



**SEPLoS MASON-135 51.2V 135AH**  
**HOME ENERGY STORAGE SYSTEM**  
**USER MANUAL**

Please read this manual carefully before operating  
and retain it for future reference.

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## 1. Safety Precautions

It is very important and necessary to read the user manual carefully before installing or using the battery. Failure to follow any of the instructions or warnings in this document can result in electrical shock, serious injury, death, or may damage the battery and the whole system.

- If the battery is stored for a prolonged time, it is requirement that they are charged every three to six months, and the SOC should be no less than 80%.
- The battery needs to be recharged within 12 hours, after fully discharging.
- Do not expose cable outside.
- All battery terminals must be disconnected before maintenance.
- Do not use cleaning solvents to clean the battery.
- Do not expose the battery to flammable or harsh chemicals or vapors.
- Do not paint any part of the battery, include any internal or external components.
- Do not connect battery with PV solar wiring directly.
- Any foreign object is prohibited to be inserted into any part of the battery.
- Any warranty claims are excluded for direct or indirect damage due to items above.

### 1.1 Before Connecting

- After unpacking, please check the battery and packing list first, if the battery is damaged or spare parts are missing, please contact the dealer.
- Before installation, be sure to cut off the grid power and make sure the battery is in the turned-off mode;
- Wiring must be correct, do not mix-connect the positive and negative cables, and ensure no short circuit with the external device;
- It is prohibited to connect the battery with AC power directly;
- The embedded BMS in the battery is designed for 48VDC, please DO NOT connect battery in series;

- It is prohibited to connect the battery with different type of battery;
- Please ensure the electrical parameters of battery system are compatible to inverter;
- Keep the battery away from fire or water.

#### 1.2. During operation

- If the battery system needs to be moved or repaired, the power must be cut off first and the battery is completely shutdown;
- It is prohibited to connect the battery with different type of battery;
- It is prohibited to put the batteries working with faulty or incompatible inverter;
- In case of fire, only dry powder fire extinguisher can be used, liquid fire extinguishers are prohibited;
- Please do not open, repair or disassemble the battery. We do not undertake any consequences or related responsibility due to violation of safety operation or violating of design, production and equipment safety standard

## 2. Brief Introduction



This manual describes the functions and features of the 51.2V 135Ah MASON-135 Battery Pack that designed and produced by SEPLOS Technology. This lithium battery is a great option for grid-tie or off-grid residential solar system. All SEPLOS batteries use safest and most stable components.

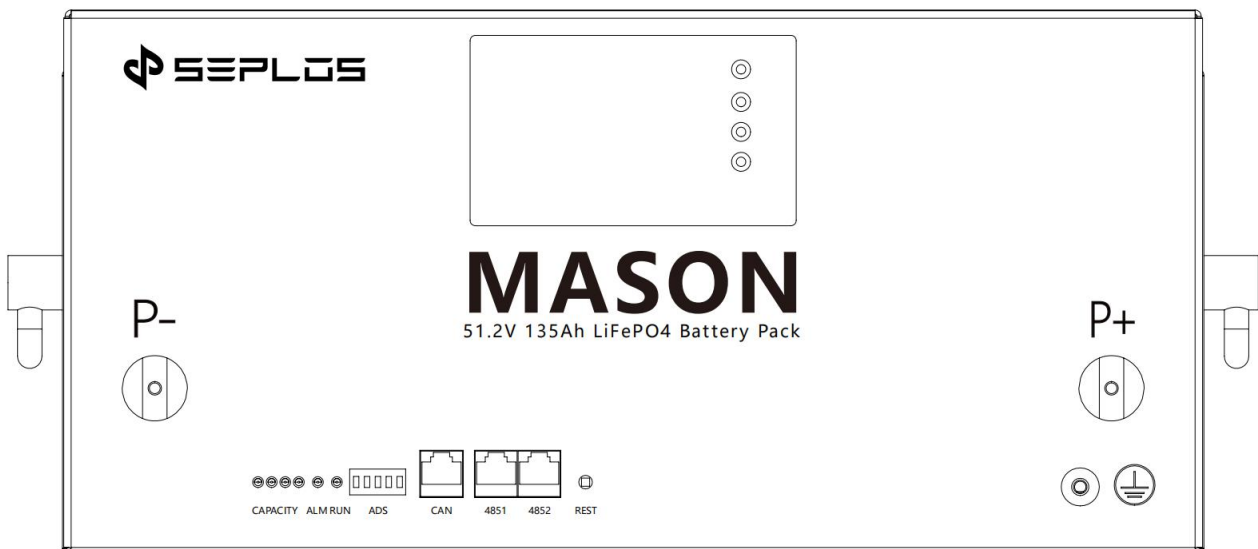
### 2.1 Features

- Lithium Iron Phosphate chemistry offers the most safest technology, and capable of reaching over 3000 cycles.
- SEPLOS smart BMS has over-discharge, over-charge, over-current, high and low temperature warning and protection functions.
- Flexible configuration, max. 15 packs can be connected in parallel for expanding capacity and power with 8 DIP switches.
- Pre-programmed with multi-protocols, SEPLOS MASON-135 works with multi-brands of inverters.
- It's perfect for solar, Telecom, wind and deep cycle applications.

