



Batt-Master cabinet 6R-100S

User Manual

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1 Introduction

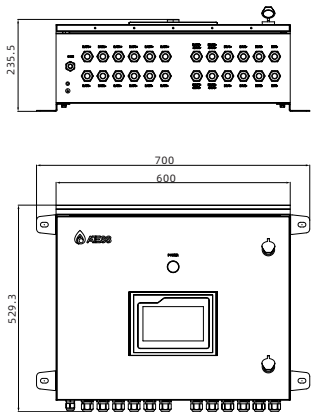
1.1 Contents

The Batt-Master cabinet 6-100S is a DC cabinet designed by ATESS specifically for the Enerstack100 stacked battery system, used for the busing of multiple battery clusters. Its basic parameters are as follow.

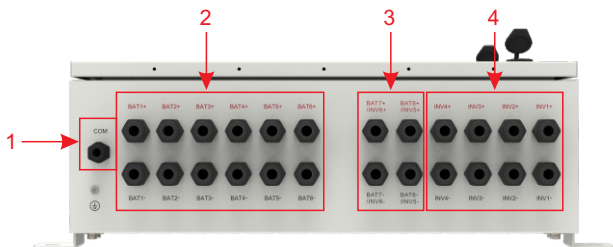
NO.	Item	Parameter
1	Dimension (W/H/D)	700*530*236(W/H/D)
2	Weight	22KG
3	Max power	600KW
4	Max battery cluster quantity	6
5	Max battery cluster current	100A
6	Max inverter quantity	6
7	Installation method	Wall mounting
8	Incoming line method	Down in, down out
9	Cooling method	Natural air cooling
10	Protection grade	IP54

Table 1 Basic parameters

1.2 External dimension

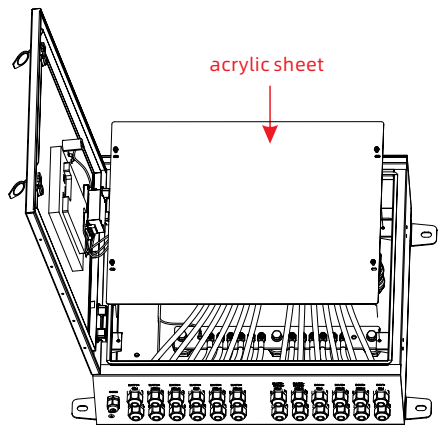


1.3 Bottom terminal description



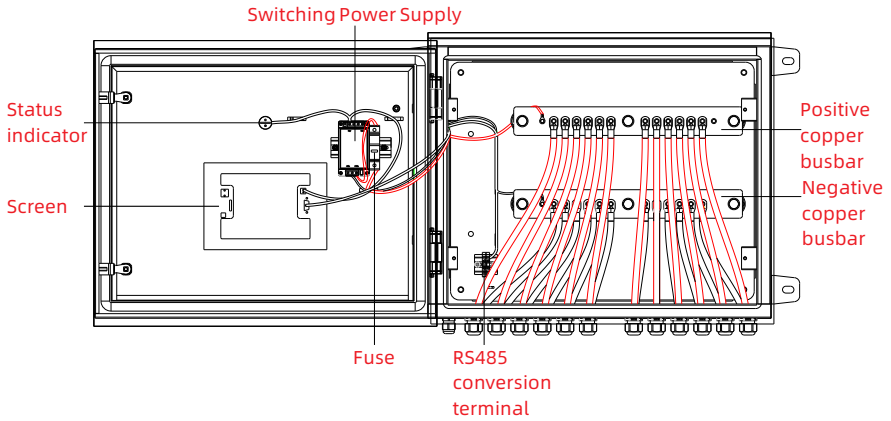
NO.	Description	Quantity(Set)
1	RS485 communication port	1
2	BAT threading port	6
3	BAT/INV threading port	2
4	INV threading port	4

1.4 Internal components



The combiner box comes standard with an acrylic plate to prevent accidental contact with internal live components. To ensure safety, the acrylic plate must be removed before any external wiring.

Note: The acrylic plate must be reinstalled after wiring is complete to ensure safety.



2 Installation and wiring

2.1 Installation prerequisites

● Personnel Requirements

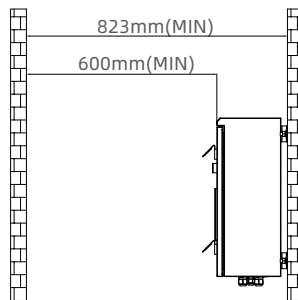
This equipment is a high-voltage electrical device; improper operation may result in electric shock. Therefore, installers must be professionals familiar with this system and have undergone relevant safety training before starting work. At least two people are required to operate the installation.

● Environmental Requirements

The installation location should avoid direct sunlight, heat sources, strong corrosive environments, enclosed spaces, and low-lying areas.

● Space Requirements

To ensure safe operation, the clearance in front of the wall where the combiner cabinet is installed should be no less than 823mm (including the cabinet). The installation height should be suitable for adult operation.



● Tools preparation



Crimping tool



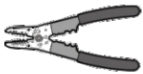
Pen



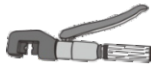
Phillips Screwdriver



Flat Screwdriver



Wire Stripple



Hydraulic Crimping



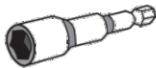
Wrench



Tape Measure



Hair Dryer



Socket Wrench



Torque Wrench



Drilling Machine

● Safety Requirement

We recommend wearing the following safety gear when working with batteries.



