



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-9780  
Instrument Firmware Version: V 7.2.5  
Zero Conductivity Frequency: 2629.26  
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	10650988	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 9780  
 CALIBRATION DATE: 16-May-17

SBE 41 TEMPERATURE CALIBRATION DATA  
 ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

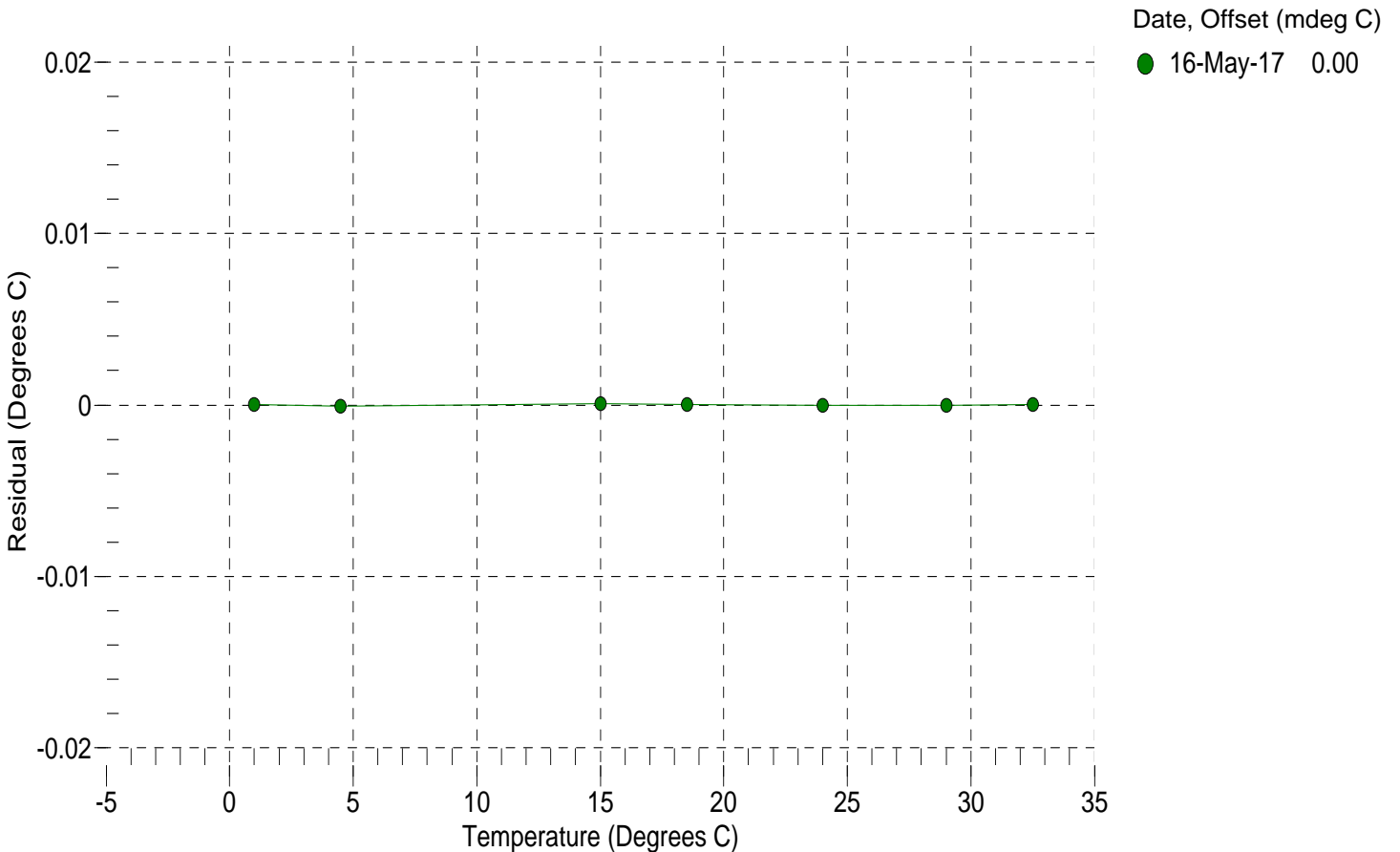
a0 = -8.358136e-004  
 a1 = 2.875643e-004  
 a2 = -3.490970e-006  
 a3 = 1.414136e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	17654404.6	1.0000	0.0000
4.5000	15054476.6	4.4999	-0.0001
15.0000	9521316.2	15.0001	0.0001
18.5000	8224453.6	18.5000	0.0000
23.9940	6575050.2	23.9940	-0.0000
29.0000	5395063.3	29.0000	-0.0000
32.5000	4714033.7	32.5000	0.0000

n = Instrument Output (counts)

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

Residual (°C) = instrument temperature - bath temperature





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SENSOR SERIAL NUMBER: 9780  
 CALIBRATION DATE: 16-May-17

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

COEFFICIENTS:

g = -9.996348e-001      CPcor = -9.5700e-008  
 h = 1.452303e-001      CTcor = 3.2500e-006  
 i = -3.626051e-004      WBOTC = 2.2184e-007  
 j = 4.696033e-005

