

# PSI-X-2.5HS PSI-X-3.6HS

EN

TRIPLE-POWER LITHIUM-ION  
BATTERIES

---

Installation Guide



/// PEIMAR

It should be noted that the technical data, information and representations contained in this document are purely indicative. Peimar reserves the right to modify the data, drawings and information contained in this document at any time and without prior notice.

/// PEIMAR

<b>1. Introduction .....</b>	<b>6</b>
<b>2. Safety Precautions .....</b>	<b>7</b>
2.1. Symbols .....	7
2.2. Safety Instructions .....	7
2.2.1 General Safety Precautions .....	7
2.2.2 Symbol legend on the label .....	9
2.3. Solutions to emergency situations .....	10
2.3.1. Leaking batteries .....	10
2.3.2. Fire .....	10
2.3.3. Wet Batteries and Damaged Batteries .....	11
2.4. Qualified installer .....	11
<b>3. Product Information.....</b>	<b>12</b>
3.1. Field of application .....	12
3.2. Product Model Specifications .....	12
3.3. Installation space .....	14
3.4. Rear image of the product .....	15
3.5. Features .....	18
3.5.1. Certifications .....	19
3.6. Technical Specifications .....	19
3.6.1. T-BAT-SYS-HV-S2.5 .....	19
3.6.2 T-BAT-SYS-HV-S3.6 .....	22
<b>4. Before Installation .....</b>	<b>26</b>
4.1. Prerequisites .....	26
4.2. Safety equipment .....	27
4.3. Installation Tools .....	27
4.4. Preparation .....	27
4.4.1. Check for transport damage .....	27
4.4.2. Unpacking.....	27
4.4.3. Accessory .....	28



<b>5. Installation Instructions .....</b>	<b>31</b>
5.1. Installation Environment Requirements .....	31
5.2. Installation Procedure .....	31
<b>6. Wiring .....</b>	<b>39</b>
6.1. Grounding .....	39
6.2. Connecting to the Inverter.....	40
6.3. Wiring .....	42
6.3.1. Wiring without Serial Module.....	42
6.3.2. Wiring with Series Module .....	46
<b>7. Commissioning .....</b>	<b>50</b>
7.1. DIP switch .....	50
7.2. Start-up and shutdown procedure .....	51
7.3. Status Indicators .....	52
<b>8. Troubleshooting .....</b>	<b>56</b>
<b>9. Disposal .....</b>	<b>60</b>
9.1. Battery disassembly .....	60
9.2. Packaging .....	60
<b>10. Maintenance .....</b>	<b>61</b>
<b>11. Warranty Conditions .....</b>	<b>61</b>

# 1. Introduction

This manual, which is an integral part of the T-BAT series, contains information on the assembly, commissioning, maintenance and failure of the device. Please read it carefully before use.

BMS	PSI-X-BMS-HS (TBMS-MCS0800)
Battery Module	PSI-X-2.5HS (TP-HS25), PSI-X-3.6HS (TP-HS36)
Serial Module	PSI-X-SBOX-HS (SERIES BOX)



## PLEASE NOTE

In the case of a tower, there are 3 parts of the T-BAT system, which include BMS, battery module(s), and base. In the case of two towers, there are 4 parts of the system, such as BMS, battery module(s), base, and Series Box. For details, refer to 3.3.1 Configuration List on page.

This manual is intended for qualified electricians. The installation procedure described in the Manual may only be performed by qualified electricians.

## 2. Safety Precautions

### 2.1. Symbols

There are several safety marks in the Manual. The detailed explanation is shown as follows:



#### **DANGER!**

"DANGER" means a hazardous situation which, if not avoided, will result in serious injury or death.

---



#### **WARNING!**

"WARNING" indicates a hazardous situation which, if not avoided, could result in serious injury or death.

---



#### **CAUTION!**

"CAUTION" indicates a hazardous situation which, if not avoided, could result in minor or moderate injury or death.

---



#### **NOTE**

"NOTE" indicates that suggestions will be provided to achieve a better use effect.

---

### 2.2. Safety Instructions

For safety reasons, installers are responsible for familiarizing themselves with the contents of the Manual and all warnings before performing installation.

#### 2.2.1 General Safety Precautions



#### **WARNING**

---

Do not crush or bump the battery, and always dispose of it according to the relevant safety rules.

#### **Observe the following precautions:**

- Explosion Hazards:
- Do not involve the battery module in a collision;
- Do not crush or puncture the battery module;

- Do not dispose of the battery module in a fire.
- Fire Hazards:
  - Do not expose the battery module to temperatures above 140°F / 60 °C;
  - Do not place the battery module near a heat source, such as a fireplace;
  - Do not expose the battery module to direct sunlight;
  - Do not allow the battery connectors to touch conductive objects, such as wires.
- Electric Shock Hazards:
  - Do not disassemble the battery module
  - Do not touch the battery module with wet hands;
  - Do not install or use the battery module in locations where excessive moisture or liquids are present;
  - Keep children away from the battery module.
- Risks of damage to the battery module:
  - Do not expose the battery module in places where there is excessive moisture or liquid;
  - Do not place any object on top of the battery module.










T-BAT SYS-HV should only be installed for residential applications and not for commercial applications.

**CAUTION!**

---

Non-operational batteries should be disposed of according to local regulations.

**2.2.2. Symbol legend on the label**

Label	Explanation
	CE mark of conformity
	The battery system should be disposed of in a proper facility for environmentally safe recycling
	Do not dispose of the battery with household waste
	Read the attached documentation
	Keep the battery system away from children
	Keep the battery system away from open flames or ignition sources
	Warning, risk of danger
	Warning, Risk of Electric Shock
	The battery module may explode

## 2.3. Solutions to emergency situations

### 2.3.1. Leaking batteries

In the event that an electrolyte solution leak occurs, avoid direct contact with the electrolyte solution and the gas that may be generated from it. Direct contact can cause skin irritation or chemical burns. If users come into contact with the electrolyte solution, do the following:

- Accidental inhalation of harmful substances: Evacuate from contaminated area and seek medical attention immediately.
- Eye contact: Rinse eyes with running water for 15 minutes and seek medical attention immediately.
- Skin contact: Wash the affected area thoroughly with soap and water and seek medical attention immediately.
- Ingestion: induce vomiting and seek medical attention immediately.

### 2.3.2. Fire

Please keep an ABC class fire extinguisher or carbon dioxide fire extinguisher near the equipment.



#### WARNING

---

The battery module may catch fire if heated to temperatures above 302 °F.



If a fire breaks out where the battery module is installed, do the following:

- Extinguish the fire before the battery module catches fire;
- If the battery module catches fire, do not attempt to extinguish the fire and evacuate immediately.



#### WARNING

---

In the event of a fire, the battery module will produce harmful and poisonous gases, and please keep the battery away.

### 2.3.3. Wet Batteries and Damaged Batteries

Do not touch the battery module after being wet and submerged in water.

Do not use the battery module if it is damaged. Failure to do so will result in loss of life and property.

Pack the battery in its original packaging and return it to Peimar or your distributor.



#### **WARNING**

---

Damaged batteries can leak electrolyte or produce flammable gases. If users suspect that the battery is damaged, contact Peimar immediately for advice and information.

### 2.4. Qualified installer



#### **WARNING**

---

All T-BAT SYS-HV operations related to electrical connection and installation must be performed by qualified personnel.

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 principles of operation and operation of grid-linked systems;
- Knowledge of the hazards and risks associated with the installation and use of electrical devices and acceptable mitigation methods;
- Knowledge of the installation of electrical devices;
- Knowledge of and adherence to this Manual and all safety precautions and best practices.

### 3. Product Information

#### 3.1. Field of application

A battery management system (hereinafter referred to as BMS) is an electronic system that manages a rechargeable battery.

A battery module is a type of electric battery that can charge or discharge loads.

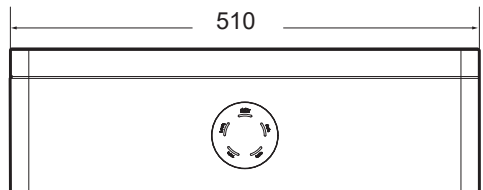
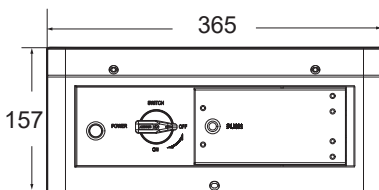
**In the case of a tower, the entire system mainly comprises a BMS, one or more battery modules, and a base. In the case of two towers, the entire system includes a BMS, battery modules, Base and Series Box.**

#### 3.2. Product Model Specifications

The following are the dimensions of the products that make up the tower:

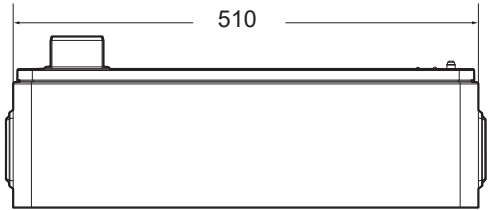
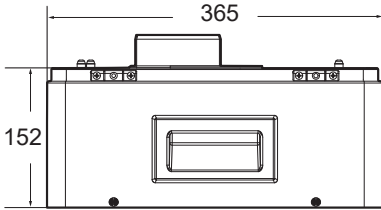
	TBMS-MCS0800	TP-HS25	TP-HS36	Base	Series box
Length (mm)	510.00	510.00	510.00	510.00	510.00
Width (mm)	365.00	365.00	365.00	365.00	365.00
Height (mm)	157.00	157.00	157.00	104.02	157.00
Weight (kg)	13.00	30.00	34.00	10.10	10.00

#### PSI-X-BMS-HS (TBMS-MCS0800)

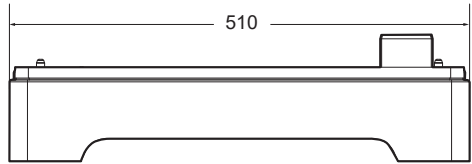
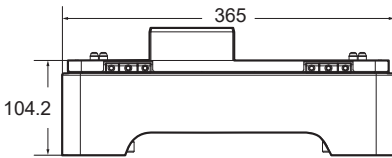




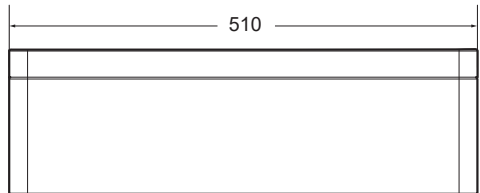
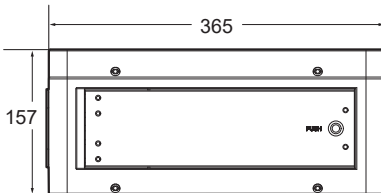
**Battery module PSI-X-2.5HS/PSI-X-3.6HS (TP-HS25/TP-HS36)**



