



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-19369  
Instrument Firmware Version: 7.2.5  
Zero Conductivity Frequency: 2625.37  
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	12406086	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 19369  
CALIBRATION DATE: 17-Jun-23

SBE 41 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

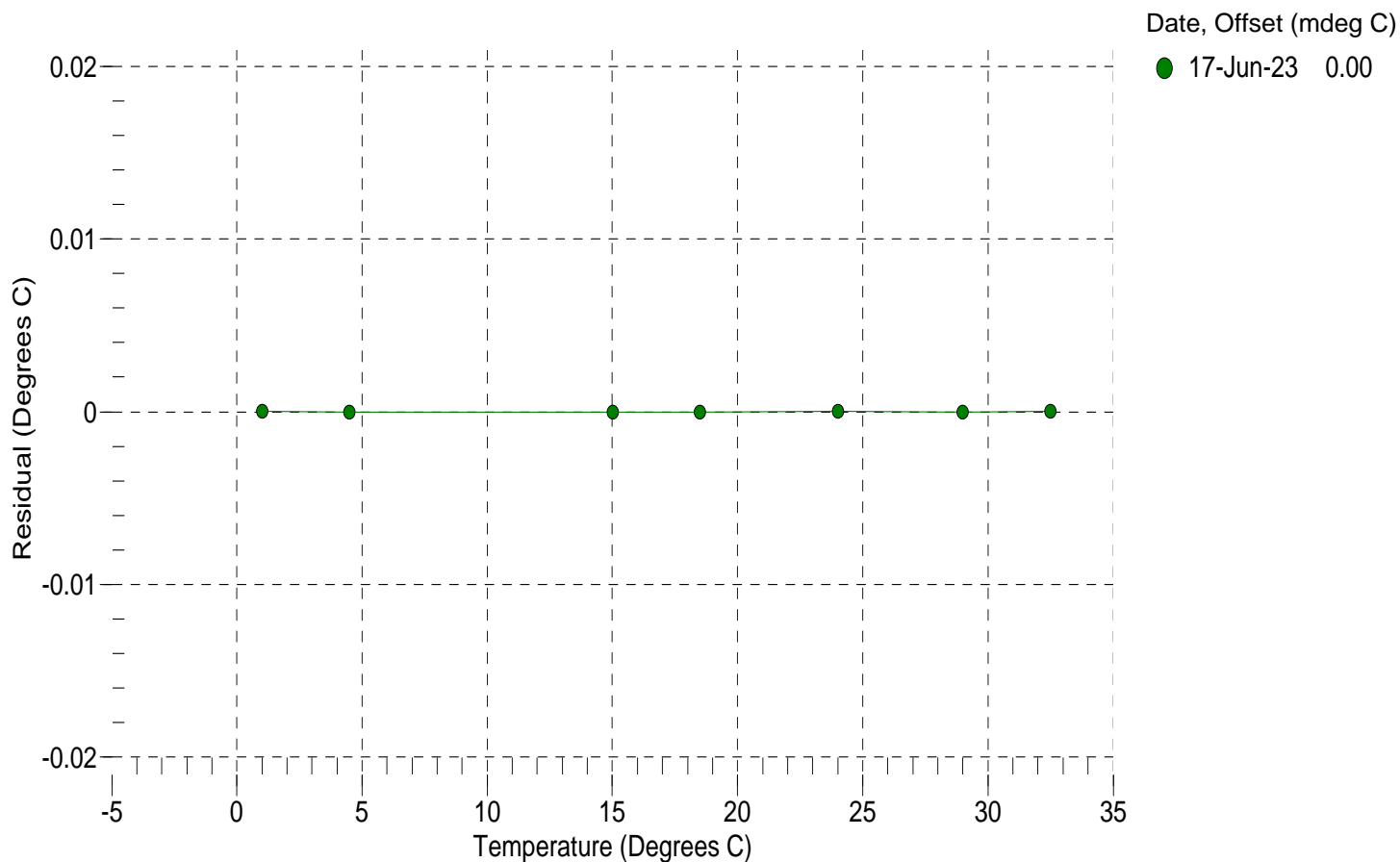
a0 = -9.106315e-004  
a1 = 3.022715e-004  
a2 = -4.278221e-006  
a3 = 1.616838e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
0.9999	15119313.8	0.9999	0.0000
4.5000	12921939.9	4.5000	-0.0000
15.0000	8225966.2	15.0000	-0.0000
18.5000	7120258.2	18.5000	-0.0000
24.0001	5708921.1	24.0001	0.0000
29.0001	4698594.9	29.0001	-0.0000
32.5000	4113329.4	32.5000	0.0000

