

Sea-Bird Electronics, Inc.

13431 NE 20th Street, Bellevue, WA 98005-2010 USA
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SENSOR SERIAL NUMBER: 0218
CALIBRATION DATE: 18-Apr-19

SBE 45 TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

ITS-90 COEFFICIENTS

a0 = -1.409602e-005
a1 = 2.771949e-004
a2 = -2.578318e-006
a3 = 1.572973e-007

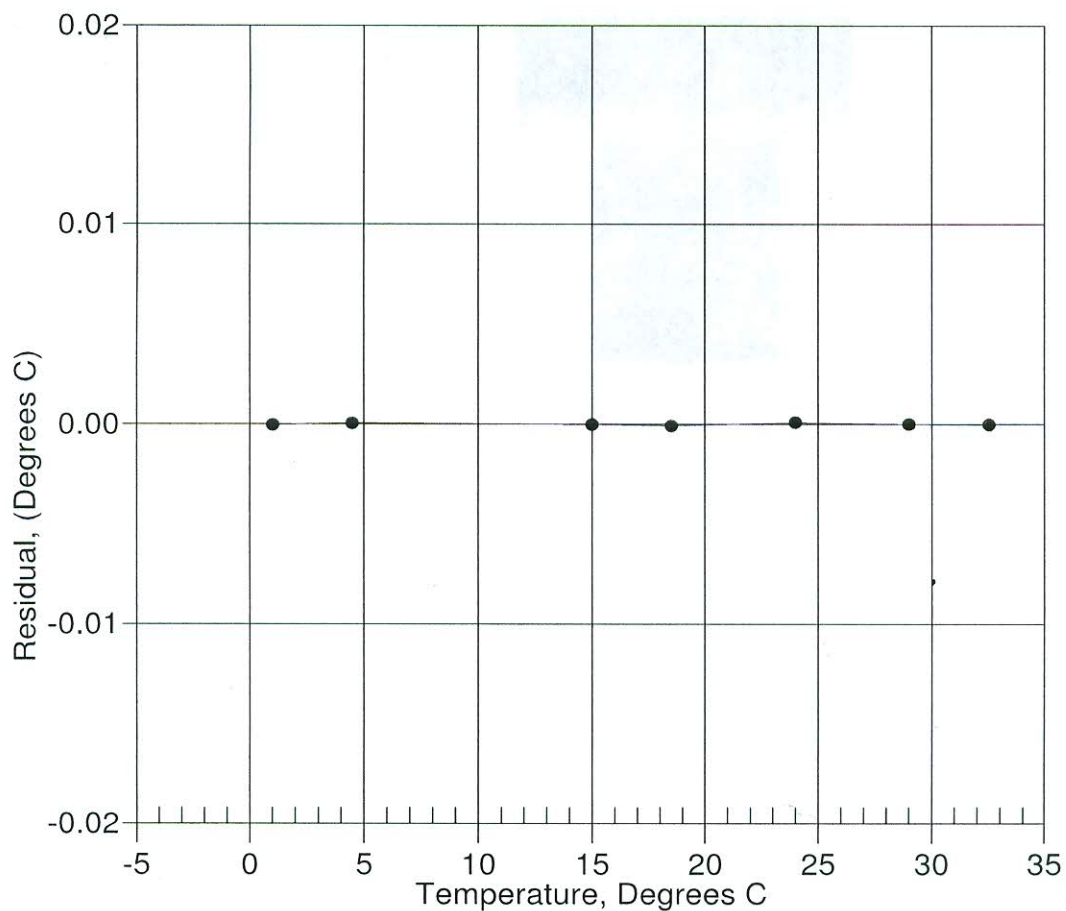
BATH TEMP (ITS-90)	INSTRUMENT OUTPUT	INST TEMP (ITS-90)	RESIDUAL (ITS-90)
1.0000	735632.8	1.0000	-0.0000
4.5000	628806.4	4.5001	0.0001
15.0000	400431.8	15.0000	-0.0000
18.5000	346640.5	18.4999	-0.0001
24.0000	277966.1	24.0001	0.0001
29.0000	228795.1	29.0000	-0.0000
32.5000	200306.4	32.5000	-0.0000

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

Date, Delta T (mdeg C)

● 18-Apr-19 -0.00



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

COEFFICIENTS:

g = -9.972782e-001
 h = 1.386588e-001
 i = -2.569631e-004
 j = 3.960805e-005

CPcor = -9.5700e-008
 CTcor = 3.2500e-006
 WBOTC = 2.7924e-007

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	2685.76	0.00000	0.00000
1.0000	34.9339	2.98506	5363.77	2.98506	0.00001
4.5000	34.9125	3.29290	5566.53	3.29290	-0.00000
15.0000	34.8678	4.27726	6169.47	4.27725	-0.00001
18.5000	34.8583	4.62334	6367.59	4.62332	-0.00001
24.0000	34.8476	5.18277	6675.11	5.18281	0.00004
29.0000	34.8398	5.70573	6949.88	5.70572	-0.00002

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

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

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

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

Date, Slope Correction

● 18-Apr-19 1.000000