**Base module**

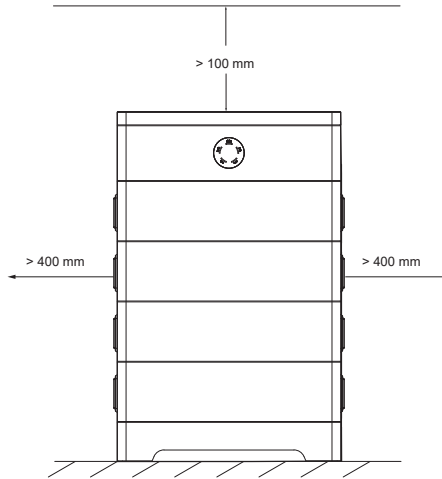


**Serial Module**

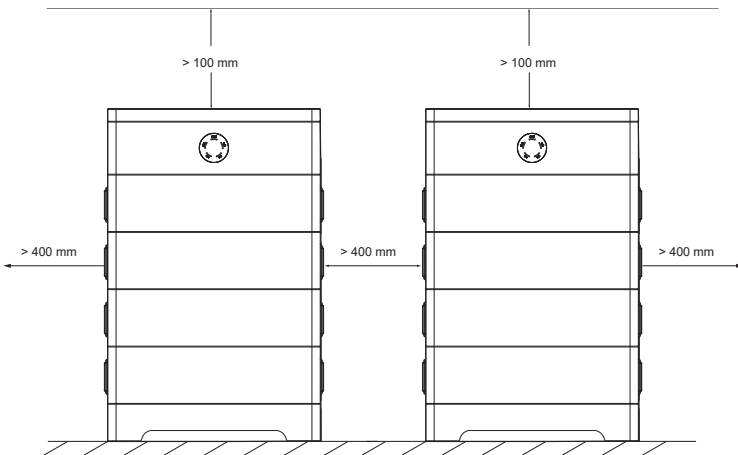


### 3.3. Installation space

A tower



Two towers



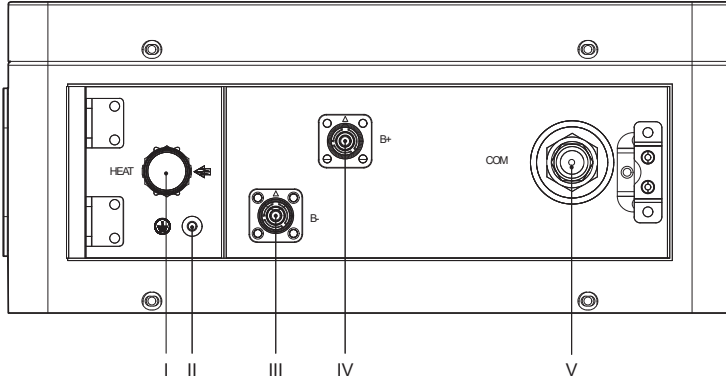
#### PLASE NOTE

The figures above show an example of a one-column and two-column connected installation space.

### 3.4. Rear image of the product

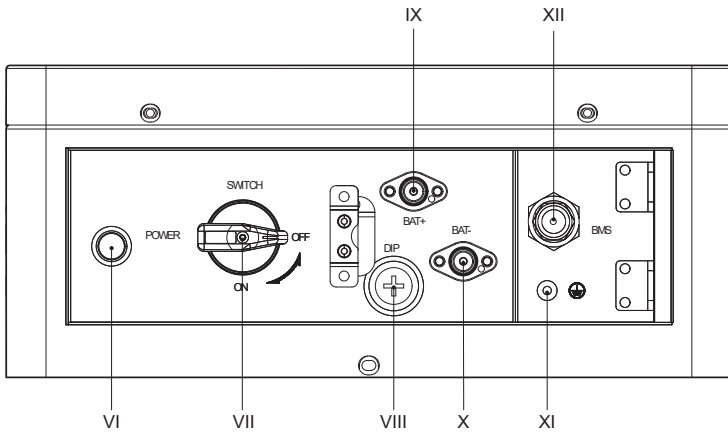
#### BMS

Left side view



Item No.	Description
I	HEAT: Connect the "HEAT" port of the series box (if equipped); or, the port must be connected to a short-circuit plug. *Note: The port was inserted into the short-circuit plug before delivery, DO NOT remove it.
II	Grounding port: Connect the grounding port of the series box (if present); Or, the port doesn't need to be plugged in.
III	B-: Connect "B-" of the series box (if present); or, connect the "IV B+" with a short power cord.
IV	B+: Connect "B-" of the stock box (if equipped); or, connect the "III B-" with a short power cord.
V	COM: Connect the "COM" port of the Serial Module (if present); Alternatively, you don't need to plug in the port. *Note: The door was covered with a waterproof cap before delivery, DO NOT remove it.

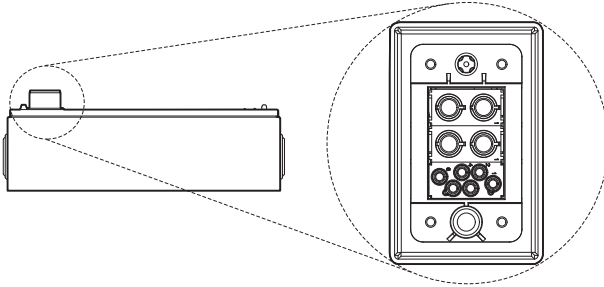
Right side view



Item No.	Description
VI	POWER: Starting system
VII	SWITCH: One switch for battery input and output
VIII	DIP: Realize Battery Parallel Function (A Reserved Function)
IX	BAT+: Connect the BAT+ of the BMS to the BAT+ of the inverter
X	BAT-: Connect the BAT of the BMS to the BAT of the inverter
XI	GND: Grounding port of BMS to grounding port of inverter
XII	BMS: Connect the "BMS" port of the BMS to the "BMS" port of the inverter

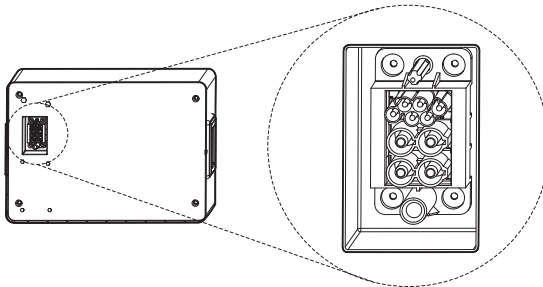
### Battery Module

Top



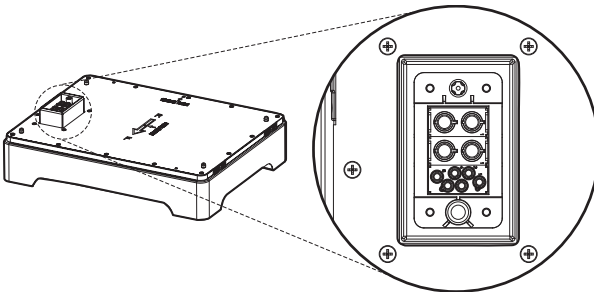
The hot-plug interface is connected to the bottom of the battery module or BMS.

Underside



The hot-plug interface is connected to the top of the battery module or base.

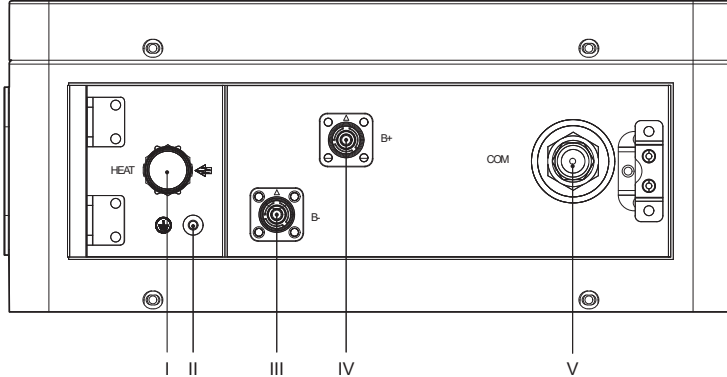
Base



The hot-plug interface is connected to the bottom of the battery module.

## Serial Module

Left Side View



Item No.	Description
I	HEAT: Connect the "HEAT" port of the BMS
II	GND: Connect the grounding port to the grounding port of the BMS
III	B-: Connect to the "B-" of the BMS
IV	B+: Connect to the "B+" of the BMS
V	COM: Connect to the "COM" port of the BMS

## 3.5. Features

The T-BAT SYS-HV is one of the most advanced energy storage systems on the market today, which uses state-of-the-art technology and has the characteristics of high reliability and convenient control. The features are shown as follows:

- 90% DOD;
- 95% round-trip battery efficiency;
- Life cycle > 6000 cycles;
- Secondary protection;
- IP65 degree of protection and protection class I;
- Safety and reliability;
- Small occupied area;
- Floor mounting.

### 3.5.1. Certifications

Security of the BAT system	CE, RCM, IEC 62619, IEC 62620, IEC 62477-1, IEC 60730 Allegato H, IEC 62040, VDE-AR-E2510, IEC 60529, UN38.3
A number	ONU 3480
Classification of Hazardous Materials	Class 9
UN Transport Test Conditions Requirements	ONU 38.3
International Protection Marking	IP65, Protection class I

## 3.6. Technical Specifications

### 3.6.1. T-BAT-SYS-HV-S2.5

No.	Model	BMS	Battery Module	Nominal energy (kWh)	Operating Voltage (Vdc)
1	T-BAT HS5.0	TBMS-MCS0800 x 1	TP-HS25 x 2	5.12	90-116
2	T-BAT HS7.5	TBMS-MCS0800 x 1	TP-HS25 x 3	7.68	135-174
3	T-BAT HS10.0	TBMS-MCS0800 x 1	TP-HS25 x 4	10.24	180-232
4	T-BAT HS12.5	TBMS-MCS0800 x 1	TP-HS25 x 5	12.8	225-290
5	T-BAT HS15.0	TBMS-MCS0800 x 1	TP-HS25 x 6	15.36	280-349
6	T-BAT HS17.5	TBMS-MCS0800 x 1	TP-HS25 x 7	17.92	315-406
7	T-BAT HS20.0	TBMS-MCS0800 x 1	TP-HS25 x 8	20.48	360-465
8	T-BAT HS22.5	TBMS-MCS0800 x 1	TP-HS25 x 9	23.04	405-522
9	T-BAT HS25.0	TBMS-MCS0800 x 1	TP-HS25 x 10	25.6	450-580
10	T-BAT HS27.5	TBMS-MCS0800 x 1	TP-HS25 x 11	28.16	495-636
11	T-BAT HS30.0	TBMS-MCS0800 x 1	TP-HS25 x 12	30.72	540-695
12	T-BAT HS32.5	TBMS-MCS0800 x 1	TP-HS25 x 13	33.28	585-750

Performance

Form	T-BAT HS5.0	T-BAT HS7.5	T-BAT HS10.0	T-BAT HS12.5	T-BAT HS15.0	T-BAT HS17.5
Rated Voltage (Vdc)	102.4	153.6	204.8	256	307.2	358.4
Operating Voltage (Vdc)	90-116	135-174	180-232	225-290	270-349	315-406
Nominal Capacity (Ah) <sup>1</sup>	50	50	50	50	50	50
Rated Energy (kWh) <sup>1</sup>	5.12	7.68	10.24	12.8	15.36	17.92
Usable energy 90% DOD (kWh) <sup>2</sup>	4.6	6.9	9.2	11.5	13.8	16.1
Max. Charge/Discharge Current (A) <sup>3</sup>	45	45	45	45	45	45
Recommended Charge/Discharge Current (A) <sup>5</sup>	45	45	45	45	45	45
Standard Power (kW)	3.1	4.6	6.1	7.7	9.2	10.8
Max. Power (kW)	4.608	6.912	9.216	11.52	13.824	16.128
Short-circuit current (A)	1900	1900	1900	1900	1900	1900
Round-trip battery efficiency (0.2 °C, 25 °C)			95%			
Expected lifespan (25 °C)			10 years			
Cycle life 90% DOD (25 °C)			6000 cycles			
Charging Temperature	-30 °C ~ 53 °C (heating function); 0 °C ~ 53 °C (heating function) <sup>6</sup>					
Discharge Temperature	-30 °C ~ 53 °C (in heating mode); -20 °C ~ 53 °C (in heating mode) <sup>4</sup>					
Storage Temperature	-20 °C ~ 30 °C (12 months) 30 °C ~ 50 °C (6 months)					
Degree of protection	IP65 degree of protection					
Protection class	I					



