



CALIBRATION CERTIFICATE

Form No. 622, Dec 2005

a xylem brand

Sensing Foil Batch No: 1023
Certificate No: 5013 21 1168

Product: 5013
Serial No: 21
Calibration Date: December 7, 2012

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

Fluke CHUB E-4	Serial No. A7C677
Fluke 5615 PRT	Serial No. 849155
Fluke 5615 PRT	Serial No. 802054
Honeywell PPT	Serial No. 44074
Calibration Bath model FNT 321-1-40	1

Parameter: Internal Temperature:

Calibration points and readings:

Temperature (°C)	-	-	-	-
Reading (mV)	-	-	-	-

Giving these coefficients

Index	0	1	2	3
TempCoef	2.43177E+01	-3.11208E-02	2.93847E-06	-4.22055E-09

*Note: Temperature calibration NOT performed

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 (°)	3.17595E+01	6.52609E+01
Temperature reading (°C)	9.90910E+00	2.31550E+01
Air Pressure (hPa)	1.00342E+03	

Giving these coefficients

Index	0	1	2	3
PhaseCoef	-3.62589E+00	1.17665E+00	0.00000E+00	0.00000E+00

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:
December 7, 2012

Sign: Shawn A. Sneddon

Service and Calibration Engineer

Aanderaa Data Instruments, Inc.



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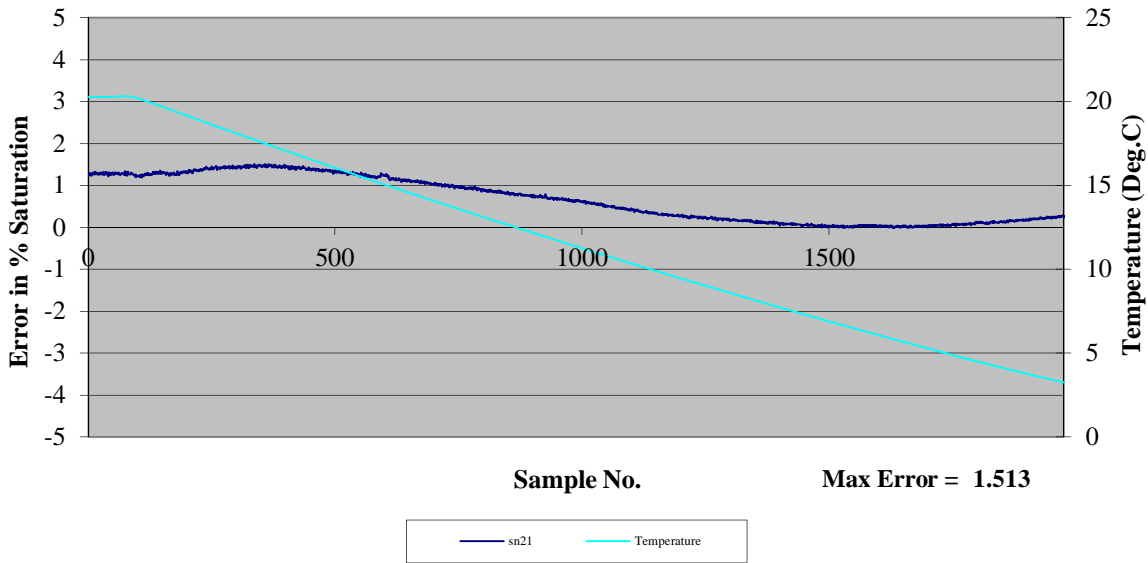
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Data from Cool Down Test:

Cool Down Test



SR10 Scaling Coefficients:

At the SR10 output the Oxygen Optode 3830 can give either absolute oxygen concentration in μM or air saturation in %. The setting of the internal property "Output"³⁾, controls the selection of the unit. The coefficients for converting SR10 raw data to engineering units are fixed.

Output = -1	Output = -2
A = 0	A = 0
B = 4.883E-01	B = 1.465E-01
C = 0	C = 0
D = 0	D = 0
Oxygen (μM) = A + BN + CN2 + DN3	Oxygen (%) = A + BN + CN2 + DN3

³⁾ The default output setting is set to -1

Date:
December 7, 2012

Sign: Shawn A. Sneddon

Service and Calibration Engineer

Aanderaa Data Instruments, Inc.

182 East Street, Suite B Attleboro, MA 02703 Tel. +1 (508) 226-9300 email: infoUSA@xyleminc.com



TEST & SPECIFICATIONS

Form No. 620, Nov 2005

a xylem brand

Layout No:
Circuit Diagram No:
Program Version:

Product: 5013
Serial No: 21

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- 1. Visual and Mechanical Checks:**
 - 1.1. O-ring surface N/A
 - 1.2. Soldering quality N/A
 - 1.3. Visual surface OK
 - 1.4. Pressure test (60MPa) N/A
 - 1.5. Galvanic isolation between housing and electronics OK

 - 2. Current Drain and Voltages:**
 - 2.1. Average current drain at 0.5Hz sampling (Max: 38mA) 31.3 mA
 - 2.2. Current drain in sleep (Max: 300uA) 191 uA

 - 3. Performance Test in Air, 20°C Temperature:**
 - 3.1. Amplitude measurement (Blue: 290 – 470mV) 363.01 mV
 - 3.2. Phase measurement (Blue: 27 ±5°) 29.75 °
 - 3.3. Temperature Measurement (100 ± 300mV) 49.53 mV

 - 4. Firmware:**
 - 4.1. Firmware upgrade 3.24

Date:
December 7, 2012

Sign: Shawn A. Sneddon

Service and Calibration Engineer

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Form No. 621, Dec 2005

a xylem brand

Sensing Foil Batch No: 1023
Certificate No: 3853 1023 40408

Product: O2 Sensing Foil PSt3 3853
Calibration Date: 18 August 2010

Calibration points and phase readings (degrees)

Temperature (°C)		3.81	10.40	19.94	29.39	38.67
Pressure (hPa)		970.25	970.25	970.25	970.25	970.25
O2 in % of O2+N2	0.00	72.97	72.50	71.81	71.02	70.09
	1.00	68.13	67.16	65.72	64.27	62.70
	2.00	64.72	63.48	61.63	59.79	57.95
	5.00	56.48	54.75	52.40	50.16	48.05
	10.00	47.08	45.17	42.67	40.36	38.33
	20.90	35.87	34.01	31.74	29.73	28.04
	30.00	30.48	28.83	26.79	25.03	23.56

Giving these coefficients ¹⁾

Index	0	1	2	3
C0 Coefficient	4.27019E+03	-1.32724E+02	2.15630E+00	-1.40276E-02
C1 Coefficient	-2.29730E+02	5.74242E+00	-6.85358E-02	1.88612E-04
C2 Coefficient	5.06402E+00	-9.62085E-02	5.22181E-04	7.70890E-06
C3 Coefficient	-5.26332E-02	7.15467E-04	3.31185E-06	-1.86124E-07
C4 Coefficient	2.10917E-04	-1.84088E-06	-4.28646E-08	1.11120E-09

¹⁾ Ask for Form No 621S when this O2 Sensing Foil is used in Oxygen Sensor 3830 with Serial Numbers lower than 184.

Date:
 March 4, 2011

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