purchased by customer)

No.	Component	Description
1	Grid breaker	Amps Part Number Description
		100 CSR2100 Eaton # CSR2100: 100 A / 240 V, 25 kAIC, 2-Pole
		125 CSR2125N Eaton # CSR2125N: 125 A / 240 V, 25 kAIC, 2-Pole
		150 CSR2150N Eaton # CSR2150N: 150 A / 240 V, 25 kAIC, 2-Pole
		175 CSR2175N Eaton # CSR2175N: 175 A / 240 V, 25 kAIC, 2-Pole
		200 CSR2200N Eaton # CSR2200N: 200 A / 240 V, 25 kAIC, 2-Pole
		100 BW2100 Eaton # BW2100: 100 A / 240 V, 10 kAIC, 2-Pole
		125 BW2125 Eaton # BW2125: 125 A / 240 V, 10 kAIC, 2-Pole
		150 BW2150 Eaton # BW2150: 150 A / 240 V, 10 kAIC, 2-Pole
		175 BW2175 Eaton # BW2175: 175 A / 240 V, 10 kAIC, 2-Pole
		200 BW2200 Eaton # BW2200: 200 A / 240 V, 10 kAIC, 2-Pole
		100 BWH2100 Eaton # BWH2100: 100 A / 240 V, 25 kAIC, 2-Pole
		125 BWH2125 Eaton # BWH2125: 125 A / 240 V, 25 kAIC, 2-Pole
		150 BWH2150 Eaton # BWH2150: 150 A / 240 V, 25 kAIC, 2-Pole
		175 BWH2175 Eaton # BWH2175: 175 A / 240 V, 25 kAIC, 2-Pole
200 BWH2200 Eaton # BWH2200: 200 A / 240 V, 25 kAIC, 2-Pole		
2	Emergency stop switch	Normally closed (NC) contact The UL certification is required for the emergency stop switch.

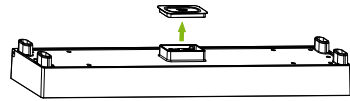
### 3. Mechanical Installation (Floor-mounting)

