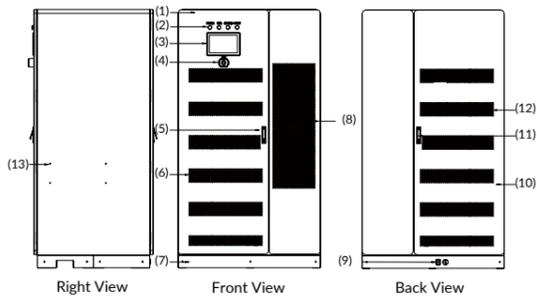


01 Product Overview

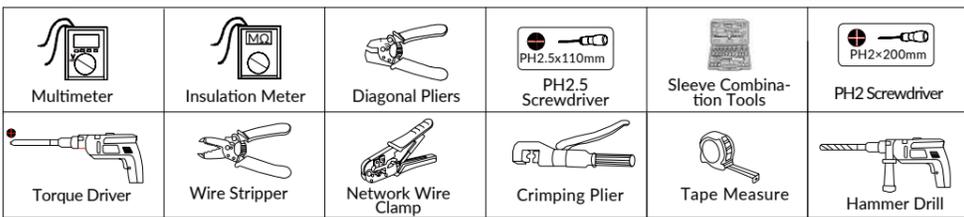
- (1) Front Door
- (2) Indicator
- (3) HMI
- (4) Emergency Button
- (5) Front Door Lock
- (6) Battery Cabin Air Outlet
- (7) Front Cover
- (8) Electrical Cabin Air Outlet
- (9) Grounding
- (10) Back Door
- (11) Back Door Lock
- (12) Battery Cabin Air Inlet
- (13) ATS Insertion Port



1.1 Packing List

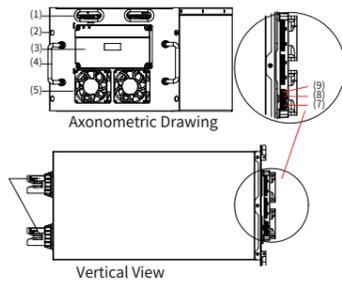
| | | | | | | |
|-------------------------------|--------------------------------|------------|------------|------------|------------------|---------------|
| S1 Meter (on-grid) (X1) | S2 3 X CT (on-grid) (X3) | A1 (X6) | A2 (X6) | A3 (X1) | A4 M8*25 (X2) | A5 M8 (X2) |
|-------------------------------|--------------------------------|------------|------------|------------|------------------|---------------|

02 Installation Tools



03 M7790-S Product Overview

- (1) Battery Sampling Cable Outlet x2
- (2) Mounting Hole x4
- (3) BMS Acquisition Board
- (4) Handle x2
- (5) Fan x2
- (6) Power Plug-in x2
- (7) Battery Intercommunication 1
- (8) Battery Intercommunication 2
- (9) BLMU Power Supply

