

Triple Power Lithium-ion Battery User Manual

50Ah



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1 Note on this Manual

1.1 Scope of Validity

This manual is an integral part of T-BAT Series. It describes the assembly, installation, commissioning, maintenance and failure of the product. Please read it carefully before operating.

T-BAT SYS-HV

T-BAT H 5.8

T-BAT PACK-HV

HV11550

NOTE: There are 4 models for T-BAT system, which includes BMS and battery pack(s). Please refer to section 3.3.1 **T-BAT SYS-HV Configuration List** on page 11 for detailed models.

1.2 Target Group

This manual is for qualified electricians. The tasks described in this manual may only be performed by qualified electricians.

1.3 Symbols Used

The following types of safety instructions and general information appear in this document described as below:



DANGER!

“DANGER” indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING!

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













CAUTION!

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



NOTE!

“NOTE” provides tips that are valuable for the optimal operation of your product.

| Symbol | Explanation |
|---|--|
|  | TUV mark for IEC62619 |
|  | The battery system should be disposed of at a proper facility for environmentally safe recycling. |
|  | The battery system should not be disposed together with the household waste. Disposal information can be found in the enclosed documentation. |
|  | Wear protective glasses |
|  | Observe enclosed documentation. |
|  | Keep the battery system away from open flames or ignition sources. |
|  | Keep the battery system away from children. |
|  | Danger of high voltages. Danger to life due to high voltages in the battery system! |
|  | Danger. Risk of electric shock! |
|  | The battery pack may explode. |

2.2 Response to Emergency Situations

2.2.1 Leaking Batteries

If the battery leaks electrolyte which is corrosive, avoid contact with the leaking liquid or gas. Direct contact may lead to skin irritation or chemical burns. If one is exposed to the leaked substance, do these actions:

Accidental inhalation of harmful substances: Evacuate people from the contaminated area, and seek medical attention immediately.

Eye contact: Rinse eyes with flowing water for 15 minutes, and seek medical attention immediately.

Dermal contact: Wash the affected area thoroughly with soap and water, and seek medical attention immediately.

Ingestion: Induce vomiting, and seek medical attention immediately.

2.2.2 Fire

In case of a fire, make sure an ABC or carbon dioxide extinguisher is nearby.



WARNING!

The battery pack may catch fire when heated above 150°C.

If a fire breaks out where the battery pack is installed, do these actions:

1. Extinguish the fire before the battery pack catches fire;
2. If the battery pack has caught fire, do not try to extinguish the fire. Evacuate people immediately.

WARNING!

If the battery pack catches fire, it will produce noxious and poisonous gases. Do not approach.

2.2.3 Wet Batteries and Damaged Batteries

If the battery pack is wet or submerged in water, do not try to access it.

If the battery pack seems to be damaged, they are not fit for use and may pose a danger to people or property.

Please pack the battery in its original container, and then return it to SolaX or your distributor.

CAUTION!

Damaged batteries may leak electrolyte or produce flammable gas. If you suspect such damage, immediately contact SolaX for advice and information.

2.3 Qualified Installer

⚠ WARNING!

All operations of T-BAT SYS-HV relating to electrical connection and installation must be carried out 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 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 manual and all safety precautions and best practices

3 Product Introduction

3.1 Product Overview

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

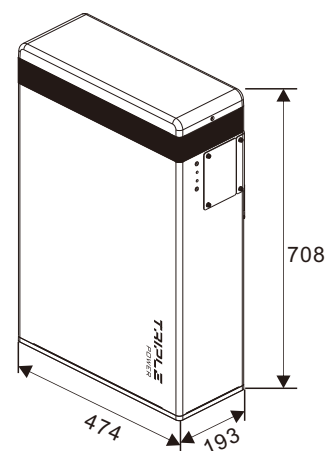
3.1.1 Demension and Weight

A battery management system (BMS) is any electronic system that manages a rechargeable battery.

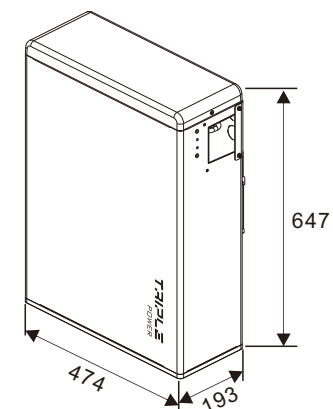
Battery pack is a type of electrical battery which can be charged, discharged into a load.

A battery system includes BMS and battery pack(s).

| | T-BAT H 5.8 | HV11550 |
|--------|-------------|---------|
| Length | 474mm | 474mm |
| Width | 193mm | 193mm |
| Height | 708mm | 647mm |
| Weight | 72.2kg | 68.5kg |



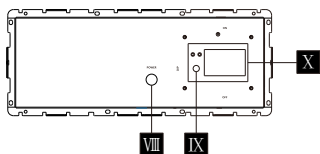
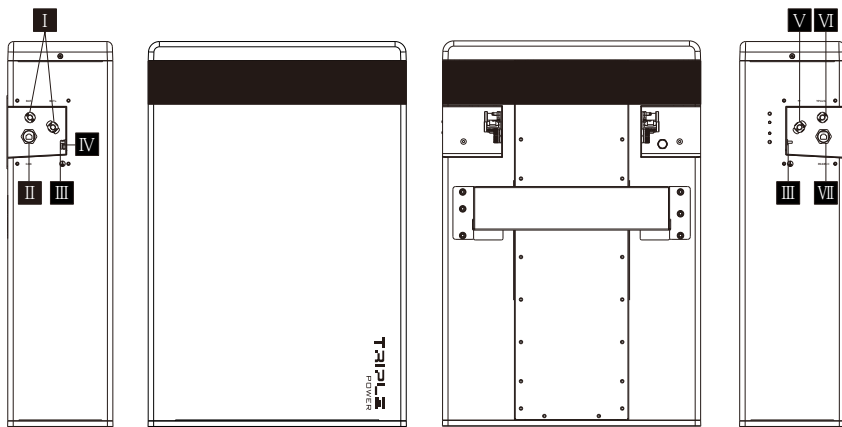
T-BAT H 5.8



HV11550
(Battery Pack)

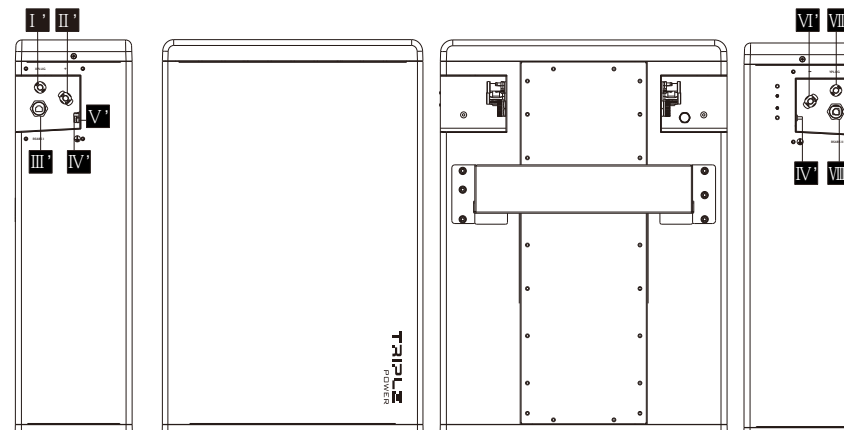
3.1.2 Appearance

- Section view of T-BAT H 5.8



| Object | Mark | Description |
|--------|-----------|--|
| I | BAT+/BAT- | Charge/Discharge Connectors |
| II | CAN | CAN Connector |
| III | GND | GND |
| IV | / | Air Valve |
| V | - | Power Connector to + of next battery pack, or to YPLUG of the same pack |
| VI | YPLUG | Power Connector' to XPLUG of next battery pack, or to "-" of the same pack |
| VII | RS485 II | RS485 Connector to RS485 I of next battery pack |
| VIII | POWER | Power Button |
| IX | DIP | DIP Switch |
| X | ON/OFF | Circuit Breaker |

