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

Re: AW: Polymer resin oxygen sensor

1 message

Steve Nixon <steve.nixon@viamed.co.uk> 14 March 2018 at 16:26
To: Bernd Lindner <b.lindner@bluepoint-medical.com>
Cc: John Lamb <john.lamb@viamed.co.uk>, Jens Schwarz <j.schwarz@sensatronic.com>
Bcc: Derek Lamb <derek.lamb@viamed.co.uk>

Hi Bernd

The following is further to Peter's offer and my brief email outline supplied earlier. Peter's offer relates directly to project 2) Medical application 10-100% O2. When do you have time to discuss this further in terms of funding and the potential for each of the parties concerned?

Going back to project 1) the alarm sensor for >21% O2, in principle this could progress now. However, we need to discuss if any funding is involved and work on the specification and we also need to discuss the pros and cons. We have the demo unit supplied by Jens and in principle we can demonstrate it to potential OEMs, but we need to draw up initial specifications and pricing. Also, the following is copied from my earlier email:

For 1) above I initially see the sensor mounted on an interface board. The problem is that we don't know how long the sensor will last, it could last too long and we significantly reduce our revenue stream.

Perhaps we need to limit the life due to say the wear of the electrode or the capillaries potentially blocking up and being compromised? Could we use a Maxim Dallas chip with an accumulative actual or 'in use' work time clock? Or should we power the board and sensor with an integral battery, which in turn limits the life of the sensor and or the interface PCB. The whole PCB could be conformal coated (for protection).

Do you have any thoughts on the above?

In relation to project 3), from your comments you appear to put this on-hold for the time being? We just need to agree where we stand, as at the meeting John wanted me to supply a test pressure chamber with a custom assembly to accommodate the sensors. I believe that EC Sense are waiting for this, but there is no point in providing it if we are not proceeding in the immediate future. Of course we also don't have any project budgeting proposals from Peter yet.

John is away at the moment, but I beleive that he will be back in the office next week.

Steve

On 2 March 2018 at 13:12, Steve Nixon <steve.nixon@viamed.co.uk> wrote:

> Understood Bernd, I'll phone when I'm back in the office on Tuesday.
>
> Steve
>
> On 2 Mar 2018 03:59, "Lindner, Bernd" <b.lindner@bluepoint-medical.com> wrote:
>
> > Hello Steve,
> >
> > the first target application is clear and was part of the offer from Peter.
> >
> > The only target at the moment is the extension of the measuring range. Minimum to 100% or better.
> >
> > So we have to start paying him for this project and we have agreement in case he will sell his business (which we do not hope) he will support us to set up our own production. Handshake agreement but ok for me, since we know each other long time.
> >
> > Peter has started with the project and we will pay him if for Milestones reached.
> >
> > Invoice from Peter will be based on this.
> >
> > With best regards
> >
> > Bernd
> >
> > ---
> >
> > **Von:** steve.nixon.viamed@googlemail.com [steve.nixon.viamed@googlemail.com]" im Auftrag von "Steve Nixon [steve.nixon@viamed.co.uk]

Gesendet: Freitag, 23. Februar 2018 15:59
An: Jens Schwarz
Cc: Lindner, Bernd; John Lamb
Betreff: Fwd: Polymer resin oxygen sensor

Hi Jens

Further to our meeting at EC Sense, would it be possible to draw up the framework for a provisional datasheet for the sensor; in terms of dimensions, power requirements, interface, range, resolution, accuracy, performance, output..?

From discussions we have three initial target applications:

1) Use as an on-board oxygen alarm, i.e. to alarm if there is a leakage of oxygen. So, in principle the sensor is functional now as it works up to circa 40%. We can also use the demo box to initially prove the principle to some OEMs.

2) Medical applications up to 100%. Requires more testing and prototypes.

3) Rebreather applications, we need to see if the sensor can work in the region of 1.1 to 1.3 bar ppO2 and for testing purposes it needs to operate at say 2.0 bar ppO2 to a maximum of 2.3 bar ppO2.

For 1) above I initially see the sensor mounted on an interface board. The problem is that we don't know how long the sensor will last, it could last too long and we significantly reduce our revenue stream.

Perhaps we need to limit the life due to say the wear of the electrode or the capillaries potentially blocking up and being compromised? Could we use a Maxim Dallas chip with an accumulative actual or 'in use' work time clock? Or should we power the board and sensor with an integral battery, which in turn limits the life of the sensor and or the interface PCB. The whole PCB could be conformal coated (for protection).

Do you have any thoughts on the above?

How do we finance the projects?

1 above) Would in principle need just a little investment, plus input from Sensatronic.

2 above) Would need Peter/Axel's development time, plus input from Sensatronic.

3 above) Is open ended at the moment, until we prove in principle that it works. Would it be possible for Vamed/VST to have exclusivity for this market? We already have the long established contacts for the technical and military markets.

Form the meeting at EC sense it sounded as though they need an extra person, not to carry out R&D, but to run the production processes. This would then free up Peter an Axel's time to carry out the R&D evaluations.

Regards

Steve

---------- Forwarded message ----------
From: **Steve Nixon** <steve.nixon@viamed.co.uk>
Date: 19 January 2018 at 17:01
Subject: Re: Polymer resin oxygen sensor
To: J Schwarz <j.schwarz@sensatronic.com>

Thanks Jens

So, we only need say 5V supply to power the unit? In principle it could be powered by standard batteries?