Form	T-BAT HS20.0	T-BAT HS22.2	T-BAT HS25.0	T-BAT HS27.5	T-BAT HS30.0	T-BAT HS32.5
Rated Voltage (Vdc)	409.6	460.8	512	563.2	614.4	665.6
Operating Voltage (Vdc)	360-465	450-522	450-580	495-636	Codice: 540-695	585-750
Nominal Capacity (Ah) <sup>1</sup>	50	50	50	50	50	50
Rated Energy (kWh) <sup>1</sup>	20.48	23.04	25.60	28.16	30.72	33.28
Usable energy 90% DOD (kWh) <sup>2</sup>	18.4	20.7	23.0	25.3	27.6	30.0
Max. Charge/Discharge Current (A) <sup>3</sup>	45	45	45	45	45	45
Recommended Charge/Discharge Current (A) <sup>5</sup>	45	45	45	45	45	45
Standard Power (kW)	12.3	13.8	15.4	16.9	18.4	20.0
Max. Power (kW)	18.432	20.736	23.04	25.344	27.648	29.952
Short-circuit current (A)	1900	1900	1900	1900	1900	1900
Round-trip battery efficiency (0.2 °C, 25 °C)			95%			
Expected lifespan (25 °C)			10 years			
Cycle life 90% DOD (25 °C)			6000 cycles			
Charging Temperature	-30 °C ~ 53 °C (heating function); 0 °C ~ 53 °C (heating function) <sup>4</sup> .					
Discharge Temperature	-30 °C ~ 53 °C (in heating mode); -20 °C ~ 53 °C (in heating mode) <sup>4</sup> .					
Storage Temperature			-20 °C ~ 30 °C (12 months) 30 °C ~ 50 °C (6 months)			
Degree of protection			IP65 degree of protection			
Protection class			I			



**PLEASE NOTE**

1. Test conditions: 100% DOD, 0.2 °C charge and discharge @ +25 °C.
2. 90% DOD; The usable energy from the system may vary depending on the inverter setting.
3. Discharge: Under battery cell temperature range of -20 °C ~ 10 °C and 45 °C ~ 53 °C, the discharge current will be reduced; Charging: In case of battery cell temperature range of 0 °C ~ 25 °C and 45 °C ~ 53 °C, the charging current will be reduced. The charging or discharging power of the product depends on the actual temperature of the battery pack.
4. The battery can only be discharged and cannot be charged in the range of -20 °C to 0 °C.
5. In case of a current rating of 30 A, wire size of 5.5 - 6.5 mm<sup>2</sup> is recommended for cables (including grounding cable ); in case of a rated current of 45 A, wire size of 8.5 - 9.5 mm<sup>2</sup> is recommended for cables (including grounding cable).
6. Within the allowable range, the relative humidity range should be between 5% and 95% relative humidity. In the meantime, effective measures must be taken to prevent condensation from forming.

**3.6.2 T-BAT-SYS-HV-S3.6**

Configuration List

No.	Form	BMS	Battery Module	Nominal Energy (kWh)	Operating Voltage (Vdc)
1	T-BAT HS7.2	TBMS-MCS0800 x 1	TP-HS36 x 2	7.37	90-116
2	T-BAT HS10.8	TBMS-MCS0800 x 1	TP-HS36 x 3	11.06	135-174
3	T-BAT HS14.4	TBMS-MCS0800 x 1	TP-HS36 x 4	14.75	180-232
4	T-BAT HS18.0	TBMS-MCS0800 x 1	TP-HS36 x 5	18.43	225-290
5	T-BAT HS21.6	TBMS-MCS0800 x 1	TP-HS36 x 6	22.12	280-349
6	T-BAT HS25.2	TBMS-MCS0800 x 1	TP-HS36 x 7	25.80	315-406
7	T-BAT HS28.8	TBMS-MCS0800 x 1	TP-HS36 x 8	29.49	360-465
8	T-BAT HS32.4	TBMS-MCS0800 x 1	TP-HS36 x 9	33.18	405-522
9	T-BAT HS36.0	TBMS-MCS0800 x 1	TP-HS36 x 10	36.86	450-580
10	T-BAT HS39.6	TBMS-MCS0800 x 1	TP-HS36 x 11	40.55	495-636

11	T-BAT HS43.2	TBMS-MCS0800 x 1	TP-HS36 x 12	44.24	540-695
12	T-BAT HS46.8	TBMS-MCS0800 x 1	TP-HS36 x 13	47.92	585-750

Performance

Form	T-BAT HS7.2	T-BAT HS10.8	T-BAT HS14.4	T-BAT HS18.0	T-BAT HS21.6	T-BAT HS25.2
Rated Voltage (Vdc)	102.4	153.6	204.8	256	307.2	358.4
Operating Voltage (Vdc)	90-116	135-174	180-232	225-290	270-349	315-406
Nominal Capacity (Ah) <sup>1</sup>	72	72	72	72	72	72
Rated Energy (kWh) <sup>1</sup>	7.37	11.06	14.75	18.43	22.12	25.80
Usable energy 90% DOD (kWh) <sup>2</sup>	6.6	10.0	13.3	16.6	19.9	23.2
Max. Charge/Discharge Current (A) <sup>3</sup>	50	50	50	50	50	50
Recommended Charge/Discharge Current (A) <sup>5</sup>	50	50	50	50	50	50
Standard Power (kW)	3.58	5.38	7.17	8.96	10.75	12.54
Max. Power (kW)	5.12	7.68	10.24	12.8	15.36	17.92
Short-circuit current (A)	1850	1850	1850	1850	1850	1850
Round-trip battery efficiency (0.2 °C, 25 °C)			95%			
Expected lifespan (25 °C)			10 years			
Cycle life 90% DOD (25 °C)			6000 cycles			
Charging Temperature	-30 °C ~ 53 °C (heating function); 0 °C ~ 53 °C (heating function) <sup>4</sup>					
Storage Temperature	-30 °C ~ 53 °C (in heating mode); -20 °C ~ 53 °C (in heating mode) <sup>4</sup>					
Storage Temperature	-20 °C ~ 30 °C (12 months) 30 °C ~ 50 °C (6 months)					
Degree of protection	IP65 degree of protection					
Protection class	I					

Form	T-BAT HS28.8	T-BAT HS32.4	T-BAT HS36.0	T-BAT HS39.6	T-BAT HS43.2	T-BAT HS46.8
Rated Voltage (Vdc)	409.6	460.8	512	563.2	614.4	665.6
Operating Voltage (Vdc)	360-465	450-522	450-580	495-636	Codice: 540-695	585-750
Nominal Capacity (Ah) <sup>1</sup>	72	72	72	72	72	72
Rated Energy (kWh) <sup>1</sup>	29.49	33.18	36.86	40.55	44.24	47.92
Usable energy 90% DOD (kWh) <sup>2</sup>	26.5	29.9	33.2	36.5	39.8	43.1
Max. Charge/Discharge Current (A) <sup>3</sup>	50	50	50	50	50	50
Recommended Charge/Discharge Current (A) <sup>5</sup>	50	50	50	50	50	50
Standard Power (kW)	14.34	16.13	17.92	19.71	21.50	23.30
Max. Power (kW)	20.48	23.04	25.6	28.16	30.72	33.28
Short-circuit current (A)	1850	1850	1850	1850	1850	1850
Round-trip battery efficiency (0.2 °C, 25 °C)			95%			
Expected lifespan (25 °C)			10 years			
Cycle life 90% DOD (25 °C)			6000 cycles			
Charging Temperature	-30 °C ~ 53 °C (heating function); 0 °C ~ 53 °C (heating function) <sup>4</sup> .					
Discharge Temperature	-30 °C ~ 53 °C (heating function); -20 °C ~ 53 °C (heating function) <sup>4</sup> .					
Storage Temperature			-20 °C ~ 30 °C (12 months) 30 °C ~ 50 °C (6 months)			
Degree of protection			IP65 degree of protection			
Protection class			I			

**PLEASE NOTE**

---

1. Test conditions: 100% DOD, 0.2 °C charge and discharge @ +25 °C.
2. 90% DOD; The usable energy from the system may vary depending on the inverter setting.
3. Discharge: Under battery cell temperature range of -20 °C ~ 10 °C and 45 °C ~ 53 °C, the discharge current will be reduced; Charging: In case of battery cell temperature range of 0 °C ~ 25 °C and 45 °C ~ 53 °C, the charging current will be reduced. The charging or discharging power of the product depends on the actual temperature of the battery pack.
4. The battery can only be discharged and cannot be charged in the range of -20 °C to 0 °C.
5. In case of a current rating of 30 A, wire size of 5.5 - 6.5 mm<sup>2</sup> is recommended for cables (including grounding cable ); in case of a rated current of 45 A, wire size of 8.5 - 9.5 mm<sup>2</sup> is recommended for cables (including grounding cable).
6. Within the allowable range, the relative humidity range should be between 5% and 95% relative humidity. In the meantime, effective measures must be taken to prevent condensation from forming.

## 4. Before Installation

### 4.1. Prerequisites

When mounting the system, avoid touching the battery terminals with metal objects or bare hands. According to the design principles, T-BAT SYS-HV will provide safe and reliable energy. Improper operation and equipment damage can cause overheating and electrolyte leakage. Accordingly, the safety precautions and warnings mentioned above in this part must be strictly observed. If you have any questions, please contact customer service. The chapter "2 Security" does not contain the provisions of all the laws and regulations of the user's location.

Before installation, make sure that the installation site meets the following conditions:

- The building can withstand earthquakes;
- The site must be more than 0.62 miles away from the sea, to avoid damage caused by salt water and moisture;
- The floor must be level;
- No flammable and explosive goods should be placed within at least 3 feet;
- The environment must be shaded and cool, away from heat sources and direct sunlight;
- Temperature and humidity remain at a constant level;
- The installation location requires less dust and dirt; and
- There are no corrosive gases, including ammonia and acid vapors.



#### PLEASE NOTE

---

If the ambient temperature exceeds the operating range, the battery pack will stop working to protect itself. The optimal temperature range for operation is between 15 °C and 30 °C. In the allowable range, the relative humidity range should be between 5% and 95% relative humidity. Frequent exposure to cold temperatures can deteriorate the performance and life of the battery.

## 4.2. Safety equipment

Installation and maintenance personnel must operate in accordance with applicable federal, state, and local regulations, as well as industry standards regarding product installation. Personnel should wear safety equipment as outlined below to avoid short circuits and personal injury.

