



SEA-BIRD
SCIENTIFIC

SBE Sea-Bird
Electronics

Sea-Bird Electronics
13431 NE 20th Street
Bellevue, Washington
98005 USA

Tel: +1 425-643-9866
seabird@seabird.com
www.seabird.com

SBE 41-CP ALACE

Instrument Configuration

Instrument Serial Number: 41-7262
Instrument Firmware Version: ALACE-CP V 3.0C
Zero Conductivity Frequency: 2742.01

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
Count	Pressure	Kistler	4645072	2000m(2000 dBar)

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SENSOR SERIAL NUMBER: 7262
CALIBRATION DATE: 23-Jun-15

SBE 41 TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

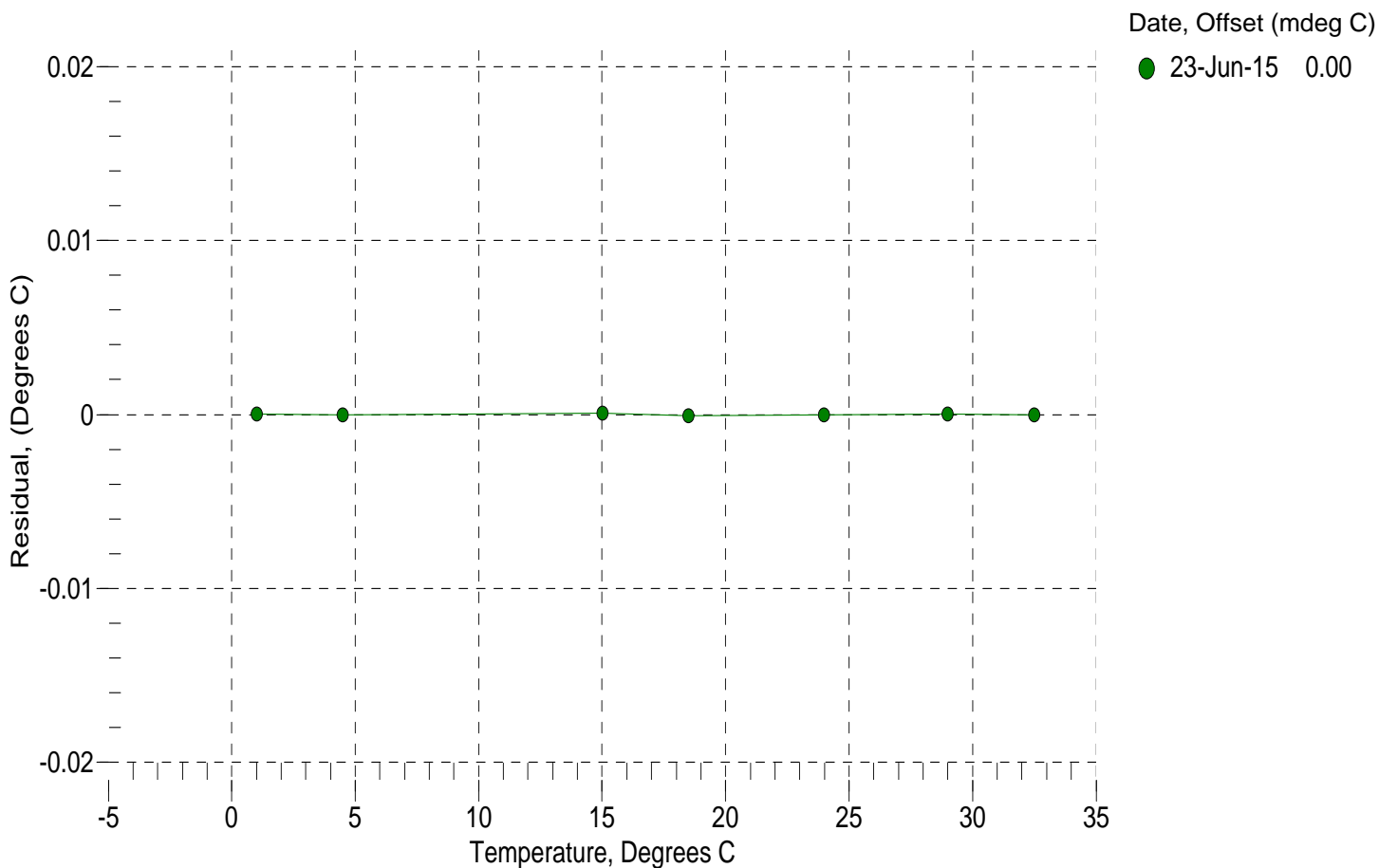
a0 = 5.775319e-005
a1 = 2.749427e-004
a2 = -2.542030e-006
a3 = 1.544077e-007

