



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

SBE41-CP ALACE

Instrument Configuration

Instrument Serial Number: 41-8704
 Instrument Firmware Version: V 7.2.5
 Zero Conductivity Frequency: 2616.44
 Communications Format: RS232
 Communications Settings: 9600 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
Count	Pressure	Druck	10387030	2000m(2000 dBar)

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SENSOR SERIAL NUMBER: 8704
CALIBRATION DATE: 29-Jul-16

SBE 41 TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

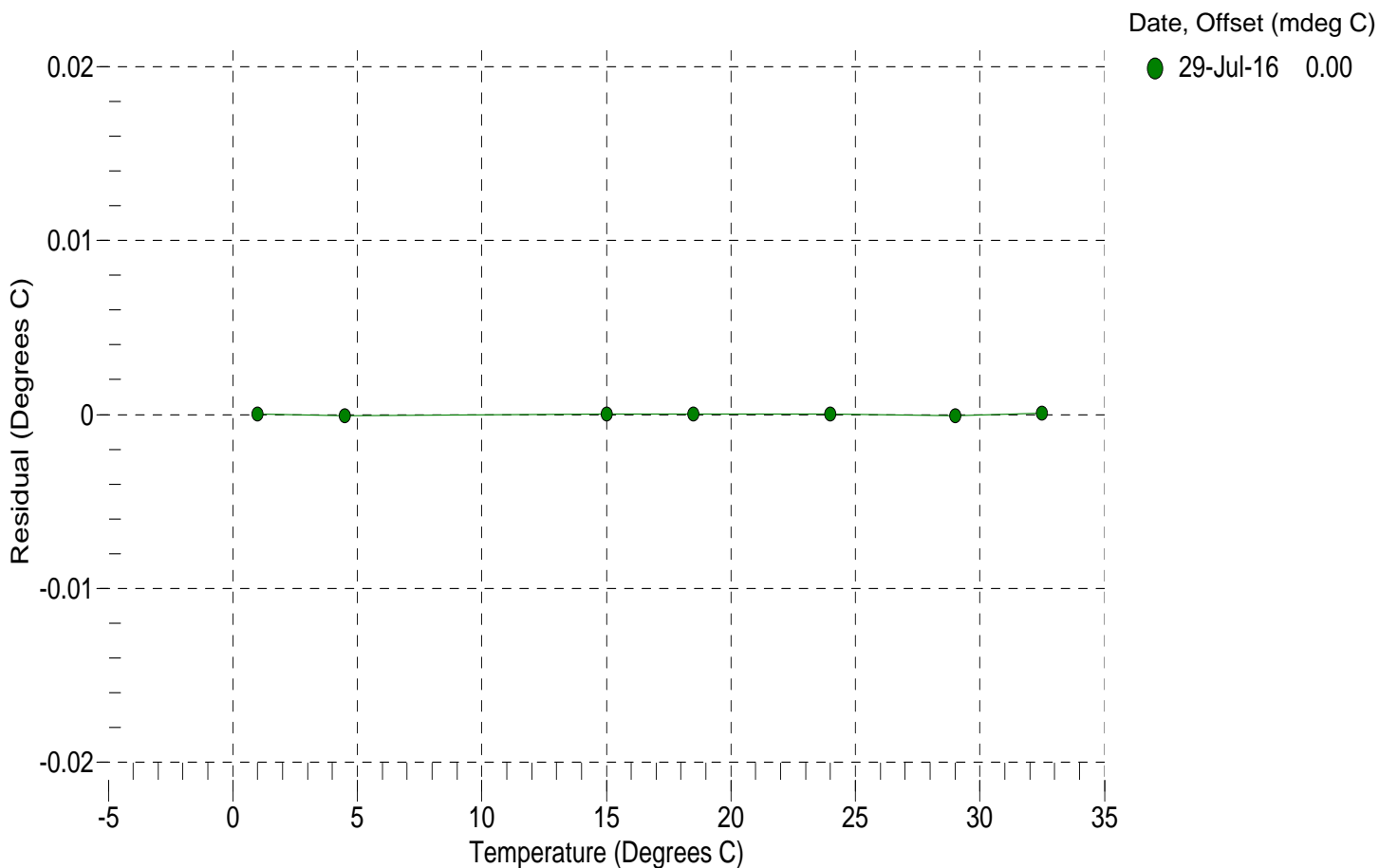
a0 = -7.686285e-004
a1 = 2.794273e-004
a2 = -2.985528e-006
a3 = 1.332626e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	15690977.3	1.0000	0.0000
4.5000	13387920.0	4.4999	-0.0001
15.0000	8481160.6	15.0000	0.0000
18.5000	7329705.2	18.5000	0.0000
23.9940	5864216.5	23.9940	0.0000
29.0000	4814997.1	28.9999	-0.0001
32.5000	4209042.0	32.5001	0.0001

n = Instrument Output (counts)

