



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-17117  
Instrument Firmware Version: 7.2.5  
Zero Conductivity Frequency: 2638.94  
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	12049459	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 17117  
 CALIBRATION DATE: 06-Feb-22

SBE 41 TEMPERATURE CALIBRATION DATA  
 ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

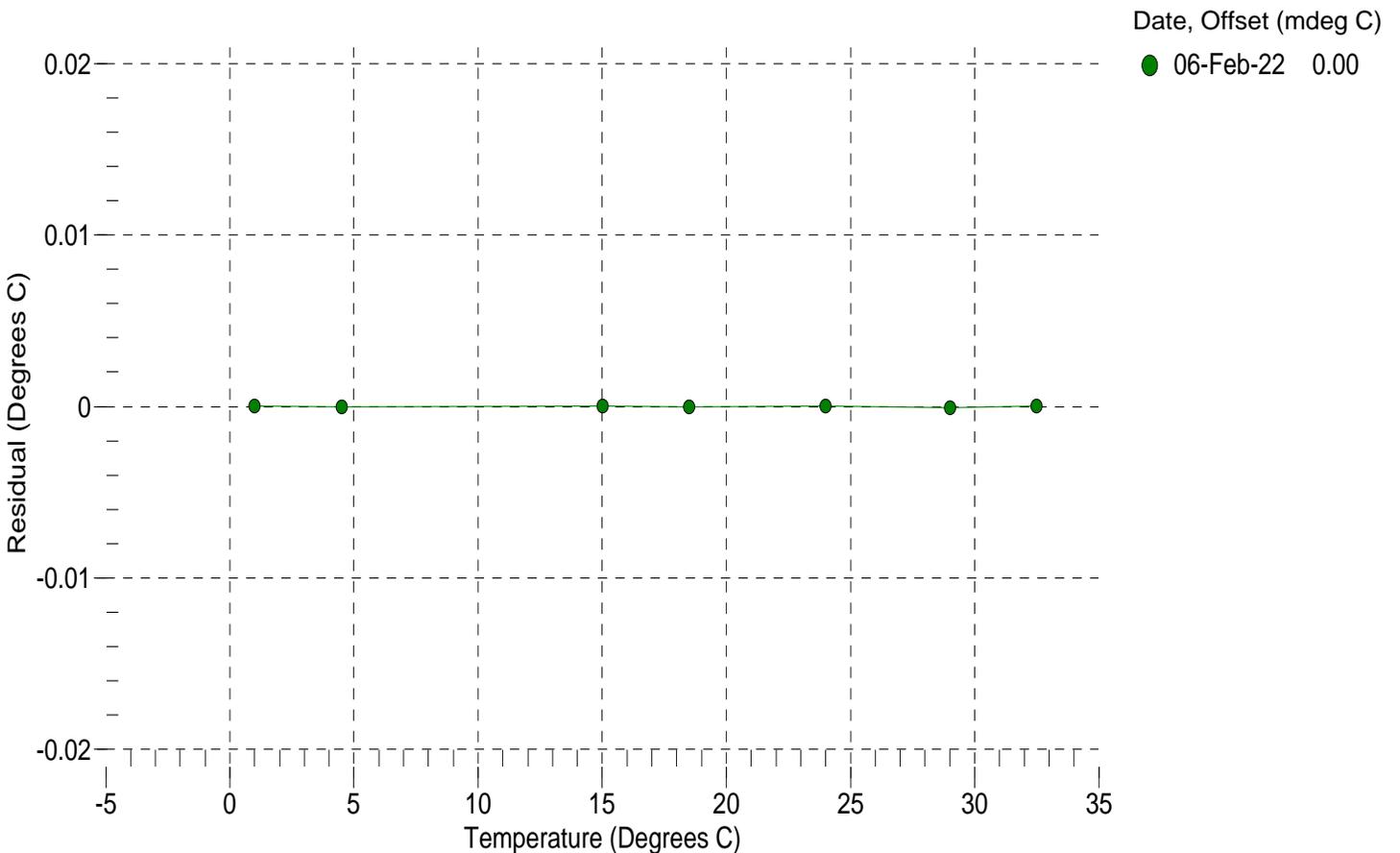
a0 = -7.687985e-004  
 a1 = 2.818786e-004  
 a2 = -3.156260e-006  
 a3 = 1.356963e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	15440818.5	1.0000	0.0000
4.5000	13164946.9	4.5000	-0.0000
15.0000	8322851.1	15.0000	0.0000
18.5000	7188266.0	18.5000	-0.0000
24.0000	5744039.5	24.0000	0.0000
29.0000	4713443.3	28.9999	-0.0001
32.5001	4117891.8	32.5001	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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 CALIBRATION DATE: 06-Feb-22

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

COEFFICIENTS:

g = -1.024592e+000      CPcor = -9.5700e-008  
 h = 1.477664e-001      CTcor = 3.2500e-006  
 i = -3.695360e-004      WBOTC = 5.0519e-007  
 j = 4.790545e-005

