10 minutes Overvoltage Issue (Error 014)

(Installer version)

Disclaimer

The material in this document has been prepared by Sungrow Australia Group Pty. Ltd. ABN 76 168 258 679 and is intended as a guideline to assist solar installers for troubleshooting. It is not a statement or advice on any of the Electrical or Solar Industry standards or guidelines. Please observe all OH&S regulations when working on Sungrow equipment.

1. Introduction

All inverters sold within Australia are required to comply with the Australian grid standards. Under the standards, the supply voltage, the power cables, and the inverter must comply with certain voltage limits. If the voltage is over the limits, the inverter will shut down and report errors. **Sungrow inverters will report 014 error when the 10 minutes average grid voltage reaches a set limit for a short time. However, the inverters will restart to run once grid voltages return to normal range.**

2. Australian Standards

2.1 Grid Voltage (AS/NZS 3112)

Under the standards, the grid voltage must be 230 Volts AC with a tolerance of -6% and +10%. This means the supply voltage must be between 216 Volts and 253 Volts.

2.2 AC wiring (AS/NZS 4777.1 2016)

The standard AS/NZS 4777.1 Clause 3.3.3 stipulates that the 'Voltage Rise' on the AC cable between the point of supply and the inverter must be no more than 2% (which at the upper limit of 253 Volts will equal to 5 Volts).

2.3 Inverter standards (AS/NZS 4777.2 2016)

The standard AS/NZS 4777.2:2016 Clause 7.5.2 introduces voltage limits for sustained operation. The average voltage of an inverter for a 10 min period shall be pre-set to **255 V** by default and may be programmable up to the maximum **258 V**.
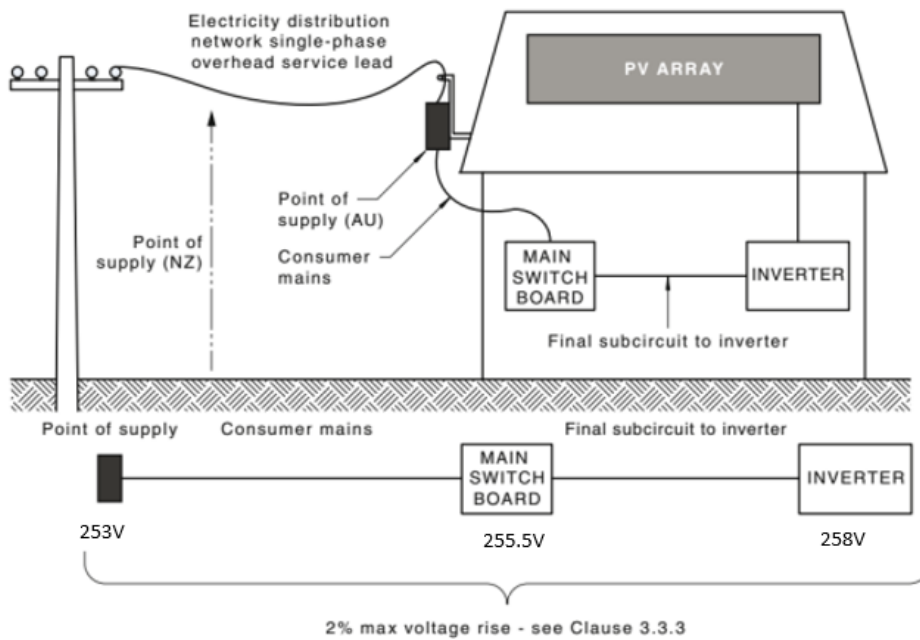
Figure 1: Voltage rise from point of supply to inverter

3. Solutions

As per stated in section 2.3, the inverter 10 min average voltage is pre-set to 255 V by default. If this voltage is over 255V, the inverter will report 014 error. **Thus, 014 error is caused by the overvoltage of the grid and it is not an inverter issue.** If this error occurs often, the inverter may be programmable up to the maximum **258 V** by a licenced electrician in accordance with DNSP's requirements.

However, if the problem persists after increasing the voltage threshold to 258 V, we recommend that the customer can contact the local distribution network service provider (DNSP) to inspect the local grid voltage.

Notice: ONLY installer's iSolarCloud account can change the settings remotely. Sungrow is not authorised to change this voltage setting because we are not licenced electrician.

