



Quick Installation and Operation Guide

LFP Battery
(Low Voltage)

V5° Plus / V5°α Plus



Information Version: 1.8
Release Date: 12 August 2026

Support Contact Information

In case of any technical issues with Pytes products,
please contact us at:
ess_support@pytesgroup.com

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Version: 1.8, August 2026

Subject to change without notice.

For the Pytes V5° Plus / V5°α Plus – Complete User Manual,
scan the QR code:



Note: This quick guide briefly describes required installation steps. Please refer to the User Manual for more detailed information.

Before Using

Warning

1. This equipment may only be installed, operated and maintained by qualified skilled person (electrician).
2. The local safety regulations and relevant operating procedures must be observed during the installation, operation and maintenance of the equipment, otherwise the equipment may get damaged. The safety precautions mentioned in the manual are only the supplement to local safety regulations.

Danger

1. Keep the Li-ion battery away from water, dust and contamination, otherwise it may cause explosion or other harmful conditions that may even lead to personal injury.
2. Do not short-circuit the Li-ion battery.
3. Observe the positive (+) and negative (-) marks on the Li-ion battery and equipment and ensure correct use. Do not reverse the Li-ion battery.
4. Do not dismantle, crush, puncture, open or shred the Li-ion battery.
5. Before removing or reconnecting with the running system, the power must be off and the system should be shut down, otherwise there will be risk of electric shock.
6. Do not expose Li-ion battery to heat or fire. In case of fire, please use dry powder fire extinguisher.
7. Do not dismantle any part of the system without contacting PYTES or PYTES authorized technical engineers. System failure caused by such will not be covered by the warranty.
8. Before operating inverter, make sure that all batteries have been started up.

Caution

1. Do not dispose of batteries in fire. The batteries may explode.
 2. Do not open or mutilate batteries. Released electrolyte can prove harmful to the skin and eyes. It may be toxic.
 3. A battery can present a risk of electric shock and burns by high short-circuit current.
 4. A malfunctioned battery can reach temperatures that exceed the threshold of contact surface.
- The following precautions should be observed when working on batteries:
- a) Disconnect the power and loads before connecting or disconnecting battery terminals;
 - b) Do not wear any metal objects including watches and rings;
 - c) Use tools with insulated handles;
 - d) Do not lay tools or metal parts on top of batteries;
 - e) Wear personal protective equipment;
 - f) Make sure the battery is well grounded.

Contact with any part of a poorly grounded or ungrounded battery can cause electric shock and burns by high short-circuit current.

The risk of such hazards can be reduced if conductive surroundings are removed by a skilled person during installation and maintenance.

The battery should be charged within 12 hours when it's fully discharged or over-discharging protection mode is activated. Fail to follow this instruction will damage the battery and is not covered by warranty.



This symbol on the product means: Do not dispose of this product with general household waste. Consult your local regulations for proper disposal instructions.

Safety and Handling Instructions

Read this entire document before installing or operating the Pytes V5° Plus and V5°α Plus Battery (hereinafter referred to as the "Battery"). Failure to do so or to follow any of the instructions or warnings in this document can result in electrical shock, serious injury, or death, or may damage the Battery and other property.

Optimize Battery Performance

1. Battery life is the amount of time your battery runs before it needs to be recharged.
2. Battery lifespan is the amount of time your battery lasts until it needs to be replaced.
3. Maximize both and you'll get the most out of your battery.

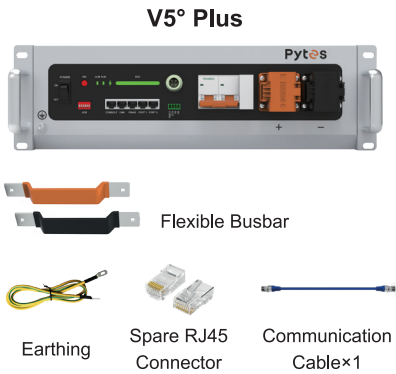
Avoid Extreme Ambient Temperatures

1. The Battery is designed to perform well in a wide range of temperatures, with Charge: 0°C~45°C (32°F~113°F)
2. Discharge: -10°C~50°C (14°F~122°F) as the ideal comfort operation zone.
3. It's important to avoid exposing your battery to ambient temperatures higher than 50°C (122°F).

Avoid Over-Discharging

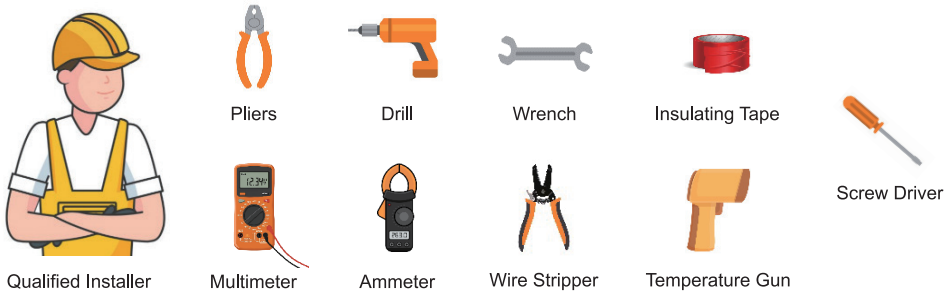
1. Over-discharge will permanently damage battery capacity and is not covered by warranty.
2. Under certain circumstance, battery will be over-discharged.
3. For open-loop operation, it is essential to set 49V as the value of low battery cut out voltage.
4. For closed-loop operation, it is essential to set low battery SOC and shutdown SOC on inverter, of which 20% and 10% are the recommended values.
5. Inverter will alarm when battery is below the low battery SOC value and will shut down when battery is below shutdown SOC value.
6. Scan the QR code for inverter setting guidance to avoid over-discharging your batteries.

