



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-11711  
Instrument Firmware Version: V 7.2.5  
Zero Conductivity Frequency: 2536.79  
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	11162136	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 11711  
CALIBRATION DATE: 29-Mar-19

SBE 41 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

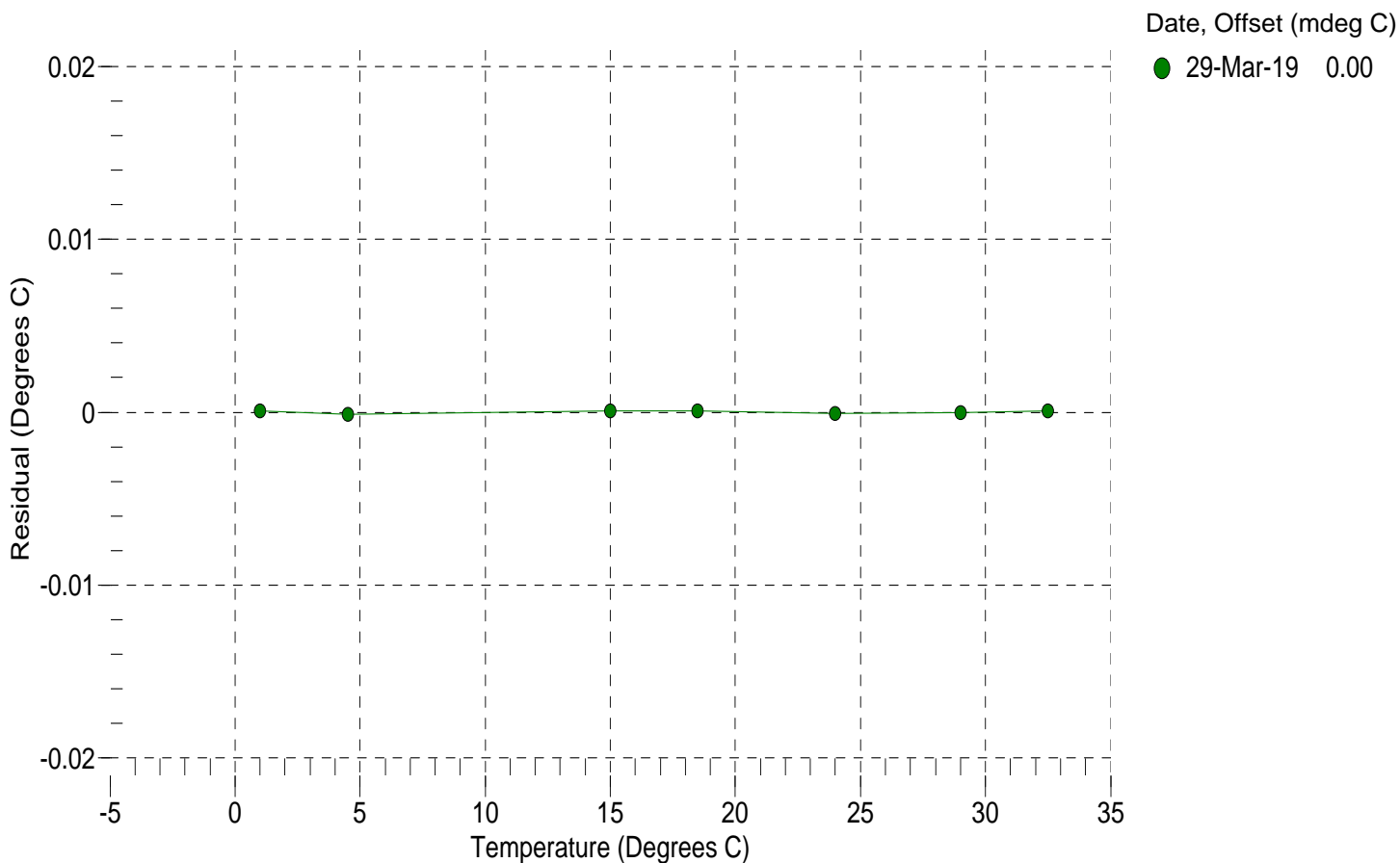
a0 = -7.598543e-004  
a1 = 2.750114e-004  
a2 = -2.553035e-006  
a3 = 1.268425e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0005	14407279.1	1.0006	0.0001
4.5000	12319471.5	4.4999	-0.0001
15.0000	7852864.8	15.0001	0.0001
18.5000	6800183.5	18.5001	0.0001
23.9940	5457116.1	23.9939	-0.0001
29.0000	4492711.7	29.0000	-0.0000
32.5000	3934482.1	32.5001	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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CALIBRATION DATE: 29-Mar-19