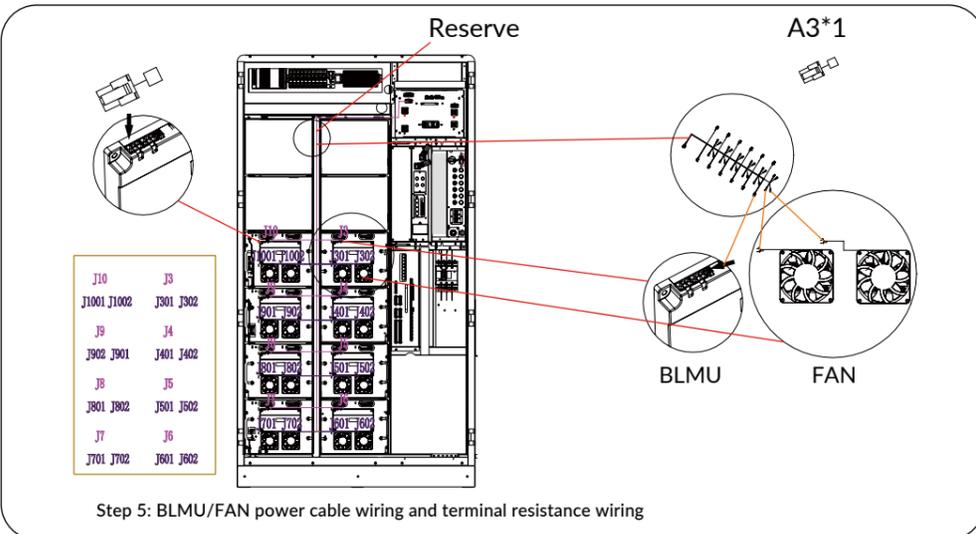


3.1 Packing List

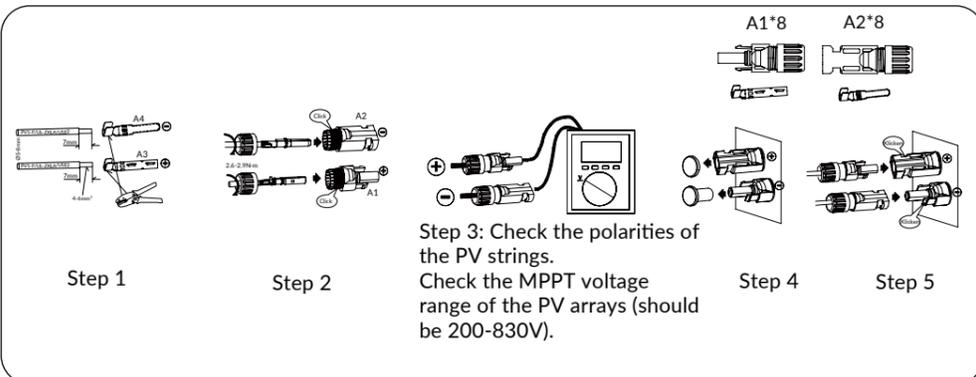
| | |
|------------|------------------|
| B1 (X1) | B2 M6*16 (X4) |
|------------|------------------|

01

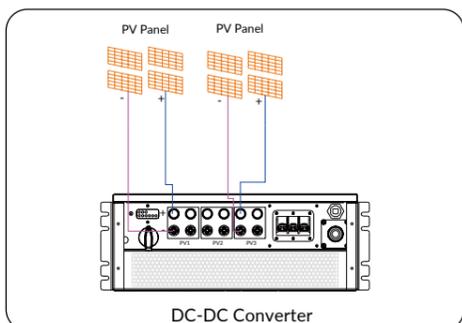
5.4 Electrical Wiring



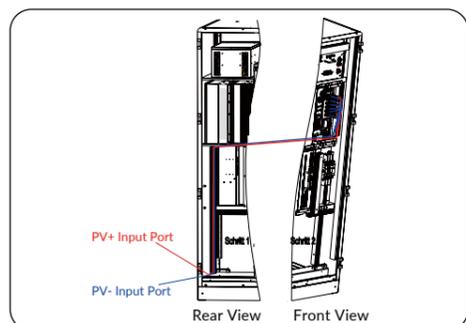
5.5 Connecting the PV Power Cable



5.6 PV Power Installation



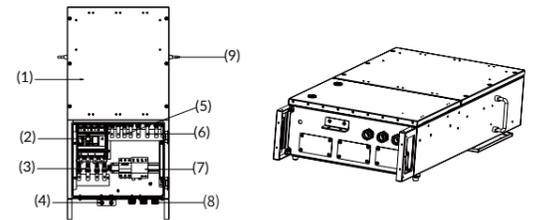
5.7 PV Cable Path



03

04 PWD-100M-O (ATS)

- (1) Cover Plate
- (2) AC Breaker
- (3) Grid Connecting Terminal
- (4) Grounding Terminal
- (5) Load Connecting Terminal
- (6) PCS Connecting Terminal
- (7) SPD
- (8) Signal Cable Waterproof Terminal
- (9) Handle

