CanadianSolar

EP CUBE

Trouble Shooting Guide

For EP Cube

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Contents

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1. Disclaimer

This document is provided for guidance purposes only and does not replace professional advice.

While every effort has been made to ensure the accuracy and reliability of the information contained herein, we cannot guarantee its completeness and accuracy.

Unless specified otherwise, this guide does not replace the safety precautions outlined in the product labels or in the installation manual. Therefore, users are encouraged to consult the Installation Manual for specific guidance.

The contents of this document may undergo alterations due to product updates or other factors. Document might change without any prior notice.

2. Purpose of the document

This troubleshooting document serves as a resource aimed at resolving technical issues and operational challenges encountered with our product, EP Cube.

Its primary purpose is to provide users with clear and concise guidance on identifying, diagnosing, and rectifying common problems or errors that may arise during usage. By outlining step-by-step instructions, troubleshooting documents empower users to effectively troubleshoot issues independently.

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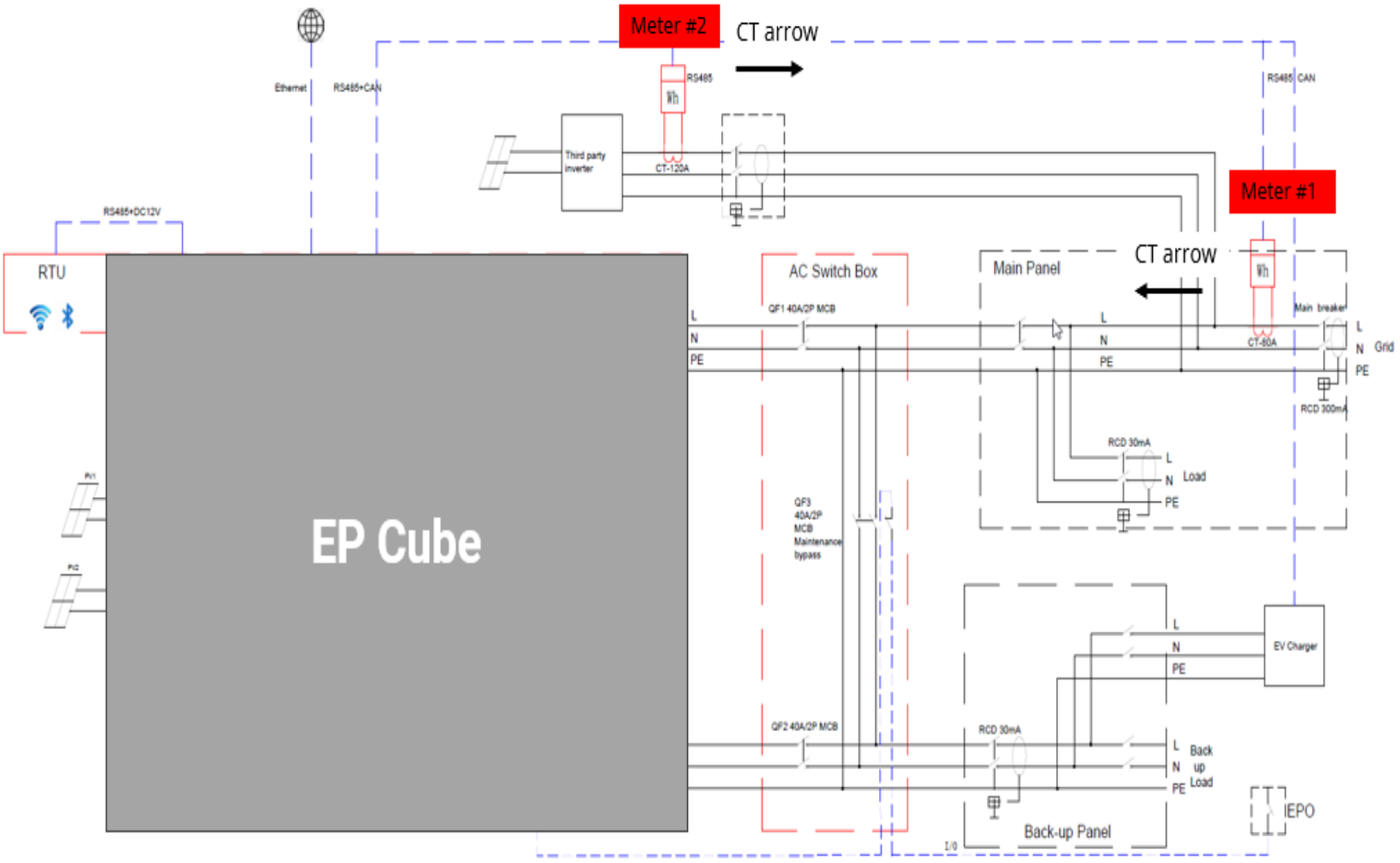
3. Basic Installation diagram with online / backup and bypass paths