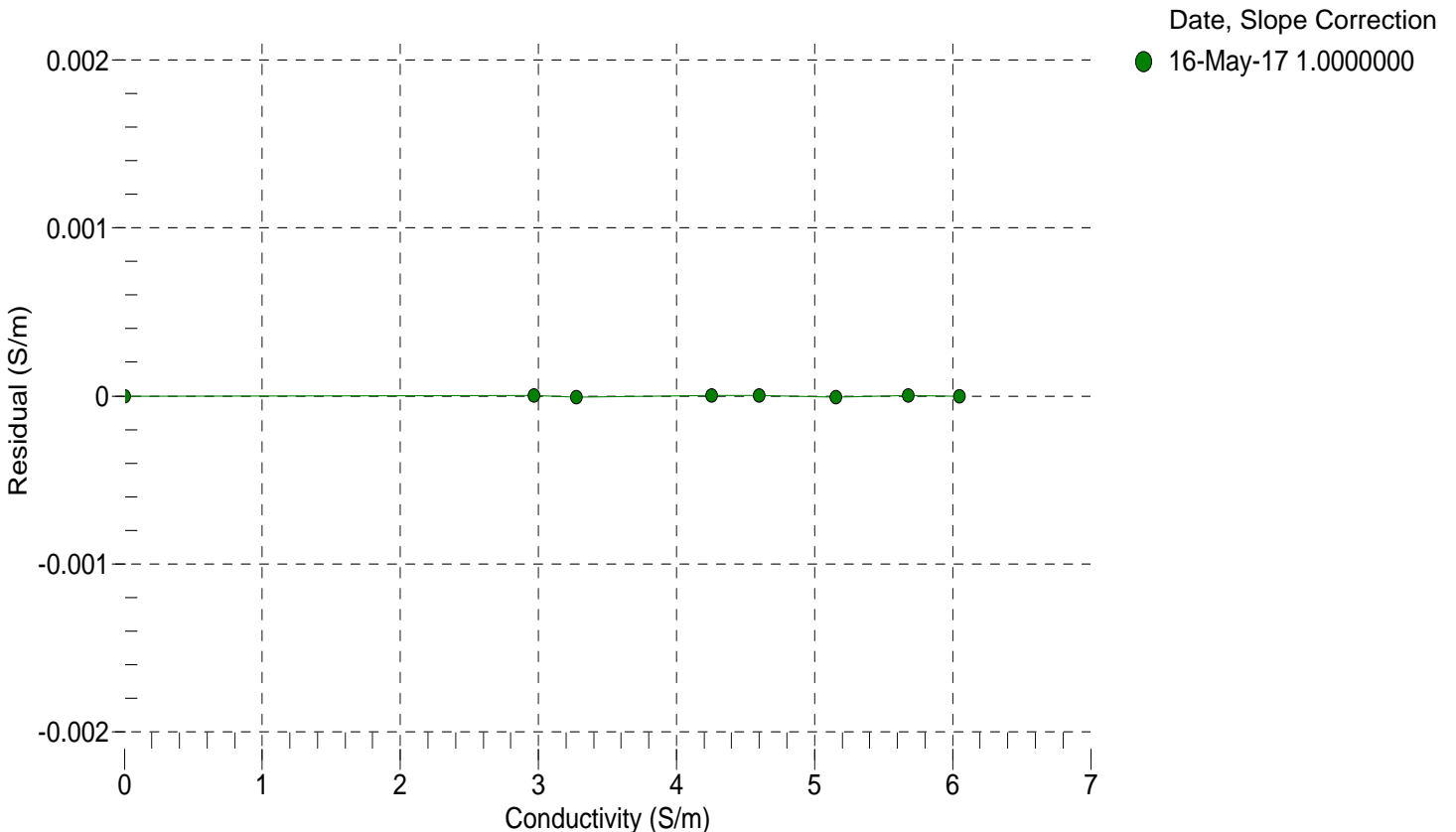
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2629.26	0.00000	0.00000
1.0000	34.7374	2.96986	5239.08	2.96987	0.00000
4.5000	34.7178	3.27635	5437.07	3.27634	-0.00001
15.0000	34.6756	4.25618	6025.85	4.25618	0.00000
18.5000	34.6669	4.60068	6219.35	4.60068	0.00000
23.9940	34.6575	5.15699	6519.39	5.15699	-0.00001
29.0000	34.6527	5.67853	6788.31	5.67854	0.00000
32.5000	34.6507	6.05037	6973.50	6.05037	-0.00000

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

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

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

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





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SENSOR SERIAL NUMBER: 9780  
 CALIBRATION DATE: 12-May-17

SBE 41 PRESSURE CALIBRATION DATA  
 2900 psia S/N 10650988

COEFFICIENTS:

PA0 =	8.758382e-002	PTCA0 =	-3.375389e+003
PA1 =	3.890010e-004	PTCA1 =	9.156710e-001
PA2 =	-2.773543e-013	PTCA2 =	4.513294e-001
PTHA0 =	3.027060e+002	PTCB0 =	2.530074e+001
PTHA1 =	-6.072460e-005	PTCB1 =	1.503759e-004
PTHA2 =	-1.221222e-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)
14.59	34314.1	4267197.4	14.66	0.00	32.50	4109974.60	36085.10
591.78	1519862.9	4264604.2	591.82	0.00	29.00	4159413.40	36090.69
1169.01	3008903.4	4263350.8	1169.11	0.00	23.99	4229937.00	36004.93
1746.29	4501007.4	4262232.4	1746.36	0.00	18.50	4307157.00	35799.17
2323.62	5996577.0	4261148.6	2323.70	0.00	15.00	4356254.80	35671.97
2900.89	7494822.1	4259808.8	2900.83	-0.00	4.50	4502965.80	35675.90
2323.55	5996193.6	4259690.2	2323.55	-0.00	1.00	4551790.60	35643.47
1746.45	4501150.1	4259385.0	1746.41	-0.00			
1168.82	3007897.6	4259199.2	1168.72	-0.00			
591.52	1518715.3	4259094.0	591.37	-0.01	TEMPERATURE (°C)	SPAN (mV)	
14.59	34123.3	4258935.6	14.58	-0.00	-4.90	25.30	
					35.00	25.31	

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)

● 12-May-17 -0.00

