

SBE45 MicroTSG (Thermosalinograph)

*Conductivity & Temperature Monitor
with RS-232 Serial Interface*

Instrument Configuration:

Serial Number	4565557-0383
Firmware Version	V 1.1b
Interface Type	RS-232
Conductivity Range	0-7 S/m
Baud Rate	4800
Power Up Jumper	Autopower Pins 1 & 2
Maximum Depth	0

CAUTION - This instrument is not intended for underwater use.

CALIBRATION SHEETS

SBE 45 Temperature Calibration - S/N 0383.....	1
SBE 45 Conductivity Calibration - S/N 0383.....	2

SEA-BIRD ELECTRONICS, INC.

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SENSOR SERIAL NUMBER: 0383
CALIBRATION DATE: 24-Aug-11

SBE 45 TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

ITS-90 COEFFICIENTS

a0 = 3.149784e-005
a1 = 2.751731e-004
a2 = -2.556130e-006
a3 = 1.531051e-007

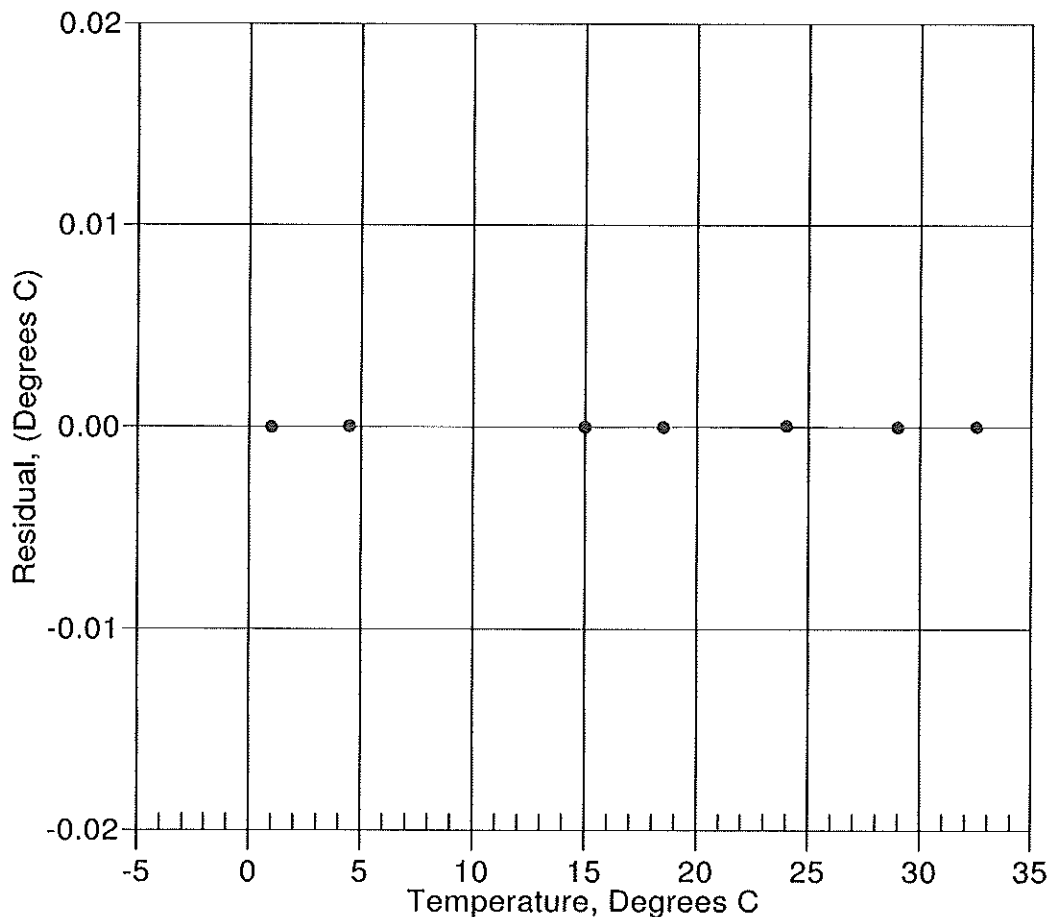
BATH TEMP (ITS-90)	INSTRUMENT OUTPUT	INST TEMP (ITS-90)	RESIDUAL (ITS-90)
1.0000	705798.8	1.0000	-0.0000
4.5000	601997.6	4.5000	0.0000
15.0000	380996.9	15.0000	-0.0000
18.5000	329171.3	18.5000	-0.0000
24.0000	263176.1	24.0000	0.0000
29.0000	216059.0	29.0000	-0.0000
32.5000	188822.7	32.5000	0.0000

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)

● 24-Aug-11 -0.00



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

COEFFICIENTS:

g = -9.961140e-001
h = 1.514823e-001
i = -2.574462e-004
j = 4.319341e-005

CPcor = -9.5700e-008
CTcor = 3.2500e-006
WBOTC = 3.8945e-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	2567.51	0.00000	0.00000
1.0000	35.0032	2.99041	5133.11	2.99042	0.00001
4.5000	34.9828	3.29888	5327.35	3.29887	-0.00000
15.0000	34.9387	4.28503	5904.87	4.28502	-0.00002
18.5000	34.9287	4.63167	6094.61	4.63166	-0.00000
24.0000	34.9175	5.19201	6389.13	5.19203	0.00002
29.0000	34.9105	5.71601	6652.42	5.71602	0.00001
32.5000	34.9054	6.08977	6833.81	6.08975	-0.00001

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

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

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

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

Date, Slope Correction

● 24-Aug-11 1.0000000

