



SEA-BIRD  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-17510  
Instrument Firmware Version: 7.2.5  
Zero Conductivity Frequency: 2645.10  
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	12072564	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 17510  
CALIBRATION DATE: 23-Apr-22

SBE 41 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

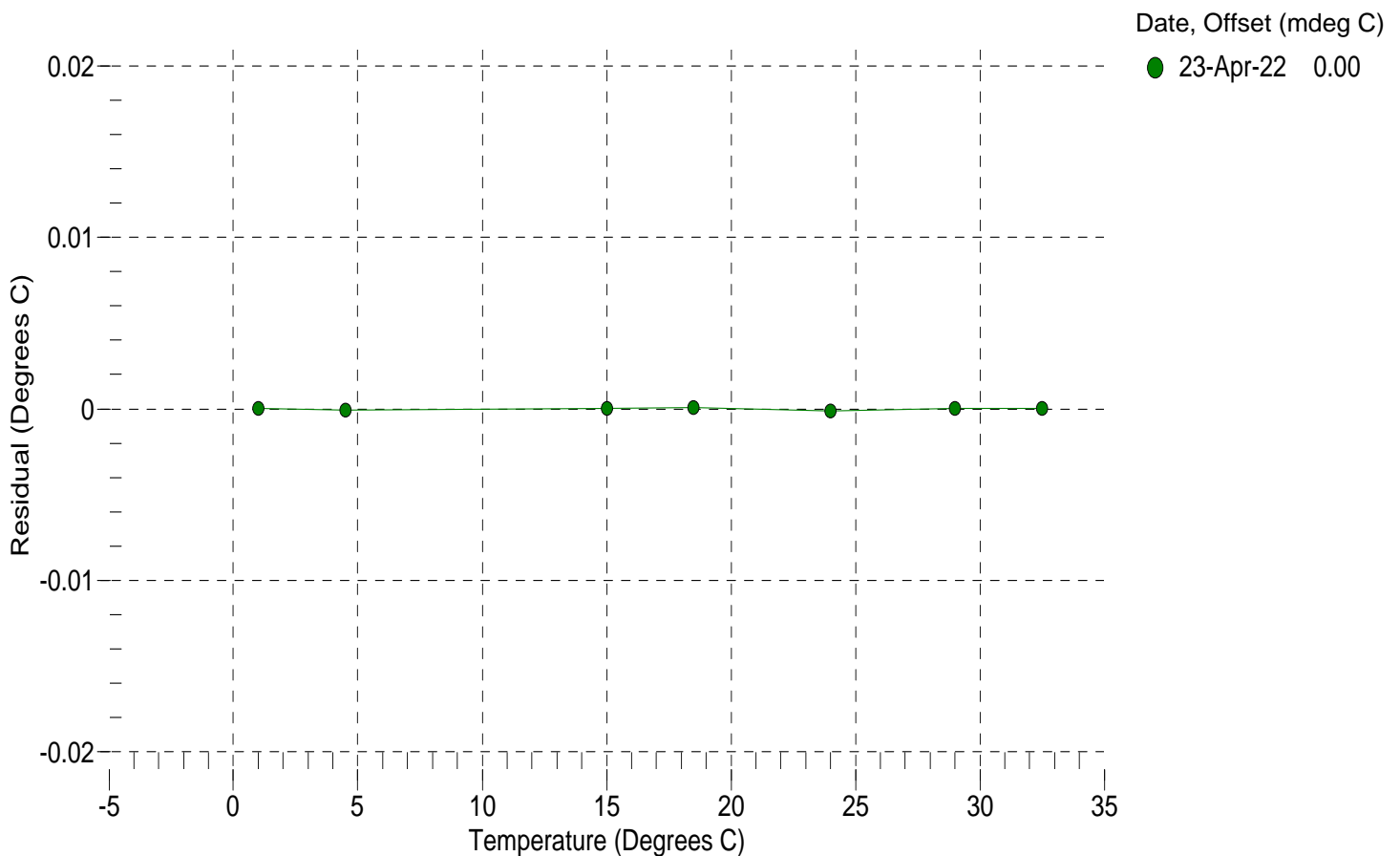
a0 = -7.676823e-004  
a1 = 2.775871e-004  
a2 = -2.696816e-006  
a3 = 1.308888e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	13754980.6	1.0000	0.0000
4.5000	11766292.5	4.4999	-0.0001
15.0000	7509110.8	15.0000	0.0000
18.5000	6504920.7	18.5001	0.0001
23.9940	5223133.8	23.9939	-0.0001
29.0000	4302208.7	29.0000	0.0000
32.5001	3768920.9	32.5001	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 = -1.028288e+000  
h = 1.474222e-001  
i = -2.901447e-004  
j = 4.498854e-005

