

## AC V Outrange Troubleshooting

**Possible cause:** The grid voltage is out of permitted range, or the inverter's voltage limits is incorrect, etc.

If there are several inverters in parallel, and one or more inverters show "AC V Outrange" after the inverters feed electricity to grid for a while, this might be caused by high impedance between the inverter and feed-in point, please record the AC cables wiring condition and record the phenomenon, then contact Growatt service.

If the inverter shows "AC V Outrange" when turn on AC breaker, check following the steps below:

- a. Turn off the AC breaker and DC switch, check whether the AC cables are connected properly;



Fig.1 AC cables wiring

- b. Turn on AC breaker, measure the voltage between L and N on the AC terminal block using a multi-meter, if value exceeds the permitted limitation of your local regulation, please contact your local grid company to confirm the power quality of the grid;
- c. Turn on DC switch, compare the grid voltage measured by multi-meter, and the AC voltage displayed on the inverter. If the tolerance is more than 3V, please calibrate the detected AC voltage of the inverter by following steps:

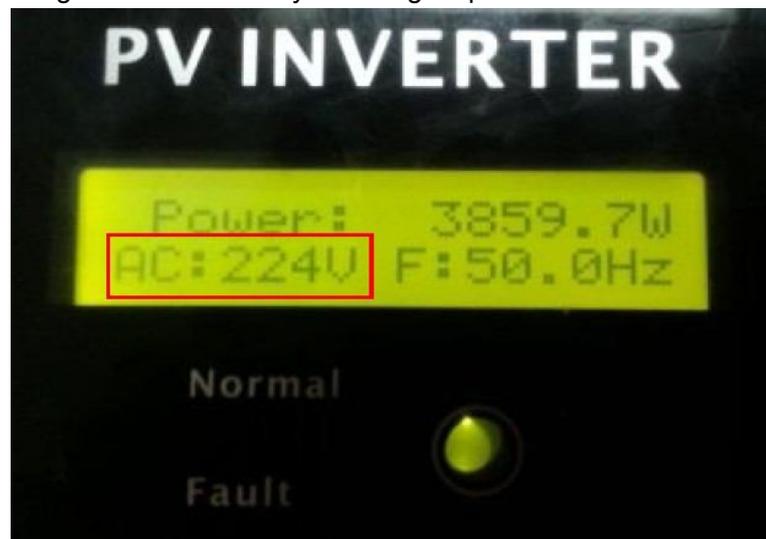


Fig.2 AC voltage shown on inverter display

- ✧ Connect the inverter to PC via USB to RS232 cable.
- ✧ Open the software, **ShineCHKVac** to calibrate AC voltage as below picture.
- ✧ Disconnect the AC breaker, then type the whole number of the voltage value measured by multi-meter. For example, if the multi-meter measured grid voltage is 230.2V, you can input 230, if the grid voltage is 230.6V, you should input 231V.

Please make sure to input the right COM port number of your PC.



Fig.3 Vac calibration

- Check the AC voltage limitation by ShineTool
  - ✧ Change to the “3 Parameter Read” tab, type into the correct COMM port number and OPCode (Growattset), then click on the “Read” button.

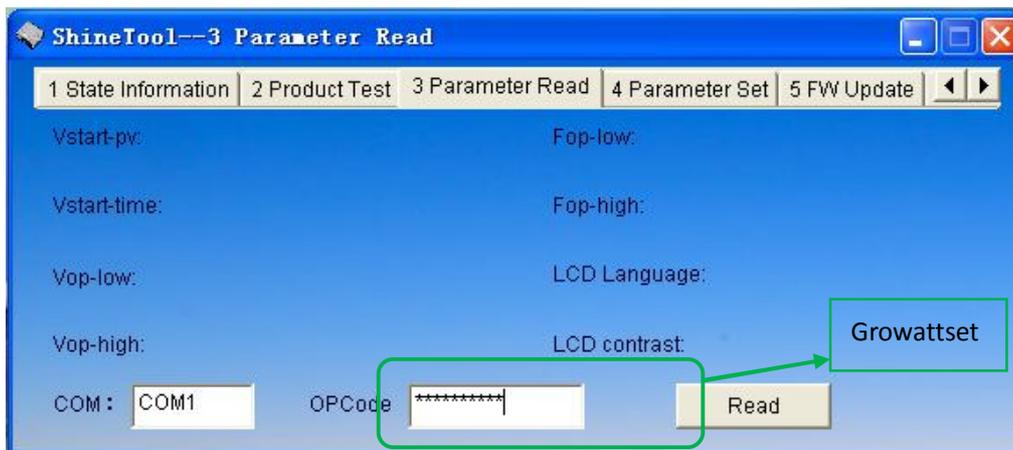


Fig.4 read Vac rang

- ✧ Check whether the limitation complied with local grid standard. If not, please reset the limits with ShineTool. Fill Corresponding value in “Set value” field, then click on the “Set” button to set upper and lower limits of AC voltage one by one. Example shown as below, you can refer to the following table for the threshold value.

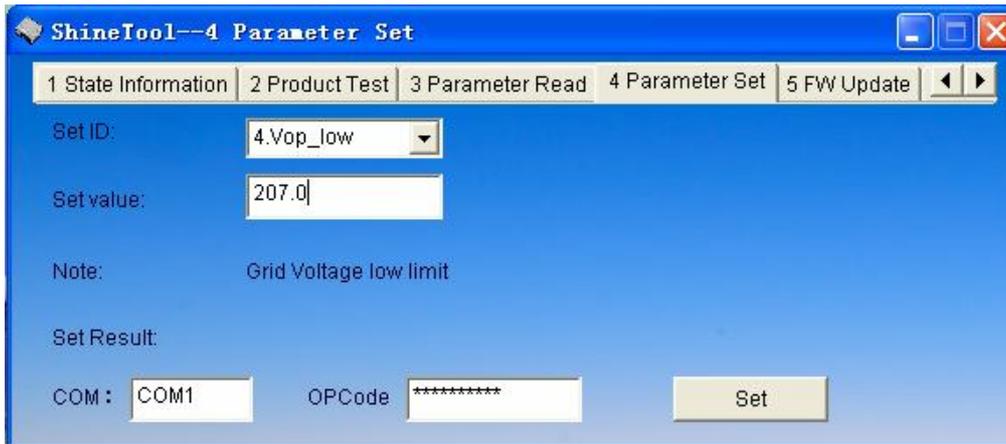


Fig.5 Set Vac range

Table 1 Vac set values

| State        | Regulation | Vac low | Vac high |
|--------------|------------|---------|----------|
| Queensland   | AS4777     | 207.0   | 255.0    |
| Other States | AS4777     | 207.0   | 263.0    |

- e. If all conditions are OK and this fault still exists, please contact Growatt service.

Additional information: The standard Vmax value (Vac high) is 255v or 263v. It is according to local grid company's requirement. Sometimes the inverter is far away from the "grid-tied point (example the switchboard)", the high impedance of the long wire may cause a voltage boost from inverter AC terminal to grid tied point / switchboard. In this case we can change the Vmax to a higher value, for example, 273v.

Please follow the below step to change Vmax to 273v if customers want to:

- ✧ Connect the inverter to PC via USB to RS232 cable.
- ✧ Run ShineTool software, change the communication COM address, choose option "4 Parameter set"
- ✧ Choose "5. Vop High", and fill in "273"
- ✧ Fill in password and click "Set".
- ✧ Red the "Vop high" value once finished.
- ✧ Commissioning inverter.

End of the document.