



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-19367  
Instrument Firmware Version: 7.2.5  
Zero Conductivity Frequency: 2629.77  
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	12406083	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 19367  
CALIBRATION DATE: 17-Jun-23

SBE 41 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

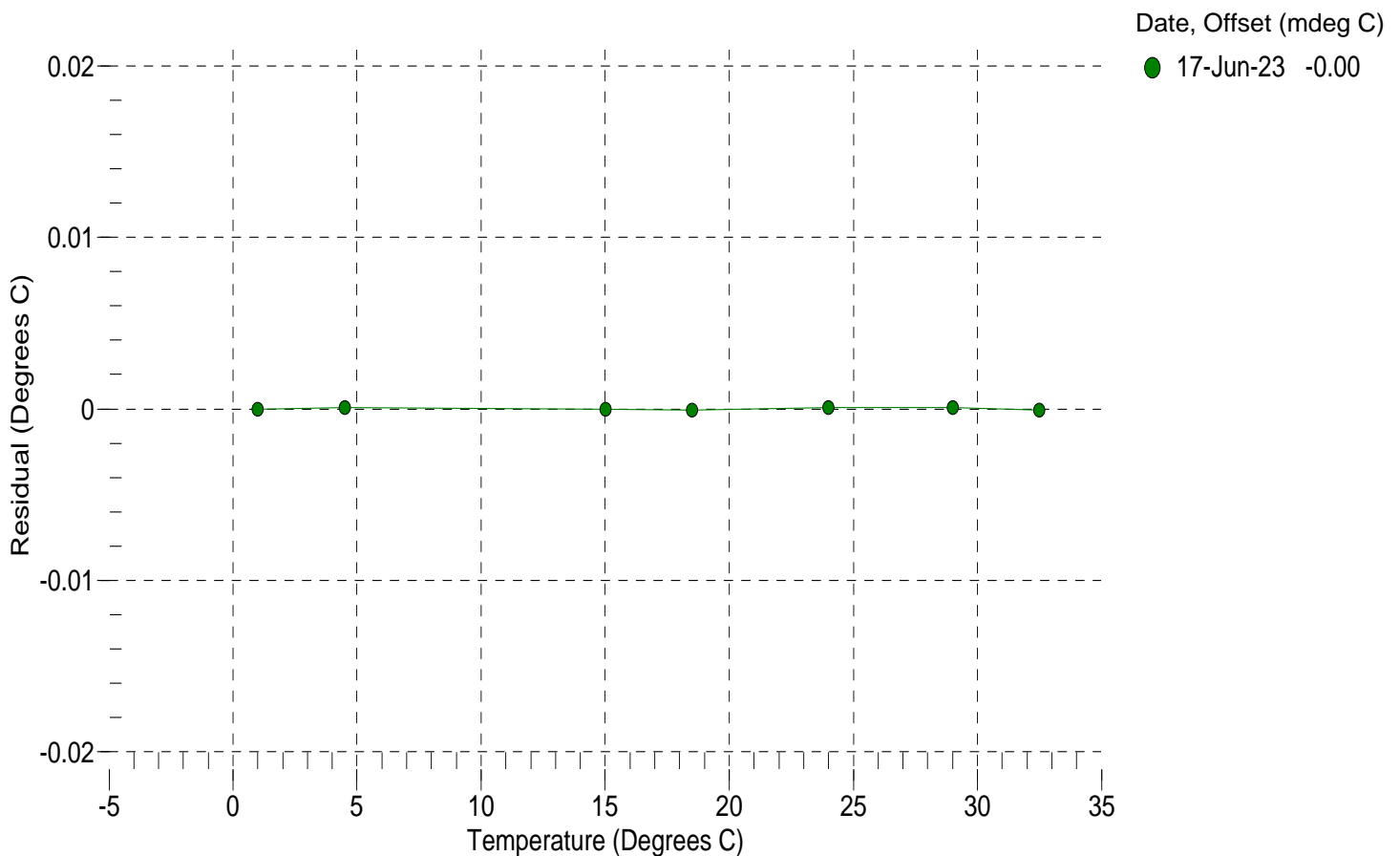
a0 = -1.043669e-003  
a1 = 3.176233e-004  
a2 = -5.006225e-006  
a3 = 1.806520e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
0.9999	14746650.0	0.9999	-0.0000
4.5000	12647192.7	4.5001	0.0001
15.0000	8131727.0	15.0000	-0.0000
18.5000	7061119.5	18.4999	-0.0001
24.0001	5689080.2	24.0002	0.0001
29.0001	4702368.3	29.0002	0.0001
32.5000	4128726.5	32.4999	-0.0001

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 = -1.021383e+000  
h = 1.478027e-001  
i = -1.232270e-004  
j = 3.086432e-005