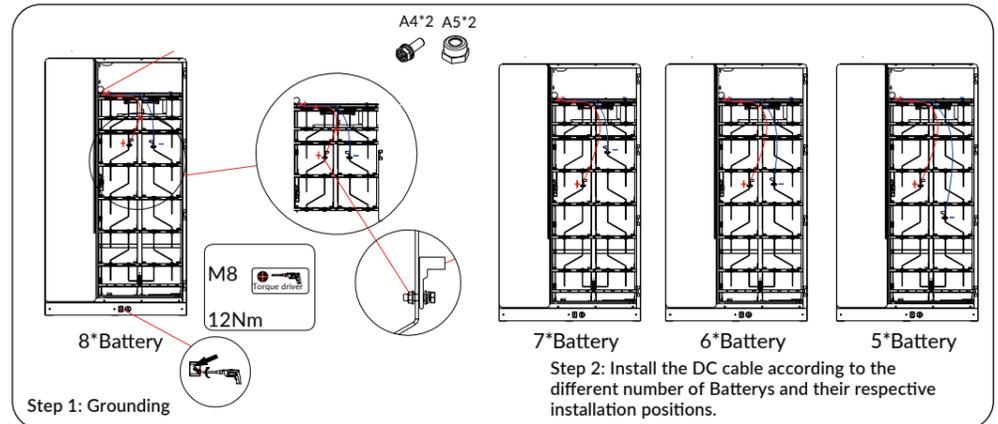


4.1 Packing List

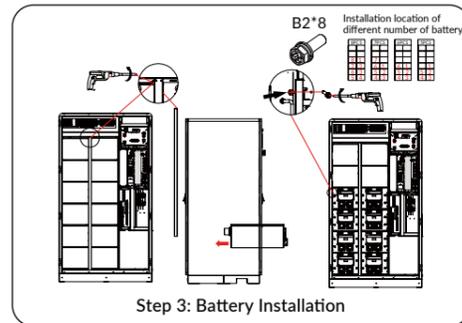
| | | | | | | |
|------------------|------------|------------|------------|------------|------------|------------|
| C1 M8*16 (X4) | C2 (X1) | C3 (X1) | C4 (X1) | C5 (X1) | C6 (X1) | C7 (X1) |
|------------------|------------|------------|------------|------------|------------|------------|

