

BYD BATTERY-BOX PREMIUM QUICK START GUIDE

Valid for HVS 5.1 / 7.7 / 10.2 / 12.8

HVM 8.3 / 11.0 / 13.8 / 16.6 / 19.2 / 22.1

BCU-V2.0



Please note that this is a Quick Start Guide only, which is a shortened assistance for the installation of the BYD Battery-Box Premium HVS/HVM. It does not replace the Operating Manual, which must be read and understood completely before installation. Please download and view it on this website: www.bydbatterybox.com.

Attention: High Voltage! Improper handling can pose a risk of electric shock and damage.

This guide and procedures described herein are intended for use by skilled workers only.

A skilled worker is defined as a trained and qualified electrician or installer who has all of the following skills and experience:

- Knowledge of the functional principles and operation of on-grid systems.
- Knowledge of the dangers and risks associated with installing and using electrical devices and acceptable mitigation methods.
- Knowledge of the installation of electrical devices.
- Knowledge of and adherence to this guide, the complete installation manual and all safety precautions and best practices.

In order to ensure the normal operation of the BYD Battery System, please download the app Be Connect 2.0 and then finish the configuration in accordance with this document.

If there are errors generated during the commissioning or operation, please read the Service Guideline and Checklist alongside this document, or digital version on the website.

If the battery system doesn't start at all, please contact BYD's local after-sales service team within 48 hours. Otherwise, the battery could be permanently damaged.

Please do not stack up batteries without protective packages when storing or handling batteries, except for installation.

QR Code for the app.

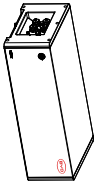
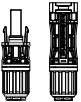
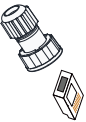


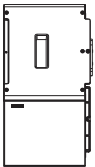
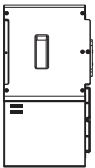
Be Connect 2.0
Google Play



Be Connect 2.0
App Store

1. Scope of Delivery

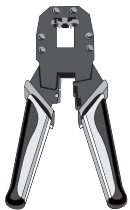
x1	x1	x3	x1	x1	x1	x4
						
A	B	J	R	T1	T2	I
BCU	Base	M4x14 Countersunk Screw	Power Cable Coupler	6 mm² Terminal	10 mm² Terminal	Communication Connector
x2	x1	x2	x4	x2	x1	x1
						
D	E	F	G	H	Q	T
Hanger (BCU Part)	Documents	Hanger (Wall Part)	M5 Screw	M6 Bolt and Nut	Waterproof plug	Terminal Resistor

x1	x1
	
C1	C2
HVS Module	HVM Module
x2	
	
J	
M4x14 Countersunk Screw	

2. Additionally Required Installation Materials

x1	x1	x2	x1	x1	x1
					
K	L	M	N	O	P
DC Cable (6 or 10 mm², double insulated External diameter: 6.3-7.6 mm)	Expansion Anchor Bolt (M8x40)	Cat5e Shield (Metal Shielded RJ45 of Cat5e or higher)	PE-terminal	PE Cable* (10 mm²)	Heat Shrink Tubing
* Note: If the maximum current of the connected inverter is no more than 40 A, a grounding cable with a cross-sectional area of 6 mm² is also acceptable.					

3. Tools



Network Wire Clamp



Marker



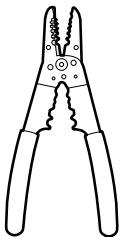
Phillips Screwdriver Bit



Flat-head Screwdriver



Torque Wrench



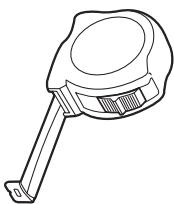
Wire Stripper



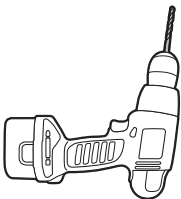
Hydraulic Plier
YAK-70



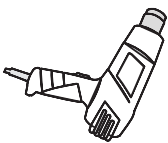
Wrench



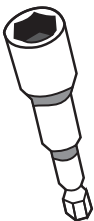
Tape Measure



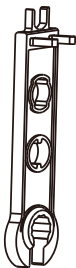
Drill



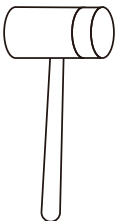
Heat Gun



Cylinder Screwdriver



Connector Wrench



Rubber Mallet



Crimping Pliers

4. Installation Location



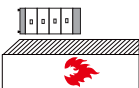
Max +50 °C



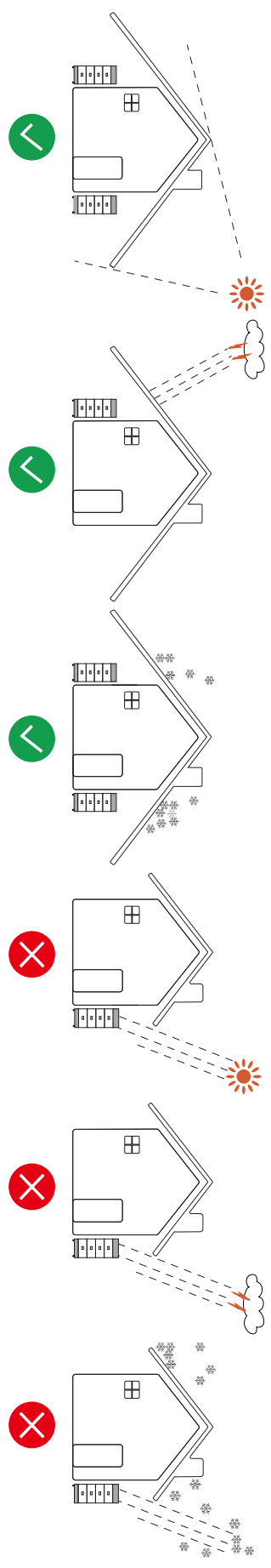
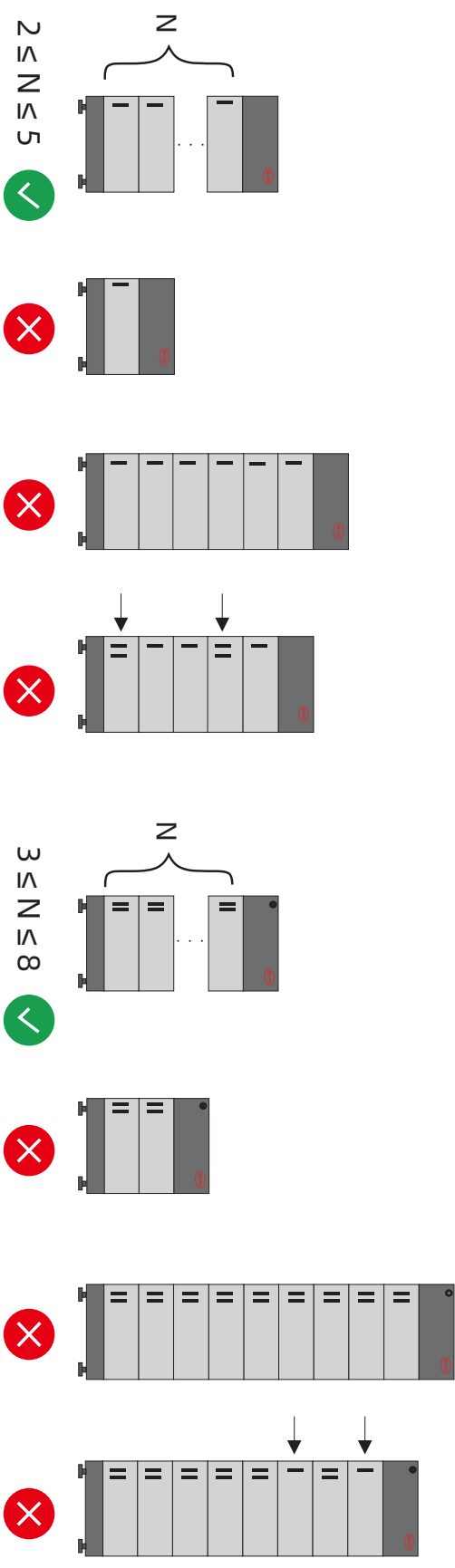
Min -10 °C