Temperature ITS-90 (°C) = $1/\{a_0 + a_1[\ln(n)] + a_2[\ln^2(n)] + a_3[\ln^3(n)]\} - 273.15$

Residual (°C) = instrument temperature - bath temperature



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CALIBRATION DATE: 29-Jul-16

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

COEFFICIENTS:

g = -9.896487e-001

CPcor = -9.5700e-008

h = 1.451407e-001

CTcor = 3.2500e-006

i = -3.371108e-004

WBOTC = -6.6876e-007

j = 4.485058e-005

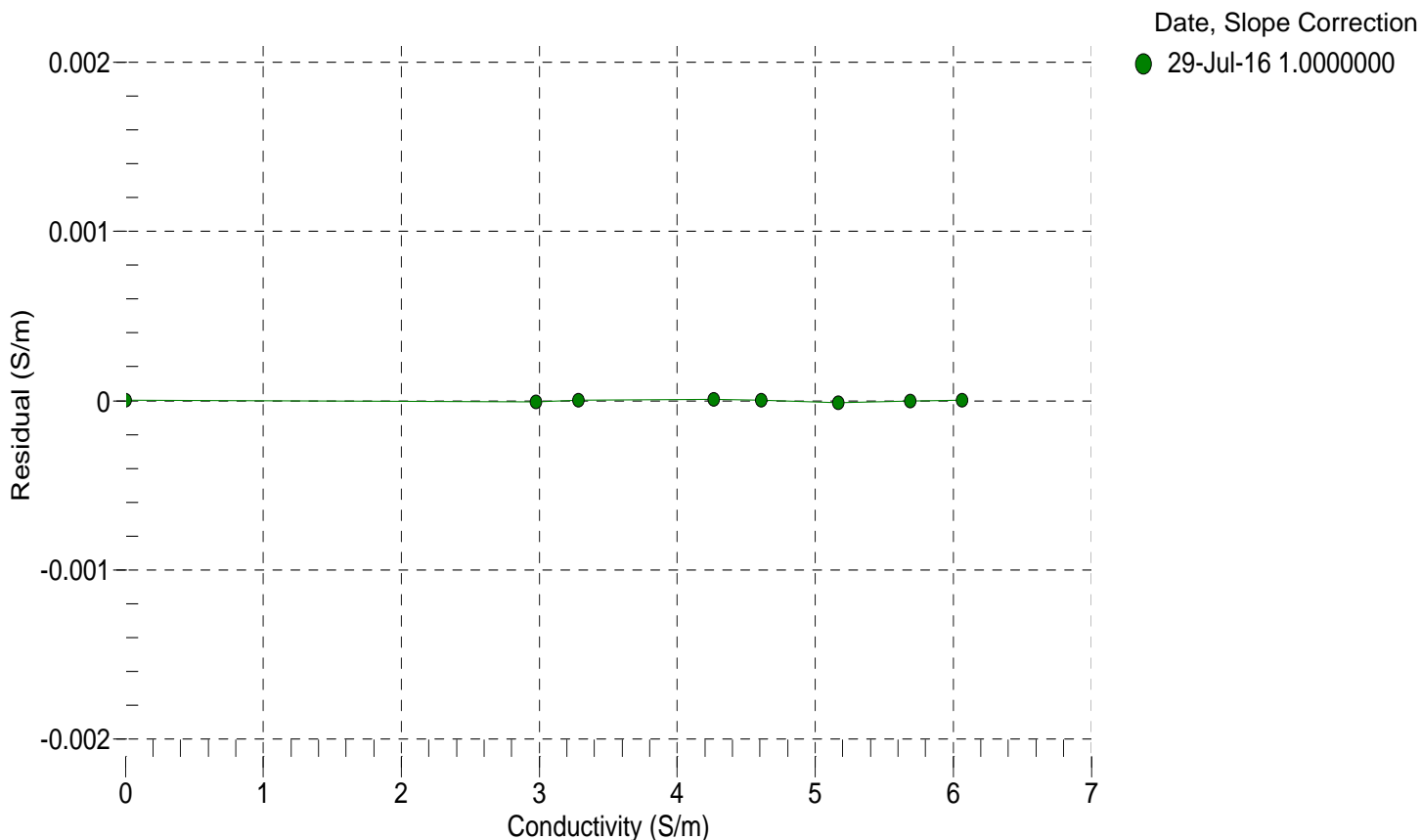
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2616.44	0.00000	0.00000
1.0000	34.8153	2.97589	5236.72	2.97588	-0.00001
4.5000	34.7956	3.28296	5435.20	3.28297	0.00000
15.0000	34.7535	4.26472	6025.33	4.26473	0.00001
18.5000	34.7445	4.60987	6219.23	4.60987	0.00000
23.9940	34.7347	5.16721	6519.86	5.16720	-0.00001
29.0000	34.7293	5.68967	6789.29	5.68967	-0.00000
32.5000	34.7264	6.06208	6974.80	6.06209	0.00000