Insulated glove



Safety goggle

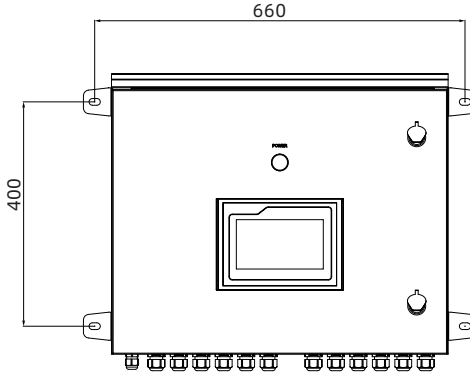


Safety shoes

2.2 Cabinet installation

● Mark the installation hole positions

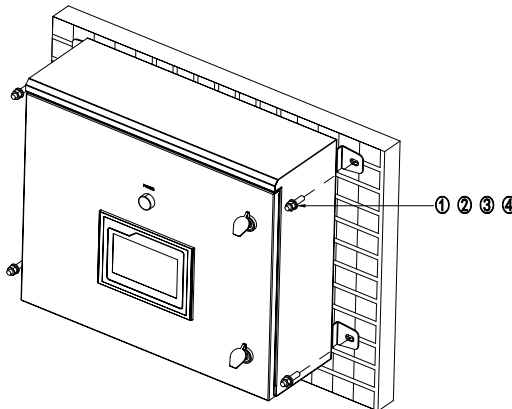
According to the dimensions of the cabinet's fixing holes, mark the drilling locations on the wall.



● Fixed combiner cabinet

1. Use a $\phi 14\text{mm}$ drill bit to drill four holes, with holes 75 to 80mm deep.
2. Insert the built-in M10 expansion bolt through the mounting holes of the chassis and gently tap them into the wall holes. Use nuts combined with flat washers and snap washers to lock the chassis to the wall. Recommended torque: $30\text{N}\cdot\text{M}$.

Note: The installation wall surface should be perpendicular to the horizontal plane, with a maximum offset angle not exceeding 10° .



2.3 Cabinet Wiring

● Wiring of power lines

Cable Requirements: $\Phi \geq 25\text{mm}^2$ / 4AWG

Insulation withstand voltage rating $\geq 1000\text{V}$

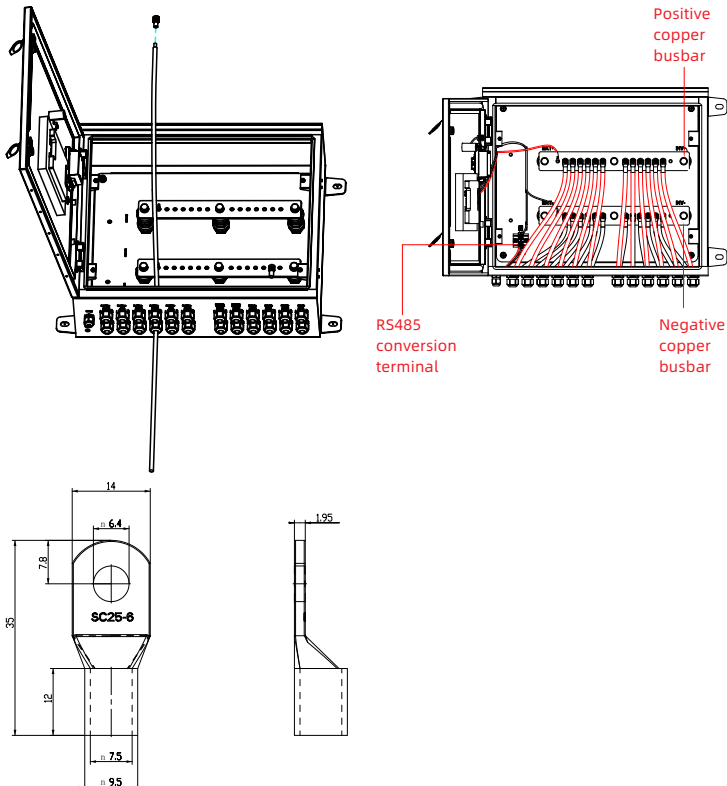
Before wiring, ensure the switch at the other end of the cable (inverter/battery) is in the open or unterminated state.

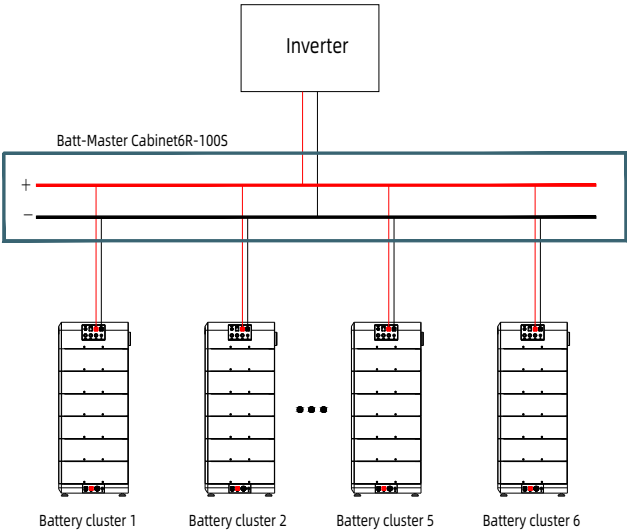
Because the terminal cannot pass through the combiner box waterproof connector, the power line must pass through the combiner box waterproof connector before crimping the terminal.

If using 4 AWG or 25mm^2 cable, we recommend using an SC25-6 terminal for crimping.

The upper copper busbar in the cabinet is the positive busbar, and the lower one is the negative busbar. First, pass the unterminated cable through the waterproof connector, and then crimp the terminal. Secure the battery cluster cables to the left and the inverter cables to the right, clearly labeling them for easy maintenance later.

