

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: 0360
CALIBRATION DATE: 20-Feb-11

SBE 45 TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

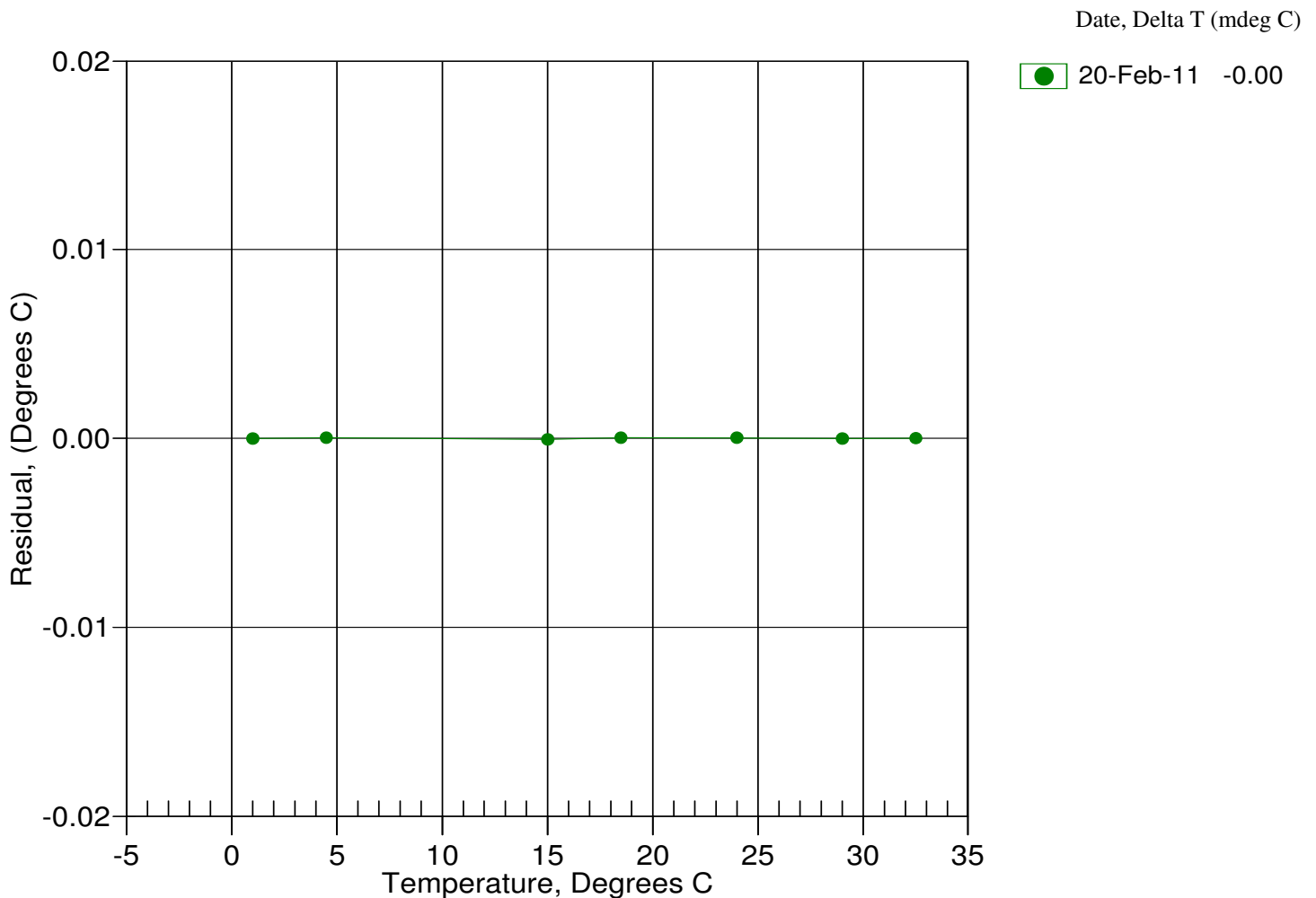
ITS-90 COEFFICIENTS

a0 = 1.195718e-004
a1 = 2.563142e-004
a2 = -1.054864e-006
a3 = 1.149115e-007

BATH TEMP (ITS-90)	INSTRUMENT OUTPUT	INST TEMP (ITS-90)	RESIDUAL (ITS-90)
1.0000	674680.7	1.0000	-0.0000
4.4999	575610.7	4.4999	0.0000
15.0000	364587.7	14.9999	-0.0001
18.5000	315074.7	18.5000	0.0000
24.0000	252004.6	24.0000	0.0000
29.0000	206955.8	29.0000	-0.0000
32.5000	180906.0	32.5000	0.0000

Temperature ITS-90 = $1 / \{ a_0 + a_1[\ln(n)] + a_2[\ln^2(n)] + a_3[\ln^3(n)] \} - 273.15$ (°C)

Residual = instrument temperature - bath temperature



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SBE 45 CONDUCTIVITY CALIBRATION DATA
PSS 1978: C(35,15,0) = 4.2914 Siemens/meter

COEFFICIENTS:

g = -9.977613e-001	CPcor = -9.5700e-008
h = 1.353086e-001	CTcor = 3.2500e-006
i = -1.365938e-004	WBOTC = 5.5203e-007
j = 2.978894e-005	

BATH TEMP (ITS-90)	BATH SAL (PSU)	BATH COND (Siemens/m)	INST FREQ (Hz)	INST COND (Siemens/m)	RESIDUAL (Siemens/m)
22.0000	0.0000	0.00000	2717.01	0.00000	0.00000
1.0000	34.6823	2.96560	5409.49	2.96560	-0.00000
4.4999	34.6625	3.27163	5613.67	3.27164	0.00001
15.0000	34.6202	4.25009	6220.83	4.25007	-0.00002
18.5000	34.6111	4.59408	6420.38	4.59408	0.00000
24.0000	34.6012	5.15015	6730.14	5.15017	0.00001
29.0000	34.5957	5.67024	7007.12	5.67025	0.00001
32.5000	34.5918	6.04125	7197.99	6.04124	-0.00001

$f = \text{INST FREQ} * \text{sqrt}(1.0 + \text{WBOTC} * t) / 1000.0$

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

t = temperature[°C]; p = pressure[decibars]; $\delta = \text{CTcor}$; $\epsilon = \text{CPcor}$;

Residual = instrument conductivity - bath conductivity

