



TEST & SPECIFICATIONS

Form No. 712, July 2008

a xylem brand

Layout No:
Circuit Diagram No:
Program Version: V4.5.7

Product: Oxygen Optode 4831
Serial No: 214

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)	26.0	mA
2.2 CANBus Current drain at 0.5 Hz sampling (Max.: 33 mA)		mA
2.3 Current drain in sleep (Max.: 180 μ A)	249	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)		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)	4.61	V

Performance test:

	Channel:	BLUE	RED
3.1 Average of Receiver readings (0 \pm 150mV)		-15.1 mv	-6.5 mv
3.2 Standard Deviation of Receiver readings (Max.: 45mV/10mV)		13.53 mv	3.39 mv
3.3 Amplitude measurement with non- fluorescence foil (<60mV/650-1200mV)		11.7 mv	856.7 mv
3.4 Amplitude measurement with fluorescence foil (700-1200mV)		874.3 mv	860.7 mv
3.5 CANBus Output test			

Function test at 0°C Temperature (in air with reference foil):

	Channel:	BLUE	RED
4.1 Amplitude measurement (Blue: 150 – 500mV, Red 650-1800mV)		328 mv	1315.2 mv
4.2 Phase measurement (Blue: 4 \pm 2°, Red: 4 \pm 2°)		9.4 °	9.0 °
4.3 Standard deviation of Phase measurement: (Max: 0.02°)		0.005 °	0.004 °
4.4 Raw data temperature measurement: (600 \pm 200mV)			715.6 mv

Function test at 20°C Temperature (in air with reference foil):

	Channel:	BLUE	RED
5.1 Amplitude measurement (Blue: 100 – 300mV, Red 650-1800mV)		315.2 mv	938.8 mv
5.2 Phase measurement (Blue: 5 \pm 2°, Red: 5 \pm 2°)		9.8 °	9.3 °
5.3 Standard deviation of Phase measurement: (Max: 0.02°)		0.007 °	0.006 °
5.4 Raw data Temperature measurement: (0 \pm 200mV)			-16.1 mv

Function test at 40°C Temperature (in air with reference foil):

	Channel:	BLUE	RED
6.1 Amplitude measurement (Blue: 150 – 500mV, Red 650-1800mV)		292.4 mv	790.1 mv
6.2 Phase measurement (Blue: 5 \pm 2°, Red: 5 \pm 2°)		10.1 °	9.8 °
6.3 Standard deviation of Phase measurement: (Max: 0.02°)		0.009 °	0.007 °
6.4 Raw data Temperature measurement: (-400 \pm 200mV)			-389.2 mv

Pressure test :

7.1 Pressure (IW version: 20MPa, DW version 60MPa)	MPa
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Date: 12 Aug 2013

Sign:

Karl Magne Klepsvik

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Production Engineer Manager



CALIBRATION CERTIFICATE

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Form No. 710, Dec 2005

Sensing Foil Batch No: 1206
Certificate No:

Product: Oxygen Optode 4831
Serial No: 214
Calibration Date: 03 Jul 2013

This is to certify that this product has been calibrated using the following instruments:

Parameter: Internal Temperature:

Calibration points and readings:

Temperature (°C)	1.00	11.97	24.02	35.99	
Reading (mV)	785.97	444.85	46.47	-328.44	

Giving these coefficients

Index	0	1	2	3	4	5
TempCoef	2.54382E01	-3.07071E-02	2.87735E-06	-4.27539E-09	0.00000E00	0.00000E00

Parameter: Oxygen:

	O2 Concentration	Air Saturation
Range:	0-500 μM ¹⁾	0 - 120%
Accuracy ¹⁾ :	< $\pm 8\mu\text{M}$ or $\pm 5\%$ (whichever is greater)	$\pm 5\%$
Resolution:	< 1 μM	< 0.4%
Settling Time (63%):	< 25 seconds	

Calibration points and readings²⁾:

	Air Saturated Water	Zero Solution (Na ₂ SO ₃)
Phase reading (°)	3.15199E+01	6.25568E+01
Temperature reading (°C)	9.91053E+00	2.21877E+01
Air Pressure (hPa)	9.75643E+02	

Giving these coefficients

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

¹⁾ Valid for 0 to 2000m (6562ft) depth, salinity 33 - 37ppt

²⁾ The calibration is performed in fresh water and the salinity setting is set to: 0

Date: 04 Jul 2013

Sign:

Tor-Ove Kvalvaag, Calibration Engineer

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