

## Grid Voltage Issues

### Disclaimer

The new **Crystal G2 Series** (SG2K-S, SG2K5-S, SG3K-S, SG3K-D, and SG5K-D) is compliance with the standard AS/NZS 4777 related to grid protection requirements. If the line voltage or frequency goes outside pre-determined parameters, the inverter must shut down for safety purposes, which means it is not a faulty inverter in these instances.

### Introduction

**Error 002** indicates that the grid voltage has exceeded the inverter allowable upper limit (260 V within 2 seconds). The inverter will recover once the grid voltage returned to normal.

**Error 003** indicates that the grid transient voltage exceeds the permissible range. This is a short-term error due to a grid recovery condition.

**Error 004** indicates that the grid voltage is below the inverter's allowable lower limit.

**Error 005** indicates that the grid voltage is too low. This is a short-term error due to a grid condition. Wait a moment for inverter recovery.

This document will use **error 002** as an example to explain the troubleshooting and the other grid voltage errors will have a similar troubleshooting process.

If the error persists, restart the inverter.

1. Turn off the solar supply main switch or the AC isolator. The solar supply main switch is usually in the switchboard. The AC isolator is between the inverter and the switchboard.
2. Turn off the DC PV array isolator (which is located next to the inverter).
3. Wait until the inverter shuts down completely (there will be no LEDs lit up and no display).
4. Turn on the DC PV array isolator.
5. Turn on the solar supply main switch or the AC isolator (whichever was turned off in step 1).
6. Wait a few minutes for inverter recovery (the LEDs go from flashing green and red indicating standby and starting up, then if the inverter works fine it will go to a green light).

## Checking Error Records

To access the error record for your Crystal G2 Series inverter:

Navigate to **Main Menu** → Select **Error Record** (Figure 1).

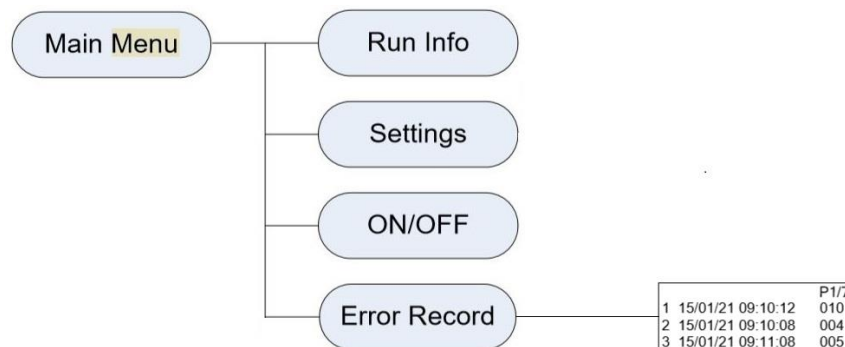


Figure 1 Error records

Take note of the most recent errors, and press ESC button to return to the main screen.

Please click [here](#) to watch this tutorial video.

Go to **Run Info** to check the Grid Voltage [V] value (Figure 2).

Once in the running information, tap (for less than half a second) the ESC/▼ button to access the AC parameters. Take a photo of the screen showing the values in this table, and send all the photos to [service@sungrowpower.com.au](mailto:service@sungrowpower.com.au).

Grid Vtg:	221.7V
Grid Frq:	50.0Hz

Figure 2 Grid voltage reading

The normal value should be around 240-250 V. If the value is too high, you need to contact your local **distributed network service provider (DNSP)**; particularly if the voltage is beyond the range specified by the DNSP (this information is available on request).

If the grid voltage value is normal by measuring an inverter’s AC power plugs, but the **Grid Vtg** reading on the LCD screen is higher, which may be caused by voltage rise.

**Issue:** Cable impedance may cause a voltage rise between an inverter’s AC power plugs and a switchboard.

**Troubleshooting:** Stop the inverter via the below steps (Figure 5) and then check the Grid Vtg reading on the LCD screen. If the **Grid Vtg** value on the LCD screen is close to the reading on the multimeter, it will prove that the cable impedance is high because the inverter has a different reading on the LCD screen when it is programmed on and off from the LCD, corresponding to with and without current, respectively.

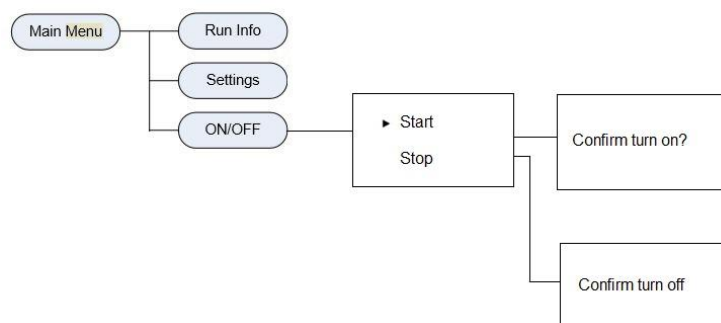


Figure 3 Inverter start/stop menu

If you have completed the above steps and believe the inverter is still faulty, please take photos as above and contact the Sungrow Service Department.