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Communication HUB

LV-HUB Product Manual

Information Version: 2.1

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This manual introduces LV-Hub from Pylontech. LV-Hub is a communication hub for US2000/US3000 Lithium-Ion Phosphate Battery storage system. Please read this manual before you install the battery and follow the instruction carefully during the installation process.

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1. Introduction

LV-Hub is the CAN/RS485 communication hub for multiple 48V battery groups in parallel connection.

Fit Description: US2000 / US3000 / Phantom-SA / US1800.

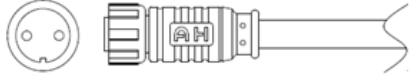
2. LV-Hub-A



| No. | Item | Parameter |
|-----|-------------------------|--|
| 1 | Operating voltage range | 48 Vdc |
| 2 | Communication | CAN/RS485 |
| 3 | System Consumption | 2W |
| 4 | Size | 442*150*44mm |
| 5 | Protection degree | IP20 |
| 6 | Weight | 3.0kg |
| 7 | Operation Life | 15 years |
| 8 | Working temperature | -20~60°C |
| 9 | Storage temperature | -40~80°C |
| 10 | CAN (Max 25 groups) | Baud rate: 500K; terminal resistance: 0/120Ω |
| 11 | RS485 (Max 5 groups) | Baud rate:9600/115200 |

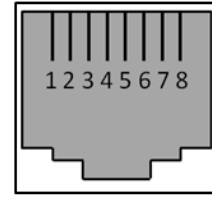
2.1 Ports:



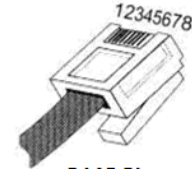
| No. | Part | Silk-screen | Function |
|------|---------------------|-------------------------|---|
| 1 | Dry signal | | Function reserve |
| 2 | Reset Switch Button | RESET | Press 2 seconds and then system will restart. |
| 3 | Dip switch | 1 - 6 | Dip 6: Up: CAN OUT terminal resistance 120Ω Down: 0Ω |
| 4 | RJ45 | CAN OUT | CAN output port (only upper port is for using); |
| 5 | RJ45 | RS232 | Debug |
| 6 | RJ45 | CAN IN | Connect to port 0 (only for CAN communication); |
| 7 | LED | STATUS | Please see 2.3. |
| 8 | LED | NUMBER/BIN 1-4 | Shows linked in battery group quantity with binary code. Please see 2.3. |
| 9~16 | RJ45 | 0; 1; 2; 3; 4; 5; 6; 7. | Only uses 0~5. Please see 3.2. |
| 17 | Switch | ON/OFF | Turns the LV-HUB ON/OFF. |
| 18 | 48VDC input | 48V DC | Power supply: take 48VDC power from outside (from AC/DC adaptor).  |

2.2 Definition of RJ45 Port Pin

| No. | CAN OUT | RS485 | RS232 Pin |
|-----|---------|--------|-----------|
| 1 | --- | --- | --- |
| 2 | GND | --- | --- |
| 3 | --- | --- | TX |
| 4 | CANH | --- | --- |
| 5 | CANL | --- | --- |
| 6 | --- | GND | RX |
| 7 | --- | RS485A | --- |
| 8 | --- | RS485B | GND |



RJ45 Port



RJ45 Plug

2.3 LED Indicators Instructions

| Status | | | | <ul style="list-style-type: none"> ● Only the HUB is turned ON, it lights once. ● No battery connected or at least one group is off line. ● When battery group is reduced it will alarm (in red), but when battery group is added in it will no alarm. |
|--------|---|---|---|---|
| 1 | 2 | 3 | 4 | Green flash; connected battery groups number |
| ● | | | | 1 group |
| | ● | | | 2 groups |
| ● | ● | | | 3 groups |
| | | ● | | 4 groups |
| ● | | ● | | 5 groups |
| | ● | ● | | 6 groups |
| ● | ● | ● | | 7 groups |