05 Installing the Product

5.1 Power Cable Installation Reserve

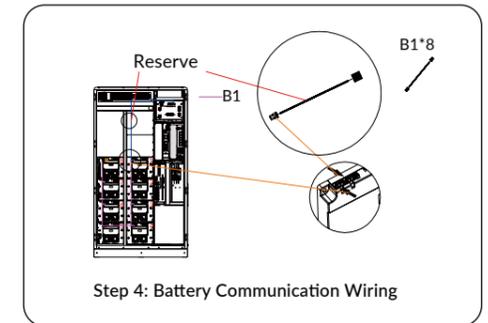


5.2 Battery Installation

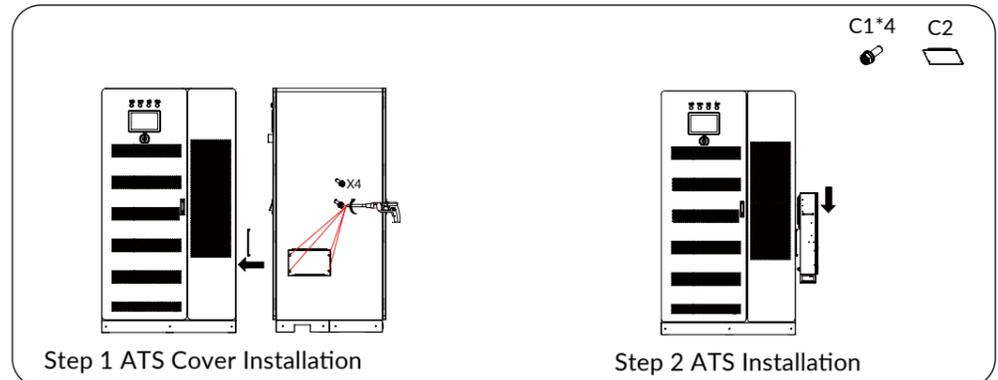


02

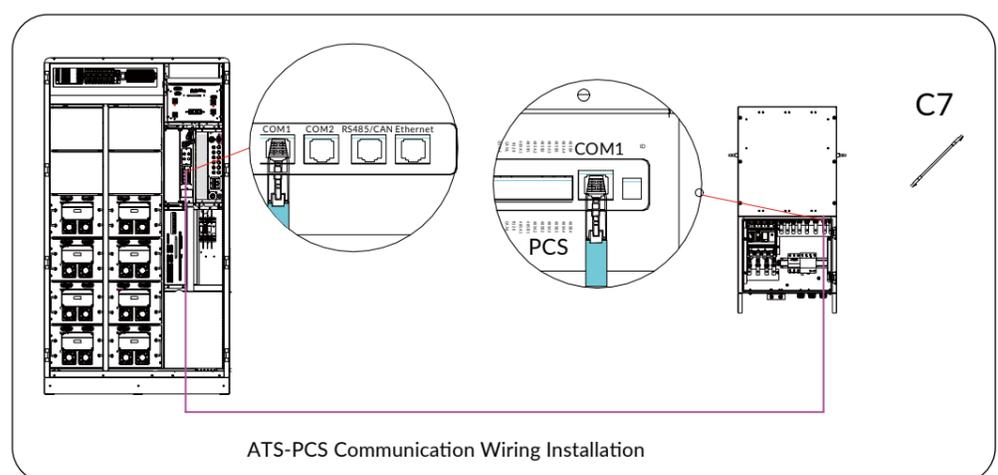
5.3 Battery Communication Wiring



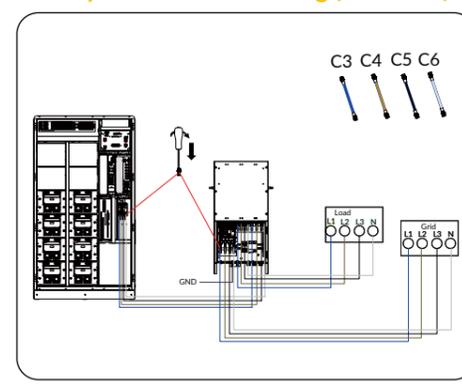
5.8 ATS Installation



5.9 ATS Power Cable and Communication Wiring

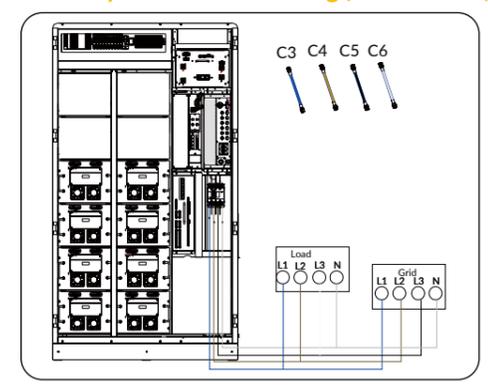


5.10 System AC-side Wiring (with ATS)

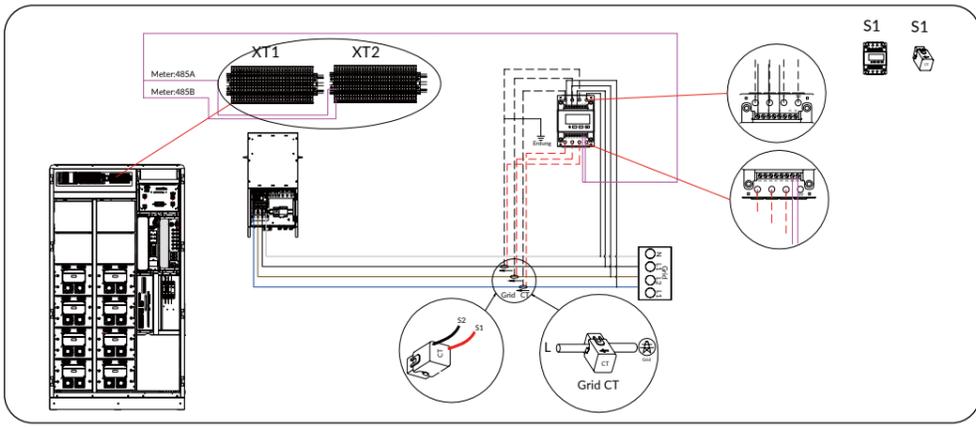


04

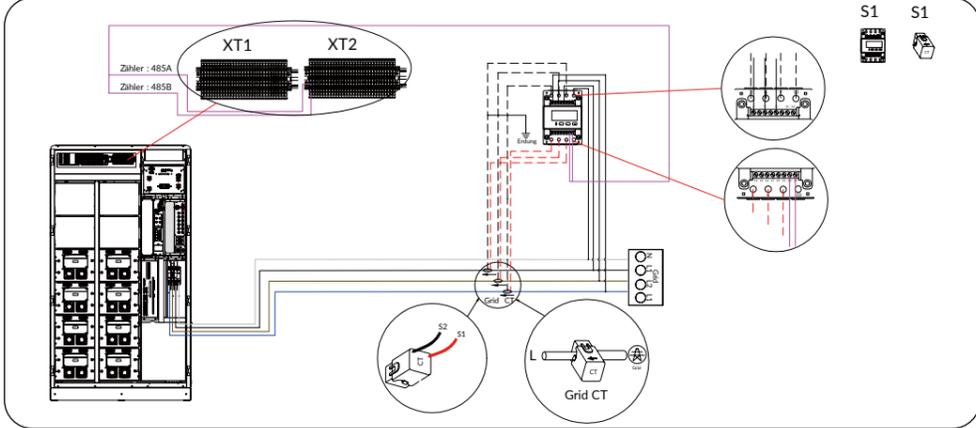
5.11 VSystem AC-side Wiring (without ATS)