- Section view of HV11550



| Object | Mark | Description |
|--------|----------|--|
| I' | XPLUG | Power Connector' to YPLUG of upper battery pack |
| II' | + | Power Connector to "+" of upper battery pack |
| III' | RS485 I | RS485 Connector to RS485 II of upper battery pack |
| IV' | GND | GND |
| V' | / | Air valve |
| VI' | - | Power Connector to + of next battery pack, or to YPLUG of the same pack |
| VII' | YPLUG | Power Connector' to XPLUG of next battery pack, or to "-" of the same pack |
| VIII' | RS485 II | RS485 Connector to RS485 I of next battery pack |

3.2 Basic Features

3.2.1 Features

The T-BAT SYS-HV is one of the advanced energy storage systems on the market today, incorporating state-of-the-art technology, high reliability, and convenient control features shown as below:

- 90% DOD
- 99% Faradic charge efficiency
- 95% Battery roundtrip efficiency
- Cycle life > 6000 times
- Secondary Protection by hardware
- IP55 protection level
- Safety & Reliability
- Small footprint
- Floor or wall mounting

3.2.2 Certifications

| | |
|--|-------------------------------|
| T-BAT system safety | CE, FCC, RCM, TUV (IEC 62619) |
| Battery cell safety | UL 1642 |
| UN number | UN 3480 |
| Hazardous materials classification | Class 9 |
| UN transportation testing requirements | UN 38.3 |
| International protection marking | IP 55 |

3.3 Specifications

3.3.1 T-BAT SYS-HV Configuration List

| No. | Model | Battery Pack | Energy(kWh) | Voltage (V) |
|-----|--------------|-------------------------|-------------|-------------|
| 1 | T-BAT H 5.8 | T-BAT H 5.8*1 | 5.8 | 100-131 |
| 2 | T-BAT H 11.5 | T-BAT H 5.8*1+HV11550*1 | 11.5 | 200-262 |
| 3 | T-BAT H 17.3 | T-BAT H 5.8*1+HV11550*2 | 17.3 | 300-393 |
| 4 | T-BAT H 23.0 | T-BAT H 5.8*1+HV11550*3 | 23.0 | 400-524 |

3.3.2 Performance

| | T-BAT H 5.8 | HV11550 |
|---|------------------------|-------------|
| Dimension(mm) | 474*193*708 | 474*193*647 |
| Weight(kg) | 72.2 | 68.5 |
| Nominal Voltage(Vdc) | 115.2 | 115.2 |
| Operating Voltage(Vdc): | 100-131 | 100-131 |
| Nominal Capacity(Ah): | 50 | 50 |
| Max. charge/discharge Current(A) : | 35 | 35 |
| Recommend Charge/Discharge Current (A): | 25 | 25 |
| Standard Power(kW) | 2.5 | 2.5 |
| Maximum Power(kW) | 3.5 | 3.5 |
| Altitude(m) | ≤ 2000 | |
| Faradic Charge Efficiency(25°C/77°F) | 99% | |
| Battery Roundtrip Efficiency(C/3,25°C/77°F) | 95% | |
| Expected Lifetime(25°C/77°F) | 5 years | |
| Cycle life(90% DOD,25°C/77°F) | 6000 cycles | |
| Available Operating Temperature | 0--55°C | |
| Optimal Operating Temperature | 15°C--35°C | |
| Storage Temperature | -20°C--55°C (3 months) | |
| | 0°C--40°C (1 year) | |
| Ingress Protection | IP55 | |

4 Installation

4.1 Installation Prerequisites

Make sure that the installation location meets the following conditions:

- The building is designed to withstand earthquakes
- The location is far away from the sea, to avoid salt water and humidity
- The floor is flat and level
- There are no flammable or explosive materials nearby
- The ambience is shady and cool, keep away from heat and avoid direct sunlight.
- The temperature and humidity stays at a constant level.
- There is minimal dust and dirt in the area.
- There is no corrosive gases present, including ammonia and acid vapor.
- The ambient temperature is within the range from 0°C to 55°C, and the optimal ambient temperature is between 15°C and 35°C.

NOTE!

The Triple Power battery pack is rated at IP55 and thus can be installed outdoors as well as indoors. However, if installed outdoors, do not allow the battery pack to be exposed to direct sunlight and moisture.

NOTE!

If the ambient temperature is outside the operating range, the battery pack stops operating to protect itself. The optimal temperature range for the battery pack to operate is 15°C to 35°C. Frequent exposure to harsh temperatures may deteriorate the performance and lifetime of the battery pack.

4.2 Safety Gear

Installation and maintenance personnel must operate according to applicable federal, state and local regulations as well as the industry standards regarding the product installation personnel shall wear safety gears, etc. in order to avoid short circuit and personal injury.



Insulated gloves



Safety goggles



Safety shoes

4.3 Tools

These tools are required to install the T-BAT system.



Torque screw driver



Phillips-screw driver



Socket nut wrench



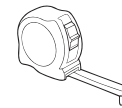
Phillips-head screw driver



Flat-head screw driver



Torque wrench



Tape measure



Drill



Pencil or Marker

4.4 Installation

4.4.1 Check for Transport Damage

Make sure the battery is intact during transportation. If there are some visible damages, such as cracks, please contact your dealer immediately.

4.4.2 Unpacking

Unpacking the battery package by cutting the packing tape and make sure the battery packs and the relevant items are complete. See package items on section 4.4.3, please check the packing list carefully, if there's any item missing, please contact SolaX or your distributor directly.

CAUTION!

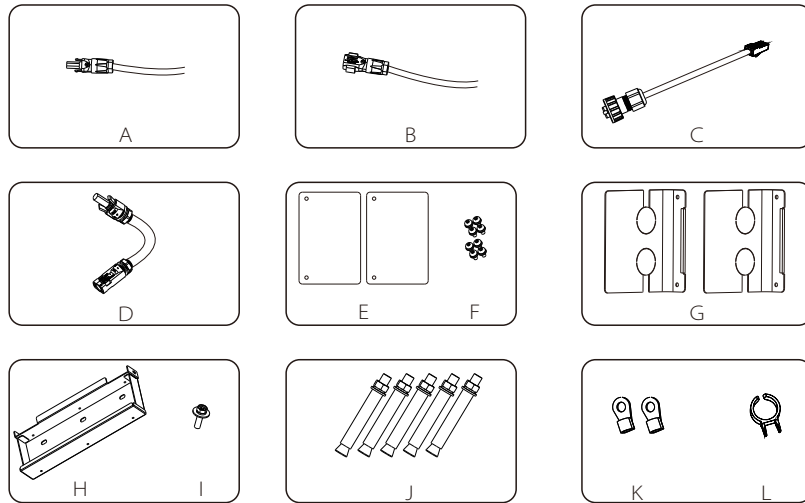
According to regional regulations, several people may be required for moving equipment.

WARNING!

Please strictly follow the installation steps. SolaX will not answer for any hurting or loss arising by incorrectly assembling and operation.