See diagram below:

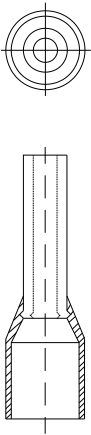


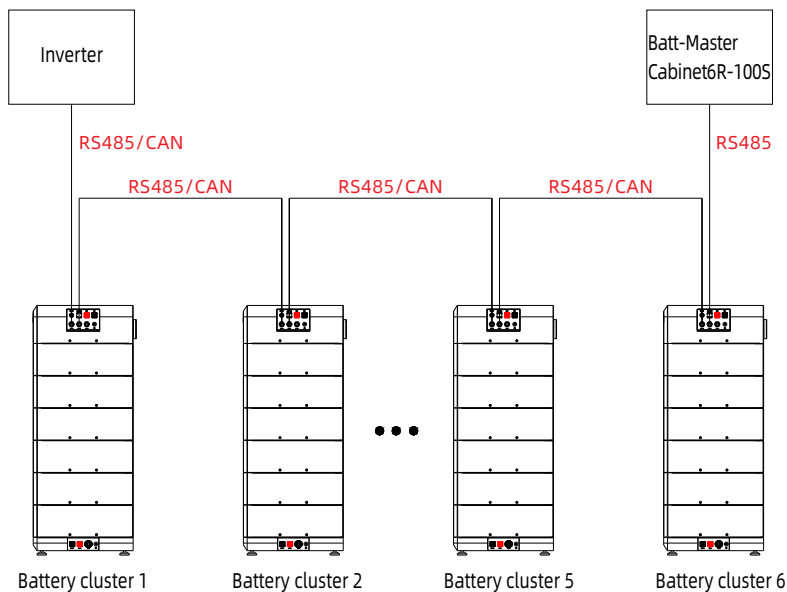


Multi-cluster battery power line connection diagram

● Wiring of communication cable

The combiner cabinet comes with a communication cable from the battery pack to the cabinet. One end of the cable with an RJ45 connector connects to the inverter. The other end, with its bare wire, is crimped with a Tubular pre-insulated terminal block and connected to the communication port on the combiner cabinet, as shown in the diagram.

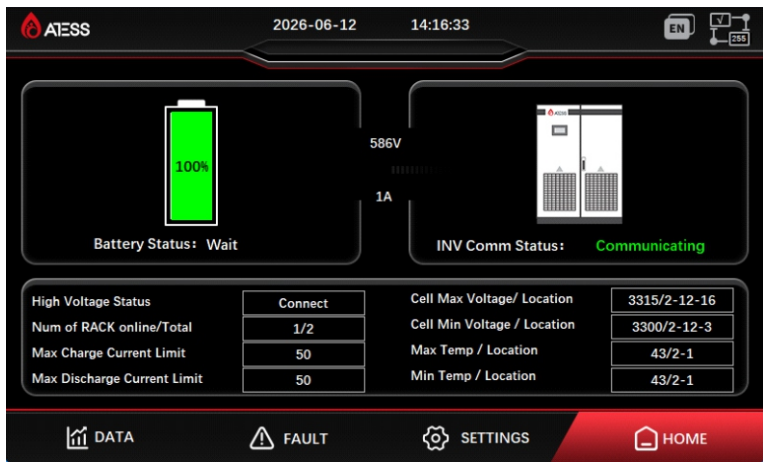




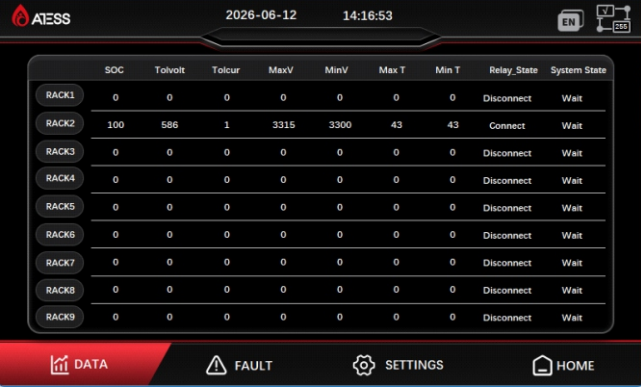
3 View and configure battery parameters

3.1 HOME

The host device (default BCU address 1) has data, and the DATA page parameter is used to view system battery data information.



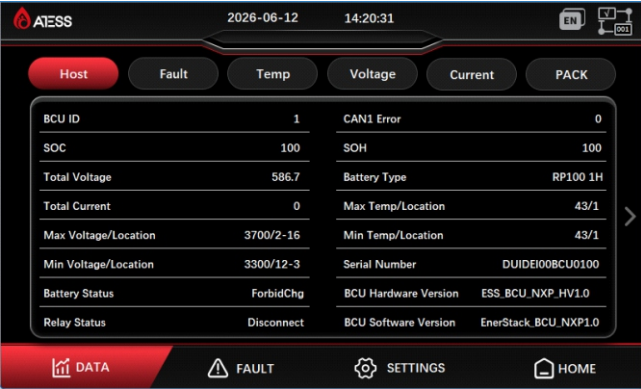
3.2 DATA



The screenshot shows the 'DATA' screen of the AESS interface. At the top, it displays the date '2026-06-12' and time '14:16:53'. Below the header, there is a table with 10 columns: RACK, SOC, Tolvolt, Tolcur, MaxV, MinV, Max T, Min T, Relay_State, and System State. The table lists data for RACK1 through RACK9. RACK1 has SOC 0, Tolvolt 0, Tolcur 0, MaxV 0, MinV 0, Max T 0, Min T 0, Relay_State Disconnect, and System State Wait. RACK2 has SOC 100, Tolvolt 586, Tolcur 1, MaxV 3315, MinV 3300, Max T 43, Min T 43, Relay_State Connect, and System State Wait. RACK3 through RACK9 all have SOC 0, Tolvolt 0, Tolcur 0, MaxV 0, MinV 0, Max T 0, Min T 0, Relay_State Disconnect, and System State Wait. At the bottom, there are navigation buttons: DATA (selected), FAULT, SETTINGS, and HOME.

