



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-10595  
Instrument Firmware Version: V 7.2.5  
Zero Conductivity Frequency: 2660.95  
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	10817710	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 10595  
 CALIBRATION DATE: 11-Feb-18

SBE 41 TEMPERATURE CALIBRATION DATA  
 ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

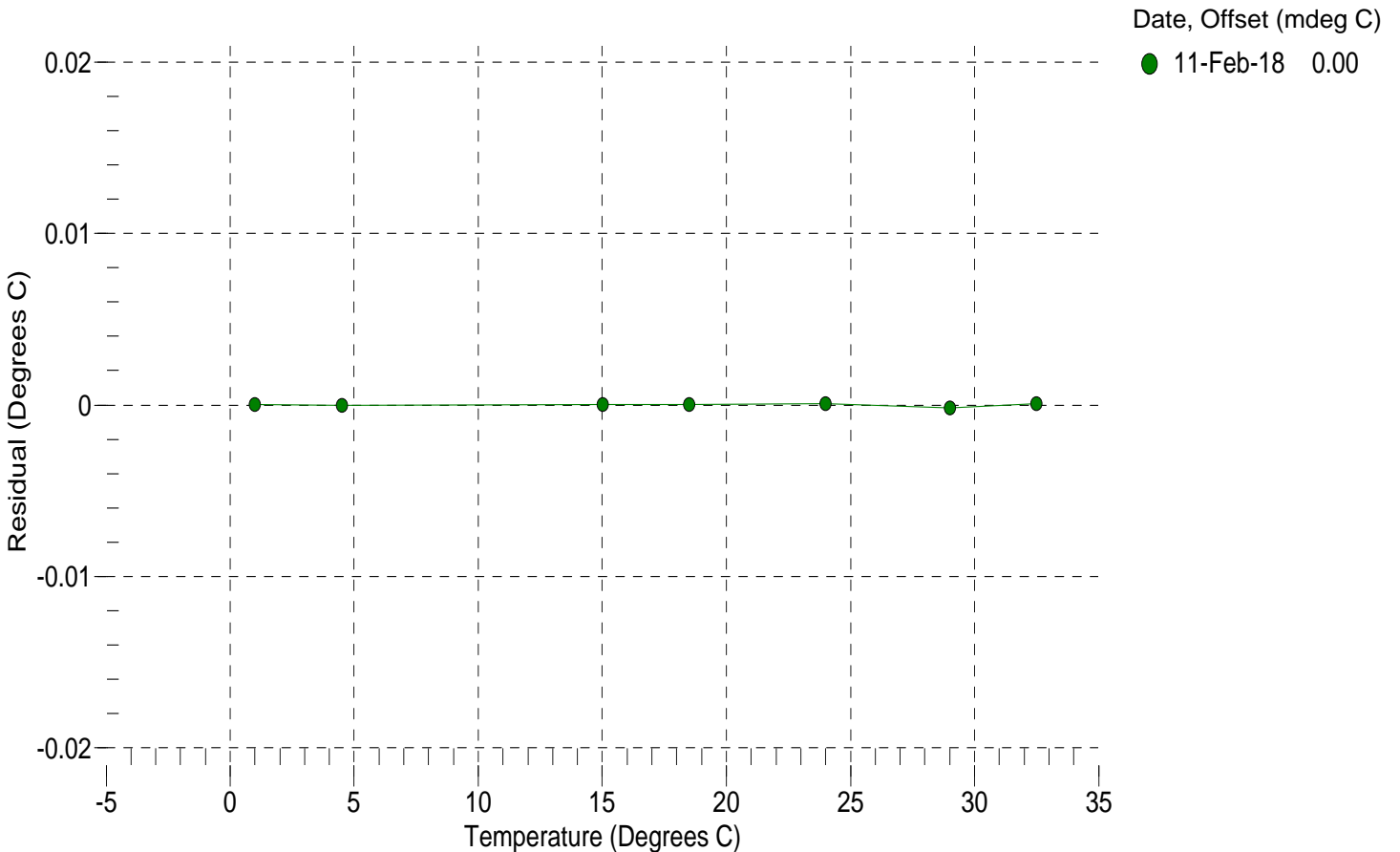
a0 = -7.604566e-004  
 a1 = 2.773562e-004  
 a2 = -2.866764e-006  
 a3 = 1.294672e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	16288461.1	1.0000	0.0000
4.5000	13890141.9	4.5000	-0.0000
15.0000	8785857.7	15.0000	0.0000
18.5000	7589375.5	18.5000	0.0000
23.9940	6067521.7	23.9941	0.0001
29.0000	4978789.9	28.9998	-0.0002
32.5001	4350313.0	32.5002	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: 10595  
 CALIBRATION DATE: 11-Feb-18

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

COEFFICIENTS:

g = -1.005895e+000      CPcor = -9.5700e-008  
 h = 1.425716e-001      CTcor = 3.2500e-006  
 i = -3.031516e-004      WBOTC = -1.2525e-007  
 j = 4.203952e-005

