



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-10499  
Instrument Firmware Version: V 7.2.5  
Zero Conductivity Frequency: 2728.64  
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	10818337	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 10499  
CALIBRATION DATE: 08-Feb-18

SBE 41 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

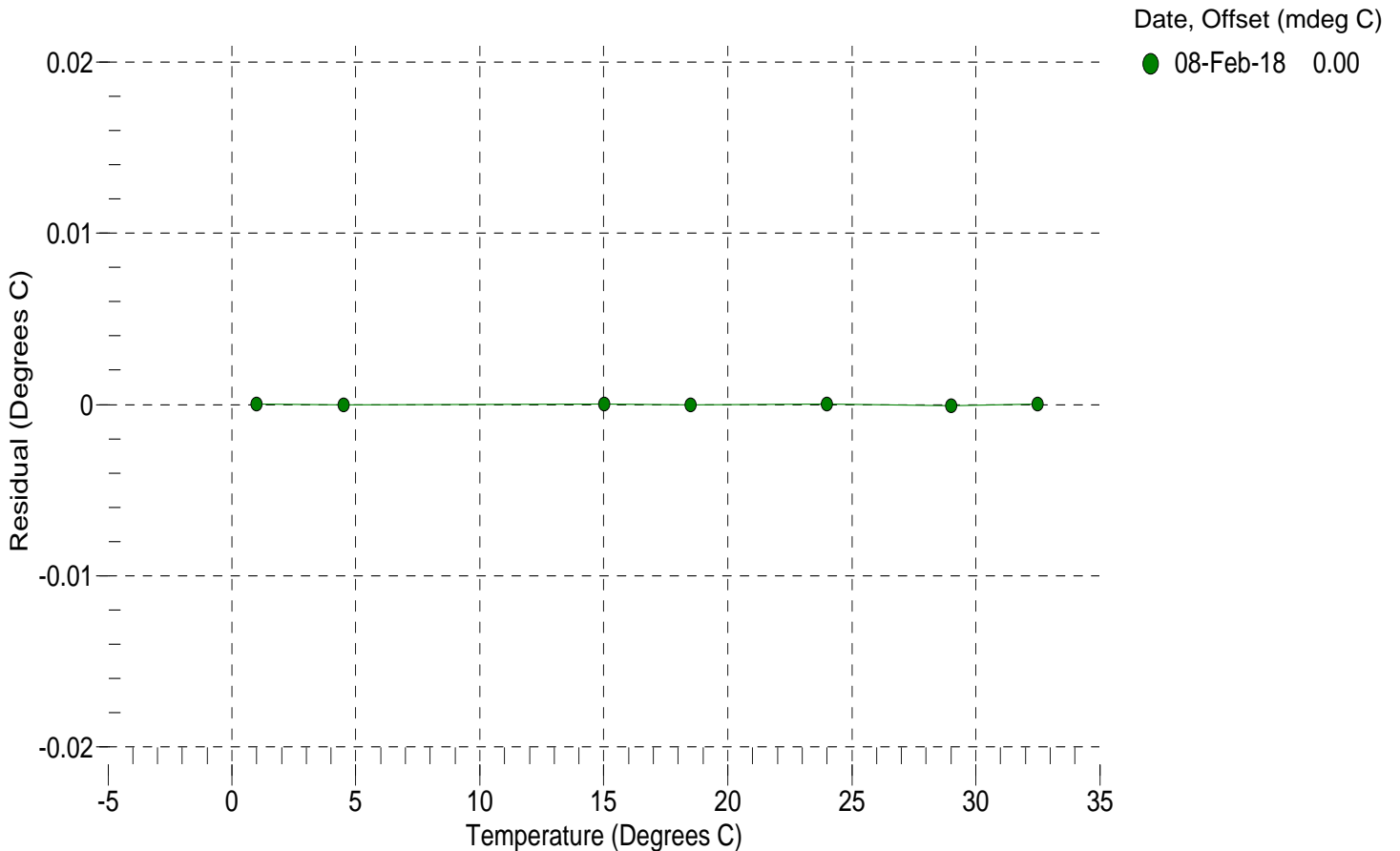
a0 = -9.064669e-004  
a1 = 2.992367e-004  
a2 = -4.049449e-006  
a3 = 1.575629e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	15227463.7	1.0000	0.0000
4.5000	13022834.7	4.5000	-0.0000
15.0000	8305472.5	15.0000	0.0000
18.5000	7193317.8	18.5000	-0.0000
23.9940	5774063.8	23.9940	0.0000
29.0000	4754825.0	28.9999	-0.0001
32.5000	4164755.8	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 = -9.989535e-001  
h = 1.347571e-001  
i = -3.310625e-004  
j = 4.240540e-005

