Quick Start of SIMPO HV Pro(EN)

ZYC ENERGY

ZERO YOUR CARBON

Version: V1.0
Released Date: 2025-03-26

1 SAFETY

SIMPO HV Pro is a high voltage DC system. All the transportation, installation, storage, use, maintenance of SIMPO HV Pro should be operated by authorized person only. Please read all safety instructions carefully before any operation and follow them during the whole working process with the system.The safety instructions mentioned in this manual are only supplement to local safety regulations.
The safety instructions listed in this manual do not represent all the precautions that should be followed. Relevant international, regional as well as industry practices should also be considered when operating. ZYC ENERGY does not assume any responsibility for violating safety operation requirements or violating safety standards for the design, production, and use of equipment.

1.1 SAFETY INFORMATION

Danger
Do not install or remove cables with electricity. Any contact between the cable core and conductor may generate electric arcs and sparks and finally lead to fire and injury.

Danger
All the cables and plugs can have a have voltage from connected battery modules, must be careful when connecting the cables and plug in the terminals.

Warning
SIMPO HV Pro is a very high voltage system, any personnel must be operating or installing with protective equipment such as insulated gloves, safety shoes and goggles etc.

Danger
The battery may be damaged or catch fire if it is subjected to mechanical vibration, collision, puncture by hard objects or pressure shocks.

Warning
Unauthorised dismantling of the battery module or PDU may result in battery damage, in which case ZYC ENERGY do not take any respondsibility.

Warning
When system fails, the components can become very hot and can cause serious injury if touched. Do not touch any component of the system without guidance when a malfunction occurs.

2 SYSTEM INTRODUCTION

SIMPO HV Pro is a high voltage energy storage system based on lithium iron phosphate battery. Consist of 11 modules with 8.06kWh energy each and one PDU designed by ZYC ENERGY. SIMPO HV Pro is a energy storage system suitable for various scenarios including like peak shaving, off-grid backup, demand management and so on.
This document introduces the product information, specifications, installation, start up, and shut down of the system.

2.1 SYSTEM OVERVIEW

Figure 2.1

2.2 SYSTEM SPECIFICATIONS

SIMPO HV Pro	Specifications							
Battery Type	LFP(105Ah)							
Module Energy(kWh)	8.06							
Number of Modules	4	5	6	7	8	9	10	11
Nominal Energy(kWh)	32.3	40.3	48.4	56.4	64.512	72.6	80.6	88.7
Electrical Data								
Nominal Voltage(V)	307.2	384	460.8	537.6	614.4	691.2	768	844.8
Operation Voltage(V)	240~350	300~438	360~525	420~613	420~613	540~788	600~876	660~963
Max Constant Current(A)	105(1C)							
Peak Current(A)	150(5s)							
General Data								
Weight(kg)	884kg							

Dimension(W*H*D)	600mm*2092mm*809mm
Protection Class	IP20
Working Temperature	-10°C ~55°C
Altitude	≤ 3000m
Efficiency	≥ 95%
Cooling	Natural Cooling
Communication	CAN/Modbus TCP/Modbus RTU
Application	On Grid/Self Consumption/Off-grid/Back up
Certificates	IEC62619,UN38.3,CE
Warranty	10 Years Performance Warranty