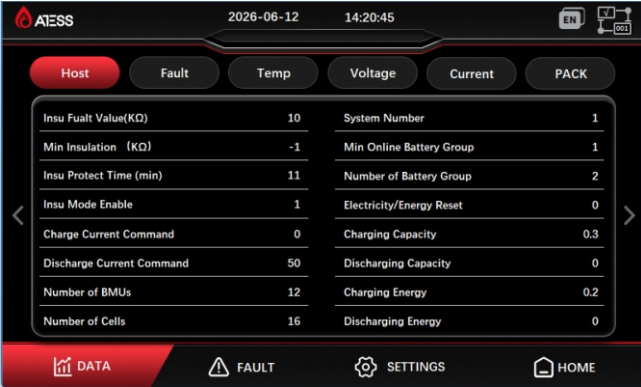
RACK	SOC	Tolvolt	Tolcur	MaxV	MinV	Max T	Min T	Relay_State	System State
RACK1	0	0	0	0	0	0	0	Disconnect	Wait
RACK2	100	586	1	3315	3300	43	43	Connect	Wait
RACK3	0	0	0	0	0	0	0	Disconnect	Wait
RACK4	0	0	0	0	0	0	0	Disconnect	Wait
RACK5	0	0	0	0	0	0	0	Disconnect	Wait
RACK6	0	0	0	0	0	0	0	Disconnect	Wait
RACK7	0	0	0	0	0	0	0	Disconnect	Wait
RACK8	0	0	0	0	0	0	0	Disconnect	Wait
RACK9	0	0	0	0	0	0	0	Disconnect	Wait

a. Host



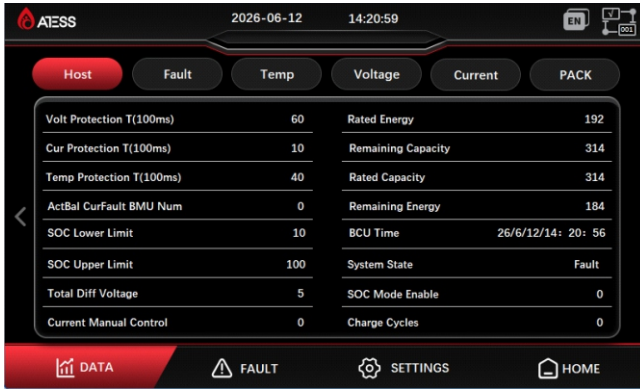
The screenshot shows the 'Host' screen of the AESS interface. At the top, it displays the date '2026-06-12' and time '14:20:31'. Below the header, there are tabs: Host (selected), Fault, Temp, Voltage, Current, and PACK. The main content area displays two columns of parameters. The left column includes: BCU ID (1), SOC (100), Total Voltage (586.7), Total Current (0), Max Voltage/Location (3700/2-16), Min Voltage/Location (3300/12-3), Battery Status (ForbidChg), and Relay Status (Disconnect). The right column includes: CAN1 Error (0), SOH (100), Battery Type (RP100 1H), Max Temp/Location (43/1), Min Temp/Location (43/1), Serial Number (DUIDE100BCU0100), BCU Hardware Version (ESS_BCU_NXP_HV1.0), and BCU Software Version (EnerStack_BCU_NXP1.0). At the bottom, there are navigation buttons: DATA, FAULT, SETTINGS, and HOME.

BCU ID	1	CAN1 Error	0
SOC	100	SOH	100
Total Voltage	586.7	Battery Type	RP100 1H
Total Current	0	Max Temp/Location	43/1
Max Voltage/Location	3700/2-16	Min Temp/Location	43/1
Min Voltage/Location	3300/12-3	Serial Number	DUIDE100BCU0100
Battery Status	ForbidChg	BCU Hardware Version	ESS_BCU_NXP_HV1.0
Relay Status	Disconnect	BCU Software Version	EnerStack_BCU_NXP1.0



The screenshot shows the 'Host' screen of the AESS interface. At the top, it displays the date '2026-06-12' and time '14:20:45'. Below the header, there are tabs: Host (selected), Fault, Temp, Voltage, Current, and PACK. The main content area displays two columns of parameters. The left column includes: Insu Fault Value(KQ) (10), Min Insulation (KQ) (-1), Insu Protect Time (min) (11), Insu Mode Enable (1), Charge Current Command (0), Discharge Current Command (50), Number of BMUs (12), and Number of Cells (16). The right column includes: System Number (1), Min Online Battery Group (1), Number of Battery Group (2), Electricity/Energy Reset (0), Charging Capacity (0.3), Discharging Capacity (0), Charging Energy (0.2), and Discharging Energy (0). At the bottom, there are navigation buttons: DATA, FAULT, SETTINGS, and HOME.

