

Program Version: 5.3.1

Product: Oxygen Optode 4831

Serial No: 947

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)	22.9	mA
2.2	CANBus Current drain at 0.5 Hz sampling (Max.: 33 mA)		mA
2.3	Current drain in sleep (Max.: 270 μ A)	225	μ A
2.4	CANBus Current drain in sleep (Max.: 180 μ A)		μ A
2.5	DSP IO voltage, J4.18 (3.3 \pm 0.15V)	3.29	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 (4.3 \pm 0.1 V)	4.34	V

Performance test:

	Channel:	Blue	Red
3.1	Average of Receiver readings (0 \pm 150mV)	-6.6 mV	-3.0 mV
3.2	Standard Deviation of Receiver readings (Max.: 45mV/10mV)	3.51 mV	0.79 mV
3.3	Amplitude measurement with non-fluorescence foil (<60mV/650-1200mV)	8.4 mV	905.2 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 >550 mV)	631.4 mV	759.9 mV
4.2	Maximum amplitude measurement (Blue: <1600 mV, Red <1400 mV)	958.3 mV	1174.5 mV
4.3	Minimum phase measurement (Blue: >32°, Red: >3°)	34.7 °	5.9 °
4.4	Maximum phase measurement (Blue: <45°, Red: <10°)	40.43 °	7.3 °
4.5	Maximum standard deviation of Phase measurement: (< 0.07°)	0.05 °	0.05 °
4.6	Minimum temperature raw data measurement: (<-200 mV)		-401.2 mV
4.7	Maximum temperature raw data measurement: (>450 mV)		719.2 mV

Date: 11 Feb 2021

Sign:

Laila A. Skålnes

Laila Skålnes, Production Engineer

Product: Oxygen Optode 4831

Certificate No: 181480260947

Serial No: 947

Date: 11.02.2021

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: 11 Feb 2021

Sign:

Laila A. Skålnes

Laila Skålnes, Production Engineer



a xylem brand

CALIBRATION CERTIFICATE

Form No 830, March 2021

Certificate no: 4831_947_00181578
Foil batch no: 1824M

Product: 4831
Calibration date: 14.02.2021

Serial no: 947
Page 1 of 2

Index	Temperature reference(°C)	[O2] Reference(μM)	Temperature raw data(mV)	Phase reading(°)
0	30.229	1.60	-61.327	61.15
1	20.144	1.15	263.807	62.16
2	10.107	0.95	584.660	62.99
3	0.864	0.83	855.267	63.69
4	0.949	21.03	852.927	61.03
5	1.023	42.83	850.907	58.42
6	1.085	63.30	849.213	56.20
7	1.133	110.00	847.880	51.90
8	1.169	151.47	846.907	48.74
9	1.203	217.99	845.980	44.63
10	1.234	323.87	845.107	39.77
11	1.250	436.82	844.673	36.06
12	1.262	540.06	844.333	33.50
13	10.810	16.50	562.827	59.95
14	10.713	34.69	565.867	56.90
15	10.641	51.52	568.080	54.41
16	10.592	86.46	569.607	50.07
17	10.565	122.86	570.427	46.43
18	10.544	172.50	571.120	42.49
19	10.531	262.60	571.507	37.36
20	10.520	341.25	571.847	34.20
21	10.499	430.12	572.513	31.53
22	20.672	13.31	246.660	58.73
23	20.613	27.49	248.587	55.47
24	20.568	41.88	250.027	52.58
25	20.534	67.66	251.113	48.29
26	20.505	95.26	252.067	44.64
27	20.482	138.17	252.807	40.29
28	20.462	204.25	253.453	35.58
29	20.450	273.72	253.847	32.17
30	20.440	344.86	254.167	29.64
31	30.402	10.82	-66.813	57.54
32	30.386	22.45	-66.293	54.02
33	30.380	34.04	-66.100	51.01
34	30.381	56.06	-66.100	46.37
35	30.385	79.35	-66.280	42.56
36	30.392	112.91	-66.487	38.42
37	30.409	167.14	-67.007	33.77
38	30.416	227.18	-67.227	30.34
39	30.422	284.31	-67.400	28.04