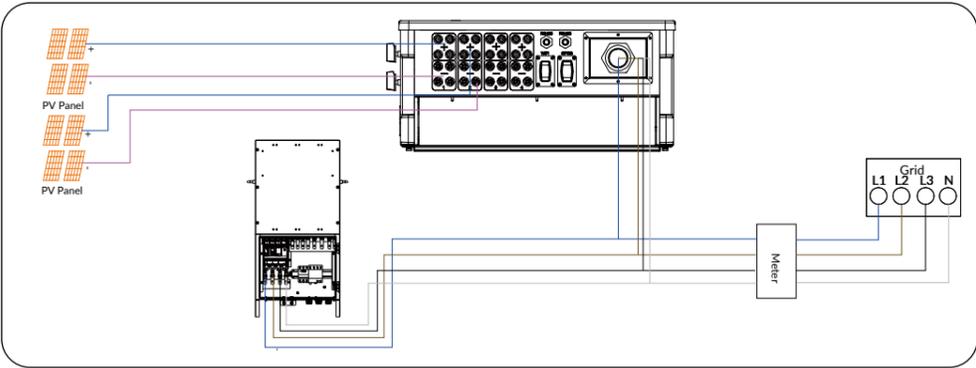
5.12 Meter Wiring (with ATS on-grid)



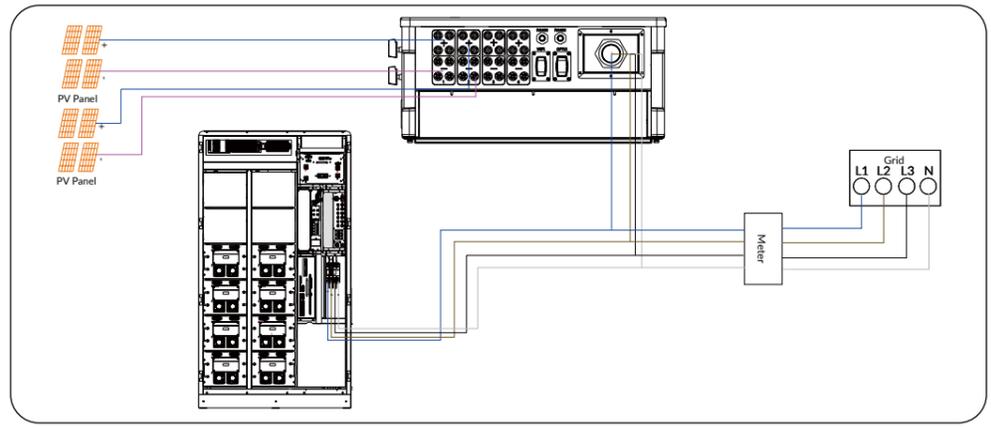
5.13 Meter Wiring (without ATS on-grid)



