



SEA-BIRD
SCIENTIFIC

SBE Sea-Bird
Electronics

Sea-Bird Electronics
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SBE41-CP ALACE

Instrument Configuration

Instrument Serial Number: 41-8469
Instrument Firmware Version: V 7.2.5
Zero Conductivity Frequency: 2639.81
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	Kistler	4940376	2000m(2000 dBar)
RS232	Oxygen	SBE 63	63-1375	7000m

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SENSOR SERIAL NUMBER: 8469
CALIBRATION DATE: 10-May-16

SBE 41 TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

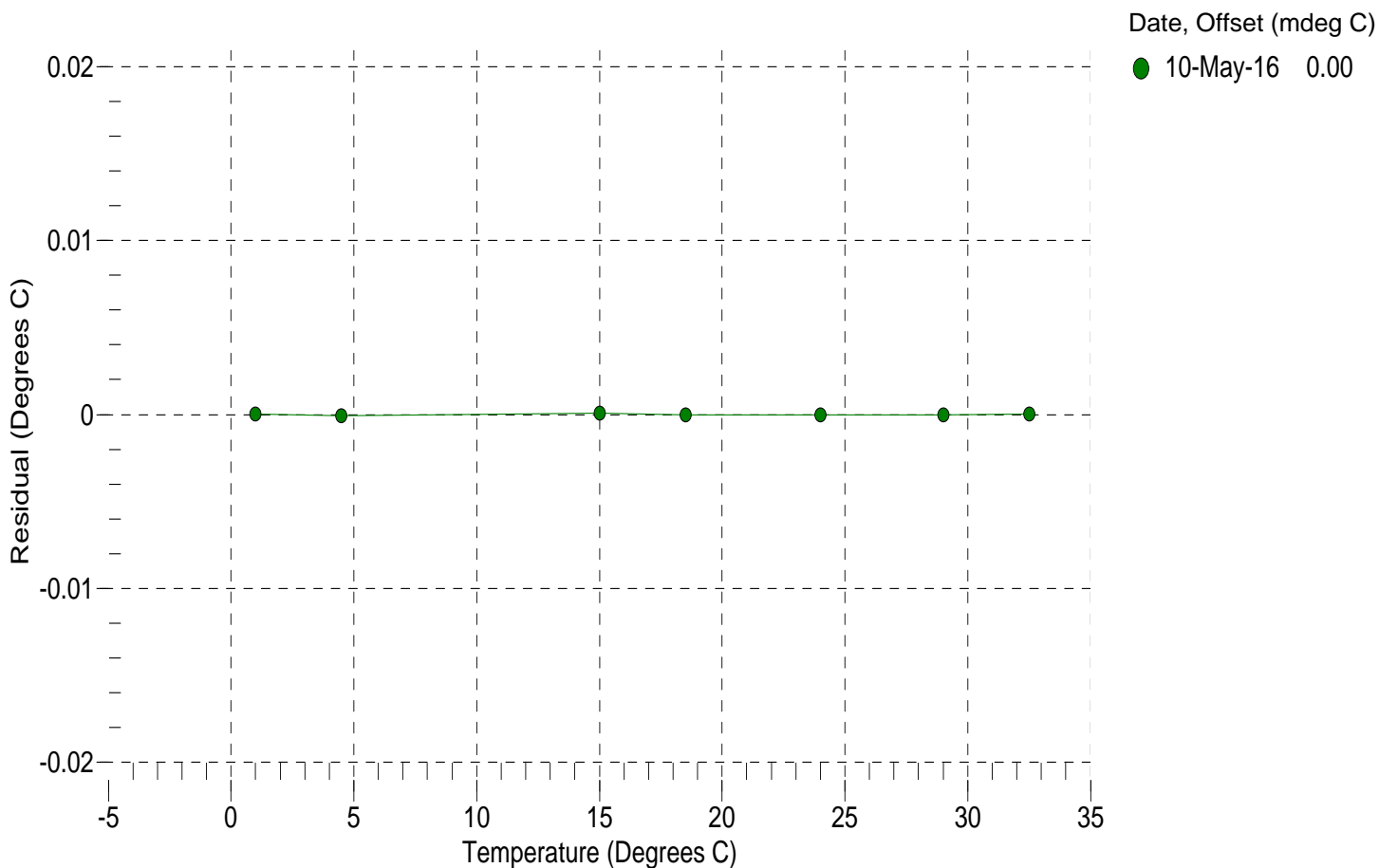
a0 = -8.576539e-004
a1 = 2.941206e-004
a2 = -3.902892e-006
a3 = 1.512059e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	16571098.1	1.0000	0.0000
4.5000	14134725.0	4.4999	-0.0001
15.0000	8946724.0	15.0001	0.0001
18.5000	7730046.3	18.5000	-0.0000
23.9940	6182074.8	23.9940	-0.0000
29.0000	5074271.4	29.0000	-0.0000
32.5000	4434721.8	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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CALIBRATION DATE: 10-May-16

