EN-QSG Sept.-2025 Version1.4

# High Voltage Battery System

Battery-Box

HVB 5.9, 8.9, 11.8, 14.8, 17.8, 20.7, 23.7, 26.7, 29.6

HVM+ 8.3, 11.0, 13.8, 16.6, 19.3, 22.1

HVS+ 5.1, 7.7, 10.2, 12.8



## Quick Start Guide

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For the latest documents visit: www.bydenergy.com

## *Disclaimer*

### 1. Target Group

Instructions in this document may only be performed by qualified personnel with the following skills:

- Understand how batteries work and operate.
- Understand the working principle and operation method of the inverter.
- Know and comply with locally applicable connection requirements, standards and directives.
- Understand and follow this document and related system documentation, including all safety instructions.
- Training to handle hazards associated with the installation and operation of electrical equipment and batteries.
- Training on installation and commissioning of electrical equipment.
- For personnel engaged in special scenarios such as working at height or operating special equipment, they must be qualified by the local country or region.

### 2. Firefighting measures

**2.1 Extinguishing media**

• DRY POWDER, SAND, CARBON DIOXIDE ($CO_2$)

**2.2 Fire precautions and protective measures**

| | |
|---|---|
| **Flammable properties** | Lithium ion batteries contain flammable liquid electrolyte that may vent, ignite and produce sparks when subjected to high temperature (>150°C), when damaged or abused (e.g.,mechanical damage or electrical overcharge). Burning cells can ignite other batteries in close proximity. |
| **Explosion data** | Extreme mechanical abuse will result in rupture of the batteries. Throw into the fire will result in burning. |
| **Special protective equipment for firefighters** | In the event of a fire, wear full protective clothing and self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode. |
| **NFPA** | Health:0 Flammability:1 Instability:0 |

## Configure the Battery System

Through the APP, you can realize intelligent battery management, including remote data monitoring, firmware upgrade and troubleshooting.

- **Android users:** Search for "BYD Energy" on Google Play or scan Android QR code to download and install.
- **iPhone users:** Search for "BYD Energy" in the App Store or scan iOS QR code to download and install.

Android

iOS

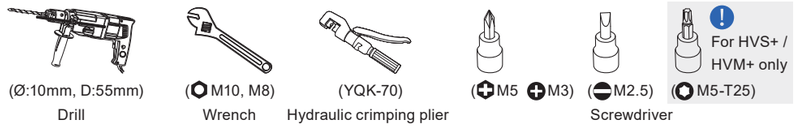
Configuration steps:

Download → Login/Register → Add Device → Bluetooth Connection /Networking → Enjoy

For detailed configuration steps, please refer to the user manual and APP instructions, Website: www.bydenergy.com.

## Requirements for Installation

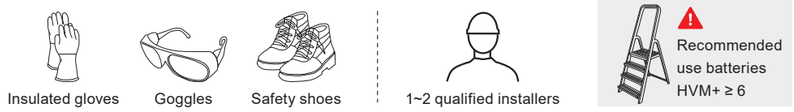
### 1. Tools & Additional Accessories (not included in the scope of delivery)







### 2. Safety Gear & Required Personnel




### 3. Installation Scene & Installation Mode




## Scope of Delivery

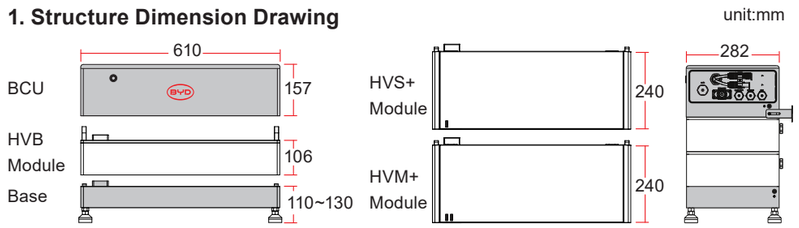



| | | | | |
|---|---|---|---|---|
| **1** | **BCU and Base Package** | 3. Terminal resistor x 1 | 9. Power cable connector x 2 | 15*. Screw M5*16 x 2 |
| | | 4. Screw M4*14 x 2 | 10. Adjustable foot x 4 | 16*. Hanger2 x 2 |
| | | 5. Knob screw x 2 | 11. Hanger1 x 2 | 17*. Rubber plug x 2 |
| | | 6. Communication terminal x 2 | 12. Screw M5*16 x 2 | |
| | 1. BCU x 1 | 7. Expansion screw M8 x 2 | 13. QSG x 1 | * (for HVS+ / HVM+ only) |
| | 2. Base x 1 | 8. Connector special tool x 1 | 14. Smart WiFi/ LAN Module x 1 | |
| **2** | **Battery Module Package** | 18. HVB Module x 1 | 20. HVM+ Module x 1 | 22. Attached document x 2 |
| | | 19. HVS+ Module x 1 | 21*. Screw M5*10 x 2 | |