Insu Fault Value(KQ)	10	System Number	1
Min Insulation (KQ)	-1	Min Online Battery Group	1
Insu Protect Time (min)	11	Number of Battery Group	2
Insu Mode Enable	1	Electricity/Energy Reset	0
Charge Current Command	0	Charging Capacity	0.3
Discharge Current Command	50	Discharging Capacity	0
Number of BMUs	12	Charging Energy	0.2
Number of Cells	16	Discharging Energy	0



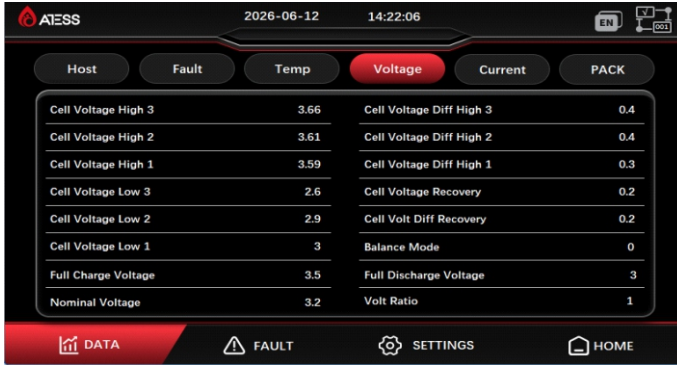
No.	Data Name	Value	Modify Ranges
1	Host ID	(View based on actual battery group)	1~15
2	Remaining Capacity	50(Rated capacity * SOC * 0.01)	-
3	SOH	100(The state of health of the battery)	-
4	State Keep	0	-
5	Battery Status	0:Wait; 1:Fault; 2:ForbidCharge; 3:ForbidDischarge; 4:Charging; 5: Discharging	-
6	System Status	0:Wait; 1:Charging; 2:Discharging; 3:Fault;	-
7	Total Voltage (V)	-(Total Voltage of the battery)	-
8	Total Current (A)	-(Total Current of the battery)	-
9	Charge Current Command (A)	50(Maximum charging current limit of the battery Cluster)	-
10	Discharge Current Command (A)	50(Maximum discharge current limit of battery cluster)	-
11	Charge Cycles	-	-
12	Number of Shutdowns	0(Cumulative shutdown times due to level 3 or above faults)	-
13	Total Voltage Low(close)	0	-
14	High Voltage Relay Status	1(Relay status (connect, disconnect))	-

No.	Data Name	Value	Modify Ranges
15	Relay FeedBack State	-	-
16	Online Battery Group	-(The number of battery clusters operating normally in the system)	-
17	Min Online Battery Group	-(Minimum number of battery clusters required for normal operation of the system)	1~15
18	Battery Group	-(The total number of battery clusters in the system)	1~15
19	Number of Pack	11(Number of BMUs in a single battery cluster)	1~15
20	Number of Cells	16(Number of cells collected by a single BMU)	1~16
21	Current Manual Control	0(manually modify the charging demand current, the maximum charging current no longer checks the charging current table)	0~310
22	SOC	50	0~100
23	Rated Capacity	100(Battery type related data verification)	0~100
24	SOC Lower Limit	10(Discharge SOC lower limit parameter)	0~20
25	SOC Upper Limit	100(Charging SOC upper limit parameter)	90~100
26	485A Address	101(Automatically set according to BCU address and system number)	1~200
27	485 SetFlag	0	0~1
28	BCU System Number	The BCU system numbers for the same system must be the same; however, the system numbers for different battery systems under the same collector cannot be the same. For example: Battery System 1 (all BCU systems are numbered as 1).	1~30
29	Battery Type	0:100AH 1C 1:100AH 0.5C 2:314AH 0.5C	0~2
30	SOC Mode Enable	0 (0: SOC is calculated based on the number of charge and discharge cycles 1: SOC is determined based on the actual charge and discharge capacity).	0~1

No.	Data Name	Value	Modify Ranges
31	Max Temp / Location	-(Location: Max Temp. PACK Num)	-
32	Min Temp / Location	-(Location: Min Temp. PACK Num)	-
33	Max Voltage /Location	-(Location: Max Voltage PACK Num-Cell Num)	-
34	Min Voltage /Location	-(Location: Min Voltage PACK Num-Cell Num)	-
35	Rated Energy	56	-
36	Charging Capacity (KWH)	0(Total charging capacity of battery cluster)	-
37	Discharging Capacity (KWH)	0(Total discharge capacity of battery cluster)	-
38	Charging Energy (KWH)	0(Total charging Energy of battery cluster)	-
39	Discharging Energy (KWH)	0(Total discharge Energy of battery cluster)	-
40	Remaining Energy (KWH)	0(Remaining Energy of battery cluster)	-
41	Electricity/Energy Reset	0(0: charge and discharge capacity is not cleared to 0; 1: charge and discharge capacity is cleared to 0)	0~1
42	Min Insulation (KΩ)	-The insulation value of the system operation. This value must be observed to trigger an insulation fault. It cannot be -1 (-1 means that the insulation module is not connected)	-
43	CAN1 Error	00 (If a communication failure between BMU and BCU is reported, this parameter needs to be checked. The value indicates that the communication with the BMU address has timed out.)	-
44	ActBal CurFault BMU Num	0	-
45	Total Diff Voltage	5 (Total pressure difference fault value of multiple parallel battery packs).	0~10
46	Insu Mode Enable	1 (0:Insulation faults are detected according to normal logic; 1:Insulation faults are detected based on the inverter status and communication status).	0~1