- Weight and mounting height instructions



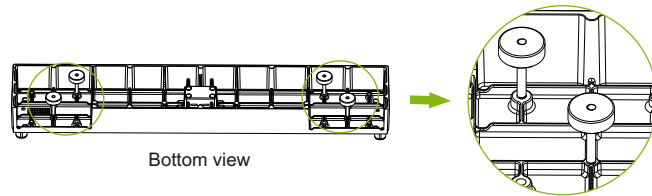
• **Mount the battery**

Step 1 Mount the base

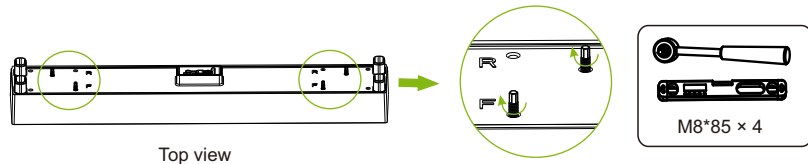


Hand remove

1



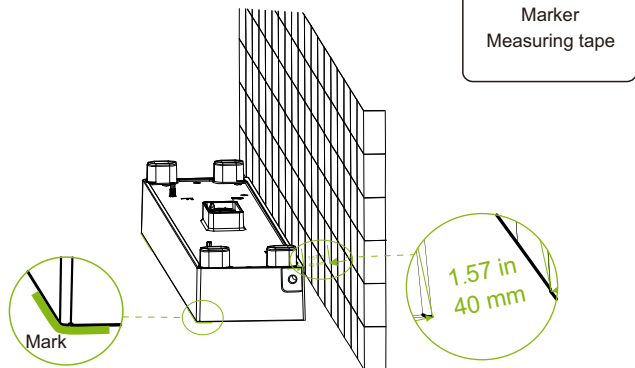
Bottom view



Top view

M8\*85 x 4

2



Marker  
Measuring tape

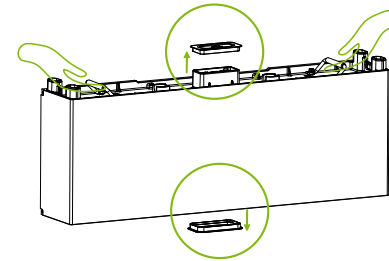
1.57 in  
40 mm

Mark

12

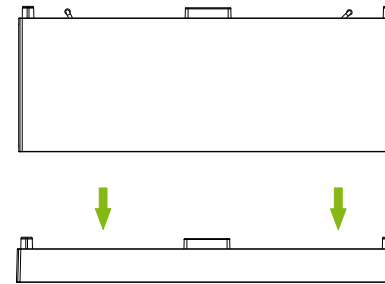
3

Step 2 Mount the battery module

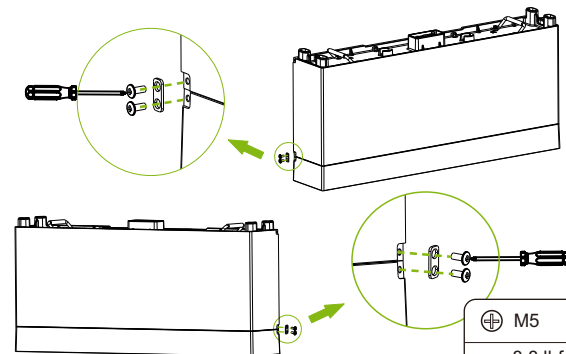


Hand remove

1



2

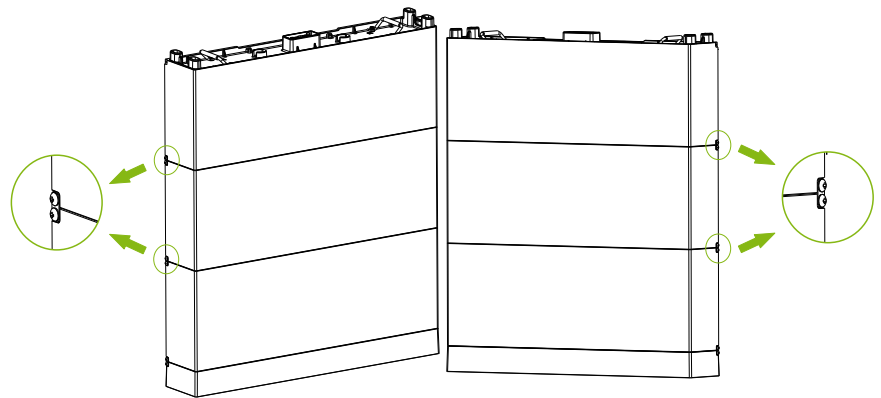


M5  
8.8 lbf.in /  
1.0 N·m

3

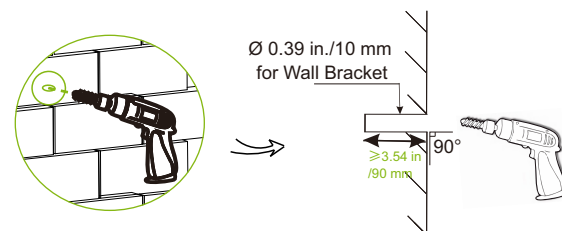
13






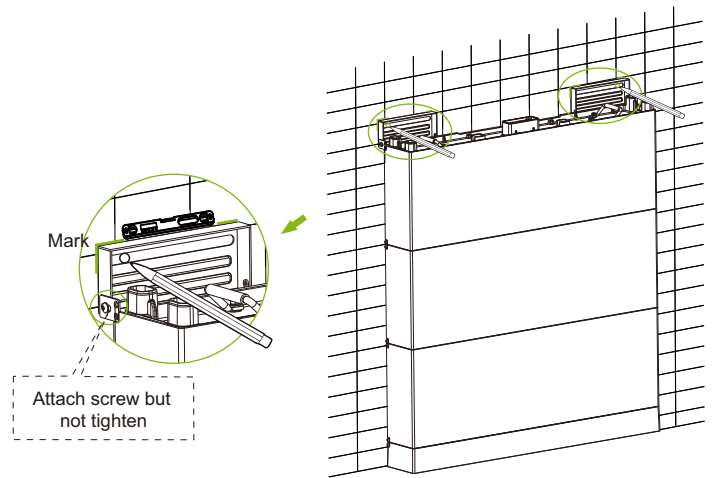
⊕	M5
⌚	8.8 lbf.in / 1.0 N·m

4

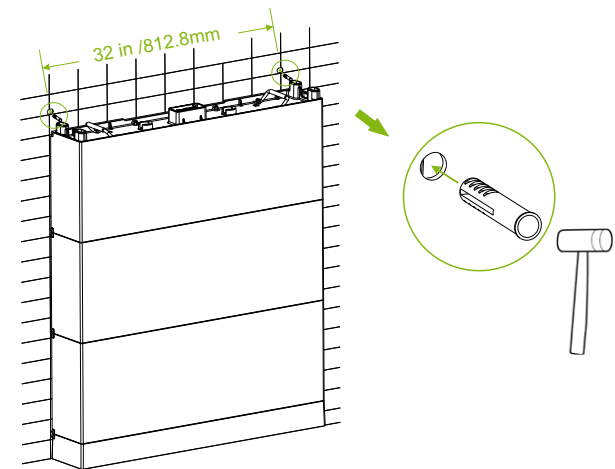


**CAUTION!**  
 Please re-mount the dust cover to the battery module before drilling holes to avoid dust falling into the interface and do remember to remove the dust cover again after the installation wall bracket completed.

6

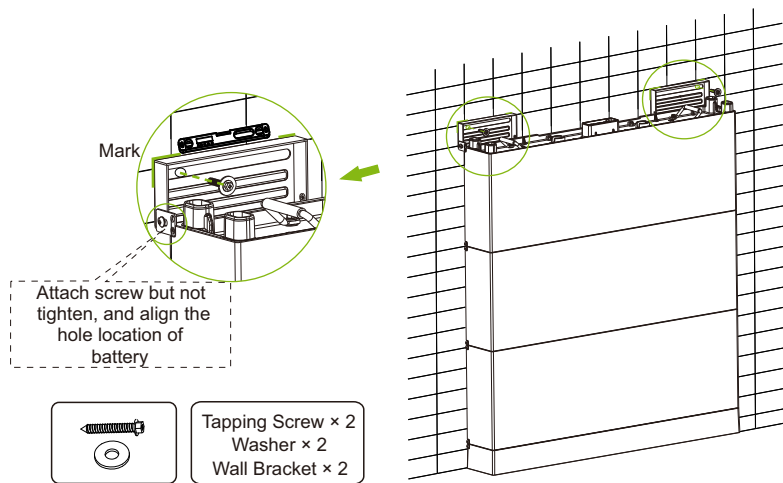


14 5

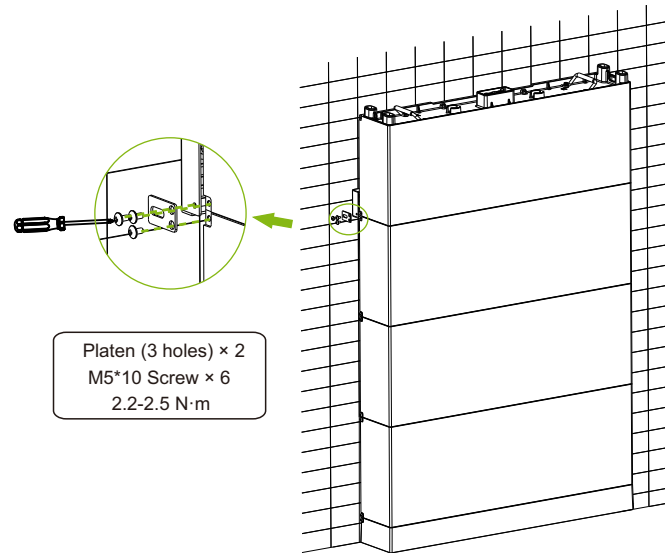


7

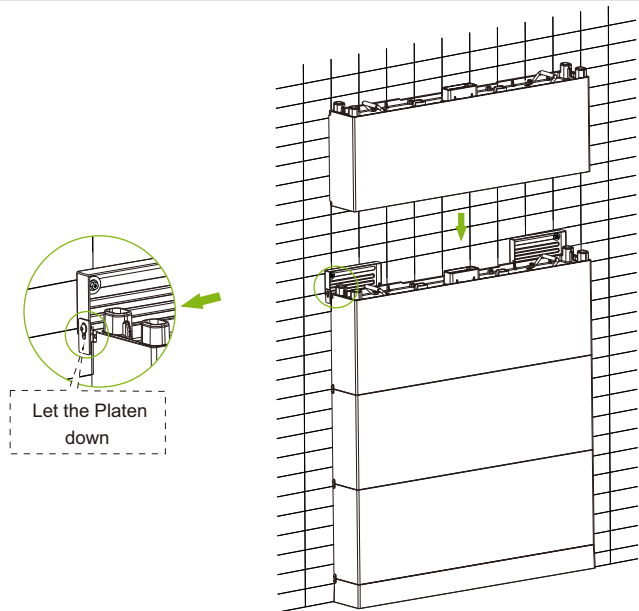
15



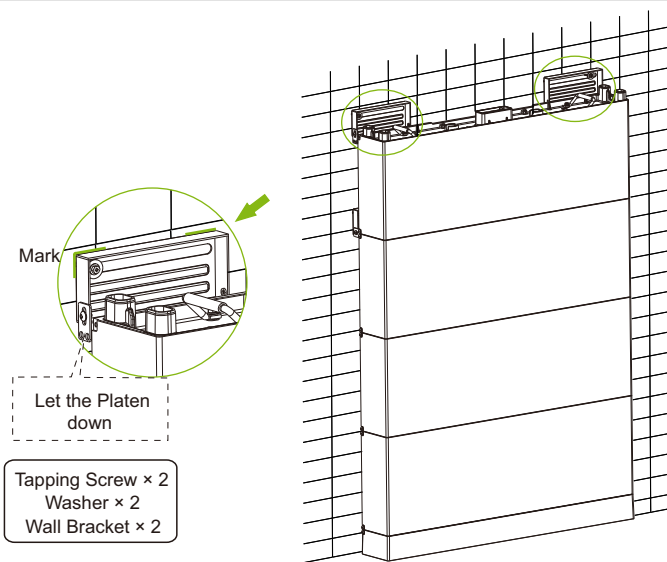
8



10



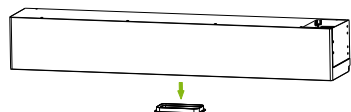
16 9



11

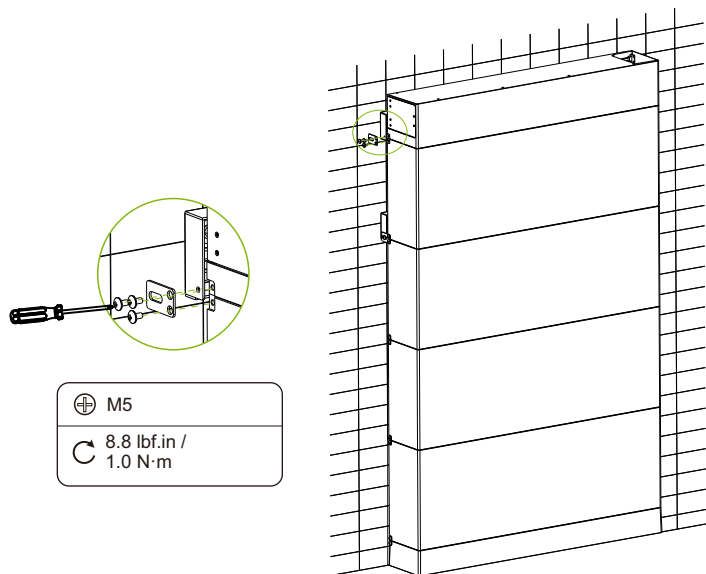
17

Step 3 Mount the BMS



Hand remove

1

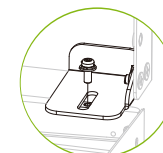
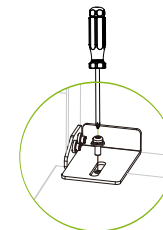
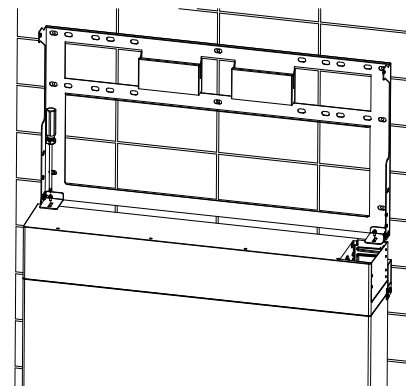


