

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: 0218
CALIBRATION DATE: 21-Nov-12

SBE 45 TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

ITS-90 COEFFICIENTS

a0 = -3.277083e-005
a1 = 2.811894e-004
a2 = -2.861998e-006
a3 = 1.639900e-007

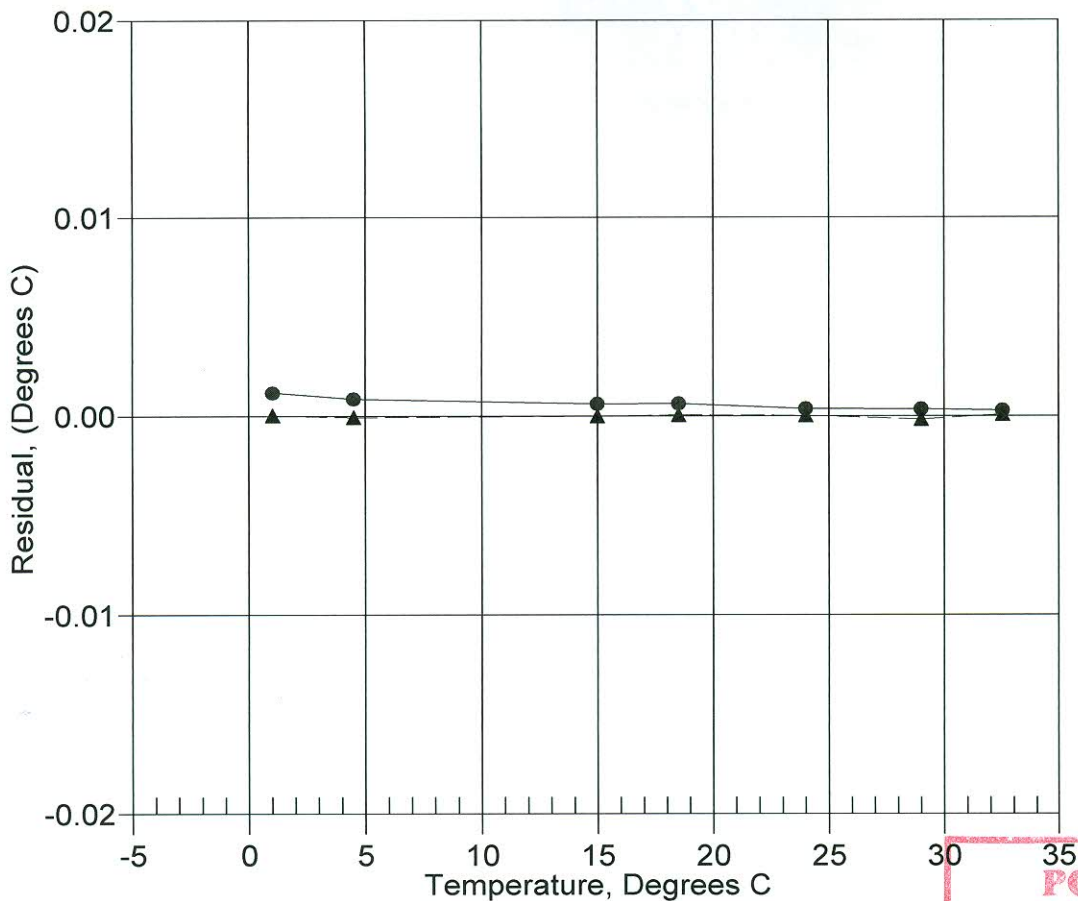
BATH TEMP (ITS-90)	INSTRUMENT OUTPUT	INST TEMP (ITS-90)	RESIDUAL (ITS-90)
1.0000	735588.7	1.0000	0.0000
4.5000	628772.5	4.4999	-0.0001
15.0000	400411.9	15.0000	-0.0000
18.5000	346625.0	18.5001	0.0001
24.0000	277962.5	24.0000	0.0000
29.0000	228799.7	28.9998	-0.0002
32.5000	200313.6	32.5001	0.0001

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

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

Date, Delta T (mdeg C)