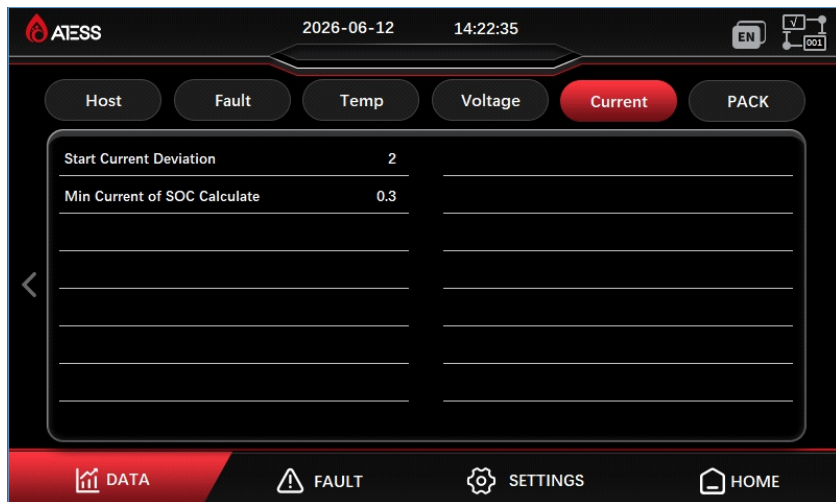
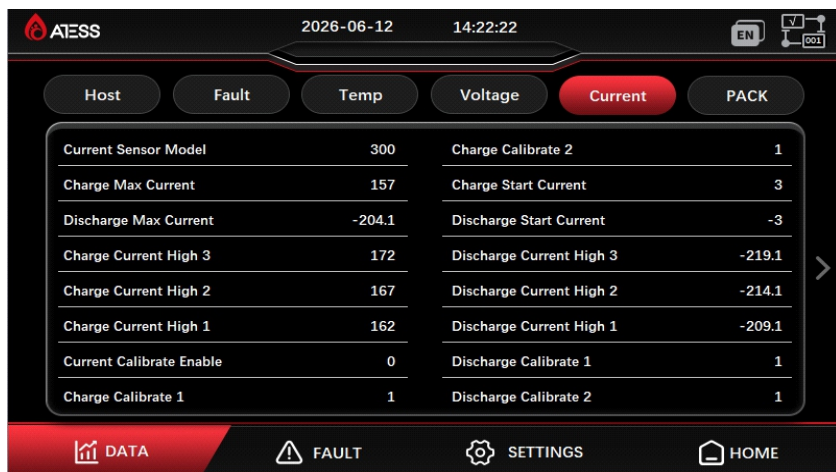
No.	Data Name	Value	Modify Ranges
47	Voltage Protection time (100ms)	20(voltage fault duration judgment time)	-
48	Current Protection time (100ms)	10(Current fault duration judgment time)	-
49	Temp Protection time (100ms)	40(temperature fault duration judgmenttime)	1~15
50	Fault Message Clear Flag	0	1~15
51	Insu Fault Value (KΩ)	10(Minimum insulation value less than this parameter will trigger insulation fault)	1~15
52	Insu Protect Time (min)	11(Insulation fault protection time)	1~16
53	Serial Number	-(BCU serial number)	0~310
54	Hardware Version	-(BCU Hardware number)	0~100
55	Software Version	-(BCU Software number)	0~100
56	BCU Time	-(BCU Time)	0~20

b. Voltage



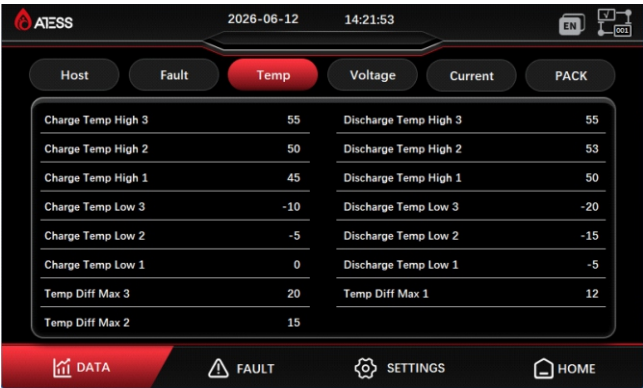
No.	Data Name	Value	Modify Ranges
0	Cell Voltage High 3 (V)	3.65	3~4.5
1	Cell Voltage High 2 (V)	3.6	3~4.5
2	Cell Voltage High 1 (V)	3.58	3~4.5
3	Cell Voltage Low 3 (V)	2.7	2~3.3
4	Cell Voltage Low 2 (V)	2.8	2~3.3
5	Cell Voltage Low 1 (V)	2.87	2~3.3
6	Cell Voltage Diff High 3 (V)	0.5	0.1~0.5
7	Cell Voltage Diff High 2 (V)	0.3	0.1~0.5
8	Cell Voltage Diff High 1 (V)	0.25	0.1~0.5
9	Full Charge Voltage (V)	3.55(The maximum voltage value of the battery cluster when it triggers the charging prohibition state during charging)	3.2~4.5
10	Nominal Voltage (V)	3.2	2.5~4
11	Full Discharge Voltage (V)	2.9(The minimum voltage value at which the battery cluster triggers the discharge-inhibited state during discharge)	2~3.2
12	Volt Ratio	1	1~5
13	Cell Voltage Recovery (V)	0.1	0.1~0.5
14	Cell Volt Diff Recovery (V)	0.1	0.1~0.5
15	Balance Mode	0(Passive balancing system, balancing mode set to 0; Active balancing system: balancing mode set to 1 (active and passive balancing switch))	'-1~1