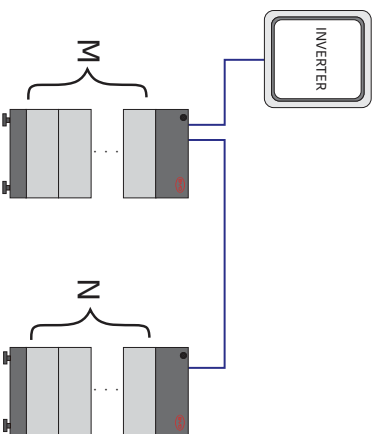


RH. +5 %~ +95 %

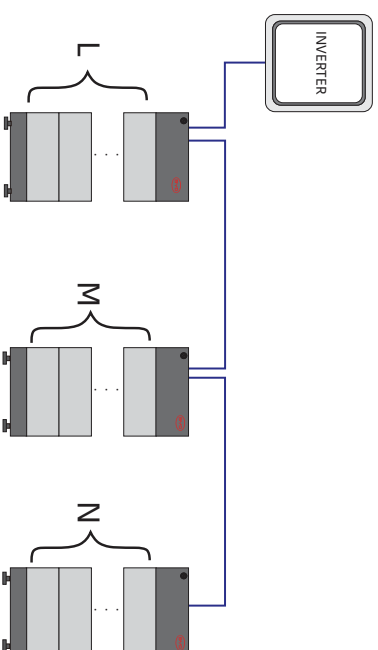


5. Connection Limitation



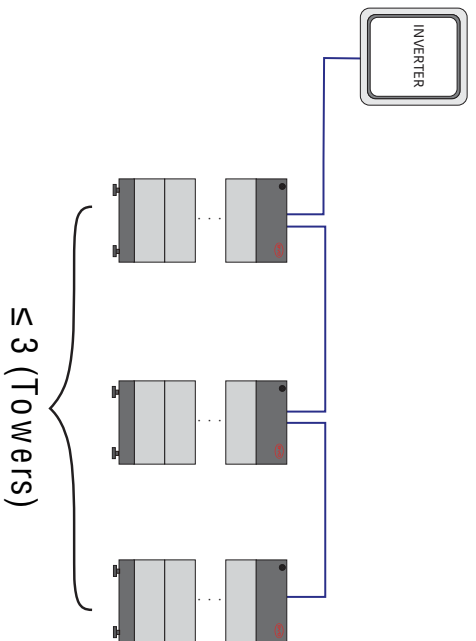


$M = N$ ✓



$L = M = N$ ✓

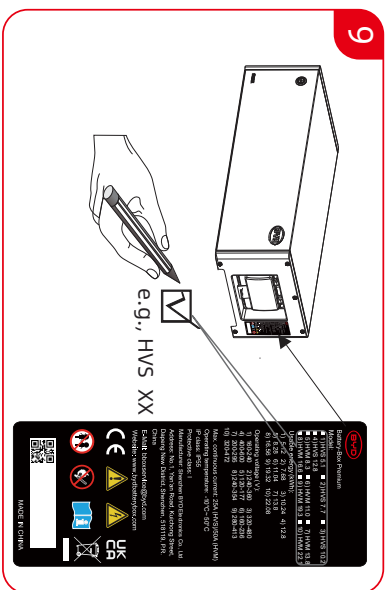
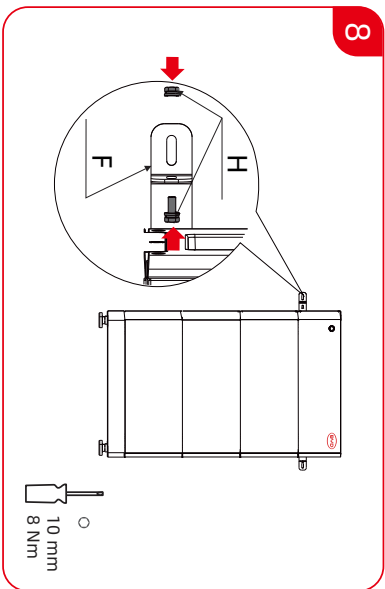
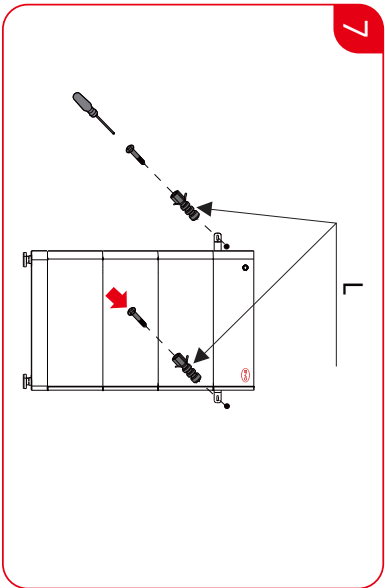
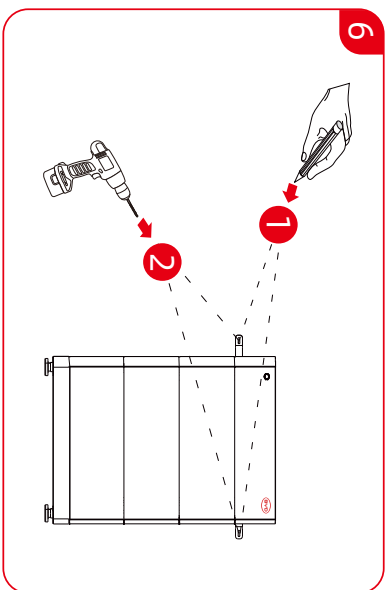
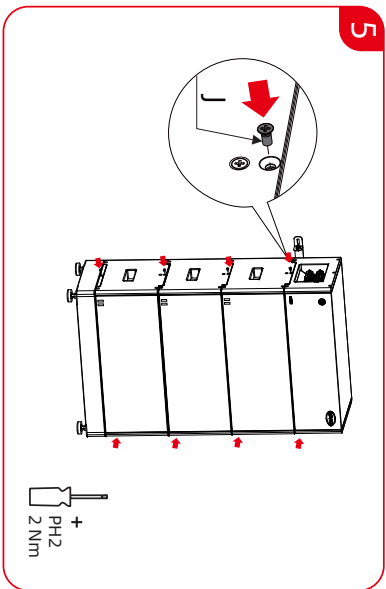
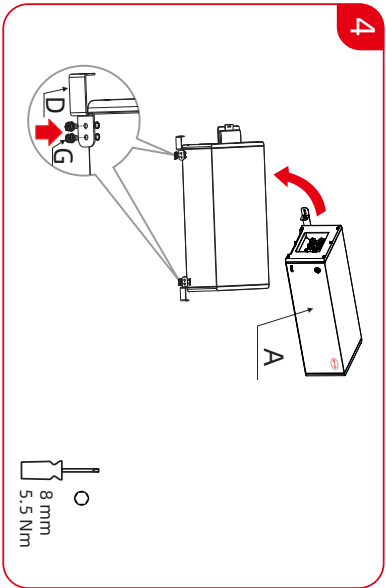
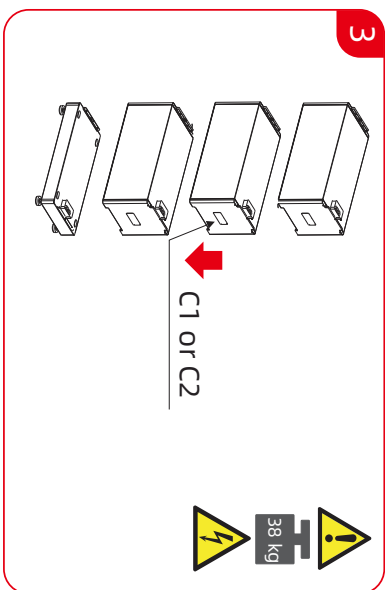
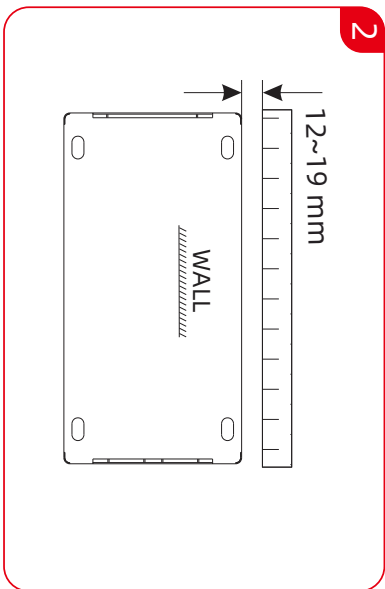
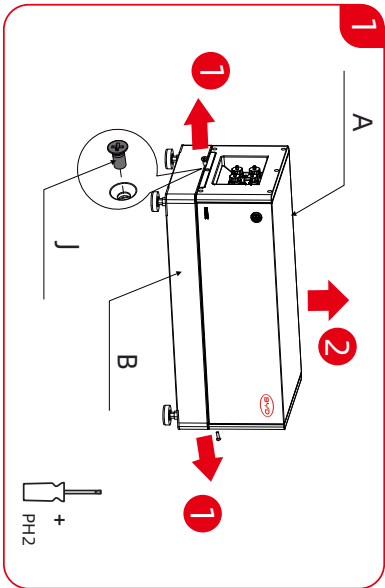
$L \neq M$ or $L \neq N$ or $M \neq N$ ✗



