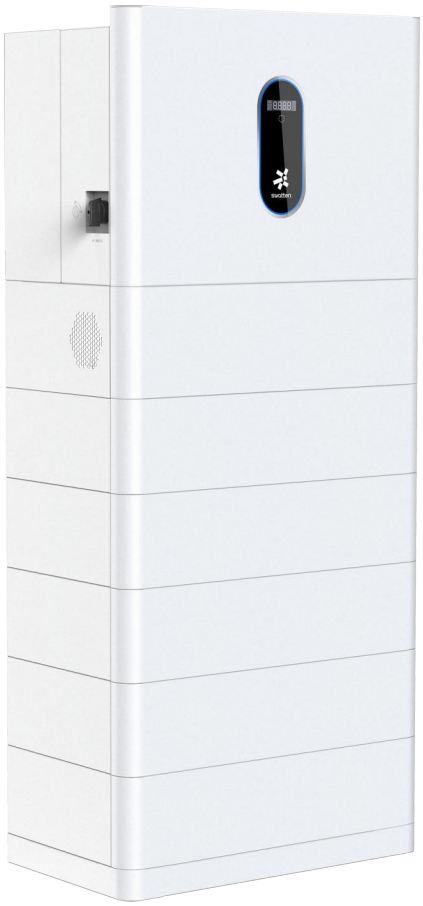
swatten
Powered by Sieyuan

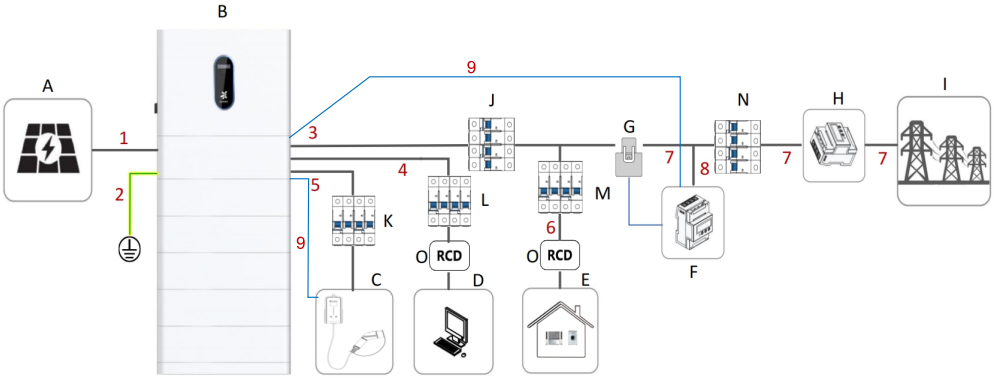


Quick Start Guide

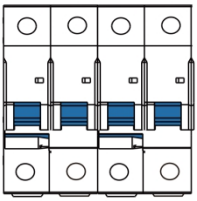
All-in-one sys-5/6/8/10kW-TH

Version 1.0
2024-12-21

Electrical Connection Overview

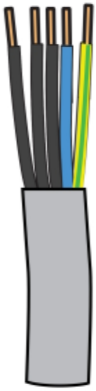
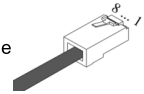


No.	Description	Reference
A	PV strings.	
B	All in one sys. (Inverter)	
C	AC charger.	
D	EPS loads, or named backup loads.	
E	NORMAL loads.	
F	Smart energy meter.	
G	Current Transformer (1 CT) of the smart energy meter.	
H	Main meter.	
I	Grid	
J	AC breaker of inverter GRID terminal.	**≥32A. (Min. 50A if need AC CHG)** Depending on Maximum EPS loads and Maximum Taking Power setting in APP.
K	AC breaker of AC charger.	**≥25A.**
L	AC breaker of EPS loads.	**≥25A.** Depending on Maximum EPS loads.
M	AC breaker of NORMAL loads.	Depending on the NORMAL loads.
N	AC breaker of Grid.	Depending on Maximum loads (EPS+ NORMAL) and Maximum Taking Power setting in APP.
O	RCD	**30mA**,or refer to local regulation.

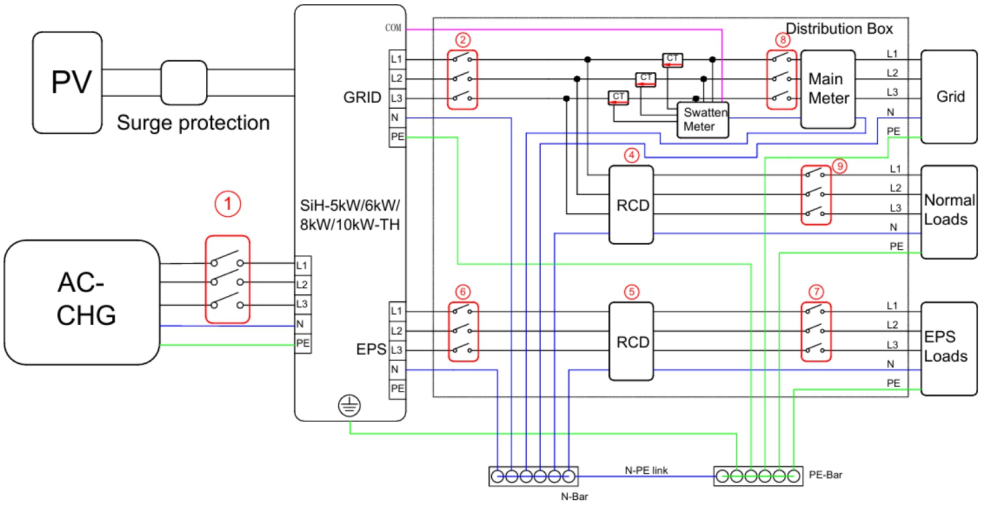


Note:
1. NORMAL loads include generators, such as another inverter.
2. All the AC breaker and RCD must Comply with local regulation.

Additionally required wires

No.	Required Materials		Type	Cross-section
1	DC cable		Outdoor multi-core copper wire cable complying with **600V** and **16A** standard.	**4-6mm²**
2	Grounding cable		Outdoor single-core copper wire cable. Conventional yellow and green wire	6mm², the same as that of the PE wire in the AC cable.
3	Inverter Grid cable		Outdoor 5-core copper wire cable	**6-10mm²** (10mm² ONLY if need AC CHG)
4	EPS Loads cable		Outdoor 5-core copper wire cable	**2.4-4mm²**
5	AC charger cable		Outdoor 5-core copper wire cable	**2.4-4mm²**
6	NORMAL loads cable		Outdoor 5-core copper wire cable	Depending on the NORMAL loads.
7	Main Grid cable		Outdoor 5-core copper wire cable	Depending on Maximum loads (EPS+ NORMAL) and Maximum Taking Power setting in APP.
8	Smart meter power cable			**0.5-1.5mm²**
9	Communication cable		CAT 5E outdoor, shielded network cable	**0.08-0.2mm²**

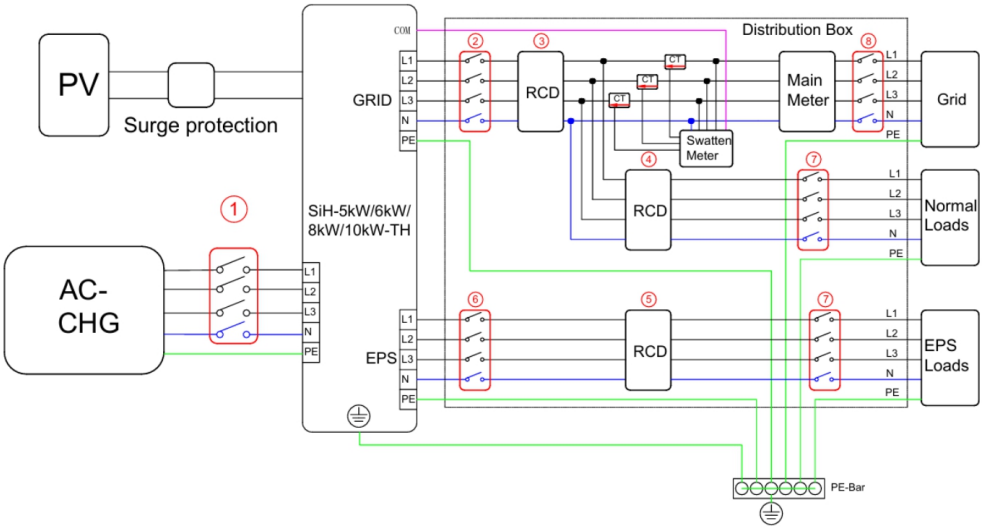
Backup Wiring Diagram (For AU / NZ / SA)



Note:

1. The PE wire of EPS termial is not required for Australia, New Zealand and South Africa.
2. 1, 2, 6, 7, 8, 9: AC breaker, refer to Electrical Connection Overview.
3. All the AC breakers and RCD must comply with local regulation.
4. As shown in the above figure, the arrow on the CT must point to the load side.

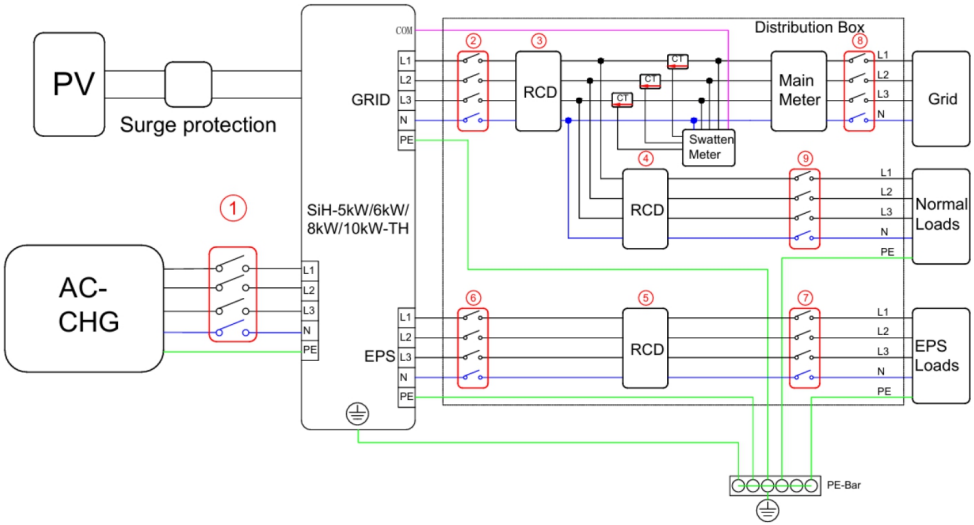
Backup Wiring Diagram (For Other Countries)



Note:

1. 1, 2, 6, 7, 8, 9: AC breaker, refer to Electrical Connection Overview.
2. All the AC breakers and RCD must comply with local regulation.
3. As shown in the above figure, the arrow on the CT must point to the load side.

