



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-10570  
Instrument Firmware Version: V 7.2.5  
Zero Conductivity Frequency: 2709.21  
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	10817712	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 10570  
 CALIBRATION DATE: 06-Feb-18

SBE 41 TEMPERATURE CALIBRATION DATA  
 ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

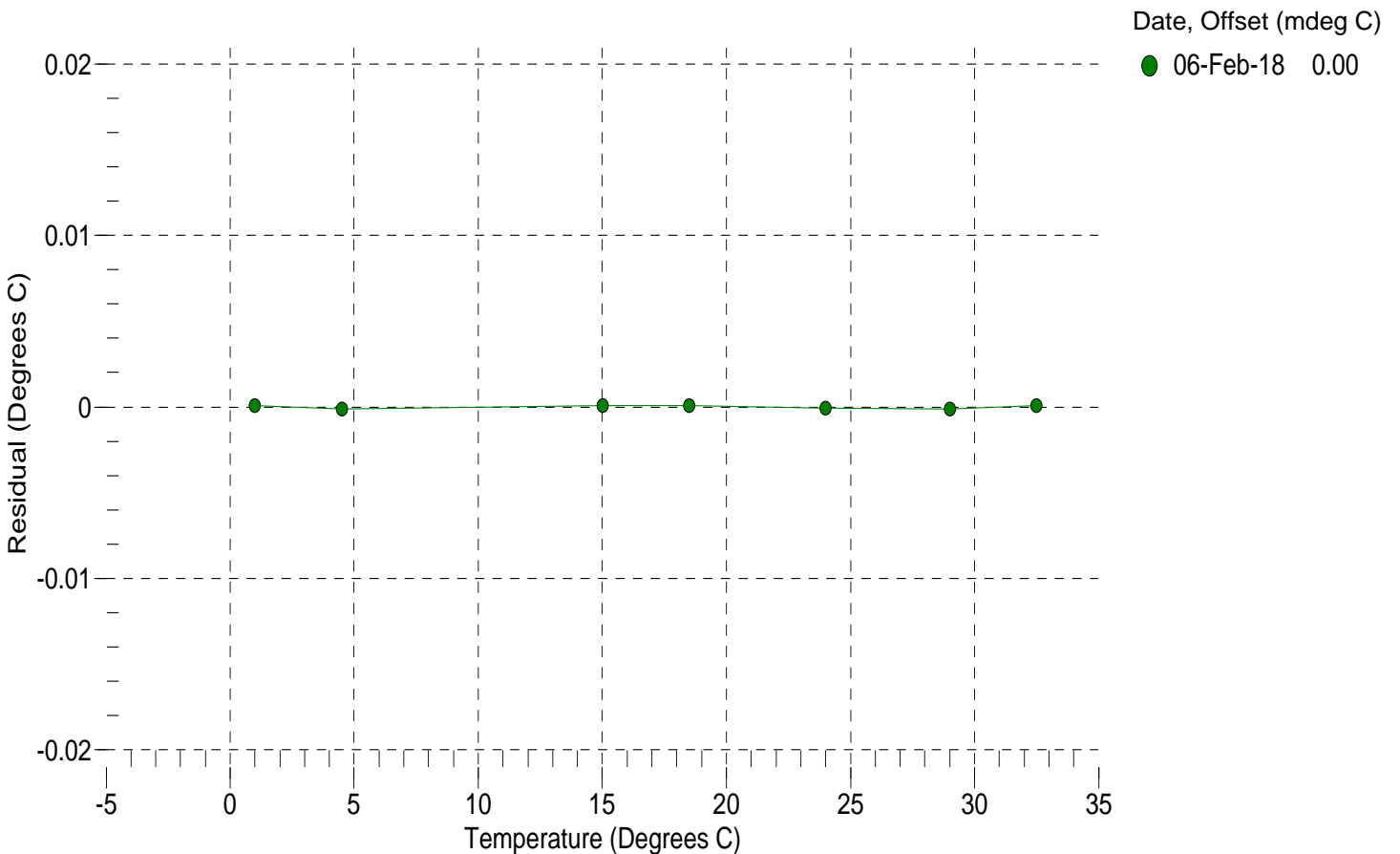
a0 = -9.237658e-004  
 a1 = 2.984552e-004  
 a2 = -4.006250e-006  
 a3 = 1.559658e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	16613430.2	1.0001	0.0001
4.5000	14208153.4	4.4999	-0.0001
15.0000	9061177.4	15.0001	0.0001
18.5000	7847751.5	18.5001	0.0001
23.9940	6299307.0	23.9939	-0.0001
29.0000	5187261.8	28.9999	-0.0001
32.5000	4543447.8	32.5001	0.0001