c. Current



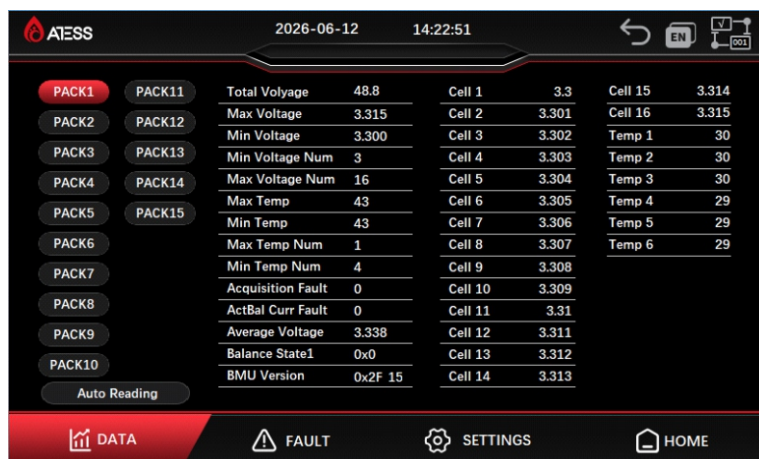
No.	Data Name	Value	Modify Ranges
0	Current Sensor Model (A)	300	-
1	Charge Max Current (A)	157	100~900
2	Discharge Max Current (A)	-204	(-900)~(-100)
3	Charge Current High 3 (A)	172	1~900
4	Charge Current High 2 (A)	167	1~900
5	Charge Current High 1 (A)	162	1~900
6	Charge Start Current (A)	3	1~20
7	Discharge Start Current (A)	-3	(-20)~(-1)
8	Start Current Deviation (A)	2	1~20
9	Discharge Current High 3 (A)	-219.1	(-900)~(-1)
10	Discharge Current High 2 (A)	-214.1	(-900)~(-1)
11	Discharge Current High 1 (A)	-209.1	(-900)~(-1)
12	Current Calibrate Enable	0	0~1
13	Min Current of SOC Calculate (A)	0.3	0~9.9
14	Charge Calibrate 1	-(Current calibration charge and discharge parameters).	1~280
15	Charge Calibrate 2		1~280
16	Discharge Calibrate 1		(-280)~(-1)
17	Discharge Calibrate 2		(-280)~(-1)
18	Total Current (A)	-	-

d. Temp page

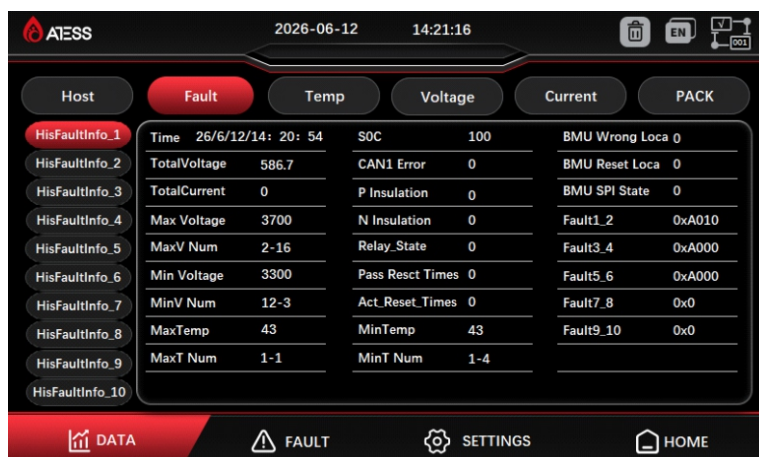


No.	Data Name	Value	Modify Ranges
0	Temp Diff Max 3(°C)	25	1~25
1	Temp Diff Max 2(°C)	15	1~25
2	Temp Diff Max 1(°C)	12	1~25
3	Charge Temp. High 3(°C)	55	35~65
4	Charge Temp. High 2(°C)	50	35~65
5	Charge Temp. High 1(°C)	45	35~65
6	Charge Temp. Low 3(°C)	-10	(-20)~10
7	Charge Temp. Low 2(°C)	-5	(-20)~10
8	Charge Temp. Low 1(°C)	0	(-20)~10
9	Discharge Temp. High 3(°C)	55	35~65
10	Discharge Temp. High 2(°C)	53	35~65
11	Discharge Temp. High 1(°C)	50	35~65
12	Discharge Temp. Low 3(°C)	-20	(-20)~10
13	Discharge Temp. Low 2(°C)	-15	(-20)~10
14	Discharge Temp Low 1(°C)	-5	(-20)~10

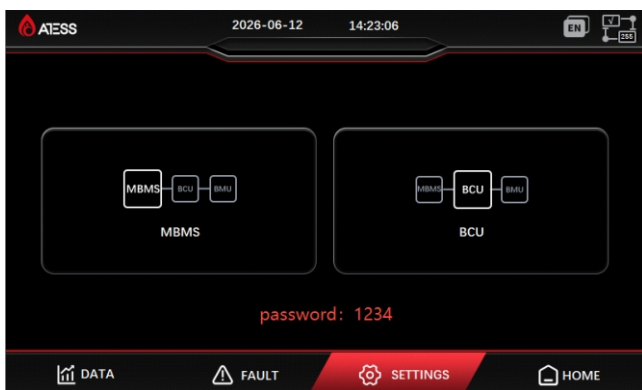
e. PACK page



f. PACK page

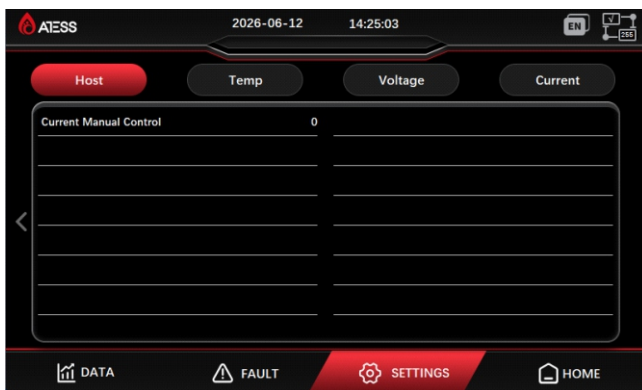
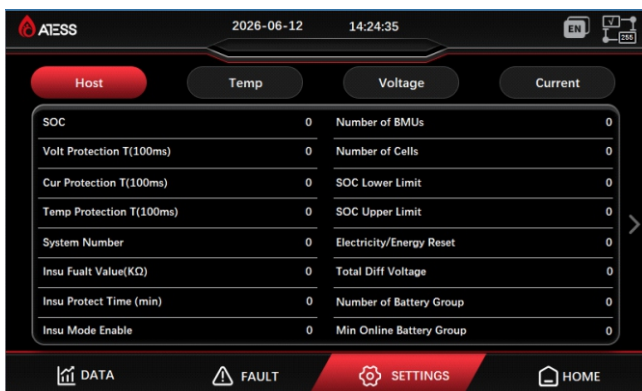