⊕ M5  
⌚ 8.8 lbf.in /  
1.0 N·m

18 2

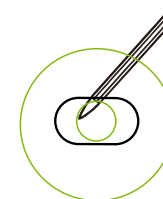
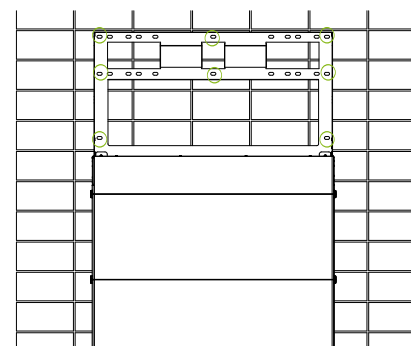
• Mount the inverter

Screw in the two M4 screws, adjust the bracket to be firmly attached on the wall surface and tighten M4 screws



⊕ M4  
⌚ 4.4 lbf.in /  
0.5 N·m

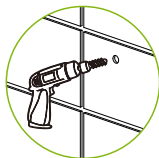
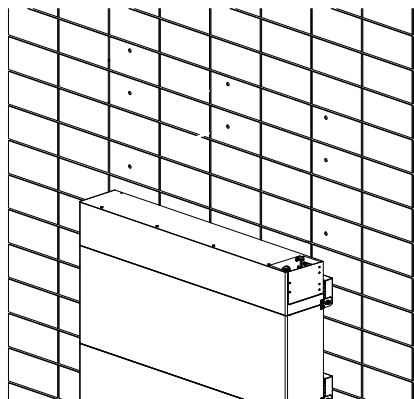
1



Round holes

2

19

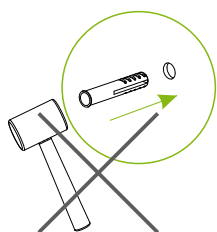
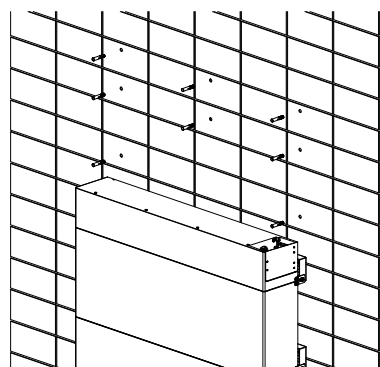


Φ4 drill for wooden wall  
 Φ10 drill for concrete wall  
 Depth:  
 2.16 in / 55 mm

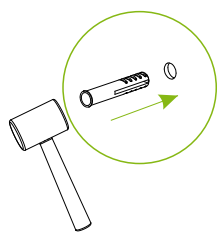


**CAUTION!**  
 Remove the screws on the bracket and disassemble the bracket  
 before drill holes.

3

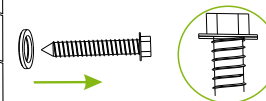
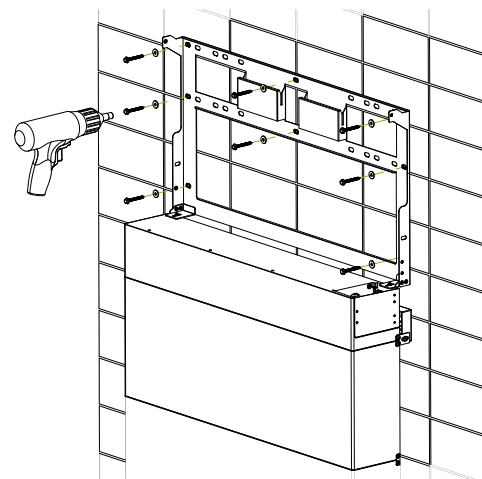


For wooden wall,  
 this step is not required



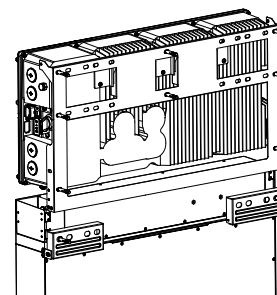
For solid concrete wall,  
 this step is required