## 2.2 Specification

| MASON-135          | PARAMETERS               |
|--------------------|--------------------------|
| Nominal Voltage    | 5.12V                    |
| Nominal Capacity   | 135AH                    |
| Energy Power       | 6.912KWh                 |
| Dimension (L*W*H)  | 420*530*200mm            |
| Cycle life         | 3000 times               |
| Weight (KG)        | 68KG                     |
| Temperature range  | 0 - 50°C (Charging)      |
|                    | -20 - 55°C (Discharging) |
|                    | -30 - 45°C (Storage)     |
| Operating Voltage  | 36.8 - 58.4V(0 - 60°C)   |
|                    | 32V - 58.4V(-20 - 0°C)   |
| Cell Configuration | 16S                      |
| Warranty           | 5 years                  |

## 2.3 Interface



**LCD SCREEN**

LCD Screen displays and monitors the voltage, capacity, temperature, and current information of battery pack. And LCD Screen comes with four buttons.



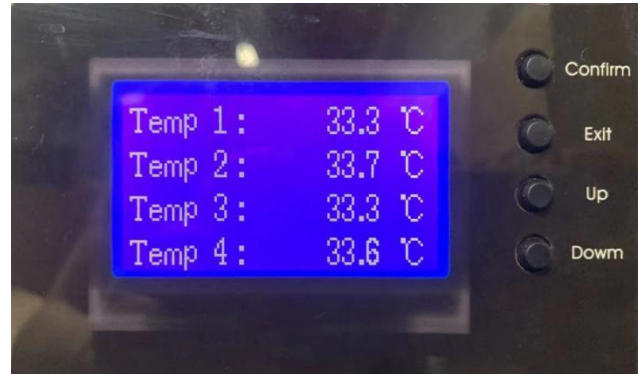
Home Page



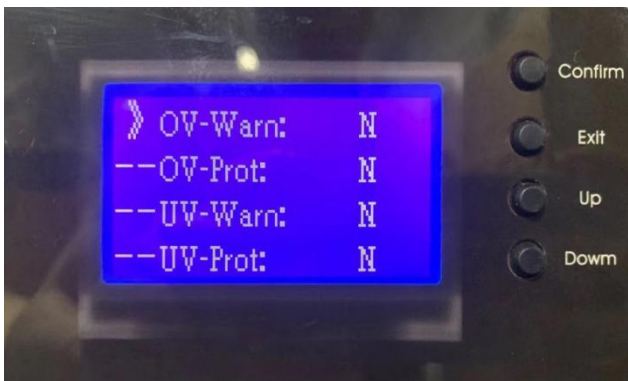
MENU Page



Individual Cell Voltage



Temperature



Warning Status



Capacity

**Capacity**

SOC light: 4 green LED lights to show the capacity status of battery pack. Each LED represents 25% the capacity.

| Status              | Charge      |             |             |             | Discharge   |             |             |             |
|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Capacity indicator  | ● L4        | ● L3        | ● L2        | ● L1        | ● L4        | ● L3        | ● L2        | ● L1        |
| 0-25%               | OFF         | OFF         | OFF         | Blink       | OFF         | OFF         | OFF         | Solid Green |
| 25%-50%             | OFF         | OFF         | Blink       | Solid Green | OFF         | OFF         | Solid Green | Solid Green |
| 50%-75%             | OFF         | Blink       | Solid Green | Solid Green | OFF         | Solid Green | Solid Green | Solid Green |
| >75%                | Blink       | Solid Green | Solid Green | Solid Green | Solid Green | Solid Green | Solid Green | Solid Green |
| Operating indicator | Solid Green |             |             |             | Blink       |             |             |             |

**ALARM**

ALARM light: red LED flash to show the battery alarm status. And red light to show the battery in protection status of abnormal temperature, over-current, or short-circuit.

**RUN**

Working light: green LED to show the battery working status.

| Battery status | Operating Mode        | RUN         | ALM          | LED Light                       |     |     |     | Remark       |
|----------------|-----------------------|-------------|--------------|---------------------------------|-----|-----|-----|--------------|
|                |                       | ●           | ●            | ●                               | ●   | ●   | ●   |              |
| Power off      | Standby               | OFF         | OFF          | OFF                             | OFF | OFF | OFF | OFF          |
| Standby        | Normal                | Solid Green | OFF          | According to battery SOC status |     |     |     | Standby mode |
| Charge Mode    | Normal                | Solid Green | OFF          | According to battery SOC status |     |     |     |              |
|                | Over current warnings | Solid Green | Blink type 2 |                                 |     |     |     |              |



|                |   |              |              |                                 |     |     |     |                          |
|----------------|---|--------------|--------------|---------------------------------|-----|-----|-----|--------------------------|
|                | Over voltage protection                             | Blink type 1 | OFF          | OFF                             | OFF | OFF | OFF |                          |
|                | Temperature, over current protection                | Blink type 2 | OFF          | OFF                             | OFF | OFF | OFF |                          |
| Discharge Mode | Normal  | Blink type 3 | OFF          | According to battery SOC status |     |     |     |                          |
|                | Warning   | Blink type 3 | Blink type 3 |                                 |     |     |     |                          |
|                | Over current, temperature, short-circuit protection | OFF          | Solid Red    | OFF                             | OFF | OFF | OFF | Termination of discharge |
|                | Under voltage protection                            | OFF          | OFF          | OFF                             | OFF | OFF | OFF | Termination of discharge |

**ADS**

ADS Switch: To setup battery address for identification, and make the communicate between batteries, battery to inverter.

NOTE: There are 8 bit DIP switches, keep the switch on down side means 'OFF', turn up the switch to top side means 'ON'

**CAN**

CAN 5 communication interface: follow CAN BUS protocol, for output pack information to inverter. One pack should be assigned as master pack. And the last 4 DIP switches (#5, #6, #7, #8) to tell how many slave packs are followed. The first 4 DIP switches are used for identifying slave packs.