2.3 BATTERY MODULE INTRODUCTION

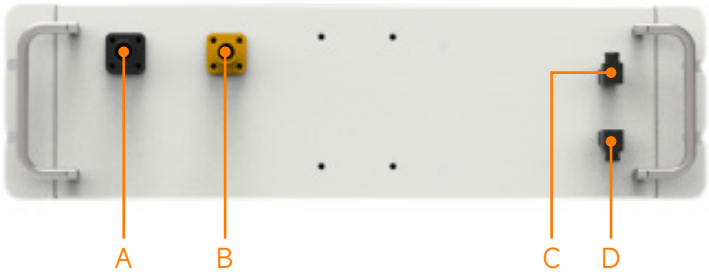


Figure 2.2

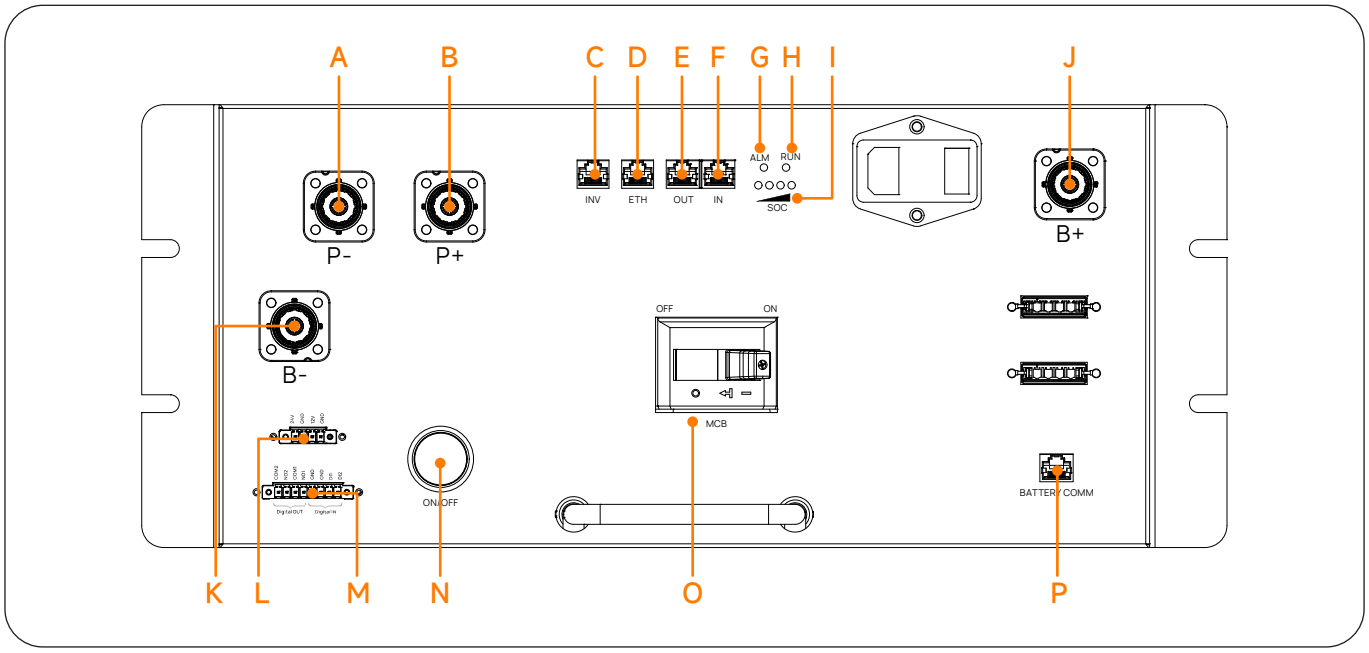
Letter	Lable	Function
A	-	DC-
B	+	DC+
C	COM 1	For communication between different modules and PDU
D	COM 2	For communication between different modules and PDU

SPECIFICATIONS

SIMPO HV Pro Battery Module	Specifications
Nominal Energy	8064Wh

Nominal Voltage	76.8V
Operation Voltage	60~87.6V
Max Constant Current	105A(1C)
Peak Current	150A(5s)
General Data	
Weight	65kg
Dimension(W*H*D)	490mm*135mm*786mm
Working Temperature	-10~55°C
IP Rate	IP20
Efficiency	≥ 95%

2.4 PDU INTRODUCTION



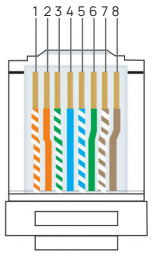
Letter	Lable	Function
A	P-	Power terminal -(to PCS)
B	P+	Power terminal +(to PCS)
C	INV	CAN/RS 485(to PCS)
D	ETH	Modbus TCP/IP(to PCS)
E	OUT	Parallel Out
F	IN	Parallel In

G	ALM	Alarm
H	RUN	Run
I	SOC	State of Charge
J	B+	Power Terminal + (to Battery)
K	B-	Power Terminal - (to Battery)
L	-	Functional interface
M	-	Functional interface
N	ON/OFF	System start up/shut down
O	MCB	Main Circuit Breaker
P	BATTERY COMM	Comm Port (to Battery)

SPECIFICATIONS

SIMPO HV Pro PDU	Specifications
Operation Voltage	200~1000Vdc
Maximum Current	250A
General Data	
Weight	15kg
Dimension(W*H*D)	490mm*200mm*545mm
Working Temperature	-20~65°C
IP Rate	IP20
Altitude	≤ 3000m
Certificates	IEC62619

DEFINITION OF 'INV' PORT PIN



PIN No.	1	2	3	4	5	6	7	8
Definition	11V GND	12V	11V	CAN_H	CAN_L	12V GND	RS485B	RS485A

Change the pin order if necessary.

DEFINITION OF 'IN' &'OUT' &'ETH' PORT PIN

IN/OUT/ETH port all use Cat5e Ethernet cable.

