

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

SENSOR SERIAL NUMBER: 0166
CALIBRATION DATE: 14-Mar-11

GliderAPL TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

ITS-90 COEFFICIENTS

g = 4.30380751e-003
h = 6.20288156e-004
i = 2.21636649e-005
j = 2.27319310e-006
f0 = 1000.0

IPTS-68 COEFFICIENTS

a = 3.64763465e-003
b = 5.80037137e-004
c = 1.47152728e-005
d = 2.27460833e-006
f0 = 2991.990

BATH TEMP (ITS-90)	INSTRUMENT FREQ (Hz)	INST TEMP (ITS-90)	RESIDUAL (ITS-90)
1.0000	2991.990	1.0000	0.00002
4.5000	3239.397	4.5000	-0.00004
15.0000	4070.790	15.0000	0.00005
18.5000	4379.024	18.5000	0.00001
23.9999	4896.303	23.9998	-0.00006
29.0000	5402.581	29.0000	0.00003
32.4999	5777.926	32.4999	-0.00000

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)

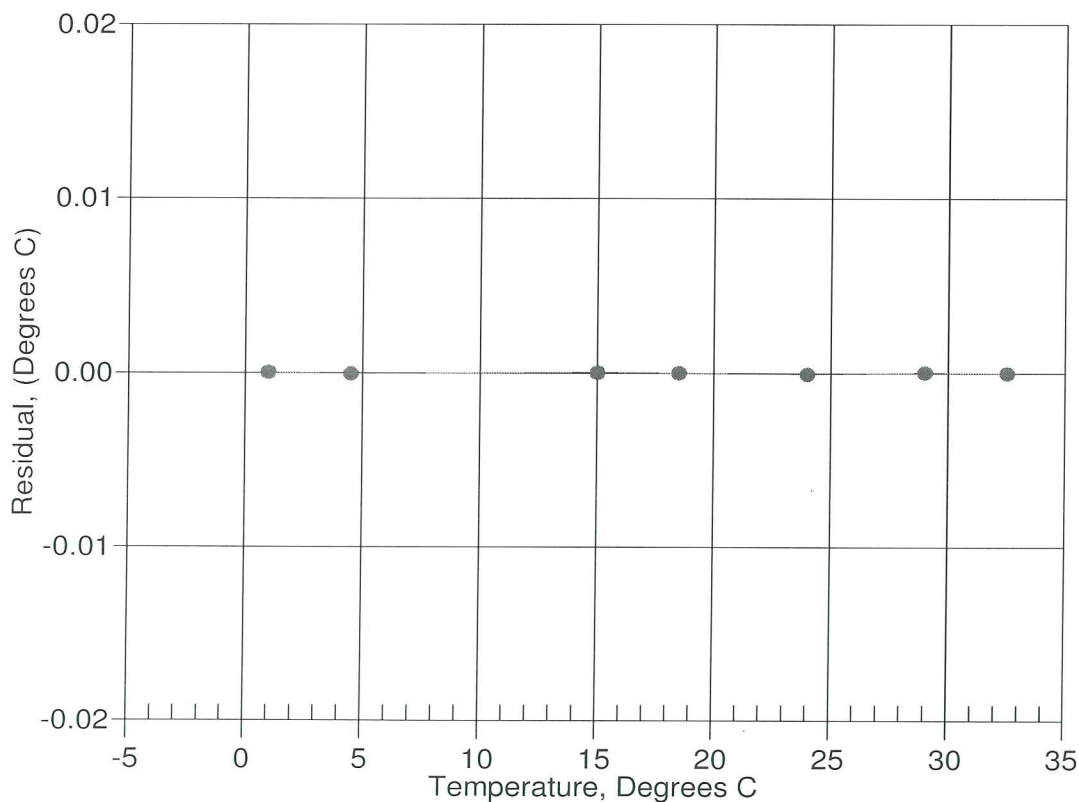
Temperature IPTS-68 = $1 / \{ a + b[\ln(f_0/f)] + c[\ln^2(f_0/f)] + d[\ln^3(f_0/f)] \} - 273.15$ (°C)

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)

● 14-Mar-11 0.00



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

GHIJ COEFFICIENTS

g = -9.84524194e+000
h = 1.106473999e+000
i = -1.09917714e-003
j = 1.56851335e-004
CPcor = -9.5700e-008 (nominal)
CTcor = 3.2500e-006 (nominal)

ABCDM COEFFICIENTS

a = 1.52847038e-005
b = 1.10330093e+000
c = -9.83455407e+000
d = -8.40600365e-005
m = 4.7
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	2.98547	0.00000	0.00000
1.0000	34.7286	2.96918	5.98027	2.96918	-0.00000
4.5000	34.7088	3.27558	6.20719	3.27558	0.00000
15.0000	34.6662	4.25514	6.88203	4.25514	-0.00000
18.5000	34.6569	4.59950	7.10384	4.59951	0.00001
23.9999	34.6465	5.15614	7.44818	5.15614	-0.00001
29.0000	34.6400	5.67668	7.75613	5.67669	0.00000
32.4999	34.6353	6.04798	7.96835	6.04798	-0.00000

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

14-Mar-11 1.0000000