Backup Wiring Diagram (For TT System)



Note:

1. 1, 2, 6, 7, 8, 9: AC breaker, refer to Electrical Connection Overview.
2. All the AC breakers and RCD must comply with local regulation.
3. As shown in the above figure, the arrow on the CT must point to the load side.

Notice

1. The contents may be updated or revised periodically due to product development. The information within this guide is subject to change without prior notification. In no circumstances can this guide replace the user manual or associated notes of the device.
2. Before installing the equipment, ensure that you carefully read, thoroughly understand, and strictly abide by the detailed instructions in the user manual and other relevant regulations. The user manual can be downloaded by accessing the website at www.swatten.com, or it can be acquired by scanning the QR code on the back cover of this guide.
3. All operations must be carried out solely by qualified personnel. These personnel must have received training in the installation and commissioning of electrical systems, be capable of handling potential hazards, and possess knowledge of the manual as well as local regulations and directives.
4. Before commencing installation, check that the items in the package are intact and complete in comparison with the packing list. In case of any damaged or missing components, contact Swatten or the distributor immediately.
5. The cable used must be in good condition and well insulated. Operating personnel must wear appropriate personal protective equipment (PPE) at all times.
6. Any violation may lead to personal injury, death, or damage to the device, and will invalidate the warranty.

Safety

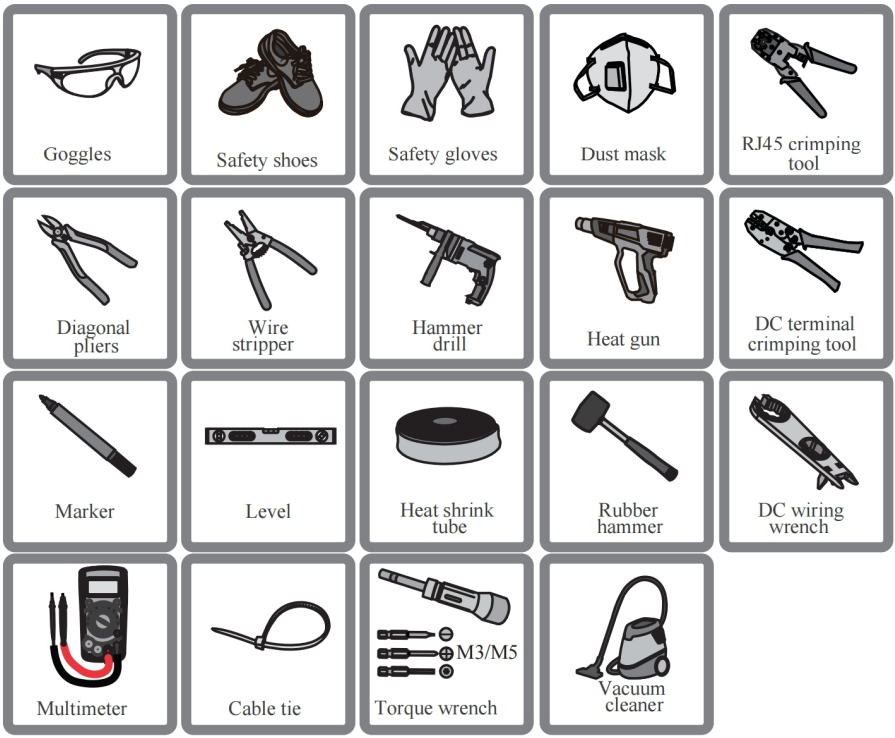
The inverter has been designed and tested in strict accordance with international safety regulations. Read all safety instructions attentively before starting any work and adhere to them constantly when working on or with the inverter. Incorrect operation or work may cause:

- Injury or death to the operator or a third party;
- Damage to the inverter or other properties.

Please comply with the safety instructions related to the PV strings and the utility grid.

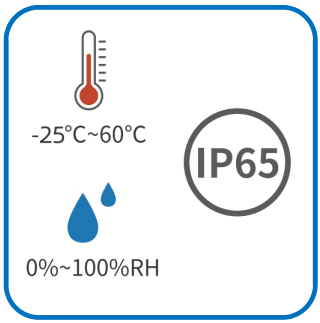
Installation Tool Requirements

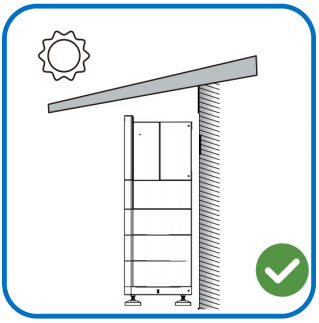
The following tools are recommended when installing the equipment. Use other auxiliary tools on site if necessary.

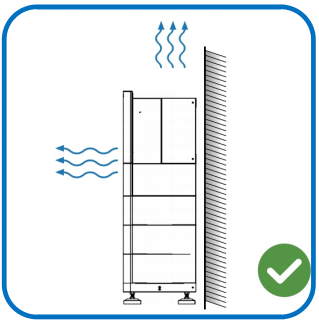


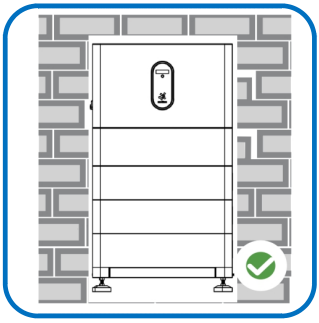
Installation Environment Requirements

1. Do not install the equipment in an area close to flammable, explosive, or corrosive materials.
2. Install the equipment on a surface that is solid enough to bear the equipment weight.
3. Install the equipment in a well-ventilated place to ensure good dissipation. Also, the installation space should be large enough for operations.
4. The equipment with a high ingress protection rating can be installed indoors or outdoors. The temperature and humidity at the installation site should be within the appropriate range.
5. Install the equipment in sheltered areas to provide protection from sunlight, rain, and snow.
6. Install the equipment in a place that is not accessible to children to ensure their safety. High temperature exists when the equipment is working. Do not touch the surface to avoid burning.
7. Install the equipment at a height that is convenient for operation and maintenance, electrical connections, and checking indicators and labels.
8. Install the equipment away from electromagnetic interference.



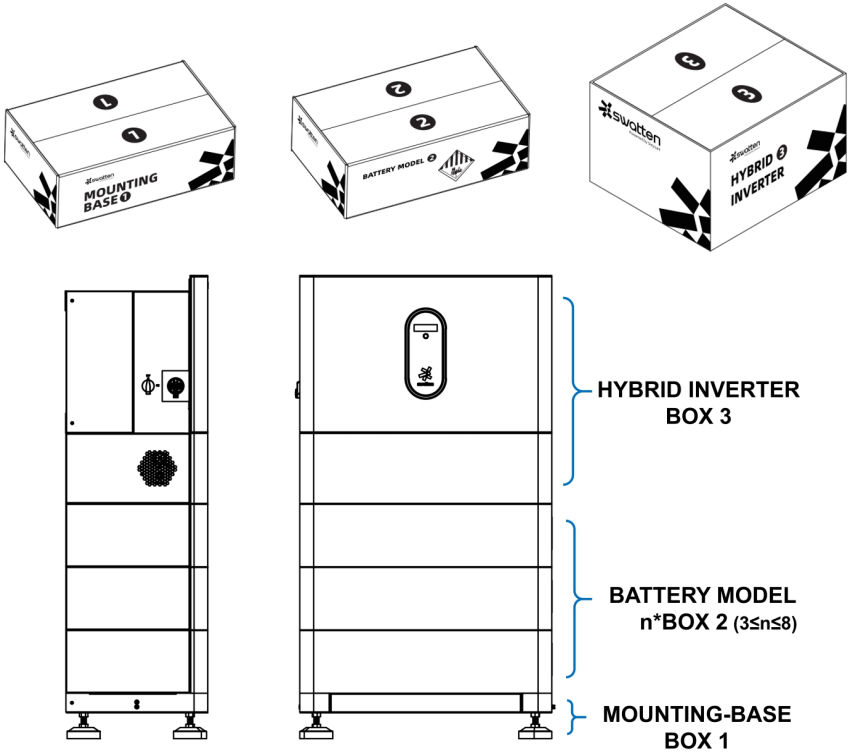




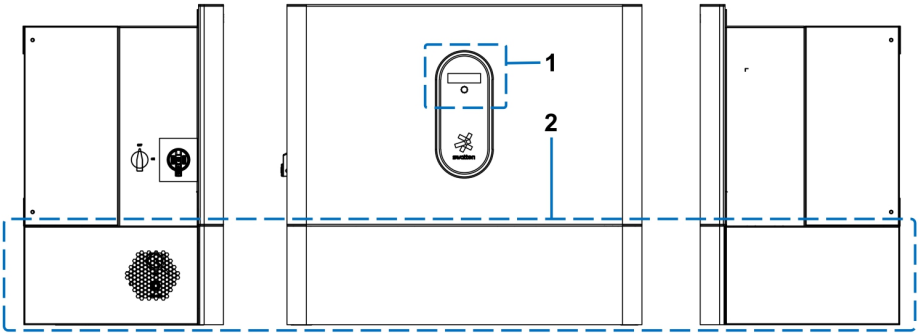


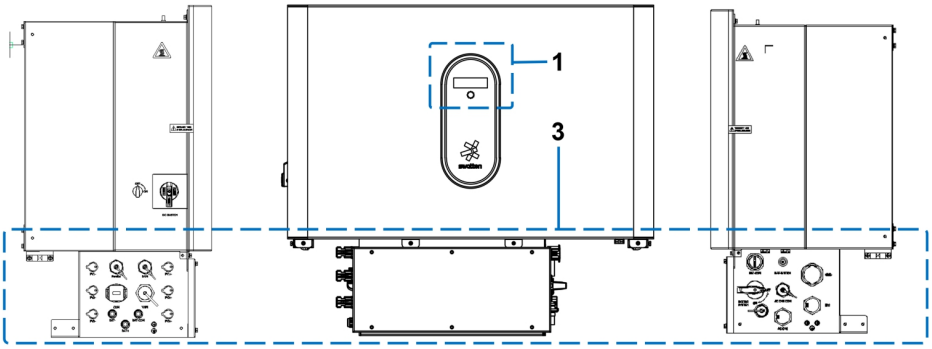
PRODUCT OVERVIEW

Appearance



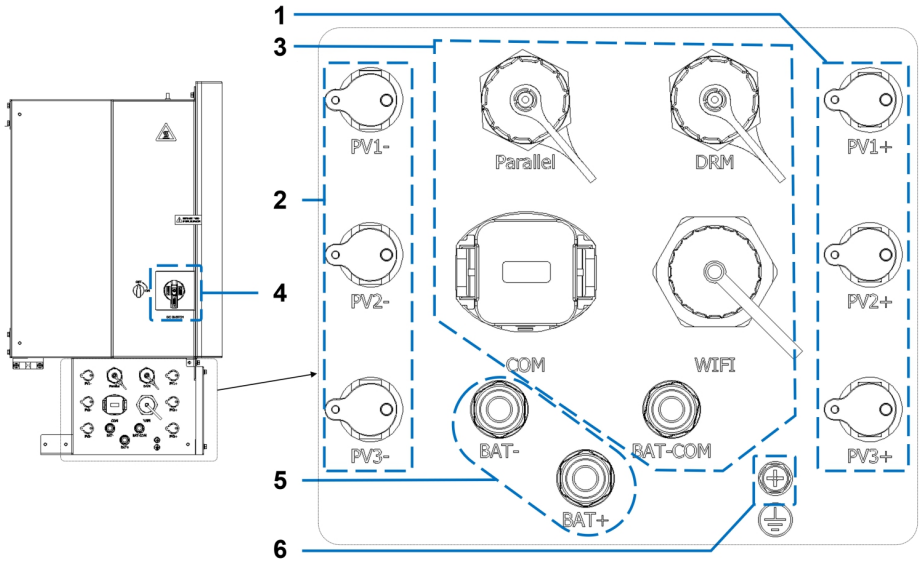
Item	Description
BOX 1	Including mounting-base, mounting bracket, cover plates for hybrid inverter.
BOX 2	Each All-in-one system requires at least 3 batteries and at most 8 batteries.
BOX 3	Including hybrid inverter, accessories box.