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

#### COEFFICIENTS:

g = -1.002428e+000  
h = 1.565359e-001  
i = -4.505718e-004  
j = 5.866632e-005

CPcor = -9.5700e-008  
CTcor = 3.2500e-006  
WBOTC = -9.8538e-008

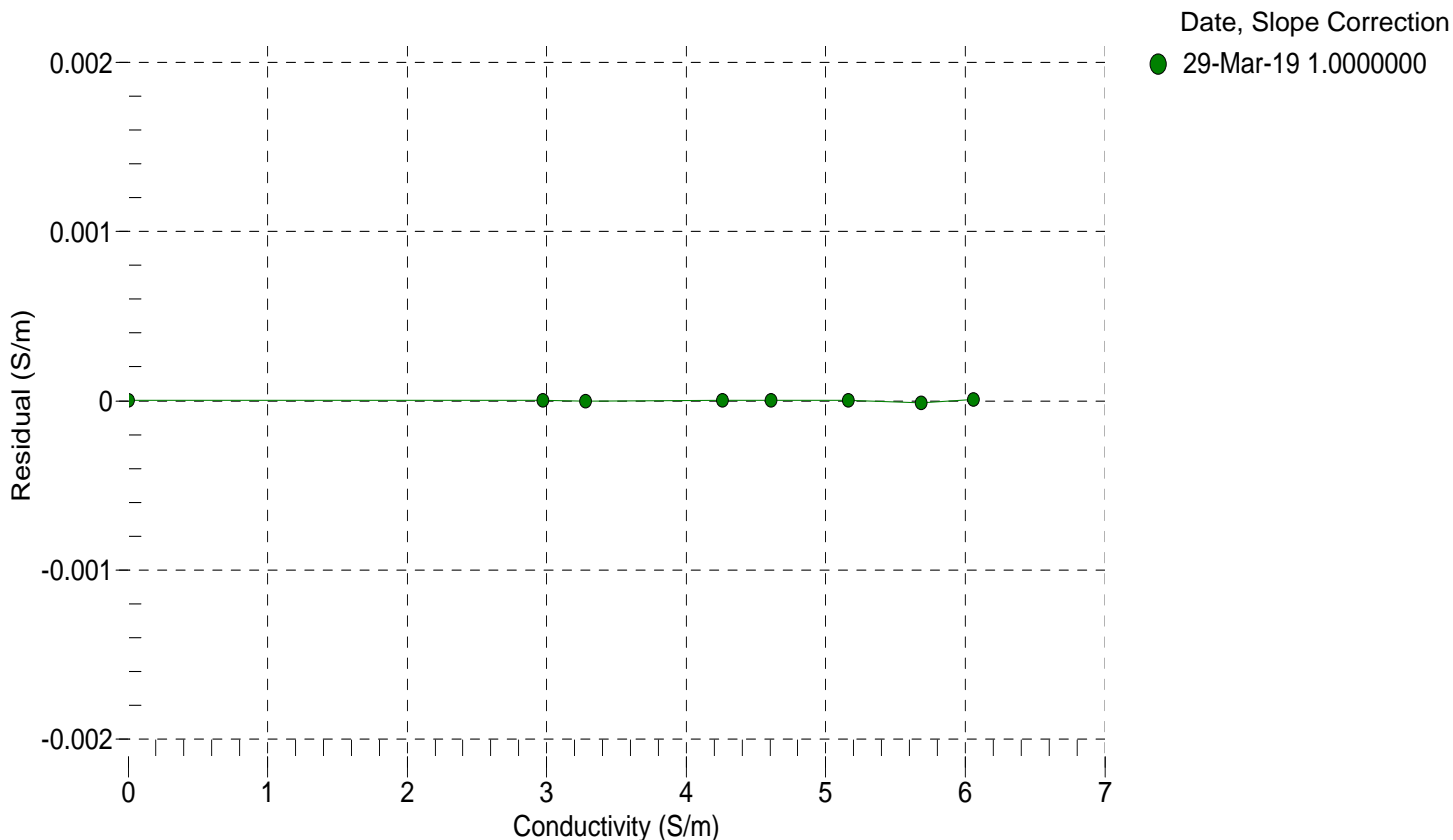
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2536.79	0.00000	0.00000
1.0005	34.7798	2.97319	5052.18	2.97319	0.00000
4.5000	34.7602	3.27995	5243.01	3.27995	-0.00000
15.0000	34.7179	4.26082	5810.52	4.26082	0.00000
18.5000	34.7089	4.60566	5997.01	4.60566	0.00000
23.9940	34.6988	5.16246	6286.15	5.16246	0.00000
29.0000	34.6933	5.68444	6545.27	5.68442	-0.00001
32.5000	34.6898	6.05642	6723.64	6.05643	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: 11711  
CALIBRATION DATE: 21-Mar-19

SBE 41 PRESSURE CALIBRATION DATA  
2900 psia S/N 11162136

COEFFICIENTS:

PA0 =	-4.450432e-002	PTCA0 =	-2.358720e+003
PA1 =	3.914004e-004	PTCA1 =	-3.265482e+000
PA2 =	-2.799030e-013	PTCA2 =	-9.697422e-002
PTHA0 =	2.975296e+002	PTCB0 =	3.141488e+005
PTHA1 =	-6.165735e-005	PTCB1 =	6.967988e+000
PTHA2 =	-9.742638e-013	PTCB2 =	1.381784e-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	34875.8	4200679.2	14.56	-0.00	32.50	4040479.60	36838.00
592.01	1513080.8	4196295.6	592.10	0.00	29.00	4090736.80	36848.40
1169.47	2994183.7	4195161.6	1169.53	0.00	23.99	4162599.00	36873.26
1747.00	4478582.7	4193939.4	1747.02	0.00	18.50	4241272.80	36949.80
2324.54	5966646.4	4192972.8	2324.69	0.01	15.00	4291290.00	36948.10
2902.05	7456978.8	4192127.0	2902.00	-0.00	4.50	4440849.40	37067.21
2324.54	5966131.6	4192287.8	2324.49	-0.00	1.00	4490707.00	36989.01
1747.08	4478665.8	4192386.6	1747.04	-0.00	TEMPERATURE (°C)      SPAN		
1169.56	2993937.2	4192319.4	1169.43	-0.00			
591.80	1512220.5	4192350.4	591.75	-0.00			
14.64	35217.2	4192055.4	14.70	0.00			
					2.12	314164.24	
					20.82	314353.78	
					32.81	314526.19	

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)

● 21-Mar-19 0.00