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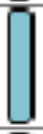
4. LED Behavior

Our EP Cube System has a blue LED strip on the right side that provides information regarding the current status of the system.

Color	Description
	On&Working
	Flashing 05 sec./ malfunction
	Stand-by
	Flashing 10 sec./ Back-up On – Grid outage
	Off

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Our WIFI Dongle (RTU) is located on the left side of the inverter and has 4 LEDs that provide information regarding the status of the connection.

PWR	ON	Power on
	OFF	Power off
COM	ON	Communication with the inverter is normal
	FLASH	Communication with the inverter is abnormal
	OFF	Power off
NET	ON	WIFI connected
	FLASH	WIFI disconnected
	OFF	Power off
SRV	ON	Communication with server is normal
	FLASH	Communication with server is abnormal
	OFF	Power off

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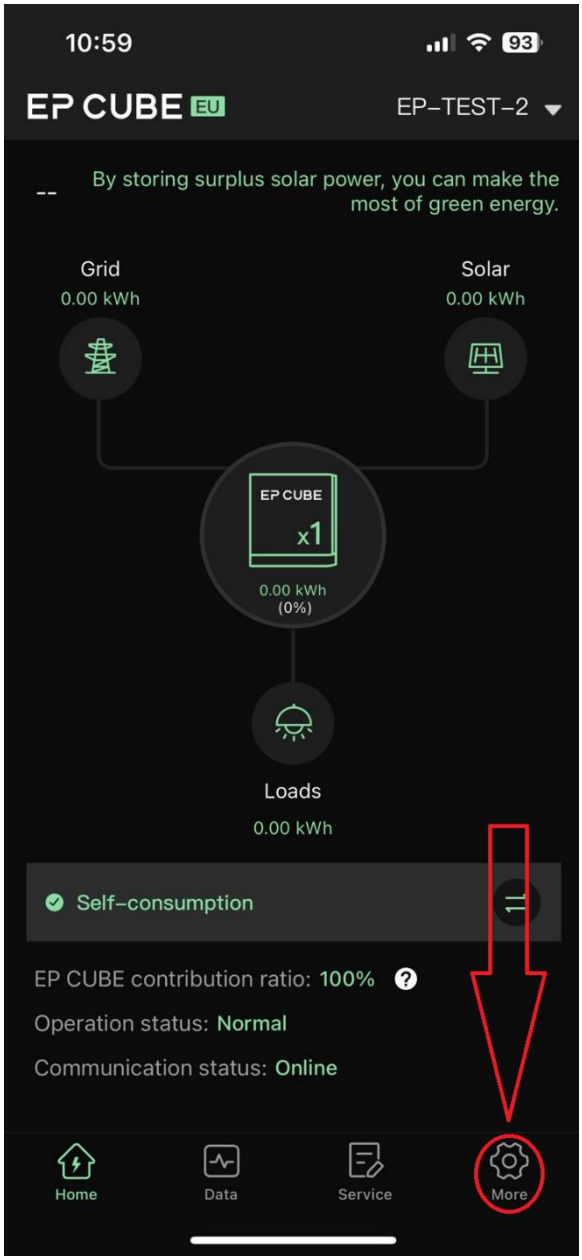
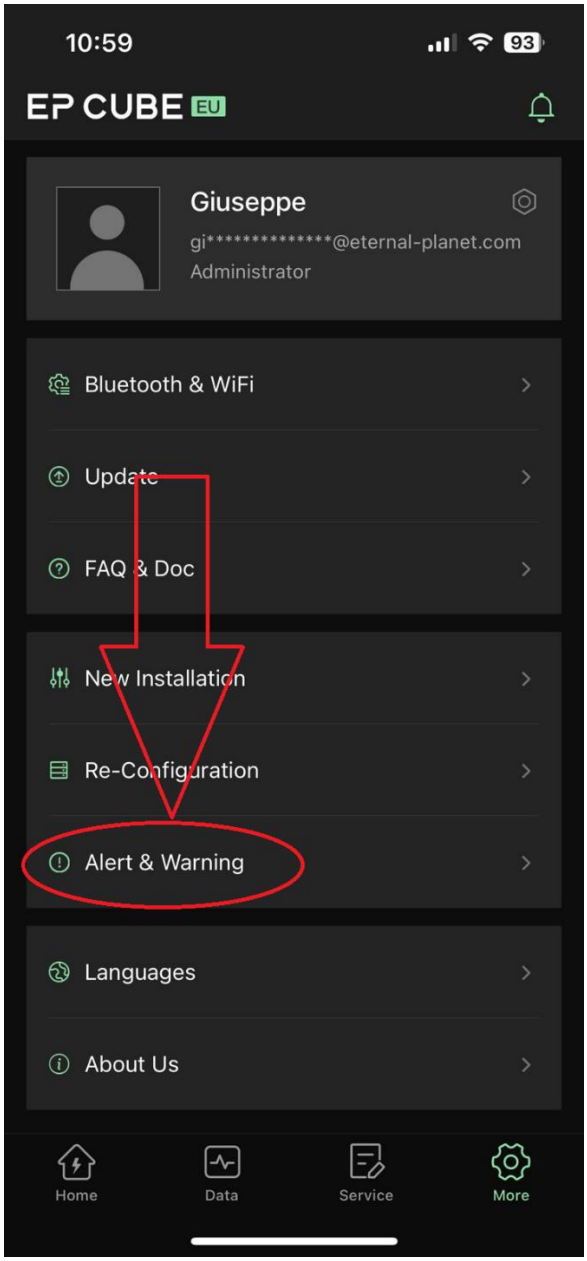
5. Where to find alerts and warnings in the APP

Open the EP Cube APP

Tap on the “More” icon

Tap on “Alert & Warning”





