



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-11710  
Instrument Firmware Version: V 7.2.5  
Zero Conductivity Frequency: 2542.62  
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	11162135	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 11710  
CALIBRATION DATE: 26-Apr-19

SBE 41 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

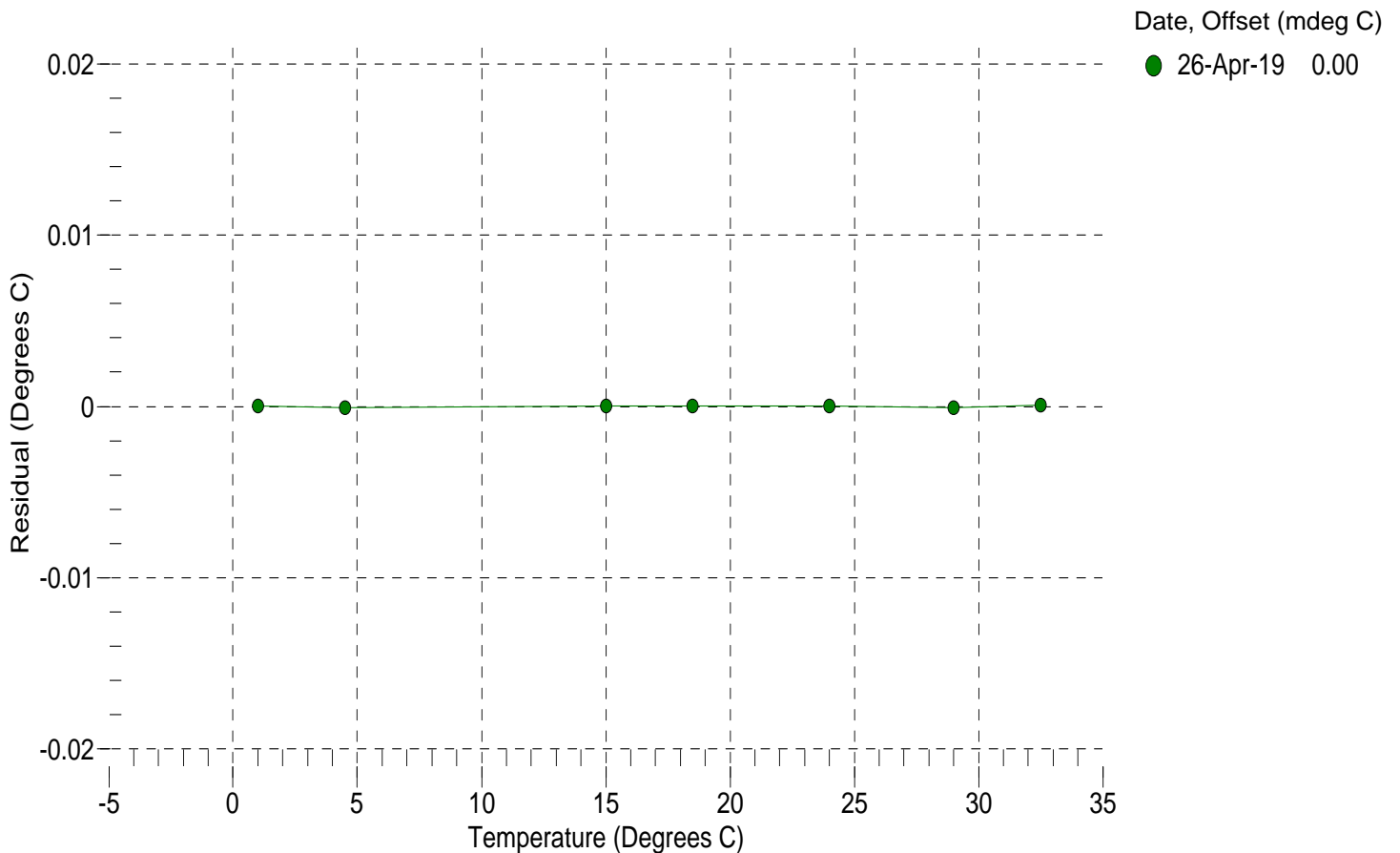
a0 = -8.339307e-004  
a1 = 2.868868e-004  
a2 = -3.290786e-006  
a3 = 1.416948e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0001	15020964.0	1.0001	0.0000
4.5001	12843684.6	4.5000	-0.0001
15.0001	8186623.9	15.0001	0.0000
18.5002	7089082.5	18.5002	0.0000
23.9941	5688854.2	23.9941	0.0000
29.0001	4683491.0	29.0000	-0.0001
32.5001	4101554.9	32.5002	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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SBE 41 CONDUCTIVITY CALIBRATION DATA  
PSS 1978: C(35,15,0) = 4.2914 Siemens/meter

