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Error 010 Islanding

Error 010 is an "islanding" error, which indicates that some point in the inverter is reading that the AC voltage (grid voltage) is 0 V and this may not be an issue related to the inverter. This could be a result of a loose AC connection, or the circuit breaker has tripped or failed. It could also be that there is a short circuit at some point in the inverter. The end user could attempt to check the circuit breaker, but a solar installer may need to test for an AC short circuit before the AC connection of the inverter, or by measuring the voltage across the AC terminals.

Troubleshooting for the end user:

1. If the fault persists, restart the inverter.

2. Please ensure all AC circuit breakers (inside the switchboard and adjacent to the inverter) are in the on position. See Appendix 1: Testing the AC Circuit Breaker and Inverter with the AC Relay for further details.

3. Check the AC cable from the AC isolator to the inverter's AC terminal for corrosion or other defects and take a photo.

4. Check the AC connectors as above for step 3.

Find fault records (Figure 1) and take photos of the fault records. Click here for instructions.

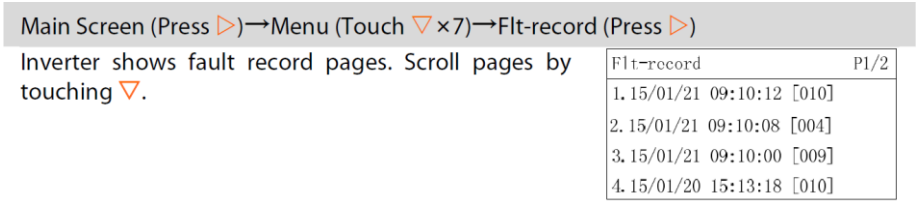

Figure 1 Inverter Fault Records

5. Please email photos of the fault record to service@sungrowpower.com.au with the inverter's serial number.
6. The customers can contact their original solar installers or find a local installer (CEC accredited) by clicking here to inspect the inverter. This includes checking the inverter AC side to see if there are any faults with the inverter or other parts of the system and taking the inverter cover off and measuring the inverter's internal voltage (see the below troubleshooting steps).

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Troubleshooting for an installer:

If the technician just installed the system and is on-site, and error 010 occurs, test for the external AC voltages of the AC plug (Figure 2). If it has the voltage, then take the inverter cover off and measure the internal voltage at the AC terminal (Figure 3), as per the following instructions.

Figure 2 External AC voltage

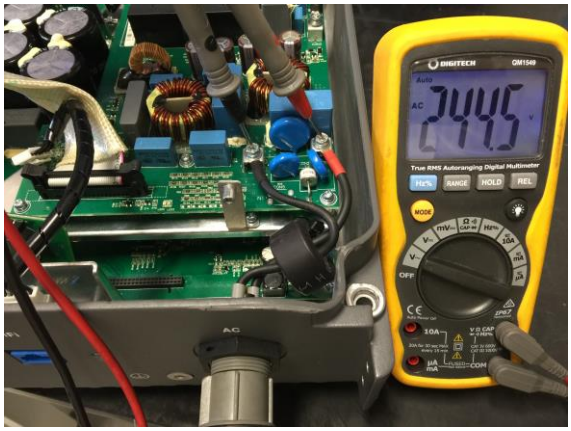

Figure 3 Internal AC voltage

Important: please take a few photos for reference

Scenario 1:

If the technician measures that the internal circuit board terminals have a voltage (around 240 Vac), but the inverter still shows error 010, **then the inverter needs to be replaced**.

Scenario 2:

However, if the technician measures that the internal circuit board terminals have no voltage, then there will be an issue with the connection or installation. Please follow below instructions.

Troubleshooting for scenario 2:

Continuity Test: Use a multimeter to check continuity from the AC connector to the inverter circuit board terminal, i.e. from the external terminal (Figure 4) to the internal terminal (Figure 5). The resistance value should be 0 (Figure 6).

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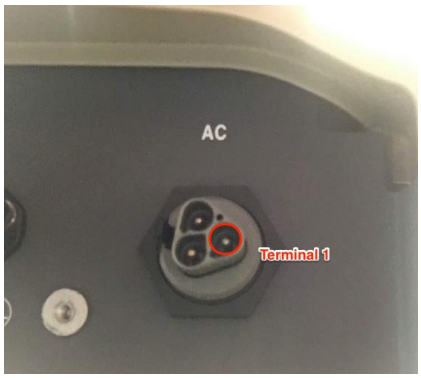

Figure 4 External terminal

Figure 5 Internal terminal

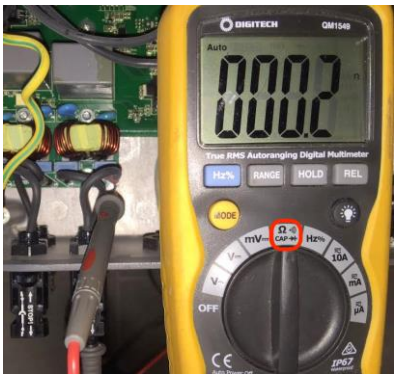

Figure 6 Resistance/continuity

Recommendation

1. Assemble the AC connector again.
2. If you have completed steps of troubleshooting for scenario 2, please take photos as above, then we can advise to replace the inverter if the test indicates that there is an internal short circuit. However, the return inverter will be tested in our warehouse, if the allegedly faulty inverter is found to be free of defects, Sungrow will provide a test report and charges may apply.

Appendix 1: Testing the AC circuit breaker and inverter with the AC Relay

There is a protection circuit inside the inverter. The relay will close after about 30 s. When error 010 occurs, make sure that all AC circuit breakers (inside the switchboard and adjacent to the inverter) are in the on position.

If the circuit breaker tripped immediately after turning it on, then there may be an issue with the circuit breaker or somewhere else on the AC circuit, other than the inverter.

If the customer switched on the circuit breaker and the circuit breaker tripped after one or two minutes when the relay closed, then this may be due to the inverter's issue.