

Program Version: 04.09.2001

Product: Oxygen Optode 4831

Serial No: 631

## Visual and Mechanical Checks:

- 1.1 Soldering quality
- 1.2 Visual surface
- 1.3 Galvanic isolation between housing and electronics

## Current Drain and Voltages:

2.1	Average current drain at 0.5 Hz sampling (Max.: 33 mA)	23.1	mA
2.2	CANBus Current drain at 0.5 Hz sampling (Max.: 33 mA)		mA
2.3	Current drain in sleep (Max.: 180 $\mu$ A)	213	$\mu$ A
2.4	CANBus Current drain in sleep (Max.: 180 $\mu$ A)		$\mu$ A
2.5	DSP IO voltage, J4.18 ( $3.3 \pm 0.15$ V)		V
2.6	DSP Core voltage, J4.17 ( $1.8 \pm 0.05$ V)	1.81	V
2.7	Excitation driver voltage, C4 Analog Board ( $4.5 \pm 0.15$ V)	4.33	V

## Performance test:

	Channel:	Blue	Red
3.1	Average of Receiver readings ( $0 \pm 150$ mV)	-8.4 mV	-4.7 mV
3.2	Standard Deviation of Receiver readings (Max.: 45mV/10mV)	2.06 mV	0.37 mV
3.3	Amplitude measm. with non-fluorescence foil (<60mV/650-1200mV)	13.3 mV	892.6 mV
3.4	CANBus Output test		

## Function test from 0 to 40°C:

	Channel:	Blue	Red
4.1	Minimum amplitude measurement (Blue: >550 mV, Red >650 mV)	741.4 mV	693.2 mV
4.2	Maximum amplitude measurement (Blue: <1600 mV, Red <1400 mV)	1169.6 mV	1076.1 mV
4.3	Minimum phase measurement (Blue: >24°, Red: >1°)	34.7 °	8.3 °
4.4	Maximum phase measurement (Blue: <34°, Red: <5°)	41.13 °	8.86 °
4.5	Maximum standard deviation of Phase measurement: (< 0.02°)	0.02 °	0.02 °
4.6	Minimum temperature raw data measurement: (<-200 mV)		-487.2 mV
4.7	Maximum temperature raw data measurement: (>450 mV)		674.6 mV

## Pressure test :

5.1	Pressure (IW version: 20MPa, DW version 60MPa)	60MPa
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Date: 04 Aug 2016

Sign:



Vidar Selsvik, Production Engineer



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# CALIBRATION CERTIFICATE

Form No 830, Juli 2012

Certificate no: 4831\_631\_00120288  
Foil batch no: 1517M

Product: 4831  
Calibration date: 04.08.2016

Serial no: 631  
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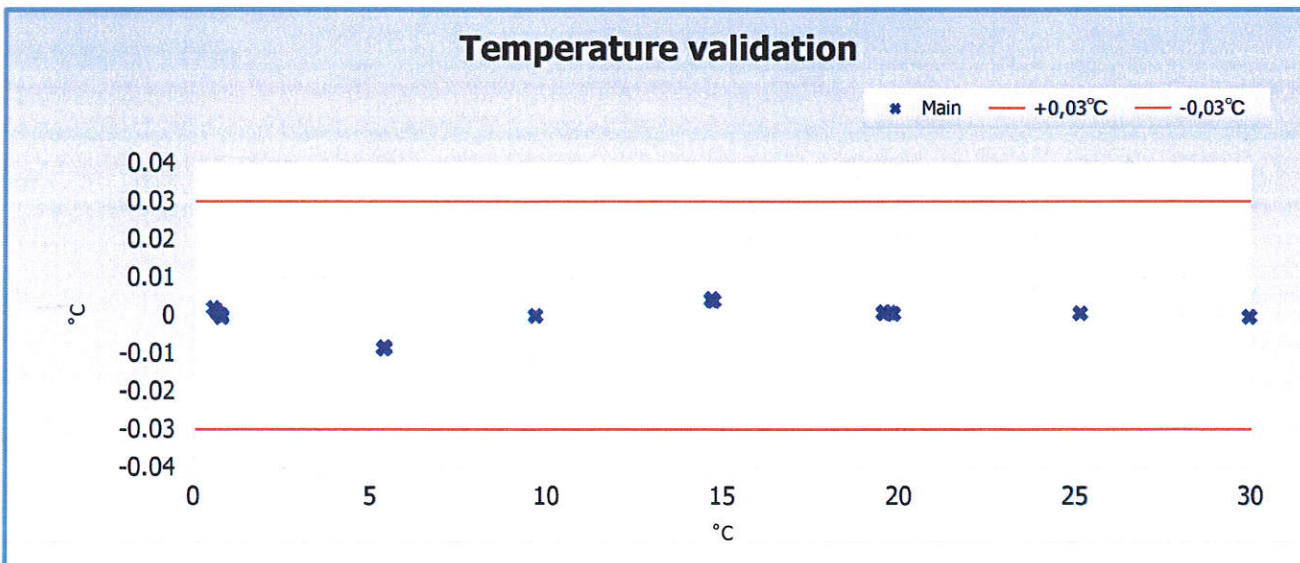
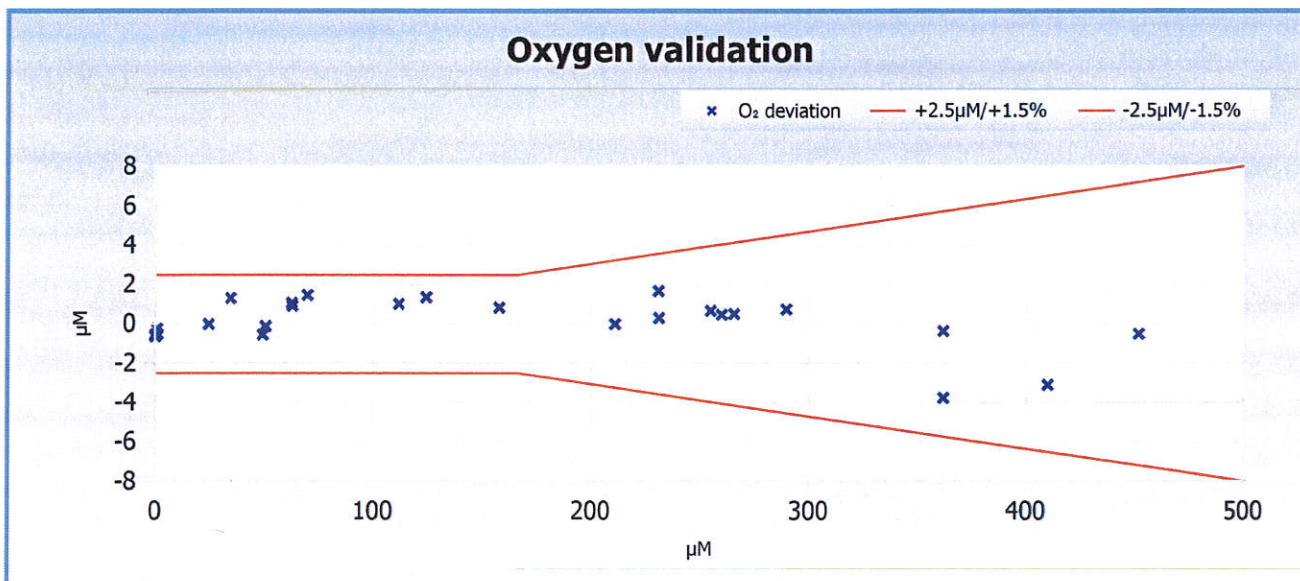
Index	Temperature reference(°C)	[O2] Reference(μM)	Temperature raw data(mV)	Phase reading(°)
0	30.119	1.11	-171.505	61.20
1	19.857	0.16	157.065	62.58
2	9.718	0.15	487.800	63.48
3	0.550	0.87	768.920	64.17
4	0.680	14.74	765.160	62.25
5	0.742	38.95	763.395	59.20
6	0.780	60.23	762.280	56.82
7	0.813	99.79	761.290	53.00
8	0.839	140.93	760.510	49.67
9	0.848	208.92	760.300	45.27
10	0.845	309.56	760.395	40.42
11	0.837	412.60	760.605	36.80
12	0.838	511.11	760.580	34.14
13	10.174	13.85	473.195	60.51
14	10.106	29.80	475.375	57.78
15	10.063	46.39	476.760	55.25
16	10.023	78.08	478.060	51.14
17	10.004	111.03	478.650	47.64
18	10.016	163.96	478.300	43.16
19	10.013	244.16	478.400	38.28
20	10.009	325.20	478.500	34.75
21	10.010	405.57	478.500	32.10
22	19.816	10.35	158.410	59.52
23	19.759	24.51	160.290	56.18
24	19.722	37.61	161.480	53.49
25	19.684	63.31	162.750	49.11
26	19.666	89.14	163.330	45.55
27	19.656	131.91	163.655	41.00
28	19.655	195.88	163.700	36.19
29	19.656	264.37	163.690	32.62
30	19.659	330.72	163.585	30.10
31	29.974	8.09	-167.070	58.52
32	30.037	20.16	-169.020	54.72
33	30.067	30.42	-169.950	51.95
34	30.084	51.30	-170.465	47.27
35	30.095	72.25	-170.800	43.58
36	30.101	106.76	-171.000	38.98
37	30.108	158.69	-171.200	34.21
38	30.110	215.08	-171.280	30.75
39	30.114	268.37	-171.400	28.39

Certificate no: 4831\_631\_00120288  
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Index	0	1	2	3	4	5	6
SVUFoilCoef	2.76729E-03	1.17561E-04	2.24137E-06	2.30419E02	-4.21188E-01	-5.79675E01	4.54207E00
TempCoef	2.46820E01	-3.10690E-02	2.90600E-06	-4.30724E-09	0.00000E00	0.00000E00	



Date:04.08.2016

*Tor-Ove Kvalvaag*  
Tor-Ove Kvalvaag, Calibration Engineer



# PRESSURE CERTIFICATE

Form No. 667, Sept 2009

**Product:** Oxygen Optode 4831  
**Serial No:** 631  
**Date:** 30.05.2016

**Certificate No:** 119129260631

This is to certify that this product has been pressure tested with the following instrument, and we confirm that no irregularities were found during the test:

Autoklav 800 bar – sn: 0210005

**Pressure readings:**

Pressure (Bar)	Pressure time (hour)
600	1

Date: 07 Jun 2016

Sign:

Vidar Selsvik, Production Engineer