n = Instrument Output (counts)

$$\text{Temperature ITS-90 (°C)} = 1 / \{ a_0 + a_1[\ln(n)] + a_2[\ln^2(n)] + a_3[\ln^3(n)] \} - 273.15$$

Residual (°C) = instrument temperature - bath temperature





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 CALIBRATION DATE: 06-Feb-18

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

COEFFICIENTS:

g = -9.961950e-001                      CPcor = -9.5700e-008  
 h = 1.363806e-001                      CTcor = 3.2500e-006  
 i = -3.660126e-004                      WBOTC = -2.4604e-007  
 j = 4.583870e-005

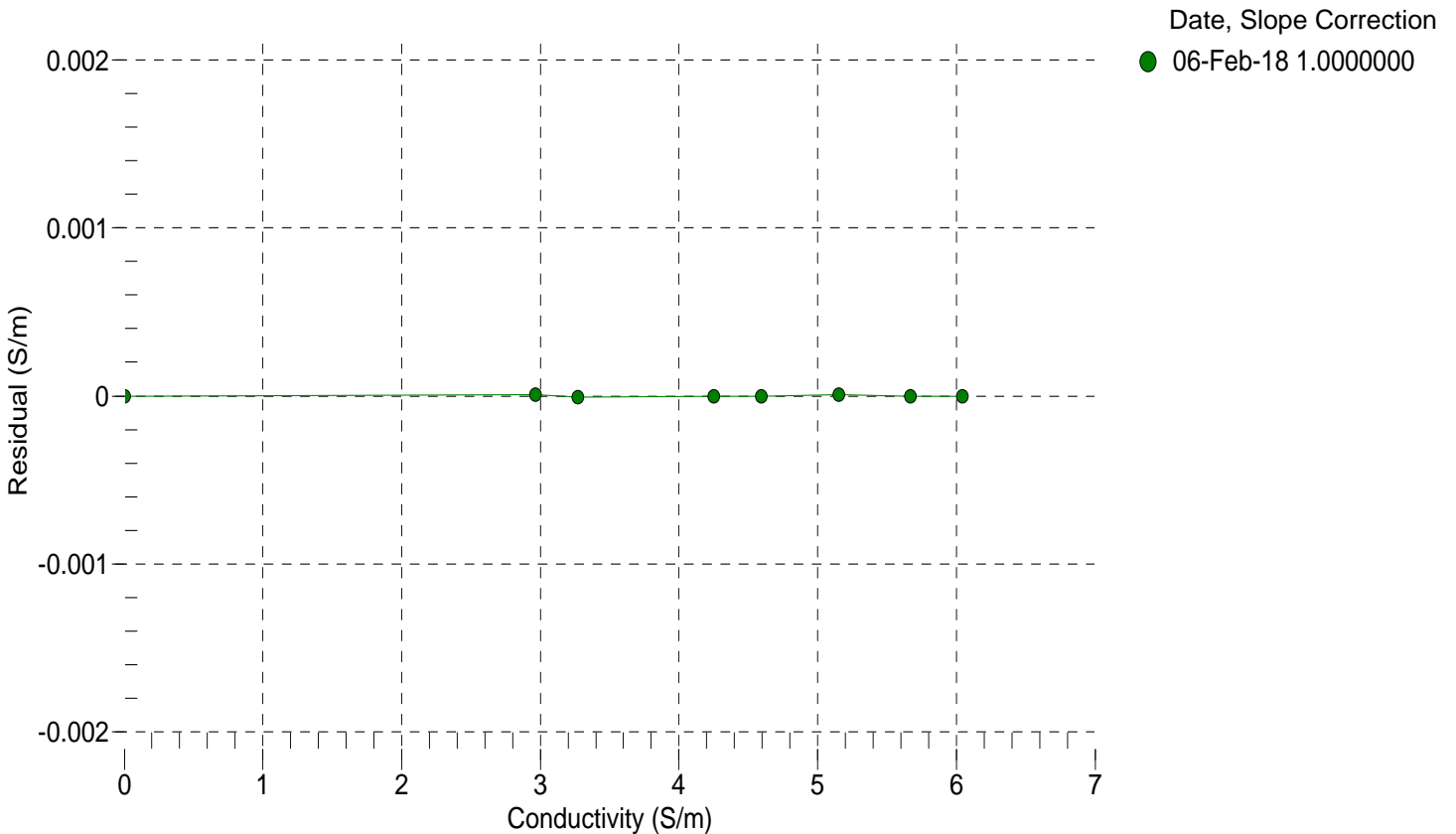
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2709.21	0.00000	0.00000
1.0000	34.6847	2.96579	5402.58	2.96579	0.00001
4.5000	34.6654	3.27189	5606.83	3.27188	-0.00001
15.0000	34.6224	4.25034	6214.04	4.25034	-0.00000
18.5000	34.6142	4.59444	6413.61	4.59444	-0.00000
23.9940	34.6057	5.15013	6723.06	5.15014	0.00001
29.0000	34.6018	5.67113	7000.38	5.67113	-0.00000
32.5000	34.5998	6.04249	7191.31	6.04249	-0.00000