COEFFICIENTS:

g = -1.001809e+000  
h = 1.557695e-001  
i = -4.695886e-004  
j = 5.945473e-005

CPcor = -9.5700e-008  
CTcor = 3.2500e-006  
WBOTC = 1.3109e-007

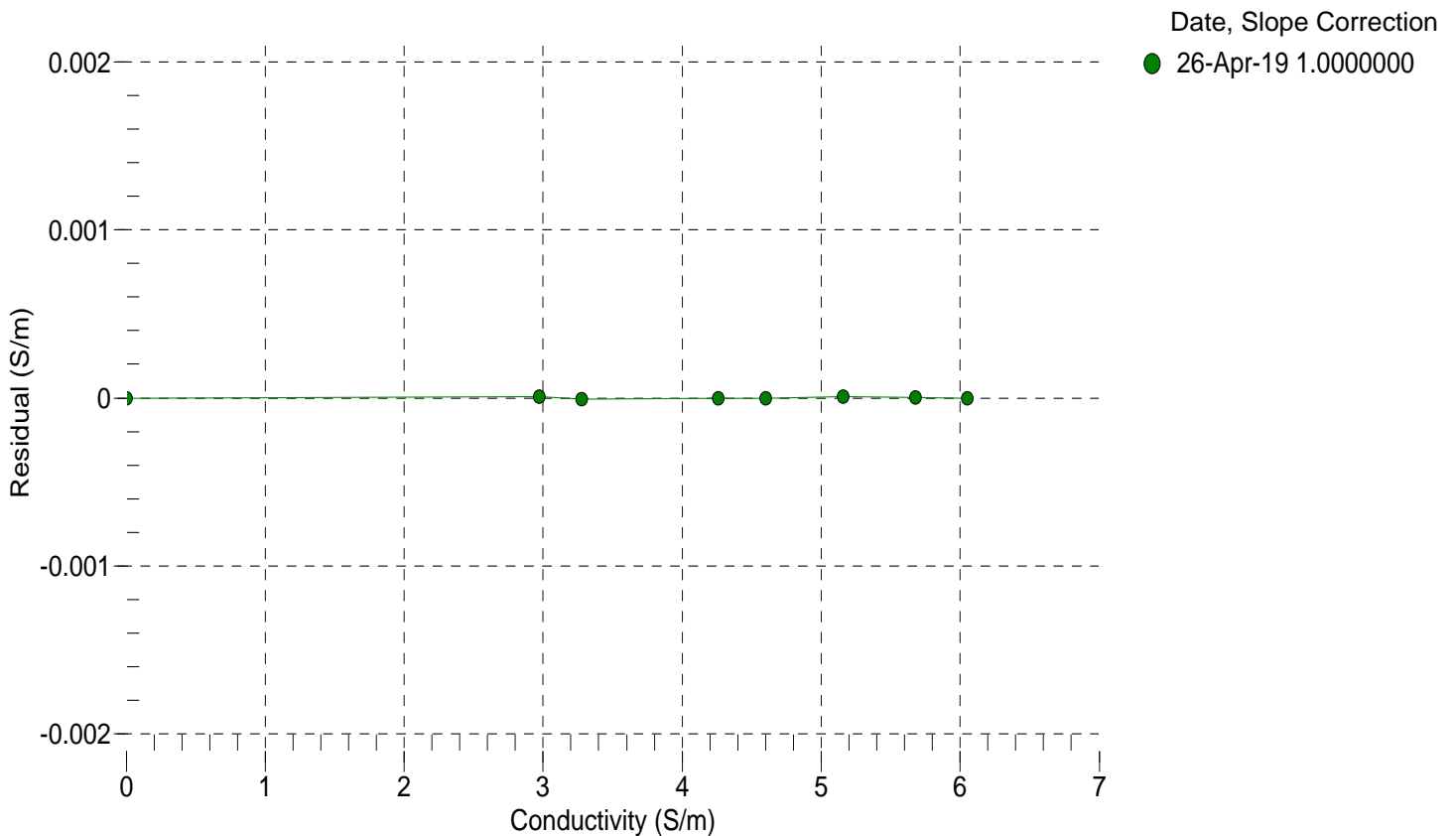
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2542.62	0.00000	0.00000
1.0001	34.7509	2.97092	5064.03	2.97092	0.00001
4.5001	34.7313	3.27750	5255.35	3.27750	-0.00001
15.0001	34.6888	4.25763	5824.25	4.25763	-0.00000
18.5002	34.6796	4.60221	6011.19	4.60220	-0.00000
23.9941	34.6694	5.15858	6301.04	5.15858	0.00001
29.0001	34.6638	5.68016	6560.79	5.68016	0.00000
32.5001	34.6608	6.05194	6739.62	6.05194	-0.00000