**RS485**

RS485 communication interface: RJ45 port, follow RS485 protocol. For transmitting battery pack information between paralleled packs. The first 4 DIP switches (#1, #2, #3, #4) are used for identifying packs' information on software.

## RESET

Reset button: to start the battery pack, hold the button for 2s to turn on battery pack.

## Battery Terminals

Two battery terminals for connect batteries in parallel, or connect the battery with inverters.

## 2.4 Cell Specification

SEPLoS 3.2V 135Ah lithium Iron phosphate (LiFePO<sub>4</sub>, LFP) aluminum case prismatic rechargeable battery cell.

- Brand New Grade A cells
- 3000+ cycle life
- M6 nuts

## 2.5 Seplos Smart BMS

The BMS is applied to monitor current, voltage, temperature, protection against over-charge, over-discharge, over-current, over-temperature, under-temperature and short circuit. The BMS provides cell balancing and current limitation during charging process to ensure a reliable safety and performance.



### 2.5.1 BMS Functions

- Over charge protection
- Over discharge protection
- Over current protection
- Cell balancing
- Temperature protection
- CAN and RS485 communication

Refer to the BMS specification for the detailed information

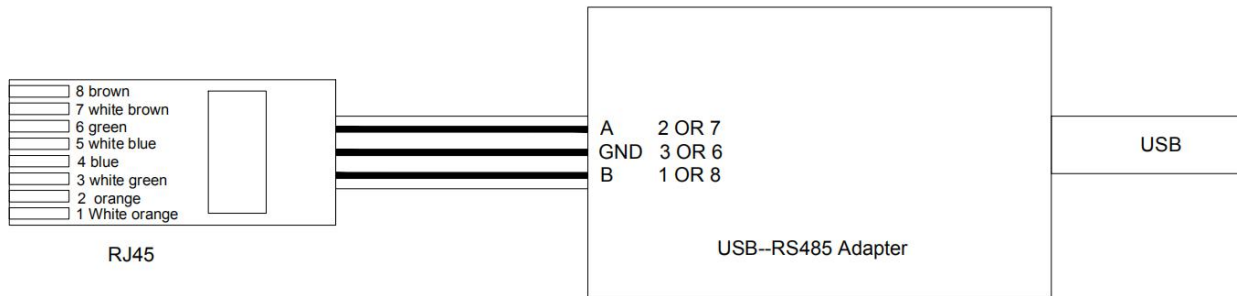
### 2.5.2 BMS Upper Computer System

Battery pack can be remotely monitored with SEPLOS BATTERYMONITOR software. With this software, battery voltage, cell voltage of single cell and pack, SOC status, cell temperature, voltage differences can be monitoring in real time. Through history record, battery status can be checked afterwards.

First, connect the battery pack to the master computer with USB-RS485 adapter with SEPLOS RS485 adapter.

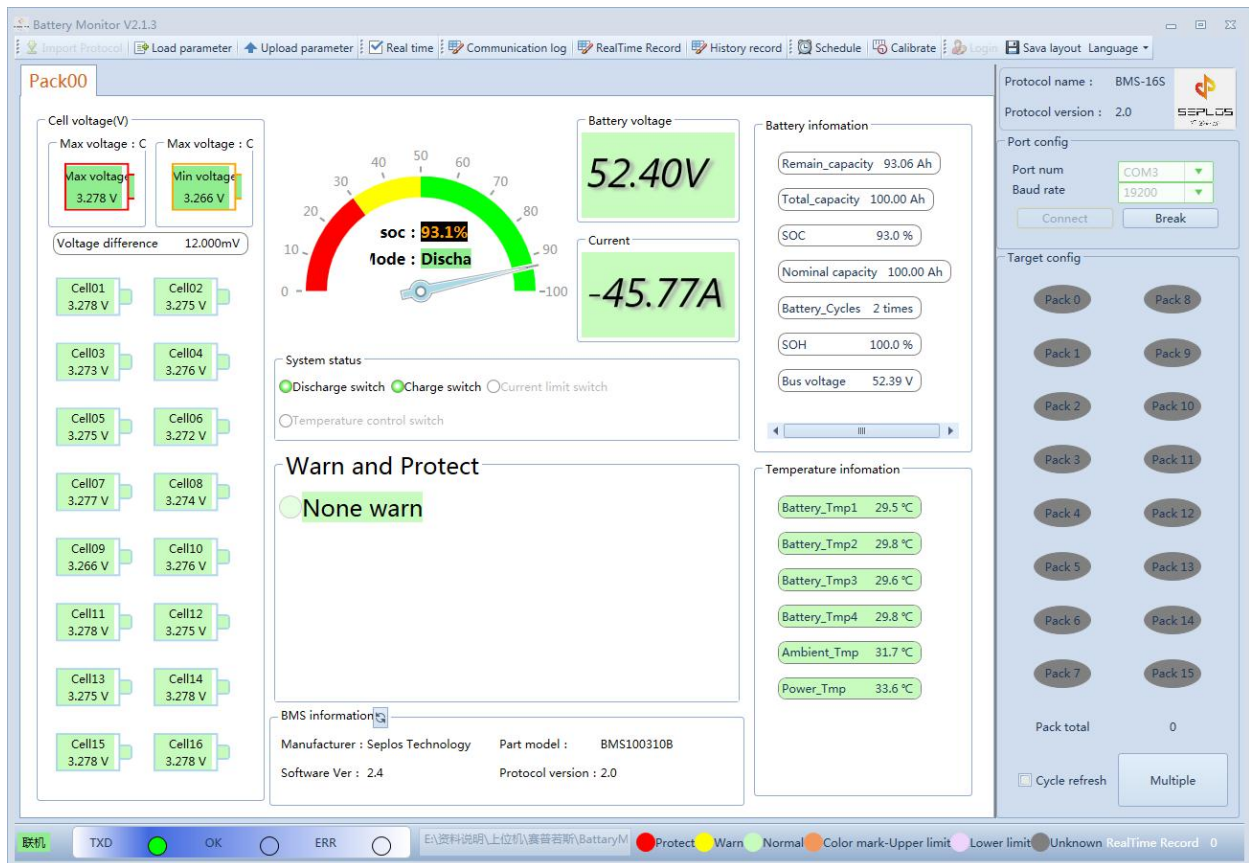


If the adapter needs wiring, follow the wiring diagram.



