



# PYTES 1uHUB

## Quick Guide

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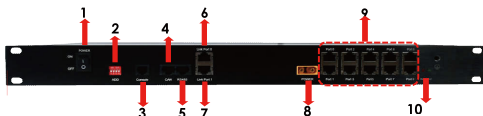


## 1. Introduction

PYTES 1uHub is to achieve the function of parallel communication between multiple clusters of batteries and inverter.

It matches with batteries from PYTES, not with batteries of other brands.

## 2. Panel Schematic

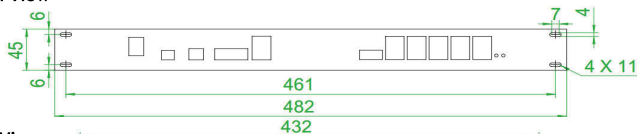


| No. | Name               | Label         | Function                                                                                                                 |
|-----|--------------------|---------------|--------------------------------------------------------------------------------------------------------------------------|
| 1   | Power Button       | Power ON/OFF  | Turn on/off 1uHub                                                                                                        |
| 2   | DIP Switch         | Add           | Communication protocol address with PCS. 4 DIPs                                                                          |
| 3   | RS232 Port         | Console       | Local Communication to PC. RS232 Protocol. RJ45 Port                                                                     |
| 4   | CAN Port           | CAN           | Output Battery information. CAN Protocol. RJ45 Port                                                                      |
| 5   | RS485 Port         | RS485         | Output Battery information. RS485 Protocol. RJ45 Port                                                                    |
| 6   | Cascade            | Link Port 0   | Link Port 0: to Connect to Port 0 of Interface                                                                           |
| 7   | Communication Port | Link Port 1   | Link Port 1: Reserved                                                                                                    |
| 8   | 48V DC IN          | Power         | XT90 Port                                                                                                                |
| 9   | Interface          | Port0 ~ Port9 | RJ45 Port<br>Port0: Reserved to Connect to Link Port 0<br>Port1~Port9: Commication with Master Battery of each Clusters. |
| 10  | Indicator Lights   | RUN/Alarm     | Green indicator: it will flash when power on<br>Red indicator: it will be on when system alarm                           |

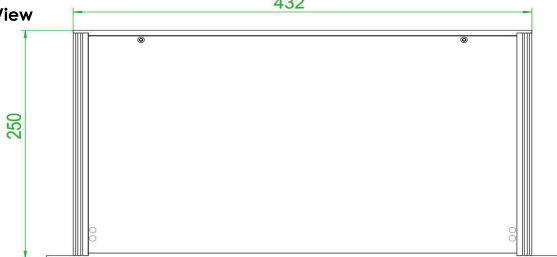
## 3. Technical Specs

|                             |                              |
|-----------------------------|------------------------------|
| Nominated Operation Voltage | 48Vdc                        |
| Communication               | CAN/RS485/RS232              |
| Consumption Power           | 2W                           |
| Protection Rate             | IP20                         |
| Dimensions(W*D*H)           | 482*250*45mm / 19*9.84*1.77" |
| Weight                      | 2.2kg / 4.85lbs              |
| Operation Temperature       | -20°C~60°C / -4°F~140°F      |

### Front View



### Top View



## 4. Packing List

| No. | Item                       | Quantity | Remarks                                                                       |
|-----|----------------------------|----------|-------------------------------------------------------------------------------|
| 1   | 1uHub                      | 1pc      |                                                                               |
| 2   | Screws                     | 4pcs     | fix 1uHub to Rack                                                             |
| 3   | Screw Nuts                 | 4pcs     | fix 1uHub to Rack                                                             |
| 4   | Power Cable                | 1pc      | XT90/SC6-8 Lug                                                                |
| 5   | 220mm Communication Cable  | 1pc      | CAT6. Connect Port 0 to Link Port 0                                           |
| 6   | 1500mm Communication Cable | 1pc      | CAT6. Pin 3-4(Labeled <b>BATT</b> ), 4-5(Labeled <b>HUB</b> ) Hub to Inverter |
| 7   | RJ45 Connector             | 2pcs     | Spare pieces                                                                  |
| 8   | User Manual                | 1pc      |                                                                               |

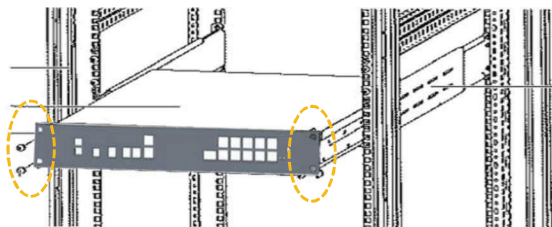
## 5. Installation

Before installation, check whether **all** the items are complete according to Packing List. Make sure that the inverter, battery and HUB are powered off.

### 5.1 Rack installation

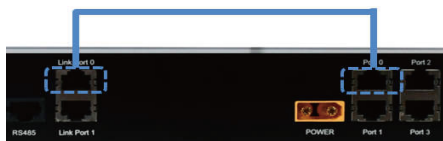
Place the 1uHub on the rack guide rail and push the 1uHub as far as it will go.

Fix the 1uHub to rack by 4 screws and screws nuts provided in the package.

