



SEA-BIRD
SCIENTIFIC

SBE Sea-Bird
Electronics

Sea-Bird Electronics
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SBE41-CP ALACE

Instrument Configuration

Instrument Serial Number: 41-8688
Instrument Firmware Version: V 7.2.5
Zero Conductivity Frequency: 2686.87
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	10300469	2000m(2000 dBar)

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SENSOR SERIAL NUMBER: 8688
CALIBRATION DATE: 31-Jul-16

SBE 41 TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

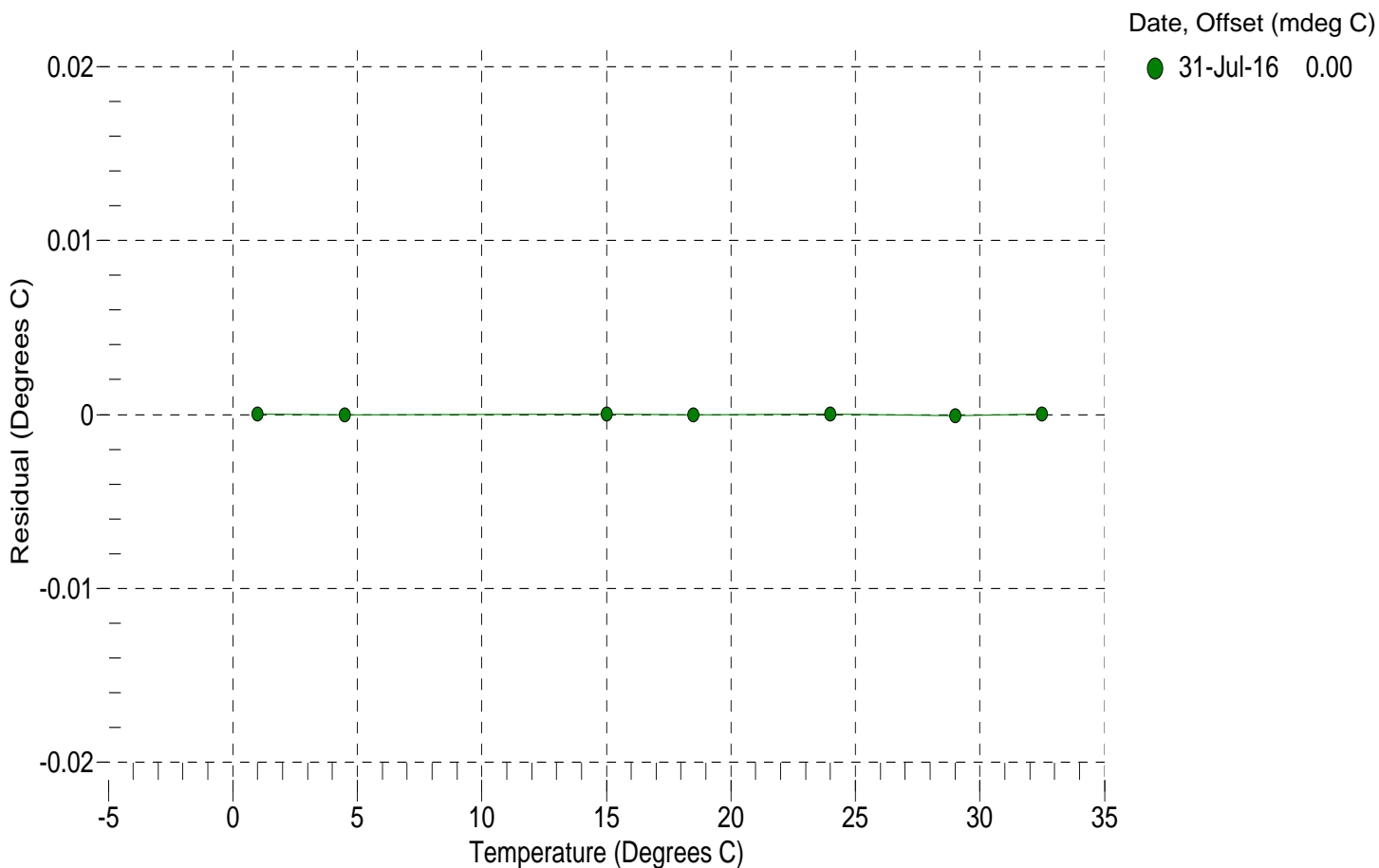
a0 = -8.495703e-004
a1 = 2.892387e-004
a2 = -3.595887e-006
a3 = 1.444644e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	17706712.2	1.0000	0.0000
4.5000	15105137.2	4.5000	-0.0000
15.0000	9564266.7	15.0000	0.0000
18.5000	8264497.5	18.5000	-0.0000
23.9940	6610553.7	23.9940	0.0000
29.0000	5426737.7	28.9999	-0.0001
32.5000	4743195.9	32.5000	0.0000

