



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-12236  
Instrument Firmware Version: V 7.2.5  
Zero Conductivity Frequency: 2557.61  
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	11325627	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 12236  
 CALIBRATION DATE: 09-Oct-19

SBE 41 TEMPERATURE CALIBRATION DATA  
 ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

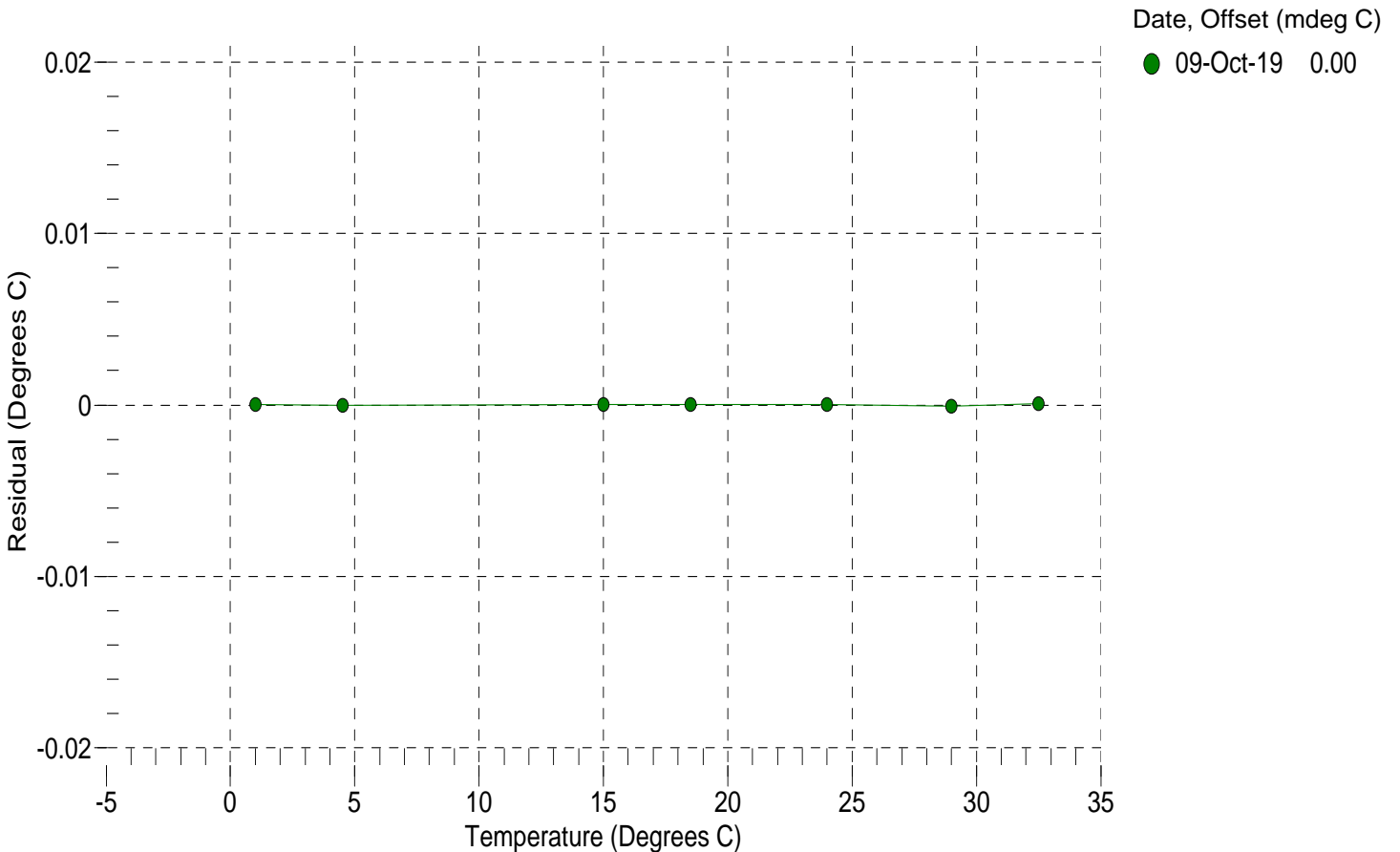
a0 = -8.888132e-004  
 a1 = 2.886069e-004  
 a2 = -3.413266e-006  
 a3 = 1.429702e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
0.9997	18063481.8	0.9997	0.0000
4.5000	15445653.5	4.5000	-0.0000
15.0000	9846262.8	15.0000	0.0000
18.5000	8526500.9	18.5000	0.0000
23.9940	6842629.0	23.9940	0.0000
29.0000	5633562.0	28.9999	-0.0001
32.5001	4933659.8	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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 CALIBRATION DATE: 09-Oct-19

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

COEFFICIENTS:

g = -1.010743e+000      CPcor = -9.5700e-008  
 h = 1.553250e-001      CTcor = 3.2500e-006  
 i = -4.725701e-004      WBOTC = -9.7737e-008  
 j = 6.102266e-005

