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PRODUCT TECHNICAL BULLETIN

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Product Affected: CSA Labeled SW Series II Inverter / Chargers built before August 2002

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Level: Urgent

Summary

During CSA evaluation of the SW Series II some changes around the welded relay detection were required. As soon as these changes were implemented in software, a number of generator users called into the Technical Support Department (and to their installers as well) to report that the inverter indicated an "Input Relay Failure" error condition when they turned off their generators. This problem only applies to CSA labeled SW Series II Inverter / Chargers built before August 2002.

The weld relay detection software makes decisions on the AC relays and the AC source present at the inverter's AC input terminals to determine when to provide and act on an "Input Relay Failure" error condition. When the inverter software detects a possible weld relay condition it shuts down the inverter and displays the error condition.

The weld relay software monitors whether the relays are energized at the correct time and how long the voltage and frequency present at the inverter's AC input are out-of-tolerance. When either the frequency or voltage of the AC source fall out of tolerance, an internal counter advances. This internal counter advances until both voltage and frequency at the AC input have fallen out-of-tolerance, at which time the counter stops and resets. If the internal counter exceeds a fixed time period (error enabled point) and the relays are not energized to close, then the AC source on the inverter's AC input is determined to be from the inverter. This would mean that a "welded relay" condition exists and the "Input Relay Failure" error would be displayed.

In the original software, a false "Input Relay Failure" error condition could occur when turning off a generator that is connected to the inverter's AC input. When some generators are turned off, the voltage falls faster than the frequency. Since the frequency takes a longer time to fall out-of-tolerance, this allows enough time for the internal counter to advance to the 'error enabled point' - before the voltage falls out-of-tolerance - and cause this false error to be displayed.

Action being taken

This software was modified to address this generator non-compatibility issue and tested in-house and found to be successful. The revised software is available as an upgrade (see part numbers below) and is available to distribute to customers who report this error condition. The software now provides a tiered level that extends the time the internal counter needs to activate the error condition. This tiered level now provides enough time for the generator voltage and frequency to fall out-of-tolerance on the inverter's AC2 input before activating the "Input Relay Failure" error. Xantrex is offering the revised software (chipset) to anyone who experiences or who may experience this problem. (People likely to experience this problem will be those who operate their SW's off-grid with a generator source of AC power.)

It is worthy to note that conditions such as dirty fuel can cause a generator's output fall out of range for a period, which exceeds the software's timer period. Under these conditions the inverter will see an input relay failure and shut down.

There are no physical or otherwise obvious differences between CSA labeled SW Series II inverter / chargers with the old software and those which have the new version. For this reason Xantrex is recommending that in all new installations where a generator will be connected that the software version be checked, and if appropriate a replacement chipset installed. The new software can be identified by scrolling to the "revision" menu item display, which is located under menu heading 3 (Trace Engineering). The original software read "Revision 4.20", the revised software now reads "SW Series Revision 4.20".

Kits to upgrade the software are available at no charge either directly from Xantrex or in some cases Xantrex distribution partners. Installers who are working primarily with off grid systems should consider carrying upgrade kits to work sites.

The software upgrade kits are:

- SWU-SW4024/C
- SWU-SW4048/C
- SWU-SW5548/C

To order an upgrade kit directly from Xantrex please contact Tech Support through the main Arlington telephone number: 360-435-8826