✗

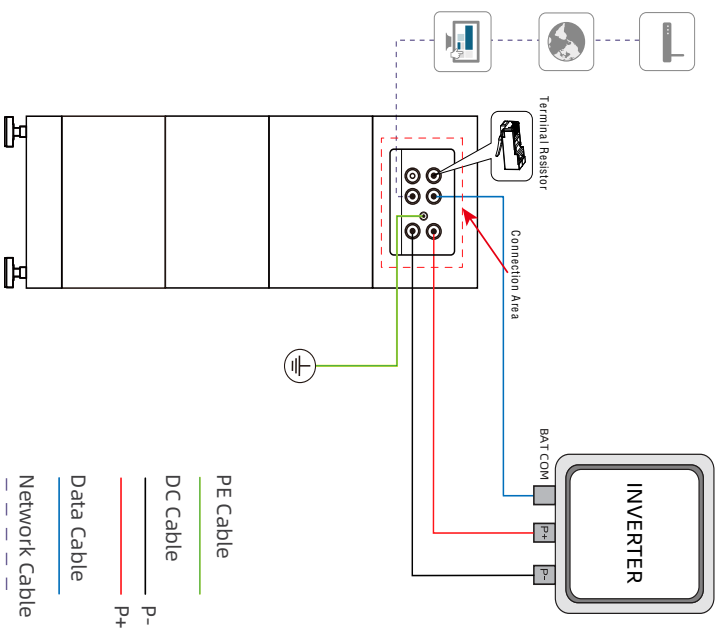
✗

6. Installation



7. Connection Diagram

Single Tower

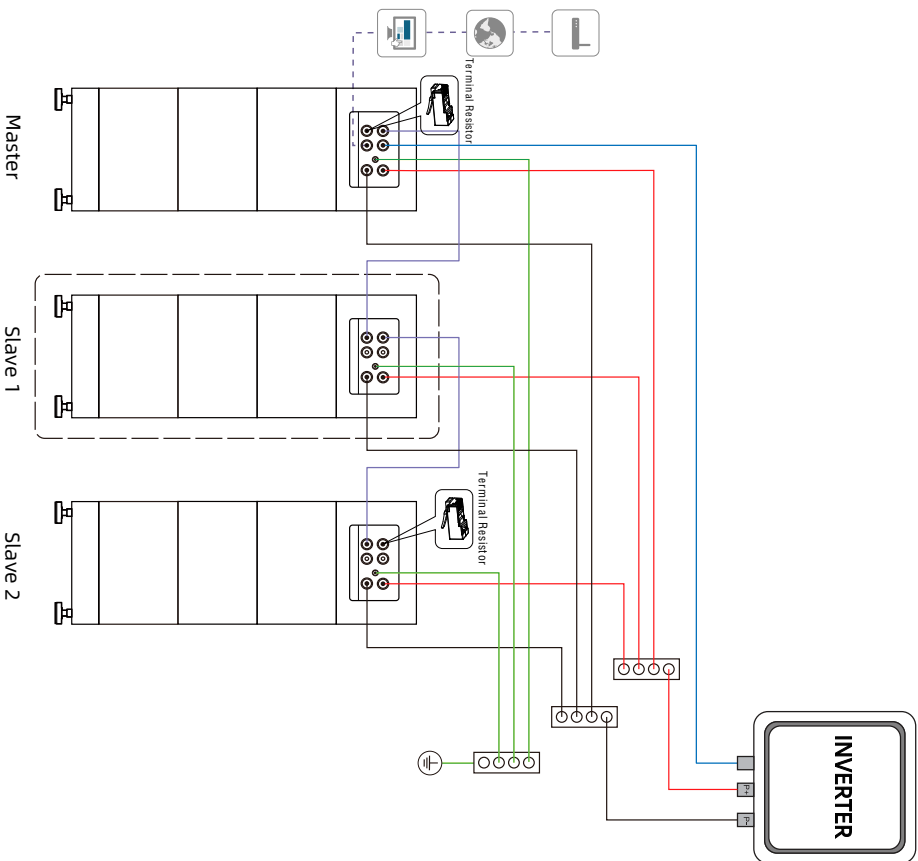


Designation of the connection Area

- INV Port for an inverter data cable
- IN IN port for parallel tower connection
- OUT OUT port for parallel tower connection
- ETH Network port for connecting a router or network switch
- PE Grounding cable connecting point
- P- DC- to inverter
- P+ DC+ to inverter

Multiple Towers

Ignore the Slave 1 in the drawing below to get the diagram of two towers



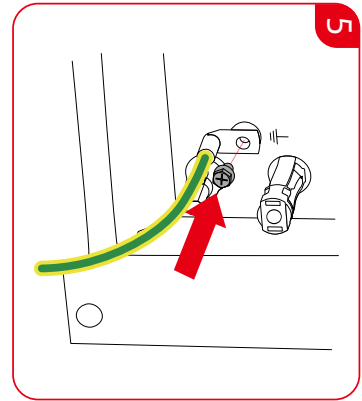
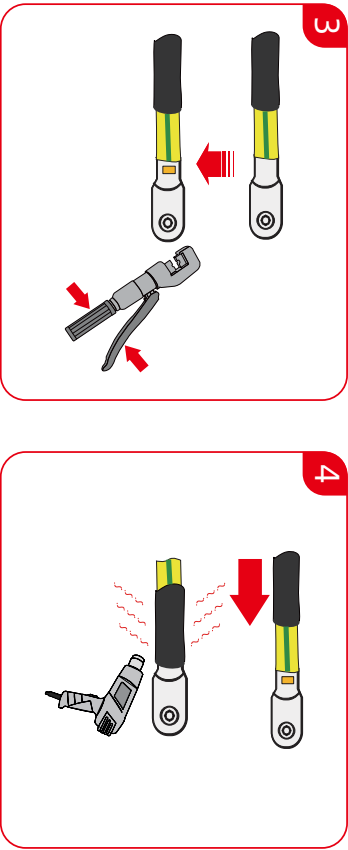
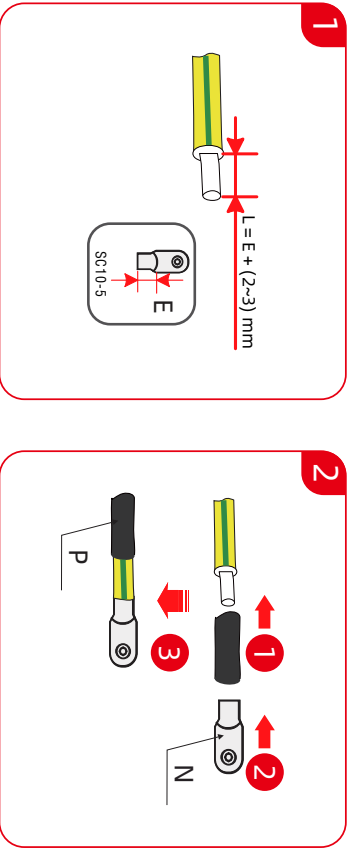
NOTICE

1. Parallel connection is not applicable to SMA Sunny Boy Storage 3.7-6.0. Please check the inverter's operating manual on how to connect up to three battery systems.
2. The length of the power cables from each tower to the combiner box should be the same.
3. The length of the power cable between each battery tower and the inverter should be less than 20 m.

