Pytes

1U HUB User Manual

1 Product introduction

PYTES 1U- HUB is to achieve the function of parallel communication between multiple clusters of batteries and inverters. It supports the connection of up to 6 clusters of batteries (each cluster supports up to 8 batteries). The front panel of the HUB is shown in Figure 1.

Figure 1 Front panel of the HUB

Table 1 Components

No.	Name	Label	Functions description
1.	Power button	POWER	When switched to "ON", the system is on; when switched to "OFF", the system is off.
2.	DIP switch	ADD	Select the matching protocol of inverter, please check the file "Hub integrating with C version 48100R".
3.	Power indicator/ Running indicator		Green indicator: the light flash when power on. Red indicator: it will light when system alarm.

2   Installation

2.1 Notice

This product is only matching with batteries from PYTES, not with batteries from other brands. Before installation, determine whether the accessories in the packing box are complete according to the attached table 5 for the list of accessories. Make sure that the inverter, battery and HUB are powered off.

2.2 Rack installation

Place the HUB on the rack guide rail and push the hub box as far as it will go. Take out 4 lug screws from the accessories package and fix the HUB on the rack through the lug. As shown in Figure 2.
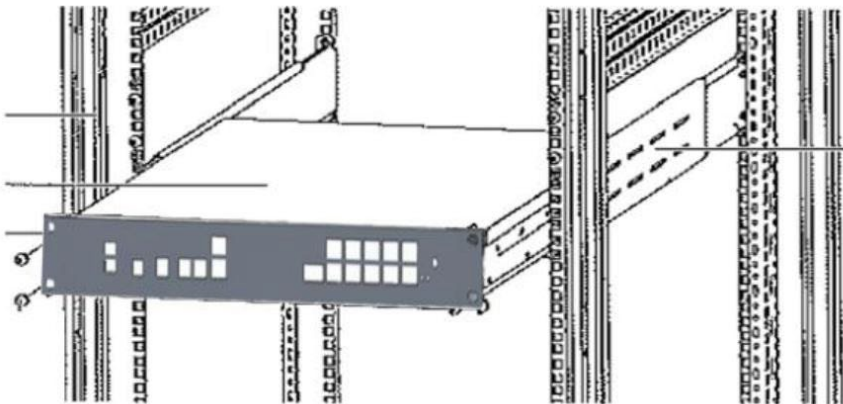

Figure 2 Rack installation

2.3 Cable connection

After rack installation, connecting the cables in the following order:

1. Connect Link Port 0 and Port 0 with the network cable in the
    accessory. See Figure 3 in details.

Figure 3

2. Connect the batteries into a group. Link one battery Port 0 to the other
    battery Port 1 one by one. Note that leave the Port 0 of the master
    battery empty. Each group supports up to 8 batteries in parallel. See
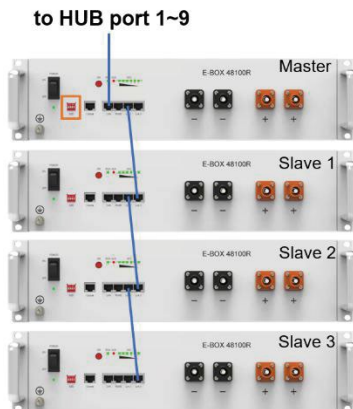   Figure 4 for details

Figure 4

3. Adjust DIP switch of each master battery to define the order of battery groups (refer to table 2).

<div align="center">Table 2</div>

Group 1		Group 5	
Group 2		Group 6	
Group 3		Group 7	
Group 4		Group 8	

Graphic the black part is the lever

Note: If the DIP switch of your battery is 4-digit, please only set the first 4 levers as the picture shown and the firmware upgrade needs to be performed.

4. Connect the battery groups to the HUB by battery comm cables*. (See the footnote in the end of the document.)   The comm cable needs to plug in the CAN port of the master battery and Port 1 to Port 9 on the HUB. Note that each HUB supports up to 6 groups.
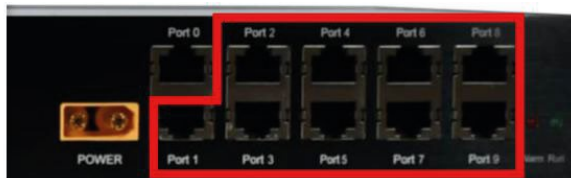
Figure 5

5. According to the inverter brand, connect the inverter communication line to the can or RS485 interface, marked in figure 6.

