SBE SEA-BIRD ELECTRONICS, INC TELEPHONE 206 643-9866 FAX 206 643-9954
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Temperature Calibration Report

Customer: EMS

SBE Job Number: 21668R Date of report: 08 September 1999

SBE Model Number: 3-04/F Serial Number: 031524

Unless instructed otherwise and if received intact (not broken) and functional, temperature sensors are calibrated 'as received', i.e, without repairs or adjustments that would prevent determination of the sensor's drift history. If calibration uncovers problems with the sensor, a second calibration will be required after the necessary work is finished.

An 'as received' calibration certificate listing the coefficients used to convert sensor frequency to temperature will be provided. Users may judge whether the 'as received' or previously determined coefficients are more likely to represent the condition of the sensor at the time of deployment (those using SEASOFT should enter the chosen coefficients using SEACON). Calibration coefficients obtained after a repair should only be used with data collected subsequent to the calibration.

'AS RECEIVED CALIBRATION' (x) Performed ( ) Not Performed

Date: 08 Sep 99 Drift since last cal: .00277 °Celsius/year

Comments:

'POST REPAIR CALIBRATION' ( ) Performed (x) Not Performed

Date: _____ Drift since last cal: _____ °Celsius/year

Comments:

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SENSOR SERIAL NUMBER = 1524
CALIBRATION DATE: 08-Sep-99s

TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

ITS-90 COEFFICIENTS

g = 4.83465197e-03
h = 6.75175619e-04
i = 2.62999812e-05
j = 2.11019218e-06
f_0 = 1000.000

IPTS-68 COEFFICIENTS

a = 3.68142314e-03
b = 6.00617459e-04
c = 1.48180158e-05
d = 2.11162225e-06
f_0 = 6159.626

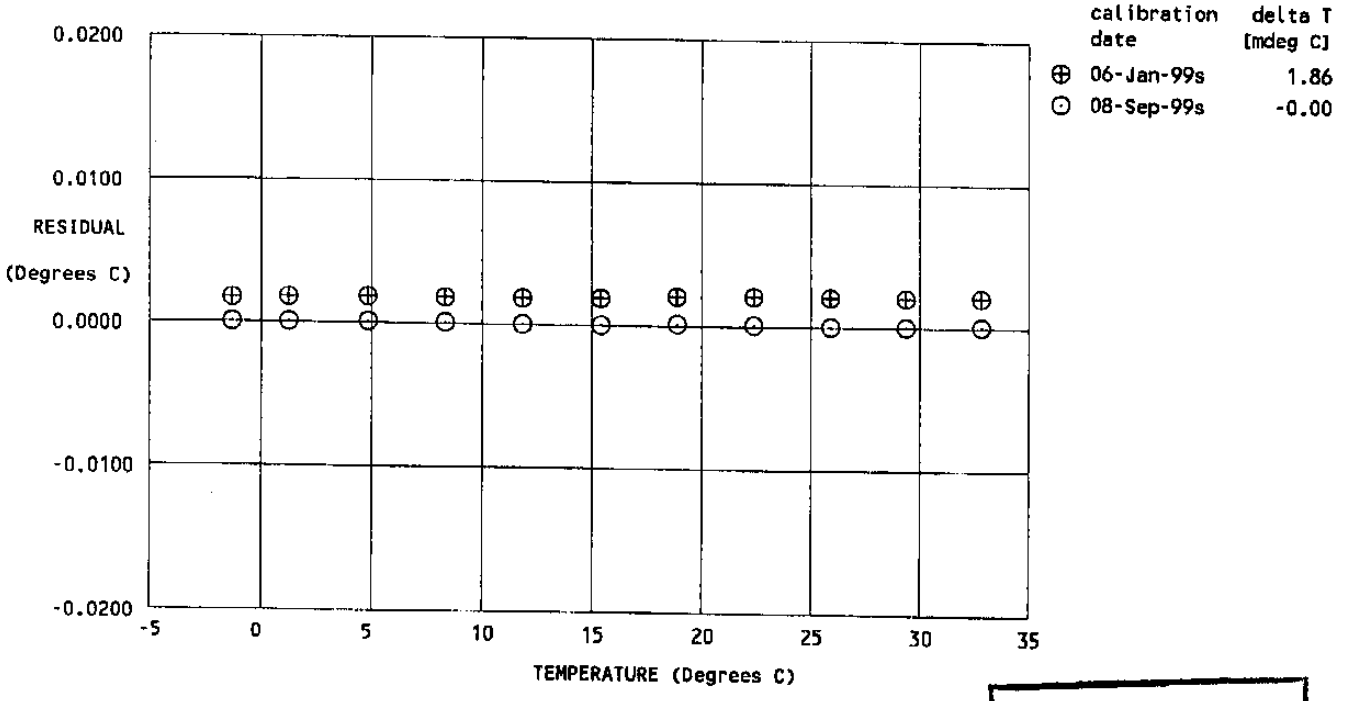
BATH TEMP (ITS-90 °C)	INSTRUMENT FREQ (Hz)	INST TEMP (ITS-90 °C)	RESIDUAL (ITS-90 °C)
-1.5155	6159.626	-1.5156	-0.00001
1.0454	6523.153	1.0454	0.00000
4.6192	7055.919	4.6192	0.00004
8.1258	7608.238	8.1258	0.00002
11.6294	8190.087	11.6294	-0.00005
15.1896	8812.851	15.1896	-0.00006
18.6533	9449.936	18.6534	0.00006
22.1542	10125.770	22.1542	0.00004
25.6817	10839.892	25.6817	-0.00002
29.1529	11575.729	29.1528	-0.00002
32.6280	12345.904	32.6280	0.00001

Temperature ITS-90 $= 1/\{g + h[\ell n(f_0/f)] + i[\ell n^2(f_0/f)] + j[\ell n^3(f_0/f)]\} - 273.15$ (°C)

Temperature IPTS-68 $= 1/\{a + b[\ell n(f_0/f)] + c[\ell n^2(f_0/f)] + d[\ell n^3(f_0/f)]\} - 273.15$ (°C)

Following the recommendation of JPOTS: T_{68} is assumed to be 1.00024 * T_{90} (-2 to 35 °C).

Residual = instrument temperature - bath temperature



POST CRUISE CALIBRATION