



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-10063  
Instrument Firmware Version: V 7.2.5  
Zero Conductivity Frequency: 2649.98  
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	10717049	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 10063  
 CALIBRATION DATE: 29-Aug-17

SBE 41 TEMPERATURE CALIBRATION DATA  
 ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

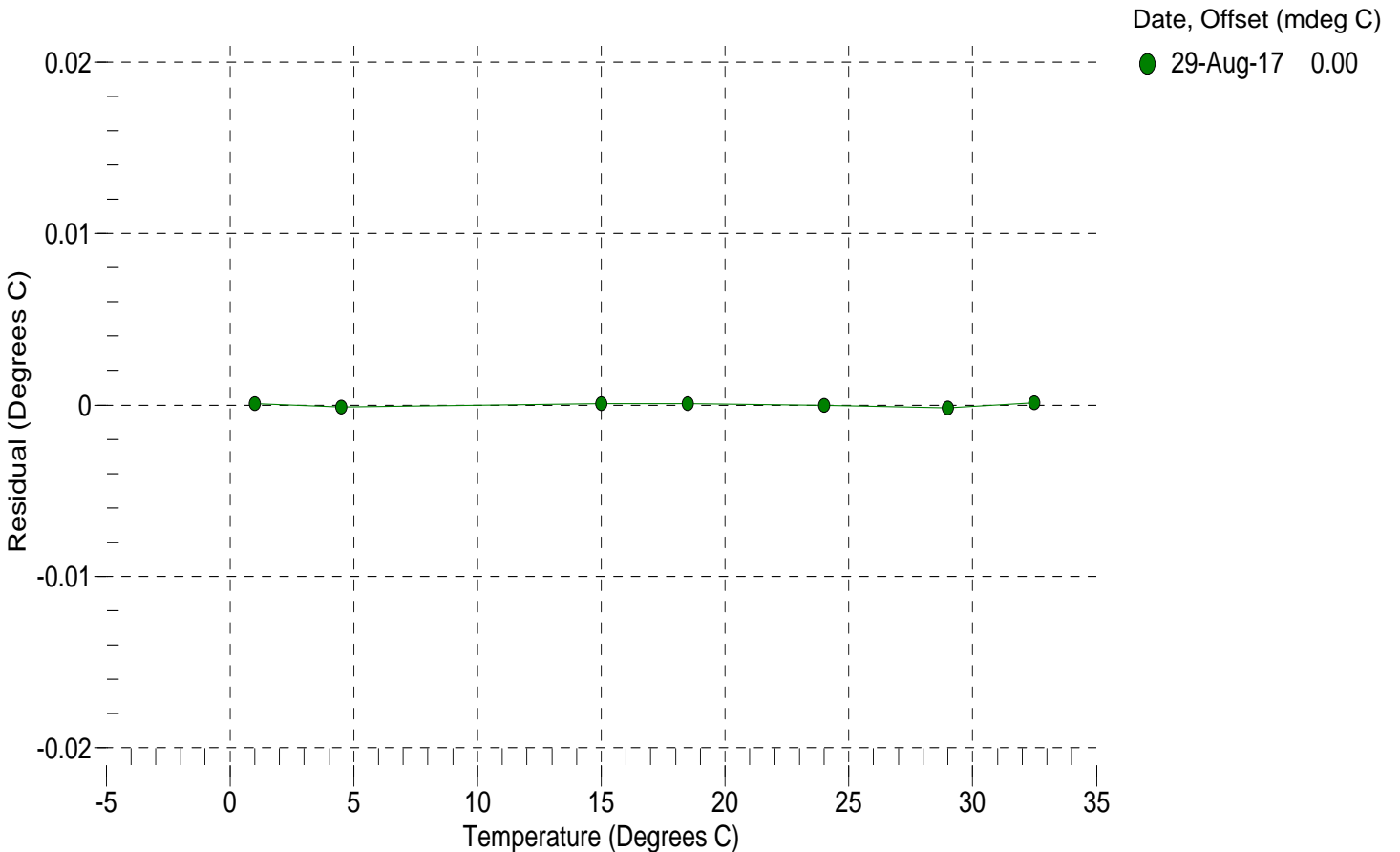
a0 = -7.857780e-004  
 a1 = 2.881219e-004  
 a2 = -3.518707e-006  
 a3 = 1.435726e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0001	14271892.9	1.0002	0.0001
4.5000	12169501.5	4.4999	-0.0001
15.0000	7695479.7	15.0001	0.0001
18.5002	6646940.5	18.5003	0.0001
23.9940	5313606.8	23.9940	-0.0000
29.0000	4359793.2	28.9998	-0.0002
32.5000	3809295.1	32.5001	0.0001

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: 10063  
 CALIBRATION DATE: 29-Aug-17

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

COEFFICIENTS:

g = -1.012168e+000      CPcor = -9.5700e-008  
 h = 1.448416e-001      CTcor = 3.2500e-006  
 i = -4.057556e-004      WBOTC = 4.1821e-006  
 j = 5.048417e-005