Certificate no: 4831_947_00181578
Foil batch no: 1824M

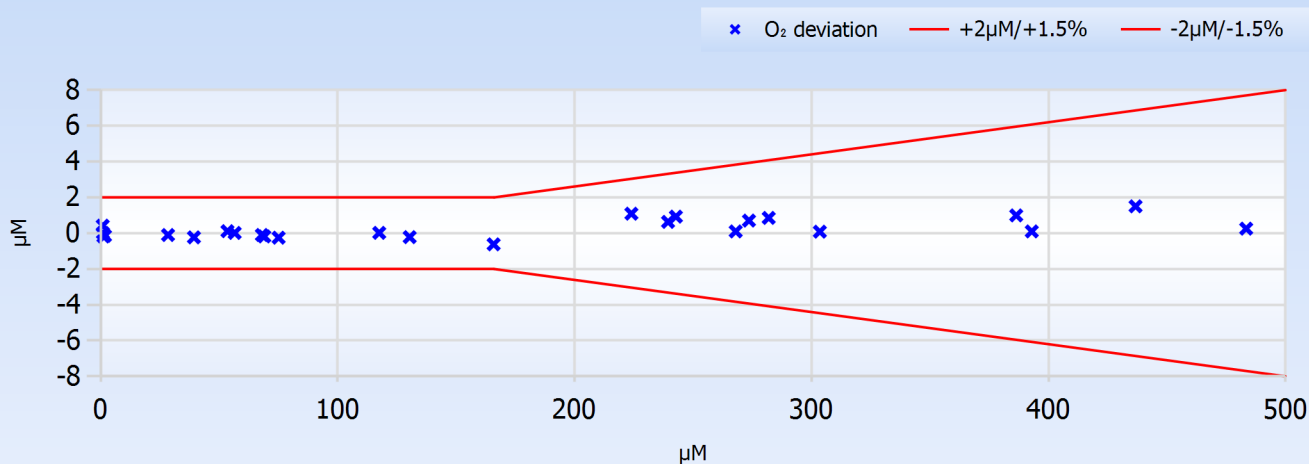
Product: 4831
Calibration date: 14.02.2021

Serial no: 947
Page 2 of 2

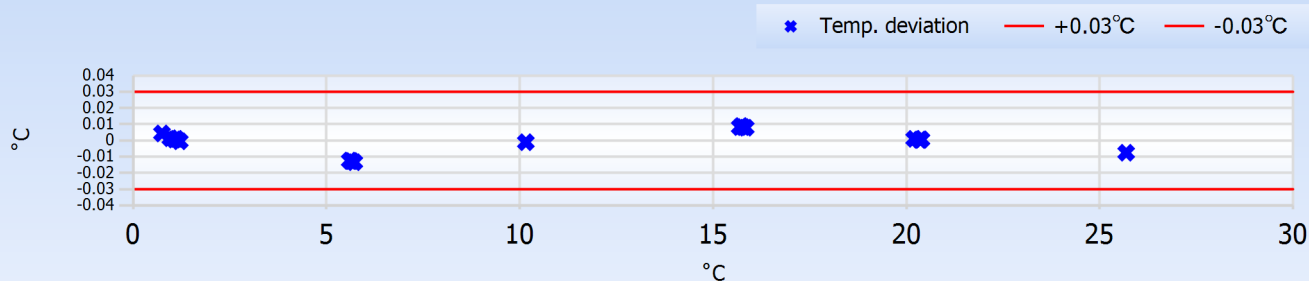
Giving these coefficients

Index	0	1	2	3	4	5	6
SVUFoilCoef	2.73884E-03	1.13765E-04	2.43599E-06	1.78800E02	-2.63690E-01	-4.03348E01	3.58297E00
TempCoef	2.82876E01	-3.14126E-02	3.33731E-06	-4.79011E-09	0.00000E00	0.00000E00	

Oxygen validation



Temperature validation



With following settings

Index	0	1	2	3
PhaseCoef	-2.76700E00	1.00000E00	0.00000E00	0.00000E00

Index	0 (Offset)	1 (Slope)
ConcCoef	0.00000E00	1.00000E00
Salinity	0.00	

Firmware Version	5.3.1
------------------	-------

Date:14.02.2021

Tor-Ove Kvalvaag
Tor-Ove Kvalvaag, Calibration Engineer