

PV Abnormal Alarm on Three-Phase Inverters

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PV Abnormal Alarm (548-551) is a warning indicating that the inverter is detecting an unexpected amount of current through the strings or the MPPT. This alarm only occurs on three-phase, grid-tied inverters i.e. SG5KTL-MT, SG10KTL-MT/M, SG15KTL-M, SG20KTL-M and there are two main reasons behind it.

Reason 1: String Current exceeds 15A

The datasheet for SG10KTL-MT, SG15KTL-M, SG20KTL-M states that the max input current for any string i.e. “**Max. current for input connector**” is 15A (Please refer to datasheet below).

- [SG10KTL-MT Datasheet](#)
- [SG15KTL-M SG20KTL-M Datasheet](#)

These inverters have 4 string inputs, 2 for each MPPT. If the current for any one of the strings exceeds 15A, PV abnormal Alarm will occur. This can occur if the strings have been paralleled up on the roof and brought down as one string. Figure 1 shows an example.

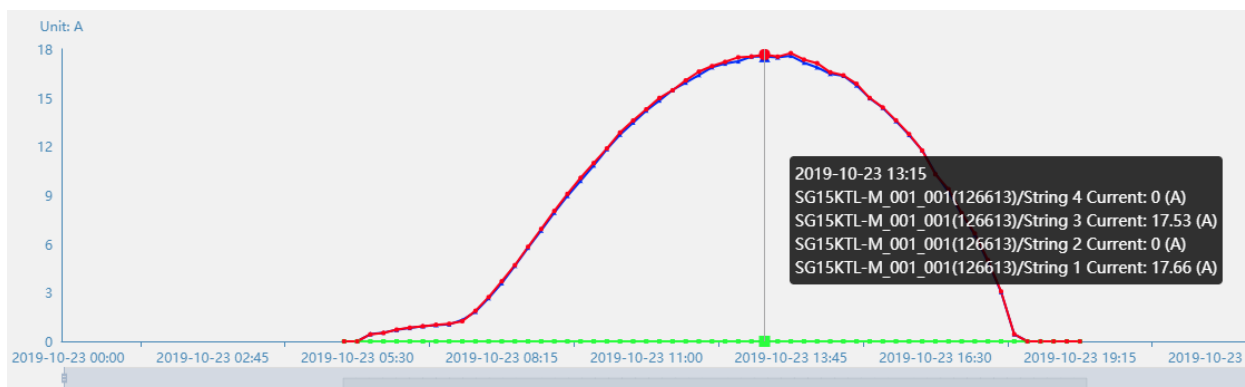


Figure 1 String Current Exceeds 15A

Resolution for Reason 1

In the case above, strings had been paralleled up on the roof and hence, total current exceeded the 15A limitation. This issue can be fixed by bringing down 2 individual strings so that both inputs are utilised on the MPPT (**Sungrow recommends**).

Alternatively, the current could be split at the bottom of the DC isolator (Figure 2).

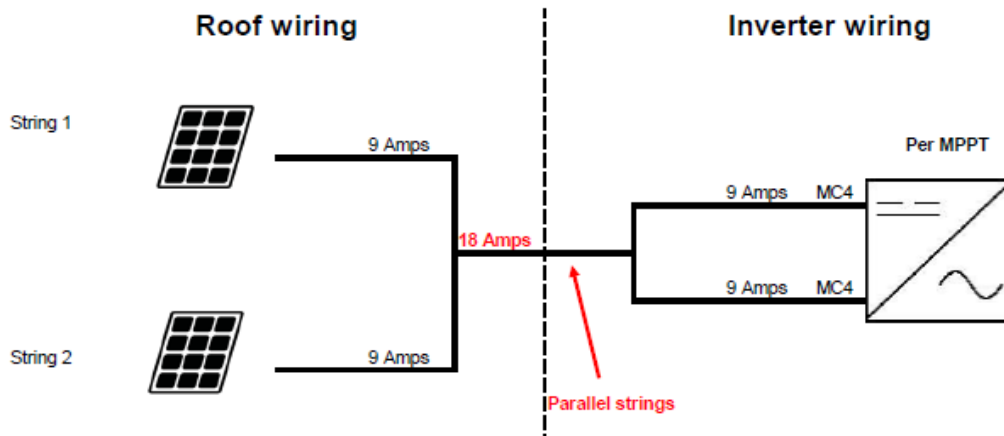


Figure 2 Splitting Current at DC Isolator

This will result in current being distributed evenly across the strings hence, eliminating the alarm altogether (Figure 3).