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

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: 10570  
 CALIBRATION DATE: 02-Feb-18

SBE 41 PRESSURE CALIBRATION DATA  
 2900 psia S/N 10817712

COEFFICIENTS:

PA0 =	3.742096e-001	PTCA0 =	-7.602224e+003
PA1 =	3.902492e-004	PTCA1 =	6.499484e+001
PA2 =	-2.832359e-013	PTCA2 =	-9.726480e-001
PTHA0 =	3.455007e+002	PTCB0 =	3.128613e+005
PTHA1 =	-6.163751e-005	PTCB1 =	8.807555e+000
PTHA2 =	-1.855020e-012	PTCB2 =	2.255279e-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)
14.68	30081.4	4608726.0	14.69	0.00	32.50	4475338.80	31604.20
591.60	1511885.3	4607554.8	591.75	0.01	29.00	4519964.00	31655.63
1168.79	2997009.9	4606746.4	1168.85	0.00	23.99	4583777.60	31611.47
1745.91	4485365.1	4606069.0	1745.95	0.00	18.50	4653465.40	31439.44
2323.03	5977110.3	4605387.6	2323.11	0.00	15.00	4697869.80	31257.60
2900.07	7471579.9	4604634.4	2900.05	-0.00	4.50	4830139.20	30825.07
2323.02	5976864.0	4604920.6	2323.00	-0.00	1.00	4874185.40	30642.95
1745.86	4485066.7	4605091.8	1745.83	-0.00			
1168.92	2996766.5	4605192.8	1168.74	-0.01			
591.66	1511565.6	4605371.4	591.62	-0.00			
14.68	29933.3	4605433.2	14.63	-0.00			

TEMPERATURE (°C)	SPAN
2.18	312881.62
23.04	313183.96
32.58	313387.60

y = thermistor output (counts)

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

$$x = \text{instrument output} - PTCA0 - PTCA1 * t - PTCA2 * t^2$$

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

$$\text{pressure (PSIA)} = PA0 + PA1 * n + PA2 * n^2$$

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

Date, Offset (%FSR)

● 02-Feb-18 0.00