LED INDICATORS

LED	Status	Operational State
ALM		Error occurs
		There is no error existing
RUN		The system is working
		The battery is not working
SOC		75%<SOC ≤100%
		50%<SOC ≤75%
		25%<SOC ≤50%
		0%<SOC ≤25%
	While SOC<5%, the first LED flashes quickly (0.5s ON, then 0.5s OFF) 	1 Hz
	While discharing, the last LED flashes normally (1s ON, then 1s OFF) 	0.5 Hz
	While charging, the last LED flashes slowly (2s ON, then 2s OFF) 	0.25 Hz

3 SCOPE OF DELIVERY

Battery Module Package

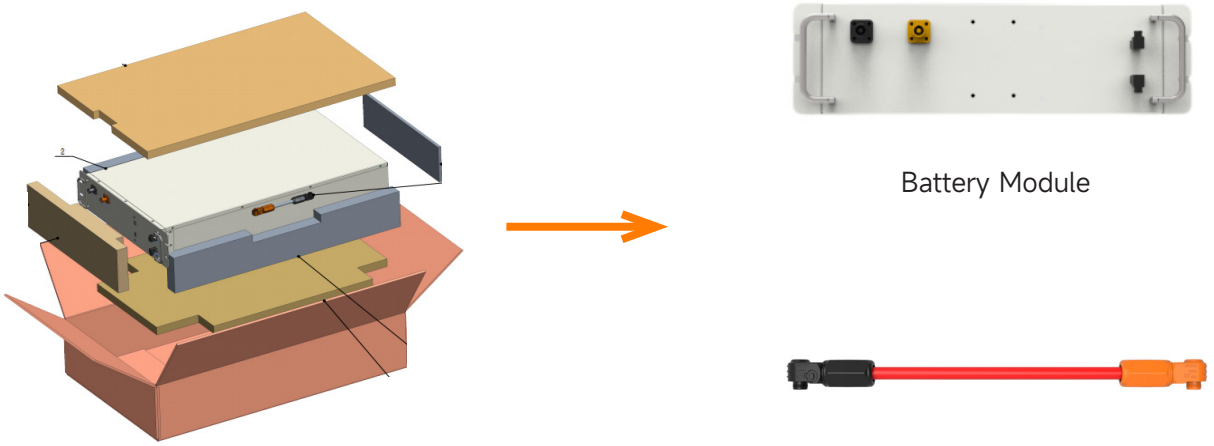


Figure 3.1

PDU Package

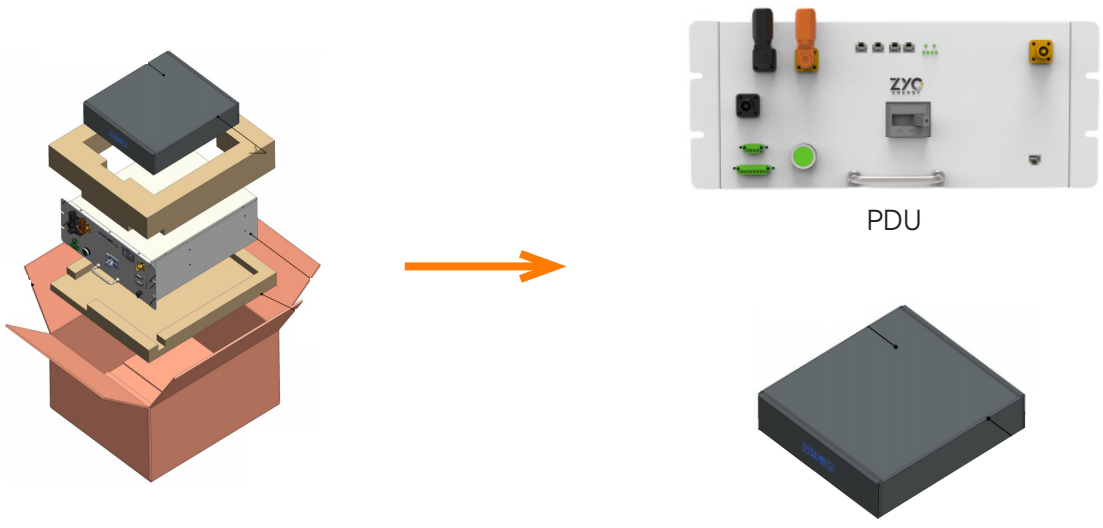


Figure 3.2

Accessory Box

Power Cable B*1

Power Cable C *1

Comm Cable*11

Terminal Resistor(Black)*1

Terminal Resistor(Grey)*1

Screws*55

Figure 3.3

3.1 ACCESSORY SPECIFICATIONS

DC Power Cable A

Power cable for battery serial connection	11 pcs	4AWG

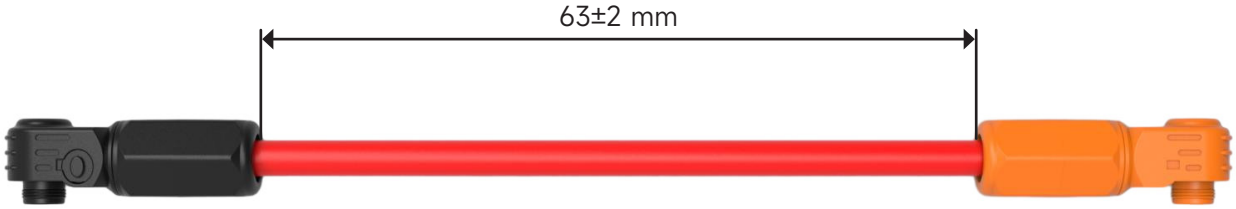


Figure 3.4

DC Power Cable B

Power cable for battery and PDU connection(-)	1 pcs	4AWG

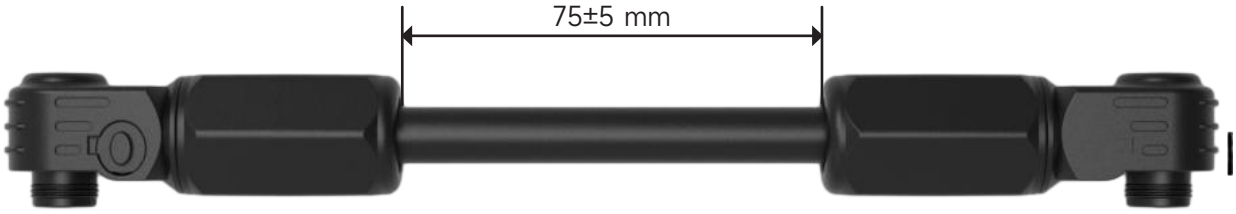


Figure 3.5

DC Power Cable C

Power cable for battery and PDU connection(+)	1 pcs	4AWG

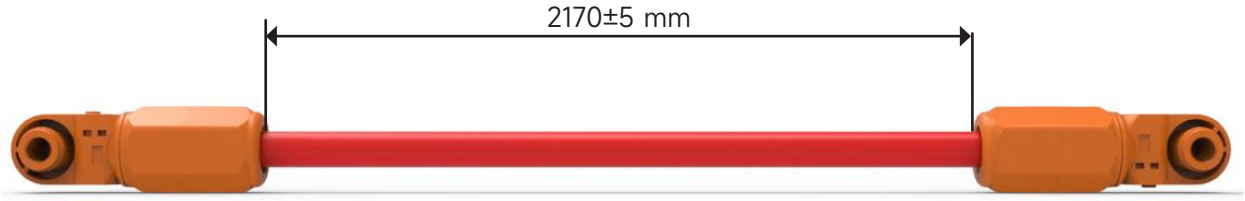


Figure 3.6

Communication Cable

Communication cable between battery modules	11 pcs	-

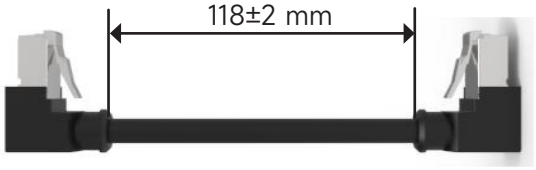


Figure 3.7

Screws

Screws for locking modules and PDU	55 pcs	M6x16

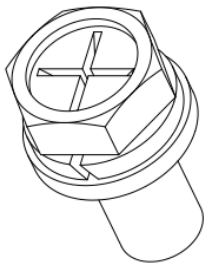


