

SEA-BIRD ELECTRONICS, INC.

13431 NE 20th Street, Bellevue, Washington, 98005-2010 USA

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

QC
121
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SENSOR SERIAL NUMBER: 0154
CALIBRATION DATE: 15-Feb-10

GliderAPL TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

ITS-90 COEFFICIENTS

g = 4.36457311e-003
h = 6.29495061e-004
i = 2.47001529e-005
j = 2.71012319e-006
f0 = 1000.0

IPTS-68 COEFFICIENTS

a = 3.64763555e-003
b = 5.82451421e-004
c = 1.50752007e-005
d = 2.71162783e-006
f0 = 3277.195

BATH TEMP (ITS-90)	INSTRUMENT FREQ (Hz)	INST TEMP (ITS-90)	RESIDUAL (ITS-90)
1.0000	3277.195	1.0000	-0.00004
4.5000	3547.040	4.5001	0.00007
15.0000	4453.228	15.0000	0.00001
18.5000	4788.973	18.4999	-0.00012
24.0000	5352.205	24.0000	0.00002
29.0000	5903.104	29.0001	0.00014
32.5000	6311.319	32.4999	-0.00009

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)

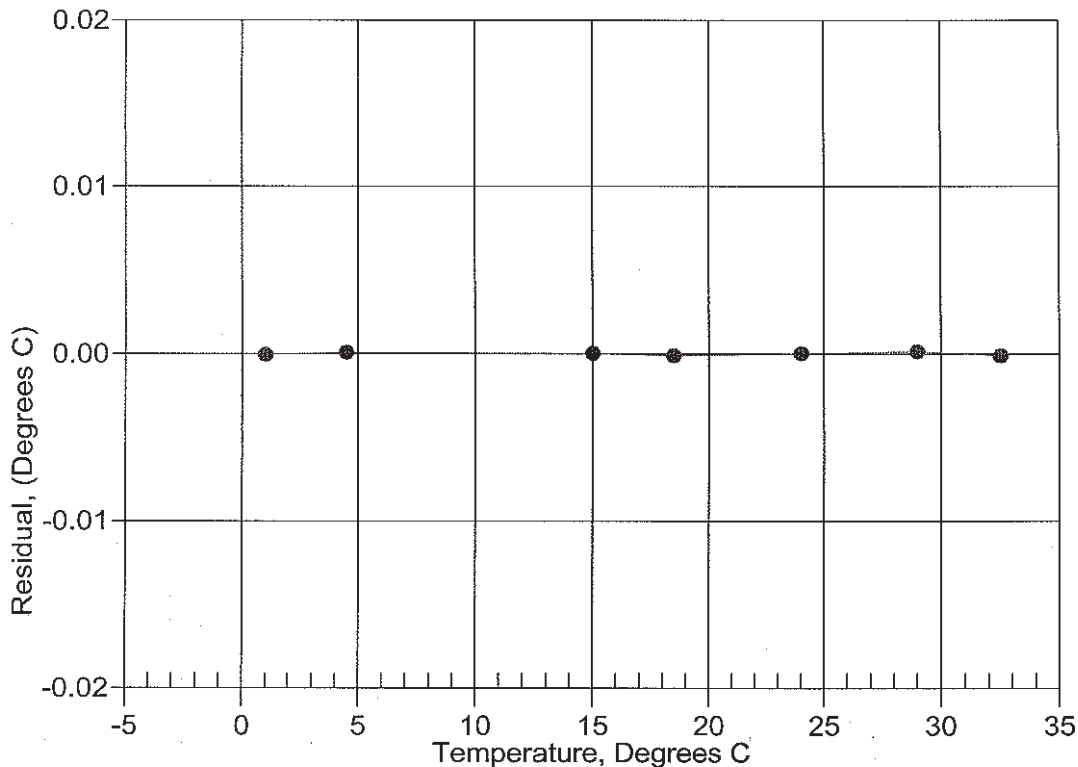
Temperature IPTS-68 = $1/\{a + b[\ln(f_0/f)] + c[\ln^2(f_0/f)] + d[\ln^3(f_0/f)]\} - 273.15$ (°C)

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-Feb-10 -0.00



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

GHIJ COEFFICIENTS

g = -9.97112449e+000
h = 1.14843528e+000
i = -1.62639241e-003
j = 2.02049632e-004
CPcor = -9.5700e-008 (nominal)
CTcor = 3.2500e-006 (nominal)

ABCDM COEFFICIENTS

a = 8.51067543e-006
b = 1.14370425e+000
c = -9.95633875e+000
d = -8.60479551e-005
m = 5.0
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	2.95049	0.00000	0.00000
1.0000	34.7046	2.96733	5.88199	2.96730	-0.00002
4.5000	34.6836	3.27344	6.10445	3.27346	0.00002
15.0000	34.6393	4.25219	6.76610	4.25220	0.00001
18.5000	34.6301	4.59633	6.98364	4.59633	0.00000
24.0000	34.6202	5.15267	7.32140	5.15266	-0.00001
29.0000	34.6149	5.67303	7.62351	5.67301	-0.00002
32.5000	34.6121	6.04440	7.83186	6.04441	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

