

# Sea-Bird Electronics, Inc.

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

Phone: (+1) 425-643-9866 Fax (+1) 425-643-9954 Email: seabird@seabird.com

SENSOR SERIAL NUMBER: 0273  
CALIBRATION DATE: 29-May-15

Glider APL TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

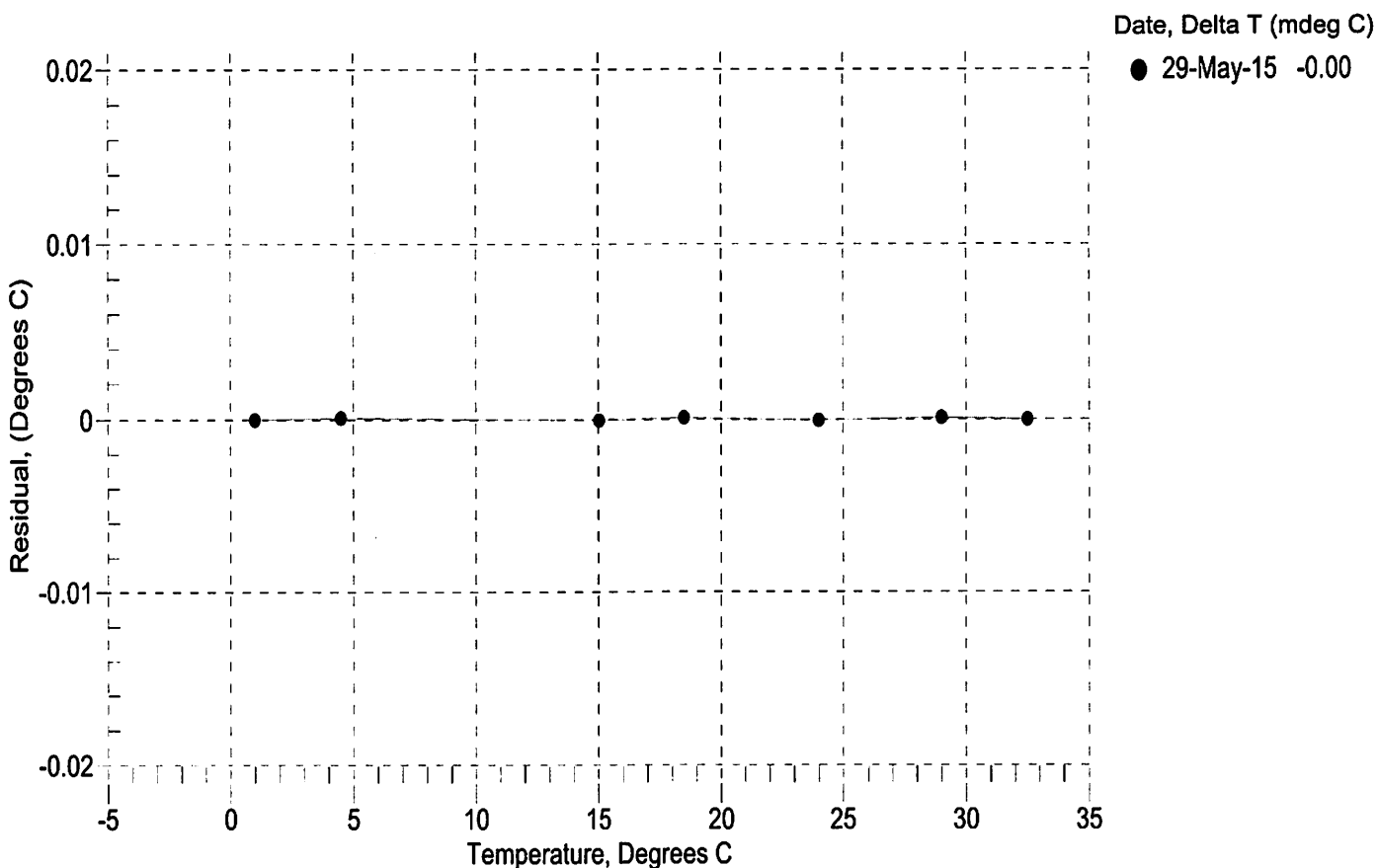
### ITS-90 COEFFICIENTS:

g = 4.39012322e-003  
h = 6.35262746e-004  
i = 2.50098000e-005  
j = 2.98578391e-006  
f0 = 1000.0

BATH TEMP (ITS-90)	INSTRUMENT FREQ (Hz)	INST TEMP (ITS-90)	RESIDUAL (ITS-90)
1.0000	3382.965	1.0000	-0.00003
4.5000	3658.859	4.5001	0.00005
15.0000	4583.318	14.9999	-0.00009
18.5000	4925.116	18.5001	0.00008
24.0000	5497.576	23.9999	-0.00006
29.0000	6056.556	29.0001	0.00008
32.5000	6470.179	32.5000	-0.00004

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)

Residual = instrument temperature - bath temperature



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

**COEFFICIENTS:**

g = -9.65021582e+000  
 h = 1.07635367e+000  
 i = -2.49499202e-003  
 j = 2.41287025e-004

CPcor = -9.5700e-008 (nominal)  
 CTcor = 3.2500e-006 (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	3.00169	0.00000	0.00000
1.0000	34.7320	2.96945	6.06361	2.96944	-0.00001
4.5000	34.7114	3.27580	6.29497	3.27581	0.00001
15.0000	34.6685	4.25540	6.98277	4.25539	-0.00001
18.5000	34.6596	4.59982	7.20878	4.59982	0.00000
24.0000	34.6497	5.15658	7.55953	5.15658	0.00000
29.0000	34.6450	5.67741	7.87320	5.67741	-0.00000
32.5000	34.6426	6.04912	8.08940	6.04908	-0.00004

$f = \text{INST FREQ} / 1000.0$

$\text{Conductivity} = (g + h * f^2 + i * f^3 + j * f^4) / (1 + \delta * t + \epsilon * p)$  Siemens / meter

t = temperatur e[°C]; p = pressure[decibars];  $\delta$  = CTcor;  $\epsilon$  = CPcor;

$\text{Residual} = \text{instrument conductivity} - \text{bath conductivity}$