What's in the Package



Note: The difference between the V5° Plus and V5°α Plus lies in the power terminal: the V5° Plus uses a Phoenix terminal, while the V5°α Plus features an Amphenol terminal along with dedicated power cables for battery parallel connections.

Required Personnel and Tools



⚠ Only trained professionals with good knowledge of power systems are allowed to install the device.

Installation Prerequisites

1. Keep the product away from heat sources, flammable materials, and explosive substances.
2. Avoid direct sunlight to prevent overheating or damage.
3. Install in a restricted area where children and pets cannot access it.
4. Place the product on a flat, level surface to ensure stability.
5. Do not install in areas with standing water or excessive moisture.
6. Minimize dust and dirt in the installation area for optimal performance.
7. Maintain a minimum distance of 0.5 meters from power conversion system (PCS).
8. Ensure fire extinguishers or other fire-fighting equipment are available nearby.
9. Always power off the battery before performing any maintenance or adjustments.

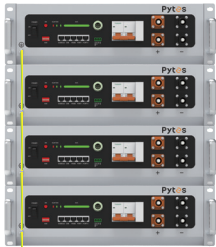
⚠ Before installing or removing the battery, make sure that the system is disconnected from any power source and that the battery device is turned off.

1. Connect Ground Cable

Single Battery



Multiple Batteries

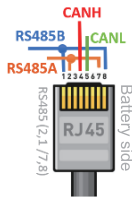
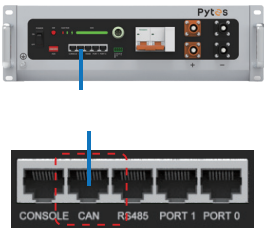


To Home Ground Connection Point

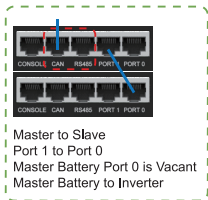
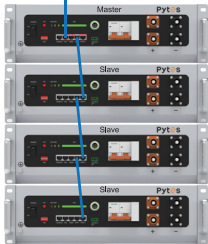
⚠ The grounding resistance should be less than 0.1Ω .

2. Connect Communication Cable

Single Battery



Custom comm cable*
from V5'a Plus CAN/RS485
port to Inverter



Master to Slave
Port 1 to Port 0
Master Battery Port 0 is Vacant
Master Battery to Inverter

Multiple Batteries

Note:

1. From master to slave, Port 1 → Port 0
2. The Communication between batteries require basic RJ45 cable;
3. Make sure pin configuration of communication cable (battery & inverter) is correct (refer to manual).

Single battery: Choose port to be inserted according to the communication protocol (RS485/-CAN) between the battery and ESS inverter, then insert the communication cables to the port;

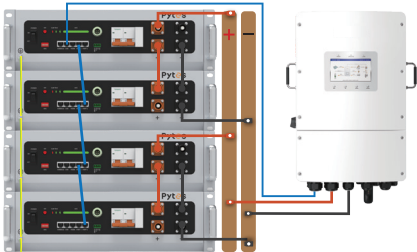
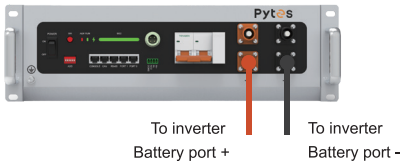
Multiple batteries: The master and the slave communicate in cascade mode: one is the host and the rest are the slaves. Please refer to the above picture for the cascade connection.

Note: Selection of the battery CAN / RS485 port is determined by the communication protocol between the battery and inverter BMS port.

⚠ The system may fail to communicate if the instructions are not followed.

3. Connect Power Cable

Single Battery



Multiple Batteries

Note: Use power cable provided with accessories to connect batteries.

Note: For battery safety, install an external breaker (determined by inverter current) between battery and inverter.

Single battery: Connect the positive and negative terminals of the battery to the positive and negative terminals of the DC port of the energy storage inverter (or the junction box).

Multiple batteries: The connection of several batteries is only permitted in parallel. Firstly, connect the positive terminals with the red cables, and connect the negative terminals with the black cables. Next, connect the positive and negative terminals of the battery to the positive and negative terminals of the DC port of the hybrid inverter (a storage device or the junction box).

Note: If you connect more than three batteries in parallel, make sure you use a bus bar with the correct rating to handle the total current.

Note: V5° Plus and V5°α Plus are not compatible with V5° and V5°α and must not be connected to them. If you have any questions regarding this, please contact Pytes.

- ⚠ Batteries connected in series are forbidden, high voltage would lead to hazard shock.
- ⚠ The battery must be placed in a locked cabinet or room, with a 5cm clearance reserved for cooling.

4. Set DIP Address



Single Battery: Set the DIP switch, based on the inverter installed.

Multiple Battery: Set the DIP switch on Master Battery only, based on the inverter installed.

DIP Addresses

Sol-Ark	
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Shutdown Procedure

Note: Ensure the inverter is off before shutting down the battery. Prior to performing the shutdown procedure, verify that the battery is in standby mode — with both charging and discharging operations fully stopped.

1. Only press SW button of master battery for 3 seconds.
2. Turn off all power button.
Please wait for all battery lights to go out before turning off the power buttons.
3. Turn off DC breaker of all batteries.

Note (For single battery): Follow the same steps for a single battery system.

 Do not discard this document! After installation, keep it adjacent to the Battery for future reference!



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