4.4.3 Accessories

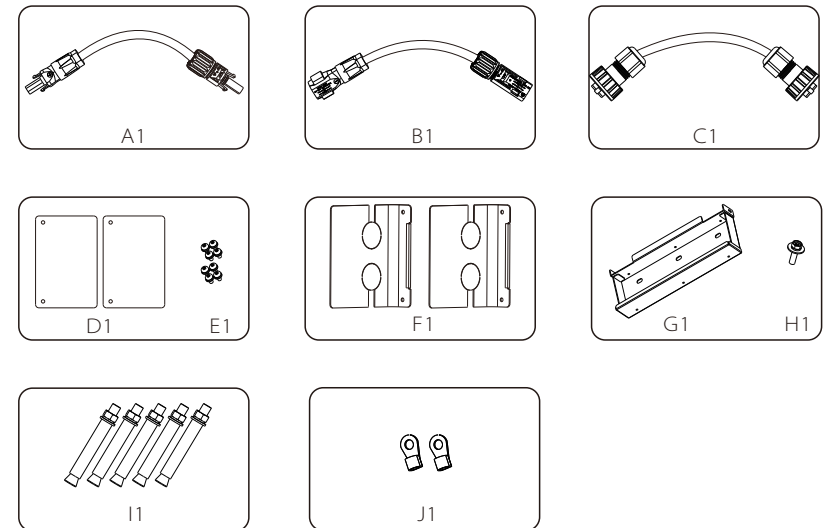
T-BAT H 5.8:



The table below lists the number of each component.

| Object | Description | Quantity |
|--------|--|----------|
| A | Power line between Inverter and T-BAT H 5.8 (+) (2m) | 1 |
| B | Power line between Inverter and T-BAT H 5.8 (-) (2m) | 1 |
| C | CAN communication cable (2m) | 1 |
| D | Series-connected plug | 1 |
| E | Cover plate1 | 2 |
| F | M4 screw | 8 |
| G | Cover plate2 | 2 |
| H | Wall bracket | 1 |
| I | M5 screw | 1 |
| J | Expansion bolt | 5 |
| K | Ring terminal (for grounding) | 2 |
| L | Power cable disassembling tool | 1 |

HV11550:



The table below lists the number of each component.

| Object | Description | Quantity |
|--------|--|----------|
| A1 | Power cable between battery packs (650mm) | 1 |
| B1 | Power cable' between battery packs (650mm) | 1 |
| C1 | RS485 communication cable (650mm) | 1 |
| D1 | Cover plate1 | 2 |
| E1 | M4 screw | 8 |
| F1 | Cover plate2 | 2 |
| G1 | Wall bracket | 1 |
| H1 | M5 screw | 1 |
| I1 | Expansion bolt | 5 |
| J1 | Ring terminal (for grounding) | 2 |

4.4.4 Battery Installation Steps

It is recommended that the space between battery packs is more than 300mm.

Steps (for T-BAT H 5.8 or HV11550):

Make sure the wall is strong enough to withstand the weight of battery packs.

Step 1: fix the wall bracket (H or G1) on the wall

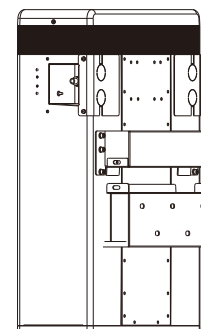
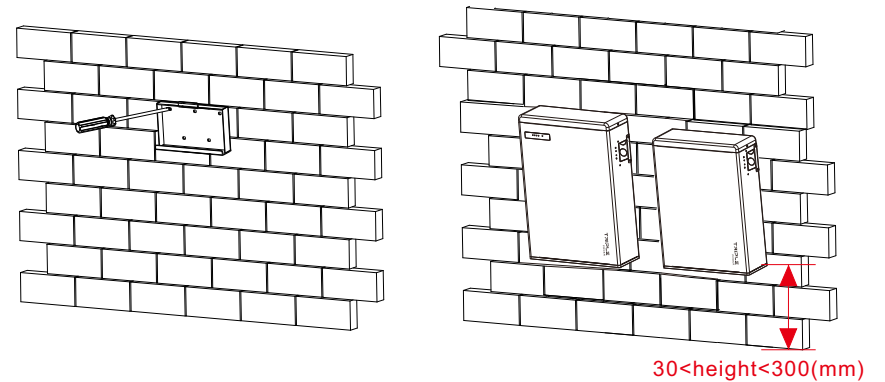
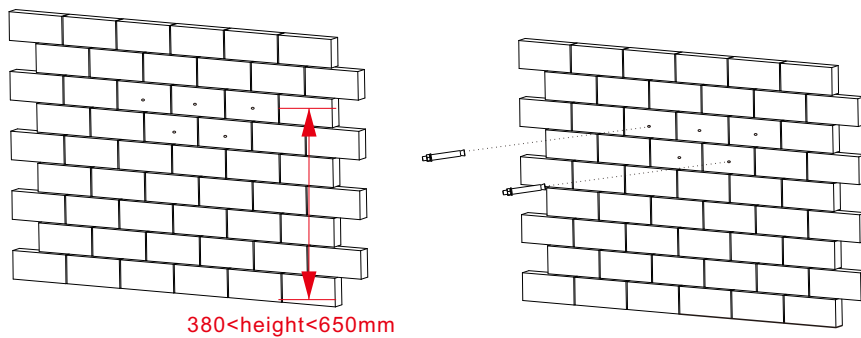
- Use the wall bracket as a template to mark the position of the 5 holes
- Drill holes with $\phi 10$ drill, make sure the holes are deep enough (at least 50mm) for installing and tightening the expansion bolts (J or I1)
- Install the expansion bolts in the wall, and screw the bracket by using the wrench.

Step 2: Match the battery with the wall bracket

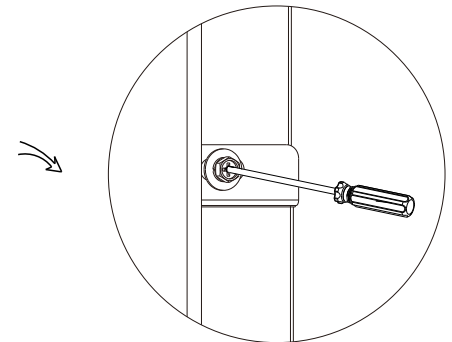
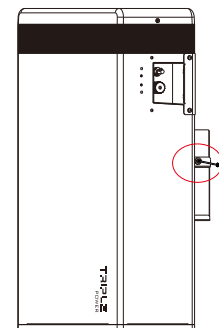
- Transport the battery to the wall bracket
- Hang the battery over the wall bracket, move the battery close to it, and match it on the wall bracket

Step3: Lock the joint between hanging board and wall bracket with M5 combinationscrew (I or H1).

Note: Keep the distance from installation point to the floor less than 650mm.



Side view of hanging the battery to the wall bracket.