CPcor = -9.5700e-008  
CTcor = 3.2500e-006  
WBOTC = -3.8022e-007

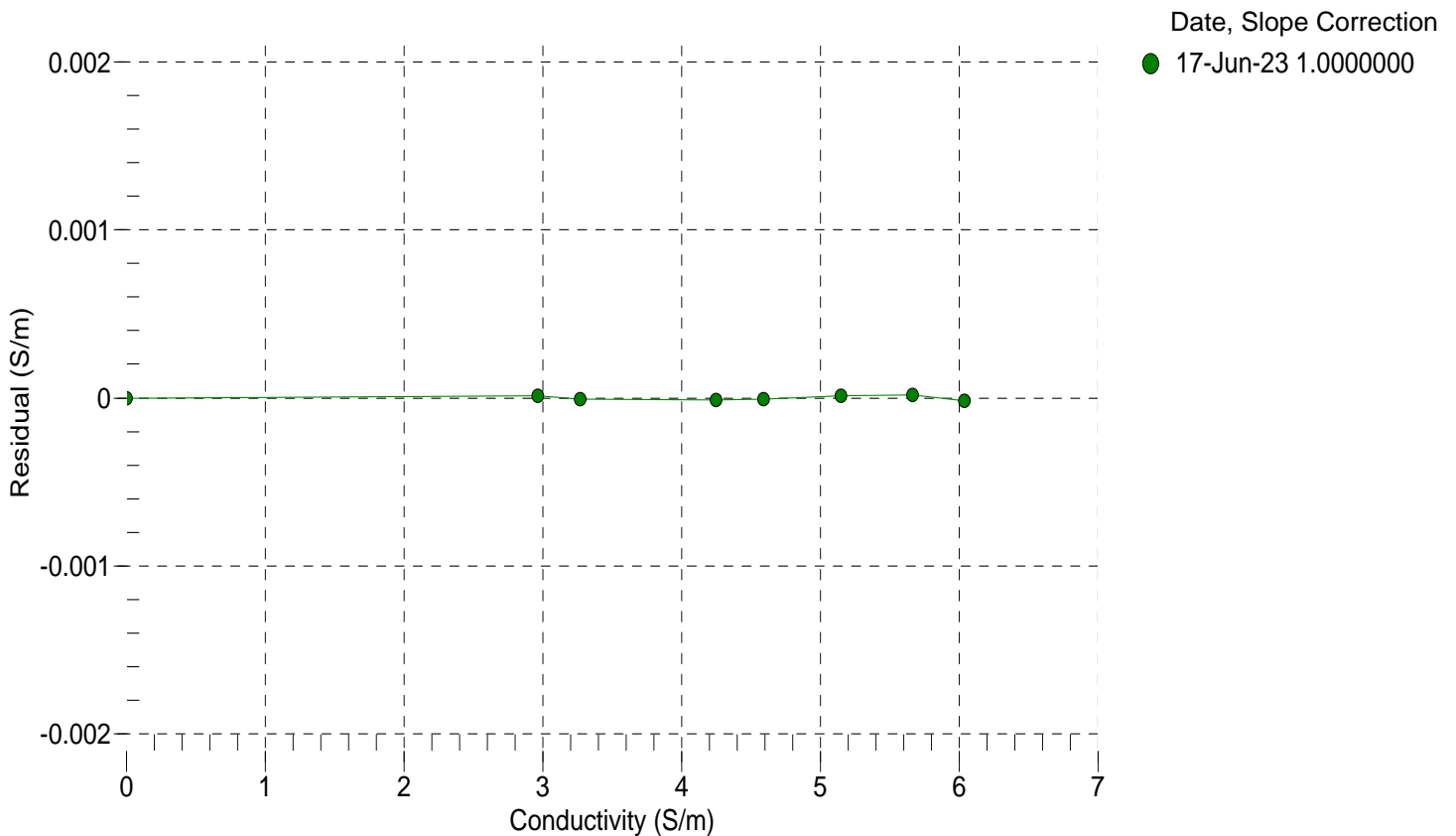
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2629.77	0.00000	0.00000
0.9999	34.6592	2.96380	5189.23	2.96382	0.00001
4.5000	34.6395	3.26968	5383.99	3.26968	-0.00001
15.0000	34.5982	4.24768	5963.52	4.24767	-0.00001
18.5000	34.5897	4.59154	6154.08	4.59153	-0.00001
24.0001	34.5807	5.14745	6449.99	5.14746	0.00001
29.0001	34.5761	5.66740	6714.68	5.66742	0.00002
32.5000	34.5706	6.03797	6896.95	6.03796	-0.00002

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

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

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 12406083

COEFFICIENTS:

PA0 =	2.512070e-001	PTCA0 =	8.625039e+003
PA1 =	3.920185e-004	PTCA1 =	3.593247e+001
PA2 =	-2.936342e-013	PTCA2 =	-3.514315e-001
PTHA0 =	2.872855e+002	PTCB0 =	3.165330e+005
PTHA1 =	-6.113967e-005	PTCB1 =	3.658510e+001
PTHA2 =	-8.718647e-013	PTCB2 =	-5.075729e-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)
14.50	45508.6	4083536.4	14.43	-0.00	32.50	3945321.60	47389.60
590.05	1518507.0	4079784.8	590.16	0.00	29.00	3996721.40	47466.14
1165.74	2994620.6	4077416.0	1165.82	0.00	24.00	4070029.40	47417.12
1741.71	4474826.0	4075446.4	1741.79	0.00	18.50	4150582.60	47194.68
2317.60	5958094.2	4073734.4	2317.66	0.00	15.00	4201766.20	47043.53
2893.45	7444547.2	4071912.8	2893.47	0.00	4.50	4354828.20	46820.51
2317.60	5957826.6	4071336.4	2317.54	-0.00	1.00	4405667.80	46720.23
1741.97	4475062.6	4070848.0	1741.86	-0.00	TEMPERATURE (°C)      SPAN		
1165.69	2994176.4	4070255.2	1165.62	-0.00			
590.54	1519435.4	4069740.4	590.50	-0.00			
14.50	45793.2	4069277.2	14.54	0.00			
					2.01	316604.49	
					20.89	317075.70	
					33.01	317187.58	

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