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

COEFFICIENTS:

g = -9.875896e-001
h = 1.423460e-001
i = -3.585351e-004
j = 4.648193e-005

CPcor = -9.5700e-008
CTcor = 3.2500e-006
WBOTC = -1.1994e-006

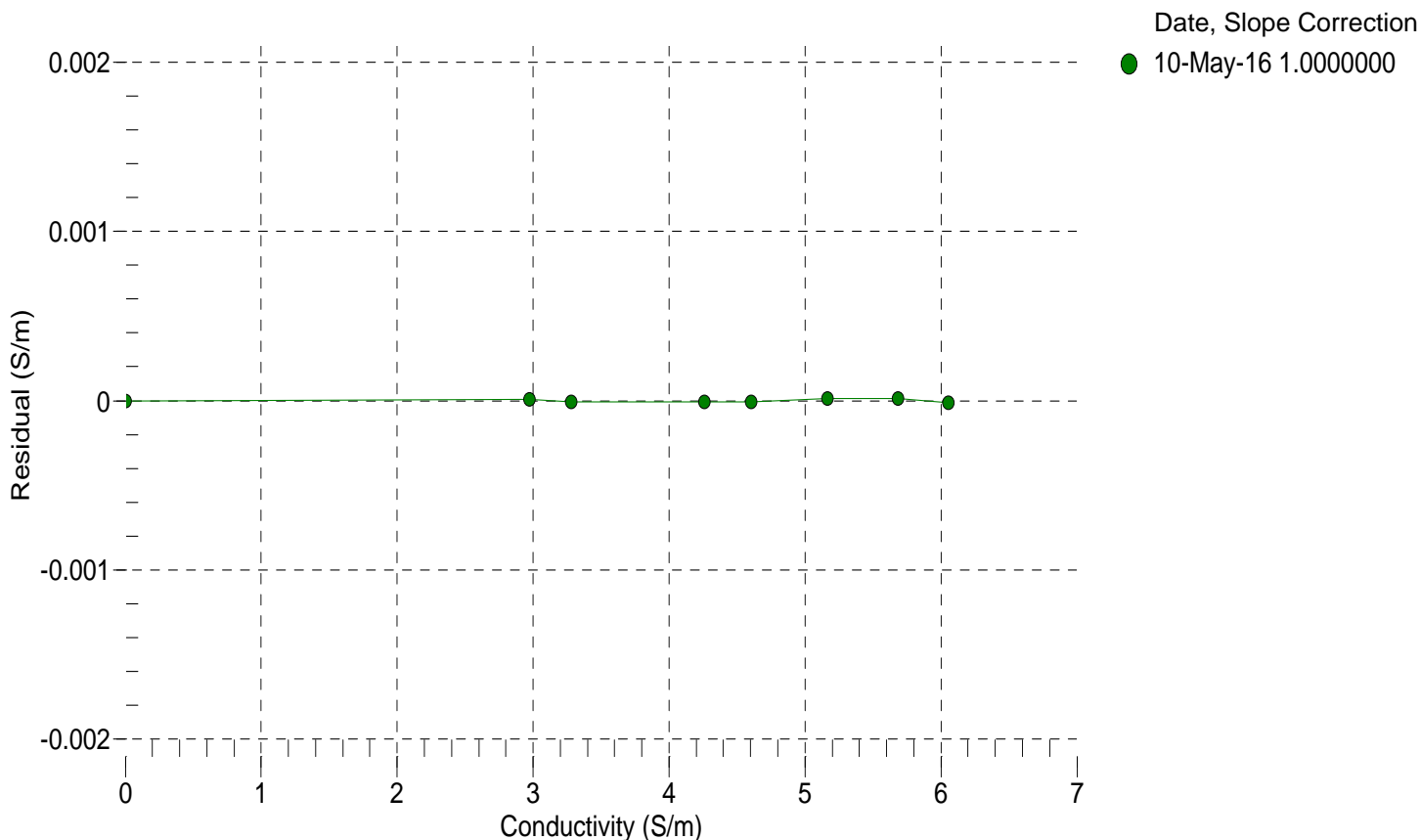
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2639.81	0.00000	0.00000
1.0000	34.7808	2.97322	5286.06	2.97323	0.00001
4.5000	34.7608	3.28000	5486.44	3.28000	-0.00001
15.0000	34.7186	4.26089	6082.21	4.26089	-0.00001
18.5000	34.7098	4.60576	6277.96	4.60575	-0.00001
23.9940	34.7002	5.16264	6581.47	5.16265	0.00001
29.0000	34.6952	5.68471	6853.44	5.68473	0.00001
32.5000	34.6927	6.05687	7040.69	6.05686	-0.00001