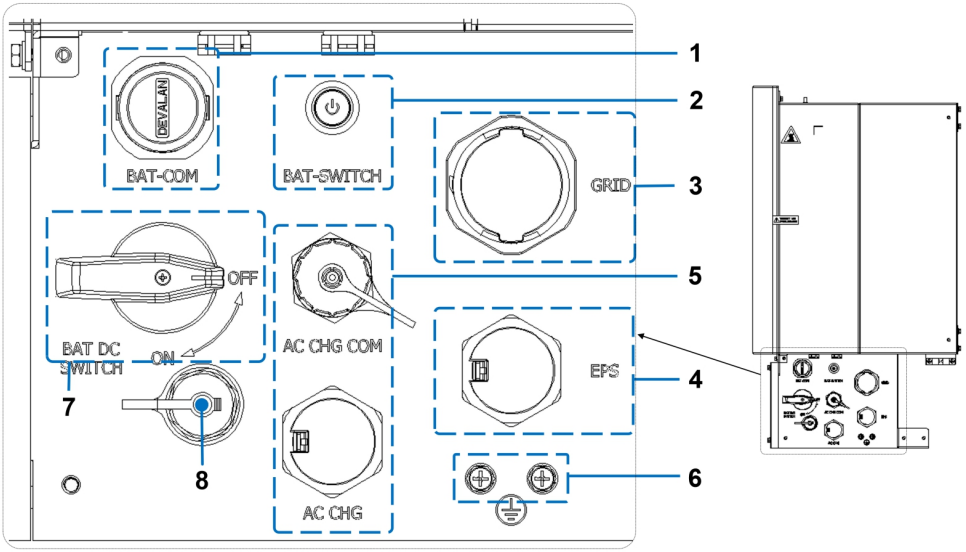
No.	Description
1	LED screen
2	Cover plates
3	Ports of hybrid inverter

Ports of Hybrid Inverter



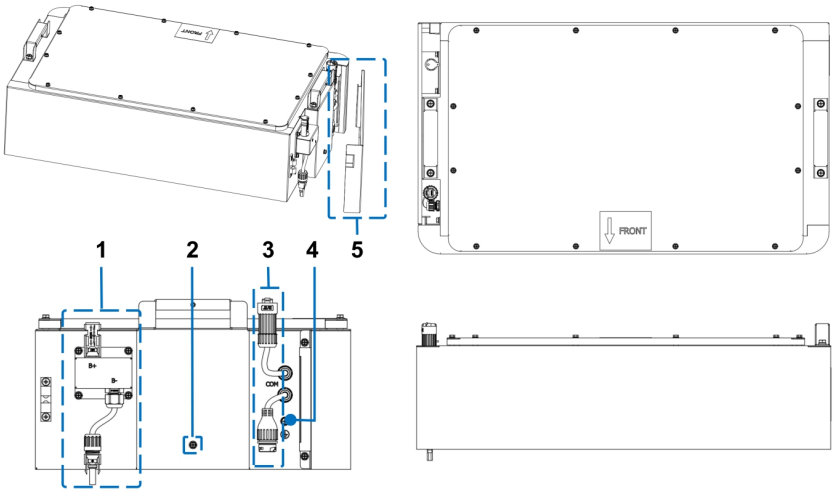
No.	Name	Description
1	PV1+,PV2+,PV3+	PV positive terminals.
2	PV1-,PV2-,PV3-	PV negative terminals.
3	Parallel	For parallel connection use ONLY.(Reserved)
	DRM	Communication port for DRM.
	COM	Communication port for Swatten smart meter.
	WIFI	Communication port for WIFI module.
	BAT-COM	Communication port between Inverter and Battery Module.

4	PV Switch	Switch for PV on or off.
5	BAT+	Battery positive terminal between Inverter and Battery Module.
	BAT-	Battery negative terminal between Inverter and Battery Module.
6	Grounding	Grounding terminal.



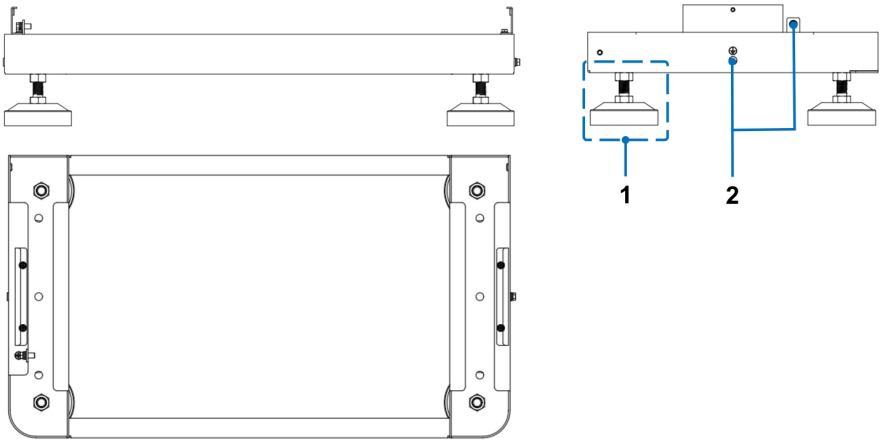
No.	Name	Description
1	BAT-COM	Reserved.
2	BAT-SWITCH	BMS power and alarm indicator.
3	GRID	Grid terminal.
4	EPS	Backup load terminal.
5	AC CHG COM	AC charger communication port.
	AC CHG	3Phase AC charger power terminal.
6	PE	Grounding terminal.
7	BAT DC SWITCH	Switch for battery's input and output.
8	REBOOT BUTTON	Press with tools such as a screwdriver to restart the battery.

Ports of Battery



No.	Description
1	Battery MC4 connector
2	Screw holes for fixation
3	Battery communication connector
4	Grounding terminal
5	Battery side cover plate

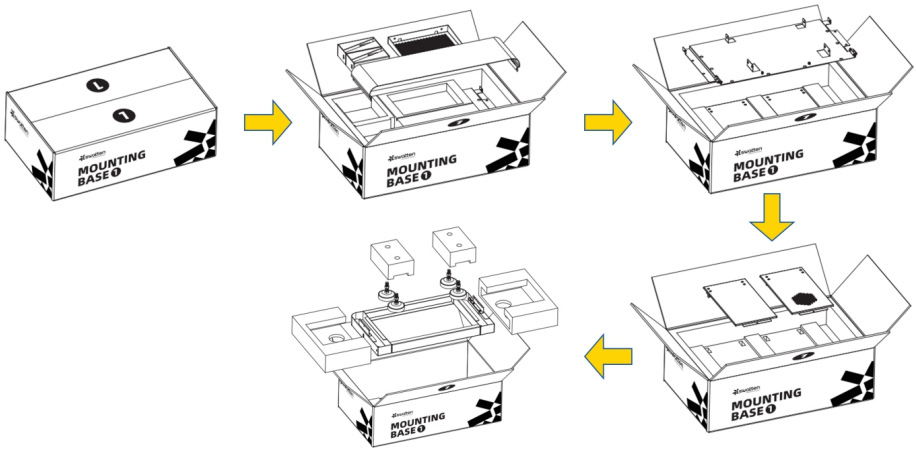
Ports of Mounting-Base



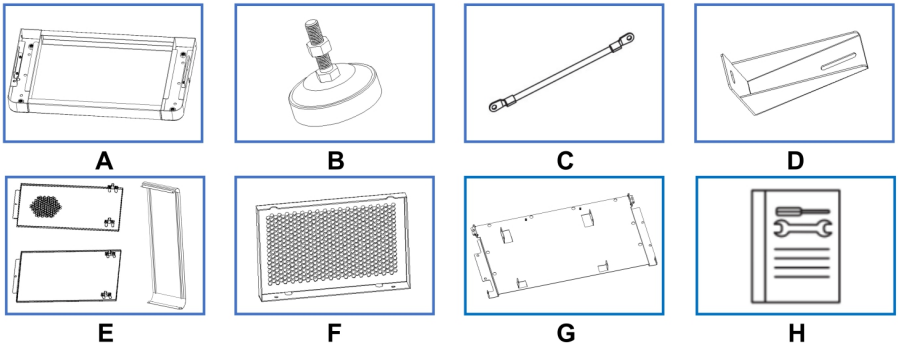
No.	Description
1	Base support feet
2	Grounding terminal

Installation: Unpacking and Inspection

BOX 1 MOUNTING-BASE (Open this box FIRST please.)