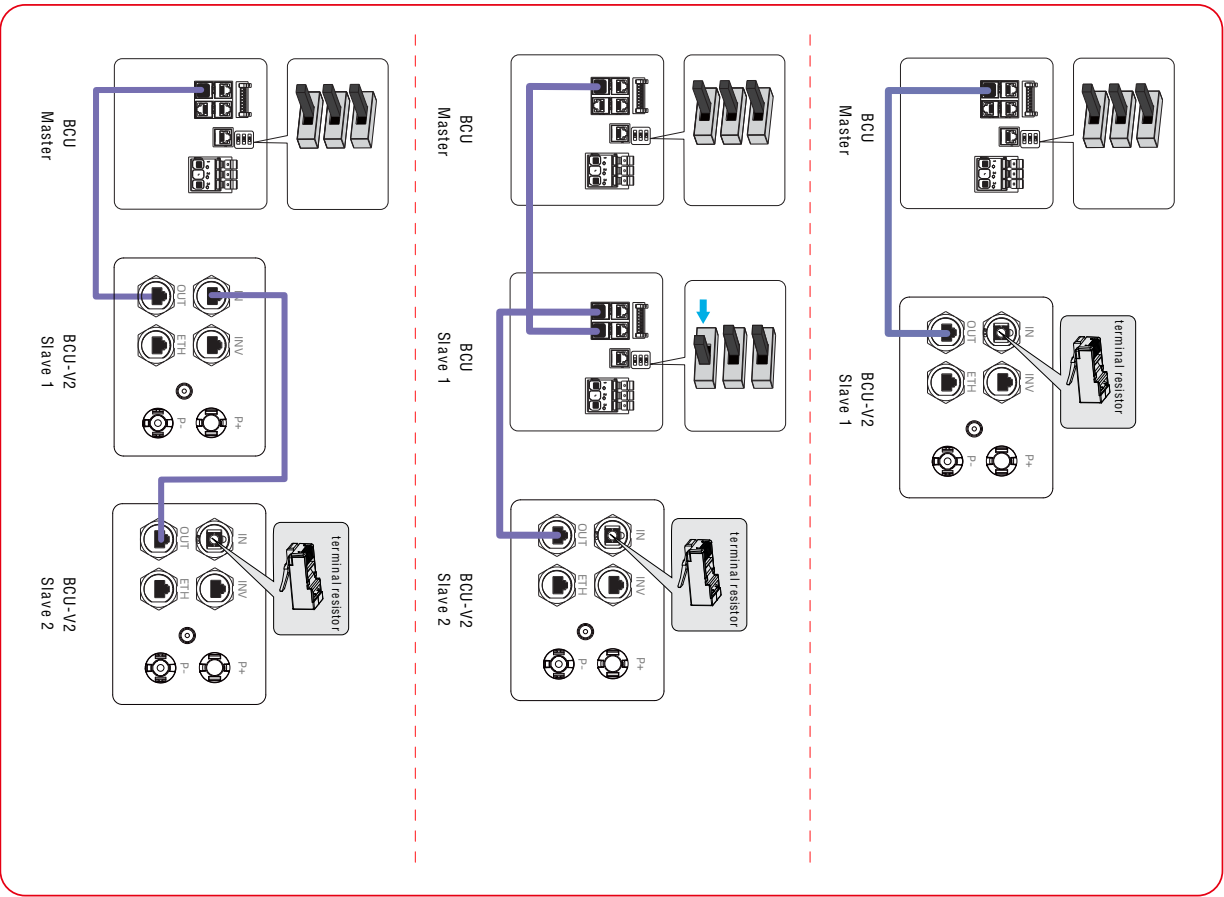
8. Electrical Connections

NOTE: Before making all electrical connections, please make sure the air switch on the BCU is off.

8.1 PE Connection



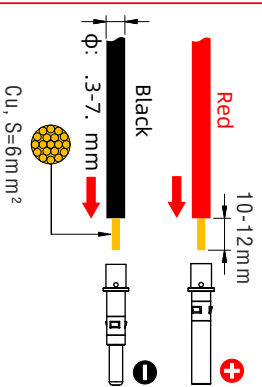
Parallel Connection - BCU and BCU-V2



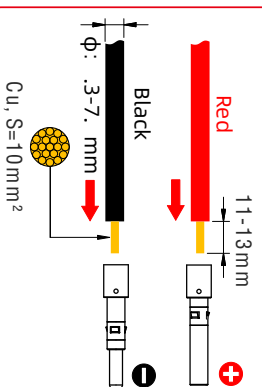
8. Electrical Connections

8.2 DC Connection

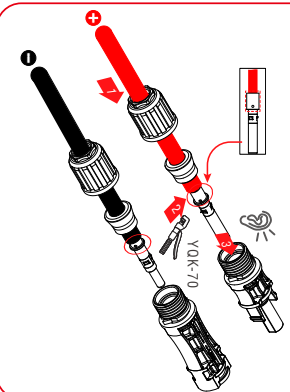
1 For 6mm² terminal



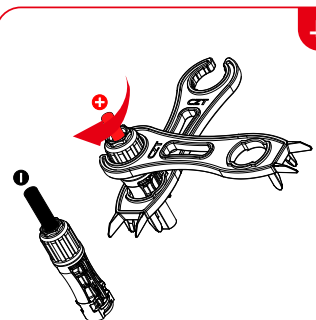
2 For 10mm² terminal



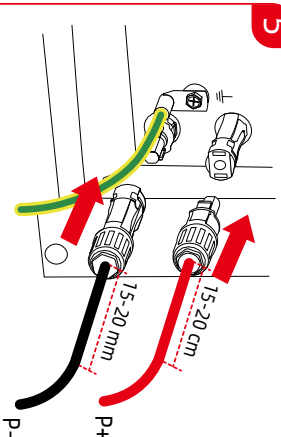
3



4



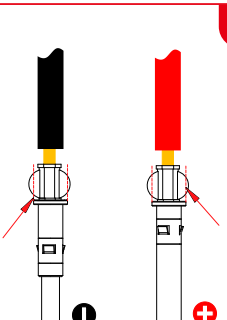
5



NOTICE

- Double Insulated
- External diameter: 6.3-7.6 mm
- Cross-section area: 6 or 10 mm²
- For the right cable cross-section, please check the inverter's operating manual as well.
- Ensure 15-20 cm of the cable coming out of the power cable coupler is kept horizontal as shown on the left drawing, which can reduce the cable stress.

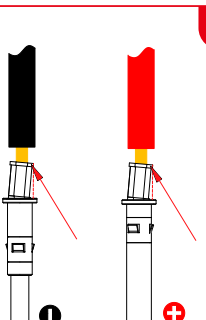
6



NOTICE

The burrs need to be trimmed. After trimming, they should not be higher than the right flange, and there should be no broken edges or wire core leakage.

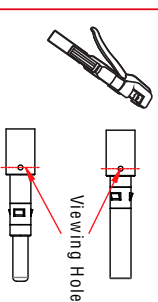
7



NOTICE

If there is any skew after pressing, it should not be higher than the right flange. And the crimping location should be no damage or cracking.

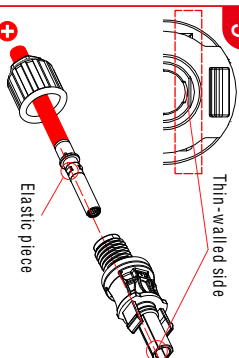
8



NOTICE

When crimping 10 mm² terminals, the crimping pliers die must not completely cover the viewing hole.