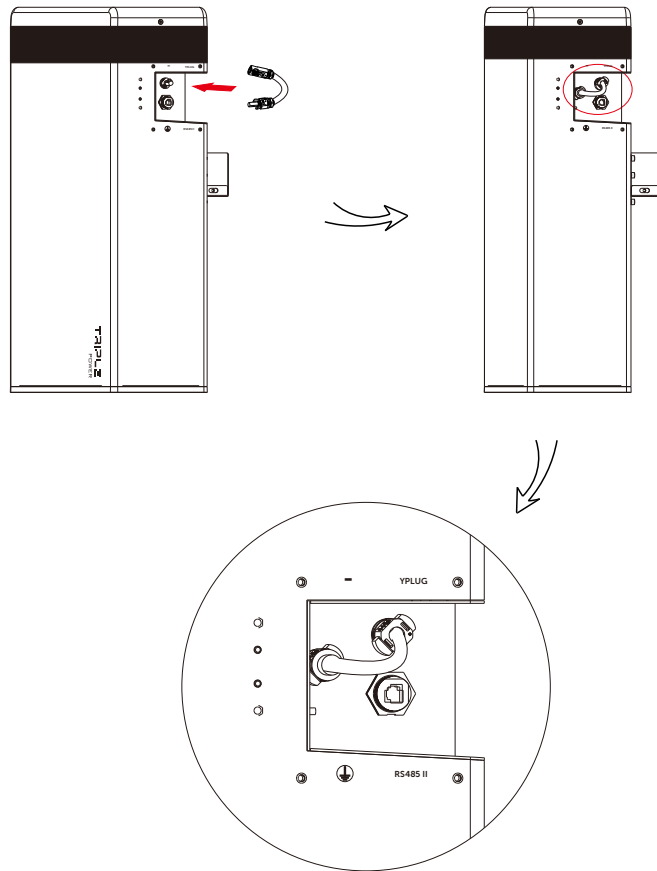


4.5 Cable Connection

4.5.1 Connecting Power Cables

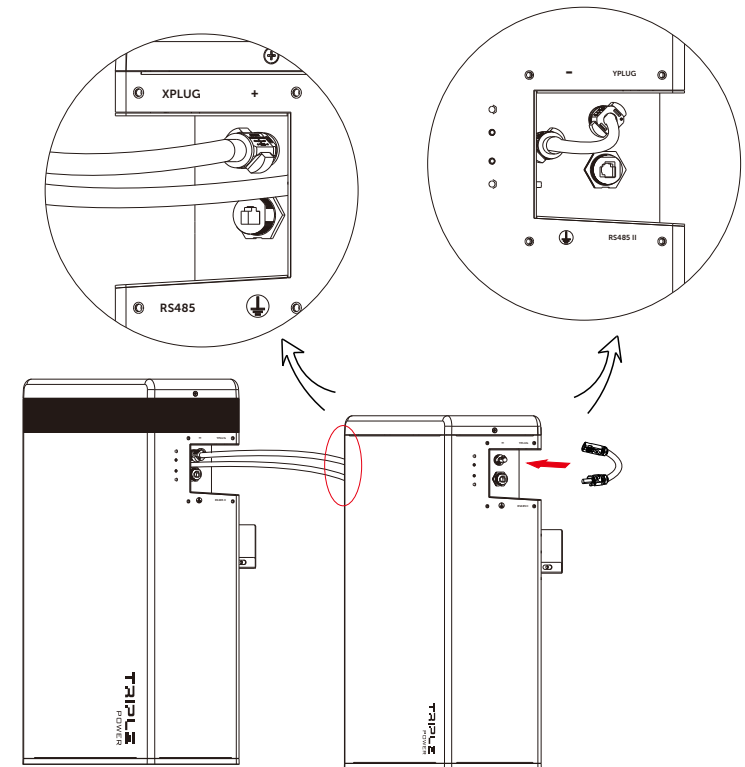
For T-BAT H 5.8:

1. The only step of connecting power cable for T-BAT H 5.8 is connecting the series-connected plug to “-” and “YPLUG” on the right side. The series-connected plug is used to make a complete circuit.



For T-BAT H 5.8 + 1~3 battery packs:

1. Connect “-” (V for T-BAT H 5.8 or VI’ for HV1 1550) on the right side to “+” (II’) on the left side of the next battery pack.
2. Connect “YPLUG” (VI for T-BAT H 5.8 or VII’ for HV1 1550) on the right side to “XPLUG” (I ’) on the left side of the next battery pack.
3. The rest battery packs are connected in the same way.
4. Insert the series-connected plug at “-” and “YPLUG” on the right side of last battery pack to make a complete circuit.



4.5.2 Connecting Power Lines

This step is going to connect power lines between Inverter and T-BAT system.

The default length of power lines are 2 meters, so customers can appropriately cut the cable according to the actual installation environment. As a result, each power line has one terminal block when leaving the factory, and customers need to connect the other end of terminal block by themselves.

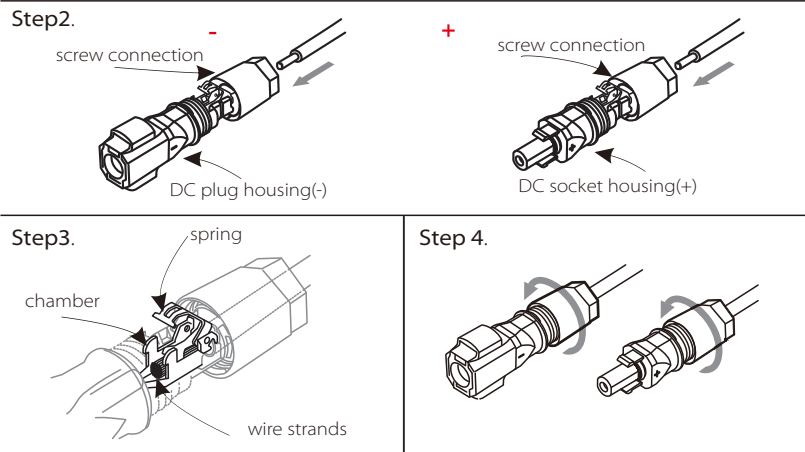
➤ Cable Connection Steps:

Step1. Strip the cable to 15mm.

Step2. Insert the stripped cable up to the stop (negative cable for DC plug(-) and positive cable for DC socket(+)) are live). Hold the housing on the screw connection.

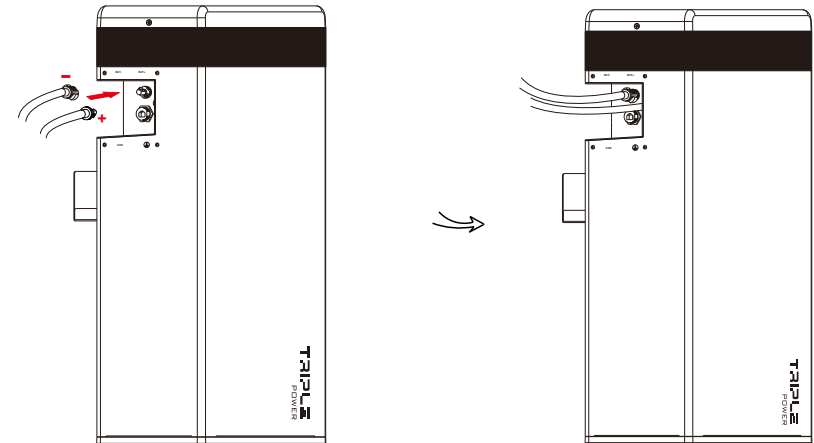
Step3. Press down spring until it clicks audibly into place (it must be possible to see the fine wire strands in the chamber)

Step4. Tighten the screw connection(tighten torque:2.0±0.2Nm)

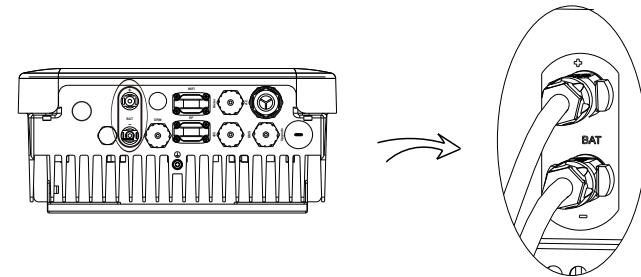


➤ Connecting Charging Cables between Inverter and T-BAT System:

1. Connect the the positive cable (+) (A) and negative cable (-) (B) to the corresponding port as shown in the following figure.