5.14 PV Inverter AC Cable Wiring (Connect to grid without ATS)

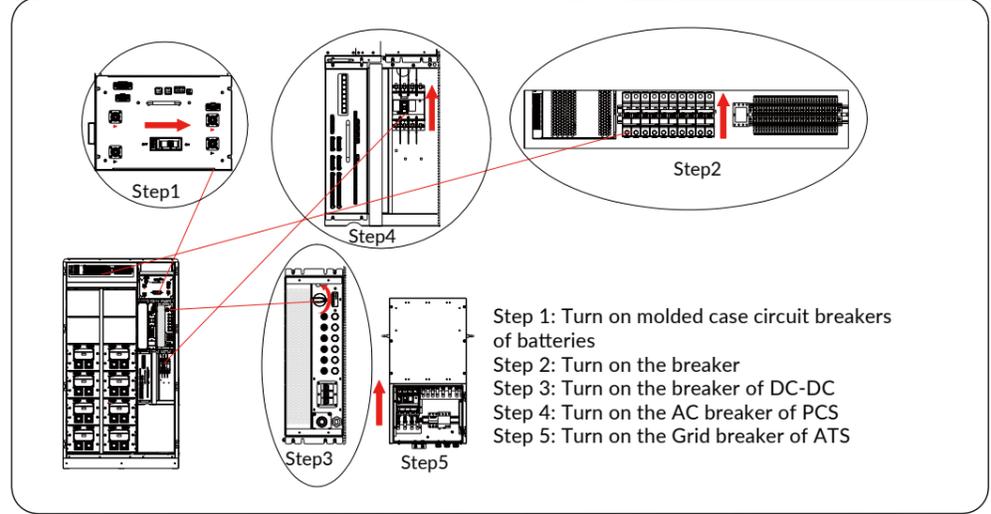


5.15 PV Inverter AC Cable Wiring (Connect to grid without ATS)



06 Commissioning

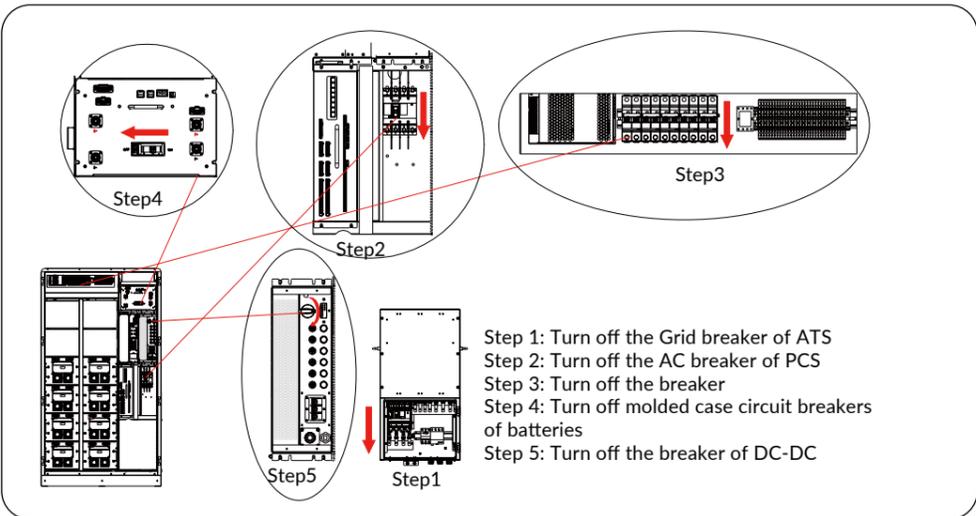
6.1 Powering on the System



6.2 System Settings

- Step 1: Use your account to log in to the system
 - Step 2: Click "Maintain" → "Configuration Management" → "Basic Parameters Configuration"
 - Step 3: Click "Write" after setting parameters
 - Step 4: Click "Maintain" → "Configuration Management" → "Control Strategy Configuration"
 - Step 5: Click "Write" after setting parameters
- Tips: Please refer to the User Manual for more System Settings options

6.3 Powering off the System



7. For more information, please download the System User Manual and Installation Manual



Installationshandbuch



Benutzerhandbuch



Alpha C & I Cloud

08 Troubleshooting

| Fehlerkategorie | Fehleranzeige | Fehlerbeschreibung | Fehlerbehebung |
|-----------------|-----------------|--|--|
| BMS | Cell-Temp-Diff | Cell temperature different fault | Shut down the system about 1 hours, then restart the system to check if the fault is eliminated. If the problem is not resolved, please contact AlphaESS customer service. |
| | Chrg-Ov-Curr | Module charge over current fault | Restart the system to check if the fault is eliminated. If the problem is not resolved, stop any operation on the system and contact AlphaESS customer service. |
| | Disch-Ov-Curr | Module discharge over current fault | Restart the system, turn off some of the loads to check if the fault is eliminated. If the problem is not resolved, stop any operation on the system and contact AlphaESS customer service. |
| | Pole-Ov-Temp | Pole over temperature fault | Shut down the system for about 2 hours, then restart the system to see if the fault is eliminated. If the problem is not resolved, please contact AlphaESS customer service. |
| | Cell-Ov-Volt | Cell over volt fault | Restart the system, switch the system to the discharging state, If the error is not eliminated, stop any operation on the system and contact AlphaESS customer service. |
| | Cell-Volt-Diff | cell volt different fault | Restart the system to see if the fault is eliminated. If the problem is not resolved, please contact AlphaESS customer service. |
| | Disch-Low-T emp | cell discharge under temperature fault | Confirm that the ambient temperature is higher than -10°C. If it is lower than it, please turn on the heating equipment such as heater. If the ambient temperature is higher than -10°C, restart the system. If the problem is not resolved, please contact AlphaESS customer service. |
| | Cell-Low-Volt | Cell under volt fault | Restart the system to see if the fault is eliminated, If the problem is not solved, please contact AlphaESS customer service. |

