



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-11708  
Instrument Firmware Version: V 7.2.5  
Zero Conductivity Frequency: 2557.85  
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	11056686	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 11708  
CALIBRATION DATE: 23-Mar-19

SBE 41 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

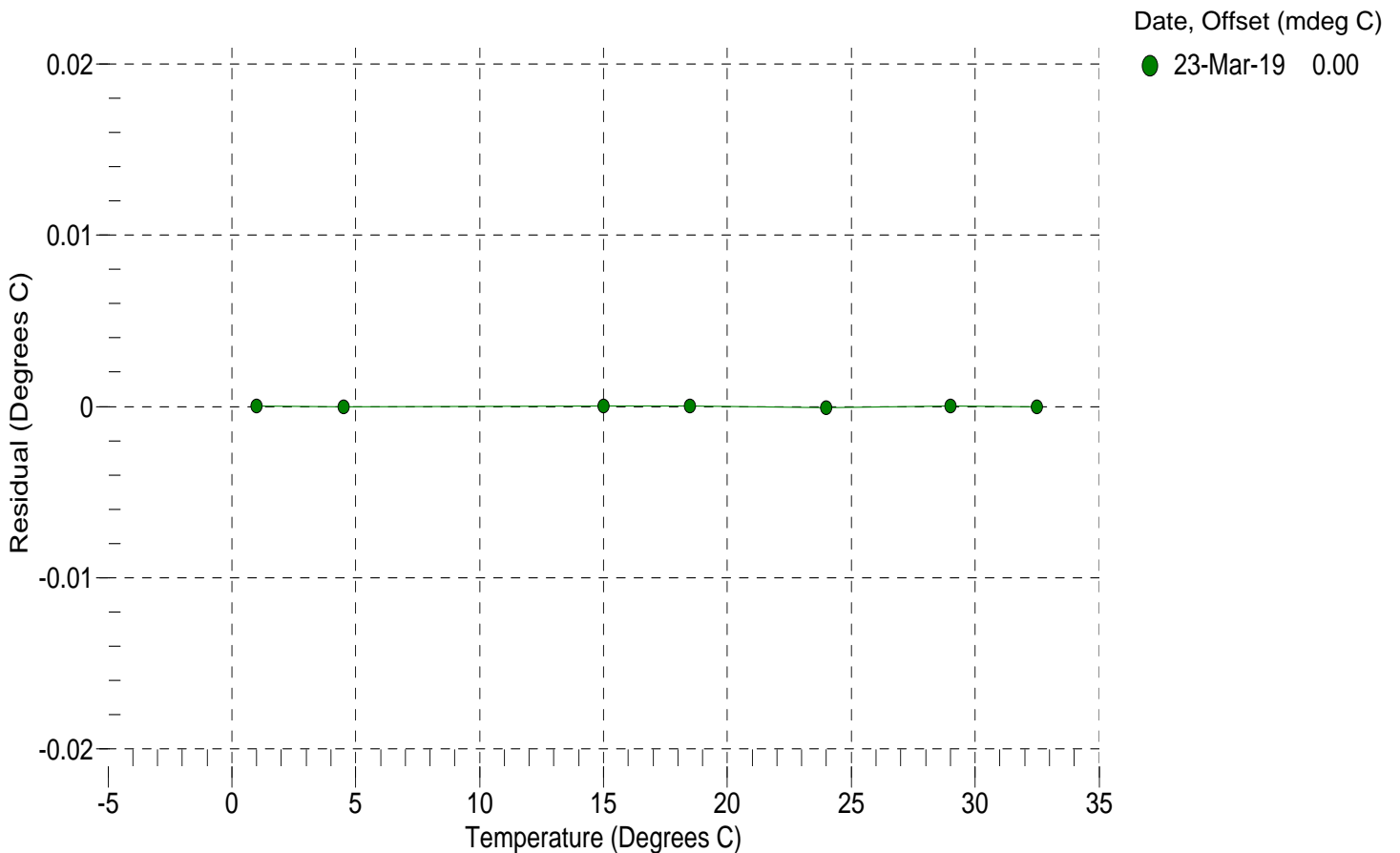
a0 = -8.905215e-004  
a1 = 2.976602e-004  
a2 = -3.991344e-006  
a3 = 1.567419e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	15121677.3	1.0000	0.0000
4.5000	12929713.3	4.5000	-0.0000
15.0000	8241048.5	15.0000	0.0000
18.5000	7136069.5	18.5000	0.0000
23.9940	5726321.0	23.9939	-0.0001
29.0000	4714121.6	29.0000	0.0000
32.5000	4128303.5	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 = -9.968464e-001  
h = 1.529717e-001  
i = -3.676357e-004  
j = 5.064354e-005