- Dust Mask
- Safety Boots
- Safety gloves
- Spectacles

## 4.3. Installation Tools

To install the SYS-HV T-BAT system, you must prepare the following installation tools.

- Hammer drill
- Meter
- Marker
- Phillips screwdriver
- Torque wrench (M4)
- Rubber mallet
- Level
- Heat gun
- Wire stripping pliers
- Crimping tool for RJ45
- Heat shrink tubing Ø6mm

## 4.4. Preparation

### 4.4.1. Check for transport damage

Make sure the battery is intact during and after transportation. If there is any damage, such as cracks, contact your dealer immediately.

### 4.4.2. Unpacking

Remove the packing tape on the box to open the battery package. Make sure the battery modules and relevant items are complete. Check the packing lists carefully according to the packaging items detailed in the "4.4.3 Accessories" section. If an accessory is missing, please contact our company or your distributor immediately.



**CAUTION!**

According to regional regulations, more people may be needed to move the equipment.



**WARNING!**

Follow the installation steps carefully. Our company will not be responsible for any injury or loss incurred from incorrect assembly and improper operation.



**PLEASE NOTE**

When installing the battery for the first time, the manufacturing date between the battery modules should not exceed 3 months.

**4.4.3. Accessory**

**PSI-X-PRL-BMS**

Descrizione	Quantità
BMS	1
Base	1
Communication cable (BMS port)	1
Short power cord (it is connected to the jack of the BMS before delivery)	1
Power Cord (Black)	1
Power Cord (Red)	1
L-shaped bracket	1
Adjustable bracket	1
Phillips screw M4x10	2
Flanged nut M6	2
Rotation wrench	1
RNB4-5 Current Terminal	2
Phillips screw M4x20	2
Phillips screw M4x14	4
Seal	4
Self-tapping screw	2
Expansion Bolt	2



Washer	2
Short circuit plug (will be installed on the HEAT port before delivery)	1
Document	1



**PLEASE NOTE**

The "\*" mark indicates that the connector that connects the inverter onto the power cables, connecting BMS and inverter, comes with the inverter accessory kit.

**Battery Module (TP-HS25/TP-HS36)**

<b>Description</b>	<b>Quantity</b>
Battery Module	1
Phillips screw M4x14	4
Seal	4
Document	1

**Standard Box**

<b>Description</b>	<b>Quantity</b>
Serial Module	1
Base	1
Heater Cable (HEAT Port)	1
Communication cable (COM port)	1
Power Cord (Black)	1
Power Cord (Red)	1
L-shaped bracket	1
Adjustable bracket	1
Phillips screw M4x10	2
Flanged nut M6	2
Rotation wrench	1
Grounding cable	1

---

Phillips screw M4x14	4
Seal	4
Self-tapping screw	2
Expansion Bolt	2
Washer	2
Phillips screw M4x20	1
Document	1

---

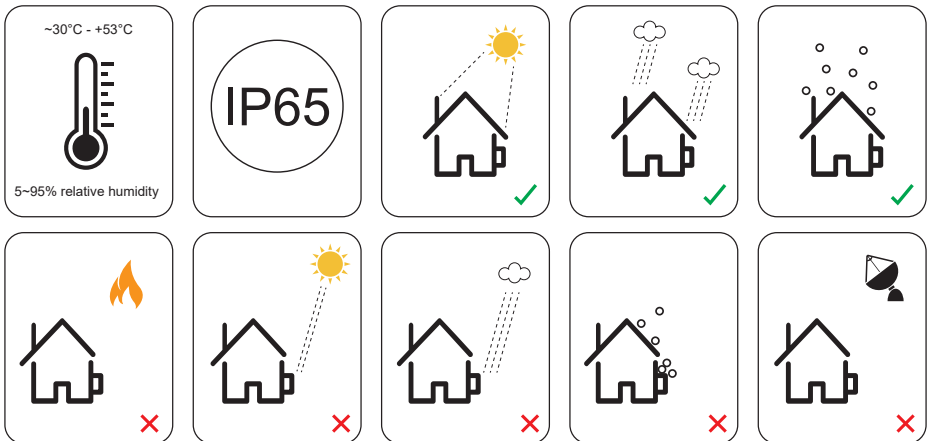
**PLEASE NOTE**

- 
- If the purchased battery module exceeds 10 sets (including 10), these battery modules must be installed in two towers, and the "Series Box" must be installed to connect two towers in series.
  - If the purchased battery module is less than 9 sets (including 9), these battery modules can be installed in one or two towers. In the case of two towers, the installation of the "Series Box" is recommended.
  - The above accessory kit for "Series Box" must be purchased by the customers themselves.

## 5. Installation Instructions

### 5.1. Installation Environment Requirements

- Make sure the equipment is installed in a well-ventilated environment;
- To prevent fires due to high temperature, make sure that the ventilation vents or heat dissipation system are not blocked when the equipment is in operation;
- Do not expose the equipment to flammable or explosive gas or smoke. Do not perform any operation on the equipment in such environments;
- Make sure the area is completely waterproof and the floor is flat and level;
- Make sure that the temperature and humidity are kept at a constant level and that there is a minimum amount of dust and dirt in the area.



### 5.2. Installation Procedure



#### PLEASE NOTE

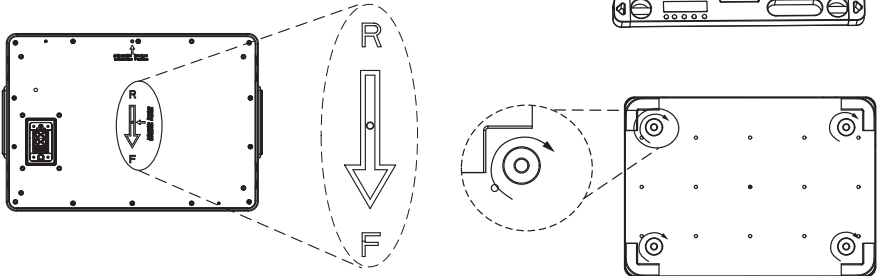
1. Between 2 and 8 battery modules can be installed in a tower for PSI-X1P series inverters and 4 to 13 for PSI-X3S series inverters. If battery module users have purchased more than 10 sets (including 10), a series module must be installed to connect two towers in serie.
2. The load-bearing capacity of the soil used to install the entire battery system shall be more than 500 kg/m<sup>2</sup>.

### Installation Steps Without Serial Module

Let's take the installation procedure for four battery modules as an example.

#### Step 1

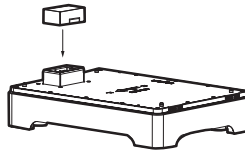
Pull out the base and adjust it.



The letters "R" and "F" on the Base indicate the back and front, respectively. The side with "R" must be against the wall.

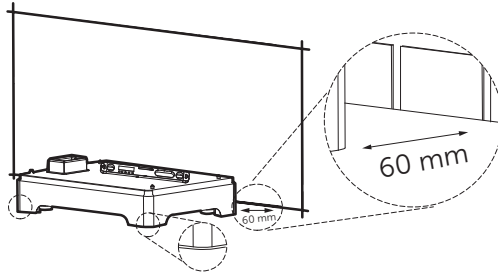
Turn clockwise, lower the Base; Turn counterclockwise, lift the base. We recommend using a spirit level.

Remove the dust cover



#### Step 2

Locate Base and accurately draw the position on both sides with a marker. We recommend using a spirit level.



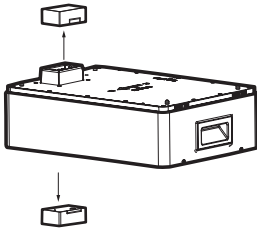
**PLEASE NOTE**

The distance between the base and the wall can be about 20 ~ 200 mm, but the recommended distance is 60 mm.

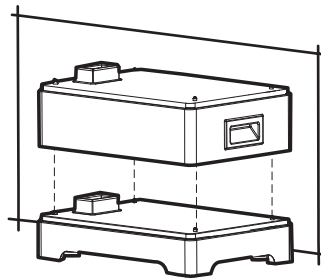
**Step 3**

Place a battery module on the base.

Remove the dust covers



Position the battery module

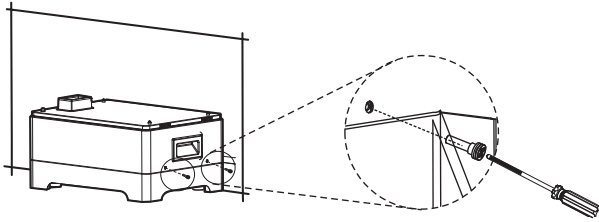


**PLEASE NOTE**

If the base is moved after the battery module is placed, move it to its original position according to the previously drawn mark.

**Step 4**

Fasten and tighten the M4x20 Phillips screws (x 4) on both sides (torque: 0.9 to 1.1 N·m).

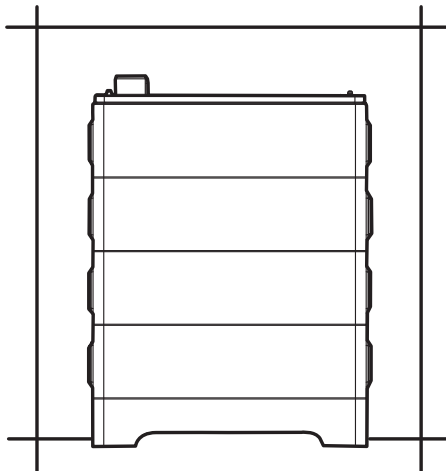


Torque 0.9 to 1.1 N·m

**Step 5**

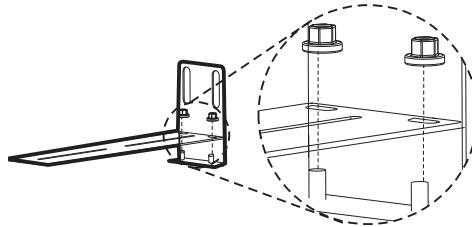
Repeat steps 3 and 4 to install the rest of the battery modules.

Place the battery modules.



**Step 6**

Join the adjustable bracket and the "L" bracket with the M6 flange nuts (x 2).

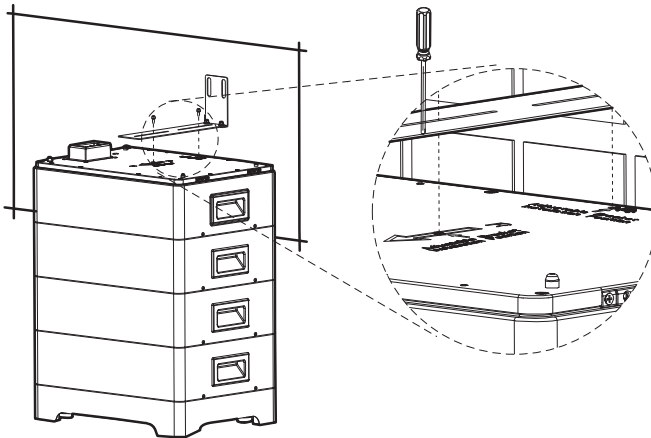


Secure M6 flange nuts  
but do not tighten

**Step 7**

Attach the assembled bracket to the battery module and wall.

Secure the assembled bracket on the battery module with M4x10 Phillips-head screws (x 2), but do not tighten.