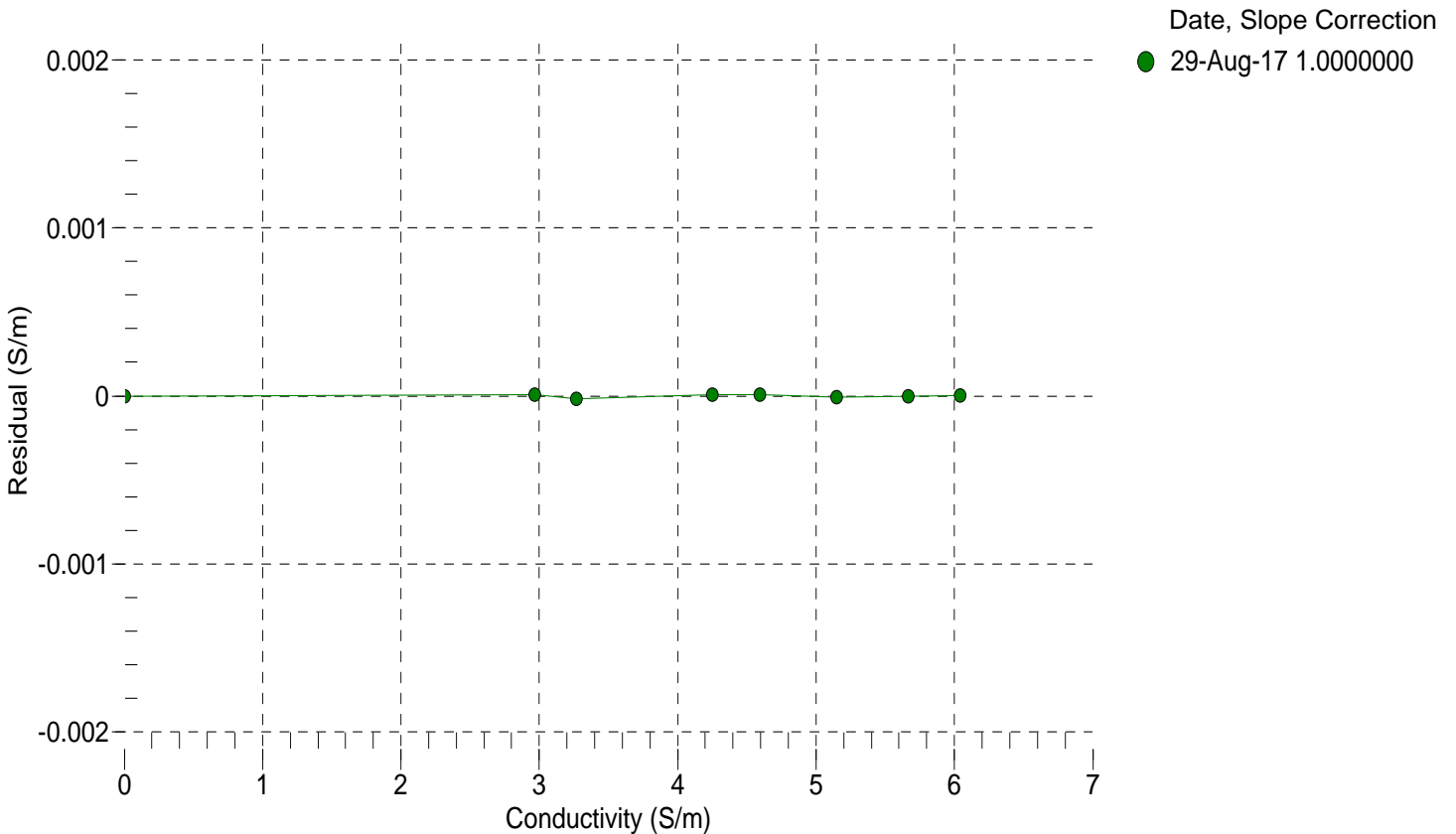
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2649.98	0.00000	0.00000
1.0001	34.6633	2.96414	5252.95	2.96415	0.00001
4.5000	34.6442	3.27008	5450.76	3.27007	-0.00002
15.0000	34.6021	4.24811	6039.04	4.24811	0.00001
18.5002	34.5933	4.59199	6232.40	4.59199	0.00001
23.9940	34.5838	5.14723	6532.21	5.14723	-0.00001
29.0000	34.5786	5.66775	6800.91	5.66775	-0.00000
32.5000	34.5753	6.03870	6985.88	6.03870	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;

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

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





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SENSOR SERIAL NUMBER: 10063  
 CALIBRATION DATE: 22-Aug-17

SBE 41 PRESSURE CALIBRATION DATA  
 2900 psia S/N 10717049

COEFFICIENTS:

PA0 =	3.008132e-001	PTCA0 =	-7.021736e+003
PA1 =	3.940711e-004	PTCA1 =	5.219088e+001
PA2 =	-2.897477e-013	PTCA2 =	-7.675135e-001
PTHA0 =	3.352544e+002	PTCB0 =	2.510375e+001
PTHA1 =	-6.348648e-005	PTCB1 =	-6.500000e-004
PTHA2 =	-1.387578e-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)
14.61	30043.3	4502504.6	14.61	0.00	32.50	4354374.40	31542.20
591.23	1494146.6	4498697.6	591.24	0.00	29.00	4400630.20	31613.78
1167.98	2961846.3	4497161.8	1168.04	0.00	23.99	4466766.80	31607.21
1744.83	4432773.3	4495968.2	1744.86	0.00	18.50	4539139.00	31414.78
2321.64	5906943.9	4494930.6	2321.70	0.00	15.00	4584899.20	31250.84
2898.46	7384169.0	4493938.8	2898.46	0.00	4.50	4722272.80	30913.78
2321.63	5906629.9	4493971.0	2321.58	-0.00	1.00	4768191.00	30794.55
1744.94	4432862.4	4493928.0	1744.90	-0.00			
1167.96	2961396.7	4493890.2	1167.87	-0.00			
591.10	1493864.5	4493632.2	591.13	0.00	TEMPERATURE (°C)	SPAN (mV)	
14.61	29991.9	4492922.2	14.59	-0.00	-5.00	25.11	
					35.00	25.08	

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)

● 22-Aug-17 -0.00

