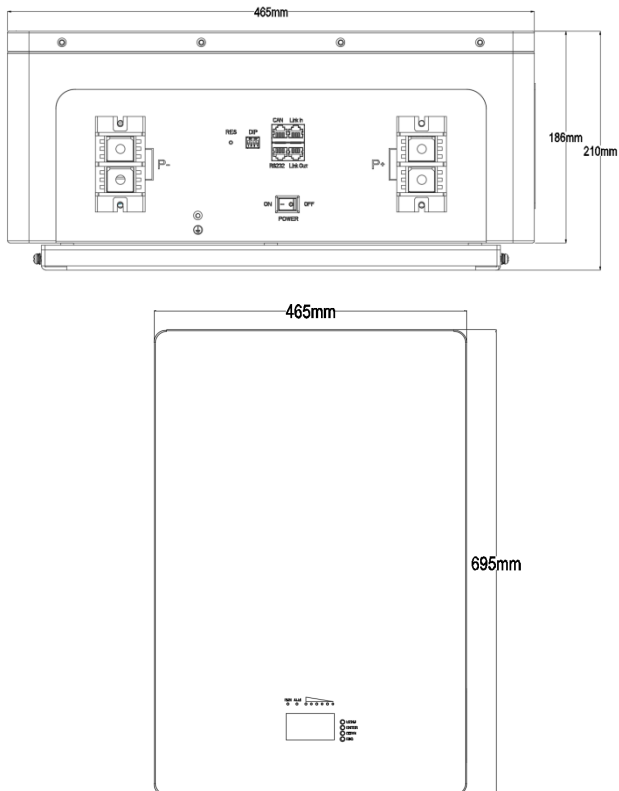# USER MANUAL
LVTS-512200 Li Battery

Contents

1   Product Overview

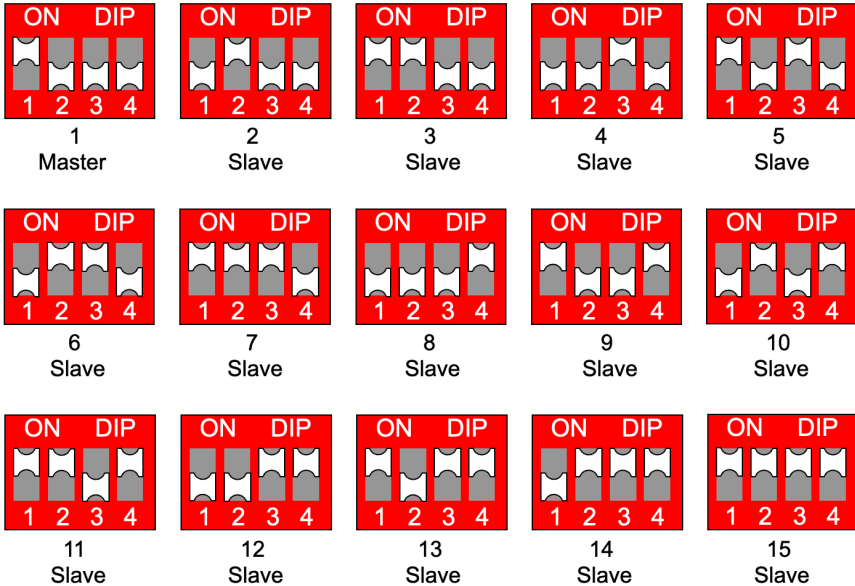LVTS-512200 is a wall mounted 51.2V 200Ah Lithium battery.

Note: LVTS-512200 **is NOT suitable for life-sustaining medical devices.**

1.1   Appearance

1.2   Switch, LCD, LED & Communication Port

1.2.1   DIP Switch

ON DIP 1 2 3 4 **1** Master	ON DIP 1 2 3 4 **2** Slave	ON DIP 1 2 3 4 **3** Slave	ON DIP 1 2 3 4 **4** Slave	ON DIP 1 2 3 4 **5** Slave
ON DIP 1 2 3 4 **6** Slave	ON DIP 1 2 3 4 **7** Slave	ON DIP 1 2 3 4 **8** Slave	ON DIP 1 2 3 4 **9** Slave	ON DIP 1 2 3 4 **10** Slave
ON DIP 1 2 3 4 **11** Slave	ON DIP 1 2 3 4 **12** Slave	ON DIP 1 2 3 4 **13** Slave	ON DIP 1 2 3 4 **14** Slave	ON DIP 1 2 3 4 **15** Slave

1.2.2   Switch ON/OFF

1、Switch ON

For single LVTS-512200, set DIP switch to 1, then switch ON POWER button.

