



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-19451  
Instrument Firmware Version: 7.2.5  
Zero Conductivity Frequency: 2843.23  
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	12198122	2000m(2000 dBar)



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USA

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SENSOR SERIAL NUMBER: 19451  
CALIBRATION DATE: 01-Aug-23

SBE 41 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

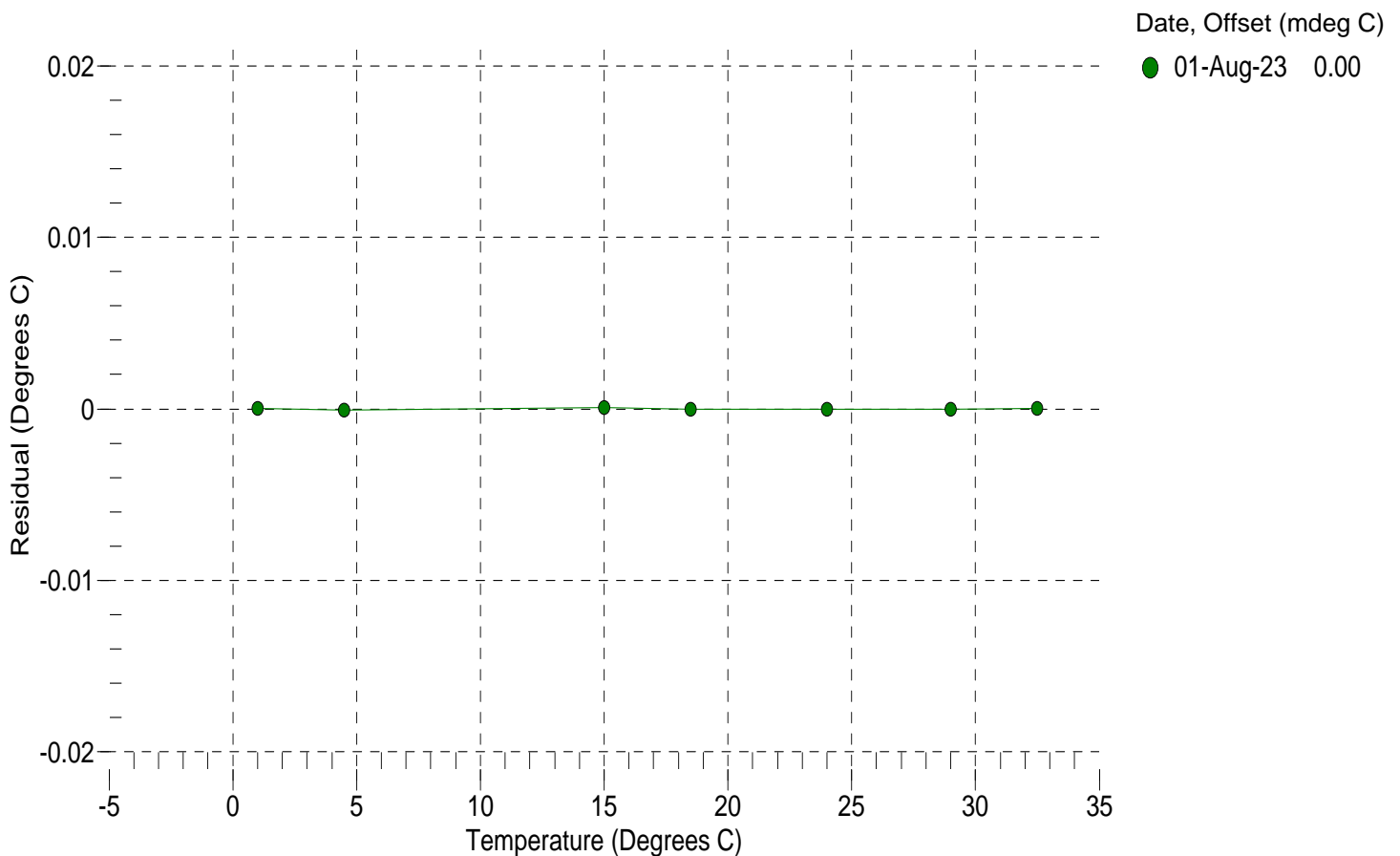
a0 = -8.894948e-004  
a1 = 3.030819e-004  
a2 = -4.407102e-006  
a3 = 1.638531e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	14654048.7	1.0000	0.0000
4.5000	12511556.9	4.4999	-0.0001
15.0000	7941125.0	15.0001	0.0001
18.5000	6867217.2	18.5000	-0.0000
23.9940	5499407.6	23.9940	-0.0000
29.0000	4519289.2	29.0000	-0.0000
32.5000	3952897.7	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 = -1.023200e+000  
h = 1.267706e-001  
i = -1.447408e-004  
j = 2.670186e-005