Note: Download the software installation file at Google drive with this link:

<https://drive.google.com/drive/folders/10pxgNLHovcDZRVGrCZsSkfecBrRw-AdW?usp=sharing>



### 2.5.3 Compatible Inverters

To make sure that the battery module works perfectly, it would be better to use the compatible inverters listed below.

**Pre-programmed CAN Protocol list:**

- Goodwe-V1.5
- Pylon-V1.3
- Growatt-V1.05
- Victron CANBUS\_PROTOCOL
- LUXPOWER\_CAN Protocol
- Sofar\_REV5
- SMA\_EN\_10

**Compatible inverters list:**

- ✓ Goodwe
- ✓ Growatt (RS485 protocol and CAN protocol, confirm the models and protocols before purchase.)
- ✓ Victron
- ✓ LUXPOWER
- ✓ Sofar
- ✓ DEYE
- ✓ Sermatec
- ✓ RENAC
- ✓ TBB POWER
- ✓ SOLIS
- ✓ SMA
- ✓ FoxESS

- ✓ Voltronic (RS485 protocol, need to customize)
- ✓ Phocos (RS485 protocol, need to customize)

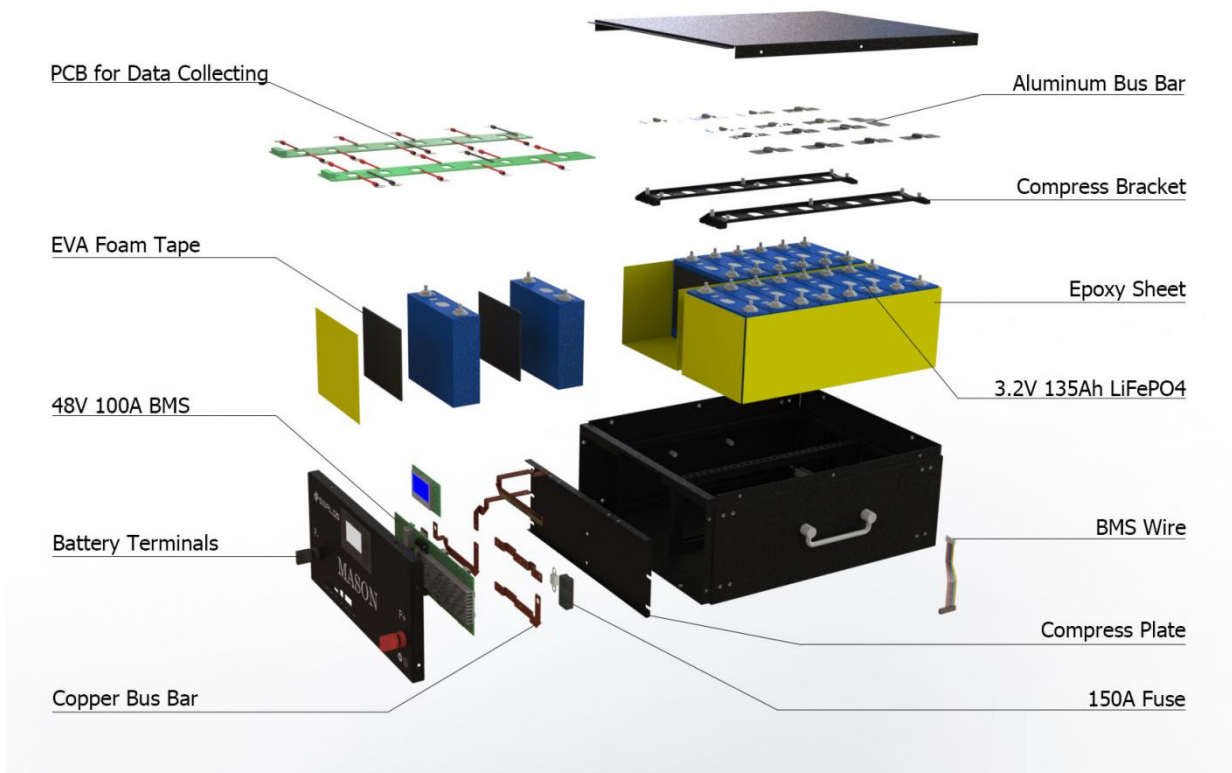
### 3. Installation

#### 3.1 Battery assembly

#### 3.2 Packing List

MASON-135 designed with easy assembly for customer made their own battery pack. Please check the packing list and assemble the battery pack accordingly to the installation guidance.

