



SEA-BIRD
SCIENTIFIC

SBE Sea-Bird
Electronics

Sea-Bird Electronics
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SBE 45 MicroTSG

Instrument Configuration

Instrument Serial Number: 45-0532
Instrument Firmware Version: 1.1b
Zero Conductivity Frequency: 2632.70
Communications Format: RS232
Communications Settings: 4800 baud, 8 Data Bits, No Parity

Installed Devices/Sensors

<i>Data Format</i>	<i>Measurement</i>	<i>Sensor Type</i>	<i>Serial Number</i>	<i>Rating</i>
Count	Temperature	Internal	N/A	N/A
Frequency	Conductivity	Internal	N/A	N/A

CAUTION - This instrument is not intended for underwater use

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SENSOR SERIAL NUMBER: 0532
CALIBRATION DATE: 24-Apr-15

SBE 45 TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

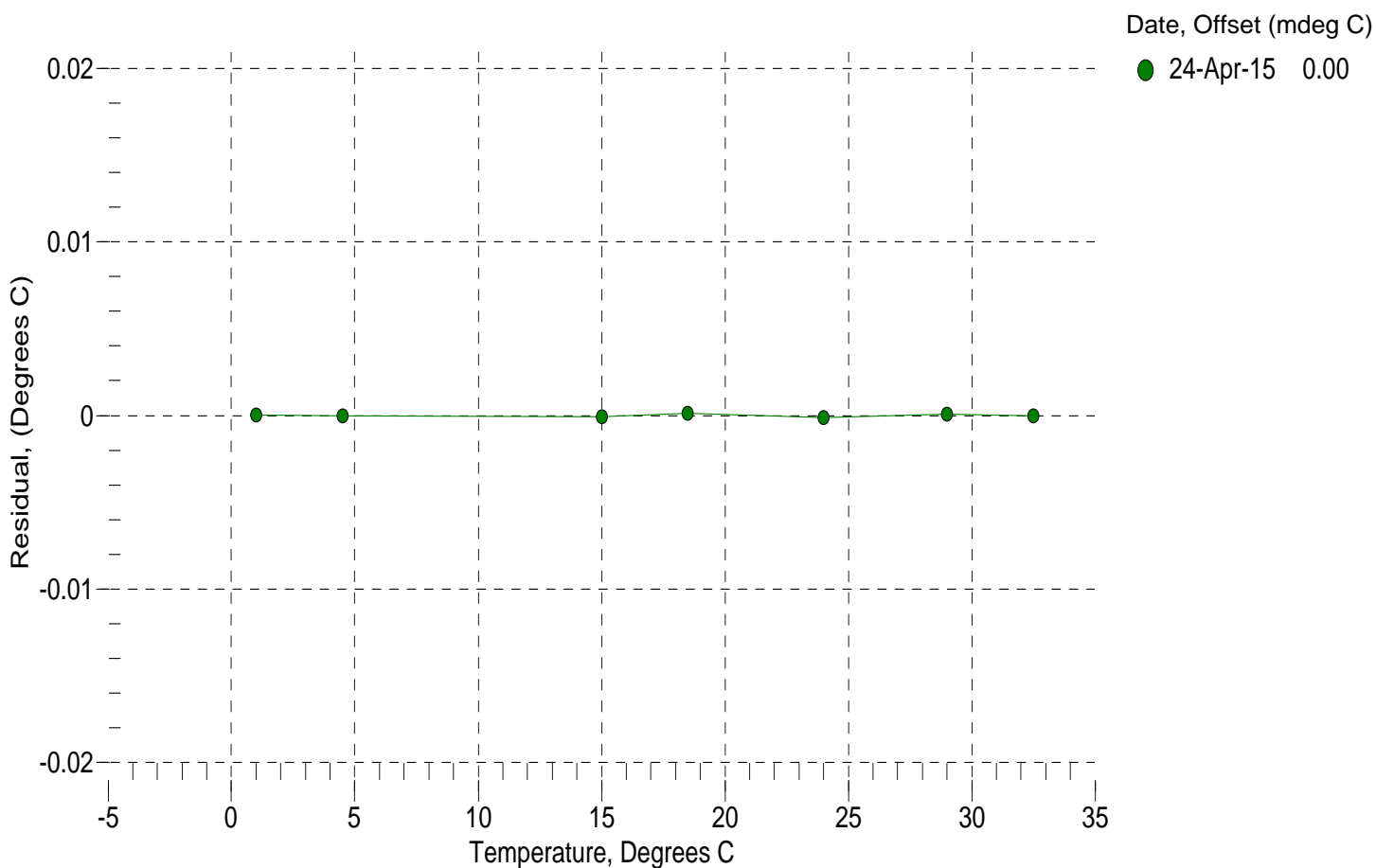
a0 = 5.084218e-005
a1 = 2.759035e-004
a2 = -2.598565e-006
a3 = 1.562321e-007

BATH TEMP (ITS-90)	INSTRUMENT OUTPUT	INST TEMP (ITS-90)	RESIDUAL (ITS-90)
1.0000	638481.6	1.0000	0.0000
4.5000	544745.0	4.5000	-0.0000
15.0000	345051.8	14.9999	-0.0001
18.5000	298191.6	18.5001	0.0001
23.9940	238561.9	23.9939	-0.0001
29.0000	195870.0	29.0001	0.0001
32.5000	171219.0	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

n = instrument output



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

COEFFICIENTS:

g = -1.000469e+000
h = 1.447138e-001
i = -2.478580e-004
j = 4.052229e-005

CPcor = -9.5700e-008
CTcor = 3.2500e-006
WBOTC = 6.6467e-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	2632.70	0.00000	0.00000
1.0000	34.6584	2.96375	5237.27	2.96376	0.00001
4.5000	34.6385	3.26960	5434.87	3.26960	-0.00000
15.0000	34.5955	4.24738	6022.49	4.24737	-0.00002
18.5000	34.5864	4.59115	6215.62	4.59115	-0.00000
23.9940	34.5764	5.14625	6515.09	5.14628	0.00002
29.0000	34.5706	5.66659	6783.44	5.66658	-0.00001
32.5000	34.5672	6.03745	6968.02	6.03705	-0.00039

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

$$\text{Conductivity} = (g + h * f^2 + i * f^3 + j * f^4) / (1 + \delta * t + \epsilon * p) \text{ Siemens / meter}$$

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

Residual = instrument conductivity - bath conductivity