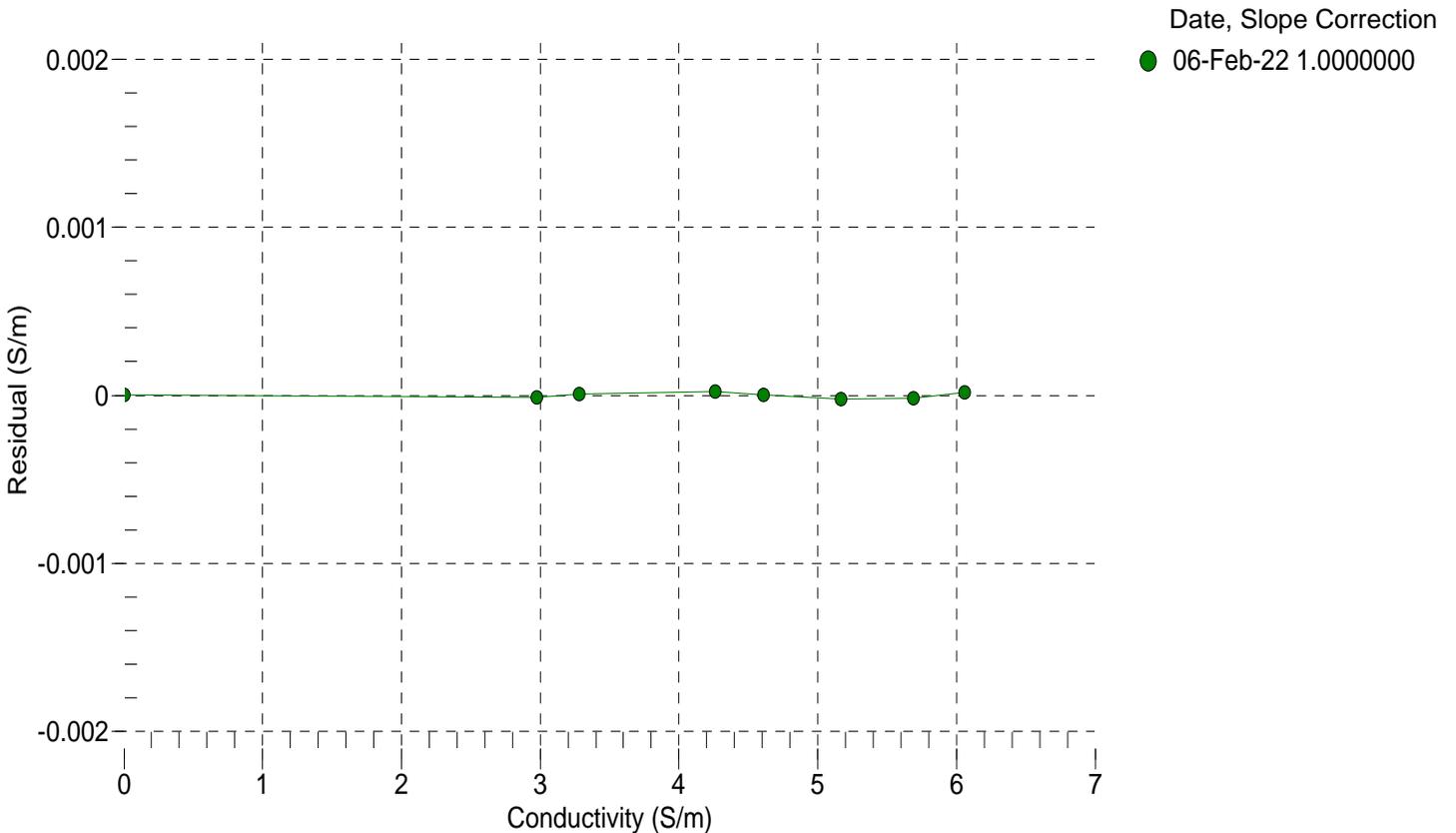
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2638.94	0.00000	0.00000
1.0000	34.8060	2.97517	5213.73	2.97515	-0.00001
4.5000	34.7871	3.28224	5409.69	3.28225	0.00001
15.0000	34.7469	4.26400	5992.63	4.26402	0.00002
18.5000	34.7385	4.60916	6184.25	4.60916	0.00000
24.0000	34.7293	5.16711	6481.73	5.16709	-0.00002
29.0000	34.7234	5.68881	6747.71	5.68879	-0.00002
32.5001	34.7184	6.06086	6930.98	6.06088	0.00002

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

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: 17117  
 CALIBRATION DATE: 04-Feb-22

SBE 41 PRESSURE CALIBRATION DATA  
 2900 psia S/N 12049459

COEFFICIENTS:

PA0 =	2.746213e-001	PTCA0 =	8.418538e+003
PA1 =	3.923476e-004	PTCA1 =	5.234171e+001
PA2 =	-2.656421e-013	PTCA2 =	-9.155026e-001
PTHA0 =	3.324154e+002	PTCB0 =	3.195406e+005
PTHA1 =	-6.179574e-005	PTCB1 =	-2.780371e+001
PTHA2 =	-1.578154e-012	PTCB2 =	5.417552e-001

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	45527.1	4514493.8	14.57	-0.00	32.50	4366424.00	47320.50
592.21	1518288.5	4514081.8	592.43	0.01	29.00	4412708.80	47420.90
1170.36	2994252.1	4513577.0	1170.38	0.00	24.00	4478619.00	47405.48
1748.48	4473473.1	4513271.0	1748.45	-0.00	18.50	4550951.40	47257.97
2326.70	5956203.7	4512931.0	2326.72	0.00	15.00	4596892.40	47161.82
2904.71	7441473.8	4512663.2	2904.80	0.00	4.50	4734069.80	46890.65
2326.62	5955727.3	4513312.6	2326.53	-0.00	1.00	4779664.60	46661.29
1748.71	4473777.8	4513903.2	1748.57	-0.00			
1170.34	2994017.7	4514573.4	1170.29	-0.00			
592.09	1517752.4	4515130.2	592.22	0.00			
14.66	45459.3	4515696.8	14.55	-0.00			

TEMPERATURE (°C)	SPAN
1.72	319494.29
20.83	319196.52
32.34	319208.02

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)  
 ● 04-Feb-22 0.00