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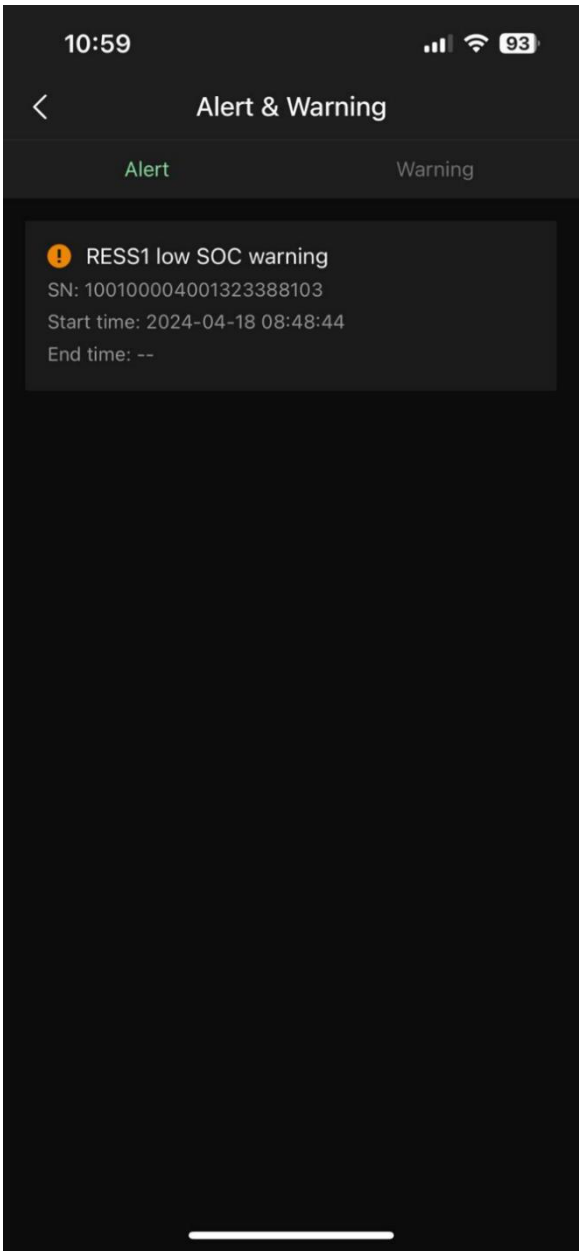
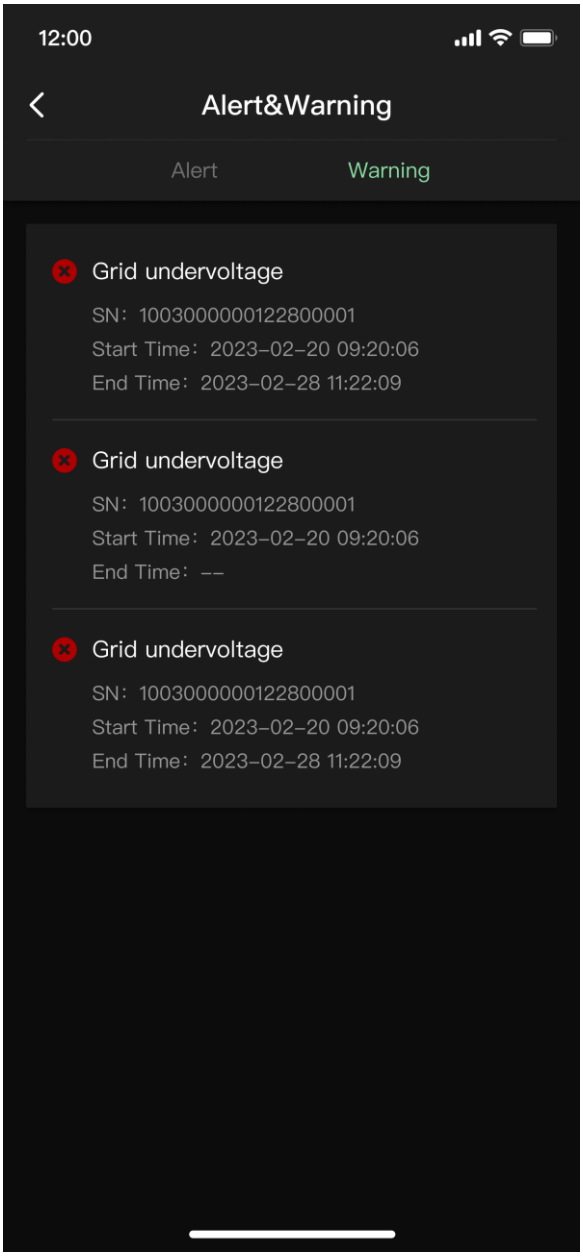
The “Alert” tab will show past and ongoing minor errors.



The “Warning” tab will show past and ongoing major errors.