BATH TEMP (ITS-90)	INSTRUMENT OUTPUT	INST TEMP (ITS-90)	RESIDUAL (ITS-90)
1.0000	638897.4	1.0000	0.0000
4.5000	544975.1	4.5000	-0.0000
15.0000	344967.0	15.0001	0.0001
18.5000	298060.2	18.4999	-0.0001
23.9940	238377.6	23.9940	-0.0000
29.0000	195664.6	29.0000	0.0000
32.5000	171006.4	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

n = instrument output



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CALIBRATION DATE: 23-Jun-15

SBE 41 CONDUCTIVITY CALIBRATION DATA
PSS 1978: C(35,15,0) = 4.2914 Siemens/meter

COEFFICIENTS:

g = -9.955155e-001
h = 1.329782e-001
i = -3.177939e-004
j = 3.980357e-005

CPcor = -9.5700e-008
CTcor = 3.2500e-006
WBOTC = 5.7738e-007

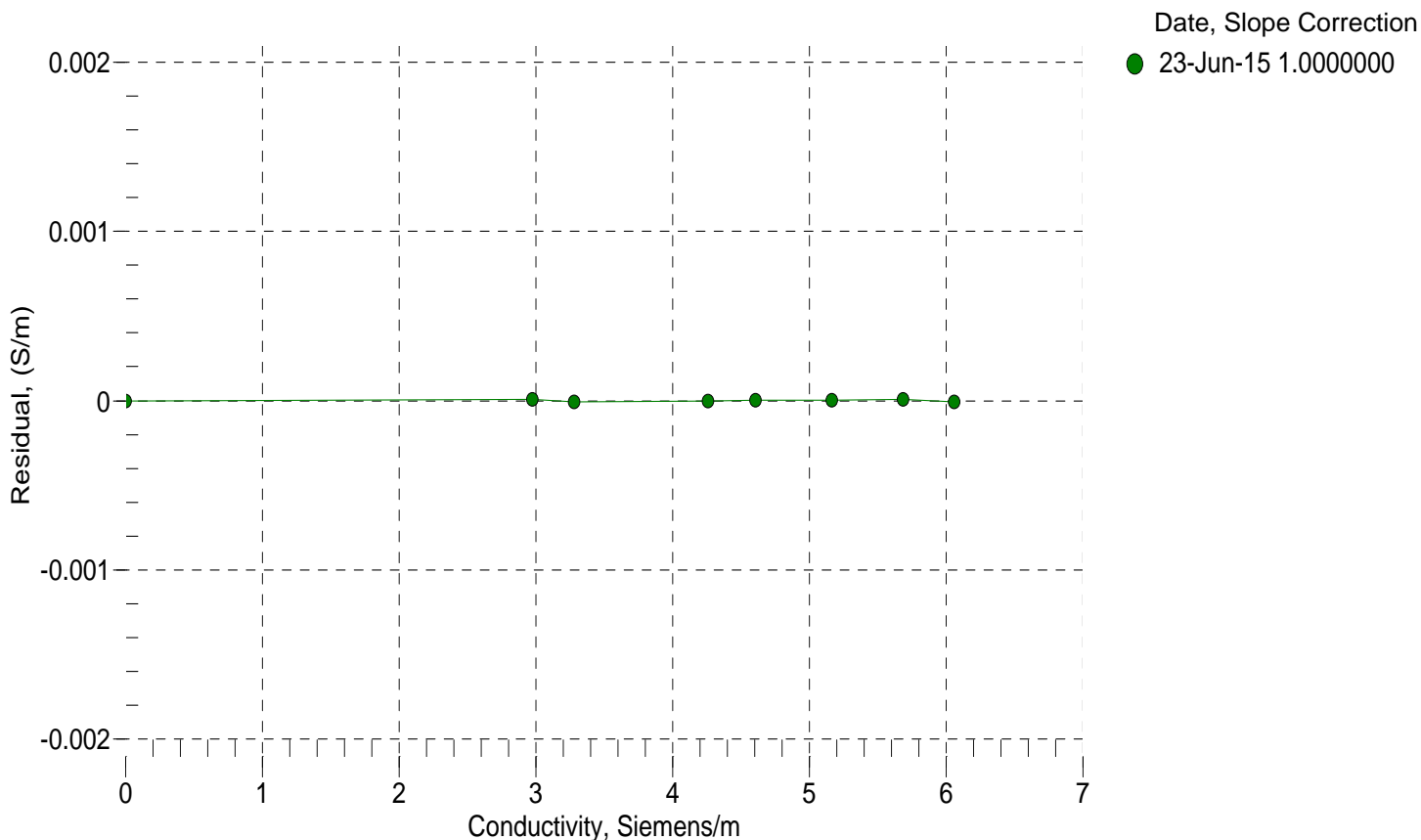
BATH TEMP (ITS-90)	BATH SAL (PSU)	BATH COND (Siemens/m)	INST FREQ (Hz)	INST COND (Siemens/m)	RESIDUAL (Siemens/m)
22.0000	0.0000	0.00000	2742.00	0.00000	0.00000
1.0000	34.7969	2.97446	5475.19	2.97447	0.00001
4.5000	34.7773	3.28141	5682.36	3.28140	-0.00001
15.0000	34.7350	4.26269	6298.35	4.26269	-0.00000
18.5000	34.7260	4.60768	6500.76	4.60768	0.00000
23.9940	34.7163	5.16477	6814.60	5.16478	0.00000
29.0000	34.7109	5.68700	7095.84	5.68700	0.00001
32.5000	34.7082	6.05927	7289.48	6.05926	-0.00001