3. Operation

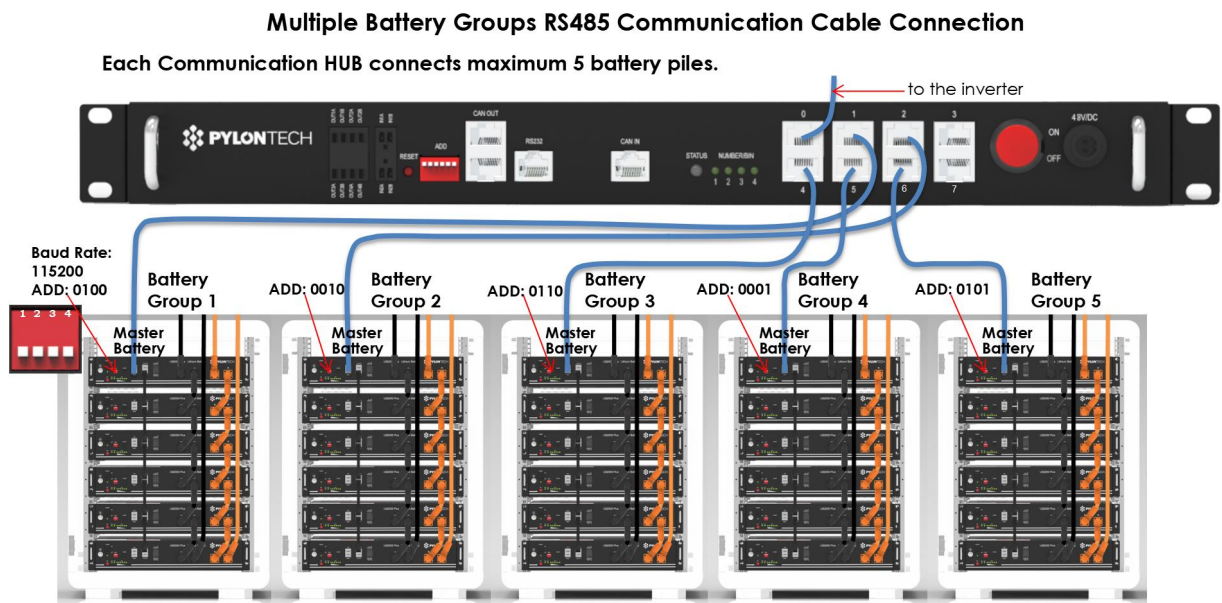
3.1 Protocol

CAN: *CAN-Bus-protocol-PYLON-low-voltage-V1.2-20180408* or above.

RS485: *RS485-protocol-pylon-low-voltage-V3.1-20180408* or above.

3.2 Cables Connection

3.2.1 Cables Connection for RS485



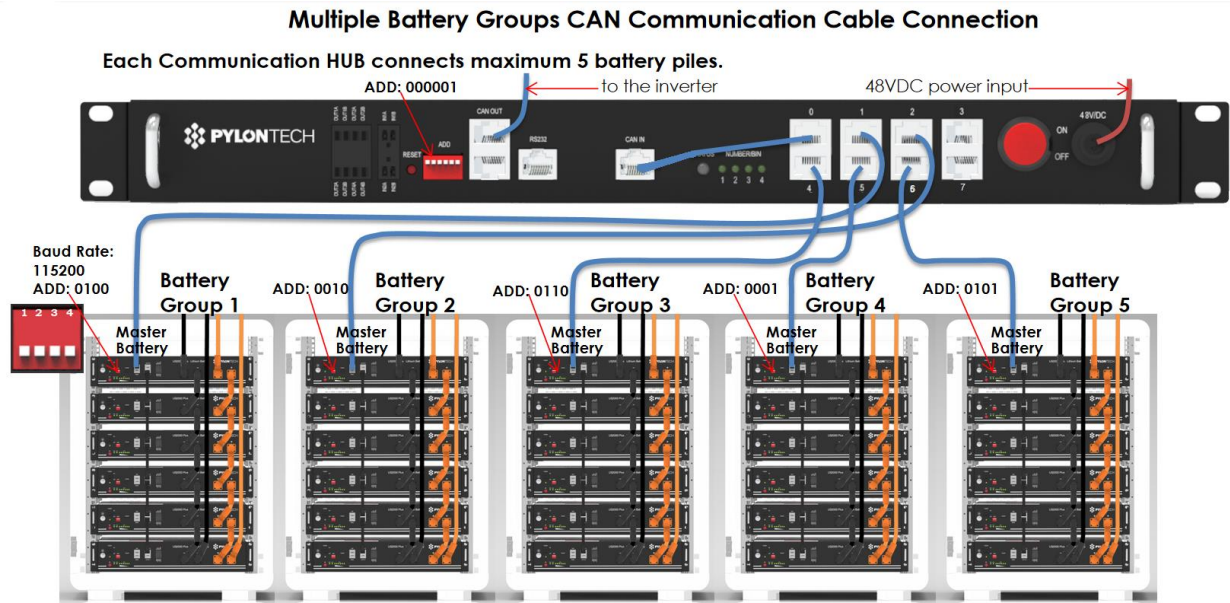
Each battery pile can configure maximum 8pcs US2000 or US3000.