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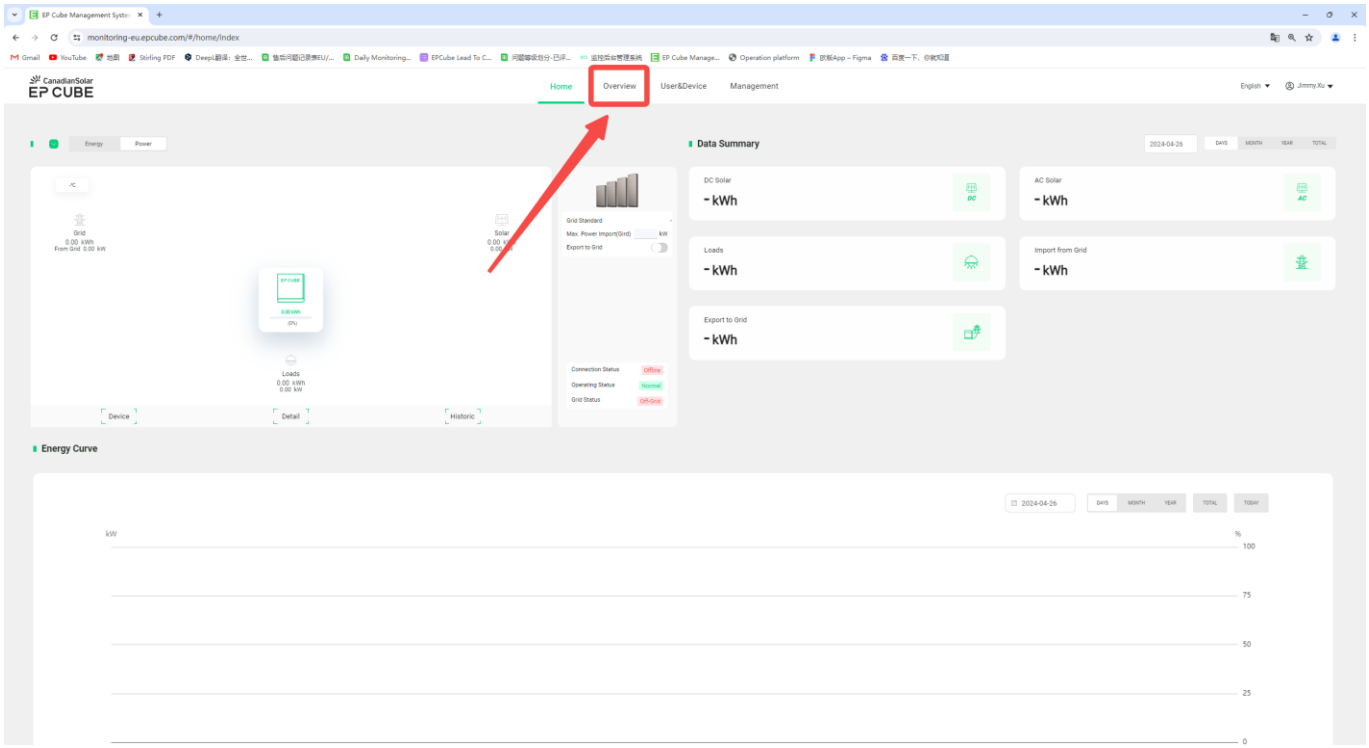
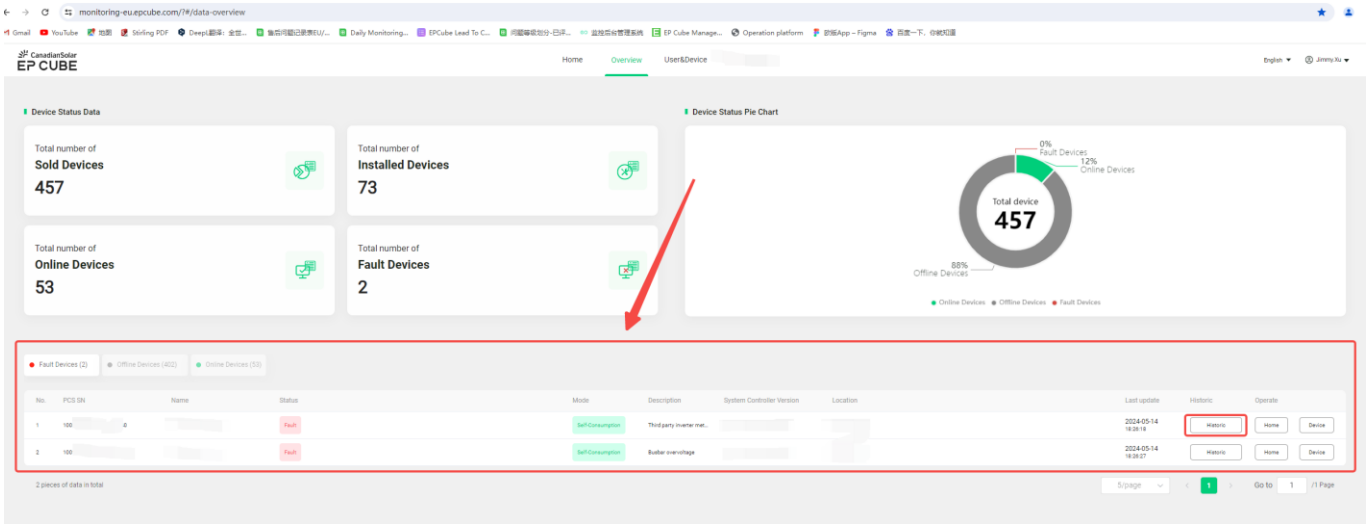
6. Where to find alert and warnings in the Web Portal

