

2024.06.06

# Specification

of Tower Combiner Box  
(2 clusters)



## 1. Product introduction

### 1.1 Product introduction

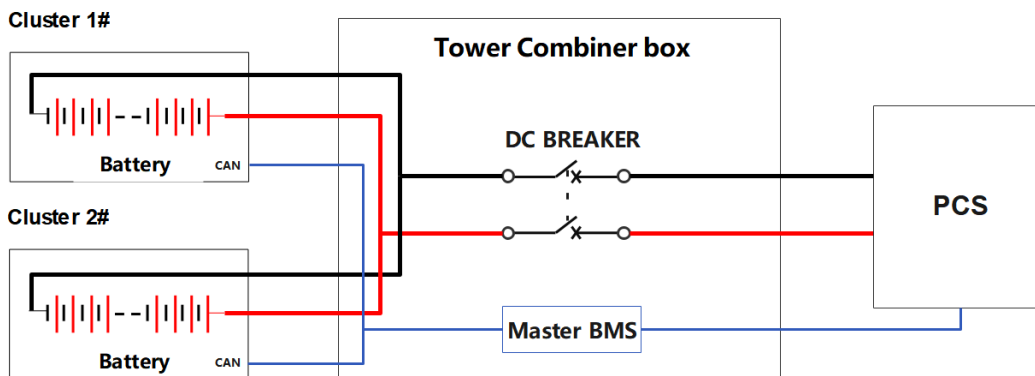
Tower Combiner Box in the energy storage system is to ensure that the energy storage component orderly connection and the connection device of flow function. Combiner Box can guarantee energy storage system is easy to cut off the circuit when maintenance, inspection, failure occurs when the energy storage system, reduce the scope of the power outage ensure availability of system.

### 1.2 Product introduction

Item	Unit	Spec
Power supply rated supply voltage	V	24VDC/220VAC
Maximum number of battery clusters supported	/	2
Dimension (W*D*H)	mm	580*480*170
Weight	kg	12
IP Rating	/	IP65
Altitude	m	4000
Operating Temperature	°C	-40~60