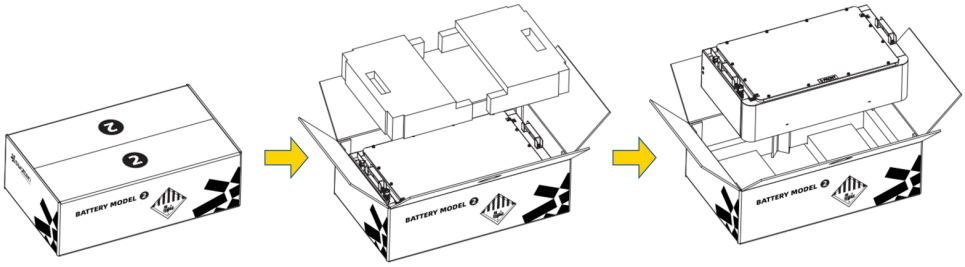


Accessories

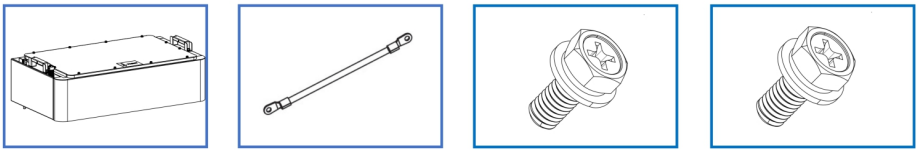


Item	Description	Qty
A	Mounting-base	1
B	Base support feet	4
C	Grounding cable	1
D	Secure bracket	4
E	Side cover plate	3
F	Secure plate on the back of the inverter	1
G	Secure plate on the bottom of the inverter	1
H	Quick start guide	1

BOX 2 Battery



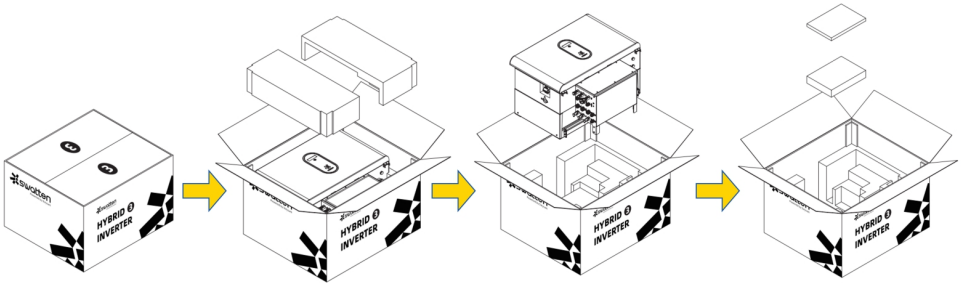
Accessories



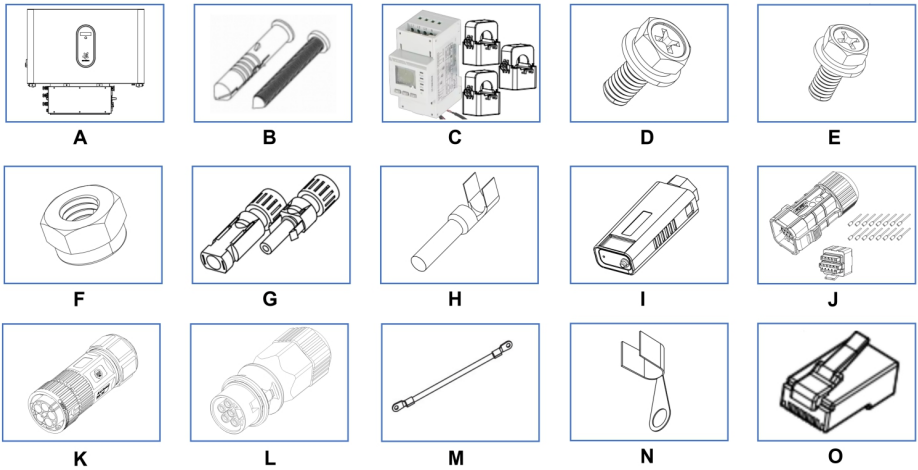
A B C D

Item	Description	Qty
A	Battery module	1
B	Grounding cable	1
C	M5 SCREWS (M5x12 for grounding cables secure)	1
D	M4 SCREWS (M4x10 for battery modules secure)	1

BOX 3 Hybrid Inverter

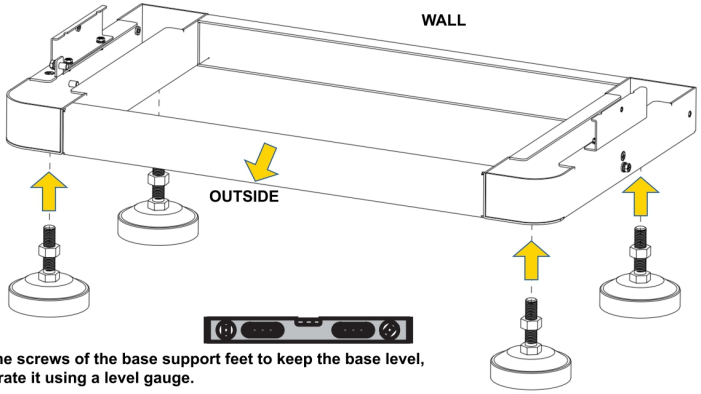


Accessories

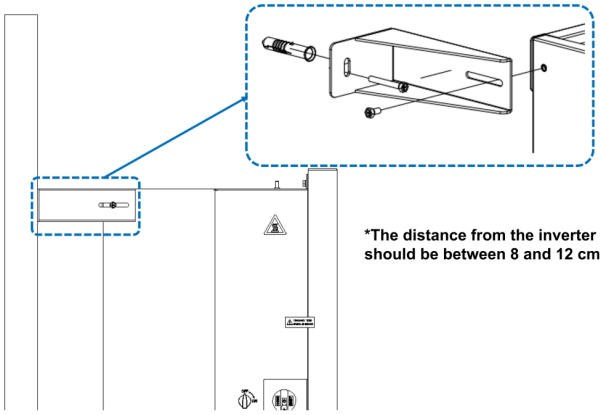


Item	Description	Qty
A	Inverter	1
B	Expansion Plug Set	4
C	Smart Energy Meter & Current Transformer (3 CTs)	1
D	M5 Screws and Washers, M5×12	15
E	M4 Screws and Washers, M4×10	5
F	M5 Nuts	3
G	MC4 Positive & Negative Connector	3 pairs
H	Crimp contact	6
I	WiFi Logger	1
J	COM Connector	1
K	GRID/AC CHG terminal	2
L	EPS terminal	1
M	Grounding cable	2
N	Grounding terminal	2
O	RJ45 (2 standard, 2 IP65 waterproofed for parallel cable use)	4

Installation: Stack and Secure

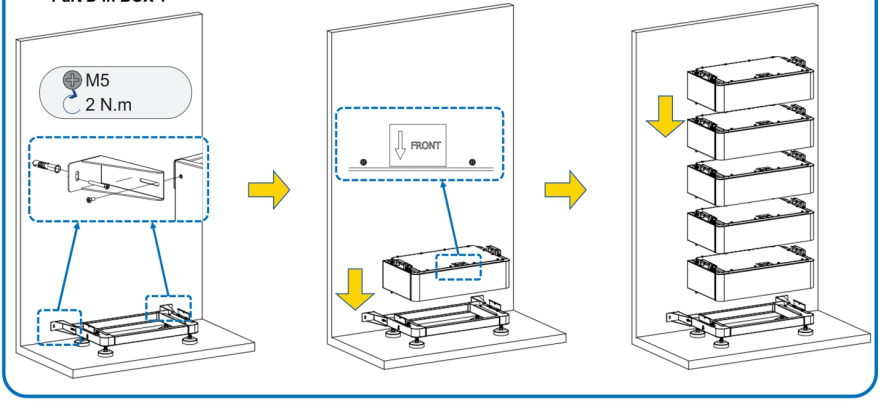


*Adjust the screws of the base support feet to keep the base level, and calibrate it using a level gauge.

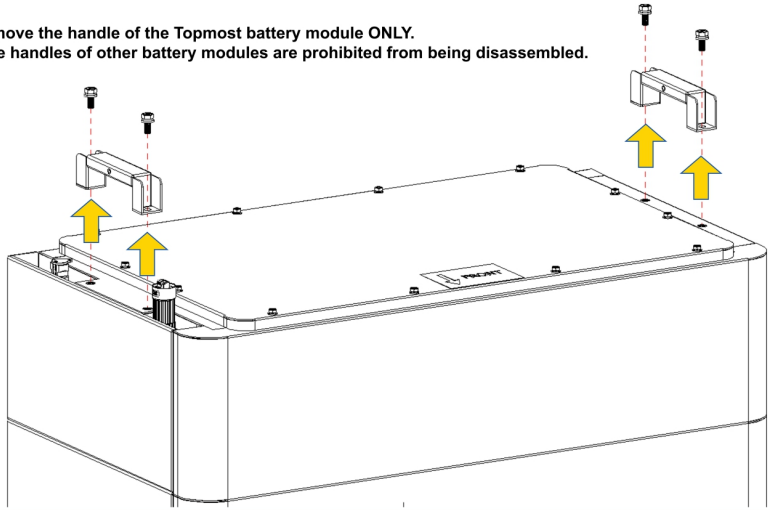


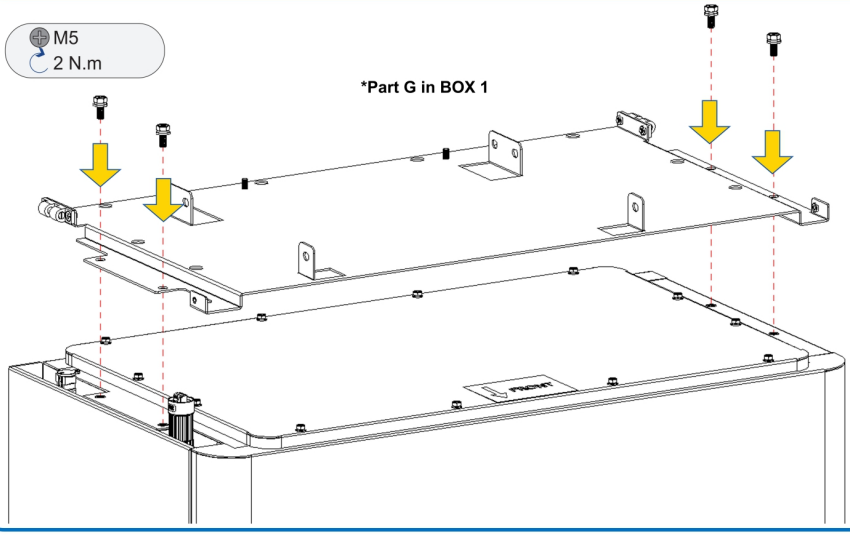
*The distance from the inverter to the wall should be between 8 and 12 cm.

