JEBEL TECHNOLOGY CO., LTD.

T: +971 4 422 56 53
E: sales@nastech.ae
W: www.jebel.ae

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Simple installation manual of DC cabinet

Model: Jebel Batt-Master Cabinet 9RP-15RP

1. Basic components

T he DC cabinet mainly collects and distributes current to each battery cluster to realize charge and discharge management function. The DC cabinet consists of 1 DC cabinet, 9 DC circuit breaker, copper bar, AC isolation transformer, MBMS, LCD, isolation power module and wire, etc.

2. Specifications and performance

Number	Model	Jebel Batt-Master Cabinet 9RP
1	Number of battery clusters in parallel	3~9P（According to the actual project needs）
2	Nominal charge and discharge current	≤0.5C/900A
3	Size	D600*W600*H1760mm
4	The weight of the	≤220kg
5	Installation environment	Indoor

Table 1 DC cabinet parameters

3. Bills of Materials

Number	Category	Specification	Quantity
1	DC circuit breaker	DC250/1000V 4P4T on/off	9
2	Switch	2P 16A	4
3	Display	7 inch DC24V	1
4	Power frequency transformer	230:315:400---160:230	1

4. DC circuit breaker

Number	Type	Specification
1	Rated continuous current	250A
2	Rated volrage	1000V
3	Wiring mode	2 in and 2 out

Table 2 DC circuit breaker

5. LCD

Number	Category	Specification
1	Size	7 inches
2	Power supply voltage	DC24V

6. MBMS

Central control BMS for 3~9 battery clusters.

7 .DC cabinet interior drawing



8.DC cabinet size drawing

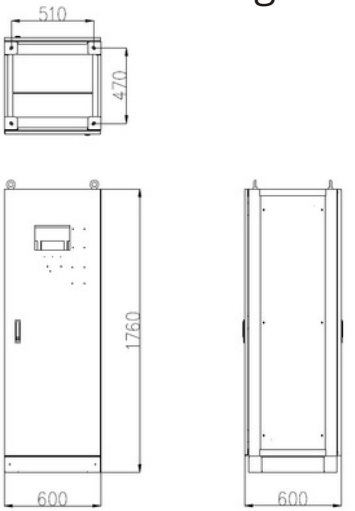
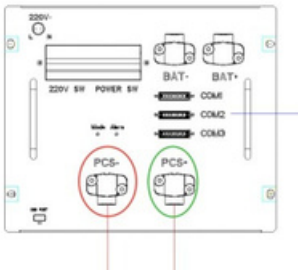


Figure 1 DC cabinet parameters

9.DC cabinet installation

9.1 DC cabinet power cable installation

1) Two positive and negative cables of 35 square meters are made respectively. One end of the cables is connected with PCS+/ PCS- of different battery cluster high-voltage boxes, and the other end of the cables is connected with the positive and negative connection inlet of the circuit breaker corresponding to the main cabinet.





2) Make the cable between the DC cabinet and the inverter according to the following table. One end of the cable is connected with the total positive and total negative copper bar inside the DC cabinet, and the other end of the cable is connected with the battery end of JBL-HYBT or JBL-PCS inverter.

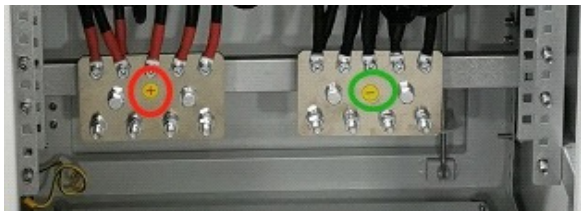


Table 3 DC cable

Number	Category	Specification
1	Cabinet goes to the BATTER terminal of JBL-HYBT-100K-3PH	50 m^2 /5m/M10 OT terminal
2	Cabinet goes to the BATTER terminal of JBL-HYBT-30K-3PH	50 m^2 /5m/M10 OT terminal
3	Cabinet reaches the BATTER terminal of JBL-HYBT-150K-3PH	120 m^2 /5m/M12, and the OT terminal

3) Connect from left to right to prevent misconnection and short-circuit.