Figure 3.8

4 INSTALLATION

During installation, wear the necessary protective gear and follow the steps in this manual.
Follow the instructoins below before starting the installation:

- Make sure that the ambient temperature is between the certain range of -10° C ~55° C.
- Keep the system away from any heat sources or cold sources that may lead to overtemperature or undertemperature.
- Keep the system away from any flammable,explosive, or corrosive materials.
- Keep the system away from direct sunlight,rain or snow as much as possible.
- Keep the system away from children,pets or any possible animals.
- Do not install the system in a strong interference enviroment.
- Install the system on flat and stable ground.
- Make sure that there is a carbon dioxide fire fighter nearby the installation area.
- Make sure that the installation area won't have water accumulated.
- When transporting, professional personnel with tools are necessary. And avoid the products from falling down and bringing certain harms.

4.1 TOOLS

Torque Wrench

Screw Driver

Electrical Screw Driver

Multimeter

Crimping Tool

Wire Cutter

Safety Shoes

Goggles

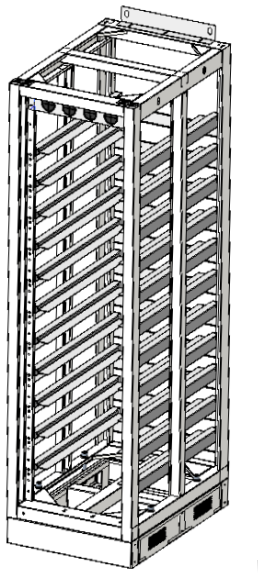
Insulated Gloves

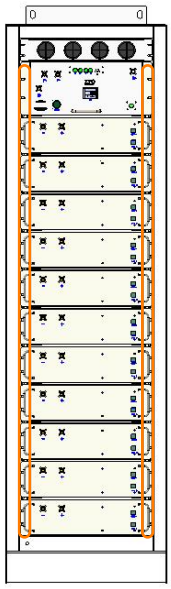
Figure 4.1

4.2 INSTALLATION STEPS

STEP 1

Install all the battery modules and PDU and lock with screws(Torque=8N·m)