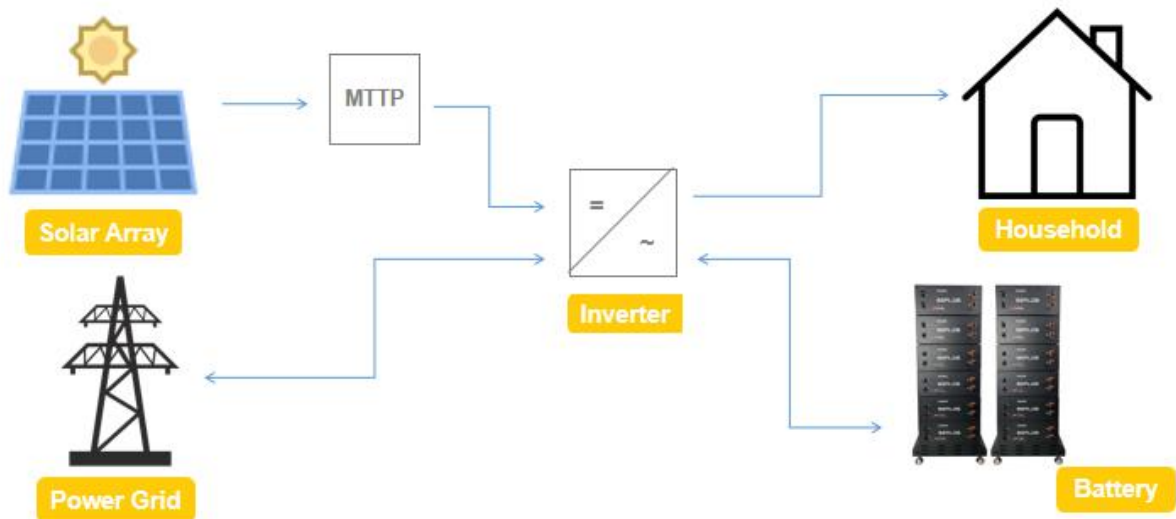
## Mason-6.9KWh DIY Battery Kits



### 3.3 Application

MASON-135 deep cycle battery pack is ideal and preferred for the following applications.

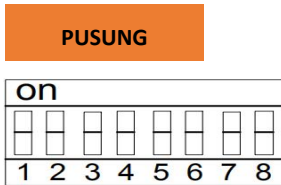
- Solar/Wind System
- Off-grid applications



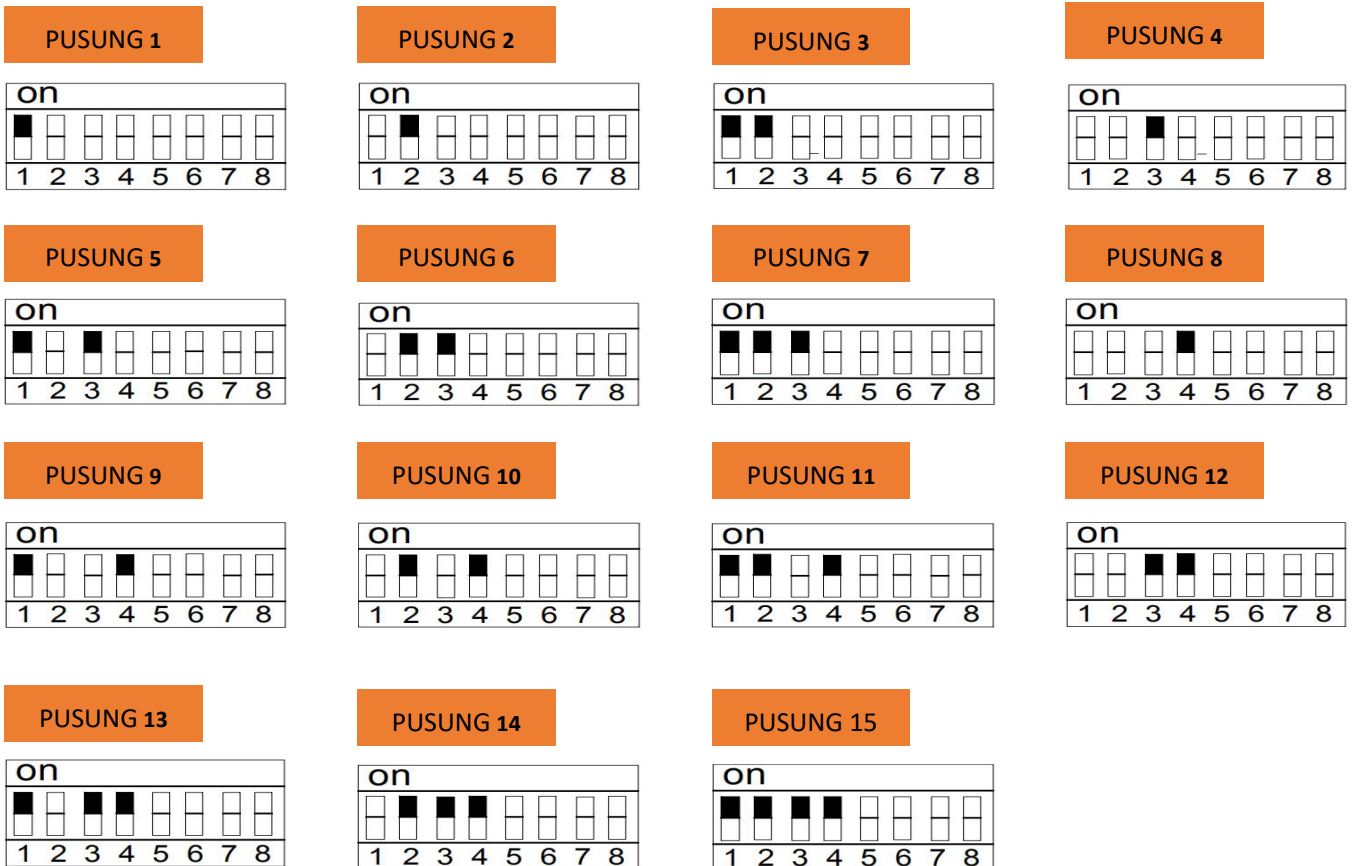
## 4. Appendix

### 5.1 RS485 DIP address setup demonstration.

Single pack: No need to set DIP address.