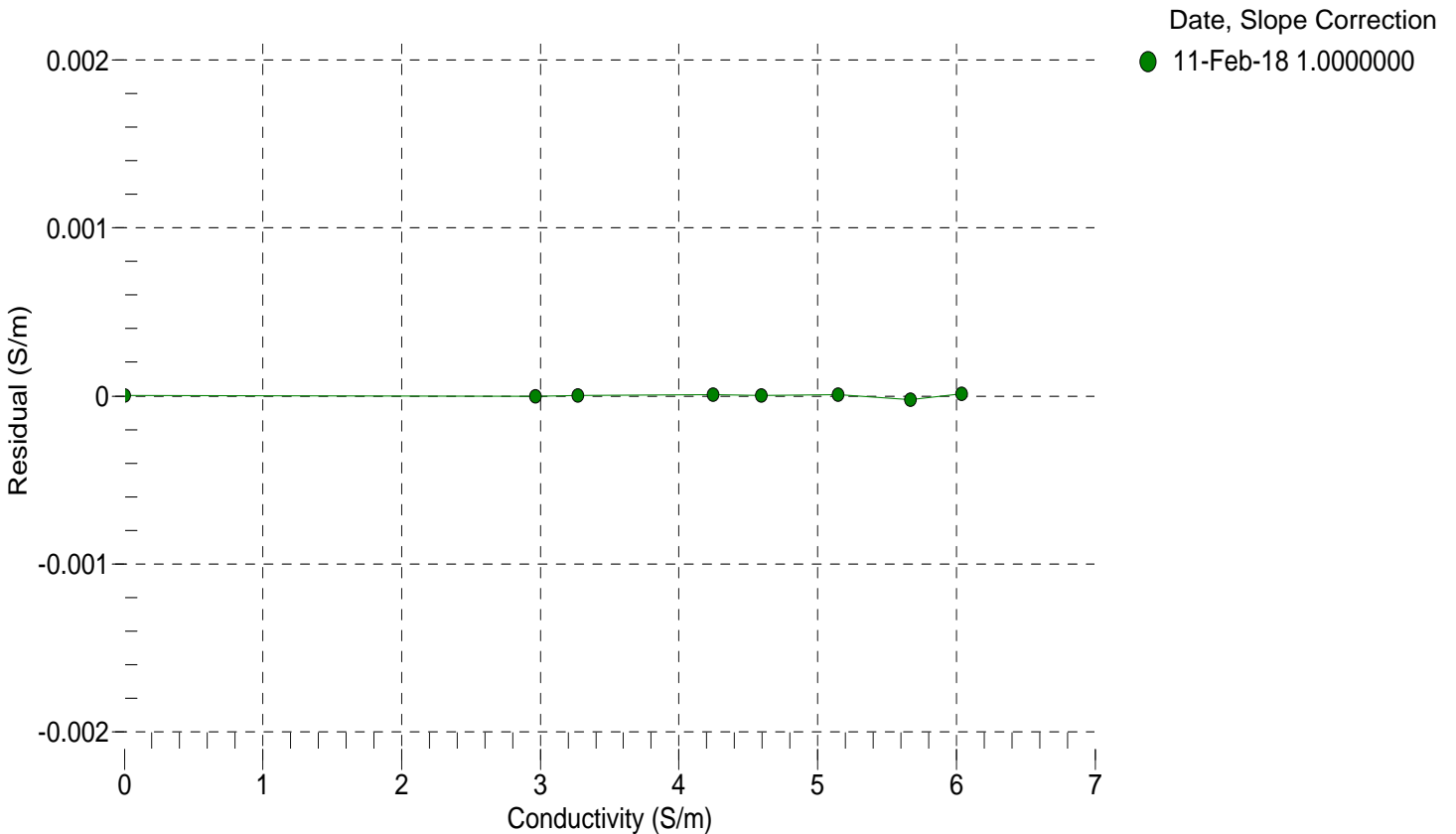
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2660.95	0.00000	0.00000
1.0000	34.6564	2.96360	5284.50	2.96359	-0.00000
4.5000	34.6373	3.26950	5483.80	3.26950	0.00000
15.0000	34.5970	4.24755	6076.54	4.24755	0.00001
18.5000	34.5890	4.59146	6271.39	4.59146	0.00000
23.9940	34.5808	5.14684	6573.56	5.14684	0.00001
29.0000	34.5767	5.66747	6844.38	5.66745	-0.00002
32.5001	34.5739	6.03849	7030.84	6.03851	0.00001

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

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: 10595  
 CALIBRATION DATE: 08-Feb-18

SBE 41 PRESSURE CALIBRATION DATA  
 2900 psia S/N 10817710

COEFFICIENTS:

PA0 =	6.444627e-001	PTCA0 =	-6.192520e+003
PA1 =	3.894053e-004	PTCA1 =	8.700024e+001
PA2 =	-2.876787e-013	PTCA2 =	-4.580335e-001
PTHA0 =	3.477159e+002	PTCB0 =	3.127078e+005
PTHA1 =	-6.301012e-005	PTCB1 =	7.806338e+000
PTHA2 =	-1.695420e-012	PTCB2 =	-4.539778e-002

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)
14.68	31621.5	4606865.0	14.72	0.00	32.50	4465987.00	33468.50
592.10	1516949.8	4603784.2	592.17	0.00	29.00	4510679.40	33341.53
1169.64	3006073.1	4602315.6	1169.82	0.01	23.99	4574545.40	33050.02
1747.32	4498235.6	4601194.4	1747.37	0.00	18.50	4644369.40	32633.02
2325.03	5994002.1	4600225.4	2325.04	0.00	15.00	4688862.40	32316.01
2902.60	7492850.4	4599308.2	2902.60	-0.00	4.50	4821481.60	31530.72
2324.99	5993891.2	4599360.0	2324.99	-0.00	1.00	4865554.40	31286.98
1747.25	4497833.3	4599358.8	1747.21	-0.00			
1169.81	3005555.0	4599359.2	1169.61	-0.01			
592.24	1517055.3	4599202.6	592.20	-0.00			
14.69	31499.8	4596284.4	14.65	-0.00			

TEMPERATURE (°C)	SPAN
2.18	312724.59
23.04	312863.53
32.58	312913.90

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)  
 ● 08-Feb-18 -0.00