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

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

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

Residual = instrument conductivity - bath conductivity



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SENSOR SERIAL NUMBER: 7262
CALIBRATION DATE: 19-Jun-15

SBE 41 PRESSURE CALIBRATION DATA
2900 psia S/N 4645072

COEFFICIENTS:

PA0 = 1.223611e+000	PTCA0 = 4.279067e+001
PA1 = 1.407924e-001	PTCA1 = -9.681517e-002
PA2 = 1.146991e-008	PTCA2 = 2.475371e-002
PTHA0 = -9.806940e+001	PTCB0 = 1.032144e+002
PTHA1 = 4.012493e-002	PTCB1 = -5.770781e-003
PTHA2 = 1.249942e-006	PTCB2 = 0.000000e+000

PRESSURE SPAN CALIBRATION

PRESSURE PSIA	INST OUTPUT	THERMISTOR OUTPUT	COMPUTED PRESSURE	ERROR %FS
14.67	147.3	2729.9	14.73	0.00
592.83	4247.9	2739.5	592.89	0.00
1170.50	8342.5	2741.5	1170.65	0.01
1748.26	12434.2	2743.1	1748.39	0.00
2326.01	16523.4	2744.3	2326.16	0.01
2903.64	20607.1	2746.3	2903.55	-0.00
2325.91	16521.5	2746.6	2325.89	-0.00
1748.23	12432.7	2748.0	1748.17	-0.00
1170.55	8340.3	2748.7	1170.31	-0.01
592.59	4244.9	2749.3	592.42	-0.01
14.67	148.0	2751.5	14.69	0.00

THERMAL CORRECTION

TEMP ITS90	PRESS TEMP	INST OUTPUT
32.50	2977.80	168.19
29.00	2904.30	163.35
23.99	2797.90	157.16
18.50	2681.30	151.90
15.00	2606.40	149.39
4.50	2379.80	145.27
1.00	2303.70	145.21

TEMP(ITS90)	SPAN(mV)
-3.92	103.24
35.78	103.01

$$y = \text{thermistor output}; t = \text{PTHA0} + \text{PTHA1} * y + \text{PTHA2} * y^2$$

$$x = \text{pressure output} - \text{PTCA0} - \text{PTCA1} * t - \text{PTCA2} * t^2$$

$$n = x * \text{PTCB0} / (\text{PTCB0} + \text{PTCB1} * t + \text{PTCB2} * t^2)$$

$$\text{pressure (psia)} = \text{PA0} + \text{PA1} * n + \text{PA2} * n^2$$

