



SEA-BIRD  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-19442  
Instrument Firmware Version: 7.2.5  
Zero Conductivity Frequency: 2845.47  
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	12198119	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 19442  
CALIBRATION DATE: 24-Jul-23

SBE 41 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

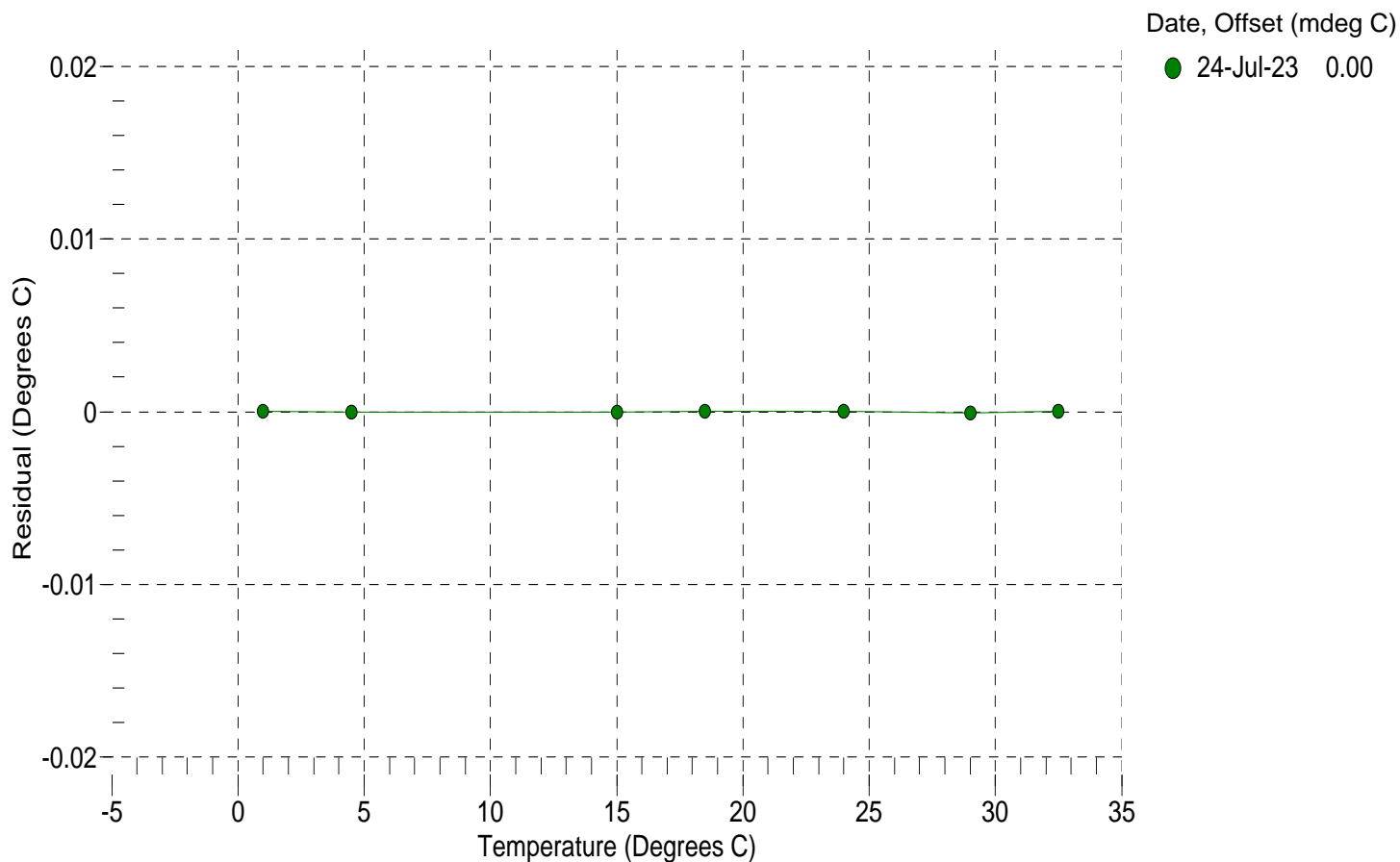
a0 = -8.139642e-004  
a1 = 2.868963e-004  
a2 = -3.369959e-006  
a3 = 1.412782e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	15196222.3	1.0000	0.0000
4.5000	12973533.9	4.5000	-0.0000
15.0001	8233105.6	15.0001	-0.0000
18.5000	7119430.5	18.5000	0.0000
24.0000	5699681.3	24.0000	0.0000
29.0001	4684747.8	29.0000	-0.0001
32.5000	4097471.6	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 = -1.011096e+000  
h = 1.252254e-001  
i = -2.103904e-004  
j = 3.115222e-005