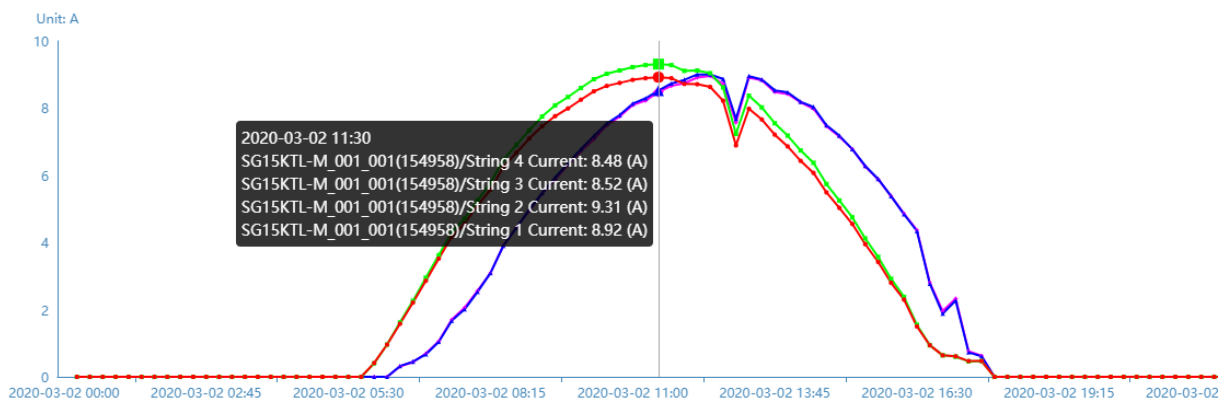


Figure 3 String Current Distributed Evenly

Reason 2: Current difference between MPPT > 6A

Another reason for the PV Abnormal Alarm to occur is if, the current difference between MPPT's is greater than 6A. This is to warn the customer that there is a significant difference between the MPPT currents and there may be something unusual. An example of a possible issue can be possible shading which can cause the current to drop significantly. An example is in the image below.

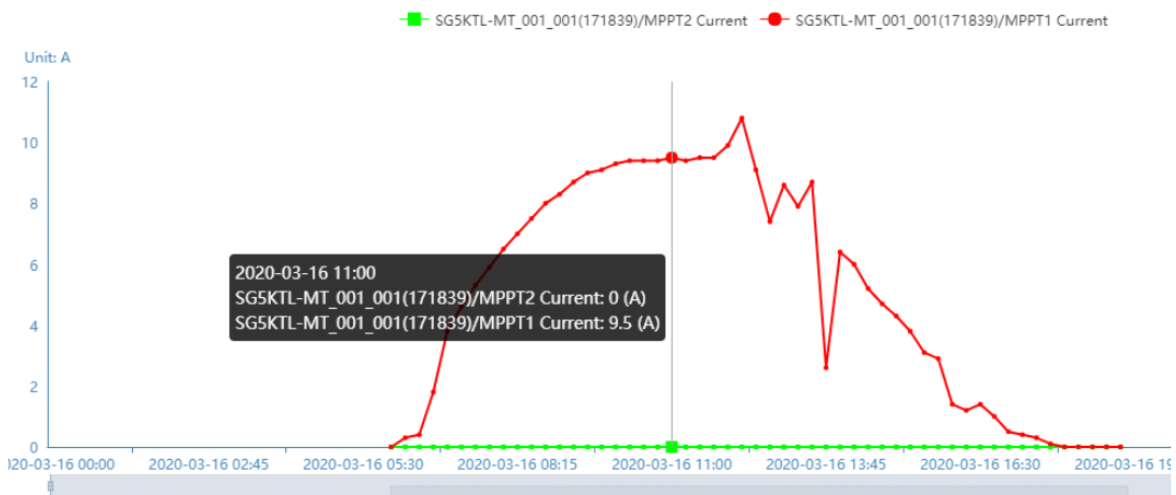


Figure 4 MPPT Current Difference > 6A

Since the difference of current between the MPPT currents is greater than 6A, the fault will occur.

Resolution for Reason 2

In this case, the strings should be checked to ensure that they are performing normally. If the current on the MPPTs is normally, String Detection setting can be turned off under local access (on-site) to avoid the fault. Steps are as follows:

On iSolarCloud, select “**Local Access**”.

