Gmail **Steve Nixon <steve.nixon.viamed@googlemail.com>**

Further temp results

1 message

Mini Nambiar <m.nambiar@jfdglobal.com> 8 December 2017 at 11:17
To: Steve Nixon <steve.nixon@vandagraphst.com>
Cc: Scott Waddell <S.Waddell@jfdglobal.com>, Michael Hossack <M.Hossack@jfdglobal.com>, Graham McLachlan <g.mclachlan@jfdglobal.com>

Hi Steve,

To keep you updated, we have conducted few more temperature tests on the sensors to understand the temperature response between 0°C / 20°C and 40°C without calibration board. This was to rule out any variance caused by board itself.

Test Setup

The cells were placed in environmental chamber on their sides with outputs wired to 100 kohm resistors on vero-board outside chamber. The cells were left with the chamber set to 20 °C for 1 hour before we started the test.

We then set the chamber temperature to 0 °C and immediately started recording the cell outputs every 10 minutes.

After an hour at 0 °C we set the chamber to 40 °C and left if for 1 hour before taking readings every 10 minutes for 1 hour. We can see that the outputs are slowly rising over the 1 hour period.

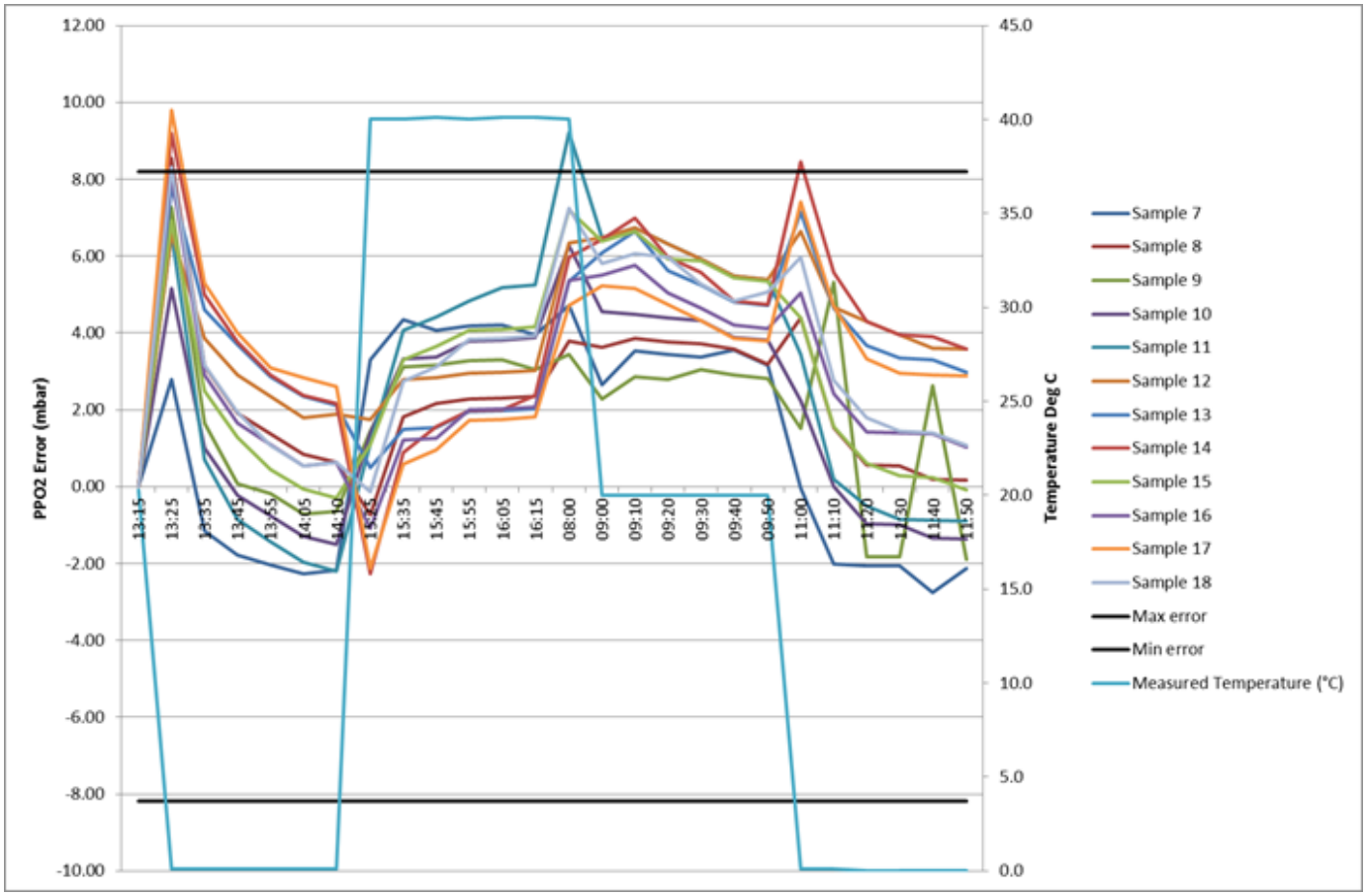
We then left the cells at 40 °C overnight and measured the outputs in the morning. The outputs had risen by ~ 3 to 4 mbar overnight.

We then dropped the temperature to 20 °C and left it for 1 hour before taking readings every 10 minutes for 1 hour. We can see that the outputs are slowly dropping over the 1 hour period.

We then dropped the temperature to 0 °C and left it for 1 hour before taking readings every 10 minutes for 1 hour. Again we can see an initial jump up then dropping slowly over the 1 hour period.

Conclusions

- The cells are nearly meeting spec – there are 5 which cross the error bars at some point.
- It takes a long time for the cell output to settle completely after a change in temperature. We see them still changing after an hour, and results were significantly higher after leaving cells at 40 °C overnight.
- The hysteresis is still there – the readings at 20 °C after the cells being held at 40 °C overnight are ~ 2 to 6 mbar higher than before.



I have arranged the raw data as well for your reference. Could we arrange for a call on Monday / Tuesday to go through the details. Are the results similar to how you would have expected the sensors to perform?

Thanks,

Mini

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Sample 7 to 18 cells only 20171206 to 20171207.xlsx
40K