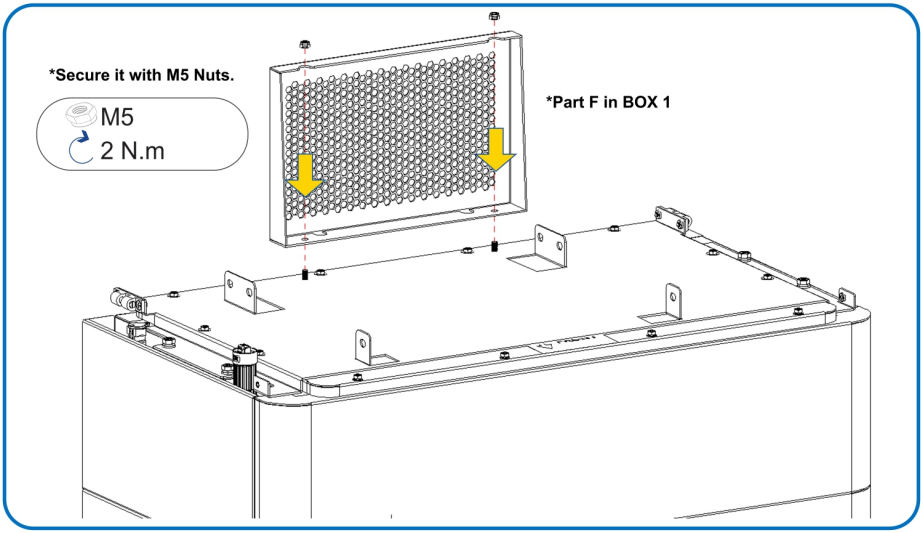
*Part D in BOX 1

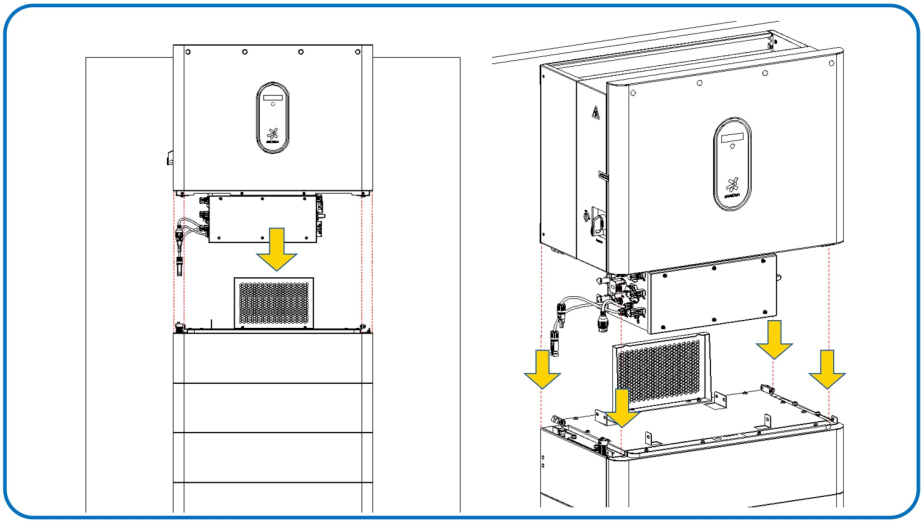


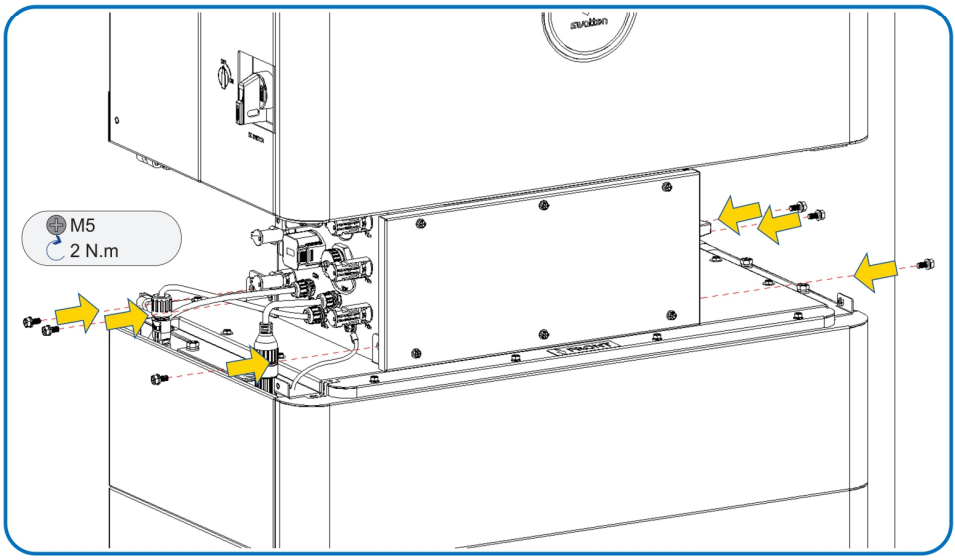
*Remove the handle of the Topmost battery module ONLY.
**The handles of other battery modules are prohibited from being disassembled.

