Date: Thu, 19 Jun 2014 14:21:13 +0100
From: Steve Hardaker <steve.hardaker@viamed.co.uk>
Subject: MAX-250(B) sensors returned on SRS64344
To: Lloyd Nembhard <Uniqueprothet@aol.com>
Mime-Version: 1.0
Organization: Viamed
X-Mailer: GoldMine [6.70.50123]

Hi Lloyd,

Just to elaborate on the details of our conversation today, I have tested the 3 MAX-250(B) sensors in low oxygen levels against a reference analyser and found them to be within specification, as such, we will return them to you 'No Fault Found'. The following information may help you to determine the cause of the problems that you are experiencing.

I calibrated both the reference analyser and a secondary analyser, which was connected to each of your sensors in turn, to 20.9% in room air, then I introduced nitrogen and observed the readings. I found that the sensors all measured accurately at low oxygen levels.

The response time of the MAX-250(B) is slightly slower than that of our reference sensor, having a t90 response of <15s, versus 6s for our reference sensor (the t90 parameter is the time taken to respond 90% of the way to the final true value).

We observed that when our reference monitor indicated a true O2 level of 1.5%, your sensors still gave a reading of around 2-3% but still falling. Within a further 20-30s they both read the same. What this actually means is that, if anything, the true O2 level is for a time potentially lower, not higher, than that indicated by your sensors when properly calibrated.

I also tested the sensors using a voltmeter, which gave a little more information. Where our reference sensor dropped completely to 0.0mV in pure nitrogen, your sensors still displayed between 0.3mV and 0.5mV in zero O2: this is known as the zero off-set and the specification of the MAX-250(B) sensor states that it should be 0.5mV or less. So these sensors are within spec.

However, as you state that the instrument uses a zero oxygen level for calibration purposes, any error in fixing the calibration at the bottom end can get magnified as you go up the scale, for this reason, it is always good practice to use air for calibration (or even 100% O2 for maximum accuracy).

All of this suggests a calibration issue with the instrument. Another thing to consider is whether the instrument is actually delivering pure nitrogen with no air contamination during the calibration process, and whether this is being left long enough for the sensor to completely settle to its lowest level before performing the calibration. Consider the following scenarios:

A) If the calibration process is pulling in air, the resulting gas mix may actually be a few percent oxygen but the analyser is told to consider this level as 0.0% oxygen. If this level was 5% for example, then when your analyser is reading 1.5% O2, you may actually have 6.5% O2.

B) The sensor has not had sufficient time to settle to its zero value before calibration takes place, so when the calibration process tells the analyser to consider the output from the sensor to be 0.0% oxygen, the output may still be a few millivolts higher, so again, when your analyser is indicating 1.5% O2, the true O2 level may be much higher.

The 2 points above are worthy of further investigation. One thing that may help would be to source a reference analyser that you can leave in the chamber to verify the true oxygen levels. I had a look in our scrap bins to see if we had any spare but they have all been sent for recycling, however, we do supply a low-cost analyser with sensor for £229.00+VAT (model GB300), if that is of interest, please let me know.

I hope this helps, if you have any queries or need any further information, please feel free to ask.

Regards,

Steve Hardaker
UK Sales Manager
Viamed Ltd.
http://www.viamed.co.uk
email: steve.hardaker@viamed.co.uk
Tel: +44 (0)1535 634542
Fax: +44 (0)1535 635582

Twitter: twitter.com/ViamedLtd
Facebook Page: Search for Viamed Ltd

Company registered in England, No. 01291765.

E-mail Disclaimer

The information in this email is confidential and may be legally privileged.
It is intended solely for the addressee. Access to this email by anyone else is unauthorized.
If you are not the intended recipient, any disclosure, copying, distribution or any action taken or omitted to be taken in reliance on it, is prohibited and may be unlawful.

If you feel you have received this email in error or would like to be removed from our mailing list, please reply with delete in the subject line or call +44 (0)1535 634542

[Sent via Goldmine]