CPcor = -9.5700e-008  
CTcor = 3.2500e-006  
WBOTC = -1.6288e-007

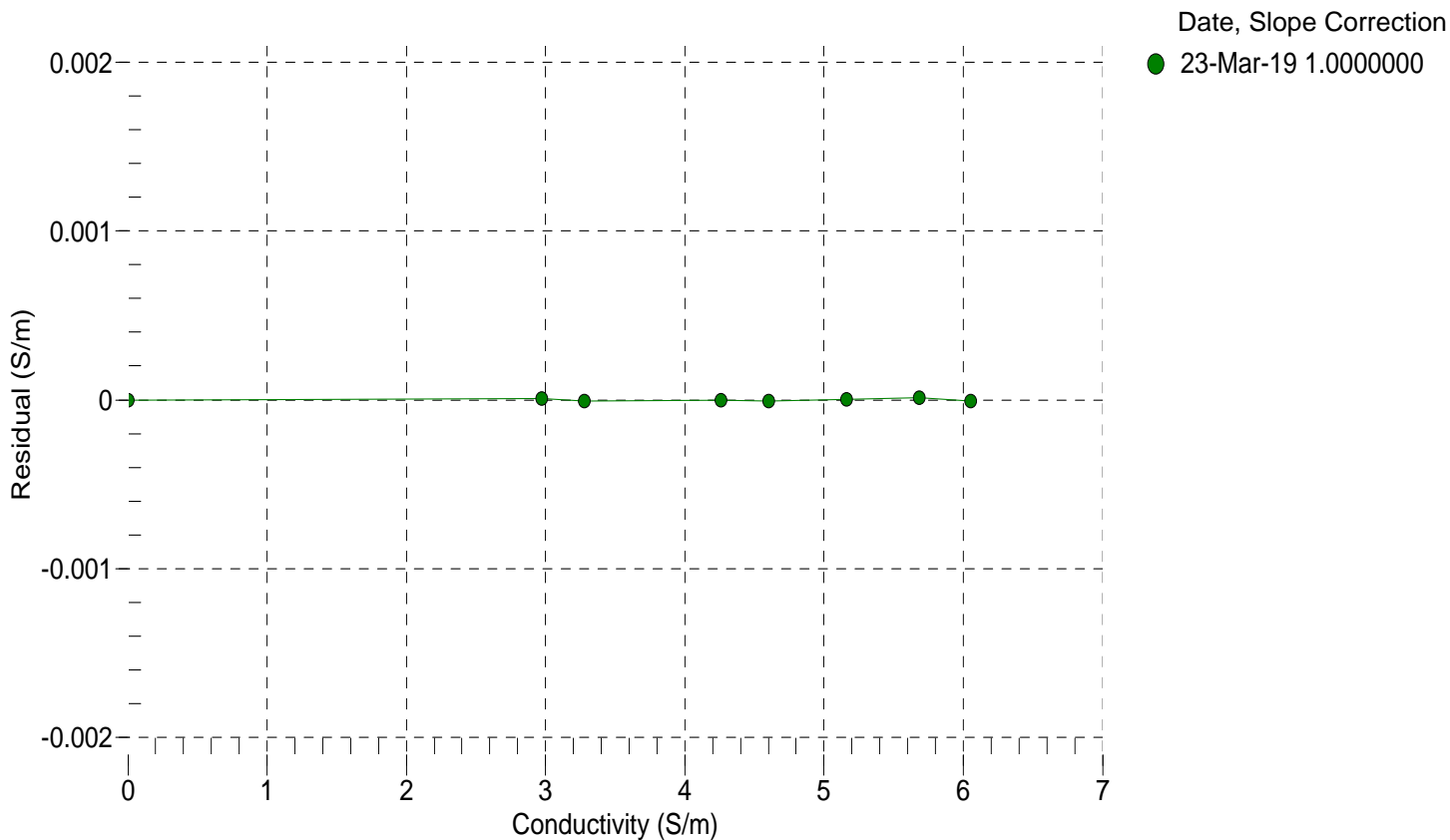
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2557.85	0.00000	0.00000
1.0000	34.7722	2.97255	5103.29	2.97256	0.00001
4.5000	34.7523	3.27928	5296.28	3.27927	-0.00001
15.0000	34.7088	4.25982	5870.10	4.25982	-0.00000
18.5000	34.6998	4.60458	6058.69	4.60457	-0.00001
23.9940	34.6900	5.16129	6351.11	5.16130	0.00000
29.0000	34.6846	5.68317	6613.17	5.68318	0.00001
32.5000	34.6815	6.05514	6793.57	6.05513	-0.00001

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

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: 11708  
CALIBRATION DATE: 19-Mar-19

SBE 41 PRESSURE CALIBRATION DATA  
2900 psia S/N 11056686

COEFFICIENTS:

PA0 =	3.037105e-001	PTCA0 =	-1.030435e+003
PA1 =	3.931066e-004	PTCA1 =	3.946877e+001
PA2 =	-2.700665e-013	PTCA2 =	-1.900668e-001
PTHA0 =	2.943627e+002	PTCB0 =	3.106225e+005
PTHA1 =	-6.199814e-005	PTCB1 =	1.030314e+001
PTHA2 =	-8.693694e-013	PTCB2 =	-1.289444e-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)
14.63	35975.8	4152958.2	14.54	-0.00	32.50	3999552.60	37914.90
590.72	1503997.3	4144953.6	590.70	-0.00	29.00	4049930.80	37866.21
1166.99	2975302.0	4143801.0	1166.99	0.00	23.99	4122665.00	37721.82
1743.27	4449592.5	4142570.2	1743.28	0.00	18.50	4201927.00	37535.41
2319.53	5926978.3	4141614.0	2319.60	0.00	15.00	4252489.40	37373.49
2895.83	7407087.8	4140771.0	2895.80	-0.00	4.50	4403387.20	37023.79
2319.69	5927178.6	4140957.0	2319.67	-0.00	1.00	4453685.60	36913.11
1743.54	4450244.7	4141115.4	1743.53	-0.00			
997.92	2542054.3	4139898.4	997.41	-0.02	TEMPERATURE (°C) SPAN		
590.96	1504578.4	4139882.6	590.92	-0.00	2.12	310643.78	
14.63	36524.7	4139450.6	14.74	0.00	20.92	310781.59	
					32.96	310821.99	

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)

● 19-Mar-19 0.00