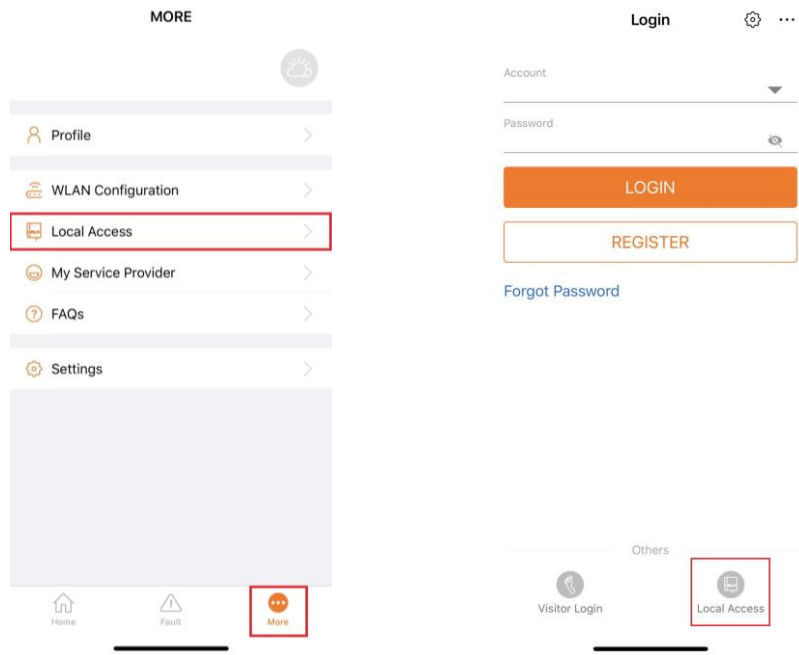


Figure 5 Local Access Login

Select “**Bluetooth**”. Connect to the **inverter SN** and login as the “**admin**”. Please contact Sungrow Service department for the password.

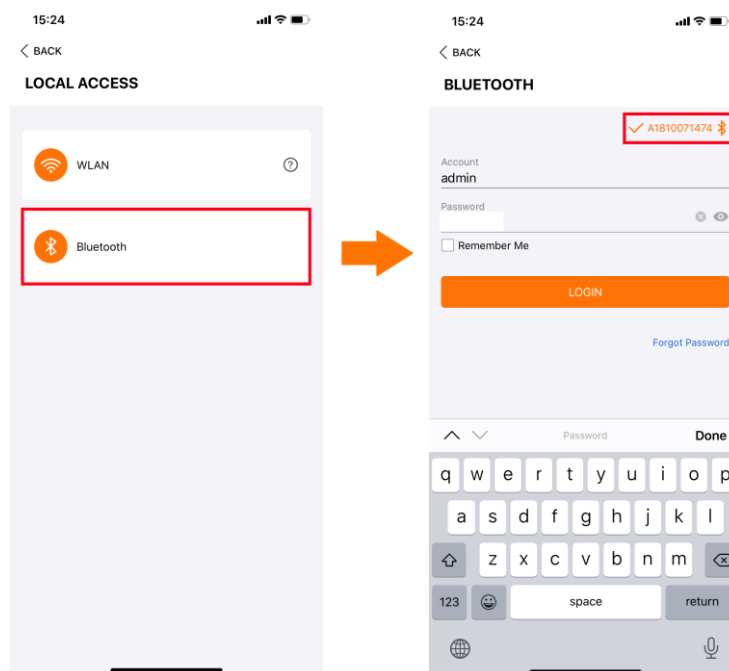


Figure 6 Bluetooth Login

Once logged in, click on “More” on the bottom right, go into “Advanced Settings”, select “String Detection” and simply turn off.