CPcor = -9.5700e-008  
CTcor = 3.2500e-006  
WBOTC = -1.1429e-006

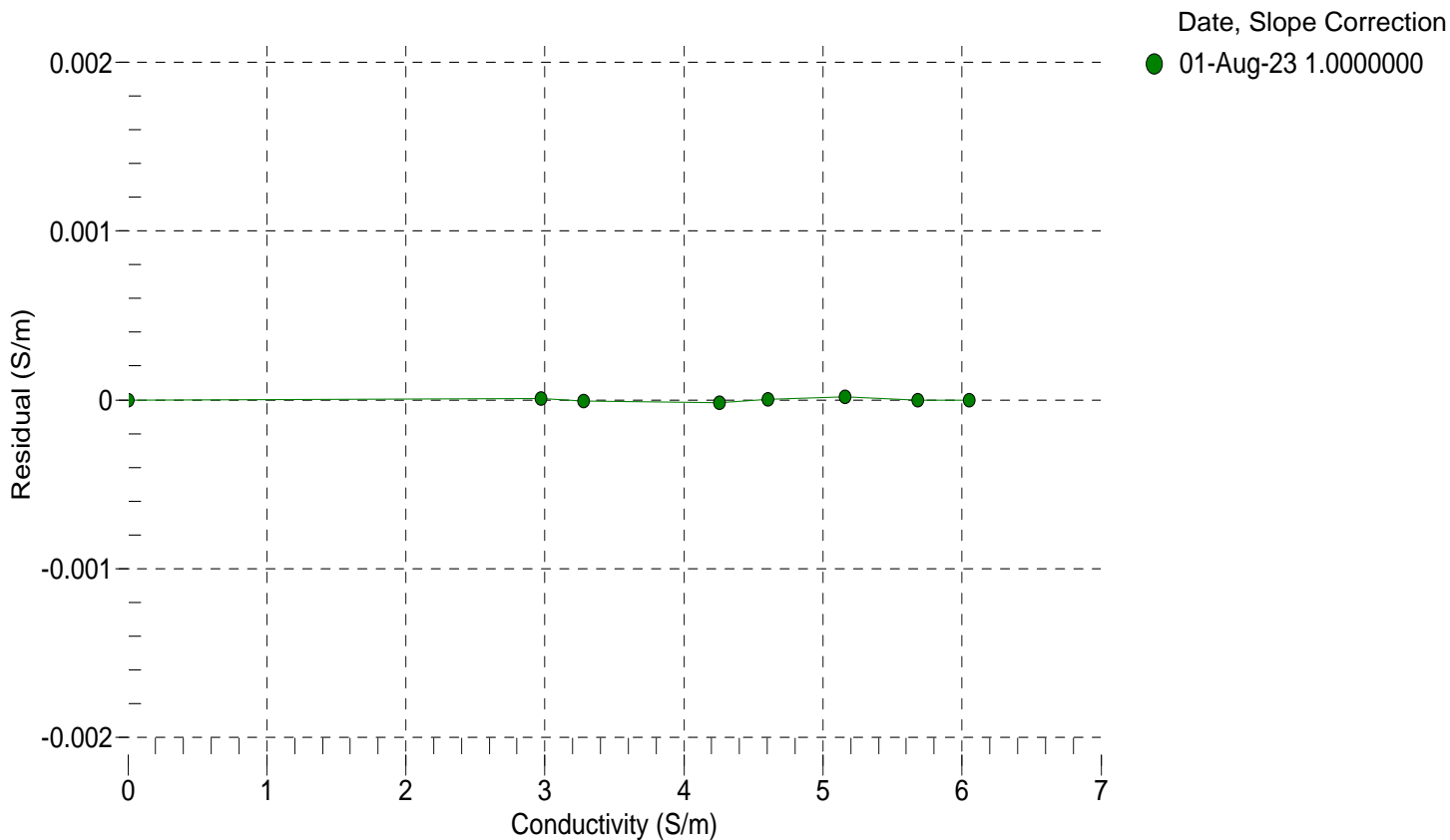
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2843.23	0.00000	0.00000
1.0000	34.7439	2.97037	5612.07	2.97038	0.00001
4.5000	34.7251	3.27697	5822.77	3.27696	-0.00001
15.0000	34.6850	4.25721	6449.60	4.25719	-0.00002
18.5000	34.6767	4.60184	6655.70	4.60185	0.00000
23.9940	34.6684	5.15843	6975.38	5.15845	0.00002
29.0000	34.6643	5.68022	7261.94	5.68022	-0.00000
32.5000	34.6625	6.05220	7459.32	6.05219	-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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SENSOR SERIAL NUMBER: 19451  
CALIBRATION DATE: 28-Jul-23

SBE 41 PRESSURE CALIBRATION DATA  
2900 psia S/N 12198122

COEFFICIENTS:

PA0 =	3.875073e-001	PTCA0 =	1.166626e+004
PA1 =	3.920315e-004	PTCA1 =	6.772375e+001
PA2 =	-2.688927e-013	PTCA2 =	-1.101012e+000
PTHA0 =	2.926838e+002	PTCB0 =	3.176884e+005
PTHA1 =	-6.138686e-005	PTCB1 =	-5.408967e+000
PTHA2 =	-9.277500e-013	PTCB2 =	3.625919e-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)
14.53	48640.8	4122693.2	14.49	-0.00	32.50	3997038.00	50022.50
589.79	1518298.8	4121566.4	589.89	0.00	29.00	4047718.60	50105.91
1165.43	2991298.4	4120803.2	1165.44	0.00	23.99	4120428.80	50087.31
1741.11	4467698.0	4120161.6	1741.13	0.00	18.50	4199918.40	49903.70
2316.88	5947497.0	4119586.0	2316.98	0.00	15.00	4250488.20	49734.74
2892.54	7429598.4	4119066.8	2892.54	0.00	4.50	4401685.60	49327.61
2316.72	5946572.8	4119669.6	2316.62	-0.00	1.00	4452041.60	49104.89
1740.82	4466854.6	4120204.4	1740.81	-0.00	TEMPERATURE (°C)      SPAN		
1165.03	2989915.6	4120690.0	1164.90	-0.00			
589.50	1517420.2	4121127.6	589.55	0.00			
14.52	48658.4	4121446.0	14.50	-0.00			
					2.01	317678.96	
					20.73	317732.04	
					32.17	317889.54	

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)

● 28-Jul-23 0.00