20 4

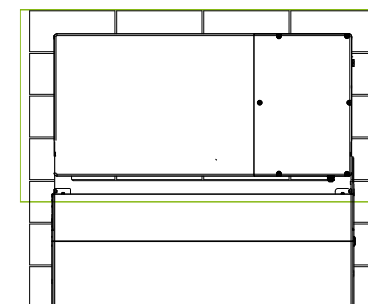


±10  
 mm  
 26.5 lbf.in /  
 3.0 N·m

5



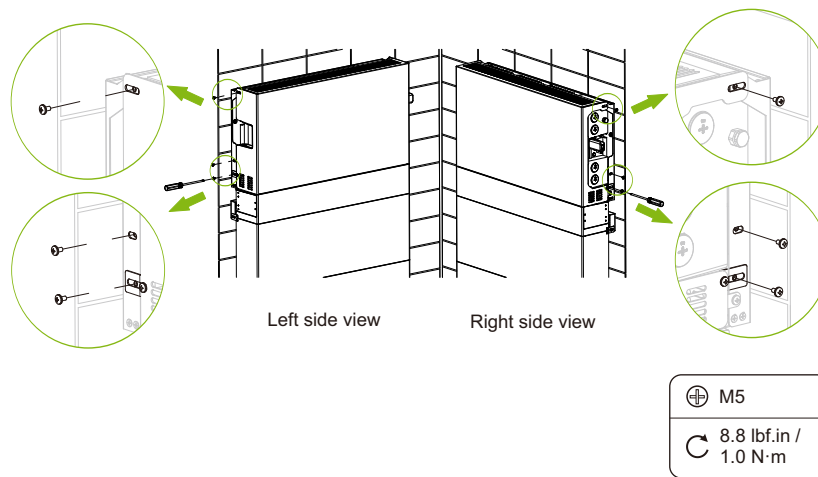
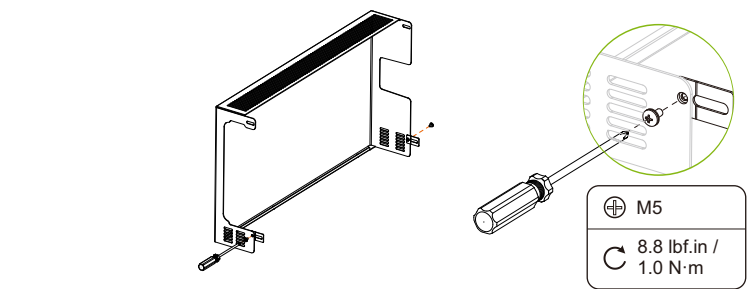
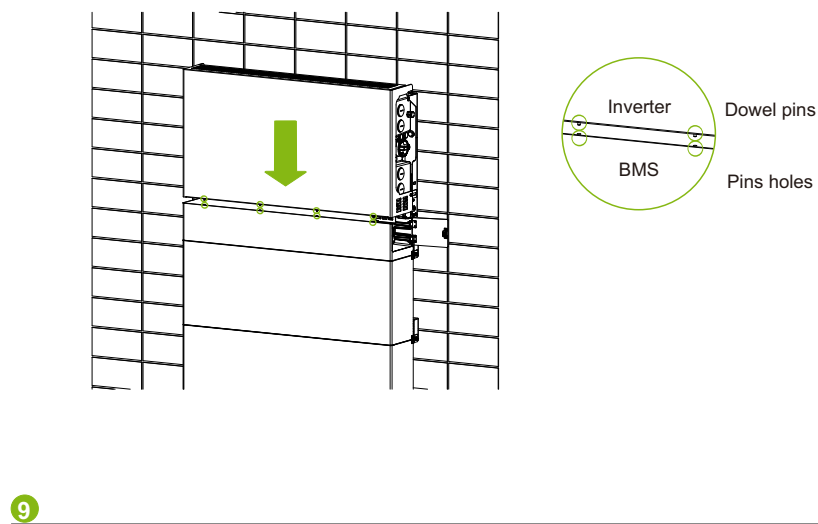
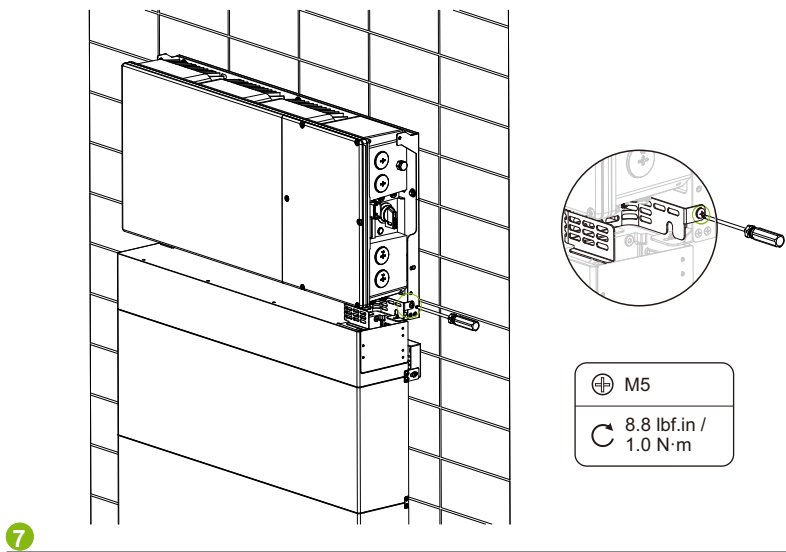
Back view



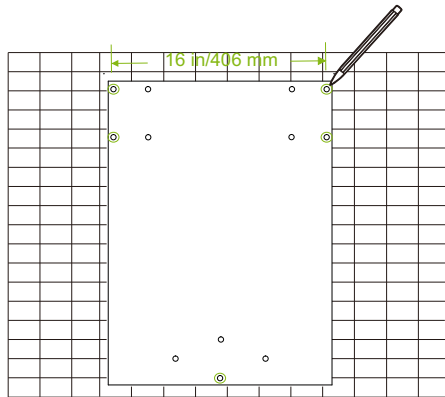
Front view

6

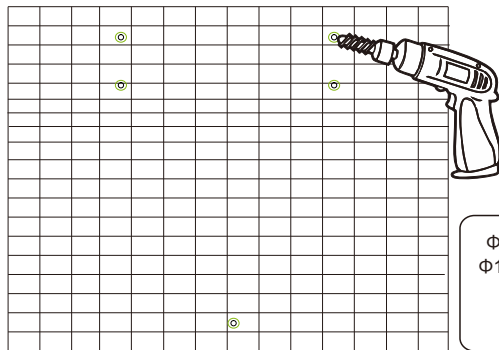
21



• **Mount the BI**

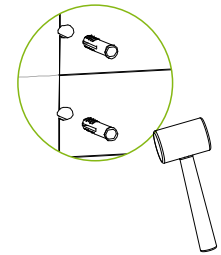
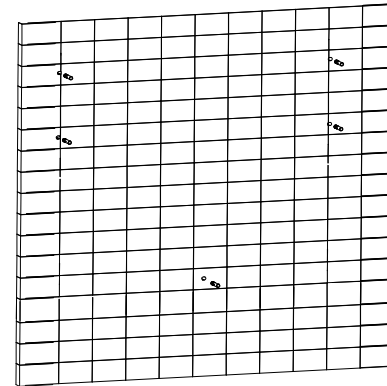


1



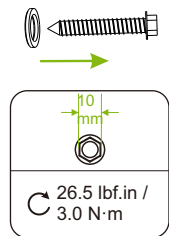
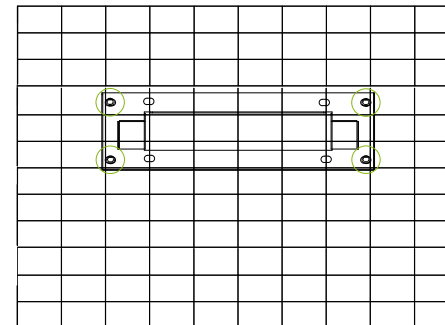
Φ4 drill for wooden wall  
Φ10 drill for concrete wall  
Depth:  
2.16 in / 55 mm

24 2



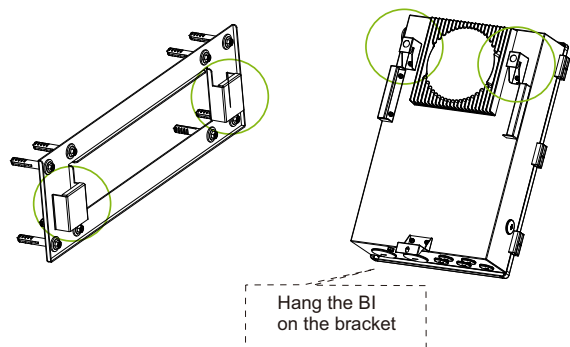
This step is not required in case of wooden wall.

3

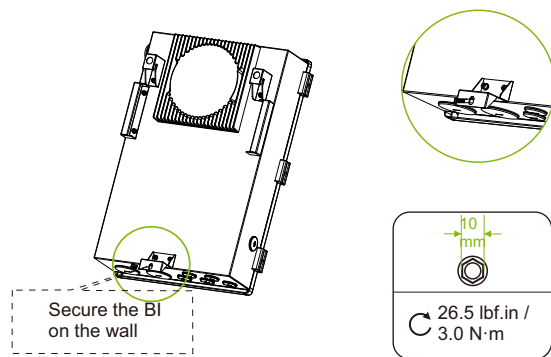


4

25

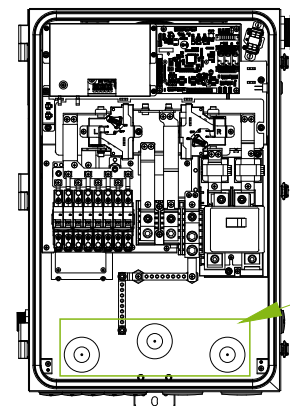


5

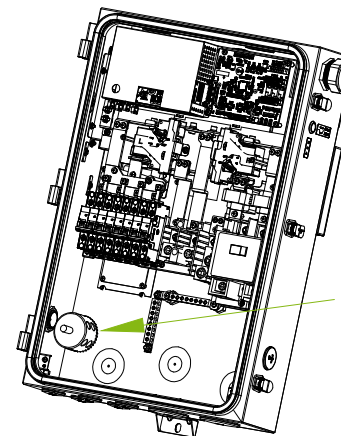


26 6

- Drill a hole in the back (Not recommended)