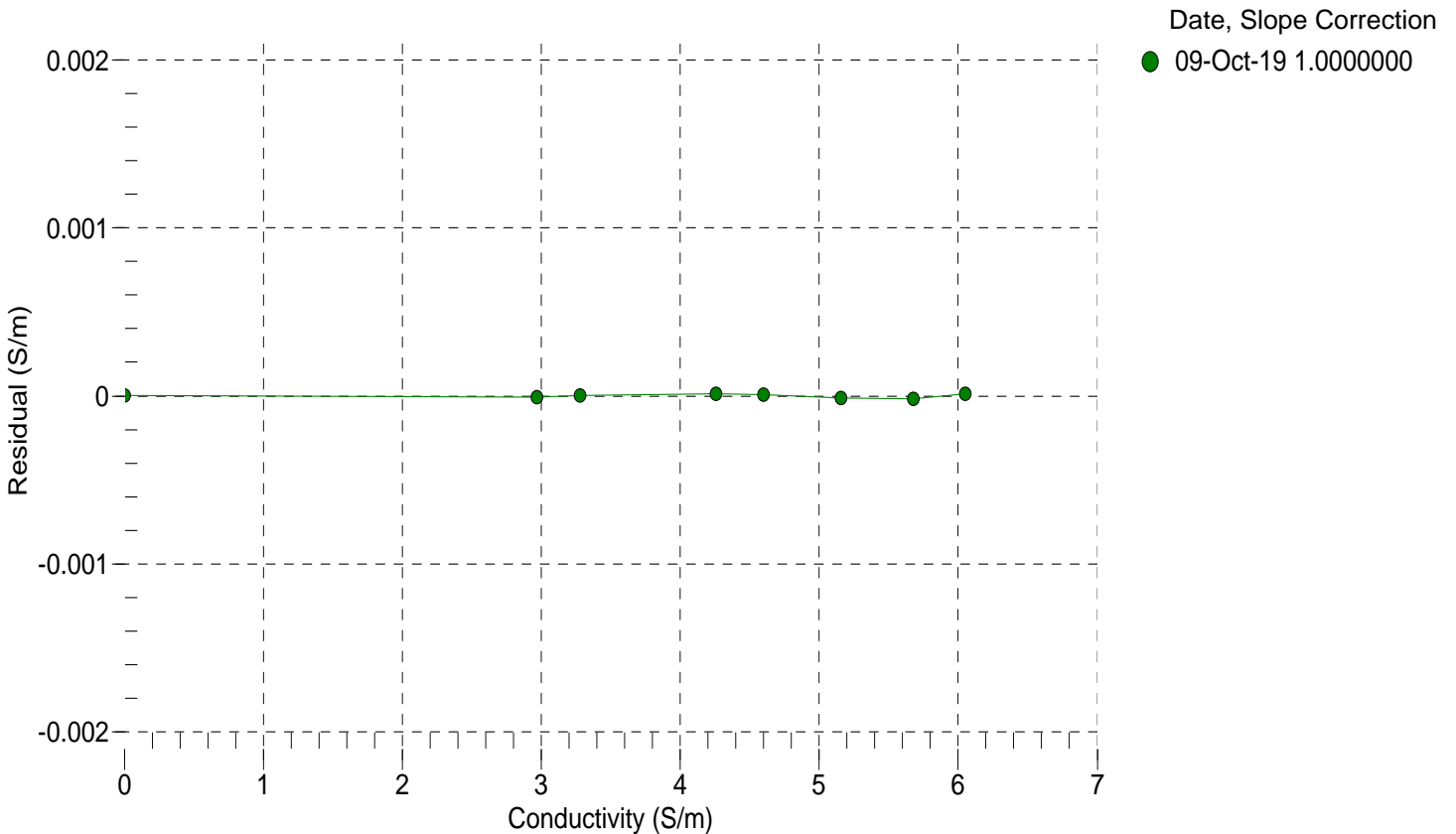
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2557.61	0.00000	0.00000
0.9997	34.7453	2.97045	5076.27	2.97044	-0.00001
4.5000	34.7256	3.27701	5267.60	3.27701	0.00000
15.0000	34.6840	4.25710	5836.56	4.25711	0.00001
18.5000	34.6754	4.60169	6023.55	4.60170	0.00001
23.9940	34.6662	5.15814	6313.48	5.15813	-0.00001
29.0000	34.6615	5.67981	6573.33	5.67980	-0.00002
32.5001	34.6587	6.05162	6752.23	6.05163	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: 12236  
 CALIBRATION DATE: 02-Oct-19

SBE 41 PRESSURE CALIBRATION DATA  
 2900 psia S/N 11325627

COEFFICIENTS:

PA0 =	3.776175e-001	PTCA0 =	2.287606e+003
PA1 =	3.927911e-004	PTCA1 =	1.082944e+002
PA2 =	-2.562415e-013	PTCA2 =	-2.946284e+000
PTHA0 =	2.956916e+002	PTCB0 =	3.141764e+005
PTHA1 =	-6.198417e-005	PTCB1 =	1.562492e+001
PTHA2 =	-8.965581e-013	PTCB2 =	4.278297e-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)
14.65	39814.0	4168870.0	14.72	0.00	32.50	4013190.20	40591.20
590.89	1509454.7	4167394.2	590.74	-0.00	29.00	4063651.20	40863.24
1167.40	2983648.2	4166431.2	1167.43	0.00	23.99	4135895.20	41126.65
1743.82	4460276.5	4165320.6	1743.96	0.00	18.50	4215019.00	41207.79
2320.34	5939496.4	4164365.8	2320.37	0.00	15.00	4265394.40	41139.20
2896.71	7421316.2	4163478.6	2896.67	-0.00	4.50	4415591.20	40590.14
2320.35	5939351.2	4163587.8	2320.31	-0.00	1.00	4465963.40	40334.32
1744.27	4461041.0	4163625.4	1744.25	-0.00			
1167.45	2983731.6	4163468.4	1167.45	0.00			
590.76	1509316.6	4163475.4	590.68	-0.00			
14.65	39714.3	4162081.6	14.69	0.00			

TEMPERATURE (°C)	SPAN
1.14	314194.15
20.15	314508.58
31.98	314719.84

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)

● 02-Oct-19 0.00