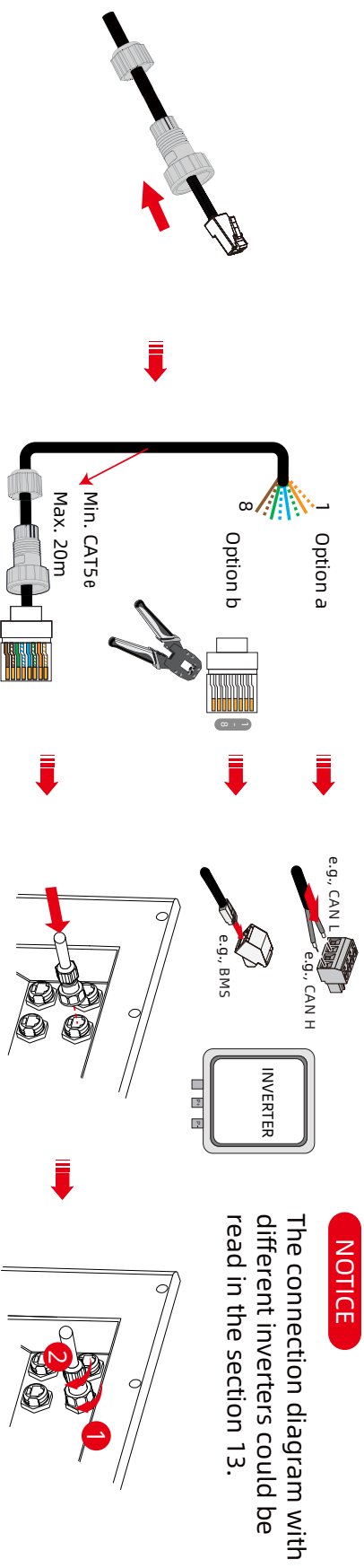
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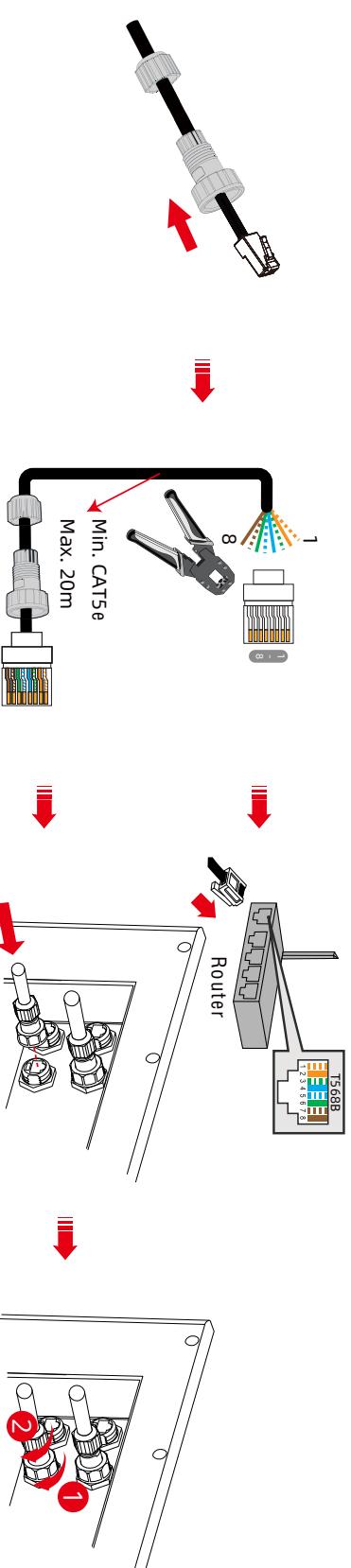
NOTICE

1. Any elastic piece of the terminal must be aligned with the thin-walled side of the plastic case opening before insertion.
2. After inserting, please try pulling it out to check if the terminal and the plastic case are securely connected.

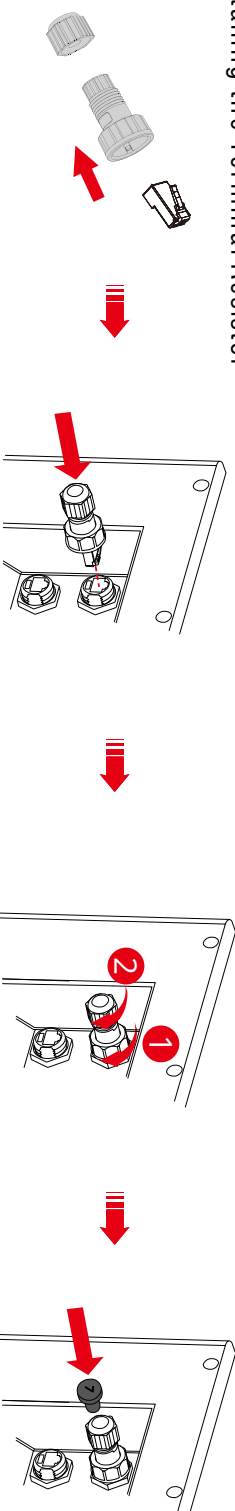
8.3 Connecting the Data Cable to an Inverter



8.4 Connecting the Data Cable to a Router (it's not mandatory, but recommended)



8.5 Installing the Terminal Resistor

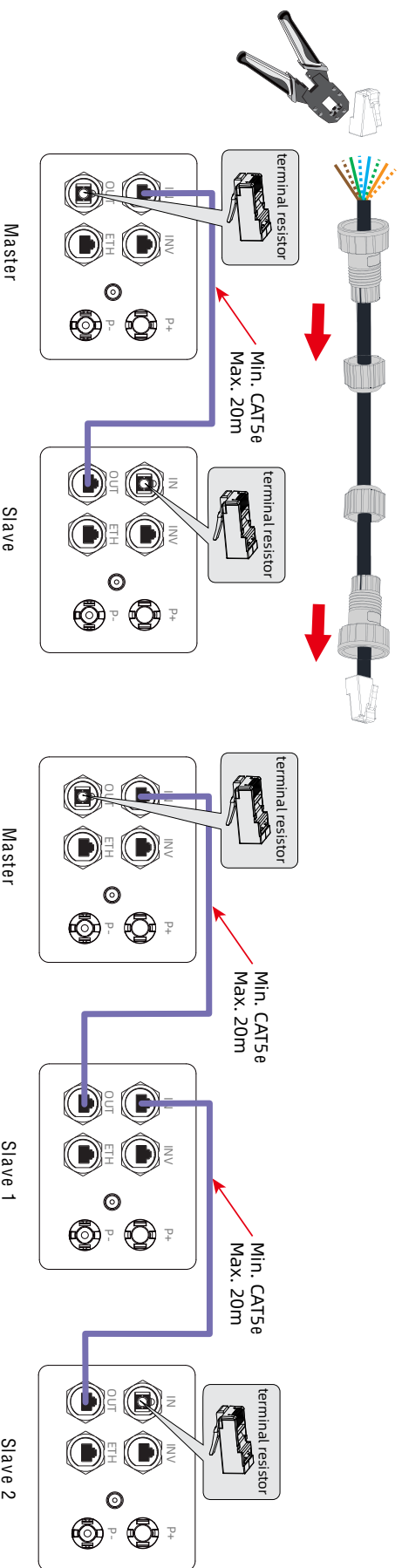


NOTICE

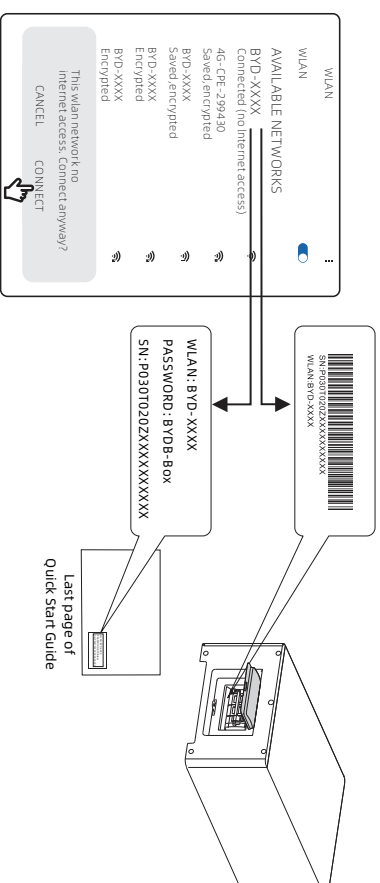
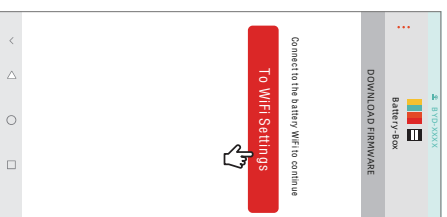
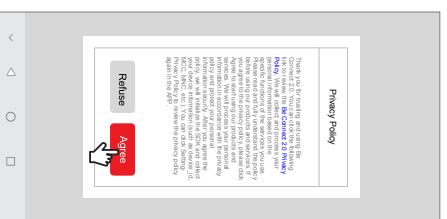
The unused RJ45 port needs to be covered with the built-in waterproof cover and tightened.