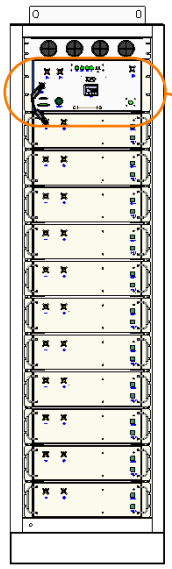
*PDU on top

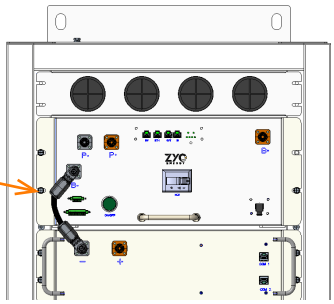
Torque=8N·m

Figure 4.2

STEP 2

Connect **DC Power Cable B** from **'-'** port of battery module on top to **'B-'** of PDU.





Power Cable B

Figure 4.3

STEP 3

Connect **DC Power Cable A** between battery modules and **DC Power Cable C** from bottom battery to **'B+'** of PDU

*When connecting **Power Cable A**, always connect black connector to **'-'** port and orange terminal to **'+'** port.

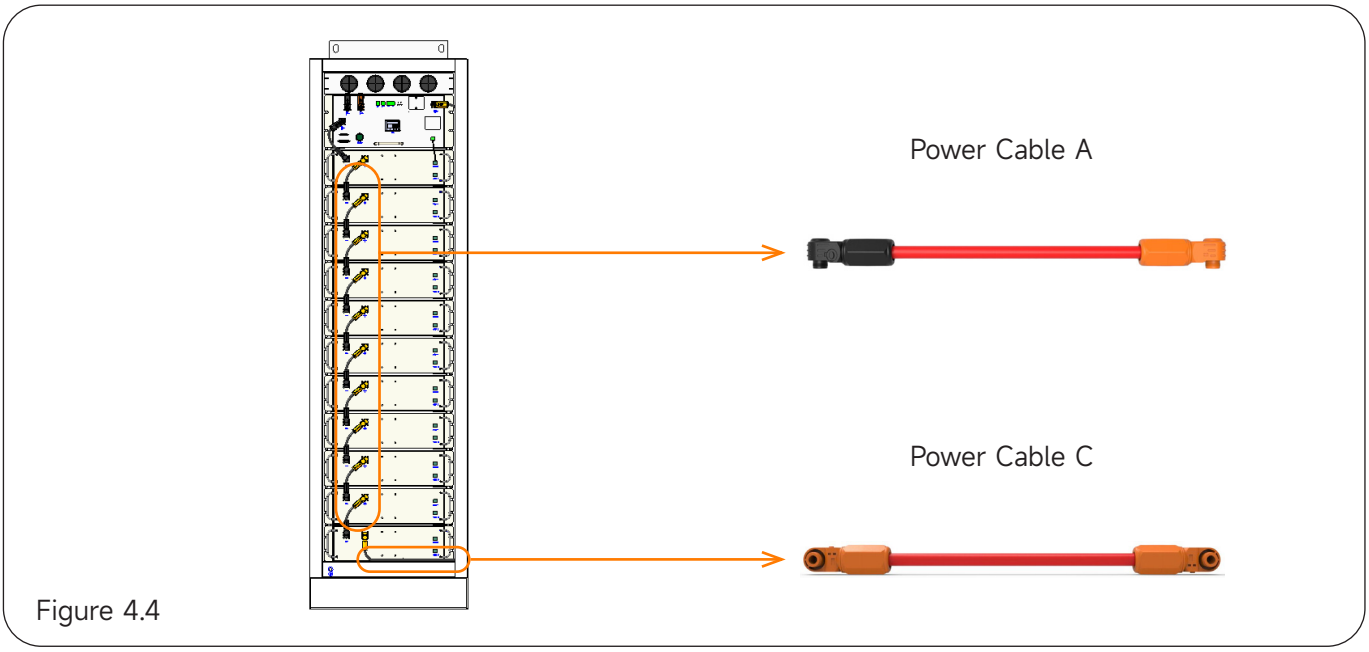


Figure 4.4

STEP 4

Connect communication cable from **'BATTERY COMM'** of PDU to **'COM 1'** of battery on top, then from**'COM 2'** of battery on top to **'COM 1'** of next battery...

