



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-10593  
Instrument Firmware Version: V 7.2.5  
Zero Conductivity Frequency: 2622.74  
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	10817707	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 10593  
 CALIBRATION DATE: 27-Feb-18

SBE 41 TEMPERATURE CALIBRATION DATA  
 ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

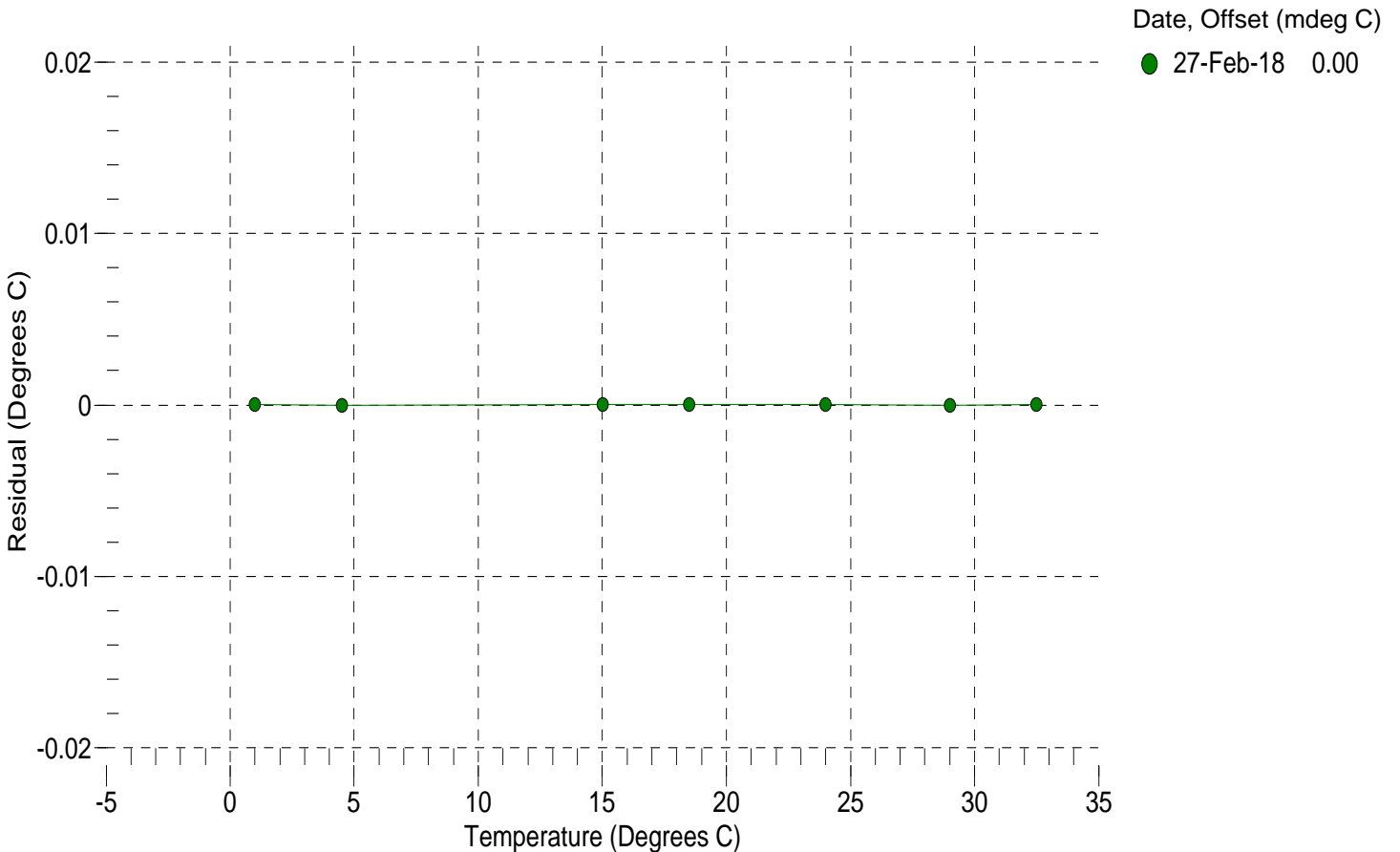
a0 = -7.846844e-004  
 a1 = 2.789075e-004  
 a2 = -2.946969e-006  
 a3 = 1.313183e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	16983359.6	1.0000	0.0000
4.5000	14488426.8	4.5000	-0.0000
15.0000	9174600.9	15.0000	0.0000
18.5000	7928009.3	18.5000	0.0000
23.9940	6341713.8	23.9940	0.0000
29.0000	5206218.9	29.0000	-0.0000
32.5001	4550542.9	32.5001	0.0000

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

COEFFICIENTS:

g = -1.014038e+000      CPcor = -9.5700e-008  
 h = 1.479761e-001      CTcor = 3.2500e-006  
 i = -3.357579e-004      WBOTC = -9.5310e-008  
 j = 4.659716e-005

