

SEA-BIRD ELECTRONICS, INC.

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

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

SENSOR SERIAL NUMBER: 0142
CALIBRATION DATE: 15-Nov-09

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

GHIJ COEFFICIENTS

g = -1.02375965e+001
h = 1.14131574e+000
i = -1.65133547e-003
j = 2.10518446e-004
CPcor = -9.5700e-008 (nominal)
CTcor = 3.2500e-006 (nominal)

ABCDM COEFFICIENTS

a = -7.46097390e-038
b = 1.14161240e+000
c = -1.03426880e+001
d = 1.88726987e-003
m = 26.9
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	2.99902	0.00000	0.00000
1.0000	34.6798	2.96541	5.91829	2.96542	0.00001
4.5000	34.6599	3.27142	6.14058	3.27142	-0.00000
15.0000	34.6170	4.24974	6.80203	4.24972	-0.00002
18.5000	34.6080	4.59371	7.01956	4.59370	-0.00000
24.0000	34.5982	5.14976	7.35735	5.14977	0.00002
29.0000	34.5931	5.66986	7.65953	5.66988	0.00002
32.5000	34.5901	6.04099	7.86787	6.04097	-0.00002

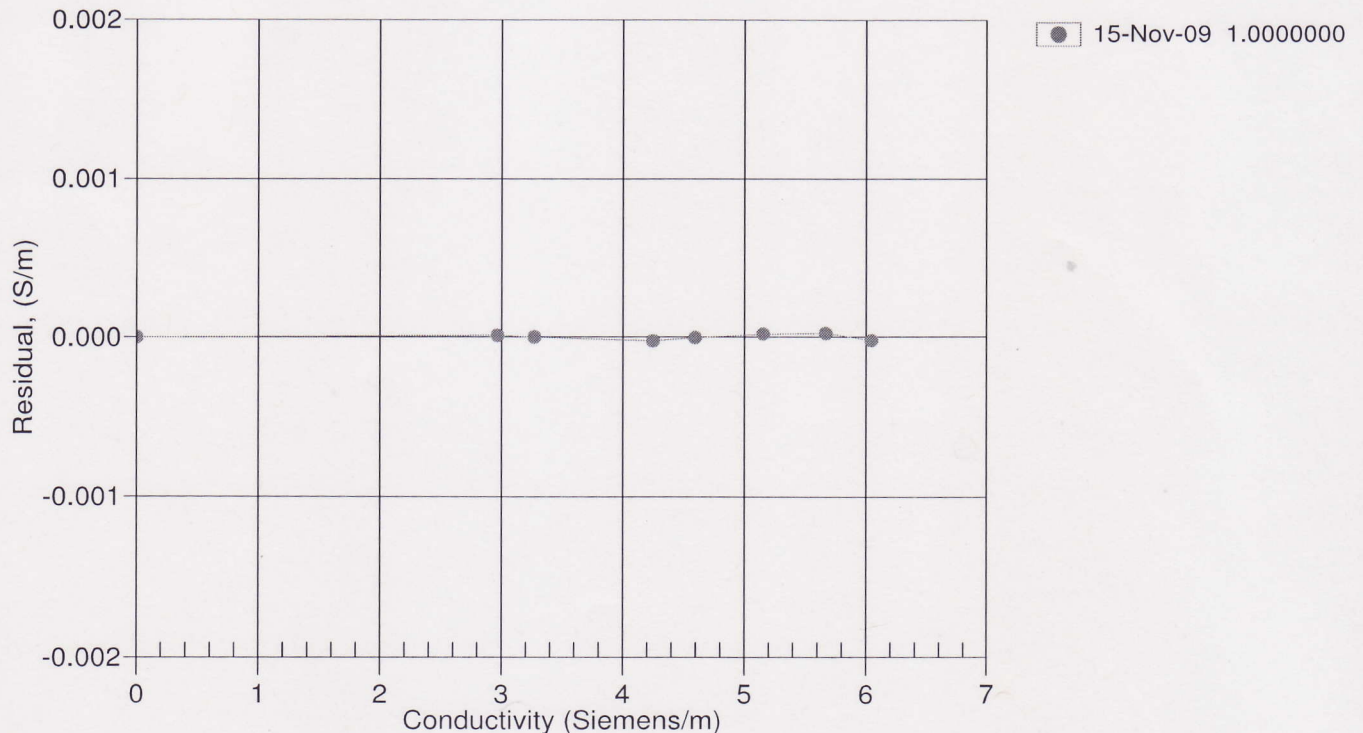
Conductivity = $(g + hf^2 + if^3 + jf^4) / 10(1 + \delta t + \epsilon p)$ Siemens/meter

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



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GliderAPL TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

ITS-90 COEFFICIENTS

g = 4.32619866e-003
h = 6.23154227e-004
i = 2.32417430e-005
j = 2.46942678e-006
f0 = 1000.0

IPTS-68 COEFFICIENTS

a = 3.64763589e-003
b = 5.80199585e-004
c = 1.48893700e-005
d = 2.47087944e-006
f0 = 3098.377

BATH TEMP (ITS-90)	INSTRUMENT FREQ (Hz)	INST TEMP (ITS-90)	RESIDUAL (ITS-90)
1.0000	3098.377	0.9999	-0.00007
4.5000	3354.532	4.5001	0.00013
15.0000	4215.244	14.9999	-0.00009
18.5000	4534.358	18.5000	-0.00004
24.0000	5069.887	24.0001	0.00005
29.0000	5593.953	29.0001	0.00010
32.5000	5982.461	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)

● 15-Nov-09 -0.00