*After finish all the connections, insert **Terminal Resistor(Grey)** to **'COM 2'** of bottom battery.

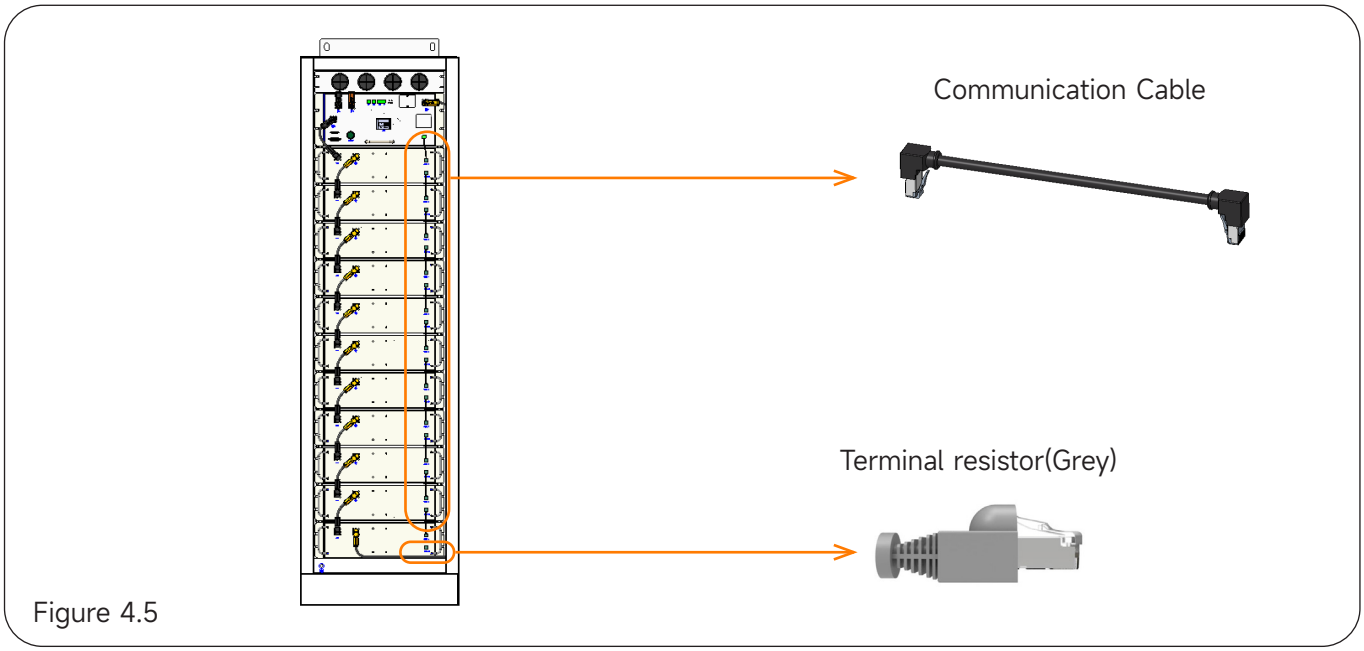


Figure 4.5

STEP 5

Use a **Cat5e Ethernet cable** to connect **'ETH'** port of PDU and EMS. Then connect power cables from **'P-'** and **'P+'** on PDU to inverter.

