



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

70506

Customer Information:

Company Atlantic Marine Center

Date 10/8/2012

Contact Richard Conway

PO Number TBD

Serial Number 043456

Model Number SBE 04C

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 conductivity sensor.

Special Notes:

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

SENSOR SERIAL NUMBER: 3456
CALIBRATION DATE: 29-Aug-12

SBE4 CONDUCTIVITY CALIBRATION DATA
PSS 1978: C(35,15,0) = 4.2914 Siemens/meter

GHIJ COEFFICIENTS

g = -9.95279263e+000
h = 1.51656234e+000
i = -2.35877737e-003
j = 2.68036557e-004
CPcor = -9.5700e-008 (nominal)
CTcor = 3.2500e-006 (nominal)

ABCDM COEFFICIENTS

a = 5.67303885e-007
b = 1.51043134e+000
c = -9.94083151e+000
d = -8.55830402e-005
m = 6.3
CPcor = -9.5700e-008 (nominal)

| BATH TEMP (ITS-90) | BATH SAL (PSU) | BATH COND (Siemens/m) | INST FREQ (kHz) | INST COND (Siemens/m) | RESIDUAL (Siemens/m) |
|-----------------------|-------------------|--------------------------|--------------------|--------------------------|-------------------------|
| 0.0000 | 0.0000 | 0.00000 | 2.56541 | 0.00000 | 0.00000 |
| -1.0000 | 34.7597 | 2.80044 | 5.01126 | 2.80045 | 0.00001 |
| 1.0000 | 34.7607 | 2.97167 | 5.12297 | 2.97165 | -0.00002 |
| 15.0000 | 34.7611 | 4.26556 | 5.89882 | 4.26559 | 0.00003 |
| 18.5000 | 34.7614 | 4.61187 | 6.08956 | 4.61186 | -0.00002 |
| 29.0001 | 34.7583 | 5.69390 | 6.65001 | 5.69388 | -0.00002 |
| 32.5000 | 34.7491 | 6.06560 | 6.83181 | 6.06561 | 0.00001 |

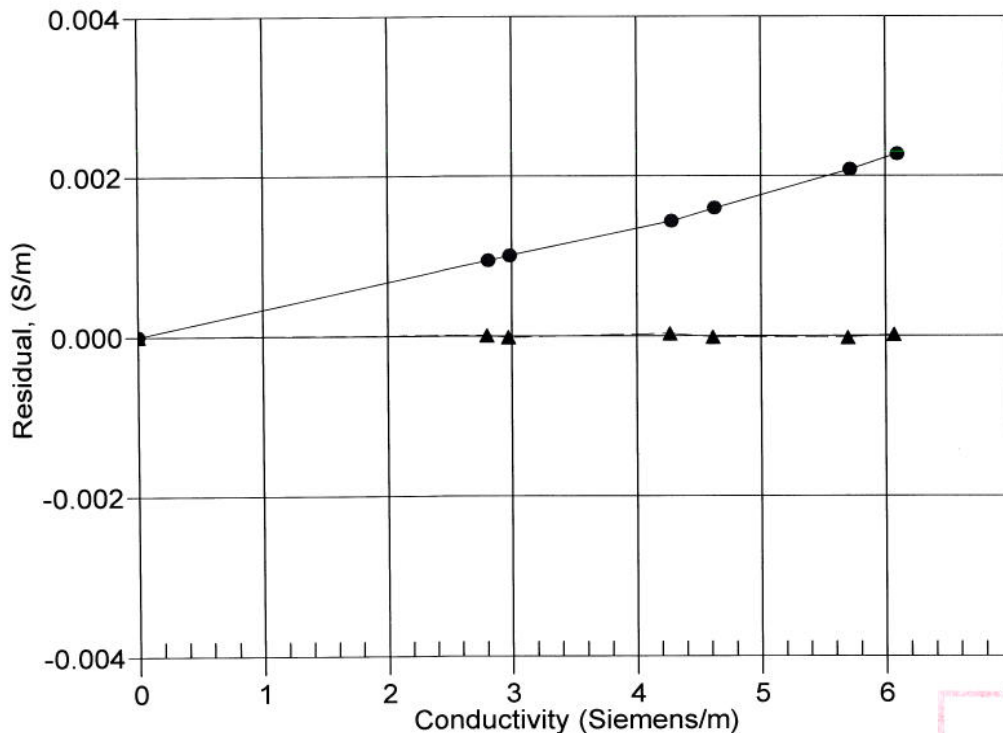
Conductivity = $(g + hf^2 + if^3 + jf^4) / 10(1 + \delta t + \epsilon p)$ Siemens/meter

Conductivity = $(af^m + bf^2 + c + dt) / [10(1 + \epsilon p)]$ Siemens/meter

t = temperature[°C]; p = pressure[decibars]; δ = CTcor; ϵ = CPcor;

Residual = (instrument conductivity - bath conductivity) using g, h, i, j coefficients

Date, Slope Correction



● 21-Oct-10 0.9996446
▲ 29-Aug-12 1.0000000

POST CRUISE
CALIBRATION



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Conductivity Calibration Report

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|--------------|------------------------|-----------------|-----------|
| Customer: | Atlantic Marine Center | | |
| Job Number: | 70506 | Date of Report: | 8/29/2012 |
| Model Number | SBE 04C | Serial Number: | 043456 |

Conductivity sensors are normally calibrated 'as received', without cleaning or adjustments, allowing a determination of sensor drift. If the calibration identifies a problem or indicates cell cleaning is necessary, then a second calibration is performed after work is completed. The 'as received' calibration is not performed if the sensor is damaged or non-functional, or by customer request.

An 'as received' calibration certificate is provided, listing the coefficients used to convert sensor frequency to conductivity. Users must choose whether the 'as received' calibration or the previous calibration better represents the sensor condition during deployment. In SEASOFT enter the chosen coefficients. The coefficient 'slope' allows small corrections for drift between calibrations (consult the SEASOFT manual). Calibration coefficients obtained after a repair or cleaning apply only to subsequent data.

'AS RECEIVED CALIBRATION'

☒ Performed ☐ Not Performed

Date: 8/29/2012

Drift since last cal: -0.00050 PSU/month*

Comments:

'CALIBRATION AFTER CLEANING & REPLATINIZING'

☐ Performed ☒ Not Performed

Date:

Drift since Last cal: PSU/month*

Comments:

**Measured at 3.0 S/m*

Cell cleaning and electrode replatinizing tend to 'reset' the conductivity sensor to its original condition. Lack of drift in post-cleaning-calibration indicates geometric stability of the cell and electrical stability of the sensor circuit.