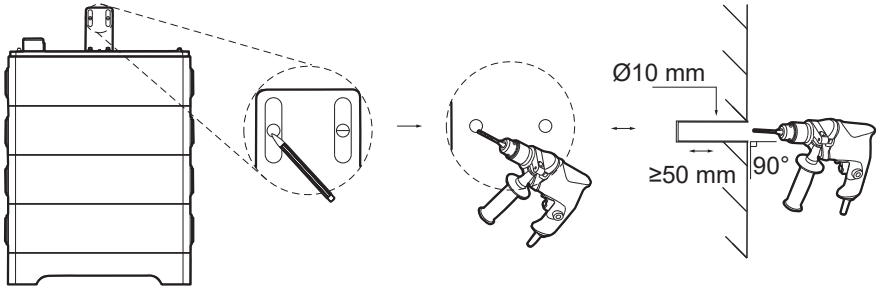


Move the assembled bracket to the wall;

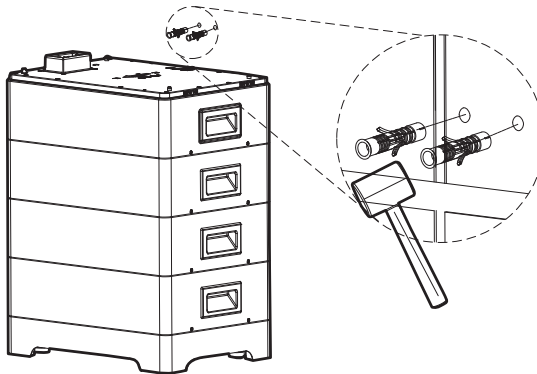
Circle along the inner ring of the holes;

Remove the assembled bracket and drill the two holes (at least 50 mm) with a drill (Ø 10 mm).

Do not remove the dust cover on the top battery



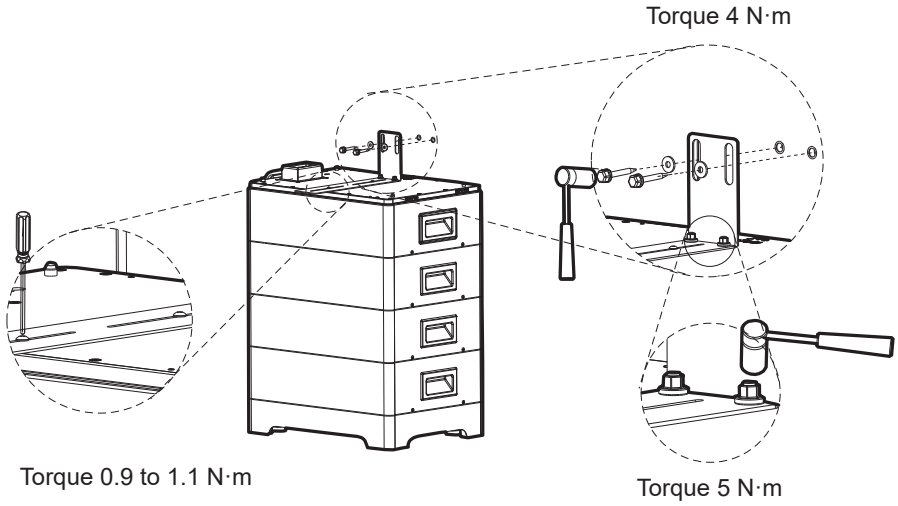
Remove the assembled bracket;  
Insert expansion bolts (x 2).



Attach the assembled bracket to the wall with the self-tapping screws (x 2) and washer (x 2) and tighten them (torque: 4 N·m);

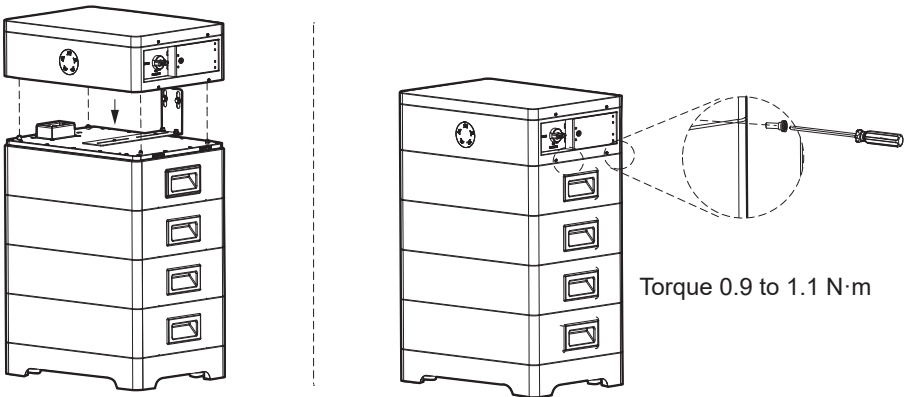
Fix the assembled bracket on the battery module with M4x10 Phillips-head screws (x 2) and tighten them (torque: 0.9 to 1.1 N·m); Tighten the M6 flange nuts (x 2) (refer to step 6) (torque: 5 N·m).





**Step 8**

Position the BMS and tighten the M4x14 Phillips-head screws (x 2) on both sides (torque: 0.9 to 1.1 N·m).



**PLEASE NOTE**

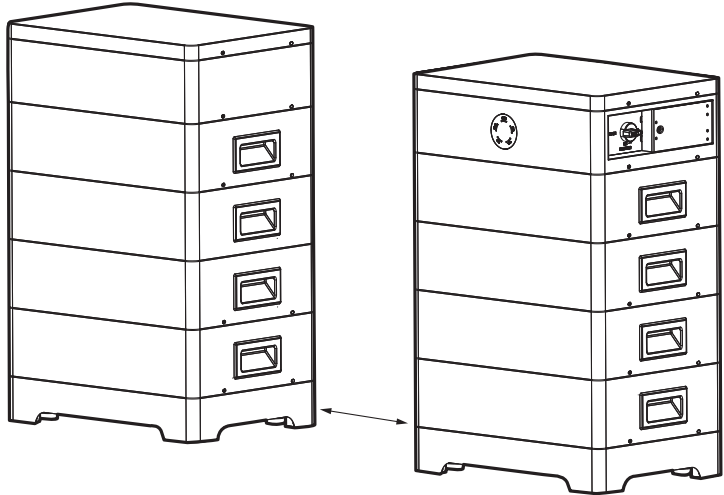
As for the cover plate on both sides of the BMS, they need to be installed after finishing the wiring.

## Installation Steps with Serial Module

In case of more than 10 sets of battery modules (including 10), a series module must be installed to connect two towers in series and a series module accessory kit.

The installation procedure for these two towers is the same as for one tower. For details, refer to steps 1 through 8.

An assembled bracket is also required for this tower



### PLEASE NOTE

1. The rule for the sequence of battery modules in the entire system is as follows: in the case of a tower, the battery module closest to the BMS is numbered by the first battery module, followed by the second battery module, the third battery module, according to the top-down principle. If there is another tower, the battery module closest to the "Series Box" can continue to be numbered according to the tower with the BMS.
2. As for the cover plates on both sides of the BMS and on the left side of the series box, they need to be installed after finishing the wiring.

## 6. Wiring

The connection of the current terminal and the communication cable, which connects the BMS and the inverter, must be made before wiring.

### 6.1. Grounding

The steps to make the connection are shown as follows:

**Step 1.**

Strip the cable sheath about 8-10 mm from the end;

**Step 2.**

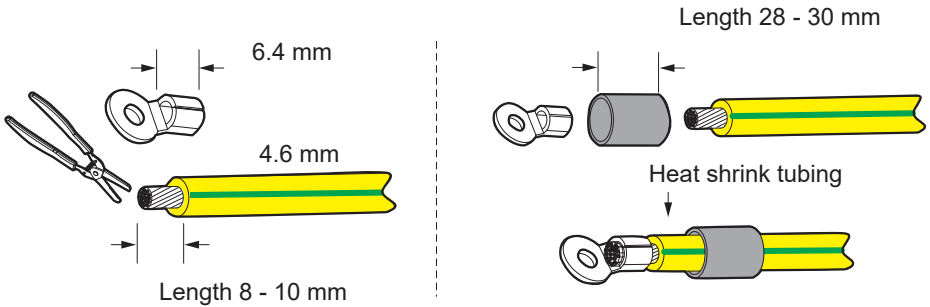
Cut the heat shrink tubing to about 28-30 mm in length, carefully slide it over the end of the cable, and then carefully thread the wires all the way into the current terminal;

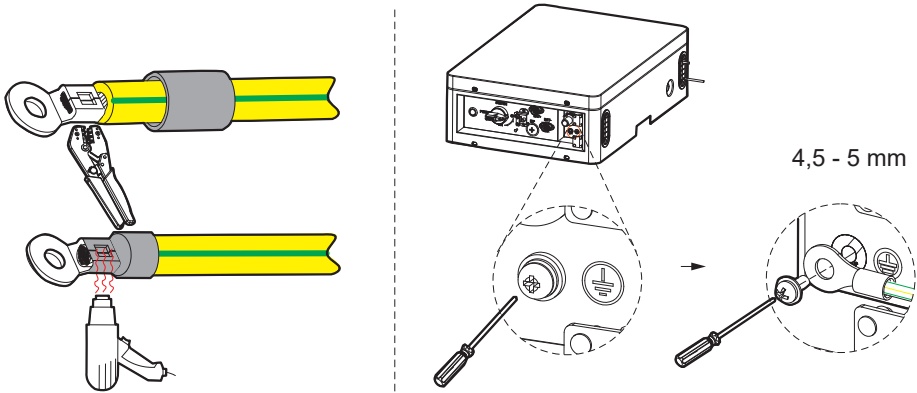
**Step 3.**

Crimp the terminal and heat the heat shrink tubing after it wraps the end of the terminal;

**Step 4.**

Connect the assembled grounding cable to the BMS, then tighten the screw.





**PLEASE NOTE**

The grounding cable must be prepared by the users themselves.

**6.2. Connecting to the Inverter**

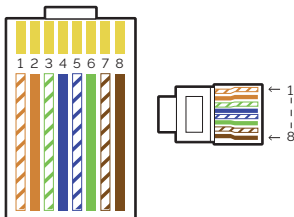
To ensure the normal operation of the BMS and inverter, the BMS communication cable supplied with the BMS accessory kit is required to connect the RJ45 connector.

The order of the pins of the communication cable is shown as follows:

PIN	1	2	3	4	5	6	7	8
<b>BMS</b>	/	GND	GND	BMS_H	BMS_L	12V	A1	B1

The wire sequence of one terminal that connects to the inverter is the same as the wire sequence of the other terminal, which connects to the BMS.