2. Keep the Inverter off. Connect the other end of power lines (+,-) to the correct port on the Inverter.

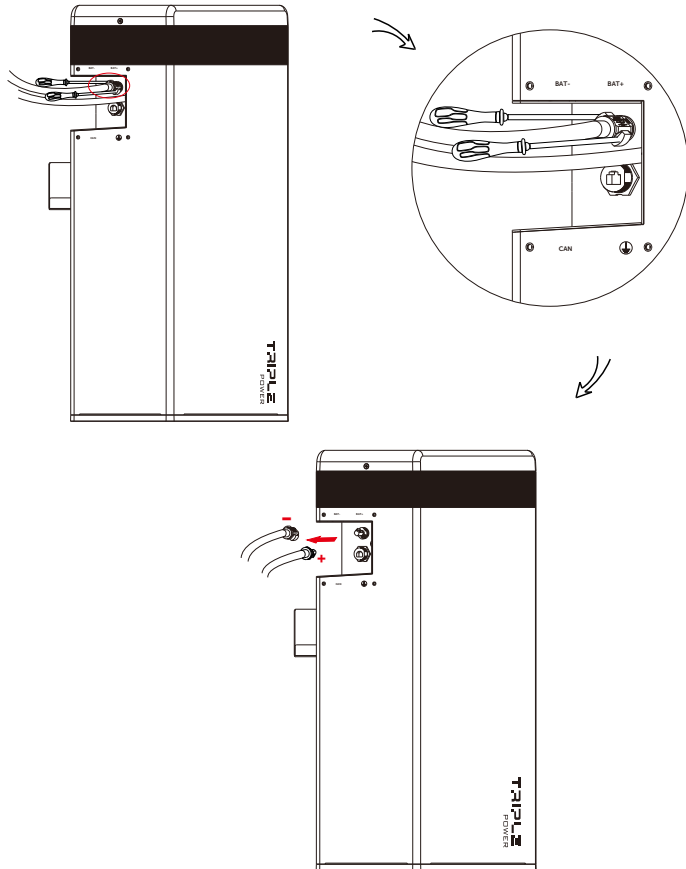


👉 NOTE!

1. When connecting the cable to Inverter, fit the two connectors together until the connection audibly locks into place.
2. Check to make sure the connection is securely locked.
3. Don't shake both ends of the cable at the joint once the connection is locked.

➤ **Disassembling Power Line (on BAT+, BAT-, "+", XPLUG port)**

Disassemble the power line by plugging the slot type screwdriver to the terminal groove of charging cable. Please see the illustration as shown below:

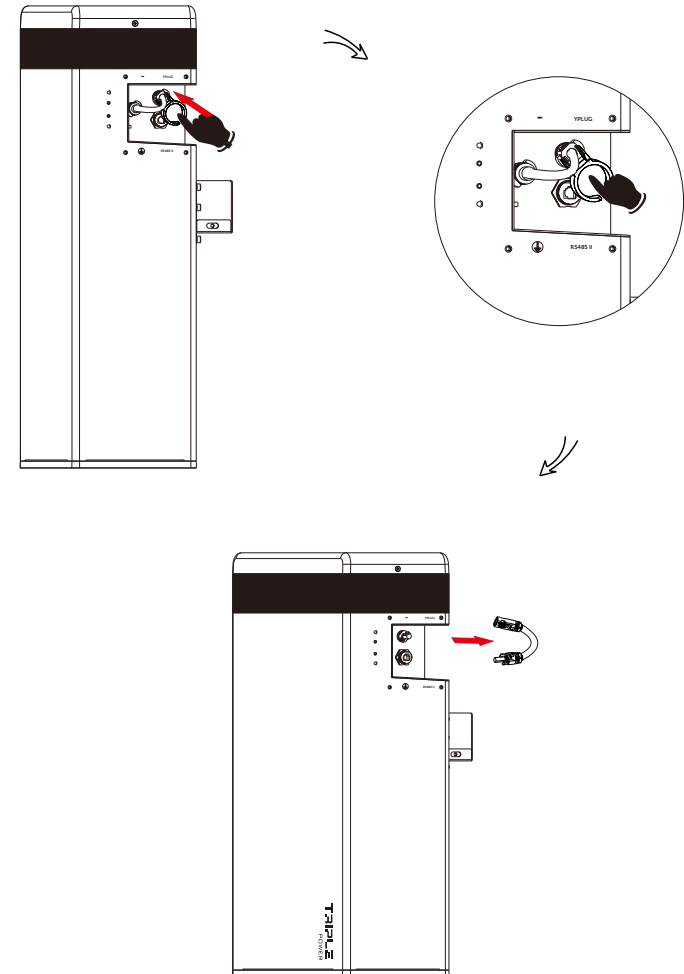


⚠ CAUTION!

DO NOT disassemble power cables when the T-BAT system is not turned off, otherwise there will be an arc discharge that could cause serious injury!

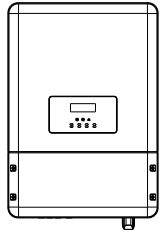
➤ **Disassembling Power Cable (on "-", YPLUG port)**

Disassemble the power line by plugging the Power cable disassembling tool(L) to the terminal groove of charging cable. Please see the illustration as shown below:

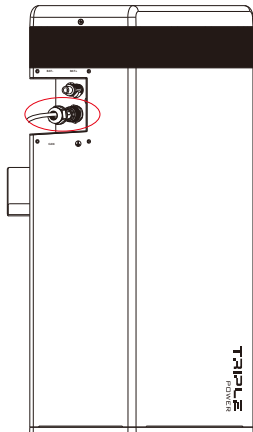


4.5.3 Connecting CAN Communication Cable

It is required for the BMS to communicate with the inverter for proper operation.

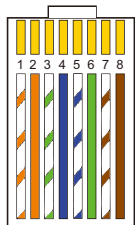
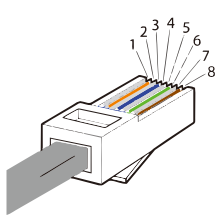


1. Insert one end of the CAN communication cable (C) which has no cable nut directly to the BMS port of the Inverter.



2. Connect the CAN communication cable to the CAN connector (II) which is marked in red. Insert the other end of the CAN communication cable to the CAN connector. Assemble the cable gland and screw the cable nut.

The wire order of the communication cable is as follows:



- 1) White with an orange stripe
- 2) Orange
- 3) White with a green stripe
- 4) Blue
- 5) White with a blue stripe
- 6) Green
- 7) White with a brown stripe
- 8) Brown

| Sequence | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|------------|---|-----|---|-------|-------|---|----|----|
| CAN | / | GND | / | CAN_H | CAN_L | / | A1 | B1 |

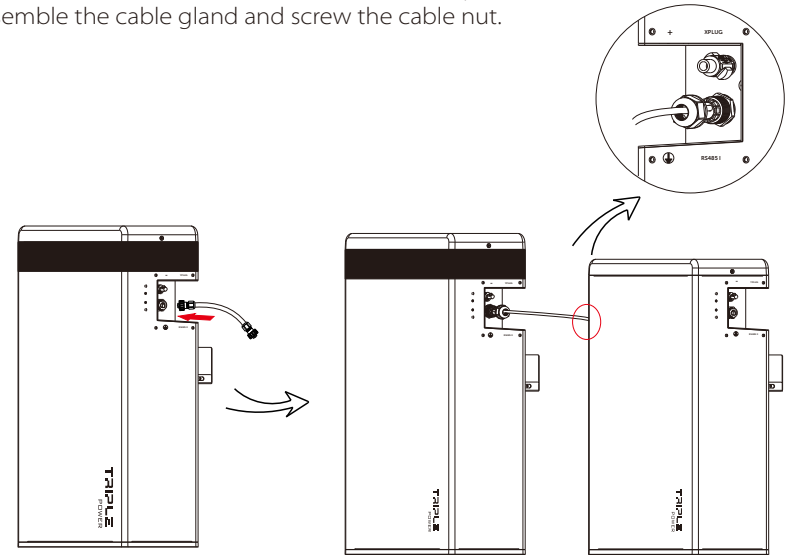
4.5.4 Connecting RS485 Communication Cable

For T-BAT H 5.8:

There's no need to use RS485 communication cable.