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

t = temperature (°C); p = pressure (decibars);  $\delta = \text{CTcor}$ ;  $\epsilon = \text{CPcor}$ ;

$\text{Conductivity (S/m)} = (g + h * f^2 + i * f^3 + j * f^4) / (1 + \delta * t + \epsilon * p)$

Residual (Siemens/meter) = instrument conductivity - bath conductivity





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SENSOR SERIAL NUMBER: 11710  
CALIBRATION DATE: 03-Apr-19

SBE 41 PRESSURE CALIBRATION DATA  
2900 psia S/N 11162135

#### COEFFICIENTS:

PA0 =	1.542289e-002	PTCA0 =	-1.229741e+003
PA1 =	3.920386e-004	PTCA1 =	8.031392e+000
PA2 =	-2.834026e-013	PTCA2 =	-2.893203e-001
PTHA0 =	3.019977e+002	PTCB0 =	3.130913e+005
PTHA1 =	-6.258222e-005	PTCB1 =	1.116271e+000
PTHA2 =	-9.077249e-013	PTCB2 =	3.134798e-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)
14.51	35855.2	4224693.6	14.53	0.00	32.50	4066462.80	37497.60
592.08	1511644.5	4223140.8	592.14	0.00	29.00	4116410.00	37612.45
1169.57	2990278.0	4222177.6	1169.62	0.00	23.99	4187829.40	37685.49
1747.21	4472538.1	4221289.6	1747.27	0.00	18.50	4266049.20	37625.63
2324.81	5957940.0	4220434.6	2324.89	0.00	15.00	4315819.40	37575.62
2902.30	7445936.2	4219417.8	2902.26	-0.00	4.50	4464465.60	37649.93
2324.72	5957505.4	4219319.4	2324.71	-0.00	1.00	4514160.20	37590.94
1747.09	4471961.5	4219342.2	1747.03	-0.00			
1169.77	2990486.3	4219400.8	1169.69	-0.00			
591.88	1510839.6	4219452.2	591.82	-0.00			
14.51	35799.3	4218650.2	14.51	-0.00			

TEMPERATURE (°C)	SPAN
2.12	313095.05
20.82	313250.38
32.81	313465.35

y = thermistor output (counts)

$t = PTHA0 + PTHA1 * y + PTHA2 * y^2$

x = instrument output - PTCA0 - PTCA1 \* t - PTCA2 \* t<sup>2</sup>

$n = x * PTCB0 / (PTCB0 + PTCB1 * t + PTCB2 * t^2)$

pressure (PSIA) = PA0 + PA1 \* n + PA2 \* n<sup>2</sup>

Residual (%FSR) = (computed pressure - true pressure) \* 100 / Full Scale Range

Date, Offset (%FSR)

● 03-Apr-19 0.00