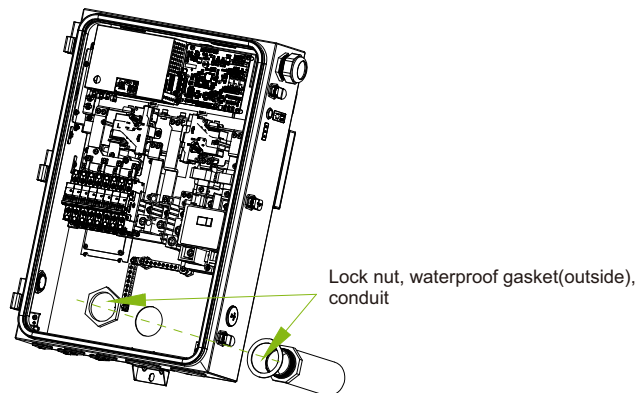


1



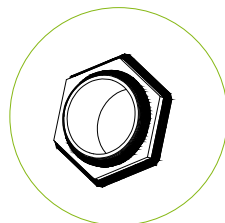
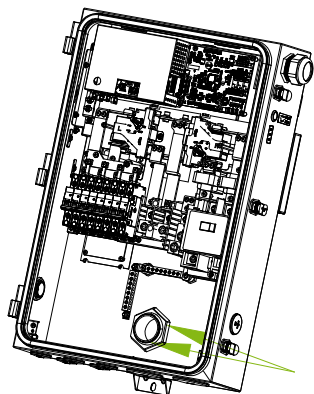
2

27



**NOTE!**  
Prohibit the flow of water inside the tubing water into the machine!

3



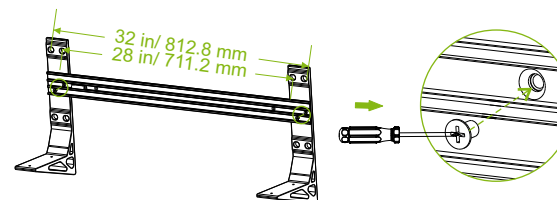
The top of the nut and contact surface of the threads must be cleaned after locking the nut, as well as the contact surface between the nut and the box.  
TSE-382 waterproof adhesive or a similar performance glue.



**NOTE!**  
Drilling a hole in the wall is required before cutting a hole in the rear. To guarantee easy installation of the conduit and sealing with the chassis, the hole's size must be greater than the conduit's outside diameter.

28 4

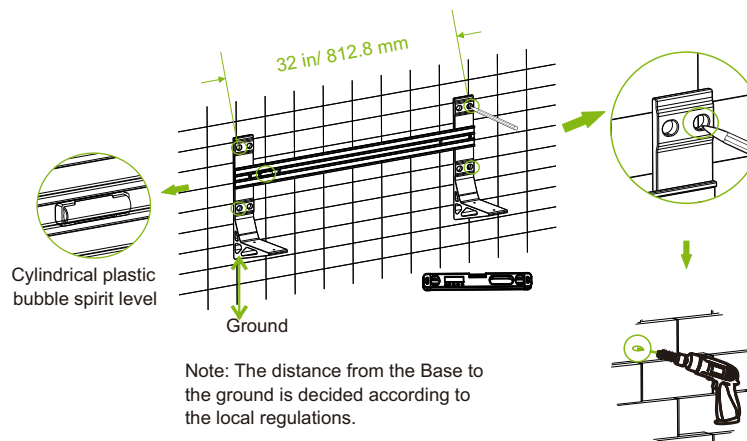
## 4. Mechanical Installation (Wall-mounting)



⊕ M5

⌚ 17.7 lbf.in / 2.0 N·m

1



Cylindrical plastic bubble spirit level

Ground

Note: The distance from the Base to the ground is decided according to the local regulations.

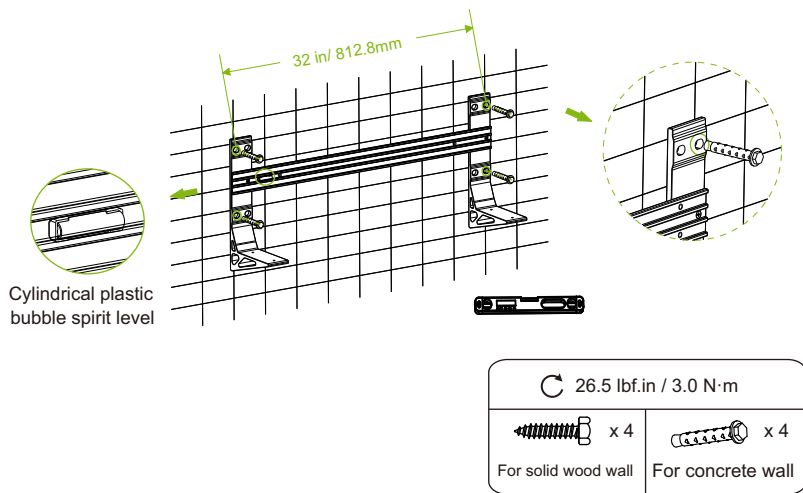
Φ8 drill for wooden wall  
Depth:  
1.97 in / 50 mm

Φ12 drill for concrete wall  
Depth:  
3.54 in / 90 mm

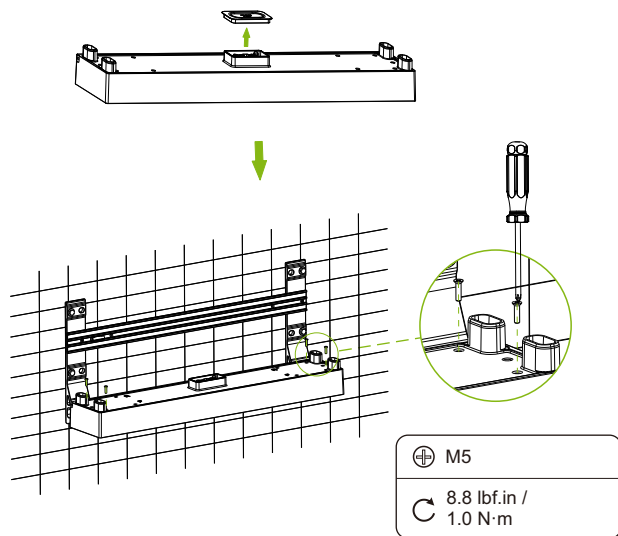
2

29





3

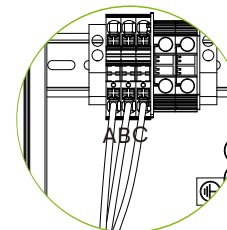
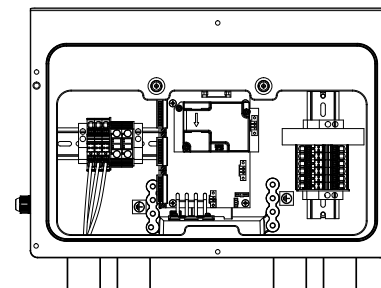


The steps of mounting battery modules, BMS and inverter are same as the floor-mounting's. Please refer to Chapter 3.