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

t = temperature (°C); p = pressure (decibars); δ = CTcor; ϵ = CPcor;

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

$$\text{Residual (Siemens/meter)} = \text{instrument conductivity} - \text{bath conductivity}$$



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SENSOR SERIAL NUMBER: 8469
CALIBRATION DATE: 06-May-16

SBE 41 PRESSURE CALIBRATION DATA
2900 psia S/N 4940376

COEFFICIENTS:

PA0 =	5.018314e+000	PTCA0 =	1.312645e+005
PA1 =	3.817308e-004	PTCA1 =	3.683920e+002
PA2 =	1.049067e-013	PTCA2 =	1.073839e+001
PTHA0 =	3.110572e+002	PTCB0 =	1.083898e+002
PTHA1 =	-8.612954e-005	PTCB1 =	-3.075377e-003
PTHA2 =	2.254794e-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)
14.65	169940.7	3720778.2	14.77	0.00	32.50	3567346.80	182533.90
591.54	1679428.2	3719725.8	591.57	0.00	29.00	3617344.20	178941.17
1168.37	3187942.0	3719174.4	1168.49	0.00	23.99	3689196.80	174258.77
1745.24	4695099.3	3718693.4	1745.37	0.00	18.50	3768482.20	169728.80
2322.01	6200946.6	3718226.2	2322.23	0.01	15.00	3819241.00	167151.79
2898.79	7704334.4	3717752.2	2898.62	-0.01	4.50	3972392.80	161087.02
2322.00	6200479.9	3717786.6	2322.04	0.00	1.00	4023711.80	159617.96
1745.29	4694937.8	3717838.4	1745.29	0.00			
1168.36	3186909.9	3717798.4	1168.07	-0.01	TEMPERATURE (°C)	SPAN (mV)	
591.37	1678383.2	3717842.2	591.13	-0.01	-4.12	108.40	
14.64	169865.9	3717526.0	14.67	0.00	35.68	108.28	

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)

● 06-May-16 0.00