Do you know what the T90 response time of the sensor is?

Regards

Steve

On 19 January 2018 at 14:46, J Schwarz <j.schwarz@sensatronic.com> wrote:

> Hi Steve,
>
> I am sending attached a short instruction for the demo unit.
>
> Regarding the sensor specs, here are some facts:
>
> Power requirement: Depends on the driving electronics plus sensor. The sensor itself requires a few micro amps only;
>
> Signal output: The sensor is giving few µA @21%O2. The output of the electronics is V or mV. The sensor requires a potentiostatic driving circuit with I/U transducer.
>
> Drive electronics: Yes, I think it makes sense that we supply the drive electronics. They can also develop their own, but it may take much time. We have some experience in the meantime. However, first we need to understand the application and the we have to adjust the electronics for this.
>
> Communication interface: We can go with RS232 or USB, whatever is required. The USB interface at the demo unit is for charging only. There is actually no usable protocol implemented.
>
> Function of LEDs: see the attached IfU
>
> Regarding sample sensors, I will try to find some and send them to you on Monday.
>
> Have a good weekend.
>
> Mit freundlichen Grüßen,
>
> Kind regards,
>
> Jens Schwarz
>
> Sensatronic GmbH
>
> Am Ring 9
>
> D-23970 Wismar, Germany
>
> Tel. +49-3841-2252 440
>
> Fax +49-3841-2252 442
>
> j.schwarz@sensatronic.com

Von: steve.nixon.viamed@googlemail.com [mailto:steve.nixon.viamed@googlemail.com] **Im Auftrag von** Steve Nixon
Gesendet: Freitag, 19. Januar 2018 13:38
An: J Schwarz <j.schwarz@sensatronic.com>
Betreff: Re: Polymer resin oxygen sensor

Sorry Jens, the unit has just arrived.

What are the power requirements of the sensor?

What is the signal output?

Would we supply the drive electronics?

What would be the communications interface?

At some stage can you please let me have a couple of examples of the actual sensors. They don't need to be working.

I'll charge up the unit and see what it does.

In the meantime what are the functions of the LEDs?

Blue

Amber

Green

Red

Steve

On 19 January 2018 at 12:01, Steve Nixon <steve.nixon@viamed.co.uk> wrote:

> Hi Jens, did you ship the demo unit and samples sensors?

Steve

On 11 January 2018 at 15:38, Steve Nixon <steve.nixon@viamed.co.uk> wrote:

> That's great news, thank you Jens.
>
> Steve
>
> On 11 January 2018 at 15:13, J Schwarz <j.schwarz@sensatronic.com> wrote:
>
> > Hi Steve,
> >
> > Sorry for being late with the demo unit. We had to solve a problem with an electronic component that we used for the old (CO2) demo unit (charging circuit), but which no longer available. We had to substitute this by another component which twice killed the charging circuit. This problem is solved now. We have the unit running for tests since three days and will send it out tomorrow morning.
> >
> > I will send a short instruction separate by email.
> >
> > Mit freundlichen Grüßen,
> >
> > Kind regards,
> >
> > Jens Schwarz
> >
> > Sensatronic GmbH
> >
> > Am Ring 9
> >
> > D-23970 Wismar, Germany
> >
> > Tel. +49-3841-2252 440
> >
> > Fax +49-3841-2252 442
> >
> > j.schwarz@sensatronic.com
> >
> >
> >
> > **Von:** steve.nixon.viamed@googlemail.com [mailto:steve.nixon.viamed@googlemail.com] **Im Auftrag von** Steve Nixon
> > **Gesendet:** Donnerstag, 11. Januar 2018 11:26

An: J Schwarz <j.schwarz@sensatronic.com>
Cc: Bernd Lindner <b.lindner@bluepoint-medical.com>
Betreff: Polymer resin oxygen sensor

Hi Jens

Sorry to hassle you, but what is the schedule for the demo unit of the polymer resin oxygen sensors? The reason why I'm enquiring is that I am planning more customer visits, so I can delay a little if the demo unit is due soon.

--

Steve

Steve Nixon

Director - Viamed Ltd.

Office: +44 (0)1535 634542

Mobile: +44 (0)7850 252267

--

Steve

Steve Nixon

Director - Viamed Ltd.

Office: +44 (0)1535 634542

Mobile: +44 (0)7850 252267

--

Steve

> > > Steve Nixon
> > > Director - Viamed Ltd.
> > >
> > > Office: +44 (0)1535 634542
> > > Mobile: +44 (0)7850 252267

--
Steve

Steve Nixon
Director - Viamed Ltd.

Office: +44 (0)1535 634542
Mobile: +44 (0)7850 252267

--
Steve

Steve Nixon
Director - Viamed Ltd.

Office: +44 (0)1535 634542
Mobile: +44 (0)7850 252267

--
Steve

Steve Nixon
Director - Viamed Ltd.

Office: +44 (0)1535 634542
Mobile: +44 (0)7850 252267

--
Steve

Steve Nixon
Director - Viamed Ltd.

Office: +44 (0)1535 634542
Mobile: +44 (0)7850 252267