6. Set the DIP Switches according to the inverter brand as shown in table 3. Connect the HUB to the inverter by the custom comm cable. Please refer to table 4 for comm cable making.

Figure 6

Table 3 HUB DIP Switch settings for different inverter

Victron		Deye/Sol-Ark		Afore		Solis	
Phocos/Voltronic		Studer		SRNE		Empty	
Goodwe		Kelong		SMT		SMA	
Megarevo		Growatt		Empty		Luxpower	

Graphic ▐▐▐▐ the black part is the lever

Table 4 Pin assignments for custom comm cable making

PinNumber	Hub RS485	Hub CAN	Deye Sol-Ark	Victron	Voltronic Off-grid	Afore
1	RS485B		RS485B			
2			RS485A			
3	RS485A	H			RS485B	
4		L				H
5					RS485A	L
6						
7			RS485A	H		
8			RS485B	L	GND	
PinNumber	Megarevo	SRNE	Growatt	SMA	GOODWE	
1						
2						
3						
4	H		H	H	H	
5	L		L	L	L	
6						
7		RS485A				
8		RS485B				

7. Connect the power cord to DC input, and the other end needs to be connected to power. It can be connected to the 48V transformer to connect the mains power, or through the battery outside interface to connect the power line.

Notice:

a) The DIP switch of each master battery in groups need to be set referring to table 2.

b) If the number of batteries in the energy storage system built by the customer is large, the customer will need to order additional communication lines between Batteries and HUB， or if the customer

wants to make their own communication lines of this type, please note that the PYTES battery wiring is 4 and 5(B and b),and the HUB wiring is 4 and 5(B and b). See Figure 7 in details
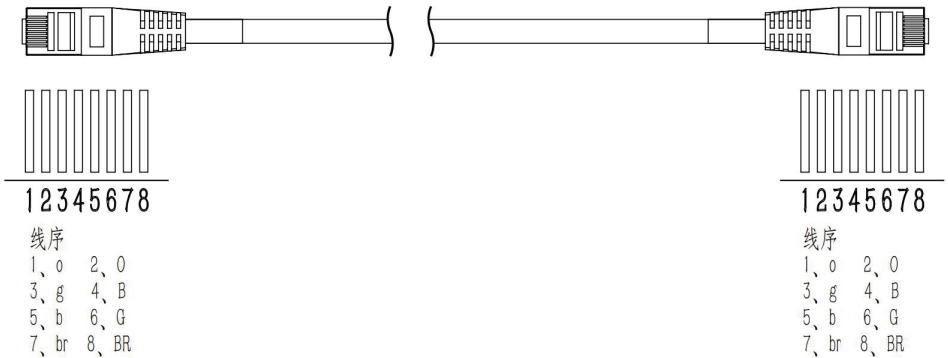

Figure 7 Pin number of comm cable

3 Operation

After rack installation and cables connection, switch on the HUB, batteries and inverters. The green indicator light, indicating that the hub is running normally. Red indicator light, indicating that the system alarm.
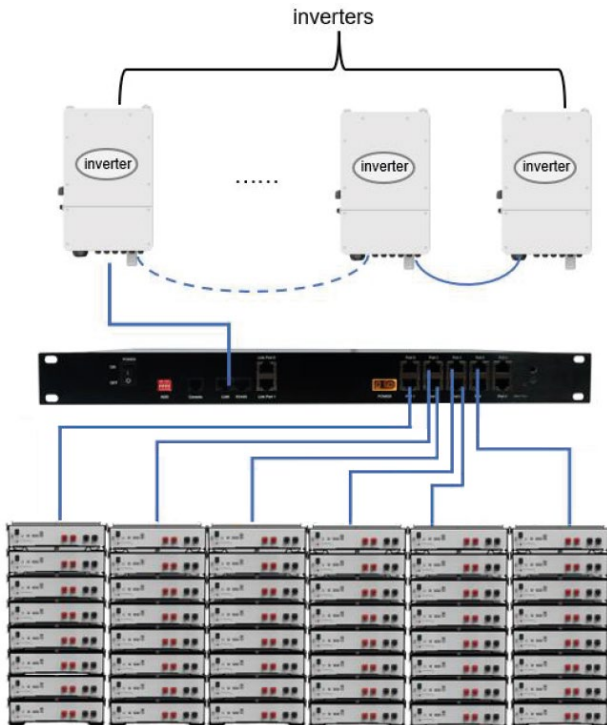
Table 5 Accessories list