*Insert **Terminal Resistor(Black)** to **'IN'** port of PDU

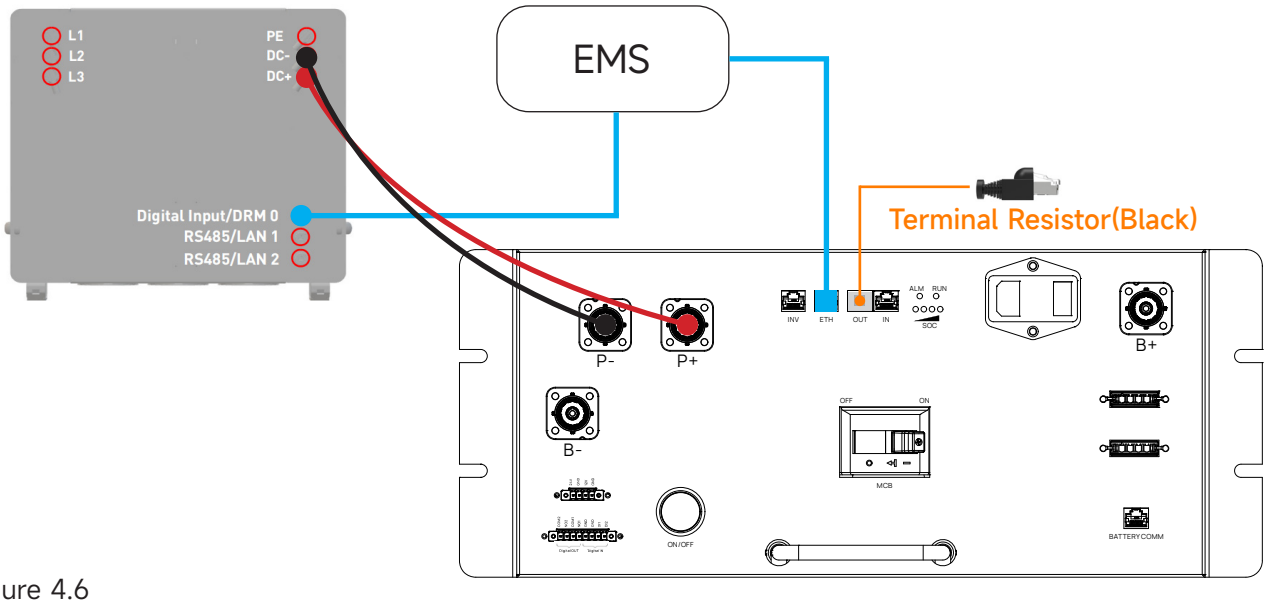
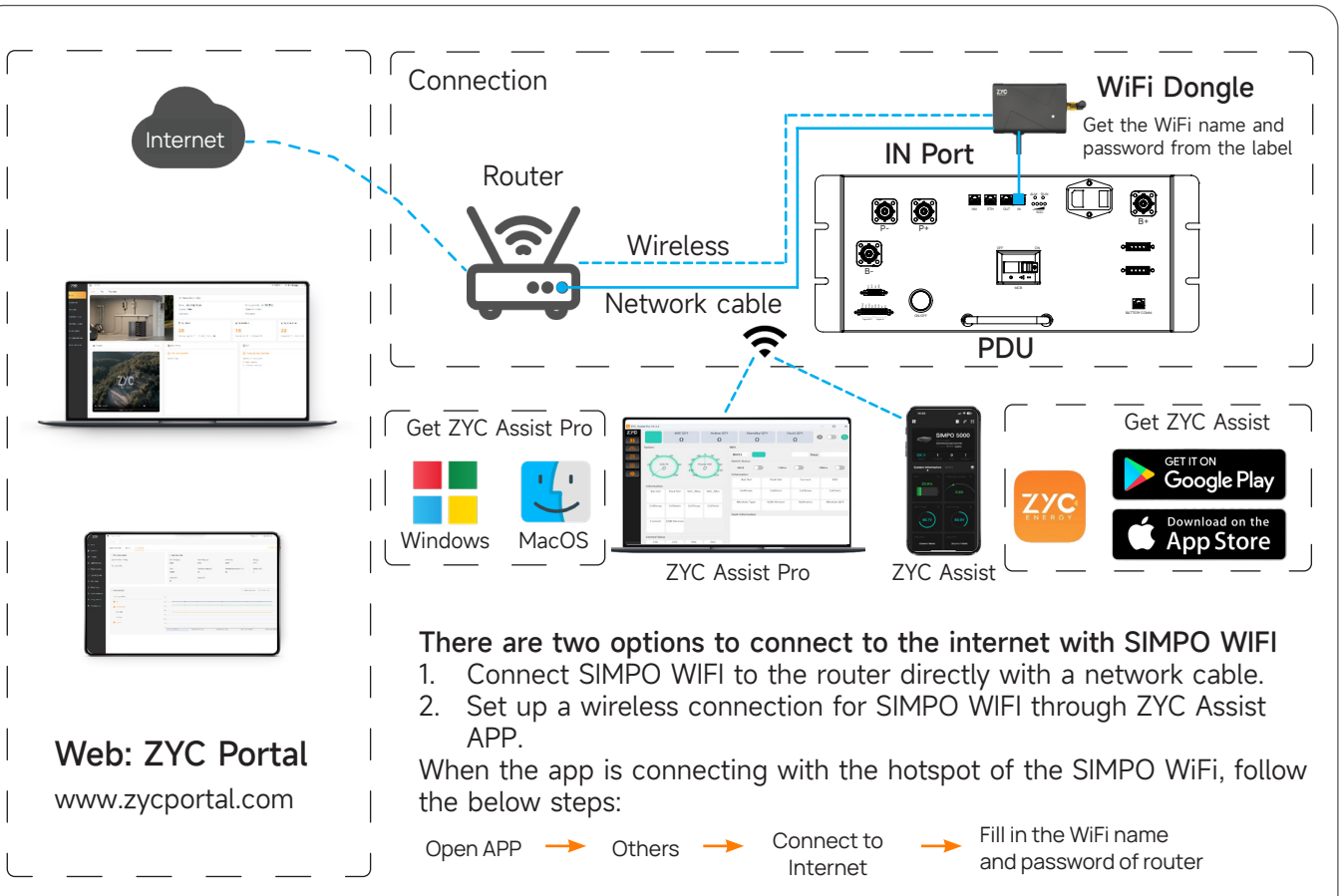


Figure 4.6

5 CONNECT TO THE INTERNET



There are two options to connect to the internet with SIMPO WIFI

1. Connect SIMPO WIFI to the router directly with a network cable.
2. Set up a wireless connection for SIMPO WIFI through ZYC Assist APP.