## 2. Basic principles and structures

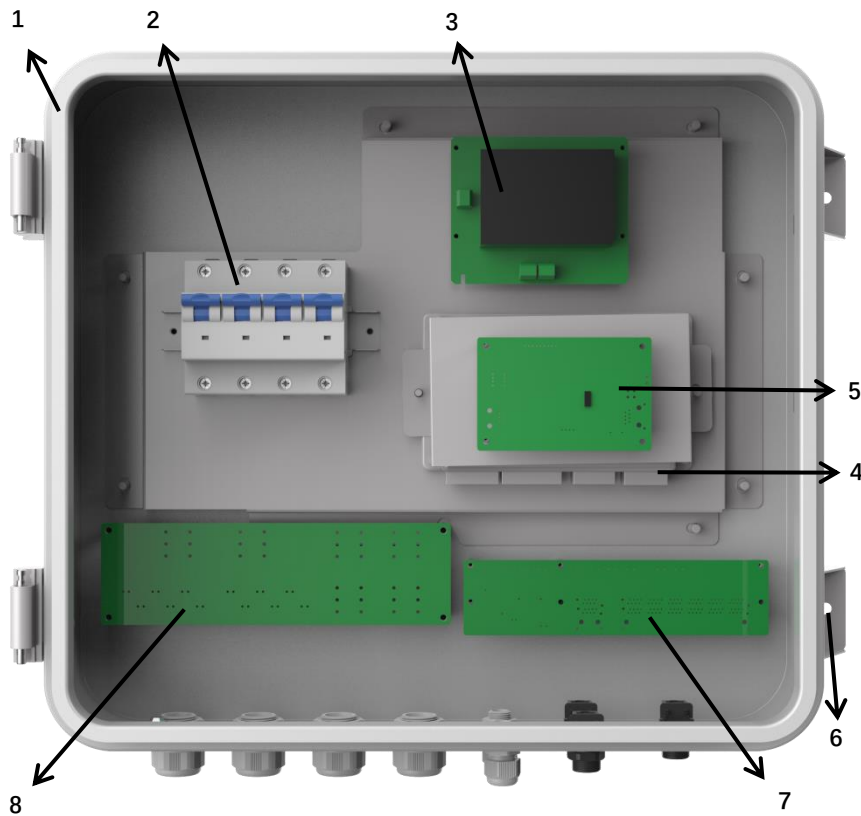
### 2.1 Principle block diagram



### 2.2 Working principle

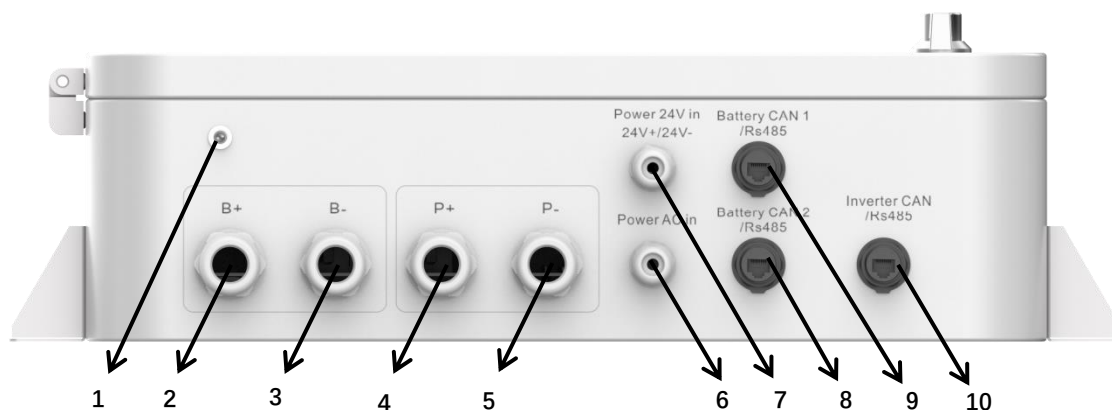
The Combiner box is mainly composed of bus copper bars, switches and boxes. When the switch is closed, the electric cabinet of each branch passes through the copper confluence. The combiner box is connected to the PCS to achieve energy exchange between the battery and the PCS.

**2.3 Appearance and Structure**



Item	Name	Definition
1	Box	Tower combiner box
2	DC breaker	When the system is operating normally, the DC switch is in the ON position
3	AC/DC	Supply 24V DC power to BMS
4	BMS	The BMS is used to summarize the battery data of each cluster and communicate with the inverter
5	Multi-function communication board	Responsible for RS485 communication
6	Installation fixing hole	Used for DC combiner box and wall installation and fixing
7	Communication switching board	Used to summarize the communication data of each cluster of batteries
8	Bus PCB board	Used for summarizing the current of 2 clusters of batteries

**2.4 Port Definition**



Item	Name	Definition
1	GND	Combiner box grounding port
2	B+	Battery positive power cable interface
3	B-	Battery negative power cable interface
4	P+	PCS positive power cable interface
5	P-	PCS negative power cable interface
6	Power AC in	220V AC power cable of the combiner box passes through this point
7	Power 24V in	24V DC power cable passes through this point
8	Battery CAN2/RS485	Connect the communication cable for each battery 2
9	Battery CAN1/RS485	Connect the communication cable for each battery 1
10	Inverter CAN/RS485	Used for communication with inverters

### 2.5 Communication Port Definition



Battery CAN/RS485

PIN	Color	Definition
PIN1	Orange/white	485A
PIN2	Orange	485B

PIN3	Green/white	NC
PIN4	Blue	CANH
PIN5	Blue/white	CANL
PIN6	Green	CANIN
PIN7	Brown/white	CANOUT
PIN8	Brown	NC



Inverter CAN/RS485

PIN	Color	Definition
PIN1	Orange/white	485A
PIN2	Orange	485B
PIN3	Green/white	NC
PIN4	Blue	CANH
PIN5	Blue/white	CANL
PIN6	Green	NC
PIN7	Brown/white	NC
PIN8	Brown	NC