For multiple LVTS-512200 connected in parallel, set DIP switch according to 1.2.1, then switch ON POWER buttons of all batteries.

2、Switch OFF

Switch OFF POWER button(s) of all batteries.

1.2.3 LCD Display

Press "MENU" button to main menu page.

Press "ESC" button to return to previous menu.

Every line is started with ">>" or "--", ">>" is the current cursor.

Press "DOWN" button to move cursor.

If a line is ended with ">>", you can press "ENTER" button to see more information.

If you don't press any button, LCD display will switch OFF after 1 min to save energy. You can press any button to switch ON LCD display.

1.2.4 LED Definition

Note: Flash 1 - 0.25s ON / 3.75s OFF

               Flash 2 - 0.5s ON / 0.5s OFF

               Flash 3 - 0.5s ON / 1.5s OFF

SOC Status while charging

STATUS		CHARGE							
		L8 🟢	L7 🔴	L6 🟢	L5 🟢	L4 🟢	L3 🟢	L2 🟢	L1 🟢
SOC (%)	0～17	ON	OFF	OFF	OFF	OFF	OFF	OFF	Flash 2
	18～33			OFF	OFF	OFF	OFF	Flash 2	ON
	34～50			OFF	OFF	OFF	Flash 2	ON	ON
	51～66			OFF	OFF	Flash 2	ON	ON	ON
	67～83			OFF	Flash 2	ON	ON	ON	ON
	84～100			Flash 2	ON	ON	ON	ON	ON

SOC Status while discharging
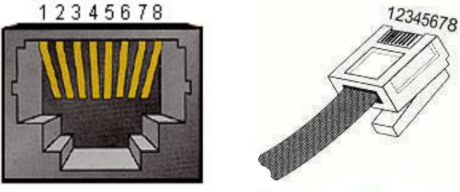
STATUS		DISCHARGE							
		L8 🟢	L7 🔴	L6 🟢	L5 🟢	L4 🟢	L3 🟢	L2 🟢	L1 🟢
SOC (%)	0～17	Flash 3	OFF	OFF	OFF	OFF	OFF	OFF	ON
	18～33			OFF	OFF	OFF	OFF	ON	ON
	34～50			OFF	OFF	OFF	ON	ON	ON
	51～66			OFF	OFF	ON	ON	ON	ON
	67～83			OFF	ON	ON	ON	ON	ON
	84～100			ON	ON	ON	ON	ON	ON

Work Status
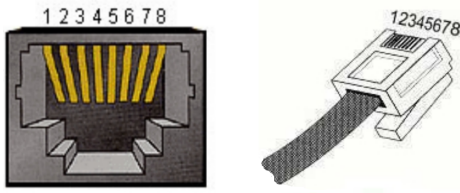
STATUS		RUN	ALM	SOC						DESCRIPTION
		L8 🟢	L7 🔴	L6 🟢	L5 🟢	L4 🟢	L3 🟢	L2 🟢	L1 🟢	
Shutdown		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
Standby		Flash 1	OFF	According to SOC						
Charge	Normal	ON	OFF	According to SOC						
	Over volt	ON	OFF	ON	ON	ON	ON	ON	ON	Switch to standby mode
	Protection	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	Stop charging
Discharge	Normal	Flash 3	OFF	According to SOC						
	Under volt	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	Stop discharging
	Protection	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	Stop discharging
Faulty		OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	Stop charging and discharging

1.2.5 Communication Port Pin Definition

1.2.5.1 CAN/RS485 to PCS

Port definitions	RJ45 Pin	Function
1 2 3 4 5 6 7 8 12345678	1	RS485-B
	2	RS485-A
	3	GND
	4	CAN-H
	5	CAN-L
	6	NC
	7	RS485-A
	8	RS485-B
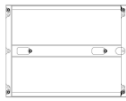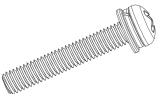
1.2.5.2 RS232 to PC
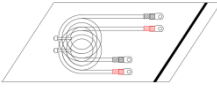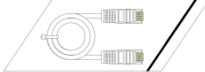
Port definitions	RJ45 Pin	Function
1 2 3 4 5 6 7 8 12345678	1	RS232-TX
	2	GND
	3	RS232-RX
	4	NC
	5	NC
	6	NC
	7	NC
	8	NC