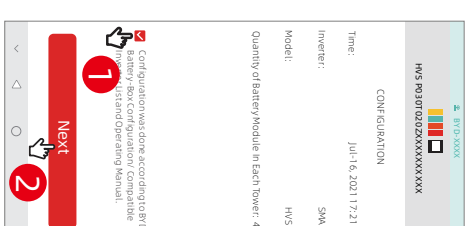
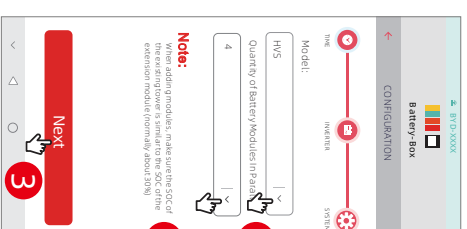
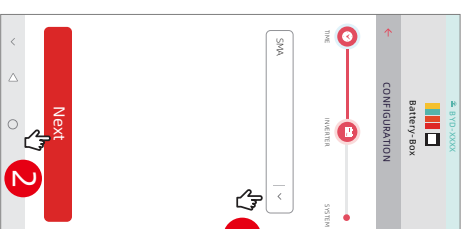
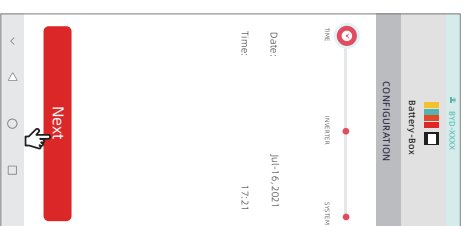
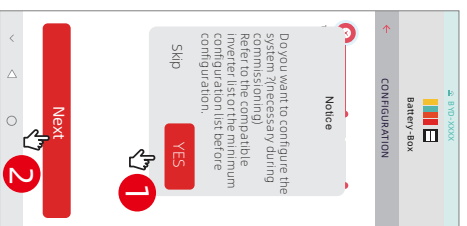
NOTICE

Parallel connection is not applicable to SMA Sunny Boy Storage 3.7-6.0.
Please check the inverter Operating Manual on how to connect up to three battery systems.



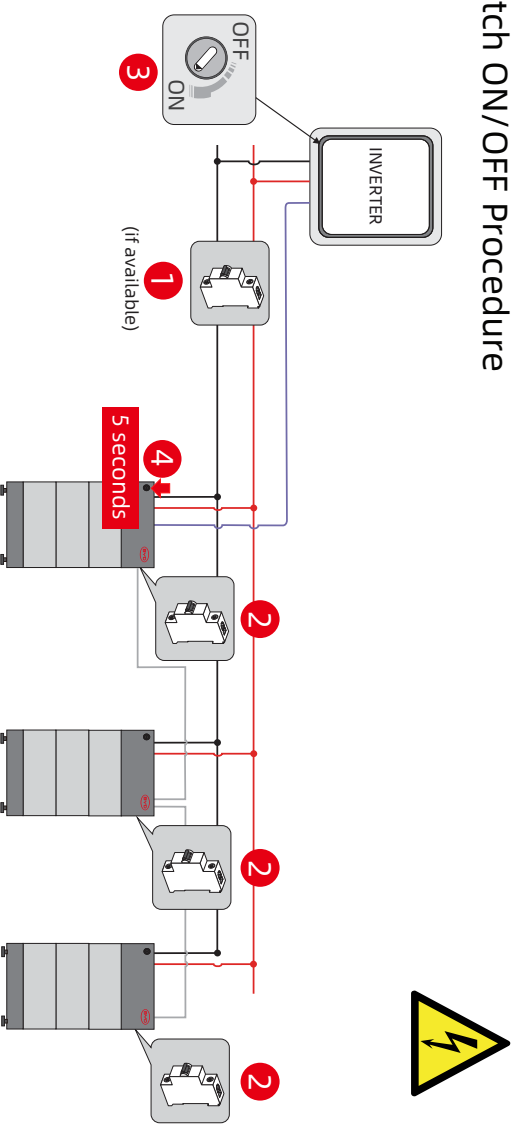
9. Configuration



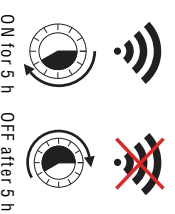


10. Switch ON/OFF Procedure

Switch ON/OFF Procedure



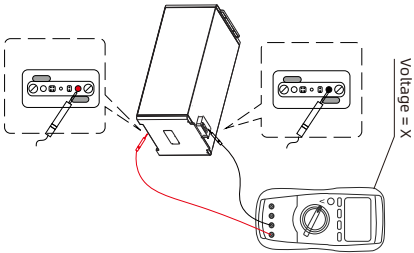
Battery WiFi will automatically shut off after five hours. Press the LED button once around one second or restart the system to activate it.



Switch On 1 → 2 → 3
Switch Off 3 → 4 → 1

11. Extension

Note: Within 5 days before extension, it is recommended to fully charge the original system to SOC 100% at least once.



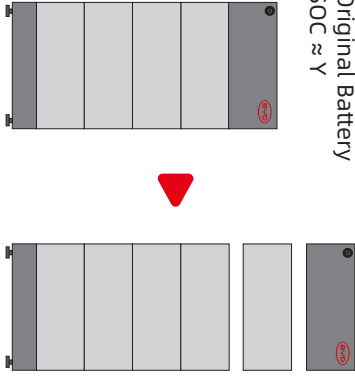
① Measure the voltage of the new battery module, get a value (X).

	Voltage (X)/ V	SOC (Y)
HVS	X<100.80	0~5%
	100.80≤X<103.20	5~10%
	103.20≤X<103.68	10~15%
	103.68≤X<104.54	15~20%
	104.54≤X<105.41	20~25%
HVM	105.41≤X	25~30%
	X<50.32	0~5%
	50.32≤X<51.52	5~10%
	51.52≤X<51.74	10~15%
	51.74≤X<52.24	15~20%
	52.24≤X<52.64	20~25%
	52.64≤X	25~30%

② Refer to the above table to find out the SOC (Y) corresponding to the X.

New Battery
SOC ≈ Y

Original Battery
SOC ≈ Y



③ Charge or discharge the original battery system until the SOC is almost equal to Y, and then add the new battery module. Do not forget to do the configuration after that.

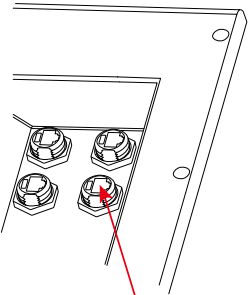
12. LED Status

Blinking white and blue alternatively	White ○ ON Blue ● ON	0.5s 0.5s	The battery system is initiating
Solid white	White ○ ON Blue ● OFF		Idle (the battery system is neither charging nor discharging)
Blinking white slowly	White ○ ON Blue ● ON	2s 2s	The battery system is charging.
Blinking white quickly	White ○ ON Blue ● ON	1s 1s	The battery system is discharging
Blinking white and solid blue	White ○ ON Blue ● ON	1s 1s	The battery system is discharging, and the SOC is below 15%.
Blinking white and blue	White ○ ON Blue ● OFF	1s 1s	An error has occurred (refer to service guideline and checklist for further details.

13. Communication Options with Inverters

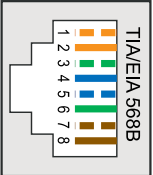
NOTICE

Do not crimp the unused pins when making the communication cable between the battery and the inverter.