No.	Item	Quantity	Unit
1.	Hub	1	PCS
2.	screws	4	PCS

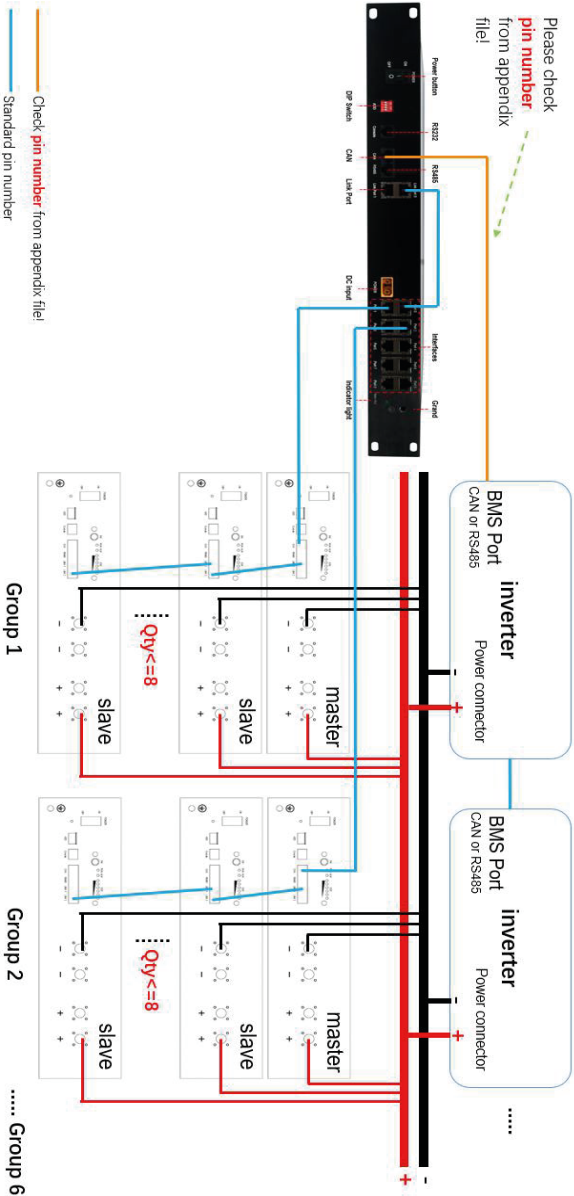|			
3.	screw nuts	4	PCS
4.	power cable	1	PCS
5.	220mm Network cable	1	PCS
6.	1500mm Network cable	1	PCS
7.	RJ45 connector	2	PCS
8.	User Manual	1	PCS

Case：

Connection diagram

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Connection of inverter, hub and batteries(Qty>8 pcs)

Please check
pin number
from appendix
file!

Check pin number from appendix file!

Standard pin number

Power button

DIP Switch

RS232

CAN

RS485

Link Port

DC Input

Interfaces

Indicator light

Grand

BMS Port
CAN or RS485

inverter

Power connector

BMS Port
CAN or RS485

inverter

Power connector

Group 1

Qty<=8

slave

slave

master

Group 2

Qty<=8

slave

slave

master

..... Group 6

....

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Warranty Card

Name	
Installation time	
Installation address	
Battery type	
Inverter type	
E-mail	

Vision：v1.0
Date：2021.12.20

Shanghai PYTES Energy Co., Ltd.
Address：No.3492, Jinqian Road, Fengxian District, Shanghai
Phone number：+86 02157474366
Postal Code：201406
Website：https://www.pytesgroup.com/
Email：ess_support@pytesgroup.com