● 04-May-11 0.60
▲ 21-Nov-12 0.00



**POST CRUISE
CALIBRATION**

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: 0218
CALIBRATION DATE: 21-Nov-12

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

COEFFICIENTS:

g = -9.766346e-001
h = 1.507681e-001
i = 3.143848e-004
j = 1.704445e-005

CPcor = -9.5700e-008
CTcor = 3.2500e-006
WBOTC = -2.4383e-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	2538.19	0.00000	0.00000
1.0000	35.0033	2.99042	5095.20	2.99043	0.00001
4.5000	34.9826	3.29886	5288.17	3.29885	-0.00001
15.0000	34.9385	4.28501	5861.72	4.28501	-0.00001
18.5000	34.9285	4.63164	6050.09	4.63165	0.00001
24.0000	34.9168	5.19192	6342.41	5.19192	0.00000
29.0000	34.9088	5.71576	6603.68	5.71576	0.00000
32.5000	34.9029	6.08938	6783.68	6.08938	-0.00000

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

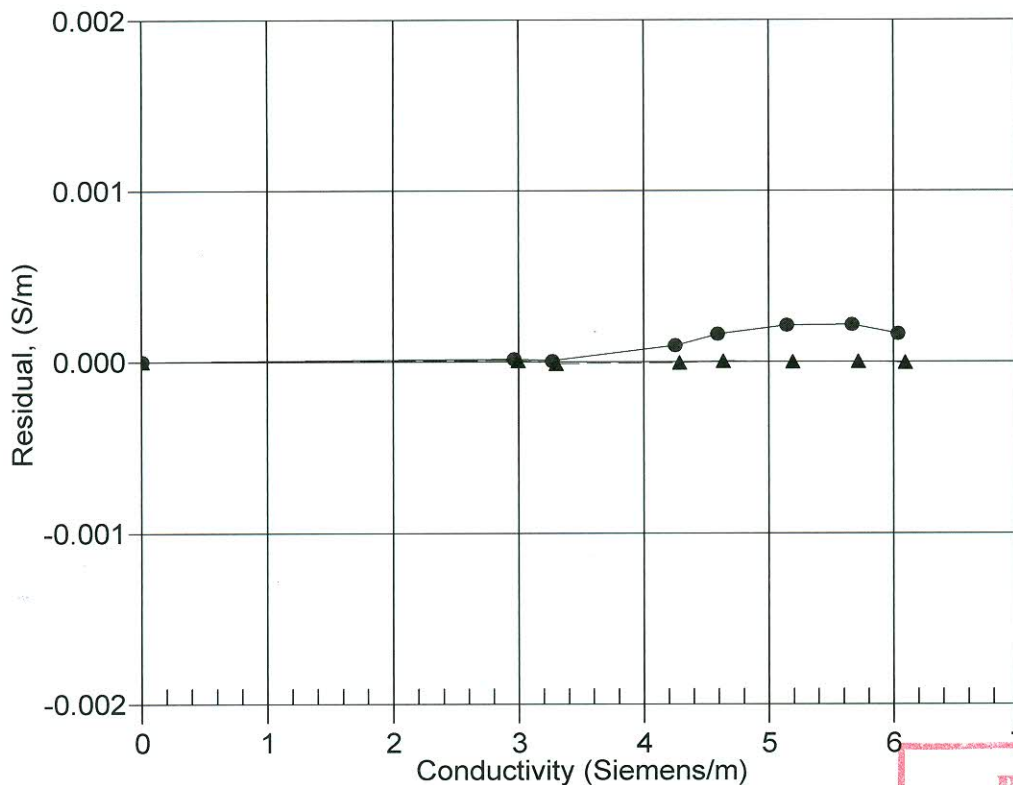
$\text{Conductivity} = (g + hf^2 + if^3 + jf^4) / (1 + \delta t + \epsilon p)$ Siemens/meter

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

Residual = instrument conductivity - bath conductivity

Date, Slope Correction

- 04-May-11 0.9999705
- ▲ 21-Nov-12 1.0000000



POST CRUISE CALIBRATION