CPcor = -9.5700e-008  
CTcor = 3.2500e-006  
WBOTC = -6.1493e-007

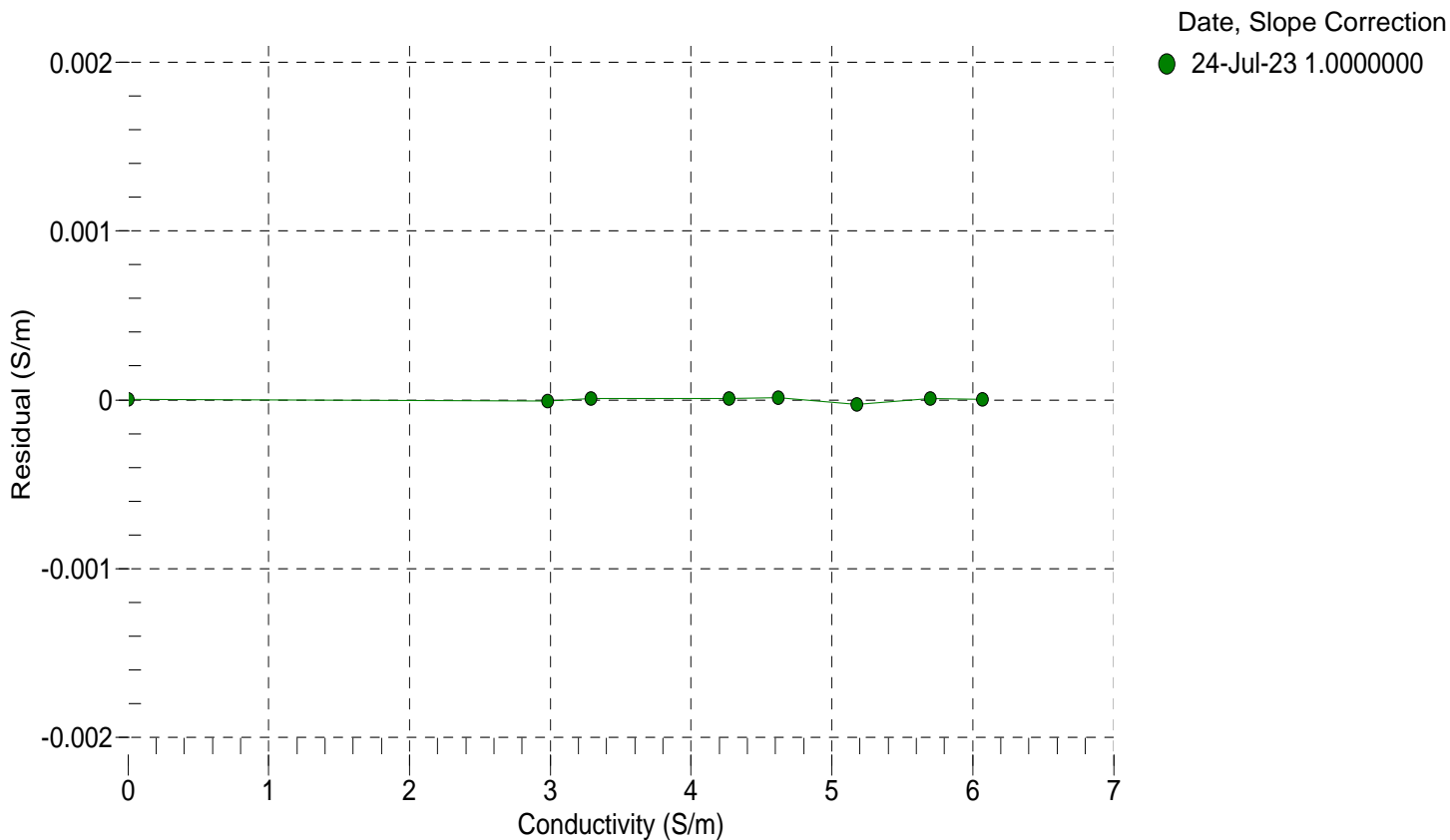
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2845.47	0.00000	0.00000
1.0000	34.8754	2.98053	5650.23	2.98052	-0.00001
4.5000	34.8560	3.28810	5863.18	3.28811	0.00001
15.0001	34.8147	4.27145	6496.46	4.27146	0.00001
18.5000	34.8062	4.61717	6704.60	4.61718	0.00001
24.0000	34.7968	5.17605	7027.67	5.17602	-0.00003
29.0001	34.7903	5.69855	7316.49	5.69856	0.00001
32.5000	34.7832	6.07087	7515.29	6.07087	0.00000

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

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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SBE 41 PRESSURE CALIBRATION DATA  
2900 psia S/N 12198119

COEFFICIENTS:

PA0 =	-1.585664e-001	PTCA0 =	1.201603e+003
PA1 =	3.928748e-004	PTCA1 =	4.244402e+000
PA2 =	-2.696408e-013	PTCA2 =	-9.900023e-001
PTHA0 =	2.927981e+002	PTCB0 =	3.153064e+005
PTHA1 =	-6.114597e-005	PTCB1 =	-8.849359e-001
PTHA2 =	-9.729356e-013	PTCB2 =	2.234778e-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)
14.55	38159.2	4147617.2	14.52	-0.00	32.50	4002147.20	38891.40
589.92	1504794.8	4144548.8	589.94	0.00	29.00	4052862.40	39178.24
1165.55	2975039.8	4143049.2	1165.61	0.00	24.00	4125225.40	39431.58
1741.21	4447918.2	4141675.6	1741.15	-0.00	18.50	4204631.60	39576.31
2317.10	5924496.4	4140346.4	2316.95	-0.01	15.00	4255121.00	39631.59
2893.00	7404866.4	4139144.0	2893.04	0.00	4.50	4406032.80	39861.48
2316.86	5924567.2	4139075.2	2316.97	0.00	1.00	4456176.40	39851.83
1740.99	4447513.6	4138883.6	1740.98	-0.00	TEMPERATURE (°C)      SPAN		
1164.76	2969986.0	4138713.2	1163.63	-0.04			
589.71	1504337.2	4138492.0	589.76	0.00			
14.55	38181.2	4137487.6	14.53	-0.00			
					2.01	315305.48	
					20.73	315384.03	
					32.17	315509.11	

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)

● 20-Jul-23 0.00