2　Installation Guide
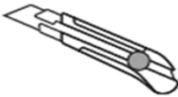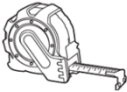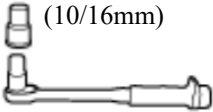
2.1　Checking Deliverables
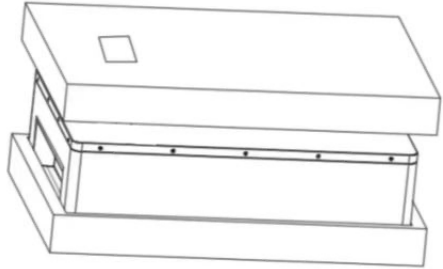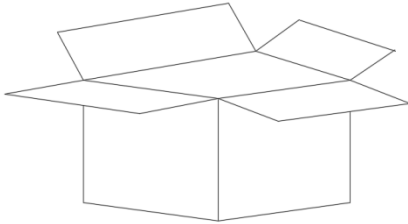
NO.	Pictures	Quantity	Description
1		1 pc	Battery
2		6 pcs	Battery hanging bolt
3		6 pcs	Battery hanger
4		1 pc	Wall Mount
5		6 pcs	Expansion Bolt
6		2 pcs	Wall Mount Bottom Bolt

7		1 pair	Power cable
8		1 pc	Comm cable

2.2　Tools

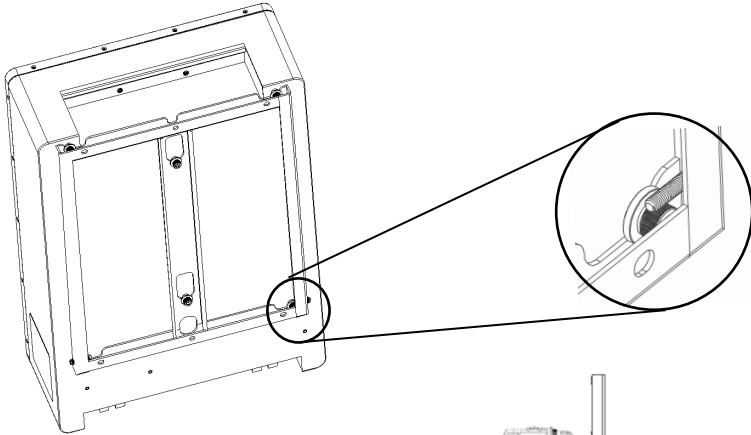| Tools			
Installation	Knife	Measuring tape	Socket wrench (10/16mm)
	Hammer	Cross Screwdriver	Hammer drill
Protection	ESD gloves	Safety goggles	Safety Shoes

2.3   Installation Instructions

Minimum mounting distance requirement: (Wall Mounted)
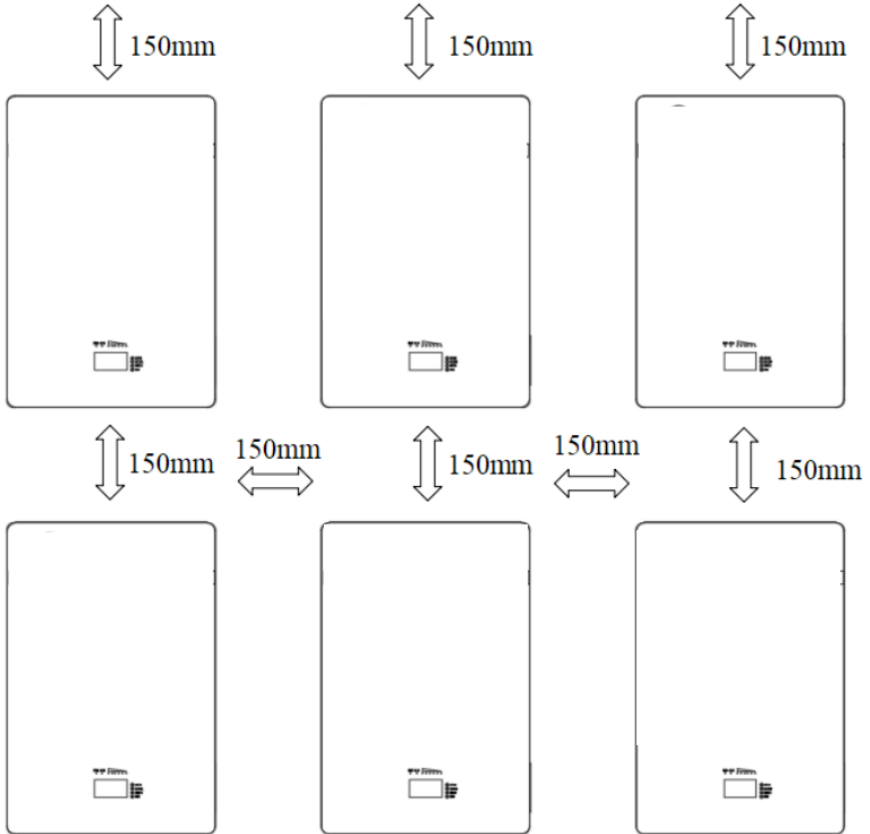
2.3.1　Installation Step