The sequence of wires is shown as follows:



1. White with orange stripes
2. Orange
3. White with green stripes
4. Blue
5. White with blue stripes
6. Green
7. White with brown stripes
8. Brown

The steps to make the RJ45 connector to BMS communication cable are shown as follows:

**Step 1.**

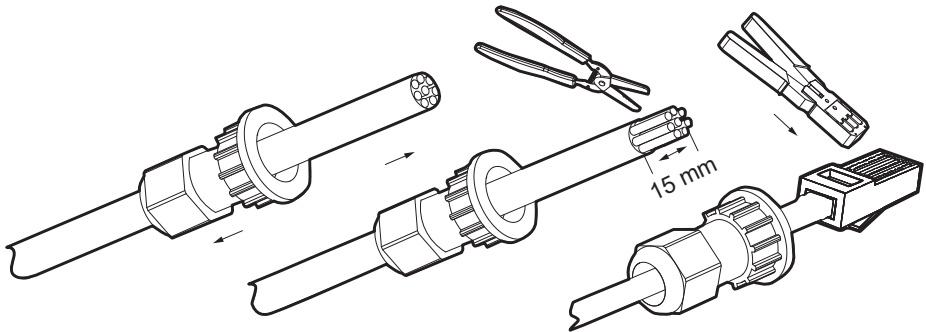
Strip the cable sheath about 15 mm from the end;

**Step 2.**

Carefully insert the wires all the way into the RJ45 connector, making sure that each wire passes through the appropriate guides inside the connector;

**Step 3.**

Push the RJ45 inside the crimping tool and press the crimping tool all the way in.



**PLEASE NOTE**

The BMS communication cable must have a shielded layer.

## 6.3. Wiring

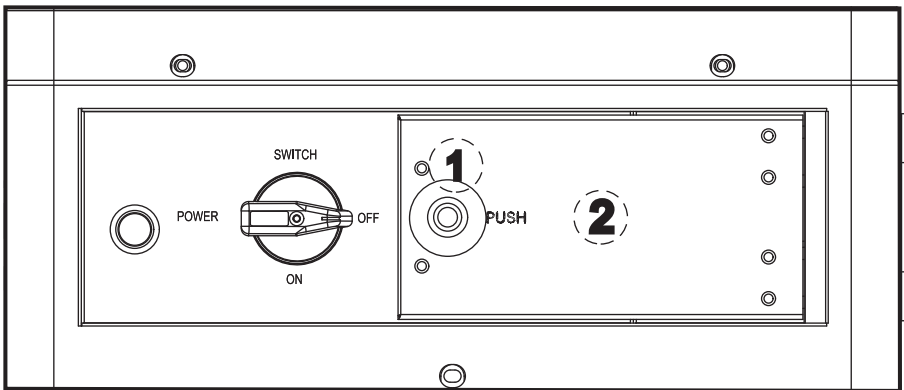
Before wiring, please:

### Step 1.

Remove the screws on both covers of the BMS.

### Step 2.

Press the lid.



### PLEASE NOTE

Remove the silicone sleeves from the BMS and series box ports (if any).

#### 6.3.1. Wiring without Serial Module



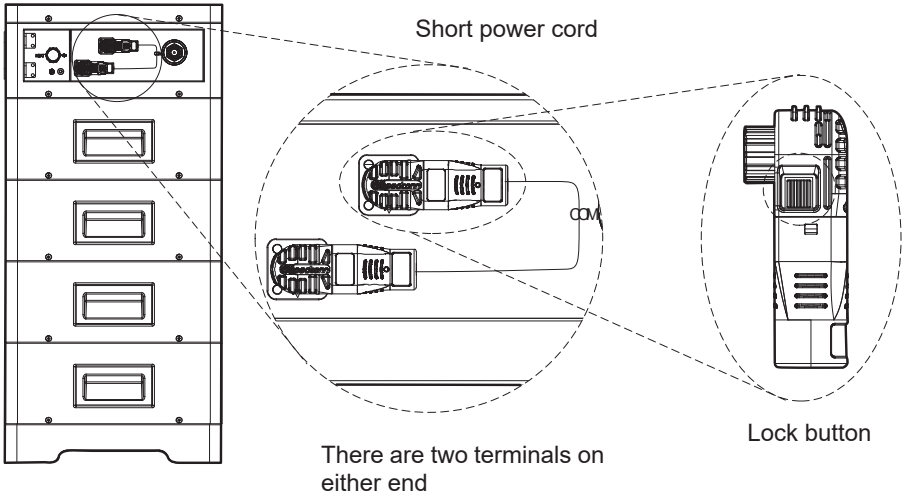
### PLEASE NOTE

Remove the labels attached to both cover plates before wiring.

**Left side of the BMS**

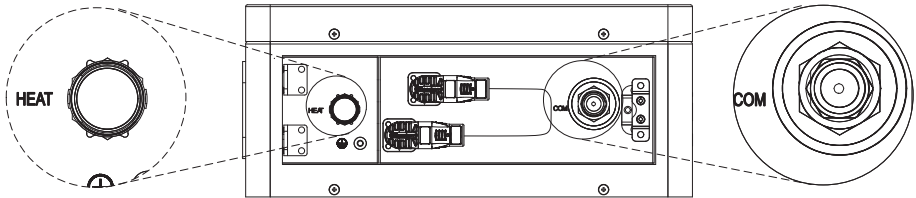


Short Power Cord: Connect "B+" and "B-".



Short circuit plug

Waterproof hood



**Right side of BMS (BMS to inverter)**



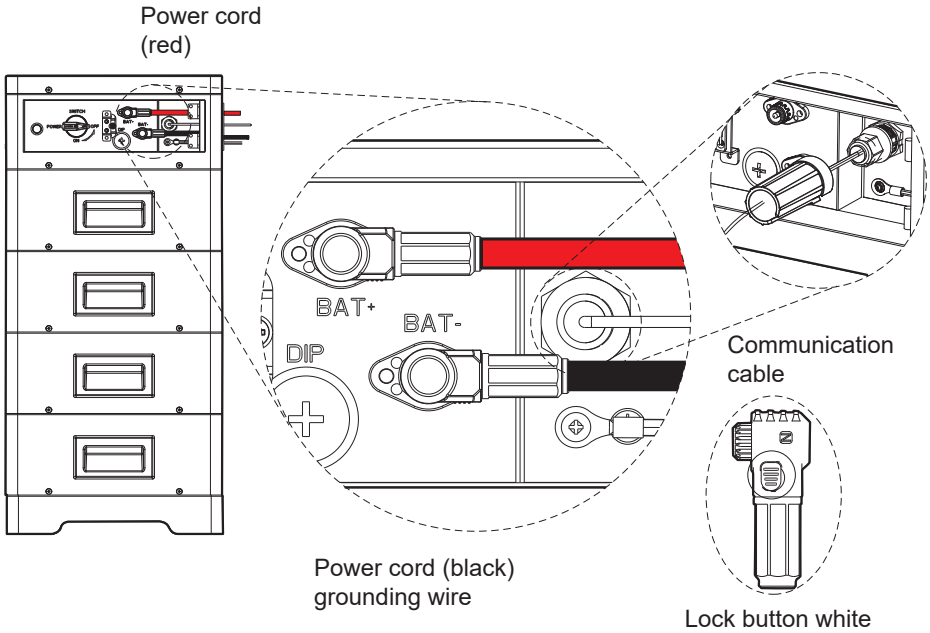
Power cable (black): Connect the BMS's "BAT-" to the inverter's "BAT-".



Power cable (red): Connect "BAT+" of the BMS to "BAT+" of the inverter.



Communication cable: Connect the "BMS" port of the BMS to the "BMS" port of the inverter.





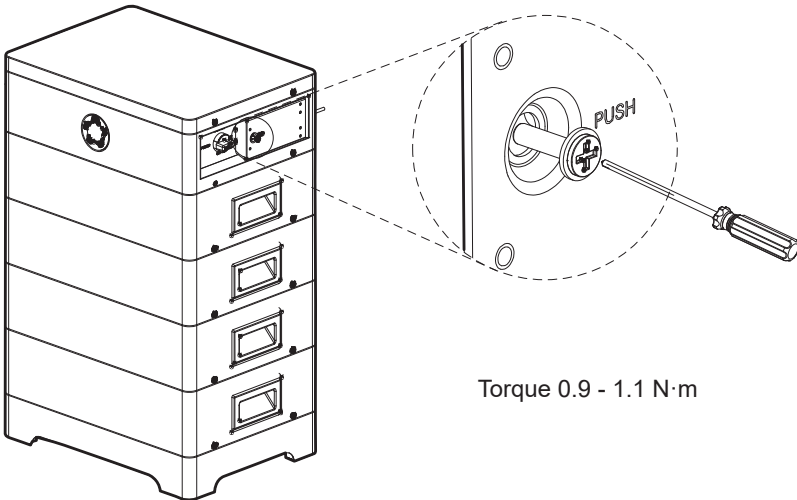


## PLEASE NOTE

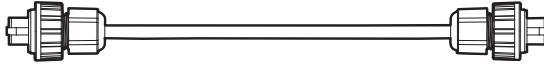
1. Press and hold the white lock button while unplugging the power cord, otherwise it cannot be pulled out.
2. Use the swivel wrench to tighten the communication cable and remove it after tightening.

## Installing the Cover Plate

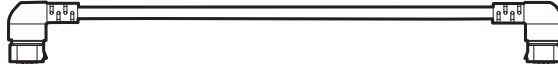
After finishing the wiring, there are two cover plates on either side of the BMS that need to be secured with M4 screws (x 2) (torque: 0.9 to 1.1 N·m).



### 6.3.2. Wiring with Series Module



Communication cable: there are two terminals at both ends; one plugs into the BMS's "COM" port, and the other plugs into the Series Box's "COM" port.



Heater wire: there are two terminals at both ends; one connects to the "HEAT" port of the BMS and the other connects to the "HEAT" port of the Serial Module.



Power Cord (Black): There are two terminals with the same function on both ends; one connects to BMS's "BAT-" and the other connects to Series Box's "BAT-".



Power Cord (Red): There are two terminals with the same function on both ends; one connects to BMS's "BAT+" and the other connects to Series Box's "BAT+".



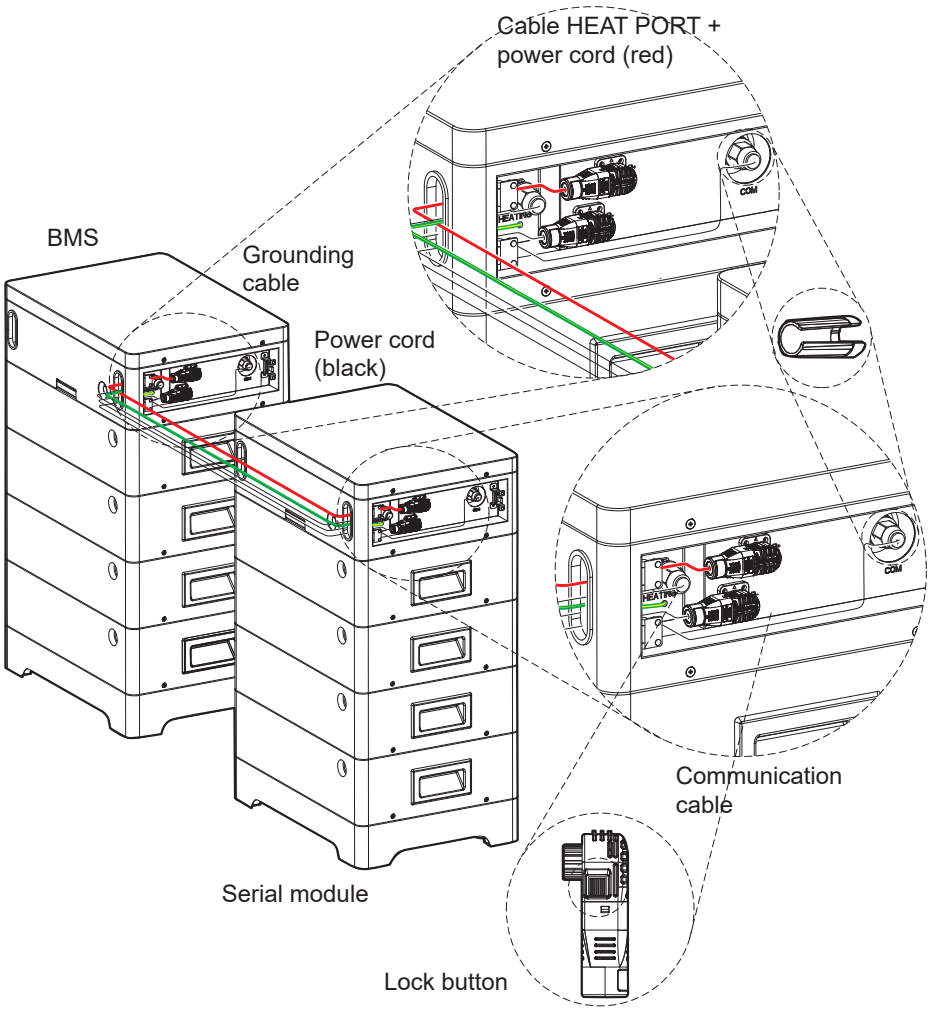
Grounding wire: There are two terminals on both ends; one connects to a grounding port of the BMS, and the other connects to the grounding port of the Stock Module.

