



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-19601  
Instrument Firmware Version: 7.2.5  
Zero Conductivity Frequency: 2911.19  
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	12400305	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 19601  
CALIBRATION DATE: 29-Sep-23

SBE 41 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

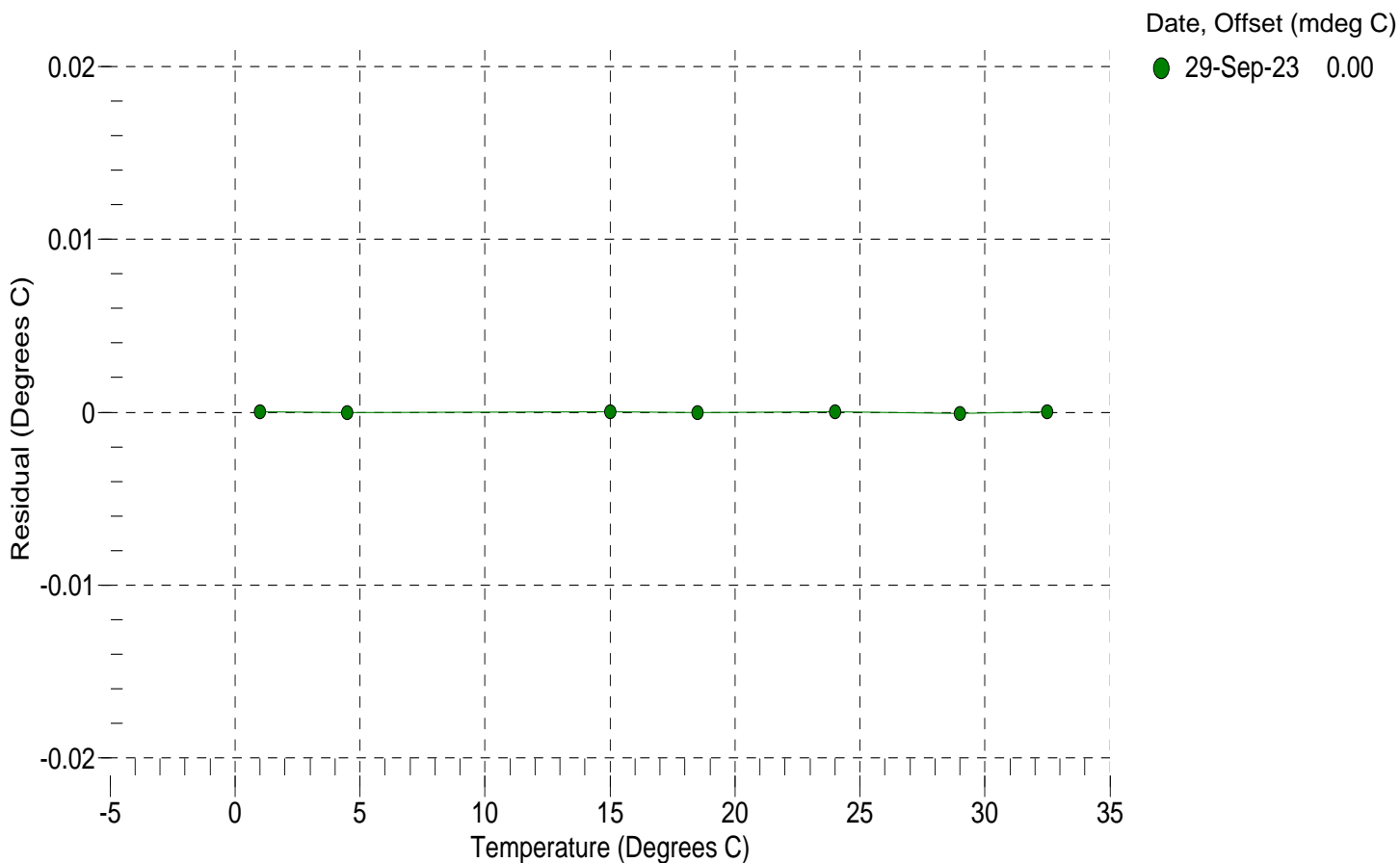
a0 = -9.210380e-004  
a1 = 3.103628e-004  
a2 = -4.877080e-006  
a3 = 1.716377e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	14877867.3	1.0000	0.0000
4.5000	12690475.7	4.5000	-0.0000
15.0000	8032872.0	15.0000	0.0000
18.5000	6940639.5	18.5000	-0.0000
23.9940	5551046.6	23.9940	0.0000
29.0000	4556657.5	28.9999	-0.0001
32.5000	3982581.8	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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CALIBRATION DATE: 29-Sep-23

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

COEFFICIENTS:

g = -1.024104e+000  
h = 1.210428e-001  
i = -1.431383e-004  
j = 2.521416e-005

CPcor = -9.5700e-008  
CTcor = 3.2500e-006  
WBOTC = -8.0140e-007

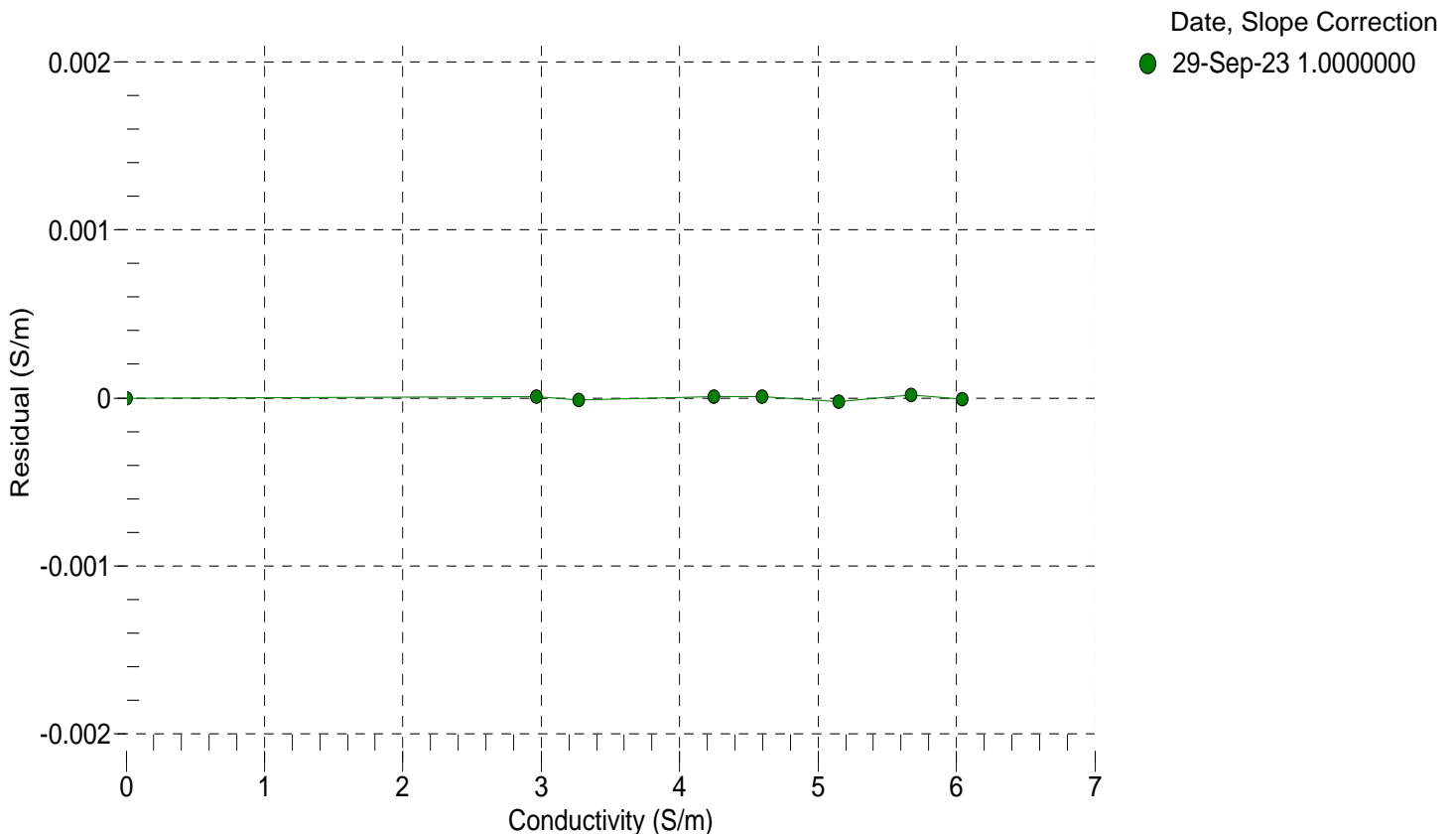
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2911.19	0.00000	0.00000
1.0000	34.6724	2.96483	5740.42	2.96484	0.00001
4.5000	34.6542	3.27093	5955.82	3.27092	-0.00001
15.0000	34.6148	4.24950	6596.62	4.24951	0.00001
18.5000	34.6069	4.59358	6807.31	4.59359	0.00001
23.9940	34.5988	5.14922	7134.08	5.14920	-0.00002
29.0000	34.5949	5.67012	7427.05	5.67014	0.00002
32.5000	34.5936	6.04153	7628.84	6.04153	-0.00001

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

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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SENSOR SERIAL NUMBER: 19601  
CALIBRATION DATE: 26-Sep-23

SBE 41 PRESSURE CALIBRATION DATA  
2900 psia S/N 12400305

COEFFICIENTS:

PA0 =	3.953526e-001	PTCA0 =	-2.562574e+003
PA1 =	3.933816e-004	PTCA1 =	5.786601e+001
PA2 =	-2.746627e-013	PTCA2 =	-6.176295e-001
PTHA0 =	2.838344e+002	PTCB0 =	3.190219e+005
PTHA1 =	-6.057467e-005	PTCB1 =	3.380486e+000
PTHA2 =	-9.015062e-013	PTCB2 =	1.662803e-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)
14.48	34195.4	4059952.8	14.45	-0.00	32.50	3920496.80	36004.20
590.84	1501943.8	4051737.6	590.90	0.00	29.00	3971998.40	36031.49
1167.09	2971986.2	4050967.6	1167.07	-0.00	23.99	4046020.20	35915.73
1743.40	4445601.8	4050292.8	1743.44	0.00	18.50	4126844.20	35677.13
2319.83	5922388.2	4049662.4	2319.86	0.00	15.00	4178251.80	35493.09
2896.25	7402065.4	4049066.4	2896.21	-0.00	4.50	4332077.60	35097.28
2319.38	5921191.0	4049526.4	2319.39	0.00	1.00	4383264.00	34883.08
1742.37	4443064.2	4049946.0	1742.45	0.00			
1166.52	2970213.4	4050339.6	1166.37	-0.01	TEMPERATURE (°C) SPAN		
590.28	1500325.6	4050713.6	590.26	-0.00	1.68	319028.02	
14.50	34469.4	4049632.0	14.55	0.00	20.27	319158.71	
					32.57	319308.38	

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)

● 26-Sep-23 0.00