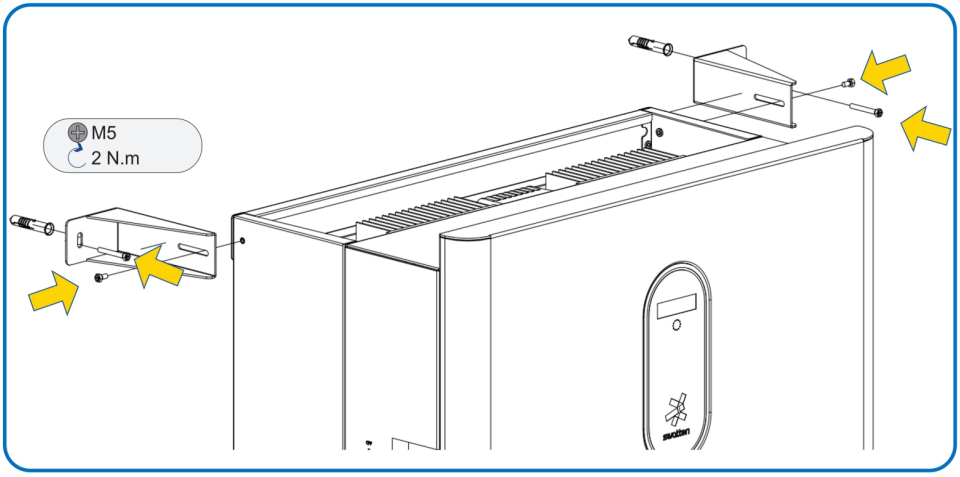


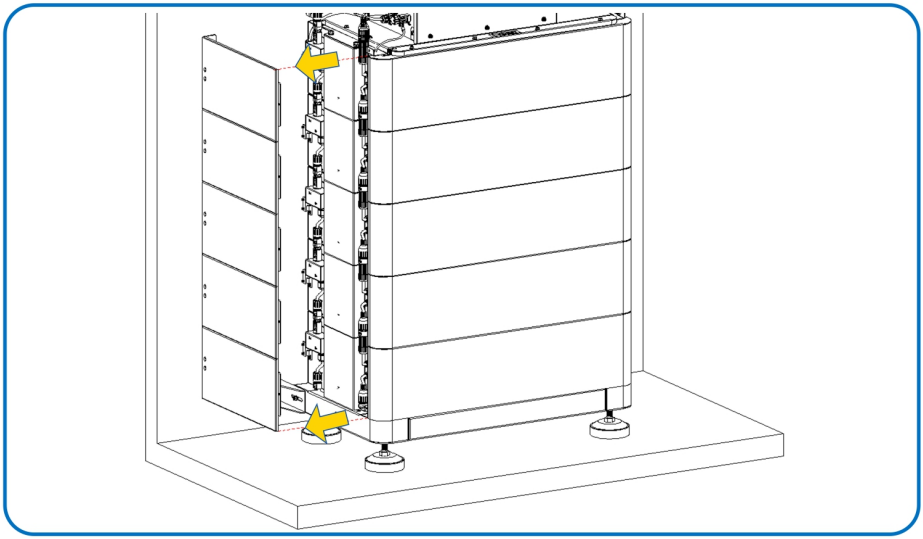


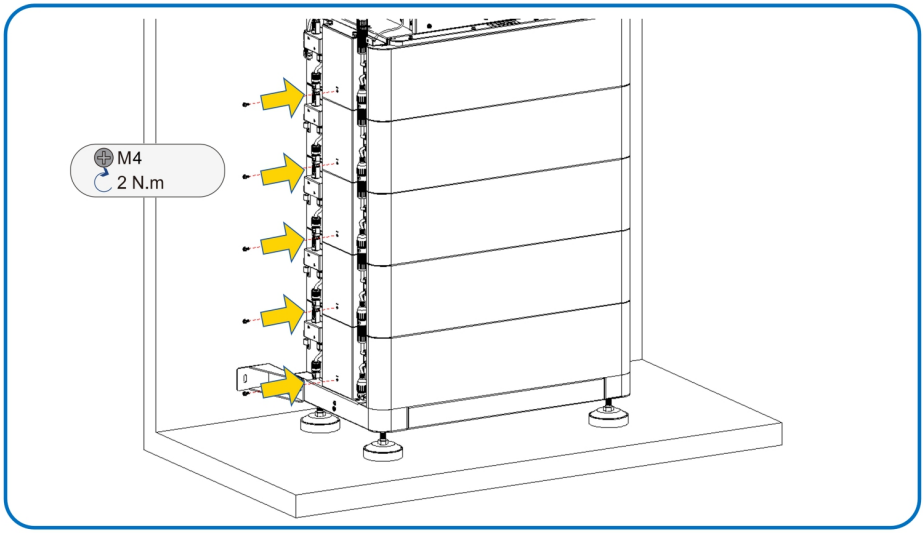

*Secure it with M5 Nuts.
M5
2 N.m
*Part F in BOX 1




M5
2 N.m

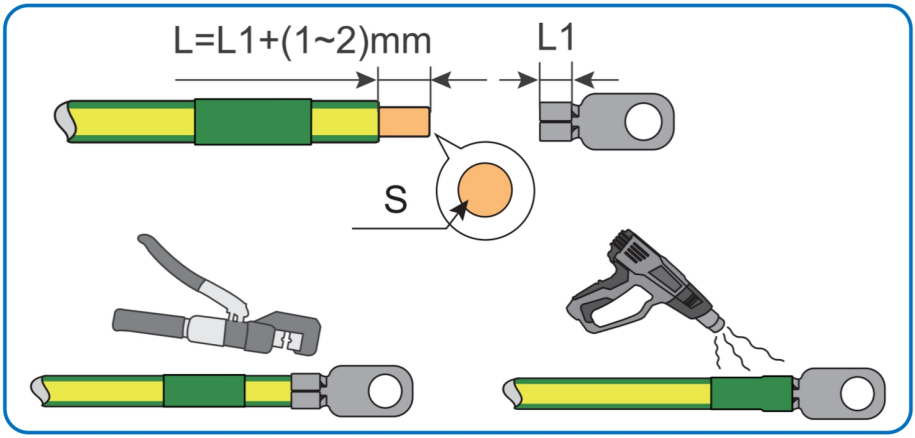

M5
2 N.m

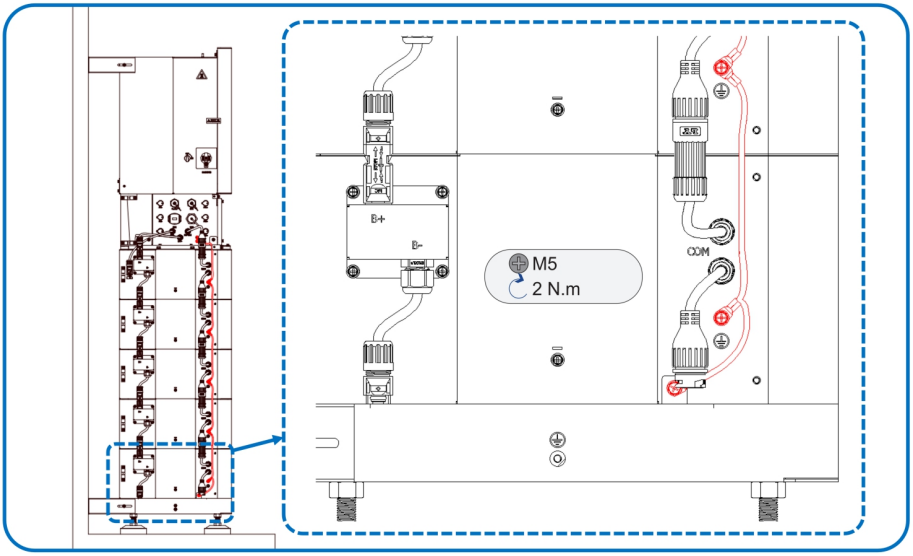



M4
2 N.m

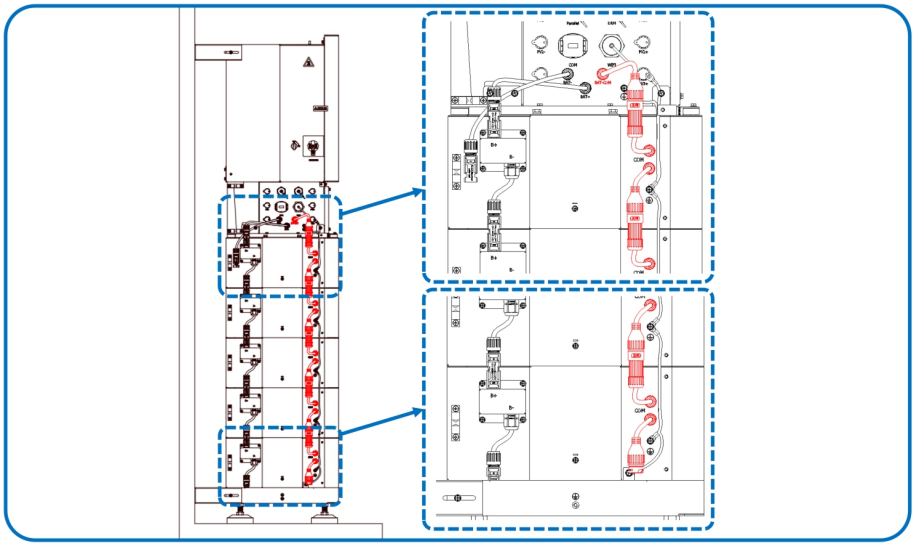
Installation: Connecting and Wiring

Grounding cable connection

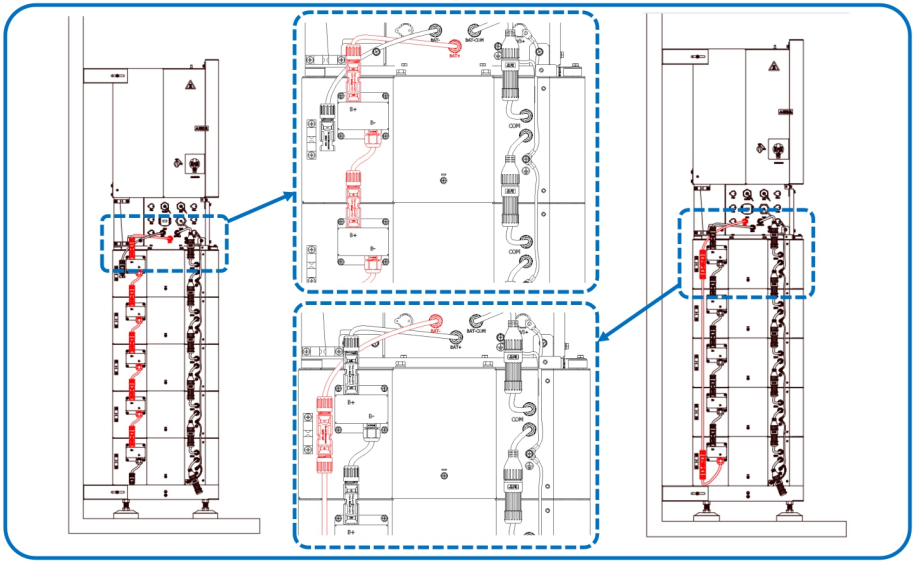




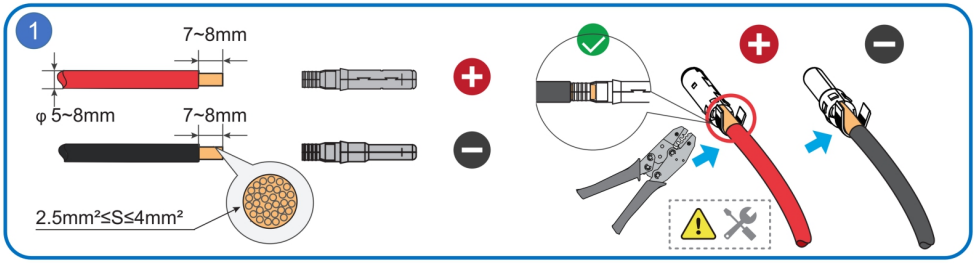
Battery communication cable connection

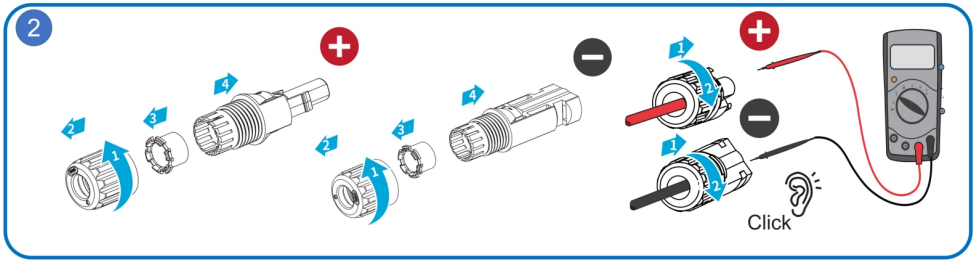


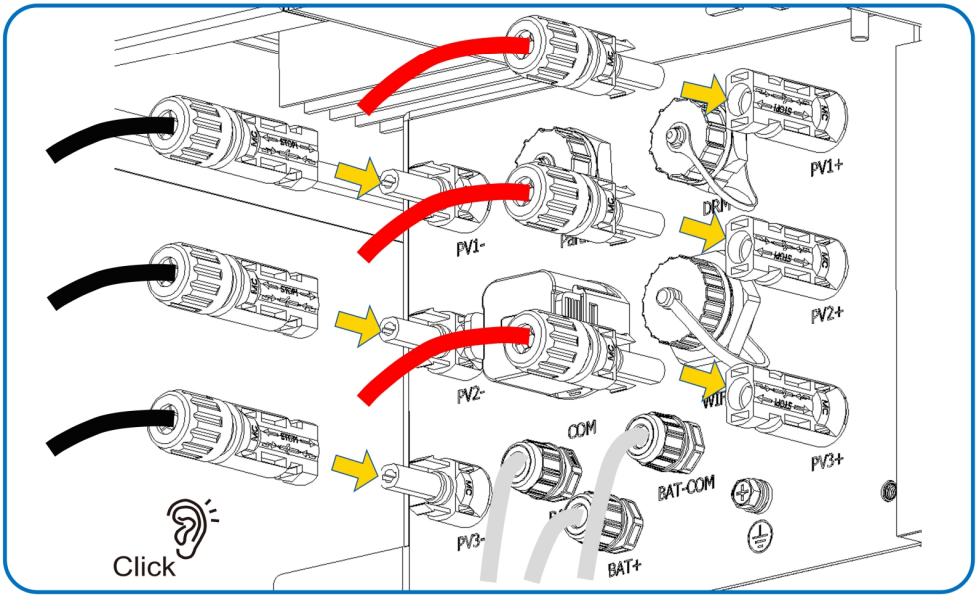
Battery power cable connection



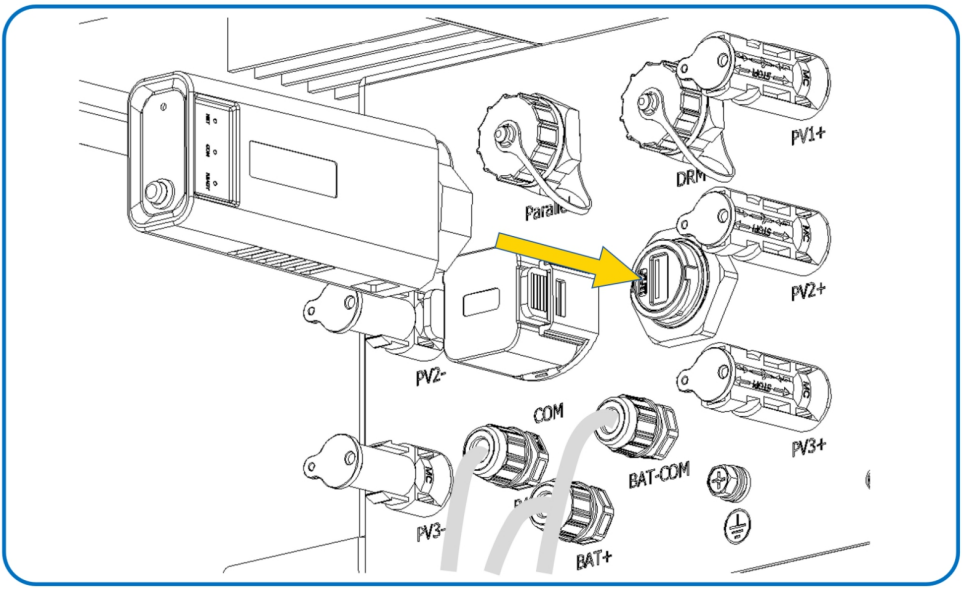
PV cable connection



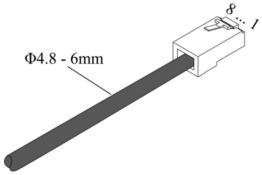




WiFi logger connection



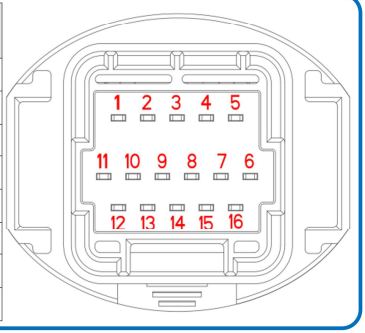
DRM/COM cable connection

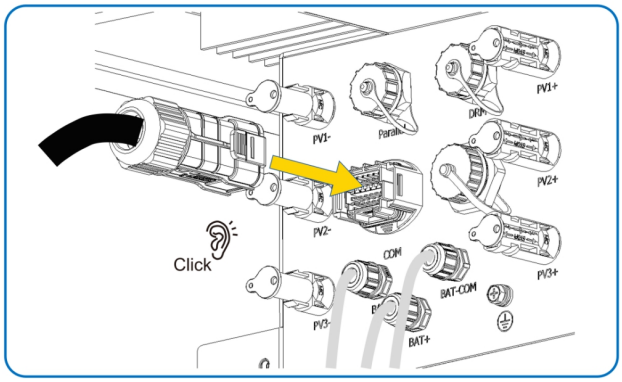


DRM			
01	**02**	**03**	**04**
RSD_2	RSD_1	COM/DRM0	3V3_DRM
05	**06**	**07**	**08**
DRM4/8	DRM3/7	DRM2/6	DRM1/5

DRM

COM			
01	**02**	**03**	**04**
DO1_COM	DO1_NO	NC	NC
05	06	07	08
DI_24V	METER_485_A	METER_485_B	BAT_12V
09	**10**	**11**	**12**
BAT_GND	NC	NC	NC
13	**14**	**15**	**16**
NC	NC	NC	DI_COM

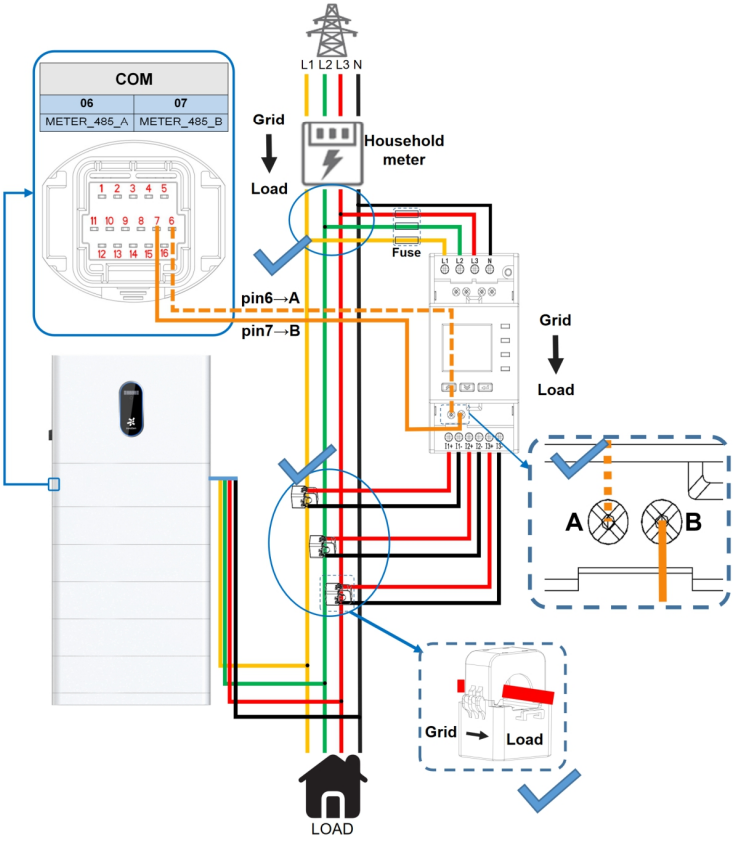




Step 1: Turn off the PV panel switch, the load switch, the battery switch and other power switches, and ensure that they cannot be reconnected.