When the app is connecting with the hotspot of the SIMPO WiFi, follow the below steps:

Open APP → Others → Connect to Internet → Fill in the WiFi name and password of router

Figure 5.1

6 SYSTEM START UP&SHUTDOWN

6.1 SYSTEM START UP

Before starting up the system, please make sure that all the cables are connected as the instructions in this document. Check all the MCBs and DC breakers(if any) are off before starting up the system.

Step 1: Turn on the '**MCB**' as ①
Step 2: Press the **'ON/OFF'** button as ②
The **'RUN'** and **'SOC'** LED indicators will light up after the system starts working.

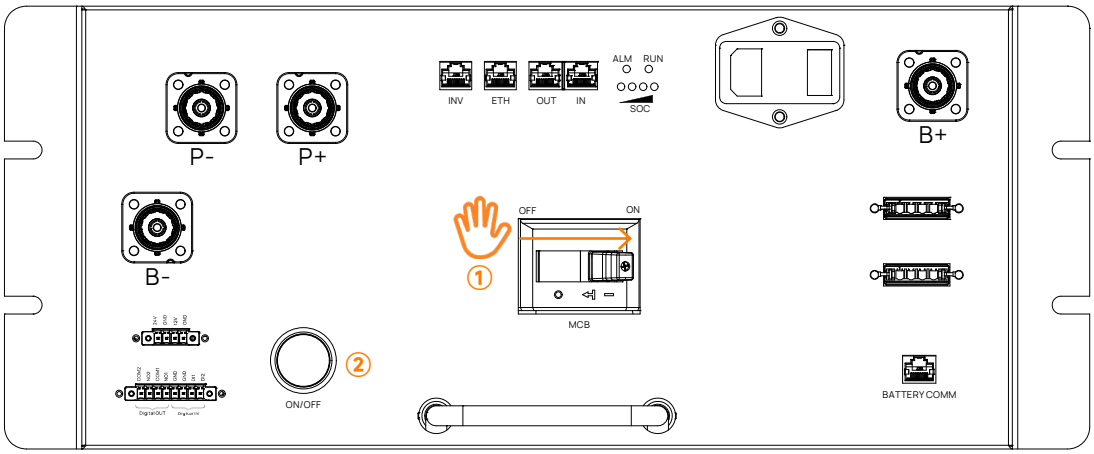


Figure 6.1

6.2 SYSTEM SHUT DOWN

Step 1: Press and hold the '**ON/OFF**' button for three seconds as ①
Step 2: The **MCB** will break automatically to ⏎ state.But before next use, please push the handle to **'OFF'** status as ②

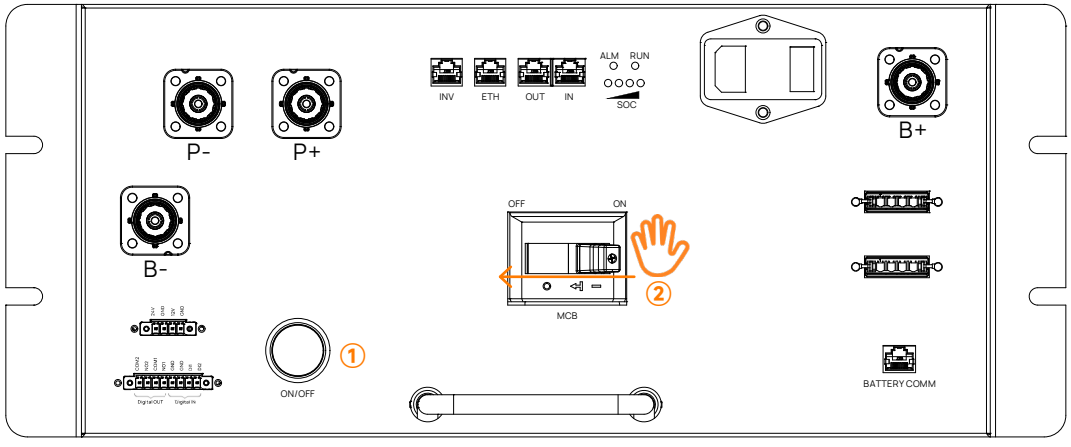


Figure 6.2

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