



SEA-BIRD ELECTRONICS, INC.

13431 NE 20th St. Bellevue, Washington 98005 USA

Phone: (425) 643-9866 Fax: (425) 643-9954 www.seabird.com

Service
Report

RMA Number	81217
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Customer Information:

Company	The University of Hawaii	Date	9/9/2014
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Contact	Sarah Searson
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PO Number	Z10077110
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Serial Number	43F0171
Model Number	SBE 43F

Services Requested:

1. Evaluate/Repair Instrumentation.
2. Perform Routine Calibration Service.

Problems Found:

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Services Performed:

1. Performed initial diagnostic evaluation.
2. Performed "Post Cruise" calibration of the oxygen sensor.
3. Performed full diagnostic evaluation.

Special Notes:

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Sea-Bird Electronics, Inc.

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Phone: (+1) 425-643-9866 Fax (+1) 425-643-9954 Email: seabird@seabird.com

SENSOR SERIAL NUMBER: 0171
CALIBRATION DATE: 06-Sep-14

SBE 43F OXYGEN CALIBRATION DATA

COEFFICIENTS:
Soc = 3.5241e-004
Foffset = -816.12
Tau20 = 1.42

A = -4.1030e-003
B = 2.2774e-004
C = -4.1722e-006
E nominal = 0.036

NOMINAL DYNAMIC COEFFICIENTS
D1 = 1.92634e-4 H1 = -3.300000e-2
D2 = -4.64803e-2 H2 = 5.00000e+3
H3 = 1.45000e+3

BATH OX (ml/l)	BATH TEMP (ITS-90)	BATH SAL (PSU)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT OXYGEN (ml/l)	RESIDUAL (ml/l)
1.24	2.00	0.00	1183.049	1.24	0.00
1.24	6.00	0.00	1228.974	1.25	0.00
1.26	12.00	0.00	1302.497	1.26	-0.00
1.28	20.00	0.00	1402.417	1.28	-0.00
1.29	26.00	0.00	1476.260	1.29	-0.00
1.30	30.00	0.00	1533.427	1.30	-0.00
3.98	2.00	0.00	1993.840	3.99	0.00
4.00	6.00	0.00	2143.914	4.01	0.00
4.03	12.00	0.00	2367.046	4.02	-0.00
4.05	20.00	0.00	2669.372	4.05	-0.00
4.07	26.00	0.00	2906.747	4.07	-0.00
4.09	30.00	0.00	3080.501	4.09	-0.00
6.73	2.00	0.00	2804.658	6.73	-0.00
6.76	6.00	0.00	3057.495	6.76	-0.00
6.81	12.00	0.00	3441.935	6.81	0.00
6.85	26.00	0.00	4332.737	6.85	-0.00
6.87	20.00	0.00	3959.174	6.88	0.00
6.89	30.00	0.00	4631.334	6.89	0.00

$$\text{Oxygen (ml/l)} = \text{Soc} * (\text{F} + \text{Foffset}) * (1.0 + \text{A} * \text{T} + \text{B} * \text{T}^2 + \text{C} * \text{T}^3) * \text{OxSol}(\text{T}, \text{S}) * \exp(\text{E} * \text{P} / \text{K})$$

F = frequency output from SBE43F, T = temperature [deg C], S = salinity [PSU], K = temperature [deg K]

OxSol(T,S) = oxygen saturation [ml/l], P = pressure [dbar]

Residual = instrument oxygen - bath oxygen

