

SEA-BIRD ELECTRONICS, INC.

1808 136th Place N.E., Bellevue, Washington, 98005 USA
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QC
121
ACC

SENSOR SERIAL NUMBER: 0131
 CALIBRATION DATE: 23-Oct-09

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

GHIJ COEFFICIENTS

g = -1.01020846e+001
 h = 1.13145839e+000
 i = -2.19485988e-003
 j = 2.55248294e-004
 CPcor = -9.5700e-008 (nominal)
 CTcor = 3.2500e-006 (nominal)

ABCDM COEFFICIENTS

a = 6.28382869e-006
 b = 1.12499512e+000
 c = -1.00823710e+001
 d = -8.74093916e-005
 m = 5.2
 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)
22.0000	0.0000	0.00000	2.99371	0.00000	0.00000
1.0000	34.8530	2.97880	5.94823	2.97881	0.00001
4.5000	34.8327	3.28612	6.17258	3.28611	-0.00001
15.0000	34.7894	4.26866	6.83990	4.26865	-0.00001
18.5000	34.7803	4.61411	7.05926	4.61411	0.00000
23.9999	34.7705	5.17256	7.39983	5.17256	0.00001
29.0000	34.7653	5.69490	7.70441	5.69491	0.00001
32.5000	34.7629	6.06773	7.91442	6.06772	-0.00001

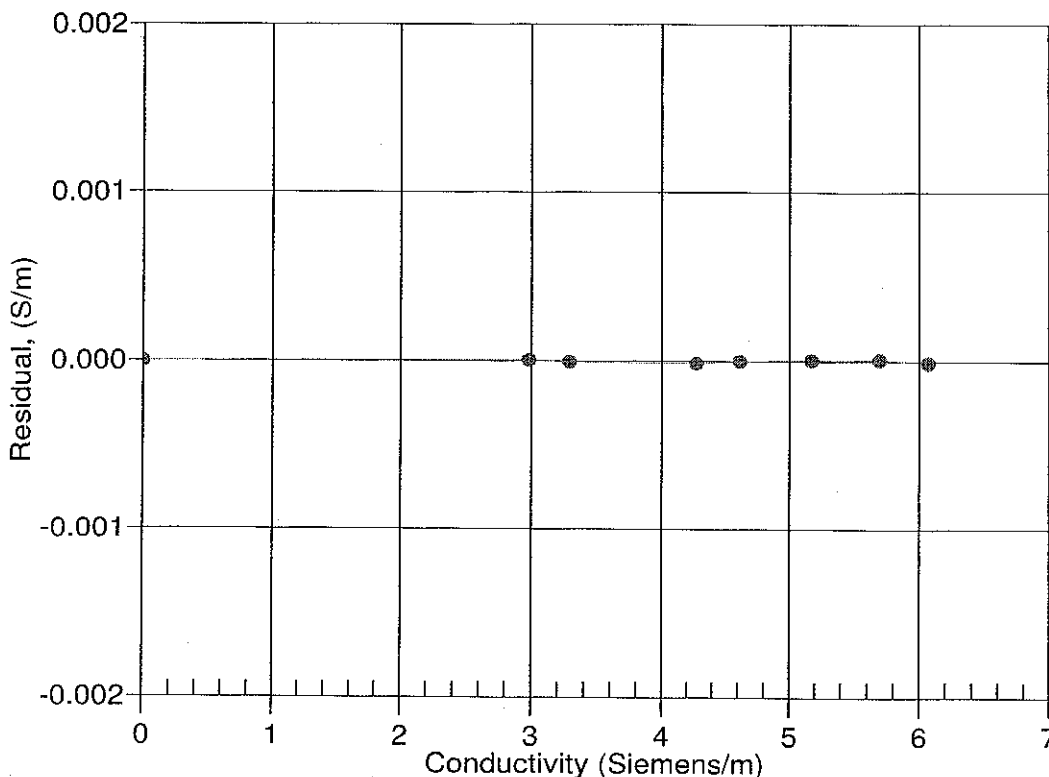
Conductivity = $(g + hf^2 + if^3 + jf^4) / 10(1 + \delta t + \epsilon p)$ Siemens/meter

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



23-Oct-09 1.0000000

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GliderAPL TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

ITS-90 COEFFICIENTS

g = 4.35624500e-003
h = 6.25019754e-004
i = 2.35247512e-005
j = 2.50779271e-006
f0 = 1000.0

IPTS-68 COEFFICIENTS

a = 3.64763549e-003
b = 5.80129280e-004
c = 1.46762512e-005
d = 2.50923549e-006
f0 = 3252.795

BATH TEMP (ITS-90)	INSTRUMENT FREQ (Hz)	INST TEMP (ITS-90)	RESIDUAL (ITS-90)
1.0000	3252.795	1.0000	-0.00004
4.5000	3521.735	4.5001	0.00007
15.0000	4425.332	15.0000	-0.00001
18.5000	4760.284	18.4999	-0.00007
23.9999	5322.340	23.9999	0.00001
29.0000	5872.321	29.0001	0.00012
32.5000	6279.979	32.4999	-0.00008

Temperature ITS-90 = $1 / \{ g + h[\ln(f_0/f)] + i[\ln^2(f_0/f)] + j[\ln^3(f_0/f)] \} - 273.15$ (°C)

Temperature IPTS-68 = $1 / \{ a + b[\ln(f_0/f)] + c[\ln^2(f_0/f)] + d[\ln^3(f_0/f)] \} - 273.15$ (°C)

Following the recommendation of JPOTS: T_{68} is assumed to be $1.00024 * T_{90}$ (-2 to 35 °C)

Residual = instrument temperature - bath temperature

Date, Offset(mdeg C)

● 23-Oct-09 -0.00