Log-in the website https://monitoring-eu.epcube.com/ with your account credentials, then click on “Overview”.



All the plants that currently have a fault ongoing will show up here.



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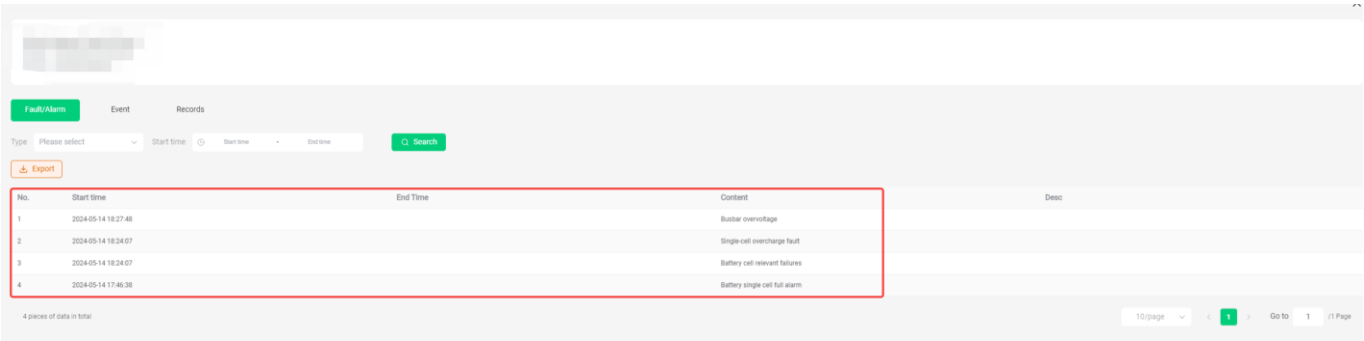
By clicking on the “historic” button, a list of the currently ongoing alarms and warnings will appear.



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7. Alerts Troubleshooting

Alerts indicate a condition that could impair or even force the inverter to stop if the problem is not corrected. In some cases, the inverter can be forced to stop but will try to resume normal operation if the condition that triggered the alert disappears.

