

CX Series – PV Abnormal Alarm

Disclaimer

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A common fault with the CX series inverters is 'PV Abnormal Alarm'

It has been discovered that this can be caused by a voltage imbalance in the strings connected to the MPPT input.

Example: If one string max voltage is 450 VDC, and the other is 500 VDC, energy will flow from the string with a higher max voltage to the one with the lower voltage.

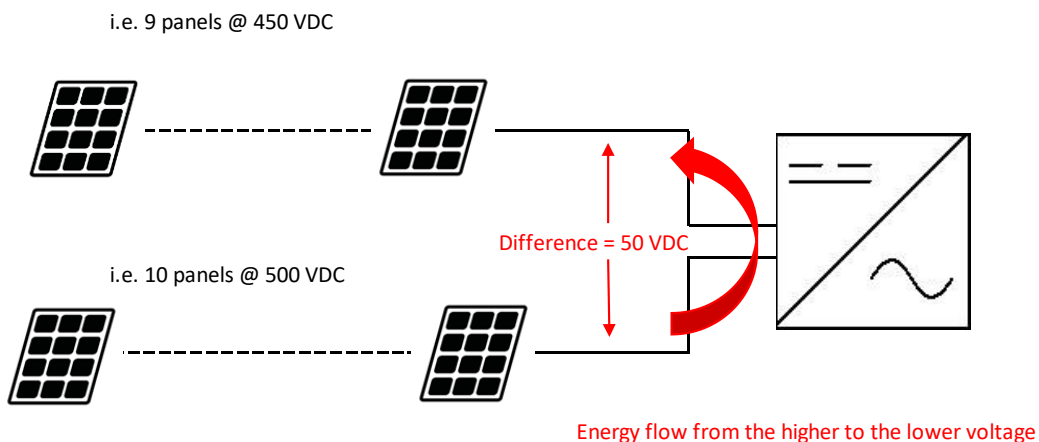
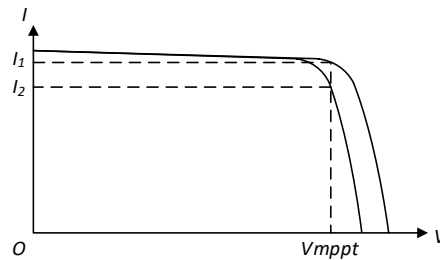


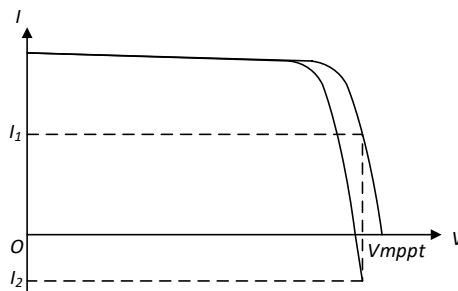
Diagram 1 – unbalanced inputs

Since the string has a wide working voltage range (from 0 VDC to open circuit voltage, i.e. 450 VDC), the reverse current may not appear all the time. But it would probably be worse in a power limitation situation, because during power limitation, the working voltage (V_{mppt}) will increase and may exceed the open circuit voltage of the string, causing a reverse current

The below 2 figures shows I-V curve of two strings with different open circuit voltage, and the string currents (I_1 and I_2) corresponding to the working voltage (V_{mppt})



String 1 and 2 both have positive current under normal working voltage



Current of string 2 turns to reverse under a higher working voltage

In the instance we encountered, the installer had 9 panels on one string, and 10 on the other. But it could happen when a panel or MC4 plug is faulty for instance.

Once we balanced the strings, the fault cleared, and the inverter worked perfectly.

In cases where the fault occurs, the installer will need to measure each string independently (cannot be done via iSolarCloud) to verify that strings are within tolerance.

If the issue persists after following above procedures, please take photos testing on site and contact Sungrow Service Department on 1800 786 476 or email to service@sungrowpower.com.au, Monday- Friday 9am - 5pm (AEDT).