30 4

## 5. Wiring Connection on the Inverter

### • AC cable



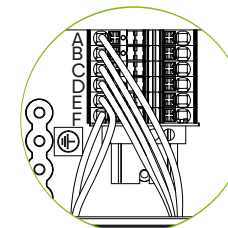
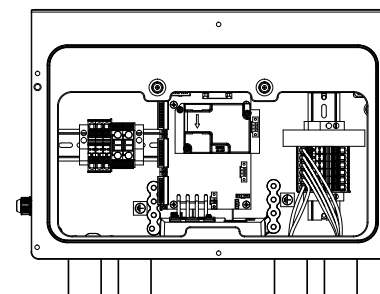
12-8 AWG (for GWU-HYB 3.8 DH)  
10-8 AWG (for GWU-HYB 5.0 DH / 6.0 DH / 7.6 TH)

0.47 in / 12 mm



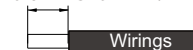
A: L1 terminal B: L2 terminal C: N terminal

### • PV cable



2 MPPTs (for GWU-HYB 3.8 DH / 5.0 DH / 6.0 DH)  
3 MPPTs (for GWU-HYB 7.6 TH)

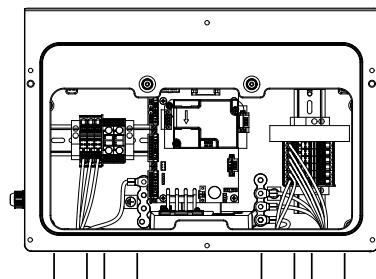
10-8 AWG 0.47 in / 12 mm



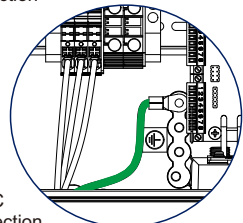
A, C and E: PV+ terminal  
B, D and F: PV- terminal

31

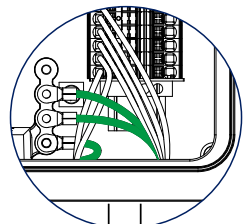
• **GND cable**



for PV connection



for AC connection



8 AWG 0.47 in / 12 mm



• **Communication cable**

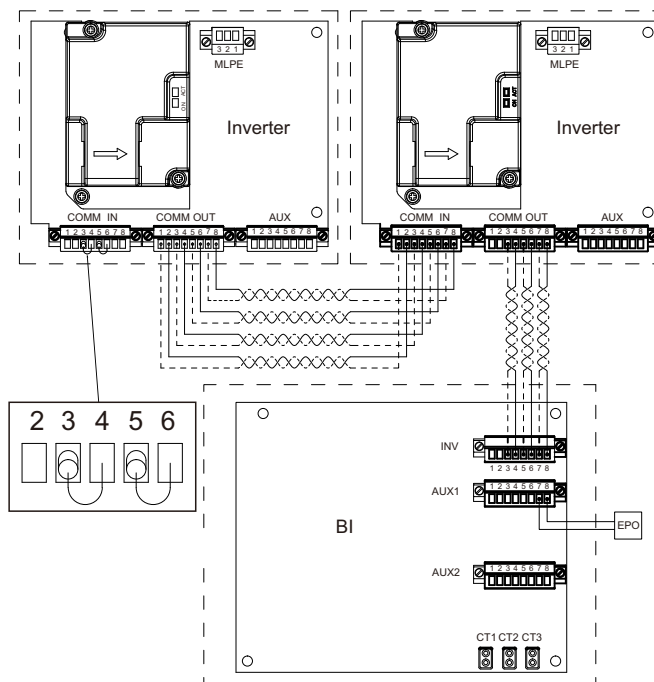
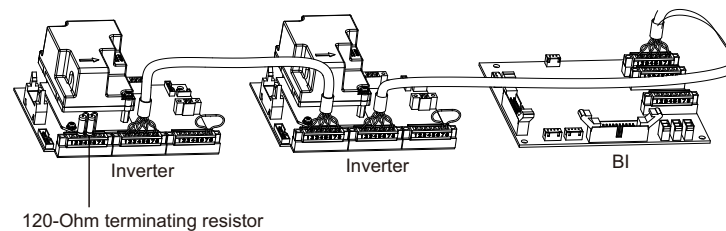


Diagram for communication connection steps between inverters

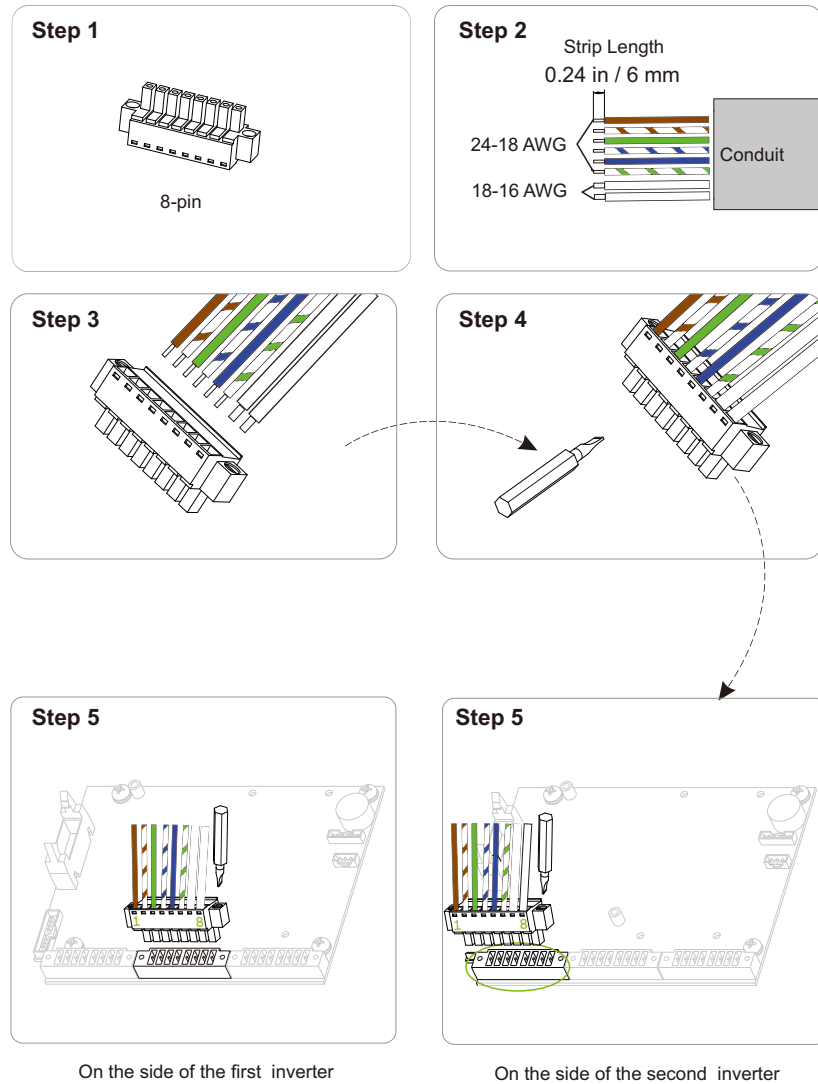
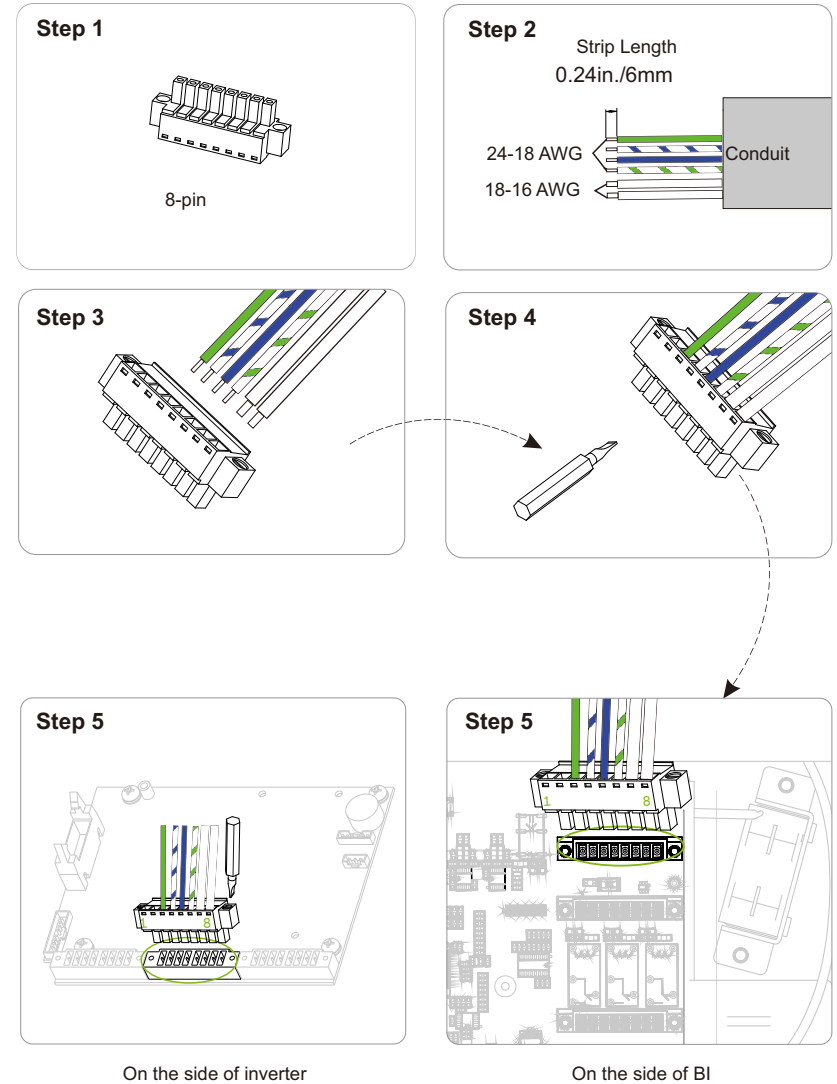
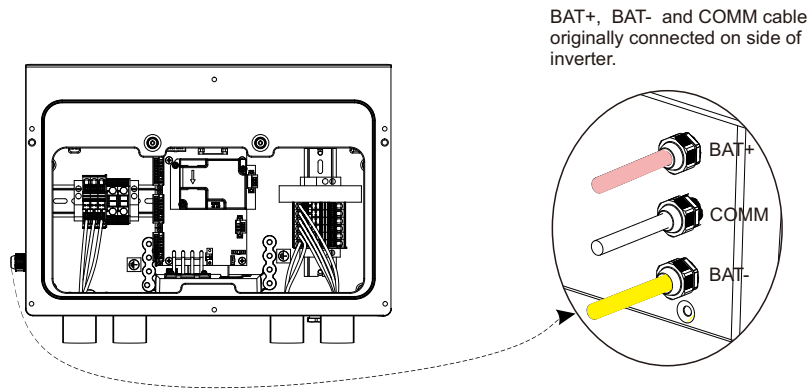