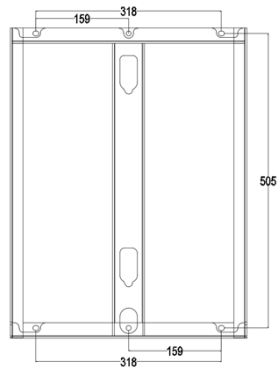**Step 1** Remove 2 pcs wall mount bottom bolts, remove wall mount from battery.

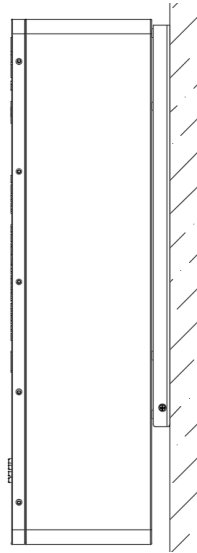**Step 2** Drill holes in the wall
according to wall mount.

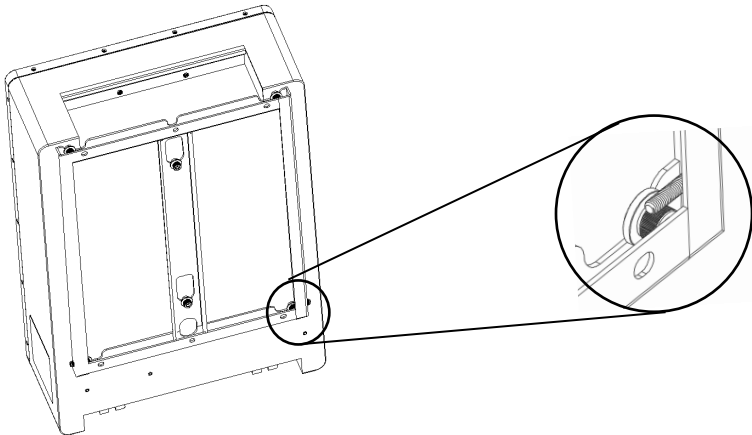**Step 3**
Fix wall mount to the wall.
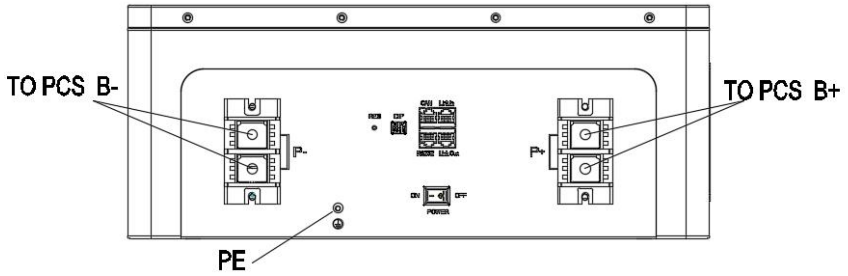
Step 4

Hang LVTS-512200 battery on wall mount.