| Fault category | LCD fault display | Fault name | Troubleshooting |
|----------------|-------------------|---|---|
| BMS | Commu_-fail_LMU | LMU Communication fault | Check if the communication cable connector between the HV-control box and the battery is not plugged in. If the problem is not resolved, please contact AlphaESS customer service. |
| | Cell-Ov-Temp | Cell over temperature fault | Stop charging and discharging and then run the system after the fault is eliminated. If the problem is not resolved, please contact AlphaESS customer service. |
| | Commu_-fail_BMU | BMU Communication fault | Check if the communication cable connector between the HV-control box and the TOP BMU is not plugged in. If the problem is not resolved, please contact AlphaESS customer service. |
| | Chrg-Low-Temp | Cell charge under temperature fault | Confirm that the ambient temperature is higher than 0°. If it is lower than below, please turn on the heating equipment such as heater. If the ambient temperature is higher than 0°, restart the system. |
| | Insulation_err | Insulation fault | If the problem is not resolved, please contact AlphaESS customer service. |
| | SOC low | Low SOC | The battery energy is low. Charge the batteries. |
| PCS | EPO | The EPO trigger fault signal | Check whether the interface line is abnormal |
| | CAN C comm. Fault | The communication between PCS and ATS is lost | <ol style="list-style-type: none"> If the application of external switching device is not connected, set the inverter type to 0. Check whether the matching resistor is connected according to the document. Check whether there is bad contact between the communication line of the module and the switching device. If the power grid fails and PCS is not in the off-grid operation state, the switching device will be in the power failure state, and PCS will report this alarm as normal. |

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| Fault category | LCD fault display | Fault name | Troubleshooting |
|----------------|------------------------------|--|---|
| PCS | EMS comm. connection timeout | <ol style="list-style-type: none"> The communication between EMS and PCS is interrupted. The EMS is not connected | <ol style="list-style-type: none"> Check whether the connection cable between EMS and PCS is loose. Check whether the EMS is working properly. |
| | Module Fan fault 1 | The fan of the PCS is stalled | <ol style="list-style-type: none"> Check whether the PCS fan cannot rotate because it is blocked by foreign objects. Clean up the dust accumulation of PCS fan. Check whether the PCS fan is damaged and cannot rotate. |
| | Module over temperature 1 | <ol style="list-style-type: none"> PCS detects overtemperature of AC radiator PCS detects overtemperature of DC radiator | <ol style="list-style-type: none"> Check whether the PCS fan works normally. Clean the vents of the PCS fan. Check whether the ambient temperature of PCS is too high. |
| | Ambient overtemp. fault | PCS detects that the ambient temperature is too warm | Check whether the ambient temperature of PCS is too high. |
| | DC input over voltage | DC voltage higher than uniform charging voltage setting | <ol style="list-style-type: none"> According to the battery parameters, correctly configure the equalizing voltage setting. When the DC input is disconnected during PCS charging operation, this alarm will be generated, and the alarm will be cleared automatically. If the difference between DC voltage sampling and DC voltage measurement is large, contact the AlphaESS. |
| | DC input under voltage | The DC voltage is lower than the DC lower limit voltage setting value | <ol style="list-style-type: none"> Correctly set the DC lower limit voltage according to the battery parameters. The DC lower limit voltage should be lower than the actual battery voltage. Check whether the DC voltage is not connected, or the BMS disconnects the battery contactor due to an alarm. If there is a large difference between the sampled DC voltage and the measured DC voltage, contact the AlphaESS. |
| | DC overload alarm | When PCS is running off-grid, the current and power of DC side exceed the rated value | During off-network operation, the load exceeds the rated value, resulting in an alarm. If the load is reduced, the alarm is automatically cleared. |
| | AC bus phase reversed | The phase sequence of the three-phase power grid line is reversed | If the phase sequence of the power grid incoming line does not meet the requirements, change the phase sequence of the power grid incoming line to be consistent with the phase sequence ABC at the power grid switch incoming line. If the phase sequence is correct, the alarm is automatically cleared. |