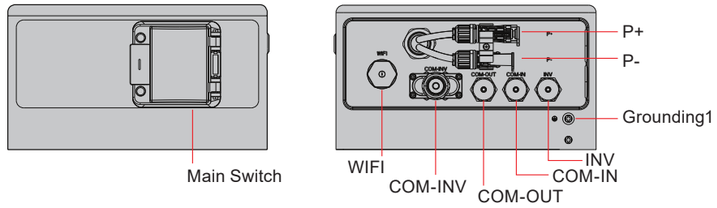
## Battery System Overview

### 1. Structure Dimension Drawing

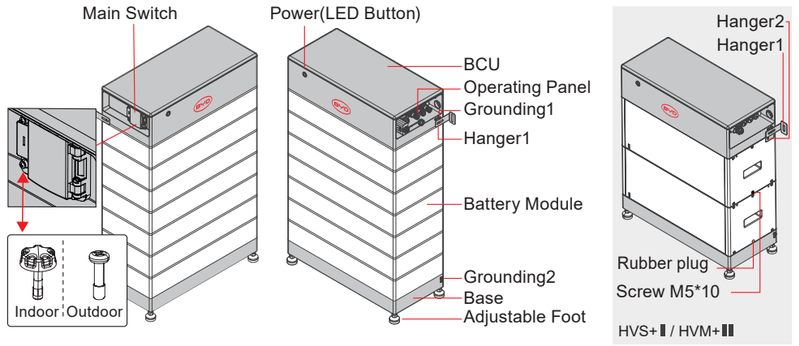
unit:mm



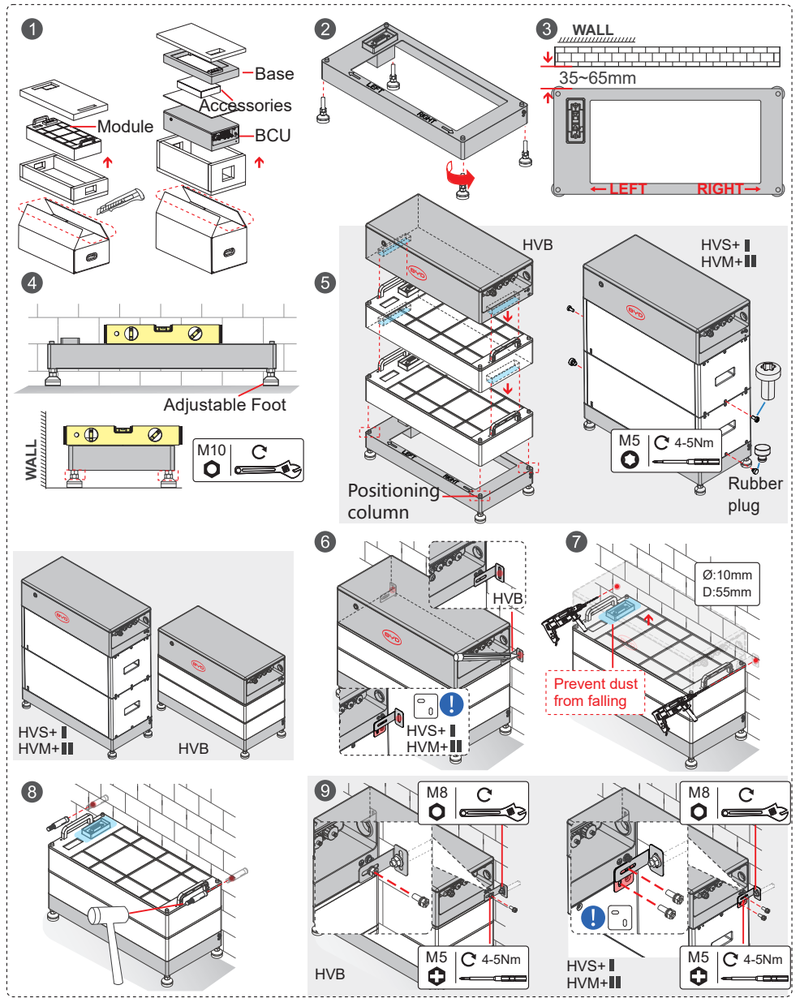

### 2. Functional Area Overview




### 3. Battery System Description

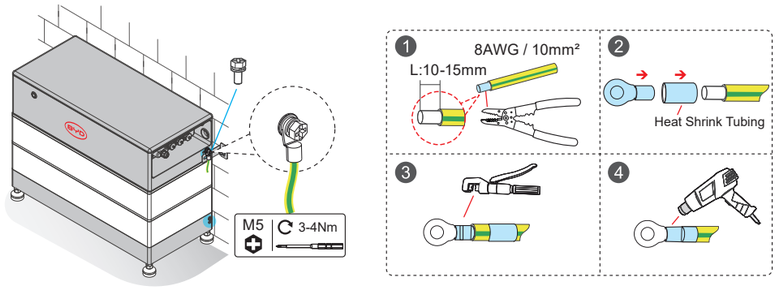



## Floor Installation



# Electrical Connection

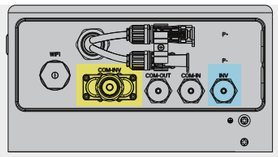
## 1. Connecting the PE



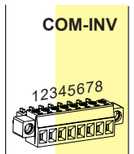




## 2. Connection Diagram




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

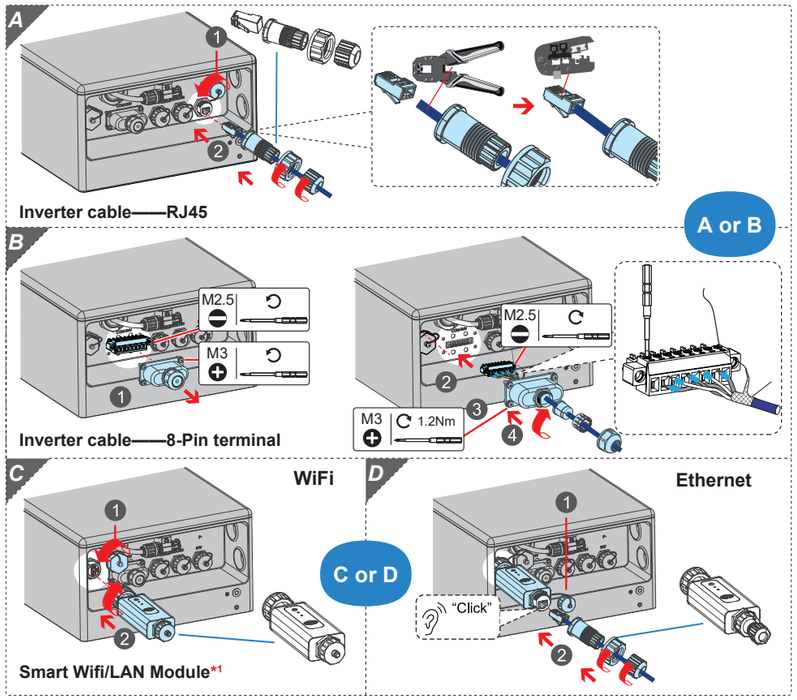



| COM-INV | |
|---|---|
| 1 | RS485A |
| 2 | RS485B |
| 3 | PCS_EN- |
| 4 | PCS_EN+ |
