

How To Troubleshoot an Inoperable APsystems Microinverter

A flashing red LED indicates the AC grid is either not present or not within specification. The microinverter does not sense that the utility grid is within voltage/frequency specifications, and cannot produce power until this is resolved. To troubleshoot an inoperable APsystems microinverter, follow the steps in the order shown to diagnose your solar system.

*** WARNING: Risk of electric shock. Always de-energize the AC branch circuit before servicing. Never disconnect the DC connectors under load.**

*** WARNING: The APsystems Microinverters are powered by DC power from the PV modules. Make sure you disconnect the DC connections and reconnect DC power and then watch for three green blinks after connection to DC power.**



APmicro™ SERIES



YC600: Dual-module (2.1)



QS1: Quad-module (4.1)

Troubleshooting an APsystems System - 15 Steps:

1. Make sure AC breakers and disconnects are closed (off).
2. Check the connection to the utility grid and verify that the utility voltage is within allowable ranges.

3. Verify that AC line voltages at all solar power circuit breakers at the load center and sub-panels are within the ranges shown in the following table.

4. Verify that AC line voltage at the junction box for each AC branch circuit is within the ranges shown in the following table:

240 Volt AC, Single Phase or Three Phase		208 Volt AC, Three Phase	
L1 to L2	211 to 264 VAC	L1 to L2 to L3	183 to 229 VAC
L1, L2 to neutral	106 to 132 VAC	L1, L2, L3 to neutral	106 to 132 VAC

5. Using an APsystems disconnect tool, disconnect the AC cable for the microinverter in question from the trunk cable.

6. Verify that utility power is present at the microinverter by measuring line to line and line to neutral at the trunk cable connector.

7. Visually check that the AC branch circuit connections (trunk cable and AC connections) are properly seated. Reseat if necessary. Check also for damage, such as rodent damage.

8. Make sure that any upstream AC disconnects, as well as the dedicated circuit breakers for each AC branch circuit, are functioning properly and are closed.

9. Disconnect and reconnect the DC PV module connectors. The Status LED of each microinverter will light solid green three times in a few seconds after connection to DC power and then blink green every ten seconds indicate normal start-up operation about five minutes after connecting to DC power. The LED subsequently resumes normal operation if the grid is present. [See page 15 of the Installation and Operation Manual for normal LED operation.](#) (YC600/QS1)

10. Clamp onto one of the DC cables with a multimeter from the PV module to measure micro inverter current. This will be under one Amp if AC is disconnected.

11. Verify the PV module DC voltage and current is within the allowable range shown in [“Specifications” on page 20 of the manual.](#) (YC600/QS1)

12. Swap DC leads with a known good, adjacent PV module. If after checking the EMA periodically (this may take up to 30 minutes), the problem moves to the adjacent module, this indicates that the PV module isn't functioning correctly. If it stays in place, the problem is with the microinverter. Call APsystems Technical Support for help in reading the microinverter data and for help in obtaining a replacement microinverter, if needed.

13. Check the DC connections between the microinverter and the PV module. The connection may need to be tightened or reseated. If the connection is worn or damaged, it may need replacement.

14. Verify with your utility that line frequency is within range (some multimeters have a frequency function to check this easily)

15. If the problem persists, please email directly to this response. Please do not reply to auto-generated emails or emailing support.usa@apsystems.com; not emailing this email directly can cause your request to take longer to resolve with the possibility of lost information. Thank you.