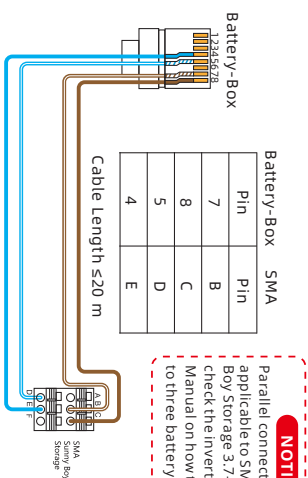


Designation of "INV" port

Pin	1	2	3	4
CAN/RS485	RS485A	RS485B	12V OUT	CAN H
Pin	5	6	7	8
CAN/RS485	CAN L	12V OUT_GND	EN	EN_GND



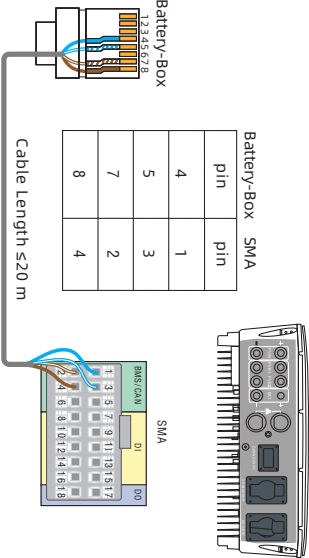
1 SMA SBS 2.5/ 3.7/ 5.0/ 6.0

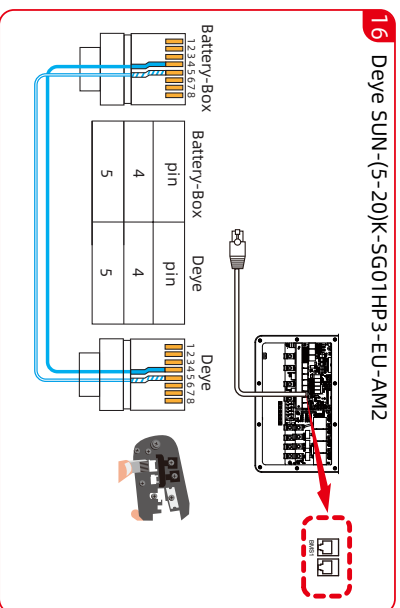
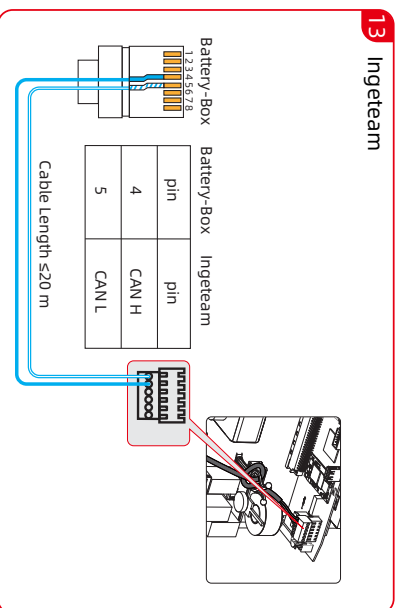
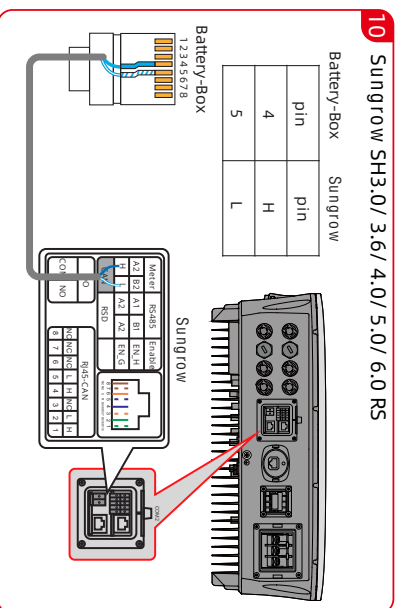
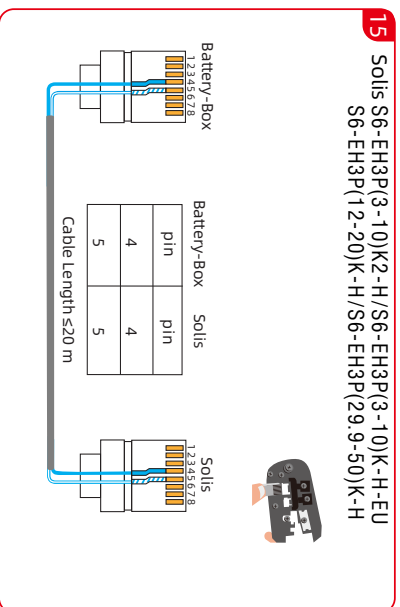
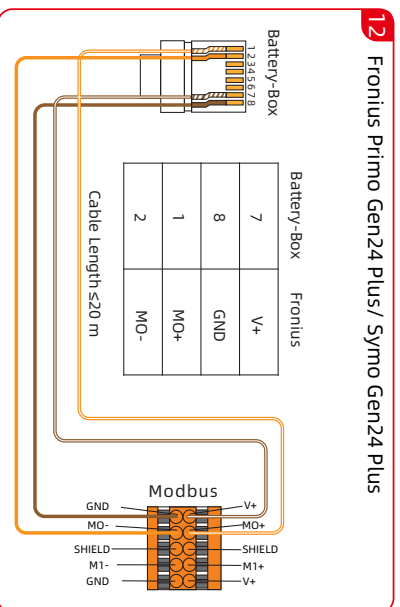
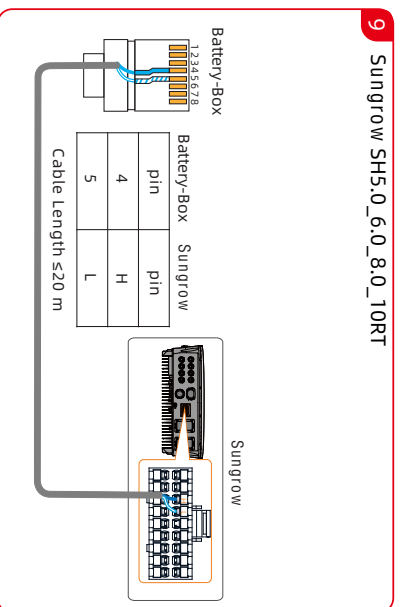
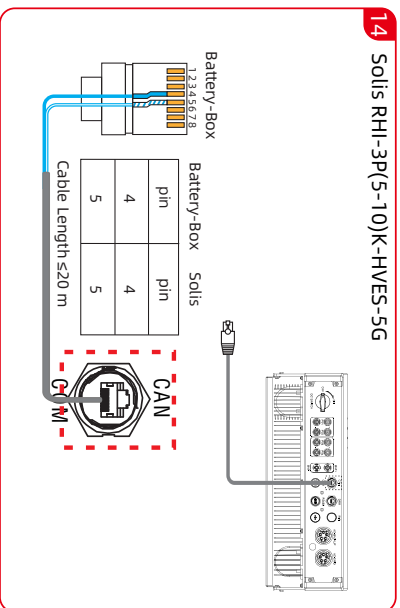
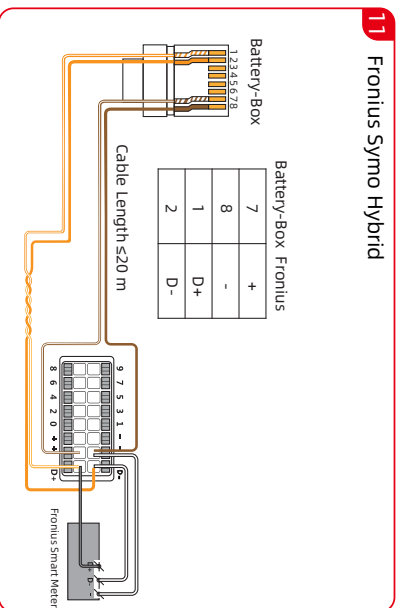
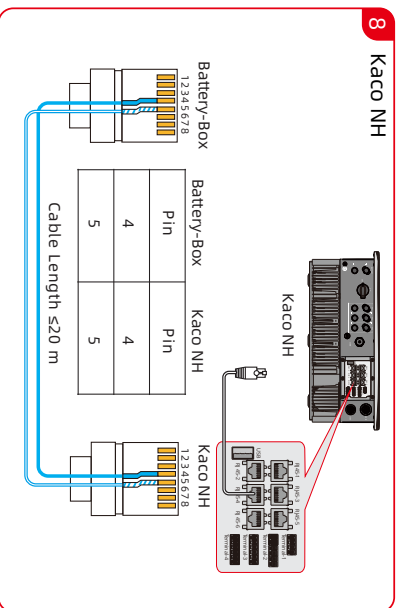