| 5 | NC |
| 6 | IGND |
| 7 | CAN_L |
| 8 | CAN_H |

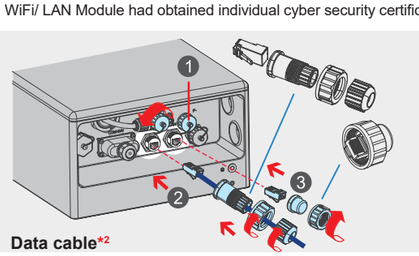



| INV | |
|---|---|
| 1 | RS485A |
| 2 | RS485B |
| 3 | IGND |
| 4 | CAN_H |
| 5 | CAN_L |
| 6 | NC |
| 7 | PCS_EN+ |
| 8 | PCS_EN- |

## 3. Connecting the Inverter cable, Smart Wifi/LAN Module*1 and Data cable*2

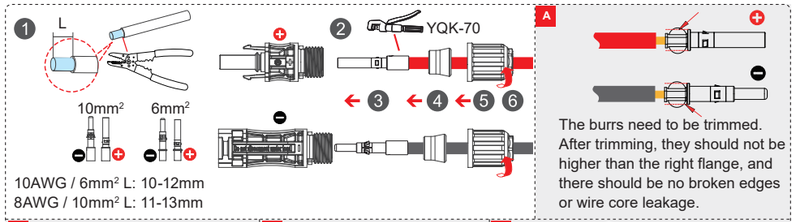



*1 The battery system doesn't have a wireless communication function. Through the USB, the battery system supports the expansion of connection with the Smart WiFi/LAN Module to implement the wireless function, and the Smart WiFi/ LAN Module had obtained individual cyber security certification in accordance with EN 18031 series.