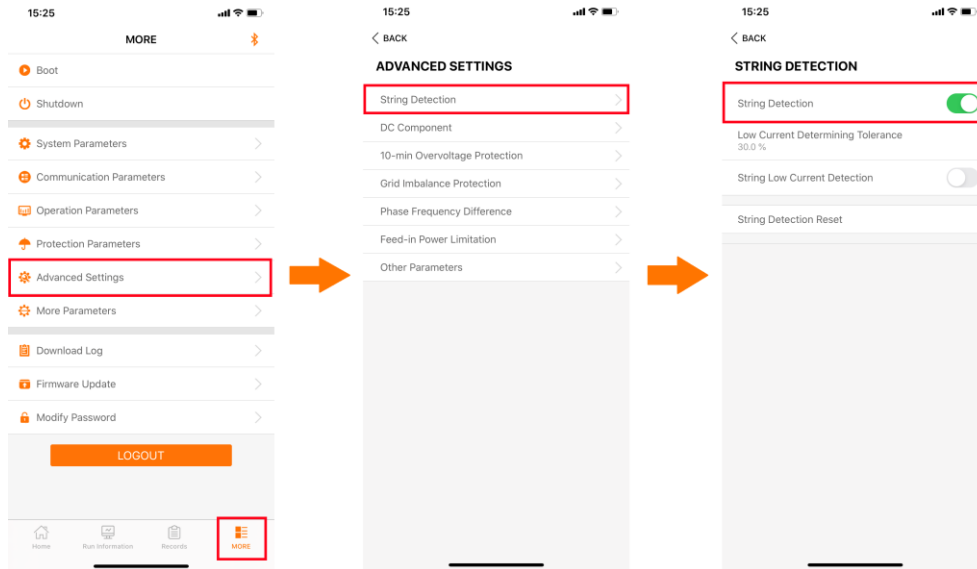


Figure 7 String Detection Setting

Special Scenario

A special case for PV abnormal alarm to occur is when it is caused due to both reasons mentioned above. This is mostly common for SG10KTL-MT. Example is as follows:

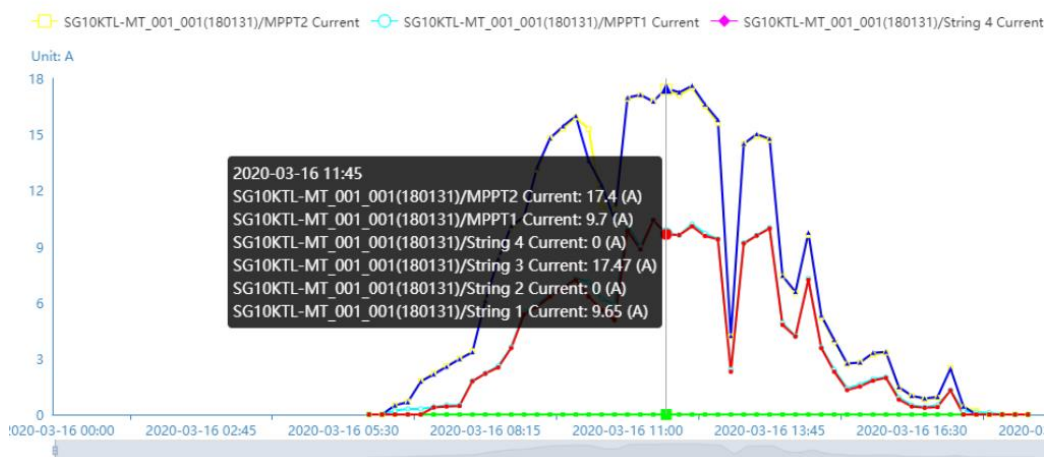


Figure 8 Special Scenario

Figure 8 shows an example where 2 string have been paralleled on the roof and brought down into string 3 (MPPT 2) Hence, causing the string current to exceed 15A. Moreover, for MPPT1 one string has been brought down. Therefore, resulting in a current difference greater than 6A between MPPTs

Resolution

To resolve this issue, resolution steps for both scenarios need to be carried out. Once fixed, the current in the string should be split and the fault should stop from reappearing. Figure 9 shows an example.

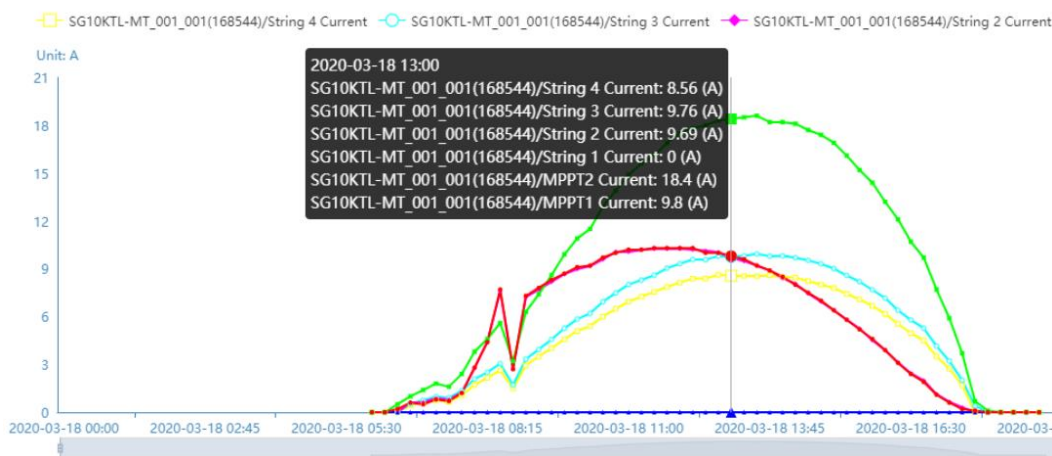


Figure 9 String and MPPT Current

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.