

QC
121
ACC

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: 0134
CALIBRATION DATE: 26-Oct-09

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

GHIJ COEFFICIENTS

g = -1.00584876e+001
h = 1.15509111e+000
i = -2.12444128e-003
j = 2.43270706e-004
CPcor = -9.5700e-008 (nominal)
CTcor = 3.2500e-006 (nominal)

ABCDM COEFFICIENTS

a = 4.65620178e-006
b = 1.14886955e+000
c = -1.00399042e+001
d = -8.71761095e-005
m = 5.3
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)
22.0000	0.0000	0.00000	2.95625	0.00000	0.00000
1.0000	34.6979	2.96681	5.87493	2.96682	0.00001
4.5000	34.6778	3.27294	6.09664	3.27293	-0.00001
15.0000	34.6344	4.25165	6.75618	4.25165	-0.00001
18.5000	34.6252	4.59575	6.97302	4.59575	0.00001
23.9999	34.6153	5.15201	7.30967	5.15202	0.00001
29.0000	34.6101	5.67233	7.61078	5.67233	-0.00001
32.5000	34.6078	6.04373	7.81844	6.04373	0.00000

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

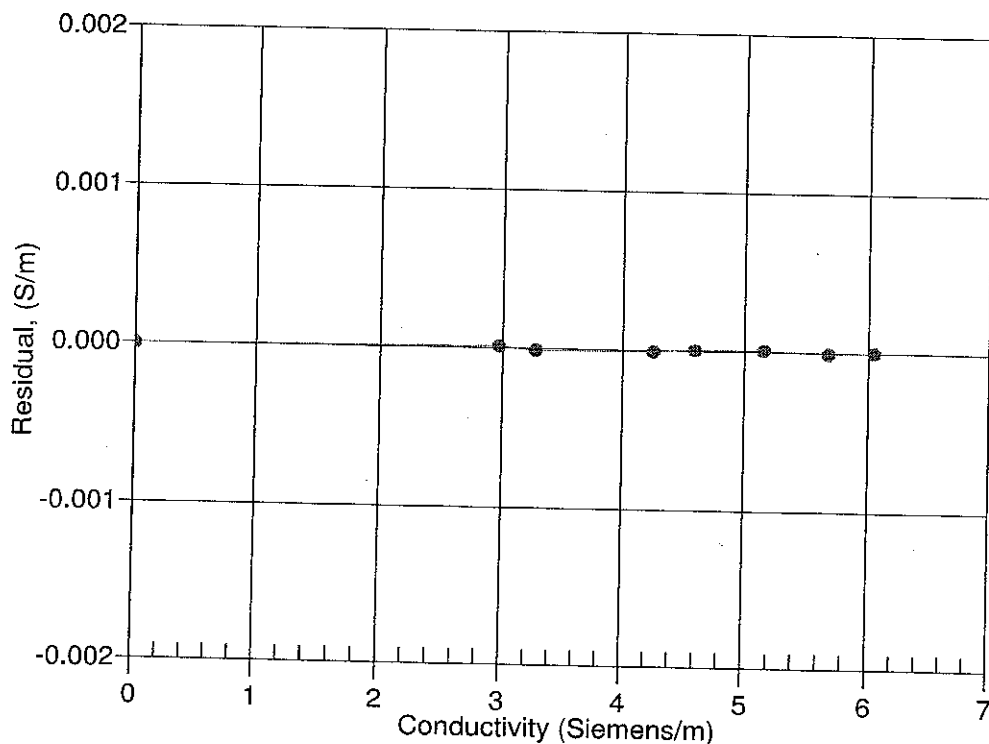
$$\text{Conductivity} = (af^m + bf^2 + c + dt) / [10(1 + \epsilon p)] \text{ Siemens/meter}$$

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

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

Date, Slope Correction

26-Oct-09 1.0000000



QC
121
ACC

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: 0134
CALIBRATION DATE: 26-Oct-09

GliderAPL TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

ITS-90 COEFFICIENTS

g = 4.33602546e-003
h = 6.22645067e-004
i = 2.29713989e-005
j = 2.40827961e-006
f0 = 1000.0

IPTS-68 COEFFICIENTS

a = 3.64763580e-003
b = 5.79551244e-004
c = 1.46999353e-005
d = 2.40970851e-006
f0 = 3153.082

BATH TEMP (ITS-90)	INSTRUMENT FREQ (Hz)	INST TEMP (ITS-90)	RESIDUAL (ITS-90)
1.0000	3153.082	0.9999	-0.00006
4.5000	3414.056	4.5001	0.00011
15.0000	4291.047	14.9999	-0.00007
18.5000	4616.220	18.4999	-0.00006
23.9999	5161.948	24.0000	0.00008
29.0000	5696.038	29.0001	0.00006
32.5000	6092.002	32.4999	-0.00006

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