Diagram for communication connection steps between inverter and BI

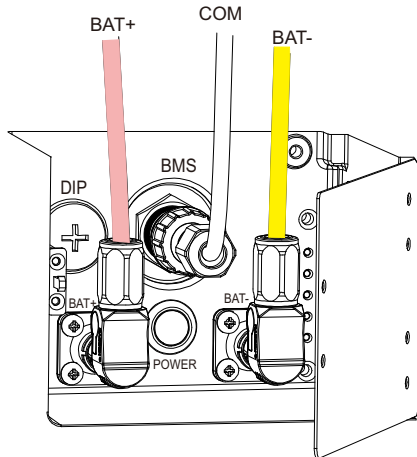


## 6. Wiring Connection Between Inverter and Battery

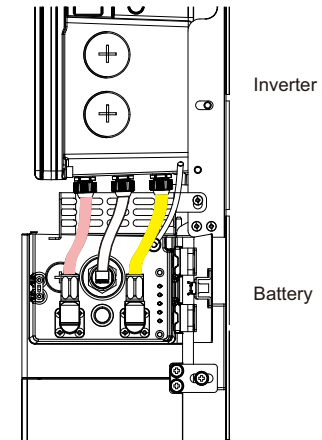
- **BAT+, BAT- and COMM cable**



On the side of inverter

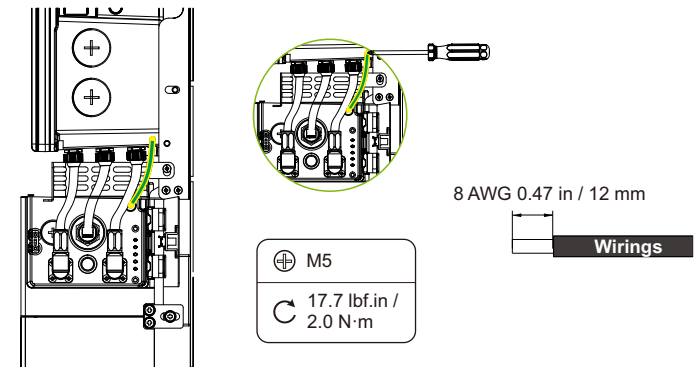


On the side of battery



Connection between inverter and battery

- **GND cable**

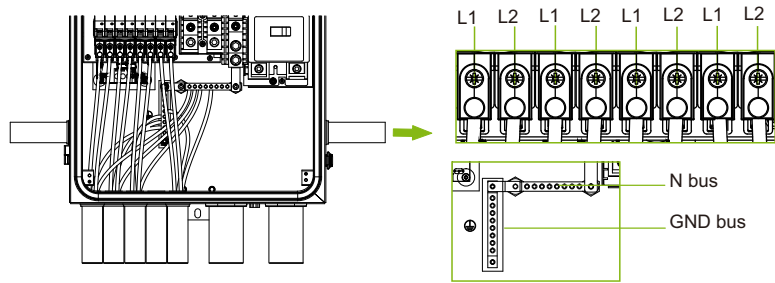


For easier connection, please connect the grounding cable on the BMS first.

## 7. Wiring Connection on the BI

### 7.1 Connect Inverter Conductors to BI

- AC cable



12–8 AWG (for GWU-HYB 3.8 DH)  
 10–8 AWG (for GWU-HYB  
 5.0 DH / 6.0 DH / 7.6 TH)

0.67 in / 17 mm



AC cable

8 AWG 0.79 in / 20 mm

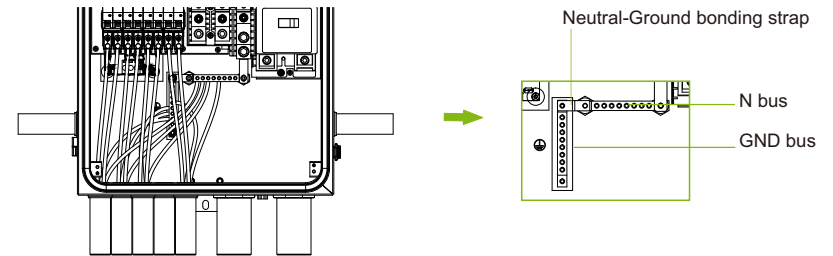


GND cable

- Neutral-Ground Bonding Strap-factory installed

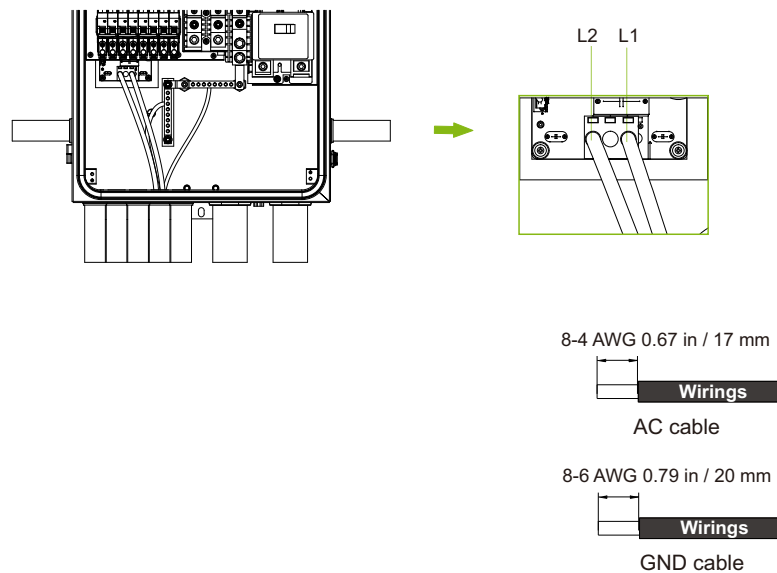
Remove Neutral-Ground bonding strap from BI if not installed as service equipment.