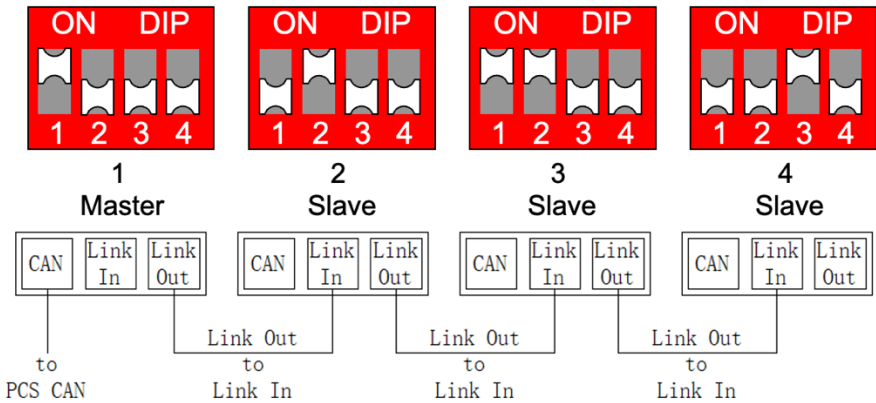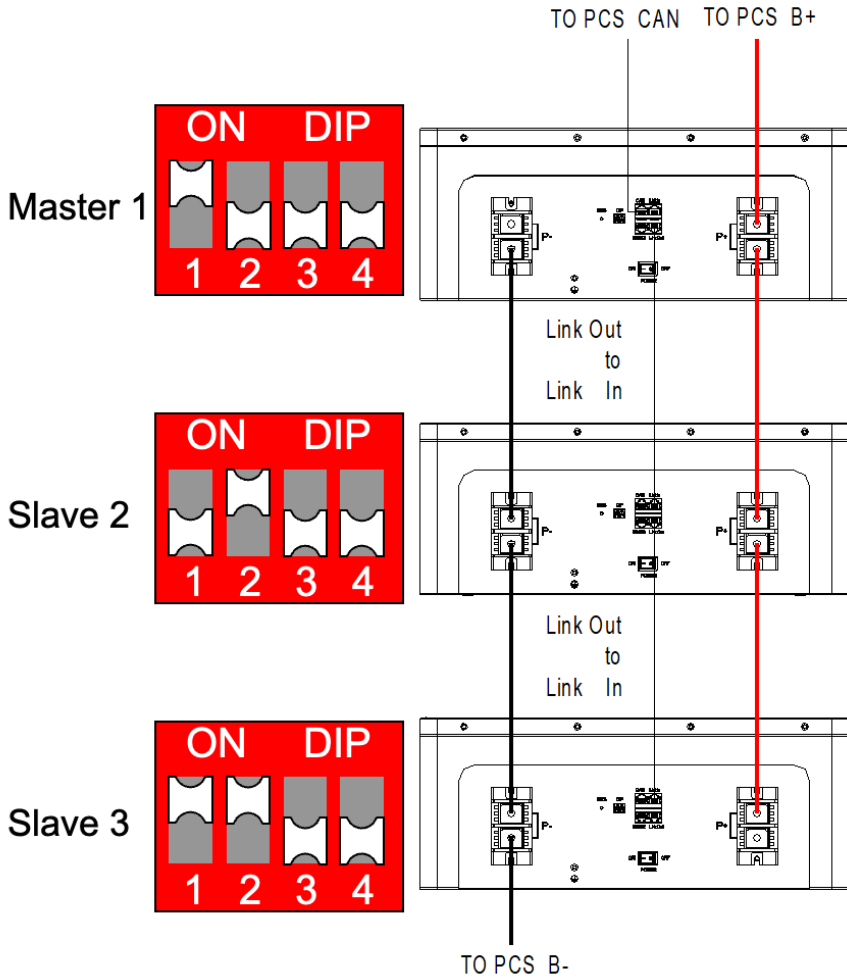**Step 5** Install 2 pcs wall mount bottom bolts.

Step 6 Connect PE cable & power cable.

Step 7 Connect communication cable.

Step 8 Refer to the following diagram when multiple batteries are connected in parallel:

3 Maintenance

3.1 Recharge Requirements During Storage

Batteries should be stored in temperature between -10℃ ～ +45℃, and recharged regularly according to the following table with 0.2C (20A) current to 50% SOC after long time storage.

Recharge requirement during storage

Storage Temperature	Storage Relative Humidity	Storage Time	SOC
Below -10℃	/	Not Allowed	/
-10~25℃	5%~70%	≤12 months	30%≤SOC≤60%
25~35℃	5%~70%	≤6 months	30%≤SOC≤60%
35~45℃	5%~70%	≤3 months	30%≤SOC≤60%
Above 45℃	/	Not Allowed	/

3.2 Recharge Requirements When Over Discharged

Please recharge over discharged (90% DOD) batteries according to the following table, otherwise over discharged battery will be damaged.

Recharge requirement when battery is over discharged

Storage Temperature	Storage Time	Note
-10~25℃	≤15 days	Battery disconnected from PCS
25~45℃	≤7 days	
-10~45℃	< 12 hours	Battery connected to PCS