- Each battery group can configure maximum 8pcs US2000B Plus or 8pcs US3000.
- LV-Hub-A configures maximum 5 group batteries.
- RS485 communication needn't additional cable and power just a simple hub is enough.



- When each battery group's current is $>120A$, this battery group must configure 2 pair external power cables like the diagram.
- The details of ADD Switch setting also can see the menu of battery.

3.2.2 Cables Connection for CAN (single HUB)

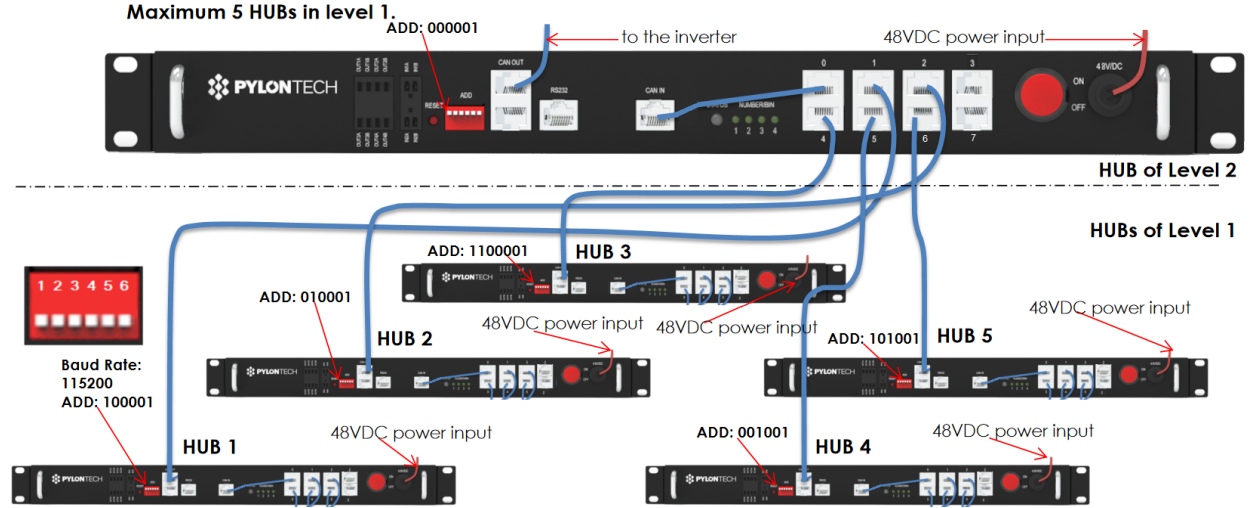


Each battery pile can configure maximum 8pcs US2000 or US3000.

- Each battery group can configure maximum 8pcs US2000B Plus or 8pcs US3000.
- LV-Hub-A configures maximum 5 group batteries.
- When each battery group's current is $>120A$, this battery group must configure 2 pair external power cables like the diagram.
- The details of ADD Switch setting also can see the menu of battery.