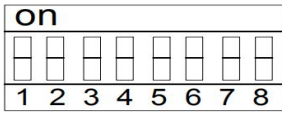
Multiple PUSUNG packs in parallel:



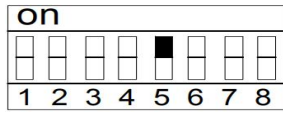


5.2 CAN BUS DIP address setup demonstration.

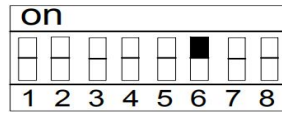
1 Pack



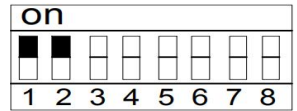
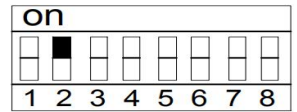
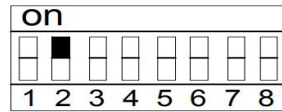
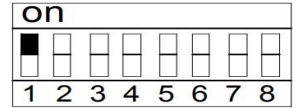
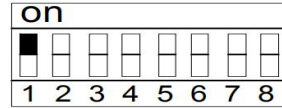
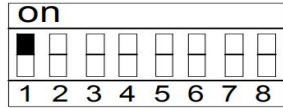
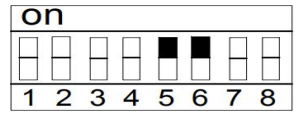
2 in Parallel



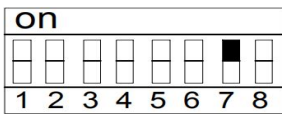
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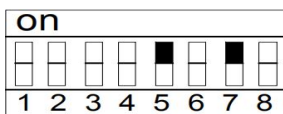
4 in Parallel



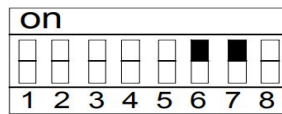
5 in Parallel



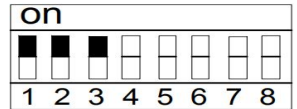
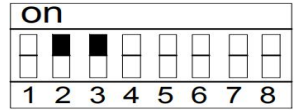
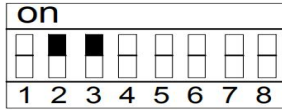
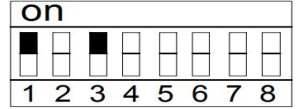
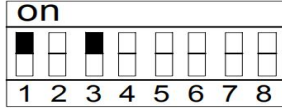
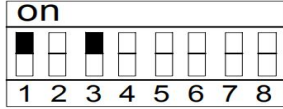
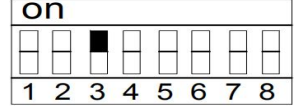
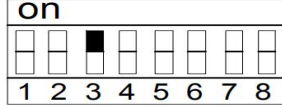
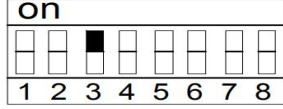
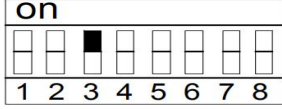
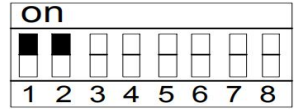
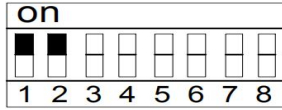
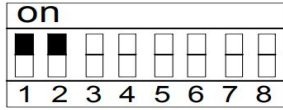
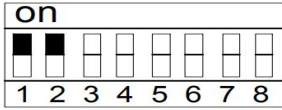
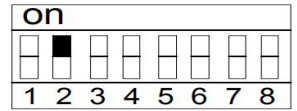
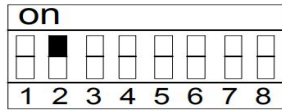
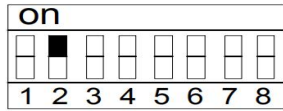
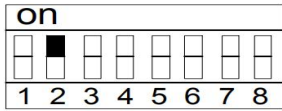
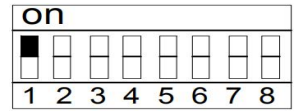
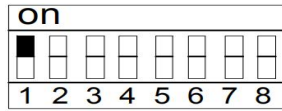
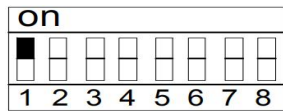
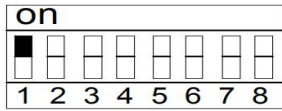
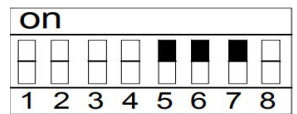
6 in Parallel