Proper earth connection and Neutral-Ground bonding strap is required for safe operation of the system and for compliance with local code requirements.

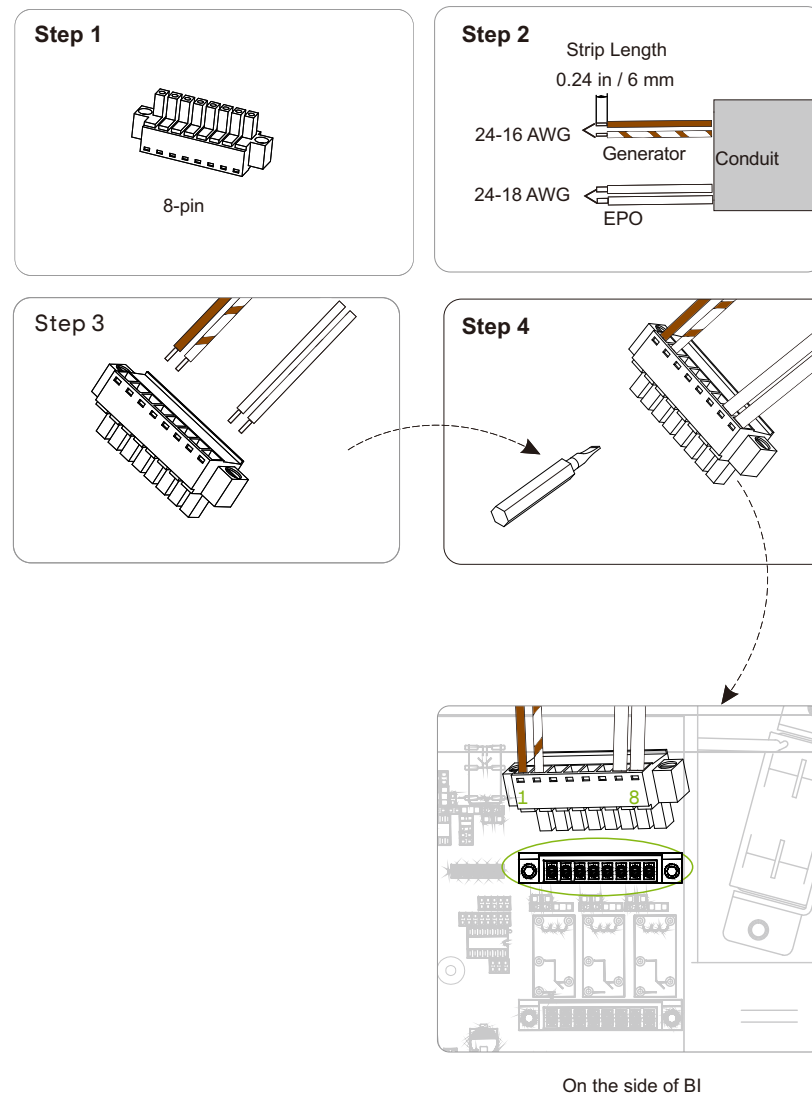


## 7.2 Connect Generator and EPO Conductors to BI

- AC cable of generator

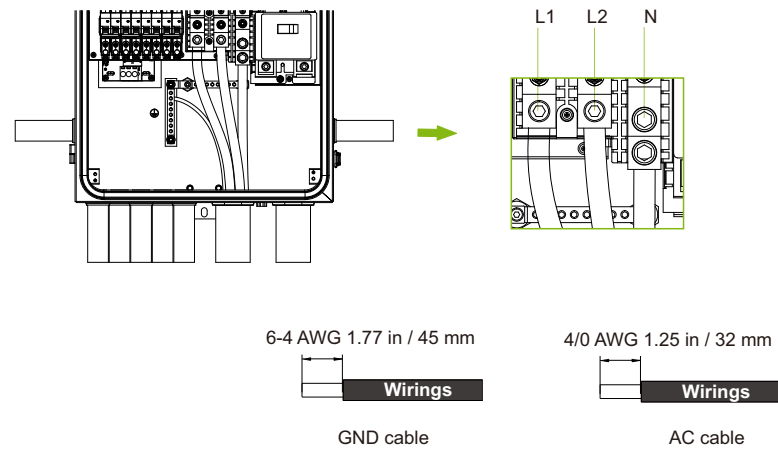


- Communication cable of generator and EPO



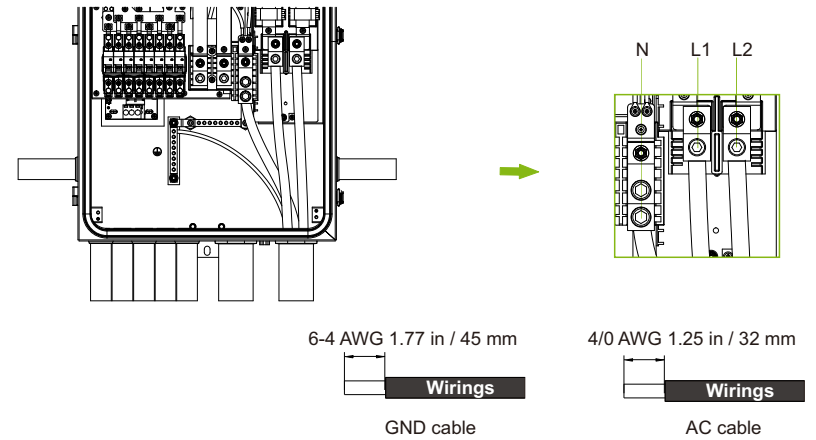
### 7.3 Connect Load Conductors to BI

- AC cable

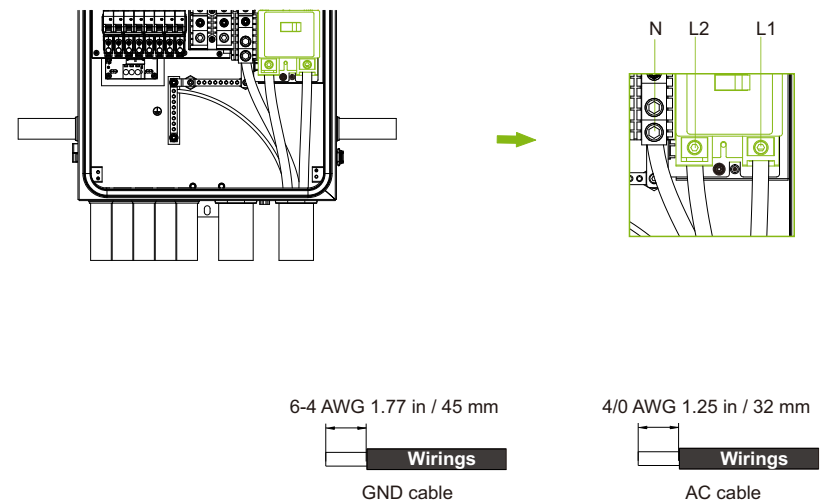


### 7.4 Connect Grid Conductors to BI

Before installing a main breaker



After installing a main breaker



## 7.5 Connect CT to BI

A set of CTs (CT L1A , CT L2A,200A) has been built in the BI. In some application scenarios ,it can measure both load and generation and there is no need to connect external CTs.But in some application scenarios,such as Partial-Home Backup solution,connecting external CTs (CT L1B , CT L2B) to measure total current both load and generation is needed. In addition,if the site includes solar equipment, a solar CT is placed after the solar inverter to measure the solar output.

CT L1A terminal and CT L1B terminal have been connected in parallel on PCB. CT L1A and CT L1B are used to measure total current both load and generation of the same phase L1.

CT L2A terminal and CT L2B terminal have been connected in parallel on PCB. CT L2A and CT L2B are used to measure total current both load and generation of the same phase L2.



**NOTE!**

For detailed information about how to configure external CT, please refer to “BI CT configuration for GWU-GreenE”.