CPcor = -9.5700e-008  
CTcor = 3.2500e-006  
WBOTC = 4.0952e-007

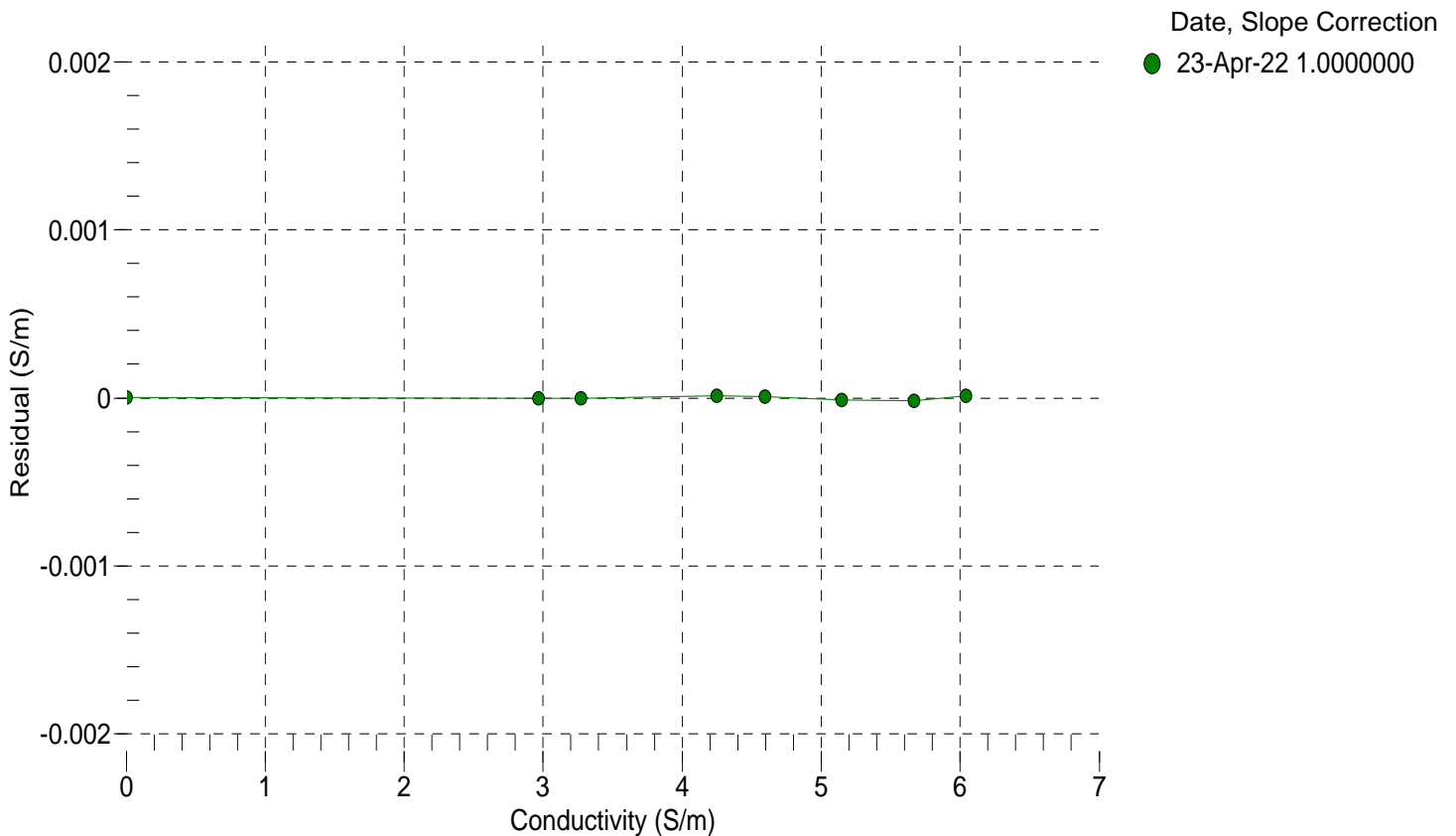
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2645.10	0.00000	0.00000
1.0000	34.6727	2.96486	5209.60	2.96485	-0.00000
4.5000	34.6533	3.27086	5404.88	3.27086	-0.00000
15.0000	34.6122	4.24922	5985.83	4.24923	0.00001
18.5000	34.6038	4.59321	6176.83	4.59322	0.00001
23.9940	34.5944	5.14864	6473.01	5.14863	-0.00001
29.0000	34.5896	5.66935	6738.52	5.66934	-0.00002
32.5001	34.5860	6.04037	6921.30	6.04038	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: 17510  
CALIBRATION DATE: 18-Apr-22

SBE 41 PRESSURE CALIBRATION DATA  
2900 psia S/N 12072564

COEFFICIENTS:

PA0 =	6.107404e-002	PTCA0 =	2.809957e+003
PA1 =	3.900421e-004	PTCA1 =	2.427647e+001
PA2 =	-2.482247e-013	PTCA2 =	-7.731322e-001
PTHA0 =	3.199766e+002	PTCB0 =	3.202184e+005
PTHA1 =	-6.106160e-005	PTCB1 =	-1.353873e+001
PTHA2 =	-1.471323e-012	PTCB2 =	4.019036e-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)
14.32	39357.1	4406631.0	14.26	-0.00	32.50	4268978.40	41167.10
590.62	1518412.6	4391567.8	590.76	0.00	29.00	4316247.00	41353.24
1167.63	3001478.7	4387876.4	1167.73	0.00	23.99	4384105.60	41490.89
1744.71	4487230.1	4385533.4	1744.64	-0.00	18.50	4458306.20	41461.60
2321.75	5976293.7	4383403.0	2321.73	-0.00	15.00	4505515.40	41361.55
2898.62	7467867.7	4381477.4	2898.69	0.00	4.50	4646398.40	41315.97
2321.51	5975815.8	4380678.2	2321.54	0.00	1.00	4693071.40	41332.43
1745.04	4487516.9	4379868.2	1744.74	-0.01			
1167.72	3001875.4	4379085.6	1167.87	0.01			
590.54	1517954.4	4377814.4	590.58	0.00			
14.30	39217.3	4376480.2	14.21	-0.00			

TEMPERATURE (°C)	SPAN
2.24	320190.09
20.92	320111.04
33.17	320211.52

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)

● 18-Apr-22 0.00