7 in Parallel



8 in Parallel

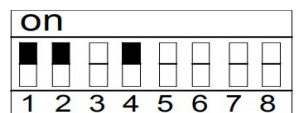
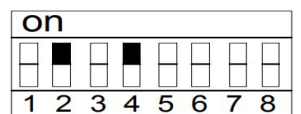
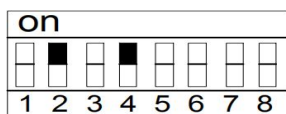
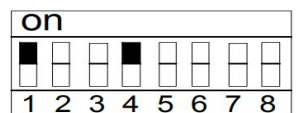
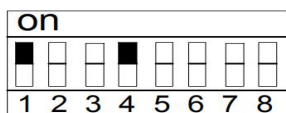
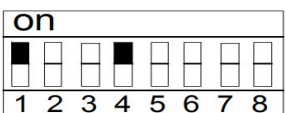
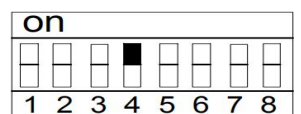
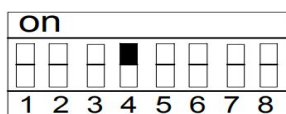
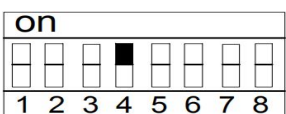
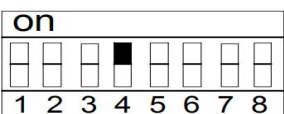
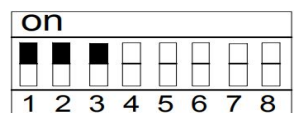
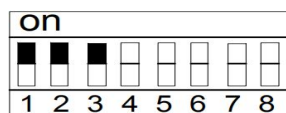
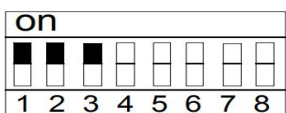
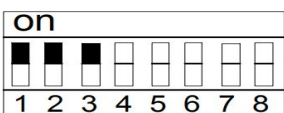
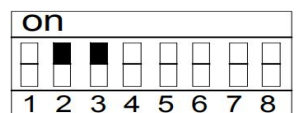
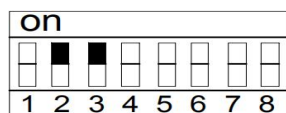
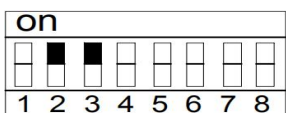
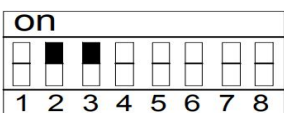
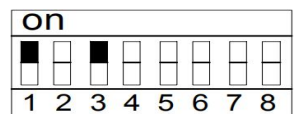
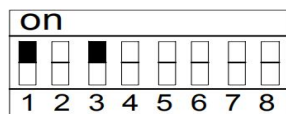
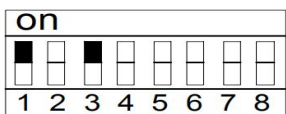
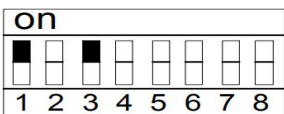
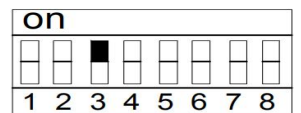
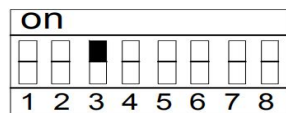
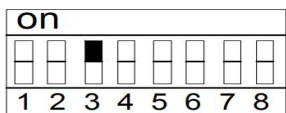
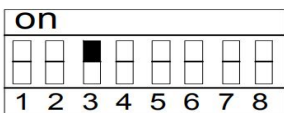
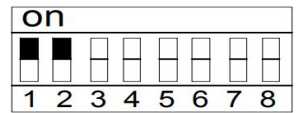
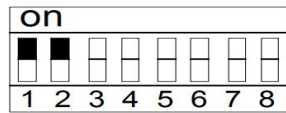
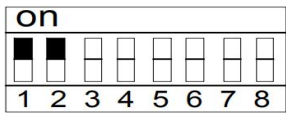
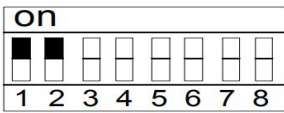
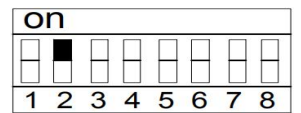
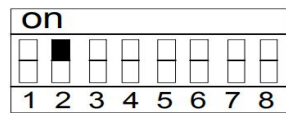
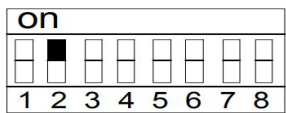
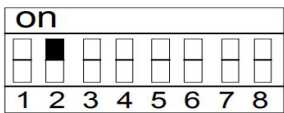
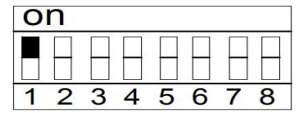
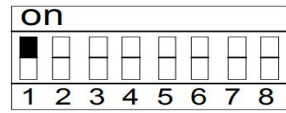
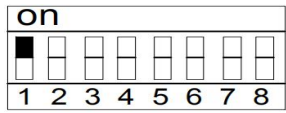
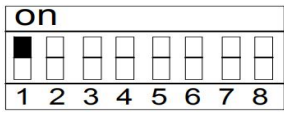
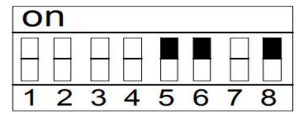
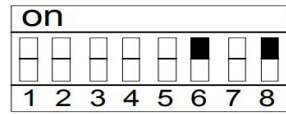
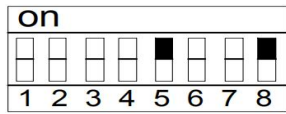
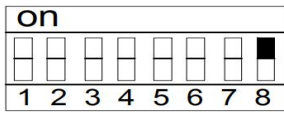