Step 2: Connect pin 6 and pin 7 of the inverter's **METER** port to terminal A and terminal B on the Smart Meter.

Step 3: Connect each wire to the terminals on the Smart Meter.

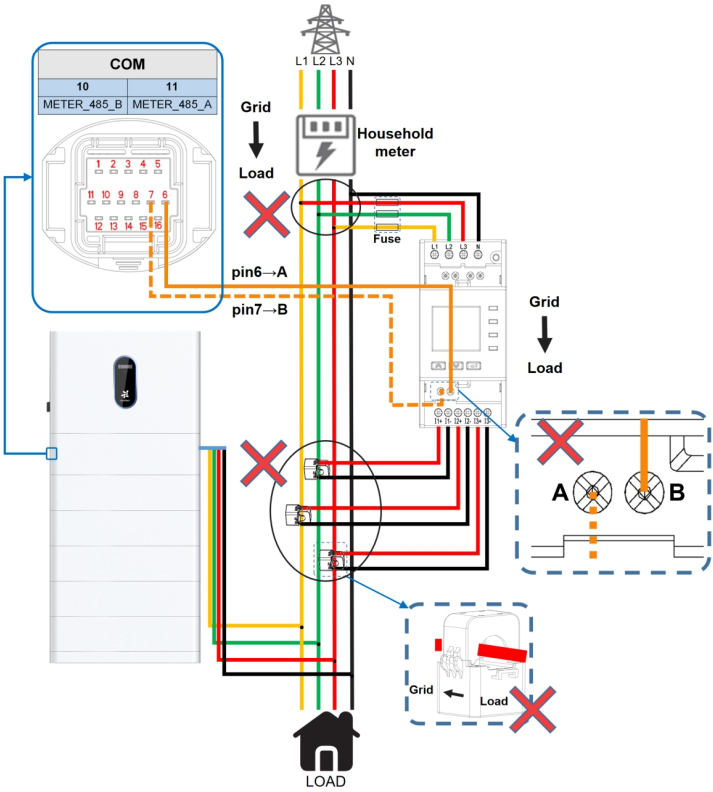


Step 4: After the meter is connected, it is necessary to carefully inspect the CT direction and cable installation. The arrow on the CT **MUST** always point to the **LOAD** side.

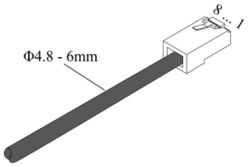
After the meter is connected, it is necessary to check the following items:

1. The arrow on the CT should be directed towards the **LOAD** side.
2. The CT corresponding to I1+ and I1- should be connected to cable L1.
   The CT corresponding to I2+ and I2- should be connected to cable L2.
   The CT corresponding to I3+ and I3- should be connected to cable L3.
3. The cables connected to the L1, L2, L3, and N terminals of the meter are correct.
4. Ensure that the clips are perfectly engaged without any deviation. Otherwise, the measurement of current may not be accurate.

5. Carefully check whether the wiring sequence of the Smart Meters and CTs are correct.

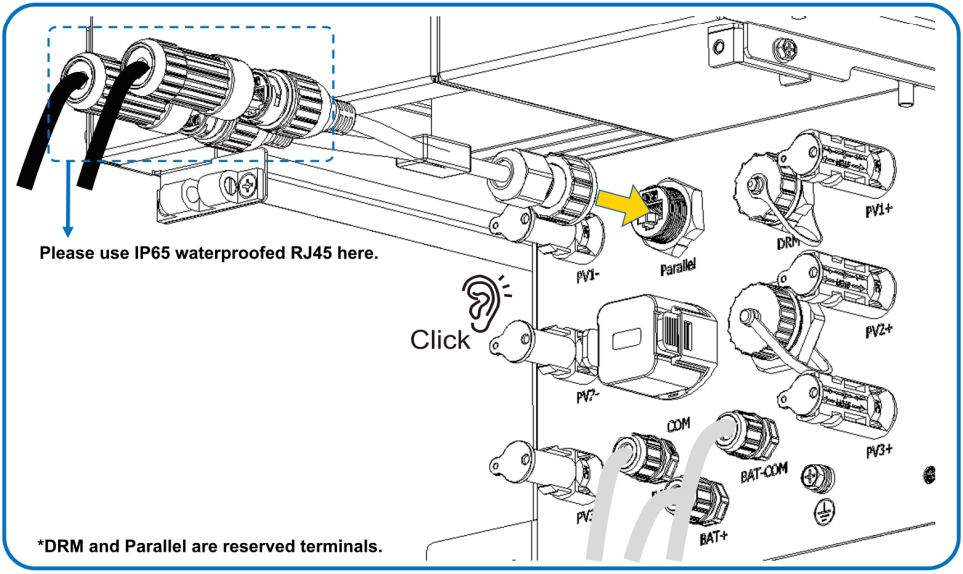


Parallel cable communication connection (For parallel use ONLY)

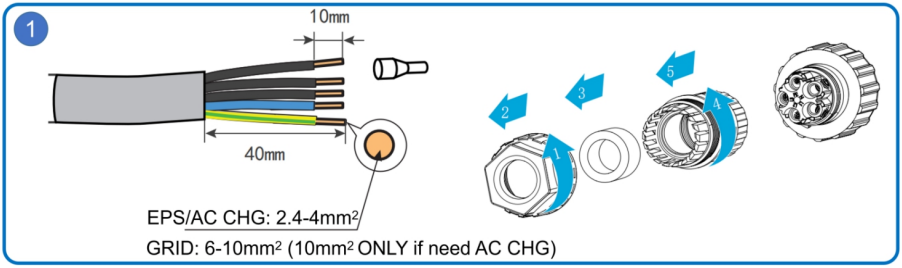


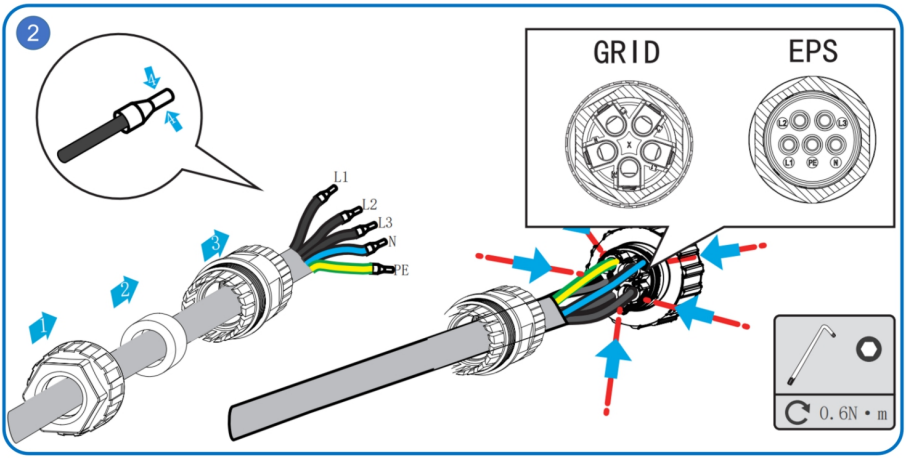
Parallel			
01	**02**	**03**	**04**
ARM_485_B	ARM_485_A	GND_24V	SYN2
05	**06**	**07**	**08**
SYN1	GND_24V	DSP_CAN_L	DSP_CAN_H