Alert Message	Possible Reasons	Troubleshooting
Reverse connection of the CT of the customer's meter	The orientation of the CT in the meter measuring the energy exchange with the Grid is incorrect or it's placed in the N line instead of the L line	1) Check CT installation (location and orientation) and turn on a load to check it in the app/meter screen. 2) It is highly recommended NOT to extend the CT Cable. 3) The CT location must be in between the Power Meter and the first possible electrical panel, before any AC cable split/parallel. Check the schematic in section 2 for further details. Repeat these steps until fixed. If no solution is found, please contact service support.
Third party inverter meter CT reversal	The orientation of the CT in the meter measuring the production of the AC coupled inverter is incorrect or it's placed in the N line instead of the L line	1) Check CT installation (location and orientation) and check if in the app the AC power coming from the 3rd party inverter is correctly displayed 2) It is highly recommended NOT to extend the CT Cable. 3) The CT location must be in between the 3rd Party inverter and its own breaker. Check the schematic in section 2 for further details. If no solution is found, please contact service support.
Failed CT failure of customer's meter	Grid Meter Failure (the communication with the the meter measuring the energy exchange with the Grid is lost)	1) Check if the meter cable is loose cable or broken 2) Check if there are any interferences/joints on the cable that could cause miscommunication with the meter. 3) Check if meter is turned on correctly. 4) Do a system and meter power cycle 5) If no solution is found, please contact service support.
Third Party Inverter Meter CT	Inverter Meter Failure	1) Check if the meter cable is loose cable or

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Failure	(the communication with the meter measuring the production of the AC coupled inverter is lost)	broken 2) Check if there are any interferences/joints on the cable that could cause miscommunication with the meter. 3) Check if meter is turned on correctly. 4) Do a system and meter power cycle 5) If no solution is found, please contact service support.
Battery single cell full alarm	One cell in the battery system is fully charged and has reached the maximum voltage value.	This alert will go away once there is enough load to discharge the battery. If it keeps NOT discharging and the battery stays at 100%, please contact service support.
Battery single cell emptying alarm	One cell in the battery system has reached the minimum voltage limit value.	This alert will go away once there is enough PV energy to charge the battery. If it keeps NOT charging and the battery stays at low SoC, please contact service support.
Battery collection total voltage full alarm	The battery is fully charged and has reached the maximum voltage value.	This alert will go away once there is enough load to discharge the battery. If it keeps NOT discharging and the battery stays at 100%, please contact service support.
Battery collection total pressure discharge alarm	The battery has reached the minimum voltage limit value.	This alert will go away once there is enough PV energy to charge the battery. If it keeps NOT charging and the battery stays at low SoC, please contact service support.
Charge/Discharge over temperature alarm	The battery temperature is over 55° degrees	If the ambient temperature is above 55° the battery system cannot work properly. Check if: 1) The system is installed under direct sunlight 2) There are heating sources nearby the inverter 3) The ambient air circulation is obstructed / insufficient and/or the ambient temperature is too high. If any of the three points is true, then the installer needs to rectify the installation in order to let the system be in the correct temperature range to properly work. If nothing else can be the source of the heat, please contact service support.

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Charge/Discharge low temperature alarm	The battery temperature is under 0° degrees	If the ambient temperature under 0° the battery system cannot work properly. Check if: 1) The system is installed outside (ex. under direct snow, ice, rain, etc.) 2) There are no covers above the inverter 3) If the ambient is extremely cold (ex. a cellar, etc.), check if there is enough insulation/heating to prevent humidity/cold/etc. If any of the three points is true, then the installer needs to rectify the installation in order to let the system be in the correct temperature range to properly work. If nothing else can be the source of the cold, please contact service support.

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8. Warnings Troubleshooting

Warnings are raised whenever a circumstance prevents the operation of the inverter. The inverter will not resume operation until the user solves the problem and restarts the inverter.