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

COEFFICIENTS:

g = -9.913175e-001
h = 1.379427e-001
i = -3.510460e-004
j = 4.443058e-005

CPcor = -9.5700e-008
CTcor = 3.2500e-006
WBOTC = -1.4885e-006

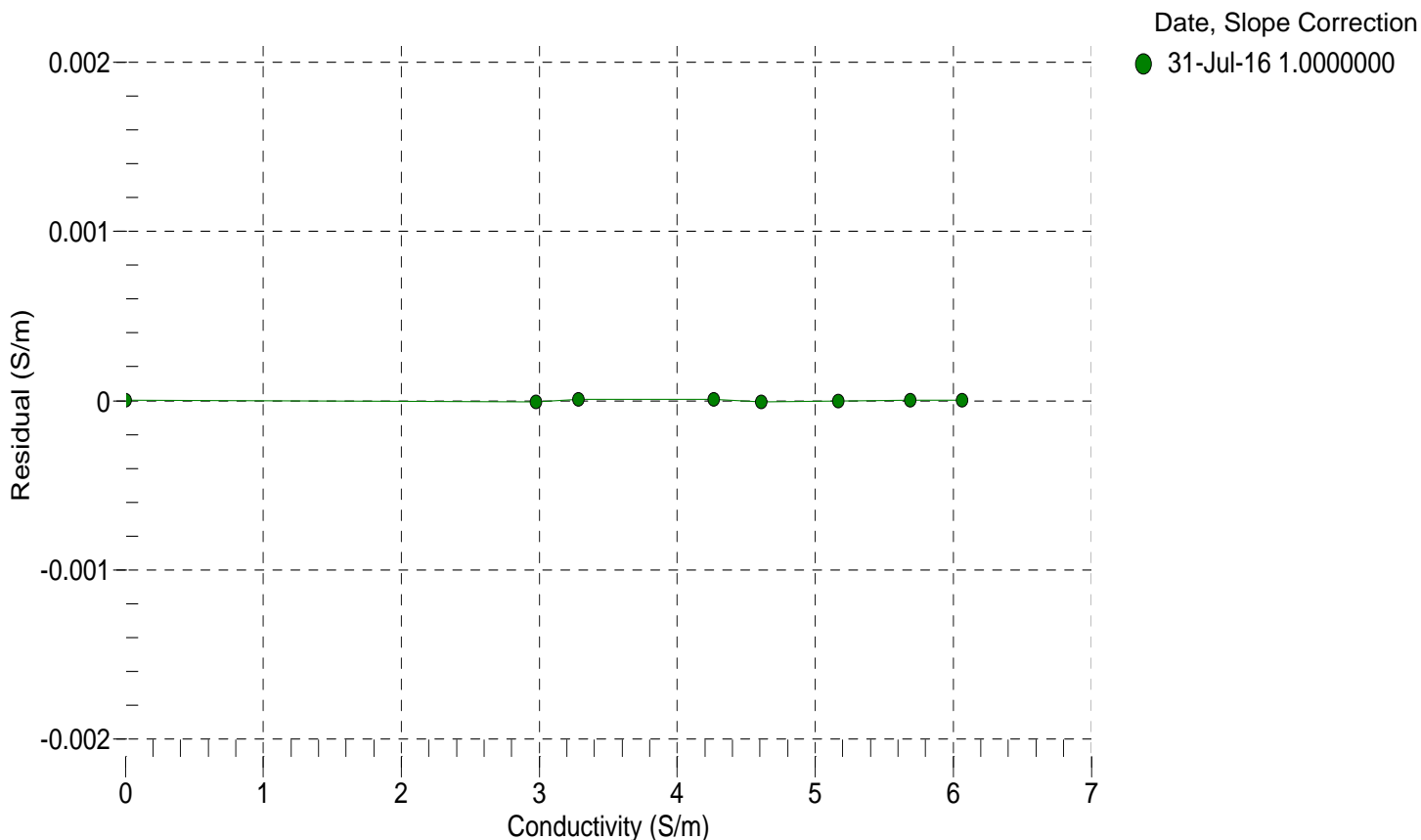
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2686.87	0.00000	0.00000
1.0000	34.8159	2.97593	5374.62	2.97593	-0.00001
4.5000	34.7964	3.28303	5578.25	3.28304	0.00001
15.0000	34.7547	4.26486	6183.63	4.26486	0.00001
18.5000	34.7460	4.61005	6382.53	4.61004	-0.00001
23.9940	34.7366	5.16746	6690.93	5.16746	-0.00000
29.0000	34.7315	5.68999	6967.29	5.68999	0.00000
32.5000	34.7279	6.06232	7157.48	6.06232	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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CALIBRATION DATE: 29-Jul-16

SBE 41 PRESSURE CALIBRATION DATA

2900 psia S/N 10300469

COEFFICIENTS:

PA0 =	4.445232e-001	PTCA0 =	-1.891451e+003
PA1 =	3.919919e-004	PTCA1 =	3.786817e+001
PA2 =	-2.898603e-013	PTCA2 =	4.997221e-001
PTHA0 =	2.872521e+002	PTCB0 =	2.515930e+001
PTHA1 =	-6.048452e-005	PTCB1 =	-5.513784e-004
PTHA2 =	-9.726522e-013	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)
14.60	35561.5	4099212.2	14.69	0.00	32.50	3959711.20	37940.70
590.84	1506473.1	4097846.0	590.90	0.00	29.00	4011021.60	37804.82
1166.91	2980243.4	4096672.8	1166.98	0.00	23.99	4084227.80	37509.32
1742.95	4457304.3	4095824.0	1743.09	0.00	18.50	4164429.60	37114.93
2319.07	5937528.0	4095018.2	2319.15	0.00	15.00	4215435.60	36828.29
2895.06	7420319.0	4094177.8	2894.95	-0.00	4.50	4367976.80	36453.46
2319.05	5937360.1	4094499.2	2319.09	0.00	1.00	4418669.20	36275.02
1743.03	4457190.0	4094653.4	1743.04	0.00			
1167.02	2980042.5	4094901.8	1166.91	-0.00			
590.98	1505743.9	4095168.0	590.62	-0.01			
14.60	35563.0	4094217.8	14.68	0.00			

	TEMPERATURE (°C)	SPAN (mV)
	-4.90	25.16
	35.00	25.14

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)

● 29-Jul-16 0.00