**Wiring between BMS and Series Module**



**PLEASE NOTE**

Remove the labels attached to both cover plates before wiring.

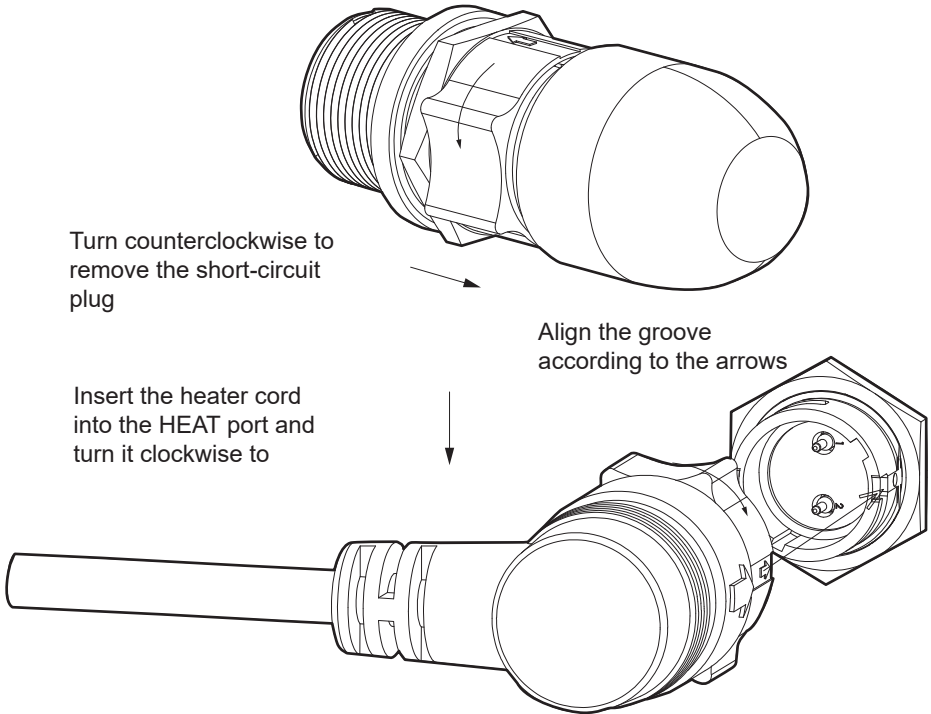




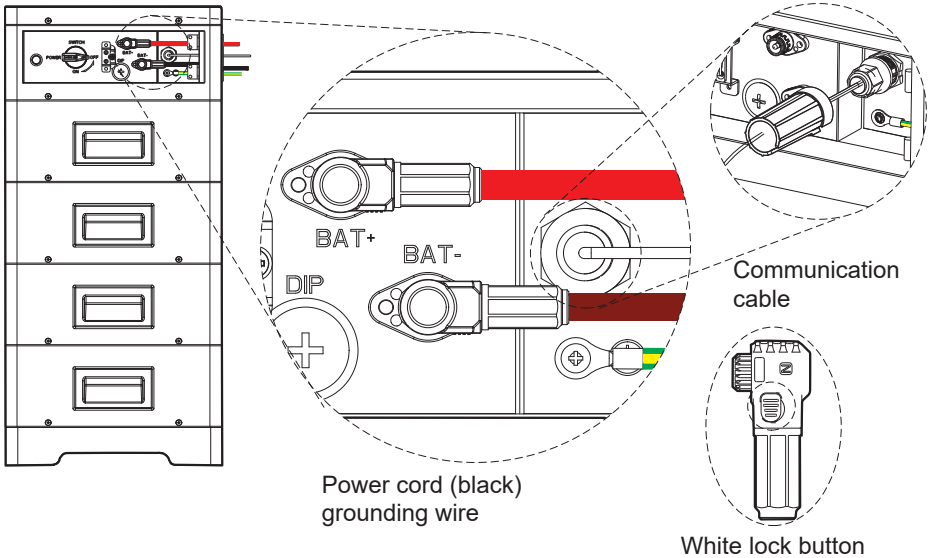
**PLEASE NOTE**

We recommend the use of corrugated tubing with an inner diameter greater than 45mm to keep the cable insulation in place and avoid potential damage.

Before wiring, the short-circuit plug on the HEAT port must be removed. And after finishing the wiring, make sure that the HEAT heater wire is locked.



**Right side of the BMS**



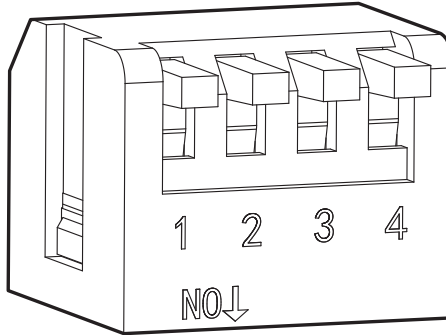
**PLEASE NOTE**

1. Press and hold the white lock button while unplugging the power cord, otherwise it cannot be pulled out.
2. Use the swivel wrench to tighten the communication cable and remove it after tightening.
3. After finishing the wiring, properly insert and tighten the M4 screws to secure the cover plates on both the BMS and the series box according to the paragraph "Installing the Cover Plate" on page 35.

## 7. Commissioning

### 7.1. DIP switch

The BMS is equipped with a DIP Switch. See the figure below.



DIP Switch 1	A reserved function
DIP Switch 2	A reserved function
DIP Switch 3	A reserved function
DIP Switch 4	<p>Terminal Resistor</p> <ul style="list-style-type: none"> <li>DIP switch 4 must be turned down (open the circuit) when connecting the BMS to the inverter.</li> <li>In the case of parallel connection, only DIP switch 4 on the last BMS should be lowered (open the circuit) and DIP switch 4 on the rest of the BMS should be raised (close the circuit).</li> </ul>

The DIP switch 4 is pressed with the factory settings.



#### PLEASE NOTE

To adjust the DIP switch, users themselves need to prepare a small flathead screwdriver.

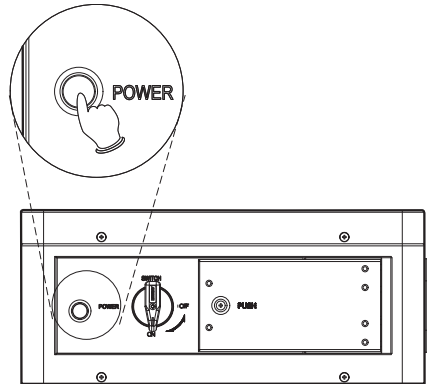
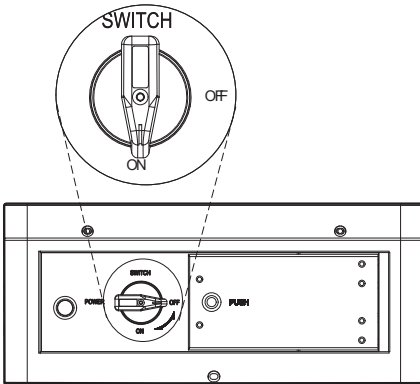
## 7.2. Start-up and shutdown procedure

Before commissioning, check that the installed battery modules are of the same model and that all grounding wires, power cords, communication cables, and heater wire are connected.

### Ignition

Step 1.  
Turn the SWITCH to ON;

Step 2.  
Press the POWER button for more than 0.5 seconds to start the system.  
See the figure below.



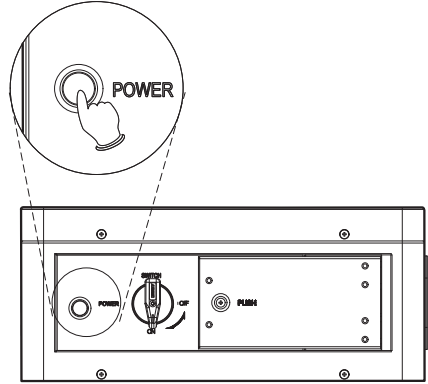
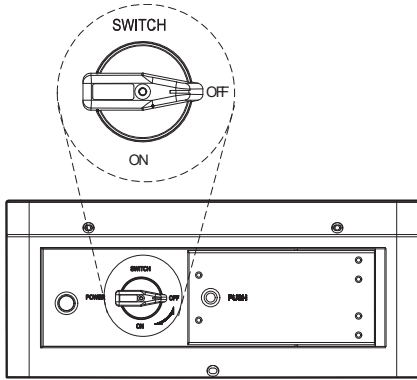
### PLEASE NOTE

- Pressing the POWER button frequently may cause a system error.
- If the system does not boot after pressing the POWER button, try again after at least 10 seconds.

**Shut down**

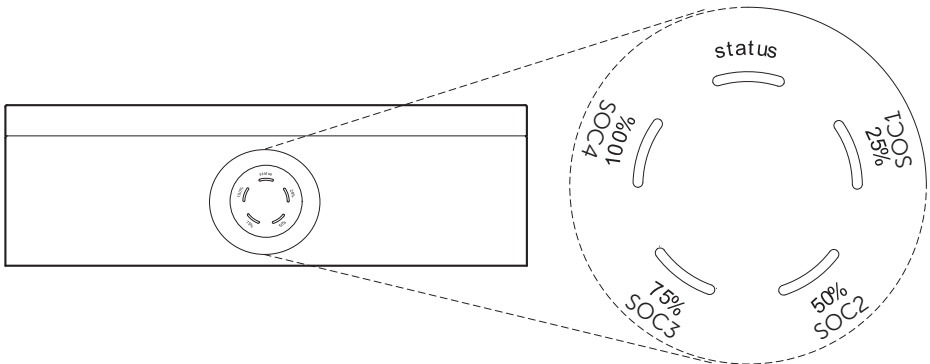
Step 1.  
Turn the SWITCH to OFF.

Step 2.  
Press the POWER button for 1 second to turn off the system. See the figure below.