n = Instrument Output (counts)

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

COEFFICIENTS:

g = -1.020143e+000  
h = 1.481799e-001  
i = -1.517303e-004  
j = 3.323213e-005

CPcor = -9.5700e-008  
CTcor = 3.2500e-006  
WBOTC = -1.2060e-006

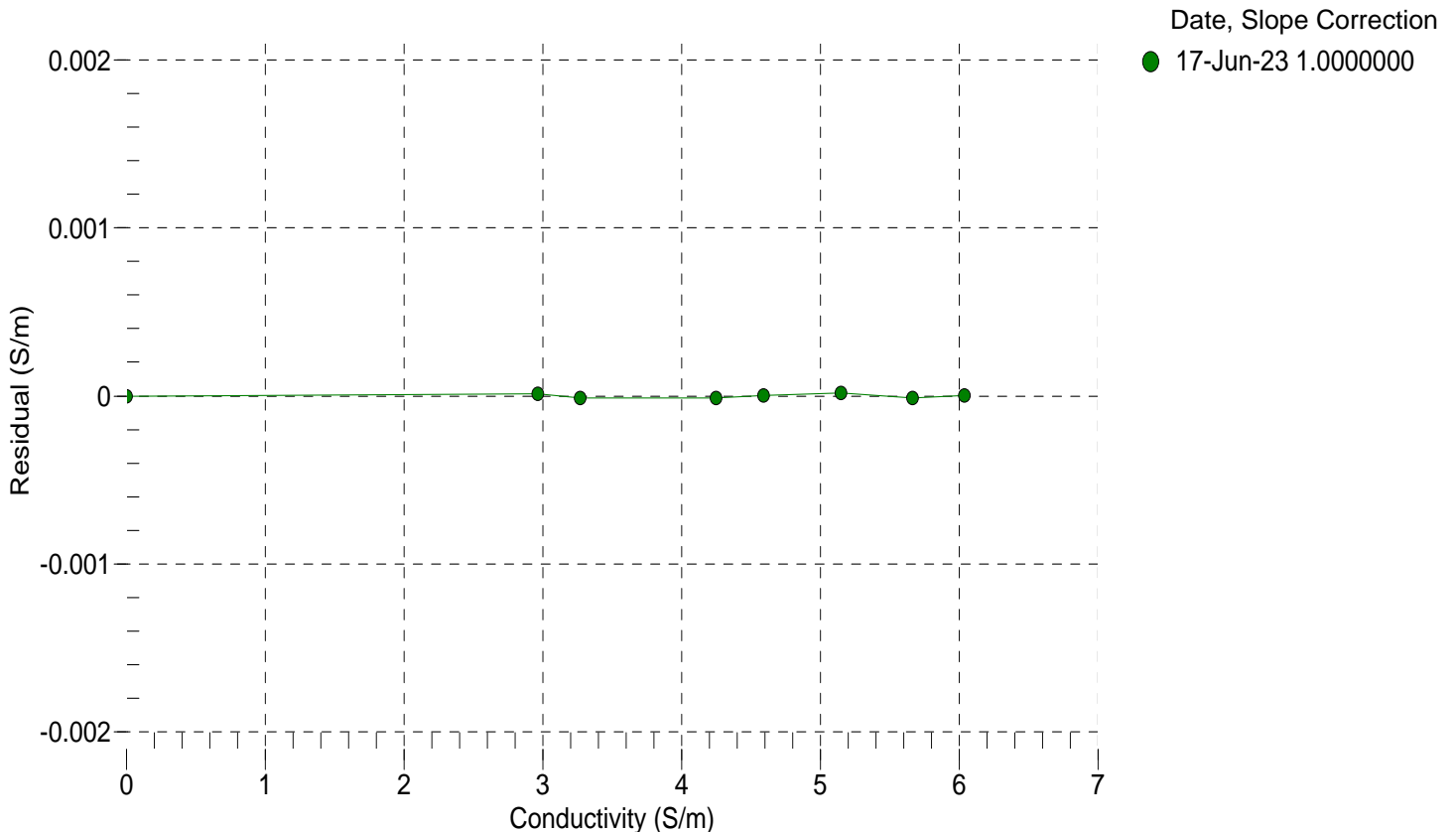
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2625.37	0.00000	0.00000
0.9999	34.6592	2.96380	5183.32	2.96382	0.00001
4.5000	34.6395	3.26968	5377.94	3.26967	-0.00001
15.0000	34.5982	4.24768	5957.03	4.24767	-0.00001
18.5000	34.5897	4.59154	6147.45	4.59155	0.00000
24.0001	34.5807	5.14745	6443.12	5.14747	0.00002
29.0001	34.5761	5.66740	6707.56	5.66738	-0.00001
32.5000	34.5706	6.03797	6889.69	6.03797	0.00000