9 in Parallel

10 in Parallel

11 in Parallel

12 in Parallel

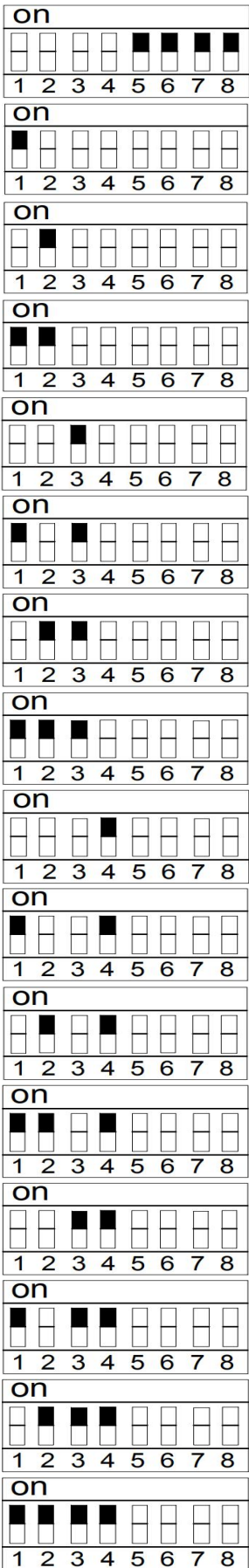
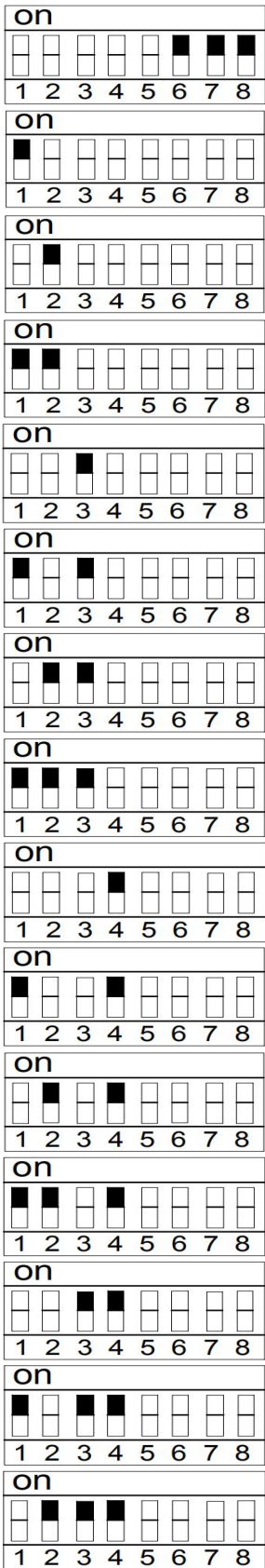
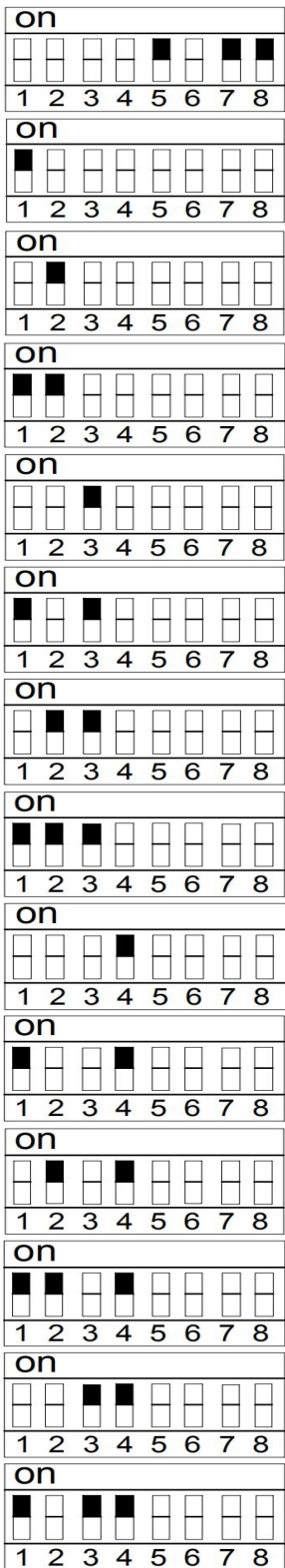
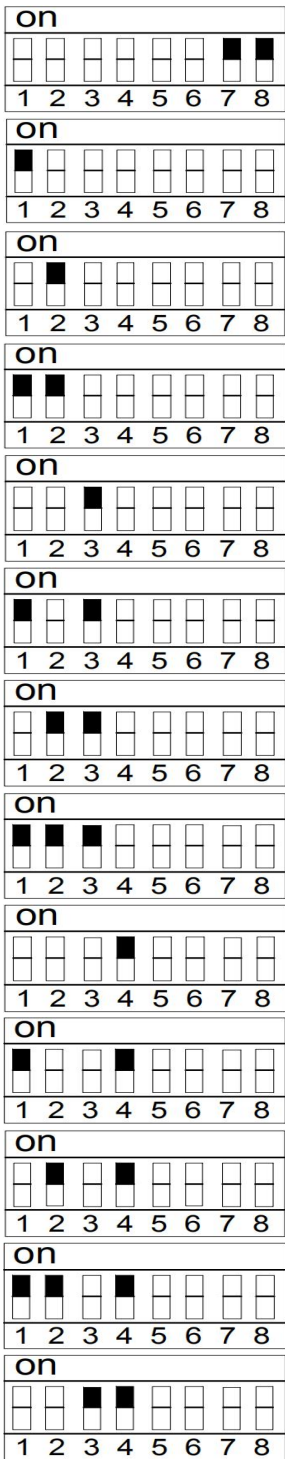


**13 in Parallel**

**14 in Parallel**

**15 in Parallel**

**16 in Parallel**





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