3.2.3 Cables Connection for CAN (multi HUB)

Multiple HUBs CAN Communication Cable Connection

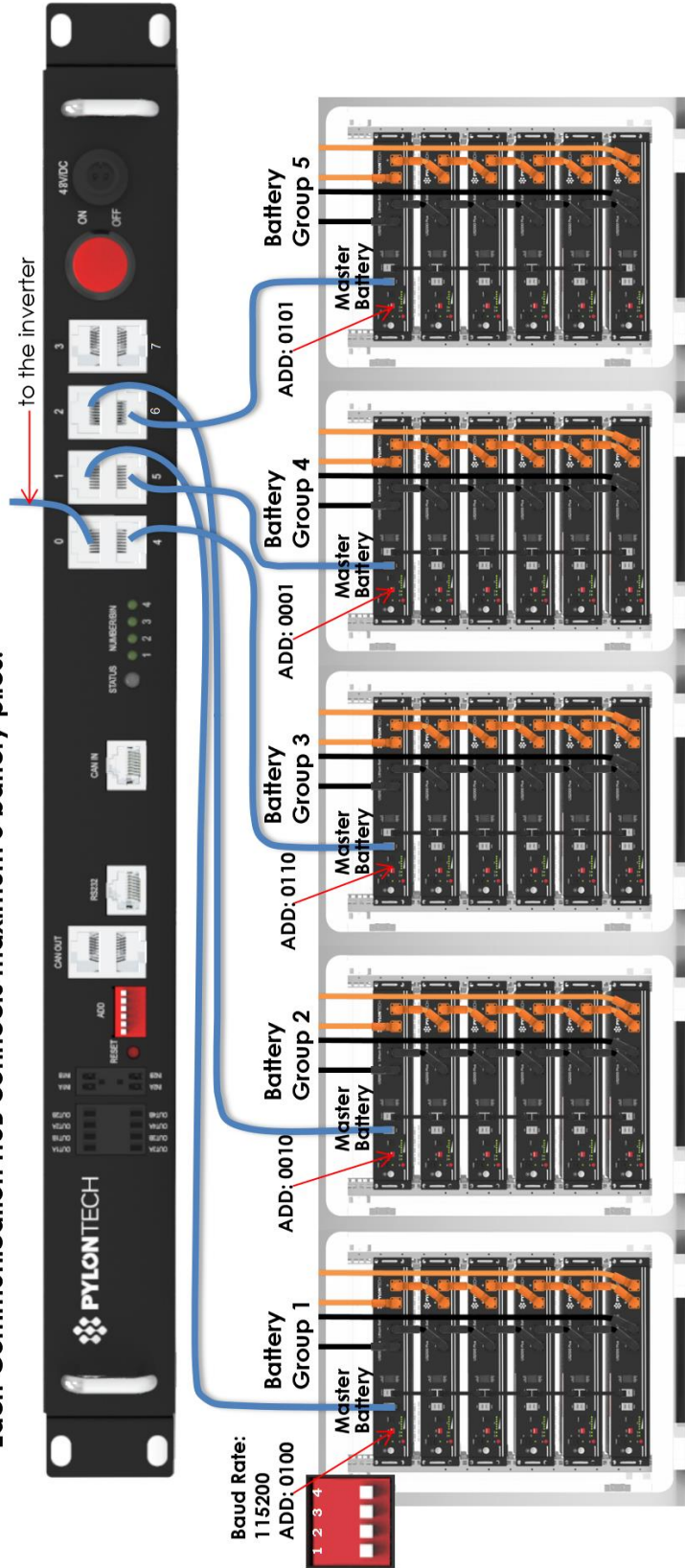


Battery bank can configure maximum 200pcs US2000 or US3000.

Annex 1: Cables Connection for RS485

Multiple Battery Groups RS485 Communication Cable Connection

Each Communication HUB connects maximum 5 battery piles.



Each battery pile can configure maximum 8pcs US2000 or US3000.