For T-BAT H 5.8 + 1~3 battery packs:

Connect RS485 II (VII for T-BAT H 5.8 or VIII for HV11550) of upper battery on the right side to RS485 I (III) of the follow-up battery pack which is on the left. Assemble the cable gland and screw the cable nut.

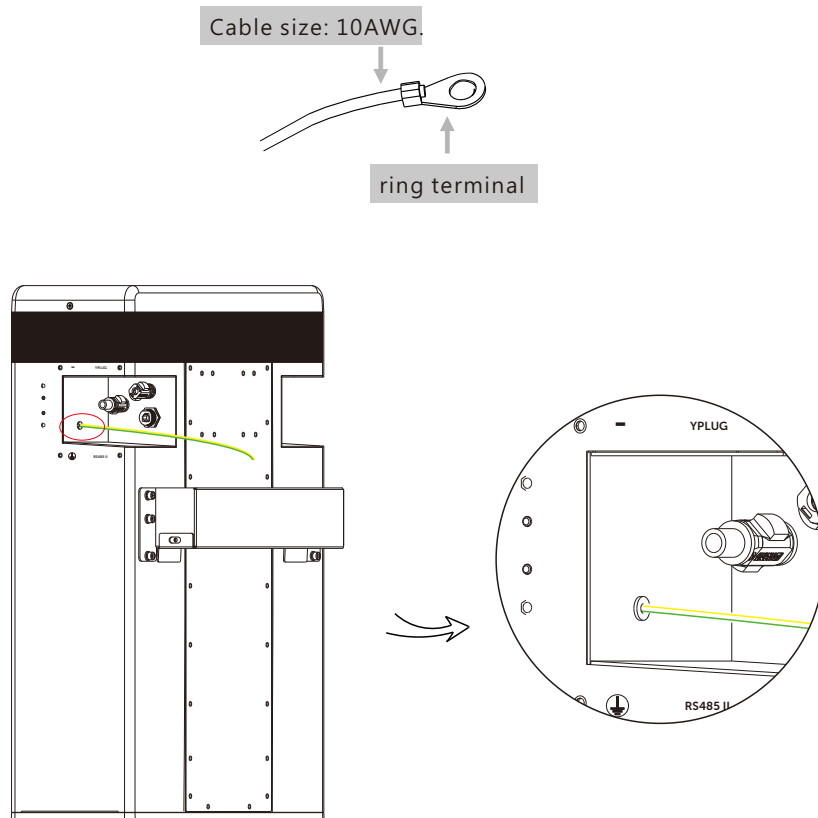


The wire order of the communication cable is as follows:

| Sequence | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------|---------|---------|----|----|----|----|-----------|---------|
| RS485I | VCC_485 | GND_485 | B2 | N- | P+ | A2 | VCC_485_2 | GND_485 |
| RS485II | VCC_485 | GND_485 | B2 | N- | P+ | A2 | VCC_485_2 | GND_485 |

4.5.5 Connecting Ground Wire

The terminal point for GND connection is on the side of grooves as shown below:



CAUTION!

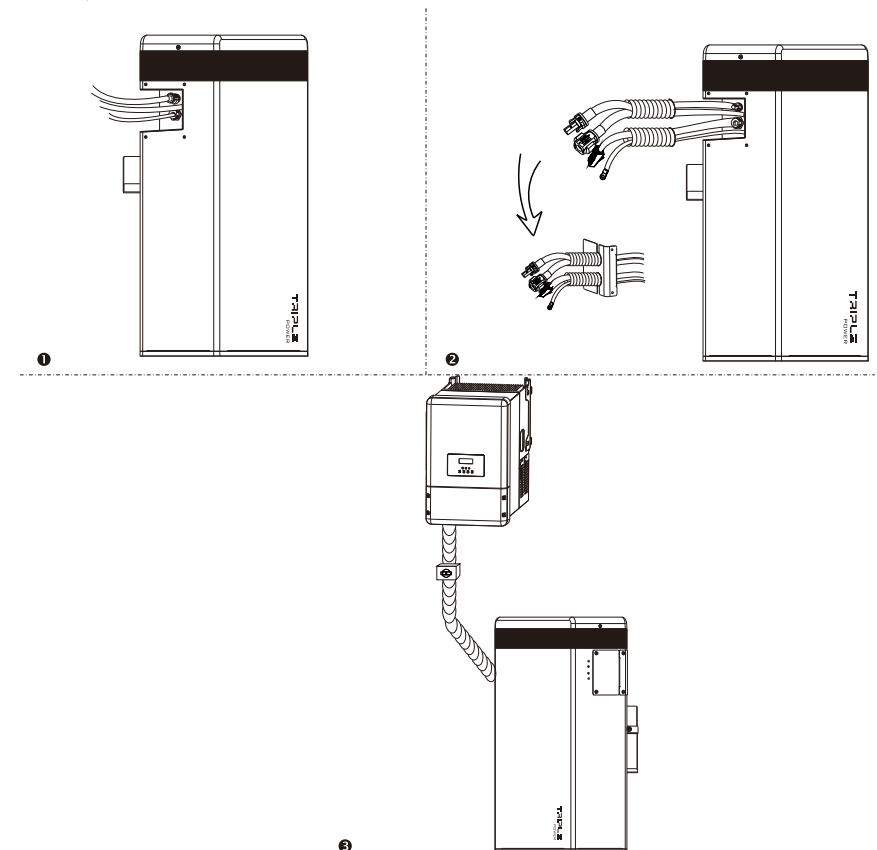
GND is mandatory!

4.5.6 Overall Installation

It is recommended to protect the cables by using corrugated pipe.

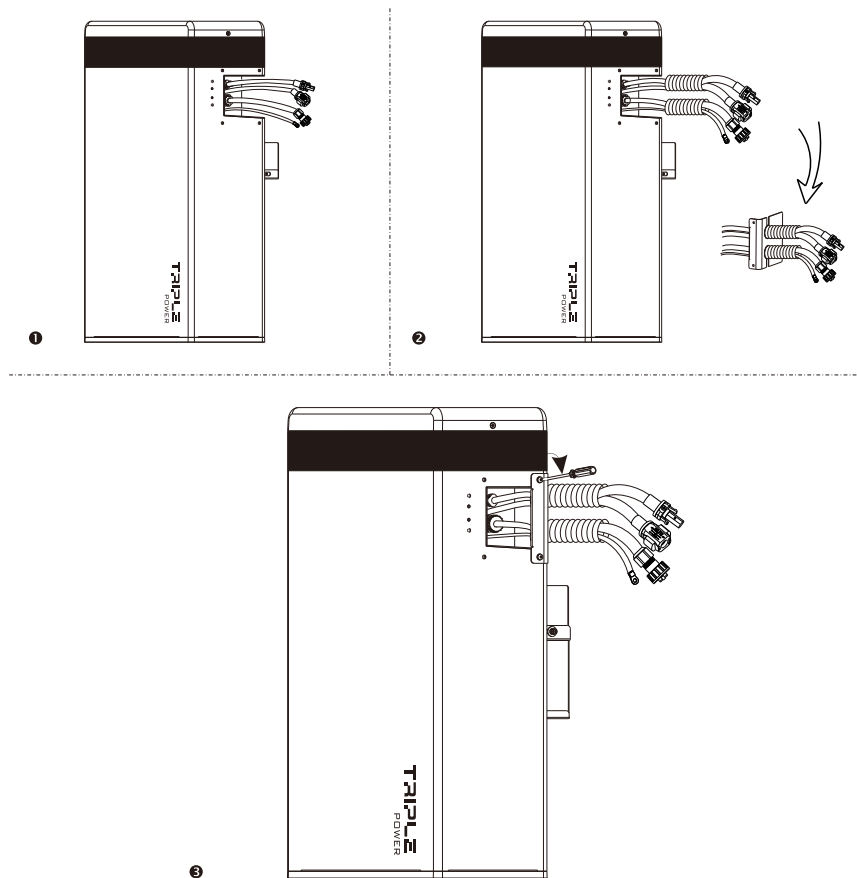
For T-BAT H 5.8:

1. Connect all the cables on the left side of T-BAT H 5.8.
2. Get the cables through the corrugated pipe.
3. DO remember to insert the series-connected plug at "-" and "YPLUG" on the right side of T-BAT H 5.8 to make a complete circuit.
4. Set the cables into the groove of metal plates and screw them back to the battery pack on both sides.

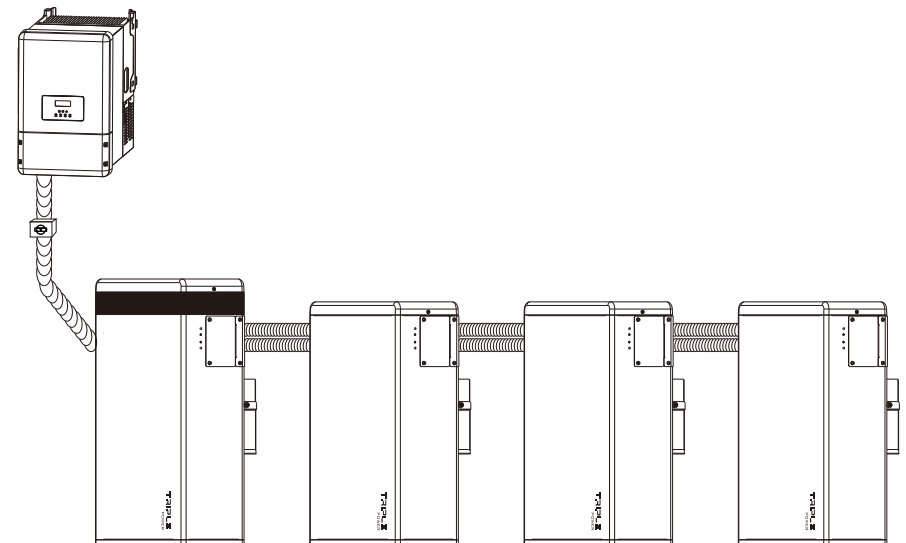


For T-BAT H 5.8 + 1~3 battery packs:

1. Connect the cables at one end of the T-BAT H 5.8/HV11550.
2. Get the cables through the corrugated pipe.
3. Set the cables into the groove of metal plates and screw them back to the battery pack on both sides.
4. DO remember to insert the series-connected plug at “-” and “YPLUG” on the right side of last battery pack to make a complete circuit.

**4.6 Overview of Installation**

The following diagram is a complete T-BAT system installation with T-BAT H 5.8 + three battery packs.

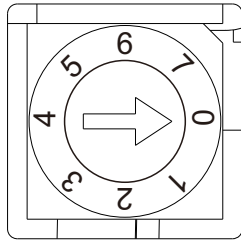
**CAUTION!**

One T-BAT system is allowed to install one T-BAT H 5.8 plus at most three battery packs. Connecting more than three battery packs will blow the fuse, and the battery pack will be damaged. Please make sure the number of battery packs meets the requirement.

5 Commissioning

5.1 Configuring Battery System

The DIP switch is used to configure the number of battery packs which are communicating to Inverter. The detailed configuration information is shown as follows:



Configuration activated by inverters

- 0- Matching T-BAT H 5.8 (default)
- 1- Matching T-BAT H 5.8 + 1*HV11550
- 2- Matching T-BAT H 5.8 + 2*HV11550
- 3- Matching T-BAT H 5.8 + 3*HV11550

➤ Black-start configuration

The black-start function is only used in the off-grid environment and there is no other power supply.

Note: if the battery is started in black-start mode, although there is no BMS communication, the port still has high voltage and there is a risk of electric shock!

After the black-start mode is started, if the BMS communication has still not been built within 3 minutes, the black start fails.

- 4- Matching T-BAT H 5.8
- 5- Matching T-BAT H 5.8 + 1*HV11550
- 6- Matching T-BAT H 5.8 + 2*HV11550
- 7- Matching T-BAT H 5.8 + 3*HV11550

5.2 Commissioning

👉 NOTE!

When powering on the BMS, the system will start self-testing. If the buzzer bips, it means DIP configuration fault or communication failure occurs. If the buzzer bips, please check if the number of battery packs is corresponding to the DIP configuration, and also check if the RS485 communication cables are correctly connected. After these two situations are checked OK, press the POWER button to power on, and press the POWER button again 10s later. In addition: The buzzer will only alarm on the corresponding fault during the power-on self-test. After the self-test is completed, it won't bip again even if the same fault occurs.

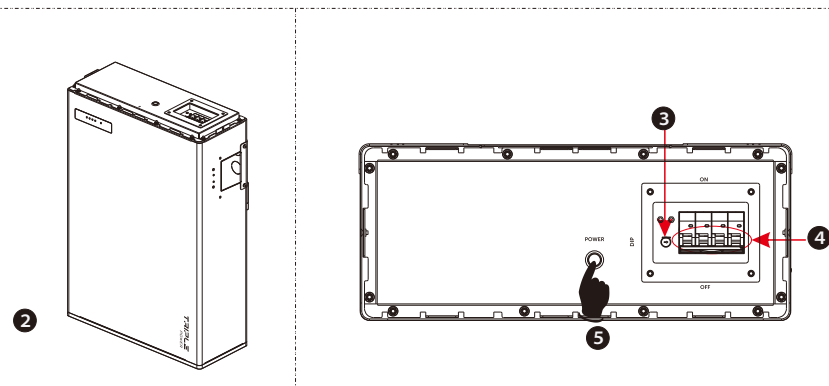
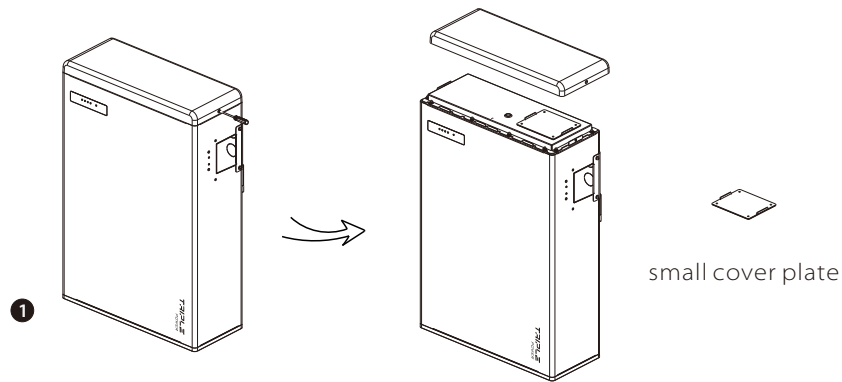
👉 NOTE!