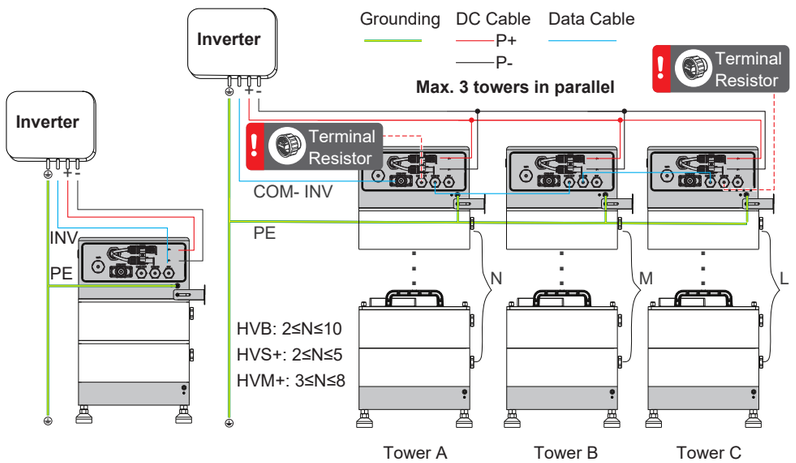



*2 Data Cable & terminal resistor are used for parallel connection.
*2 Connect terminal resistor, plug the terminal resistor into the “OUT” port of the master module and the “IN” port of the last slave module.

## 4. DC Connection

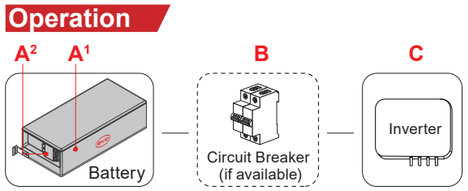



# Systems Connection




| Only one type of battery module can be used in the same tower! | Number of Module: | Product Model: |
|---|---|---|
| | N = M = L √ | A = B = C √ |
| | N ≠ M or N ≠ L or M ≠ L X | A ≠ B or A ≠ C or B ≠ C X |

# Operation




Switch on the Battery:
B ⟶ A² ⟶ C

Switch off the Battery:
C ⟶ A¹ 5s ⟶ B

Black Start Function:
B ⟶ A² ⟶ A¹ 3s

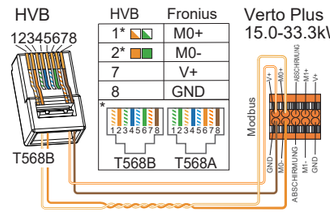
**Max. short circuit current value:** 3.6kA (HVB) / 2.56kA (HVM+) / 2.42kA (HVS+), **Short circuit duration:** < 8ms

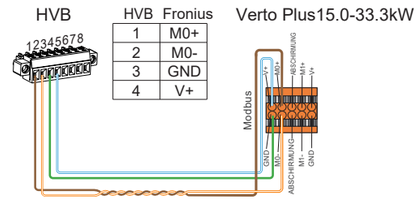
# LED Signals

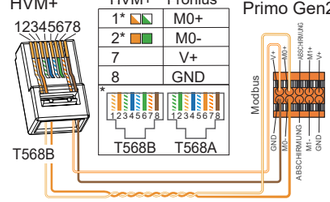
| Indicator | Status | Description |
|---|---|---|
| Flashing white and blue alternatively | White ON/OFF, Blue ON/OFF, 0.5s | The battery system is initiating |
| Flashing white slowly | White ON/OFF, 2s; Blue ON/OFF | The battery system is charging |
| White light flashing | White ON/OFF, 1s; Blue ON/OFF | The battery system is discharging |
| Constant white | White ON/OFF; Blue ON/OFF | Idle (the battery system is neither charging nor discharging). |
| Constant blue | White ON/OFF; Blue ON/OFF | BCU failure |
| Constant blue and white light flashes a certain number of times | White ON/OFF, N, 2.5s; Blue ON/OFF, 0.5s | Counting from top to bottom, flashing N times, represents the Nth battery module failure, N represents 1-10 battery modules |

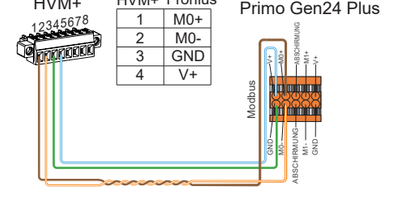
# Connection Options with Inverters

### Connection with Fronius

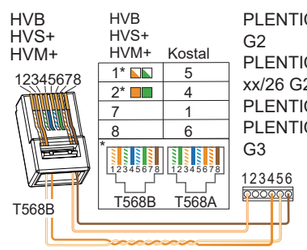


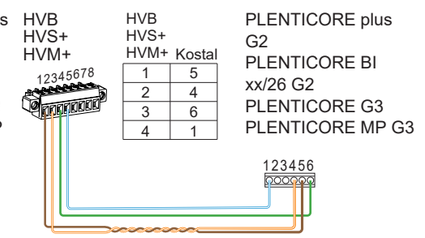




### Connection with Kostal




### Connection with Kaco