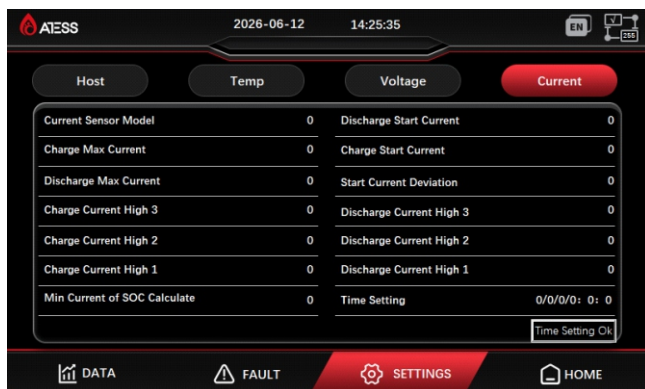
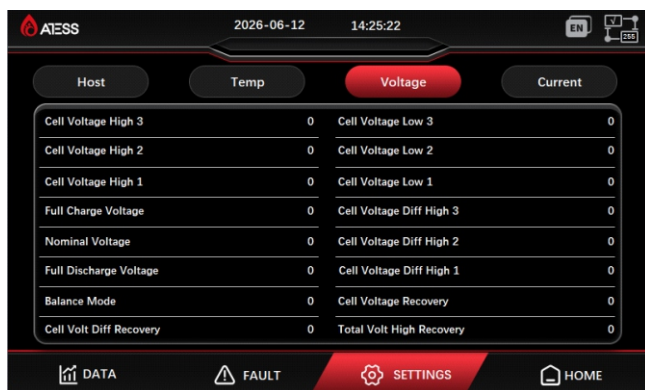
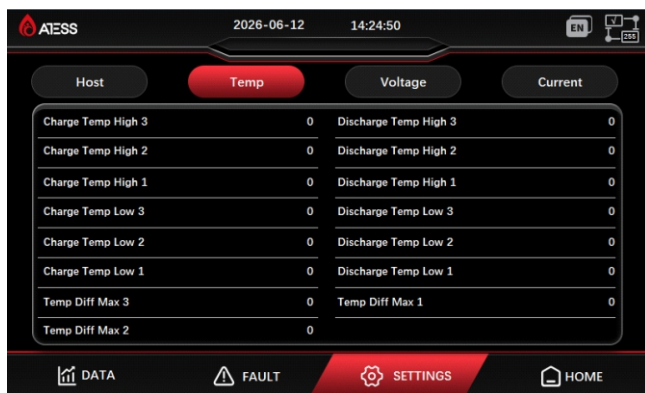
3.3 SETTING



a. MBMS setting

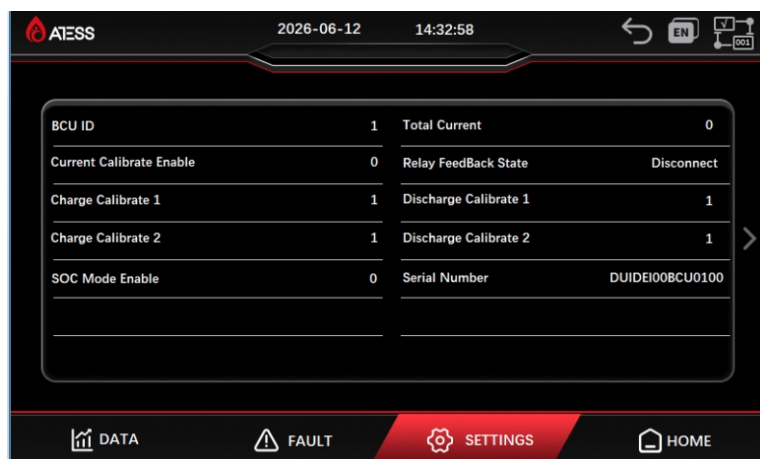
Modify the single-machine or multi-parallel battery cluster protection Parameters.



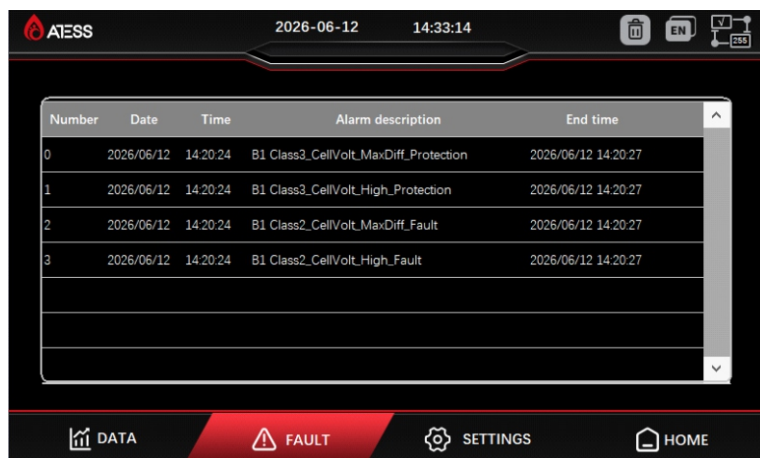


b. BCU setting

Modify the independent parameters of the battery cluster.



3.4 FAULT





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