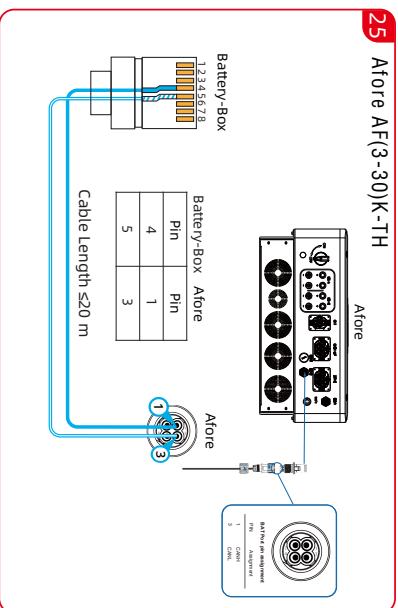
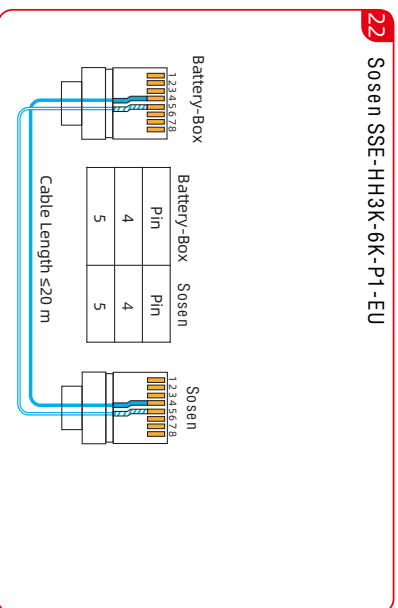
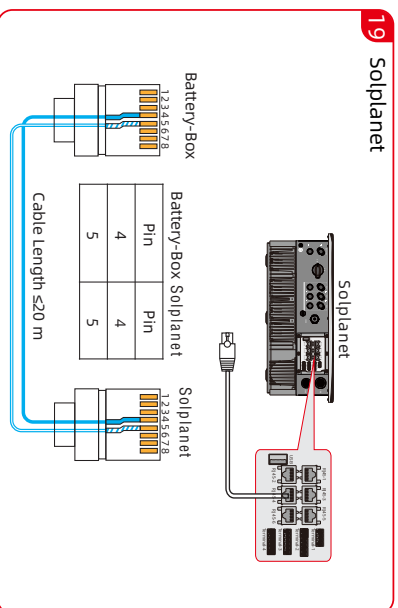
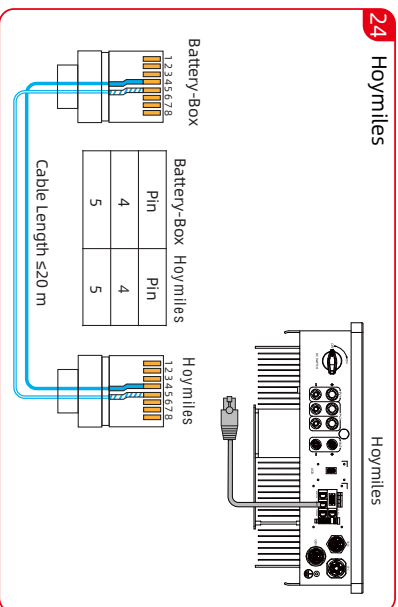
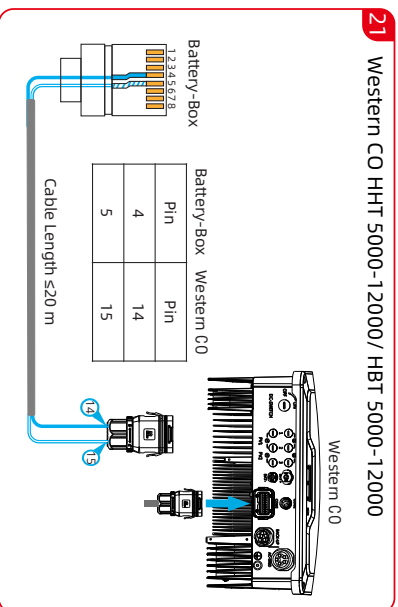
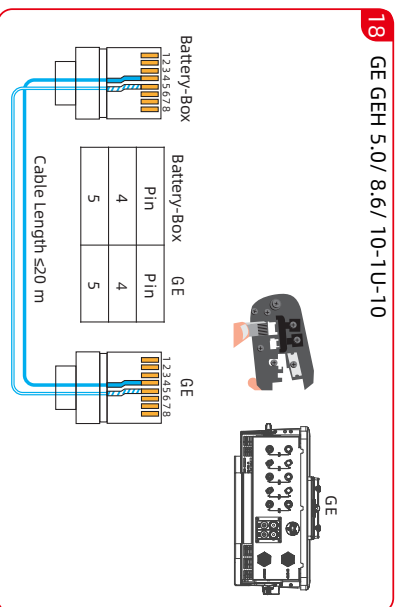
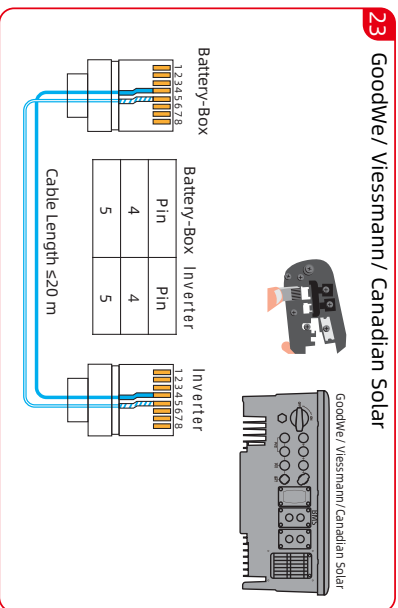
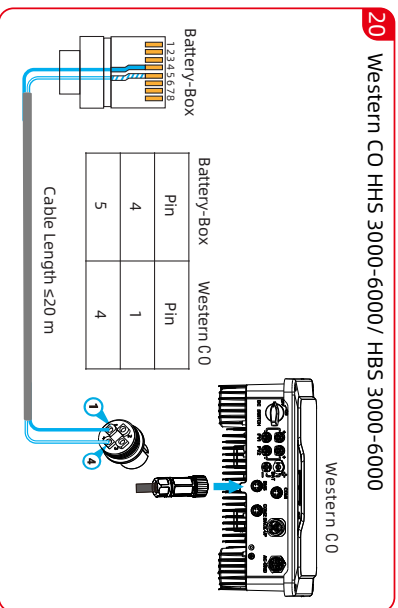
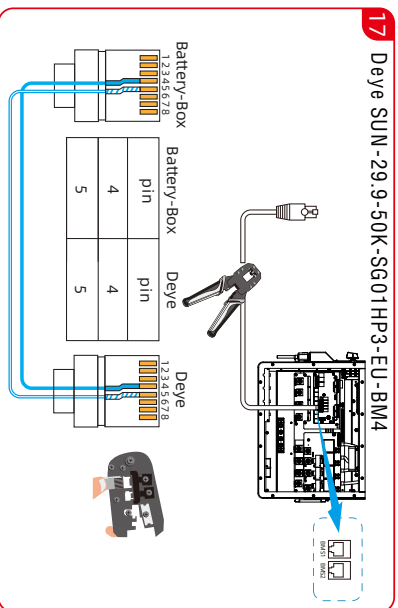
NOTICE

Parallel connection is not applicable to SMA Sunny Boy Storage 3.7-6.0. Please check the inverter Operating Manual on how to connect up to three battery systems.

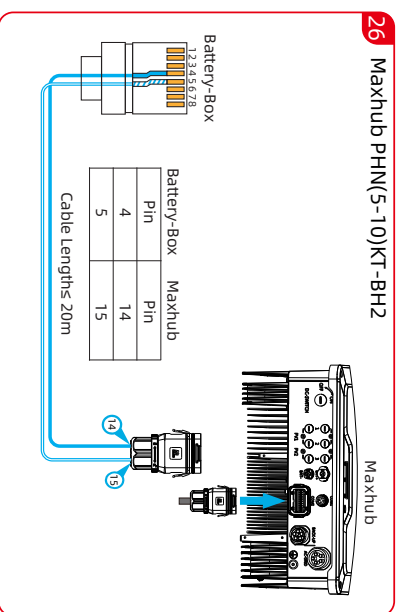
2 SMA STP 5.0-10.0 SE



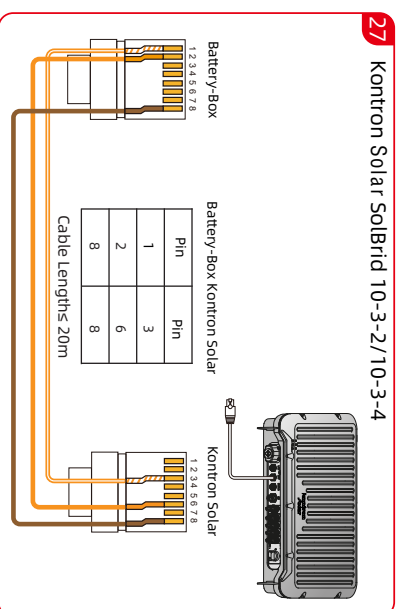




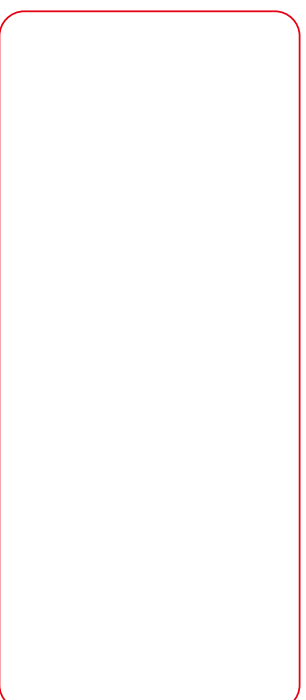
26 Maxhub PHN(5-10)KT-BH2



27 Kontron Solar SolBrid 10-3-2/10-3-4



WLAN name, password and serial number.

A large, empty rounded rectangular box with a thin red border, intended for inputting the WLAN name, password, and serial number.



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