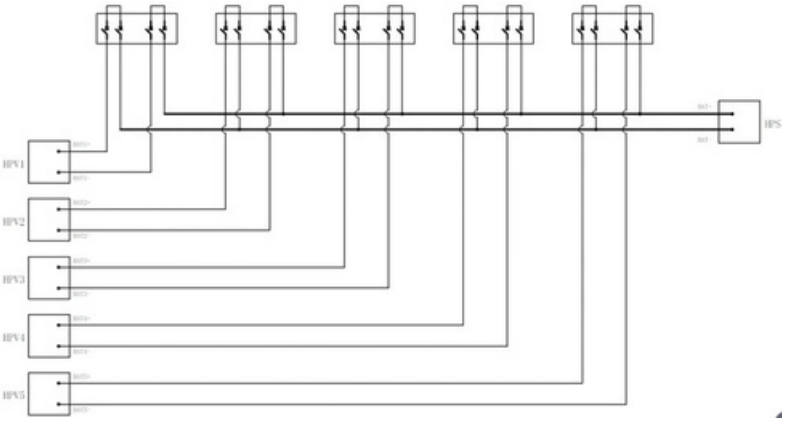
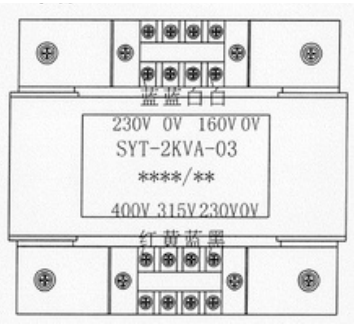
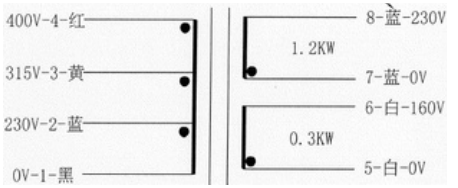


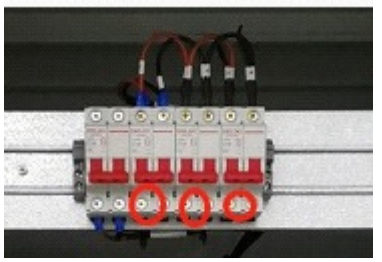
Fig. 2 Electrical schematic diagram of DC cabinet power line

Precautions:
After the DC cable connection is completed, tap the cable plug connector with a rubber hammer to ensure the cable is firmly installed.

9.2 AC cable installation of DC cabinet







1) AC input wiring: according to the field AC voltage level, such as AC 400V, prepare two AC cables, the input is connected to the AC400V-4-red and 0V-1-black end of the isolation transformer;
2), AC load output wiring: according to different load functions, AC load outputs are respectively connected to the air switch output terminal.

9.3 DC cabinet communication power cable installation

1) Connect the DC24V wire between the DC cabinet and the battery cluster (high voltage box). The power supply DC24V is output from the high voltage box to supply power to the MBMS and the display screen inside the DC cabinet;
2) Connect RS485 and CAN1 communication wires between DC cabinet and battery cluster (high voltage box);
3) Connect CAN2 communication wire between DC cabinet and JBL-HYBT inverter;
4) Connect the EX485 communication wire between the DC cabinet and the monitor.





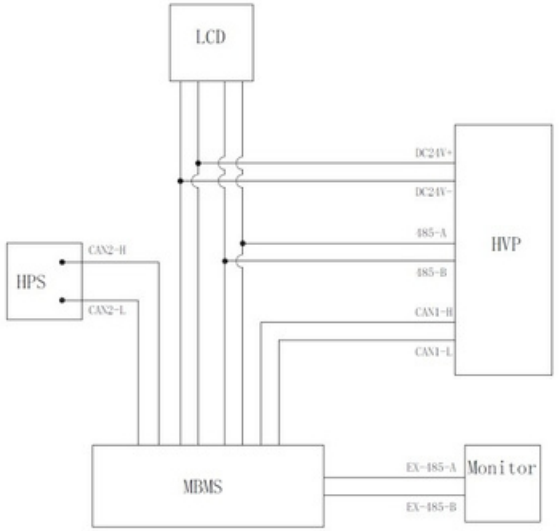


Fig. 4 Schematic diagram of DC cabinet communication line and power line

Precautions:
When engaged in the assembly of energy storage system, they must wear labor protection shoes;
Long sleeves for personnel.No sleeveless shirts, no sleeves rolled up;
All personnel involved in the work wear appropriate gloves;