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| Fault category | LCD fault display | Fault name | Troubleshooting |
|----------------|---|---|---|
| PCS | AC bus phase lost | If the PCS detects an AC connection error | If PCS is set to 3P3W, but the AC incoming line is connected to the N line, this alarm will be reported. Disconnect the N line from the PCS, and then set the fault clearing command to clear the alarm. |
| DCDC | Module_PV PV1 Side Input Over Voltag | Set the input voltage on the PV1 side to the maximum PV voltage on the PV1 side | <ol style="list-style-type: none"> Configure PV1 parameters based on the operation guide. The PV1 side should be connected to a voltage that meets requirements. |
| | Module_PV PV2 Side Input Over Voltag | Set the input voltage on the PV2 side to the maximum PV voltage on the PV2 side | <ol style="list-style-type: none"> Configure PV2 parameters based on the operation guide. The PV2 side should be connected to a voltage that meets requirements. |
| | Module_PV PV3 Side Input Over Voltag | Set the input voltage on the PV3 side to the maximum PV voltage on the PV3 side | <ol style="list-style-type: none"> Configure PV3 parameters based on the operation guide. The PV3 side should be connected to a voltage that meets requirements. |
| | Module_PV PV1 Side Input Under Voltage | Input voltage on the PV1 side The voltage is lower than the lowest voltage set on the PV side | <ol style="list-style-type: none"> Set parameters on the PV side based on the operation guide. The PV1 side should be connected to a voltage that meets requirements. |
| | Module_PV PV2 Side Input Under Voltage | Input voltage on the PV2 side The voltage is lower than the lowest voltage set on the PV side | <ol style="list-style-type: none"> Set parameters on the PV side based on the operation guide. The PV2 side should be connected to a voltage that meets requirements. |
| | Module_PV PV3 Side Input Under Voltage | Input voltage on the PV3 side The voltage is lower than the lowest voltage set on the PV side | <ol style="list-style-type: none"> Set parameters on the PV side based on the operation guide. The PV3 side should be connected to a voltage that meets requirements. |
| | Module_PV PV1 Side Input Reverse Connection | The two branches of PV1 are inversely connected | <ol style="list-style-type: none"> Check whether the positive and negative PVS of the two branches on the PV1 side are reversed. After the positive or negative connection of PV1 ports is denied, check whether PV1 current sampling value Ipv1 is abnormal. |

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| Fehlerkategorie | LCD fault display | Fault name | Troubleshooting |
|-----------------|---|--|--|
| DCDC | Module_PV PV2 Side Input Reverse Connection | The two branches of PV2 are inversely connected | <ol style="list-style-type: none"> Check whether the positive and negative PVS of the two branches on the PV2 side are reversed. After the positive or negative connection of PV2 ports is denied, check whether PV2 current sampling value Ipv2 is abnormal. |
| | Module_PV PV3 Side Input Reverse Connectio | The two branches of PV3 are inversely connected | <ol style="list-style-type: none"> Vergewissern Sie, dass die positiven und negativen PVS-Klemmen auf der PV3-Seite nicht vertauscht sind. Nachdem die positive oder negative Verbindung der PV3-Anschlüsse verweigert wurde, prüfen Sie, ob der PV3-Stromabtwert Ipv3 abnormal ist. |
| | Module_PV Bus Side Reverse Connection | The port voltage on the BUS side is negative | <ol style="list-style-type: none"> Check whether the positive and negative ports on the BUS side are reversed. After the positive and negative connections of BUS ports are denied, check whether the voltage sampling of BUS ports is abnormal. |
| ATS | Grid over voltage | The power grid voltage exceeds the protection range | Check whether the power grid voltage exceeds the rated protection range. |
| | Grid under voltage | The power grid voltage is less than the protection range | Check whether the power grid voltage is lower than the rated protection range. |
| | Grid over frequency | The network frequency is greater than the protection range | Check whether the power grid output frequency is greater than the rated protection range. |
| | Grid under frequency | The network frequency is less than the protection range | Check whether the power grid output frequency is lower than the rated protection range. |
| | Grid phase reversed | The phase sequence of the grid is reversed | Check whether the interphase cable on the side of the grid is reversed. |
| | CAN A comm. Fault | The CAN communication between the ATS and PCS fails | Check whether the pcs and ATS are powered on, whether the communication network cable is in poor contact, and whether the dip switch is correct. |

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