**7.3. Status Indicators**

The power indicators show the current battery percentage. There are five indicators on the BMS which are: a status light and four SOC power indicators. See the figure below:





For detailed indicator information, see the table below:

Start	After pressing the POWER button to start the system, the status light flashes yellow for 0.1 seconds and turns off for 0.1 seconds, and all SOC power indicators are off.
Closing	After holding down the POWER button for more than 1 second, the status light will illuminate solid green and the SOC power indicators will flash blue clockwise. Then all lights turn off within 2.4 seconds of releasing the button.
Standby	The status light flashes green for 1 second and turns off for 4 seconds. The SOC power indicators are off.
Upload	The status light lights up solid green, and the status of the SOC power indicators depends on the actual situation. For details, refer to the following "Table 1 Indicator Information While Charging".
Unloading	The status light lights up solid green, and the status of the SOC power indicators depends on the actual situation. For details, refer to the following "Table 2 Indicator Information During Discharge".
Operating error	In the event of a fault, the status light will remain on solid red for 10 minutes, then that red light will flash for 1 second and then turn off for 4 seconds.
Warning	If there is a warning, the status light will flash yellow for 1 second, then turn off for 4 seconds.
"Black start"	For details, please refer to the "Black Start" part.

Table 1: Indicator Information During Charging

SOC Value	Status light	SOC1	SOC2	SOC3	SOC4
$0\% \leq \text{SOC} < 25\%$	Green	Flash	Light off	Light off	Light off
$\text{SOC} < 50\%$	Green	Light on	Flash	Light off	Light off
$\text{SOC} < 75\%$	Green	Light on	Light on	Flash	Light off
$\text{SOC} < 100\%$	Green	Light on	Light on	Light on	Flash
$100\% \text{ SOC} \geq$	Green	Light on	Light on	Light on	Light on

Table 2: Indicator Information During Discharge

SOC Value	Status light	SOC1	SOC2	SOC3	SOC4
$\text{SOC} \geq 75\%$	Green	Flash	Flash	Flash	Flash
$\text{SOC} \geq 50\%$	Green	Flash	Flash	Flash	Light off
$\text{SOC} \geq 25\%$	Green	Flash	Flash	Light off	Light off
$\text{SOC} \geq 0\%$	Green	Flash	Light off	Light off	Light off



**PLEASE NOTE**

In case of pressing and holding the POWER button, there are two conditions:

1. Press and hold the POWER button for more than 5 seconds but not less than 20 seconds, the system will enter inverter start mode.
2. Press and hold the POWER button for more than 20 seconds, the system will enter the Black Start.

**Black start**

The equipment is capable of providing Black Start capability, which means that our inverter and energy storage battery can continue to operate even if the power grid and PV panel are out of service. The boot procedure for Black Start is as follows:

- If the POWER button is pressed and pressed for less than 20 seconds, the status light will flash green for 1 second and then turn off for 4 seconds, with a period of 5 seconds.
- After holding down the POWER button for more than 20 seconds (including 20 seconds), the status light will illuminate solid green and the SOC power indicators will flash as follows:
  - First, the SOC3 indicator lights up green, and the rest of the indicators are off;
  - Secondly, the SOC2 and SOC4 indicators light up green, and the rest of the indicators are off;
  - Thirdly, the SOC1 indicator lights up green and the rest of the indicators are off;
  - Finally, all power indicators are off.
- The POWER button must be released at any time during the process.

The power indicators will change according to the actual situation, with the details as below:

Guilt	SOC1	SOC2	SOC3	SOC4
Huge differential pressure	Flash	Off	Off	Off
Voltage fault (undervoltage and overvoltage of the unit, overvoltage and undervoltage of the total voltage)	Off	Flash	Off	Off
Temperature Failure (High Temperature, Low Temperature)	Flash	Flash	Off	Off
Current fault (charging overcurrent, discharge overcurrent)	Off	Off	Flash	Off
Hardware failure (MCU fault, external short circuit fault, AFE fault, voltage sampling disconnect error, temperature sampling, or current sensor default)	Flash	Off	Flash	Off
Relay Fault	Off	Flash	Flash	Off
Insulation failure	Flash	Flash	Flash	Off
Self-test error	Off	Off	Off	Flash
Inverter communication loss	Flash	Off	Off	Flash
Loss of battery module communication	Off	Flash	Off	Flash

## 8. Troubleshooting

Check the indicators (refer to "7.3 Status Indicators") to determine the status of the SYS-HV T-BAT. In the event that the following circumstance occurs, such as voltage or temperature above the limit, a warning state will be triggered.

The BMS of the T-BAT system will periodically report its operating status to the inverter.

In case the SYS-HV T-BAT exceeds the specific limit, it will enter a warning state. And if the warning is signaled, the inverter will stop working immediately.

Please use the monitoring software on the inverter to check the cause of the alert.

Possible error information is shown as follows:

Error	Description	Diagnosis and solution
BMS_External_Err	External BMS fault	Unable to establish communication with the inverter: Restart the BMS; Contact the company's after-sales staff.
BMS_Internal_Err	BMS internal fault	Unable to establish communication with the inverter: Restart the BMS; Check whether the connection between the batteries is normal; Contact the company's after-sales staff.
BMS_OverVoltage	BMS Surge	Single battery overvoltage. Contact the company's after-sales staff.
BMS_LowerVolatge	BMS undervoltage	Undervoltage of the individual battery. The battery is forced to charge via inverter; Contact the company's after-sales staff.

BMS_ChargeeOverCurrent	BMS Overcurrent Charge	BMS overcurrent charge. Restart the BMS; Contact the company's after-sales staff.
BMS_DischargeOverCurrent	BMS Overcurrent Charge	BMS discharge overcurrent. Restart the BMS; Contact the company's after-sales staff.
BMS_TemHigh	High BMS Temperature	The temperature of the BMS is too high. Allow the BMS to cool to normal temperature and restart; Contact the company's after-sales staff.
BMS_TemLow	Low BMS temperature	The temperature of the BMS is too low. Warm up the BMS and restart; Contact the company's after-sales staff.
BMS_CellImbalance	BMS Cellular Imbalance	Battery inconsistency. Restart the BMS; Contact the company's after-sales staff.
BMS_Hardware_Protect	Hardware protection of the BMS	Hardware protection of the BMS. Restart the BMS; Contact the company's after-sales staff.
BMS_Circuit_Fault	Circuit failure	BMS circuit failure. Restart the BMS; Contact the company's after-sales staff.
BMS_Insulation_Fault	Insulation failure	BMS insulation fault. Restart the BMS; Contact the company's after-sales staff.
BMS_VoltSensor_Fault	Voltage Sensor Failure	BMS voltage sampling error. Restart the BMS; Contact the company's after-sales staff.

BMS_TempSensor_Fault	Temperature Sensor Failure	BMS temperature sampling error. Restart the BMS; Contact the company's after-sales staff.
BMS_TempSensor_Fault	Current Sensor Failure	BMS current sampling error. Restart the BMS; Contact the company's after-sales staff.
BMS_Relay_Fault	Relay Fault	BMS relay contact adhesion error. Restart the BMS;
BMS_Type_Unmatch	BMS Type Matching Error	Different types of BMS. Restart the BMS; Contact the company's after-sales staff.
BMS_Version_Unmatch	BMS Version Match Error	Different types of BMS. Restart the BMS; Contact the company's after-sales staff.
BMS_Manufacturer_Unmatch	BMS Manufacturer Matching Error	Different types of BMS. Restart the BMS; Contact the company's after-sales staff.
BMS_SW&HW_Unmatch	BMS software and hardware mismatch error	Different types of BMS. Restart the BMS; Contact the company's after-sales staff
BMS_M&S_Unmatch	BMS Module and Battery Mismatch Error	Different types of BMS. Restart the BMS; Contact the company's after-sales staff.
BMS_CR_Unresponsive	Charge request doesn't respond	The inverter does not respond to the charging request. Restart the BMS or inverter; Contact the company's after-sales staff.
S_Software_Protect	Battery Module Software Protection	Software protection of the battery module. Restart the BMS; Contact the company's after-sales staff.

BMS_536_Fault	536 BMS Error	BMS voltage sampling error. Restart the BMS; Contact the company's after-sales staff
BMS_Selfchecking_Fault	BMS self-test error	BMS self-test error. Restart the BMS; Contact the company's after-sales staff.
BMS_Tempdiff_Fault	Fault other than temperature	The temperature of the BMS varies greatly. Restart the BMS; Contact the company's after-sales staff.
BMS_Break	BMS Disconnect Error	BMS sampling error. Restart the BMS; Contact the company's after-sales staff.
BMS_Flash_Fault	BMS flash failure	Memory chip error. Restart the BMS; Contact the company's after-sales staff.
BMS_Precharge_Fault	BMS Precharge Fault	External short circuit of the BMS. Check the external connection and restart the BMS; Contact the company's after-sales staff.
BMS_AirSwitch_Break	Disconnecting the BMS cut-off switch	Disconnecting the BMS rupture switch. Restart the BMS; Contact the company's after-sales staff.

## 9. Disposal

### 9.1. Battery disassembly

Turning off the battery unit:

- Disconnect the cables between BMS and inverter;
- Disconnect the series wiring terminal on the battery;
- Disconnect the cables.

### 9.2. Packaging

Pack the BMS and battery module in the original packaging.

If the original packaging is no longer available, use a Acardboard or equivalent box that meets the following requirements:

- Suitable for loads over 70.00 kg;
- Properly closed and sealed.



**This device MUST NOT be disposed of as urban waste.**

The crossed-out wheellie bin symbol on the device label indicates that the product at the end of its useful life must be collected separately from other waste to allow it to be properly treated and recycled. The user must, therefore, deliver the end-of-life equipment free of charge to the appropriate municipal centres for the separate collection of electrical and electronic waste, or return it to the retailer in the 1-on-1 manner when purchasing a new equivalent product. Adequate separate collection for the subsequent recycling, treatment and environmentally compatible disposal of discarded equipment helps to avoid possible negative effects on the environment and health and promotes the reuse and/or recycling of the materials of which the equipment is made. Any improper disposal of the product by the user will result in the application of the penalties provided for by current legislation.



## 10. Maintenance

- If the ambient temperature for storage is  $-20\text{ }^{\circ}\text{C} \sim 30\text{ }^{\circ}\text{C}$ , recharge the batteries at least once every 12 months.
- If the ambient temperature for storage is  $30\text{ }^{\circ}\text{C} \sim 50\text{ }^{\circ}\text{C}$ , recharge the batteries at least once every 6 months.
- If the battery(s) has not been used for more than 9 months, the battery(s) should be charged to at least 50% SOC each time.
- For the first installation, the interval between the production dates of the batteries should not exceed 3 months.
- If a battery is replaced or added for capacity expansion, the SOC of each battery must be consistent. The maximum SOC difference should be between  $\pm 5\%$ .
- If users want to increase the capacity of the battery system, make sure that the SOC of the existing system capacity is about 40%. The date of manufacture of the new battery should not exceed 6 months; If the battery exceeds 6 months, charge the new battery to about 40%.
- In the allowable range, the relative humidity range should be between 5% and 95% relative humidity.

## 11. Warranty Conditions

For warranty conditions, please refer to the relevant document that can be downloaded from the website internet [www.peimar.com](http://www.peimar.com).





/// PEIMAR



[info@peimar.com](mailto:info@peimar.com) | [www.peimar.com](http://www.peimar.com)