Warning Message	Possible Reasons	Troubleshooting
Meter disconnection	There is no communication between EP Cube and the meter measuring the energy exchange with the Grid.	1) Check if the meter cable is loose cable or broken 2) Check if there are any interferences/joints on the cable that can cause miscommunication with the meter/inverter. 3) Check if meter is turned on correctly. 4) Perform a system and meter power cycle 5) If no solution is found, please contact service support.
DC input voltage is high PV1/2 overvoltage peak value	Voltage from the PV is higher than the maximum voltage limit	Measure the voltage of the string/s and if one/both exceed the maximum voltage limit on the datasheet, it is necessary to modify the string to make it work within the inverter VoC/Vmppt range.
DC input voltage is low	Voltage from the PV is lower than the minimum voltage required	Measure the voltage of the string/s and if one/both are under the minimum voltage threshold on the datasheet, it is necessary to troubleshoot the string to make it work within the inverter VoC/Vmppt range.
PV1/2 reverse connection	The positive and negative of the strings are reversed	1) Check if PV1/2+ and PV1/2- are reversed. 2) Check that the polarity of the strings is correct.
Phase A voltage 1/2/3/4-stage high	There is an overvoltage on the AC side	The Grid voltage is above the country code threshold. The inverter will stop to operate. 1) Check that the correct region settings are selected. 2) Check whether there are any anomalies on the AC side cabling. 3) Measure the grid voltage. If above the country threshold, please wait until grid is again in correct range. 4) If under, please contact service support.

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Phase A voltage 1/2/3/4-stage low	There is an undervoltage on the DC side	The Grid voltage is below the country code threshold. The inverter will stop to operate. 1) Check that the correct region settings are selected 2) Check whether there are any anomalies on the AC side cabling. 3) Measure the grid voltage. If under the country threshold, please wait until grid is again in correct range. 4) If above, please contact service support.
Frequency 1/2-stage high/low	The AC line frequency is not stable, therefore the inverter stops to operate.	1) Check that the correct region settings are selected 2) Check if the frequency is within the country thresholds. If outside the range, the inverter will stop operating until it is back in the normal range. 3) Analyse if this problem comes from another appliance (ex. some engines/pump can cause a frequency drop/rise); if so, please investigate and eliminate the issue. 4) If the problem originates from the grid, please contact grid distributor. 5) If no solution is found, please contact service support.
Phase A overcurrent/peak overcurrent	Excessive load or other external anomalies cause the current to exceed the maximum current allowed by EP Cube	1) If it's a transient or if loads decrease, it will recover automatically. 2) If not, please contact service support.
Hardware PDP failure	This error is usually triggered during other faults.	1) Check for other warnings present at the same time. 2) If there are none, please contact service support.
Island protection	There is a grid/earth problem	1) Check whether grid status is normal. If not, please wait until grid comes into normal operative status. 2) If yes, take measurements of L-N, L-PE, N-PE and contact service support.

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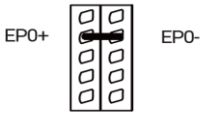
Emergency stop press	The EPO jumper is missing or the emergency button, if installed, has been pressed.	1) If the EPO jumper is missing, please follow the manual and install it correctly.  2) If it's installed, check if it makes proper contact on the pins EPO- and EPO+. After that, perform a power cycle and the problem should recover. 3) If the Emergency button has been installed and pressed, please perform a system reboot after making sure the system is safe to be restarted. 4) If issue persists, please contact service support.
PV1/2 Insulation Abnormal	PV DC leakage	1) Check if there is any DC leakage from the panels with appropriate device (Insulation Tester). 2) The threshold for the alarm to appear is 75k Ohm. If the PV string/s are below this insulation value, please investigate and solve what is causing the issue (broken PV cable, bad grounding, etc.). The machine will then start to operate normally again once the insulation is corrected. 3) If issue persists, please contact service support.
Ungrounded	There is no ground conductor connected in the inverter	1) Check if there is any grounding mistake (ex. Not properly screwed ground, node not making contact, etc.) 2) If no issue is found, please contact service support.

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9. Contact Us

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