$f = \text{Instrument Output(Hz)} * \text{sqrt}(1.0 + \text{WBOTC} * t) / 1000.0$

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

Conductivity (S/m) = $(g + h * f^2 + i * f^3 + j * f^4) / 10 (1 + \delta * t + \epsilon * p)$

Residual (Siemens/meter) = instrument conductivity - bath conductivity



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SENSOR SERIAL NUMBER: 8704

CALIBRATION DATE: 25-Jul-16

SBE 41 PRESSURE CALIBRATION DATA

2900 psia S/N 10387030

COEFFICIENTS:

PA0 =	1.636551e-001	PTCA0 =	4.944425e+003
PA1 =	3.915468e-004	PTCA1 =	-1.169399e+001
PA2 =	-3.018760e-013	PTCA2 =	1.419816e+000
PTHA0 =	3.050967e+002	PTCB0 =	2.514743e+001
PTHA1 =	-6.063407e-005	PTCB1 =	-7.286432e-004
PTHA2 =	-1.265776e-012	PTCB2 =	0.000000e+000

PRESSURE SPAN CALIBRATION

THERMAL CORRECTION

PRESSURE (PSIA)	INSTRUMENT OUTPUT (counts)	THERMISTOR OUTPUT (counts)	COMPUTED PRESSURE (PSIA)	RESIDUAL (%FSR)	TEMP (°C)	THERMISTOR OUTPUT (counts)	INSTRUMENT OUTPUT (counts)
14.64	42473.0	4288940.2	14.70	0.00	32.50	4138256.00	44741.00
591.19	1515577.6	4285998.8	591.17	-0.00	29.00	4187456.00	44546.74
1167.48	2992045.2	4283967.2	1167.64	0.01	23.99	4257635.00	44239.78
1743.86	4471471.9	4282611.2	1743.94	0.00	18.50	4334460.40	43907.36
2320.31	5954718.8	4281388.6	2320.41	0.00	15.00	4383279.80	43756.55
2896.66	7440575.6	4280241.6	2896.56	-0.00	4.50	4529309.20	43672.65
2320.21	5954341.8	4280199.2	2320.27	0.00	1.00	4577797.60	43631.03
1743.92	4471234.3	4280063.2	1743.86	-0.00			
1167.40	2990979.9	4280024.8	1167.22	-0.01	TEMPERATURE (°C)	SPAN (mV)	
590.85	1514422.6	4279867.4	590.71	-0.00	-4.90	25.15	
14.64	42440.0	4279664.0	14.68	0.00	34.90	25.12	

y = thermistor output (counts)

$$t = PTHA0 + PTHA1 * y + PTHA2 * y^2$$

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

$$n = x * PTCB0 / (PTCB0 + PTCB1 * t + PTCB2 * t^2)$$

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

$$\text{Residual (\%FSR)} = (\text{computed pressure} - \text{true pressure}) * 100 / \text{Full Scale Range}$$

Date, Offset (%FSR)

● 25-Jul-16 0.00