If DNSPs refer to contact the inverter manufacturer, please contact Sungrow Service Department on 1800 786 476 or email to service@sungrowpower.com.au, Monday-Friday 9am - 5pm (AEDT).

4. Overvoltage Setting Procedures (for installers only)

4.1 Change the setting on iSolarCloud

Open iSolarCloud -> Choose "Settings" -> Search plant -> Tick the plant -> Tick the device -> Choose "**Advanced Settings**" -> Turn on "10-min Overvoltage Protection" -> Set "Protection Value" -> Click "Apply Settings" -> Input login password you're your iSolarCloud account) -> Confirm Settings.
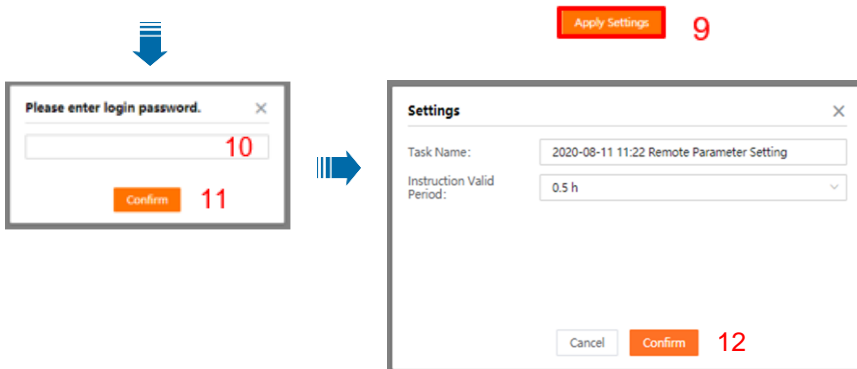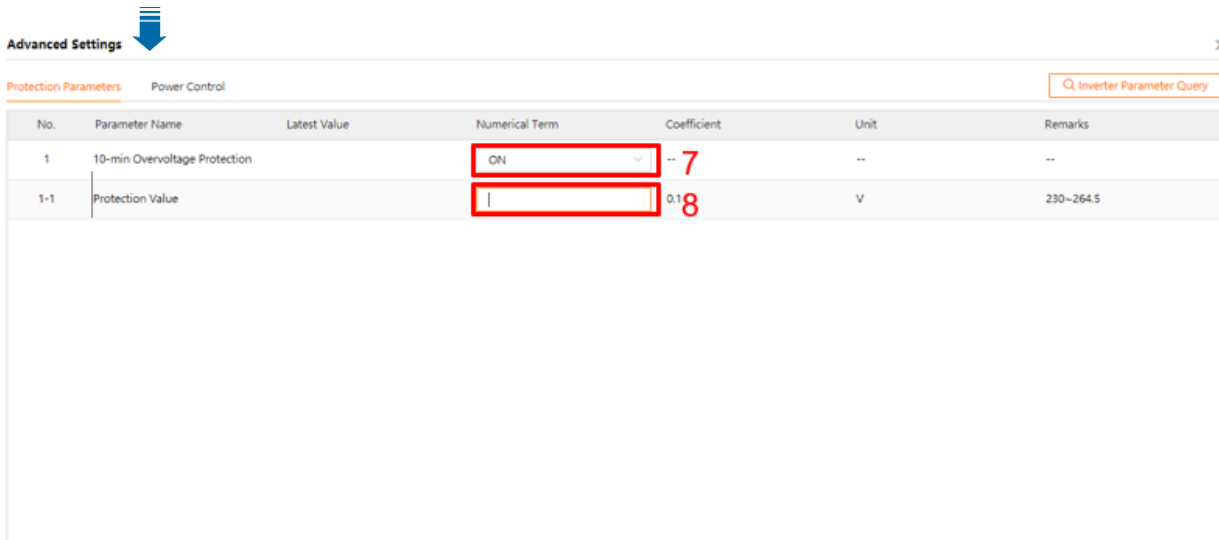
4.2 Change the setting through local access

Open iSolarCloud app -> Local Access -> WLAN -> Login inverter with the account "admin" and password "pw8888" -> Settings -> Protection Parameters -> Grid Abnormal Protection -> Turn on "10-min Overvoltage Protection" -> Put voltage limit in "Protection Value" and save.