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

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

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

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





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CALIBRATION DATE: 13-Jun-23

SBE 41 PRESSURE CALIBRATION DATA  
2900 psia S/N 12406086

COEFFICIENTS:

PA0 =	5.532306e-001	PTCA0 =	1.225876e+004
PA1 =	3.930015e-004	PTCA1 =	9.860647e+001
PA2 =	-2.754287e-013	PTCA2 =	-1.590793e+000
PTHA0 =	3.010726e+002	PTCB0 =	3.225970e+005
PTHA1 =	-6.183737e-005	PTCB1 =	1.777662e+000
PTHA2 =	-1.011564e-012	PTCB2 =	8.378131e-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)
14.50	49113.0	4217030.0	14.48	-0.00	32.50	4071993.40	50897.50
589.99	1515902.6	4212669.2	590.16	0.01	29.00	4121875.40	50941.55
1165.87	2985733.0	4209949.2	1165.84	-0.00	24.00	4193008.40	50897.76
1741.66	4459205.4	4207379.2	1741.75	0.00	18.50	4271177.20	50685.30
2317.58	5935661.0	4205009.6	2317.62	0.00	15.00	4320836.20	50485.45
2893.57	7415292.6	4202742.0	2893.53	-0.00	4.50	4469297.20	49799.48
2317.48	5935530.0	4201484.8	2317.56	0.00	1.00	4518574.20	49519.91
1741.58	4458442.6	4200340.8	1741.43	-0.01			
1165.71	2985307.4	4199158.4	1165.65	-0.00	TEMPERATURE (°C) SPAN		
589.95	1515281.0	4198070.4	589.89	-0.00	2.01	322600.92	
14.50	49182.2	4196684.8	14.49	-0.00	20.89	322670.70	
					33.01	322747.01	

y = thermistor output (counts)

t = PTHA0 + PTHA1 \* y + PTHA2 \* y<sup>2</sup>

x = instrument output - PTCA0 - PTCA1 \* t - PTCA2 \* t<sup>2</sup>

n = x \* PTCB0 / (PTCB0 + PTCB1 \* t + PTCB2 \* t<sup>2</sup>)

pressure (PSIA) = PA0 + PA1 \* n + PA2 \* n<sup>2</sup>

Residual (%FSR) = (computed pressure - true pressure) \* 100 / Full Scale Range

Date, Offset (%FSR)

● 13-Jun-23 0.00