10.Connecting instructions of DC cabinet, battery cluster and JBL-HYBT

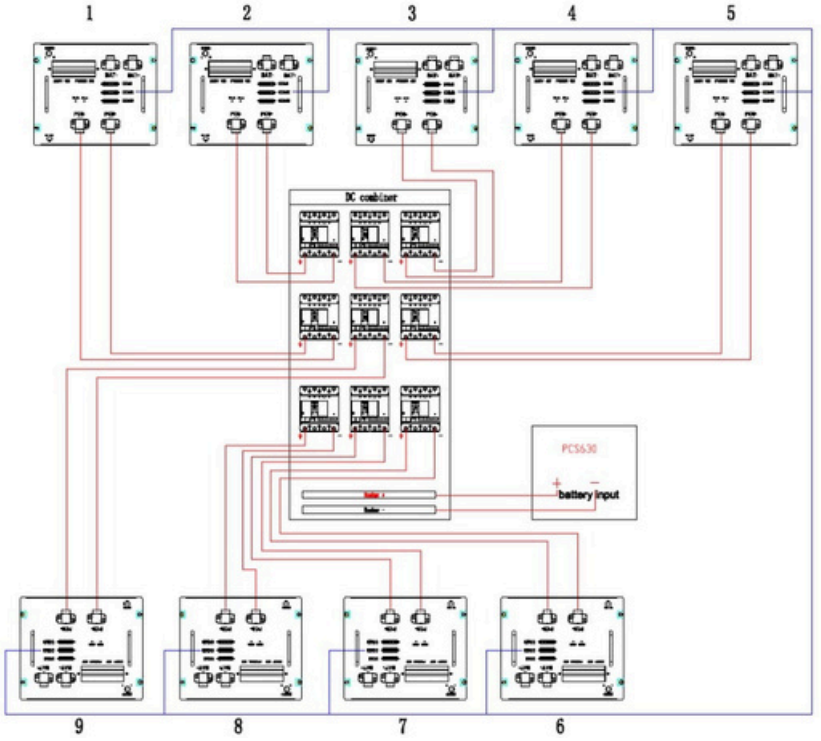


Fig.5 Electrical schematic diagram of high voltage box and DC cabinet of energy storage system

before DC cabinet wiring, all circuit breakers should be reset to OFF;

Post installation inspection
The energy storage system shall be inspected after installation:
Tighten the screw, the torque meets requirement(12Nm);
Wiring from the high voltage box of the battery cluster to the DC cabinet input circuit breaker, from DC bus cabinet copper output to the inverter should be correct, on both positive/negative poles, models and line sequence;
The field wiring should be consistent with the factory wiring diagram.
Check whether the cable of each interface is tight after installation;

11. DC cabinet installation and debugging

1) Power on the high-voltage box of the battery cluster, wait for about 1min, and the battery cluster will change from red to green on the second page of the LCD screen, as shown in the figure below;



2) Use a multimeter to test the voltage between input positive and negative poles of the 9 input circuit breakers inside the DC cabinet, if battery voltage is detected to be 500V or above, then manually switch the DC cabinet circuit breaker of the corresponding battery cluster to “ON”. Otherwise if no battery voltage detected, the circuit breaker stays “OFF”; After the system discharge for a period of time, the remaining DC cabinet circuit breakers should not be switched ON until the battery voltage of each battery cluster number is detected.

12. Caution

This equipment contains potentially hazardous voltages. Do not attempt to disassemble the unit.
•To avoid personal injury due to energy hazard, remove wristwatches and jewelry when repairing.
Use tools with insulated handles.
•Repair are to be performed only by qualified technical personal authorized by Jebel ESS.

13. About Jebel ESS

JEBEL TECHNOLOGY CO., LTD.

Serviceline
T: +971 4 422 56 53
E: sales@nastech.ae
W: www.jebel.ae