CPcor = -9.5700e-008  
CTcor = 3.2500e-006  
WBOTC = -2.4429e-007

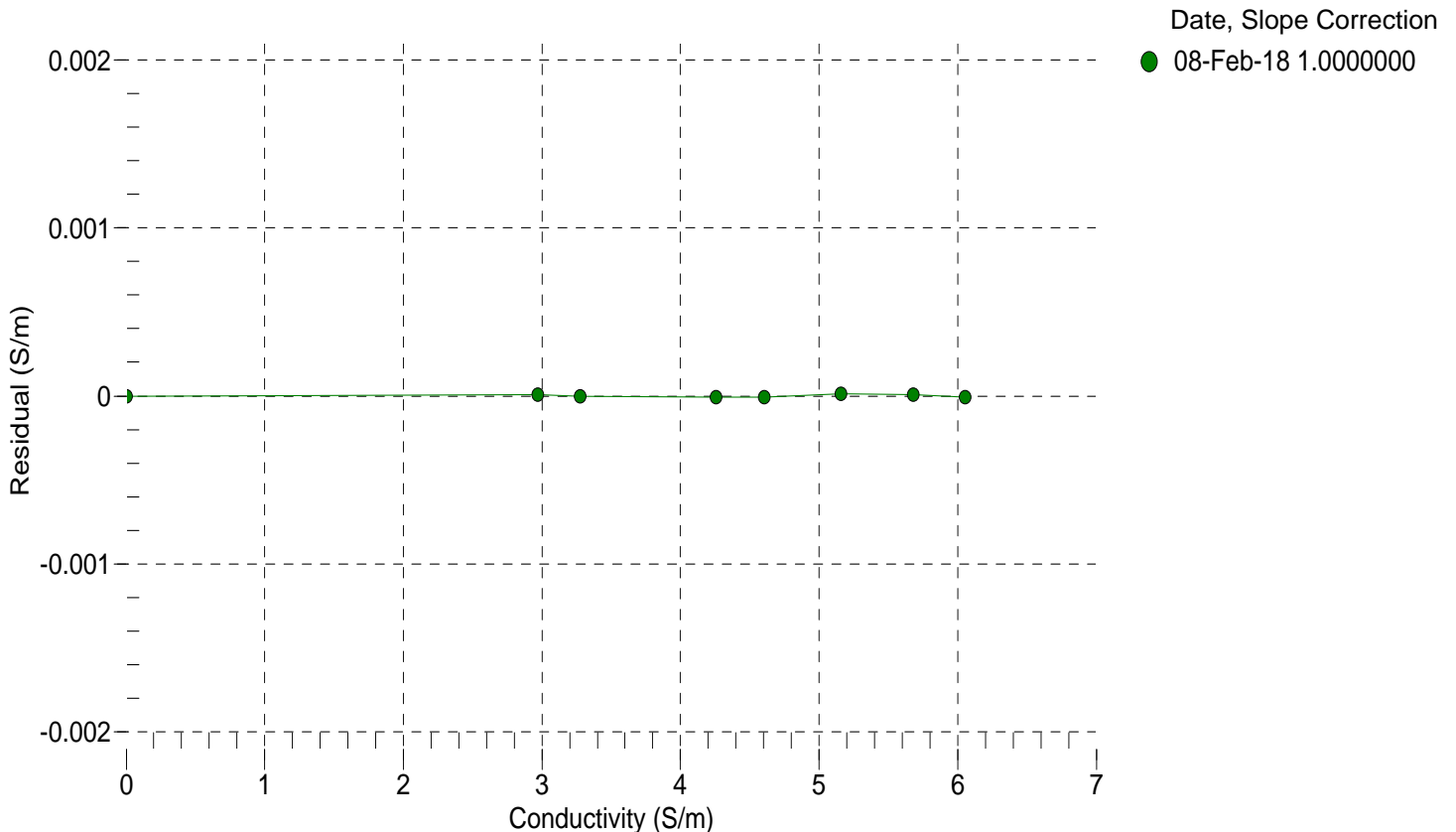
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2728.64	0.00000	0.00000
1.0000	34.7497	2.97081	5438.63	2.97082	0.00001
4.5000	34.7301	3.27739	5644.15	3.27739	-0.00000
15.0000	34.6880	4.25754	6255.26	4.25753	-0.00001
18.5000	34.6790	4.60212	6456.06	4.60211	-0.00001
23.9940	34.6692	5.15854	6767.42	5.15855	0.00001
29.0000	34.6640	5.68017	7046.44	5.68018	0.00001
32.5000	34.6615	6.05204	7238.56	6.05203	-0.00001

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

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: 10499  
CALIBRATION DATE: 05-Feb-18

SBE 41 PRESSURE CALIBRATION DATA  
2900 psia S/N 10818337

#### COEFFICIENTS:

PA0 =	5.516878e-001	PTCA0 =	-9.012207e+003
PA1 =	3.933774e-004	PTCA1 =	1.225428e+002
PA2 =	-2.830726e-013	PTCA2 =	-2.676809e+000
PTHA0 =	3.449628e+002	PTCB0 =	3.103604e+005
PTHA1 =	-6.217691e-005	PTCB1 =	-6.611923e+001
PTHA2 =	-1.766116e-012	PTCB2 =	2.116362e+000

#### 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)
14.69	28324.8	4594554.0	14.71	0.00	32.50	4460293.60	29907.00
591.98	1495681.4	4593484.8	592.09	0.00	29.00	4505160.80	30110.01
1169.50	2966352.1	4592577.6	1169.54	0.00	23.99	4569170.60	30230.11
1747.18	4440784.7	4591769.2	1747.23	0.00	18.50	4639213.00	30138.99
2324.84	5918387.5	4591074.0	2324.92	0.00	15.00	4683719.20	29972.26
2902.30	7398301.2	4590400.8	2902.26	-0.00	4.50	4816703.80	29282.93
2324.76	5918055.7	4590692.8	2324.78	0.00	1.00	4860858.00	28915.34
1747.13	4440384.0	4590933.4	1747.06	-0.00			
1169.83	2966849.1	4591166.0	1169.72	-0.00			
592.00	1495351.8	4591328.4	591.95	-0.00			
14.69	28216.8	4591176.4	14.66	-0.00			

TEMPERATURE (°C)	SPAN
2.03	310235.04
22.28	309937.94
32.68	310459.67

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)

● 05-Feb-18 0.00