Frequently pressing the POWER button may cause the system error. Please make sure at least 10 seconds is needed when you are going to press the POWER button from the last pressing operation.

Commissioning Steps

If all the battery packs are installed, follow these steps to put it in operation.

1. Remove the upper cover board of T-BAT H 5.8;
2. Remove the small cover plate;
3. Rotate the DIP to corresponding number with small tool according to the number of battery pack(s) that has(have) been installed;
4. Move the circuit breaker to the ON position;
5. Press the POWER button to turn on the T-BAT system;
6. Put the small cover plate back;
7. Reinstall the upper cover board to T-BAT H 5.8;
8. Power on the Inverter.



5.3 Status Indicators

The LED indicators on the front panel of the battery pack are showing the operating status.

5.3.1 BMS

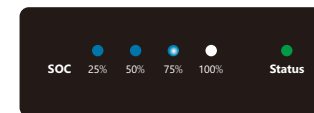


The following table shows the status of BMS.

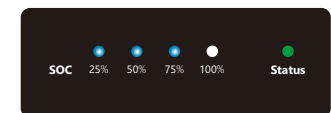
| No. | Status of BMS | Mode |
|-----|--|-----------------------------|
| 1 | Light off | Power off |
| 2 | The Green LED is light on for 1s, and light off for 4s | Inverter sends Idle command |
| 3 | The Orange LED is light on for 1s, and light off for 4s | BMS Protection |
| 4 | The Red LED keeps light on for 10min, then flickers with light on for 1s, and light off for 4s | Fault |
| 5 | The Green LED is light on for 0.3s, and light off for 0.3s | Upgrade for BMS |
| 6 | The Green LED keeps light on | Active |

The capacity indicators show the SOC:

- When the battery pack is neither charging nor discharging, the indicator lights off.
- When the battery pack is charging, part of the Blue LED is flashing with the frequency of light on for 0.5s, light off for 0.5s, and part of the Blue LED keeps light on. Take SOC 60% for instance, in charging state:
 1. The first two Blue LED indicators keeps on
 2. The third Blue LED indicator flashes once every 1s
- When the battery pack is discharging, the Blue LED is flashing with the frequency of light on for 1s, and light off for 4s. Take SOC 60% for instance, in discharging state:
 1. The first three blue LED indicators flash once every 5s



Charging



Discharging

5.3.2 Battery Pack



S1 and S2 represent independent status indicators. The status of S1 and S2 have the same meaning for battery pack in the following table.

Note: only when both S1 and S2 are flashing once every 5s in Green LED, it means the battery system is active.

| No. | Status of battery pack | Mode |
|-----|--|-----------------|
| 1 | Light off | Power off/Sleep |
| 2 | The Green LED is light on for 1s, and light off for 4s | Active |
| 3 | The Orange LED is light on for 1s, and light off for 4s | Protection |
| 4 | The Red LED keeps light on for 10min, then flickers with light on for 1s, and light off for 4s | Fault |
| 5 | The Green LED is light on for 0.3s, and light off for 0.3s | Upgrade for BMS |

NOTE!

After powering off the BMS, the LED lights of S1 and S2 will keep flashing in 20 minutes.

5.4 Shutting Down T-BAT System

To shut down the system, follow the steps described below:

1. Turn off the breaker between Inverter and battery pack;
2. Open the upper cover board;
3. Power off the BMS;
4. Turn off the system by moving the circuit breaker switch to the OFF position;
5. Make sure that every indicator on the T-BAT system is off;
6. Disconnect the cables.

6 Troubleshooting

6.1 Troubleshooting

Check the indicators on the front to determine the state of the T-BAT system. A warning state is triggered when a condition, such as voltage or temperature is beyond the design limitations. The T-BAT system's BMS periodically reports its operating state to the inverter.

When the T-BAT system falls outside prescribed limits, it enters a warning state. When a warning is reported, the inverter immediately stops operation.

Use the monitoring software on the inverter to identify what caused the warning. The possible warning messages are as follows:

| Warning Messages | Description | Troubleshooting |
|------------------|---|---|
| BMS_External_Err | The communication between BMS and Inverter is interrupted | Check if the communication cable between BMS and Inverter is correctly and well connected. |
| BMS_Internal_Err | 1. DIP switch at the wrong position; 2. The communication between battery packs is interrupted | 1. Move the DIP switch to the correct position; 2. Check if the communication cable between battery packs is correctly and well connected. |
| BMS_OverVoltage | Battery over voltage | Please contact SolaX after-sales service or your distributor directly. |
| BMS_LowerVoltage | Battery under voltage | Please contact SolaX after-sales service or your distributor directly. |
| BMS_ChargeOCP | Battery charge over current protection | Please contact SolaX after-sales service or your distributor directly. |
| BMS_DischargeOCP | Battery discharge over current protection | Please contact SolaX after-sales service or your distributor directly. |

| Warning Messages | Description | Troubleshooting |
|----------------------|---------------------------------------|---|
| BMS_TemHigh | Battery over temperature | Wait till the temperature of cells go back to the normal state. |
| BMS_TemLow | Battery under temperature | Wait till the temperature of cells go back to the normal state. |
| BMS_CellImblance | The capacities of cells are different | Please contact SolaX after-sales service or your distributor directly. |
| BMS_Hardware_Protect | Battery hardware under protection | Please contact SolaX after-sales service or your distributor directly. |
| BMS_Insulation_Fault | Battery insulation fault | Please contact SolaX after-sales service or your distributor directly. |
| BMS_VoltSensor_Fault | Battery voltage sensor fault | Please contact SolaX after-sales service or your distributor directly. |
| BMS_TempSensor_Fault | Battery temperature sensor fault | Please contact SolaX after-sales service or your distributor directly. |
| BMS_CurrSensor_Fault | Battery current sensor fault | Please contact SolaX after-sales service or your distributor directly. |
| BMS_Relay_Fault | Battery relay fault | 1. Make sure the power cable is correctly and well connected to the power connector (XPLUG) of the BMS; 2. If the first step still does not work, please contact SolaX after-sales service or your distributor directly. |
| BMS_SelfChk_Fault | BMS selfcheck fault | Please contact SolaX after-sales service or your distributor directly. |

| Warning Messages | Description | Troubleshooting |
|------------------------------------|--|--|
| BMS_CellTempDiff_Fault | The temperature between cells are different | Stop charging or discharging for a while. |
| BMS_CapMismatch_Fault | The capacity of battery packs are different | Please contact SolaX after-sales service or your distributor directly. |
| BMS_SlaveSwVer_Mismatch_Fault | The software between slavers are different | Please contact SolaX after-sales service or your distributor directly. |
| BMS_SlaveSw&HwMismatch_Fault | The hardware is different | Please contact SolaX after-sales service or your distributor directly. |
| BMS_Manu_Mismatch_Fault | The cell manufacture is different | Please contact SolaX after-sales service or your distributor directly. |
| BMS_MasterSw&SlaveSwMismatch_Fault | The software between Master and Slaver are different | Please contact SolaX after-sales service or your distributor directly. |
| BMS_ChgReqNoAck_Fault | No action for charging request | Check the information from Inverter. |

7 Decommissioning

7.1 Dismantling the Battery

Shutting down T-BAT system

Disconnect the cables between BMS and Inverter

Disconnect the series wiring terminal on the ended battery.

Disconnect the other cables.

7.2 Packing

Please pack the BMS and battery packs with the original packaging.

If it is no longer available, you can also use an equivalent carton that meets the following requirements.

- Suitable for loads more than 70kg
- With handle
- Can be fully closed