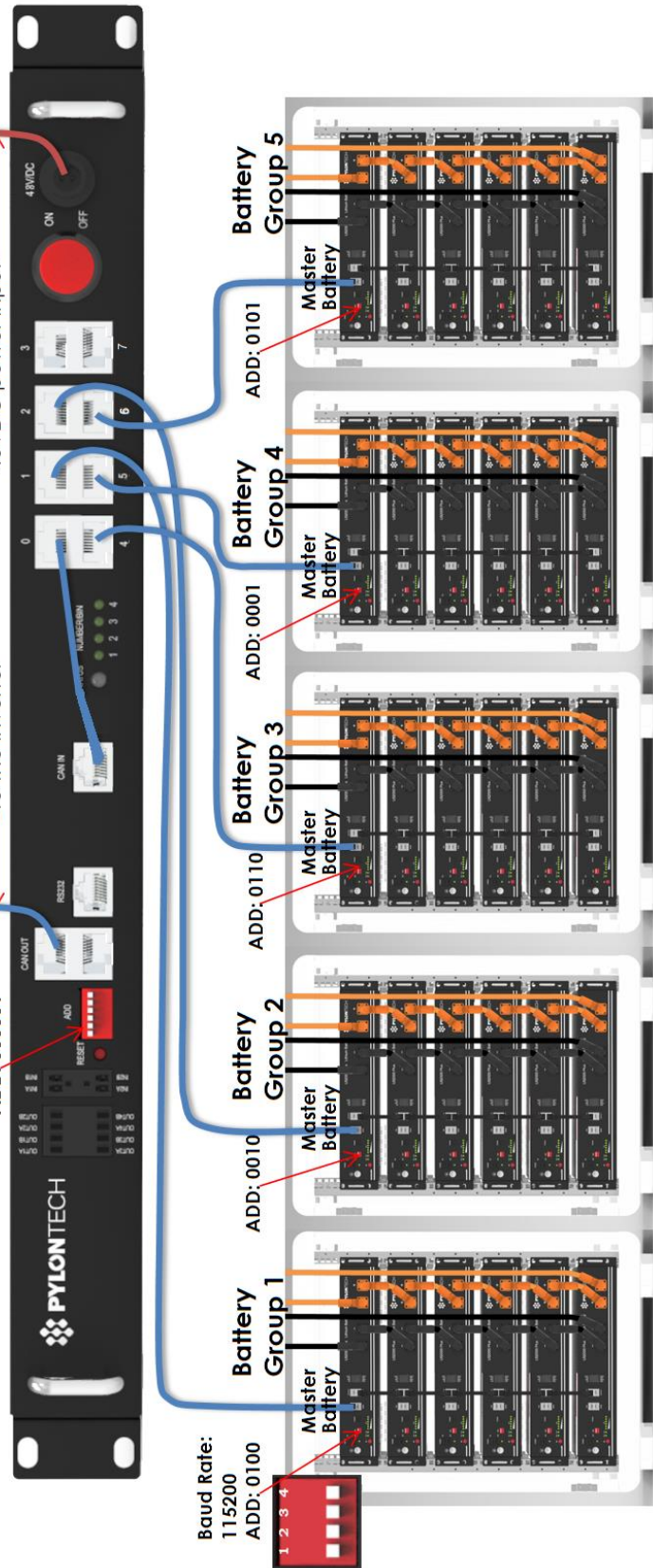
Annex 2: Cables Connection for CAN

Multiple Battery Groups CAN Communication Cable Connection

Each Communication HUB connects maximum 5 battery piles.

ADD: 000001 → to the inverter

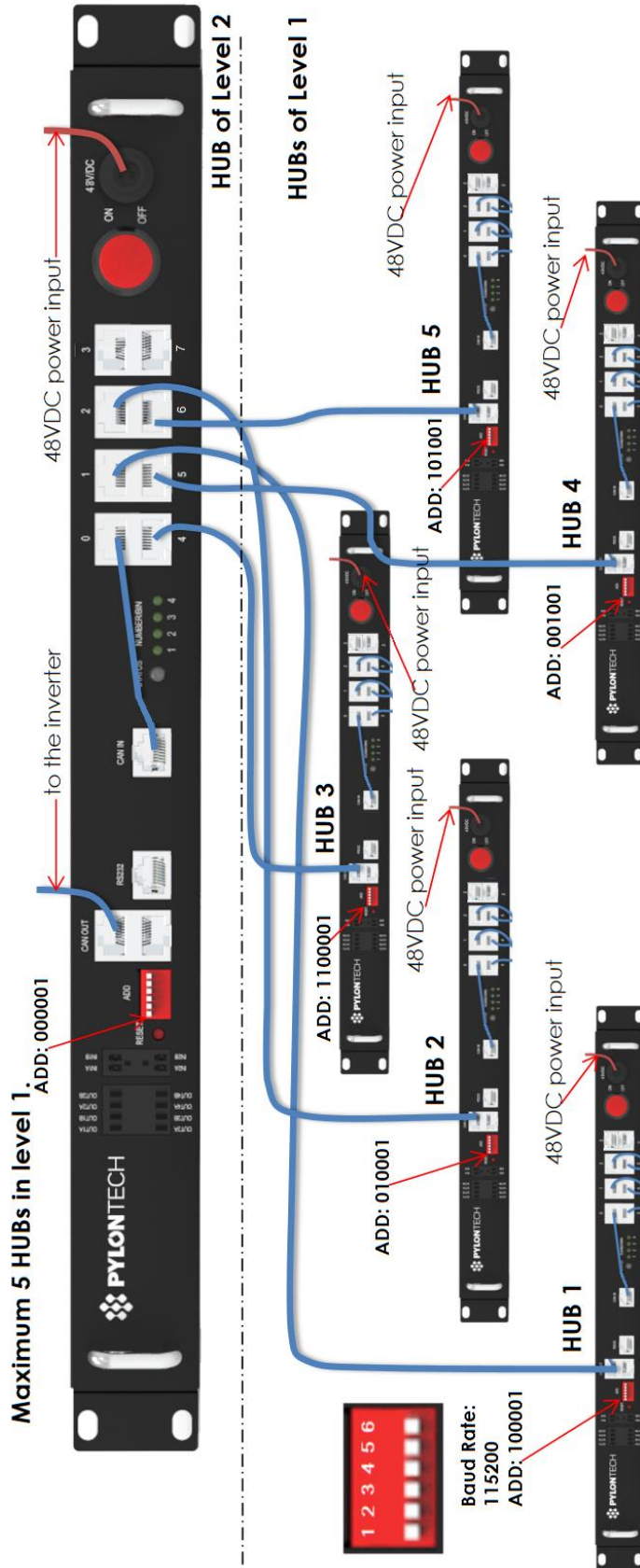
48VDC power input →



Each battery pile can configure maximum 8pcs US2000 or US3000.

Annex 3: Cables Connection for CAN (multi HUB)

Multiple HUBs CAN Communication Cable Connection



Battery bank can configure maximum 200pcs US2000 or US3000.



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