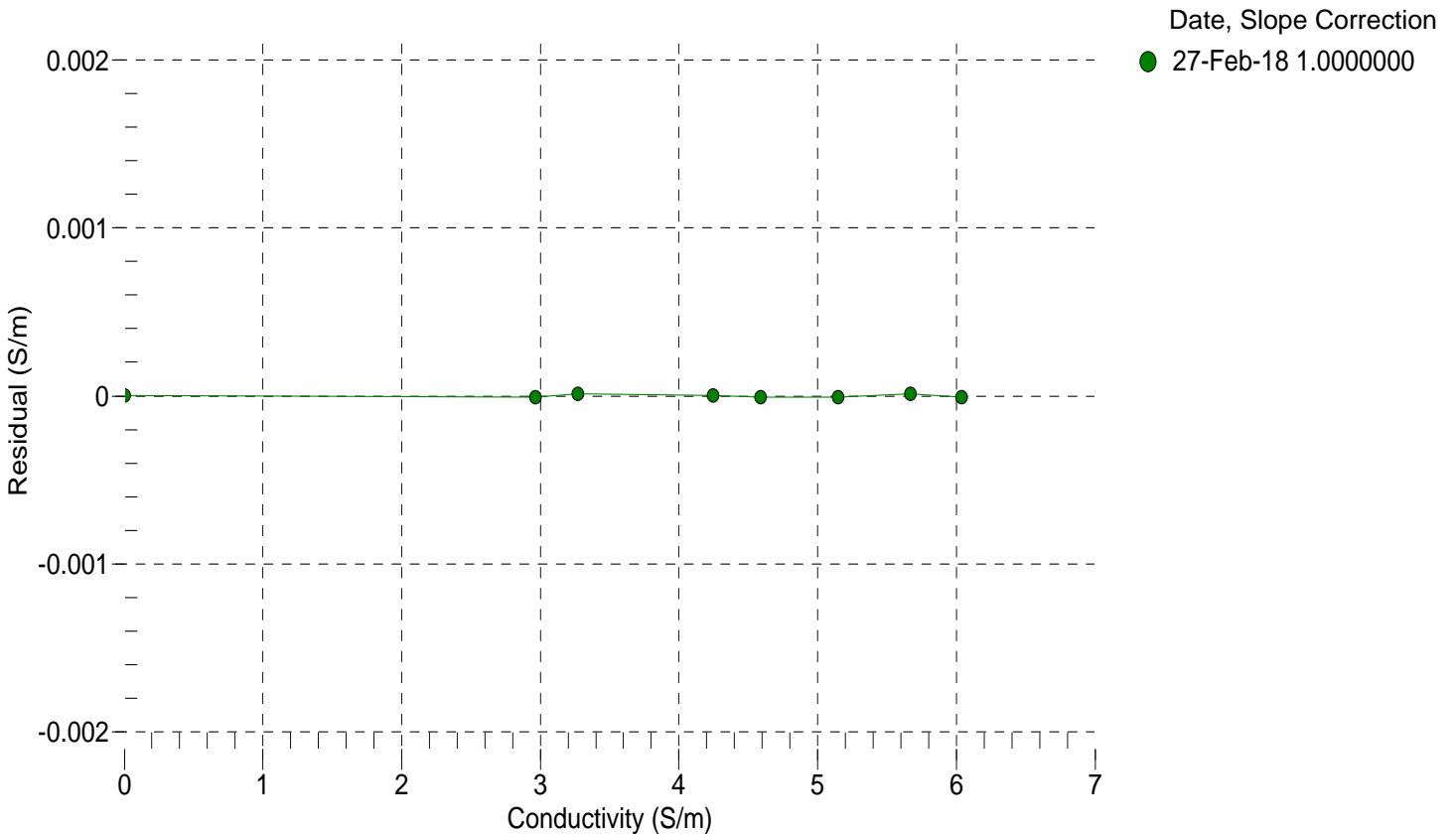
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2622.74	0.00000	0.00000
1.0000	34.6505	2.96314	5192.87	2.96313	-0.00001
4.5000	34.6315	3.26900	5388.33	3.26901	0.00001
15.0000	34.5917	4.24697	5969.70	4.24697	0.00000
18.5000	34.5837	4.59083	6160.82	4.59082	-0.00001
23.9940	34.5754	5.14612	6457.21	5.14611	-0.00001
29.0000	34.5712	5.66667	6722.89	5.66669	0.00001
32.5001	34.5682	6.03761	6905.76	6.03760	-0.00001

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

t = temperature (°C); p = pressure (decibars);  $\delta$  = CTcor;  $\epsilon$  = 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: 10593  
 CALIBRATION DATE: 08-Feb-18

SBE 41 PRESSURE CALIBRATION DATA  
 2900 psia S/N 10817707

COEFFICIENTS:

PA0 =	6.191699e-001	PTCA0 =	-9.274436e+003
PA1 =	3.911438e-004	PTCA1 =	8.428896e+001
PA2 =	-2.856539e-013	PTCA2 =	-4.917780e-001
PTHA0 =	3.379928e+002	PTCB0 =	3.122214e+005
PTHA1 =	-6.139789e-005	PTCB1 =	4.230718e+001
PTHA2 =	-1.749037e-012	PTCB2 =	-6.407428e-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	28375.0	4561726.4	14.70	0.00	32.50	4419286.40	30629.30
592.10	1509546.7	4557732.4	592.24	0.00	29.00	4464758.80	30519.18
1169.64	2994118.4	4556216.0	1169.86	0.01	23.99	4529638.60	30252.00
1747.32	4481681.8	4555089.6	1747.38	0.00	18.50	4600681.40	29853.51
2325.03	5972813.1	4554107.8	2325.01	-0.00	15.00	4645863.00	29558.93
2902.60	7467092.1	4553217.0	2902.60	-0.00	4.50	4780542.60	28792.76
2324.99	5972802.6	4553313.2	2325.00	0.00	1.00	4825417.60	28575.99
1747.25	4481292.0	4553345.6	1747.21	-0.00			
1169.81	2993471.7	4553397.8	1169.59	-0.01			
592.24	1509222.9	4553332.8	592.10	-0.00			
14.69	28379.2	4550927.6	14.68	-0.00			

TEMPERATURE (°C)	SPAN
2.18	312310.67
23.04	312856.01
32.58	312919.65

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)

● 08-Feb-18 0.00