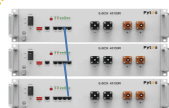


## 5.2 Cable Connection

1. Connect Port 0 to Link Port 0 on 1uHub with the 220mm Communication Cable.



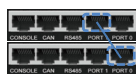
2. Connect the batteries into a group/Cluster \*.  
Link one battery Port 0 to the other battery Port 1 one by one.  
Leave the Port 0 of master battery empty.



**E-Box 48100R A & E-Box 48100R B**  
up to 8pcs parallel each group

**E-Box 48100R C MCU1.0**  
up to 8pcs parallel each group  
Firmware 1.5.30.C8.T6 & previous versions

**E-Box 48100R C MCU2.0**  
up to 16pcs parallel each group



**V5° / V5° α**

\*Supports up to up to 16pcs parallel each Group.

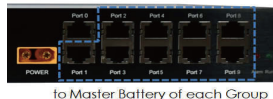
3. Define battery groups sequence by setting DIP switch of each master battery.

| DIP for Battery Group Address |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Group 1                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Group 2                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Group 3                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Group 4                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Group 5                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Group 6                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Group 7                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Group 8                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

\* White Bar indicates the DIP position

If the DIP switch of your battery is 4-digit, please only set the first 4 DIPs and the firmware upgrade needs to be performed

4. Connect Master Batteries from each group to 1uHub with standard pin communication cables. The cable goes from CAN port of each master battery to Port 1~Port 9 on 1uHub.



5. According to inverter communication protocol, connect inverter to 1uHub, CAN or RS485 port with custom pin communication cable.

\*a 3-4/4-5 cable is included in 1uHub package.

BATT Labeled end to 1uHub, HUB labeled end to Inverter.



| Pin Number | 1uHub RS485 | 1uHub CAN | Deye Sol-Ark | Votronic | Alswel Hoymiles Senergy | Afore | SMA   | Livolttek |
|------------|-------------|-----------|--------------|----------|-------------------------|-------|-------|-----------|
| 1          | RS485B      |           | RS485B       |          |                         |       |       | H         |
| 2          |             |           | RS485A       |          |                         |       |       | L         |
| 3          | RS485A      | H         | GND          | RS485B   |                         |       |       |           |
| 4          |             | L         | H            |          | H                       | H     | H     |           |
| 5          |             |           | L            | RS485A   | L                       | L     | L     |           |
| 6          | GND         |           | GND          |          |                         |       |       |           |
| 7          |             |           | RS485A       |          |                         |       |       |           |
| 8          |             |           | RS485B       |          |                         |       |       |           |
| Pin Number | Luxpower    | SRNE      | Growatt      | Goodwe   | Victron                 | MUST  | Solis | Megarevo  |
| 1          | RS485B      |           |              |          |                         |       |       |           |
| 2          | RS485A      |           |              |          |                         |       |       |           |
| 3          |             |           |              |          |                         |       |       |           |
| 4          | H           |           | H            | H        |                         |       | H     | H         |
| 5          | L           |           | L            | L        |                         |       | L     | L         |
| 6          |             |           |              |          |                         | L     |       |           |
| 7          |             | RS485A    |              |          | H                       | H     |       |           |
| 8          |             | RS485B    |              |          | L                       |       |       |           |

\* 1uHub to Inverter Communication Pin Numbers.

6. Set DIP Switch on 1uHub according to inverter brand.

| DIP on 1uHub - PCS Communication Protocol Address |  |                       |  |                   |  |
|---------------------------------------------------|--|-----------------------|--|-------------------|--|
| Victron                                           |  | Deye<br>Solark        |  | Afore             |  |
| Voltronic<br>Phocos<br>Epever                     |  | Studer                |  | SRNE<br>INHENERGY |  |
| Goodwe                                            |  | Aiswei<br>(Solplanet) |  | SMA               |  |
| Growatt                                           |  | Luxpower              |  | Megarevo          |  |
| Solis                                             |  | MUST                  |  |                   |  |

\* White Bar indicates the DIP position

7. Connect power cable XT90 terminal to 1uHub DC input, the other end SC6-8 to main power with a 48V transformer.

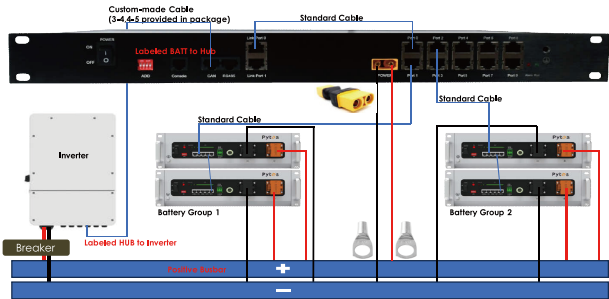
1uHub can also be powered by your 48V battery by connecting the SC6-8 end of the power cable to battery external interface.

## 6. Operation

Switch on the batteries, 1uHub and inverter.

The green indicator light will be on, which indicates 1uHub is running normally.

## 7. System Diagram



## Warranty Card

|                      |  |
|----------------------|--|
| Name                 |  |
| Installation Date    |  |
| Installation Address |  |
| Battery Model        |  |
| Inverter Model       |  |
| Email                |  |



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