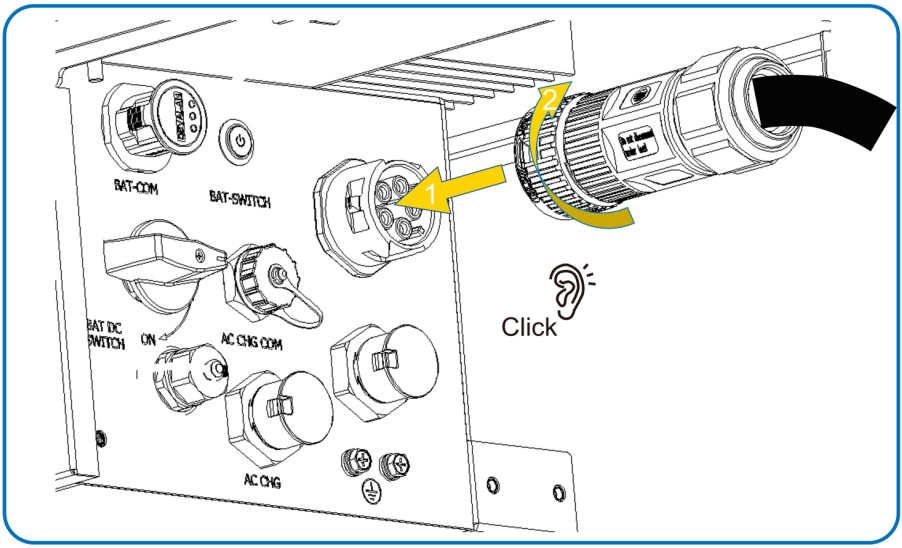
Parallel

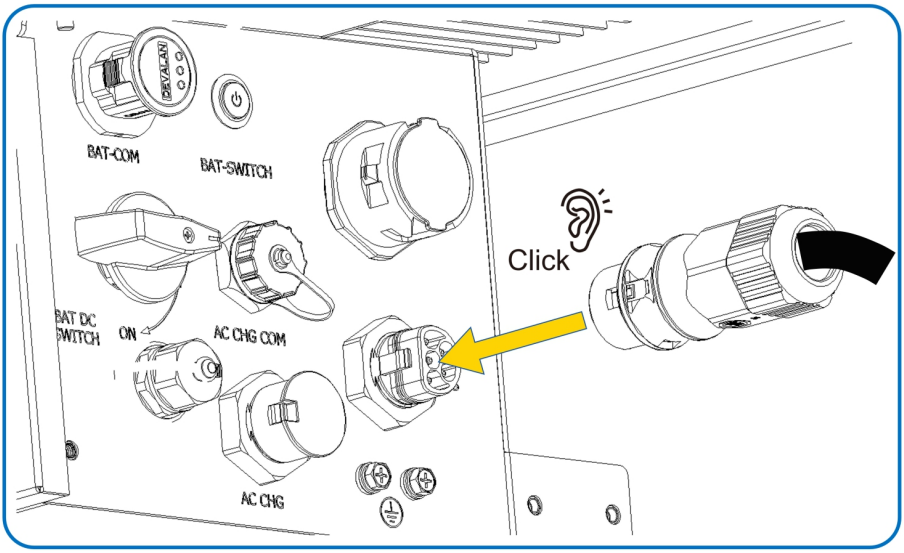


GRID/EPS power cable connection



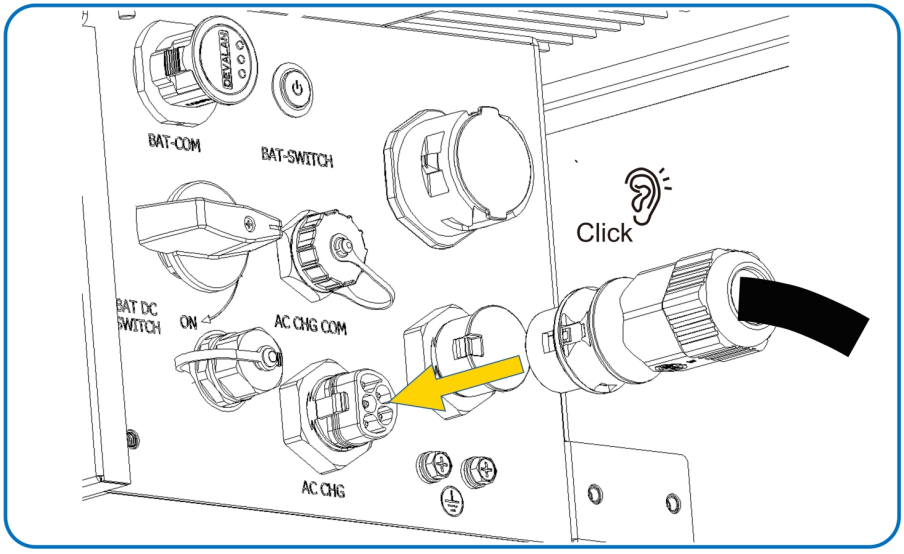


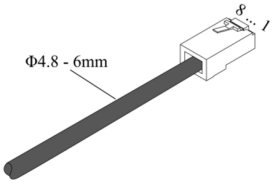




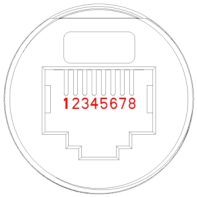
AC CHG: Power cable & COM cable connection

According to the actual installation situation, AC Charger can also be used as a normal load and connected to the Grid terminal of inverter.

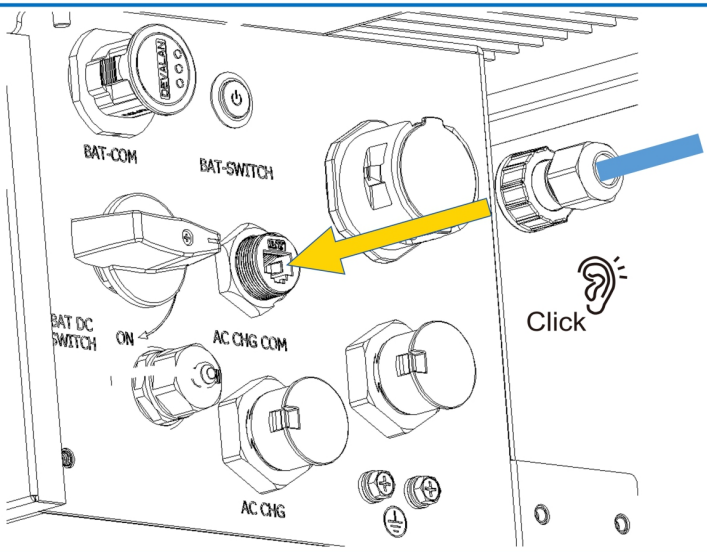




AC CHG COM			
01	**02**	**03**	**04**
NC	NC	ARM_485_B	ARM_485_A
05	**06**	**07**	**08**
NC	NC	NC	NC

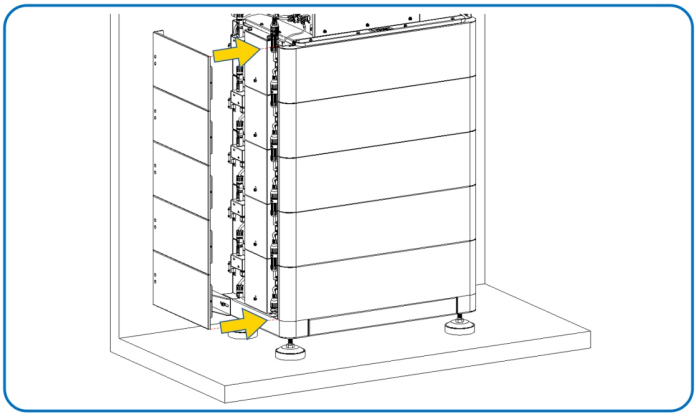


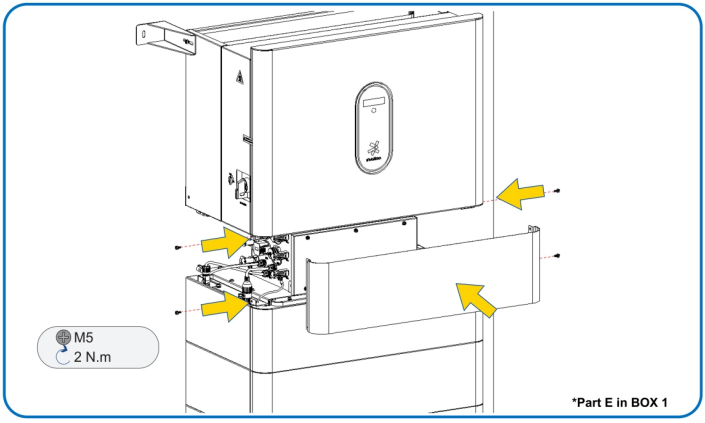
AC CHG COM

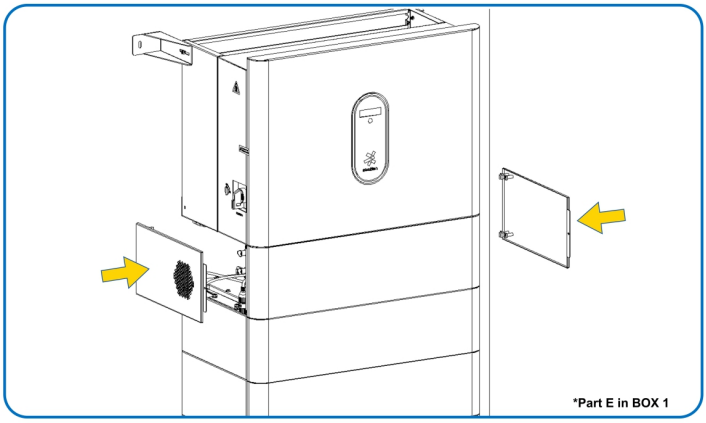


Install the side cover plate of inverter

Before installing the cover plates, please power on the system. After verifying that the wiring is correct, power off the system and then install all the cover plates.







App

Scanning the QR code for inverter App download and commissioning.

App Download

Commissioning Steps

LED indicator

LED Color	State	Definition
Green	ON	The inverter is operating normally.
	Flashing	The inverter is at standby or startup state (without on/off-grid operation).
Red	ON	A system fault has occured.
Grey	OFF	Both the AC and DC sides are powered down.

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Website: https://www.swatten.com

Installation Video

User Manual Download

www.swatten.com