



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-10664  
Instrument Firmware Version: V 7.2.5  
Zero Conductivity Frequency: 2634.78  
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	10391755	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 10664  
 CALIBRATION DATE: 06-Mar-18

SBE 41 TEMPERATURE CALIBRATION DATA  
 ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

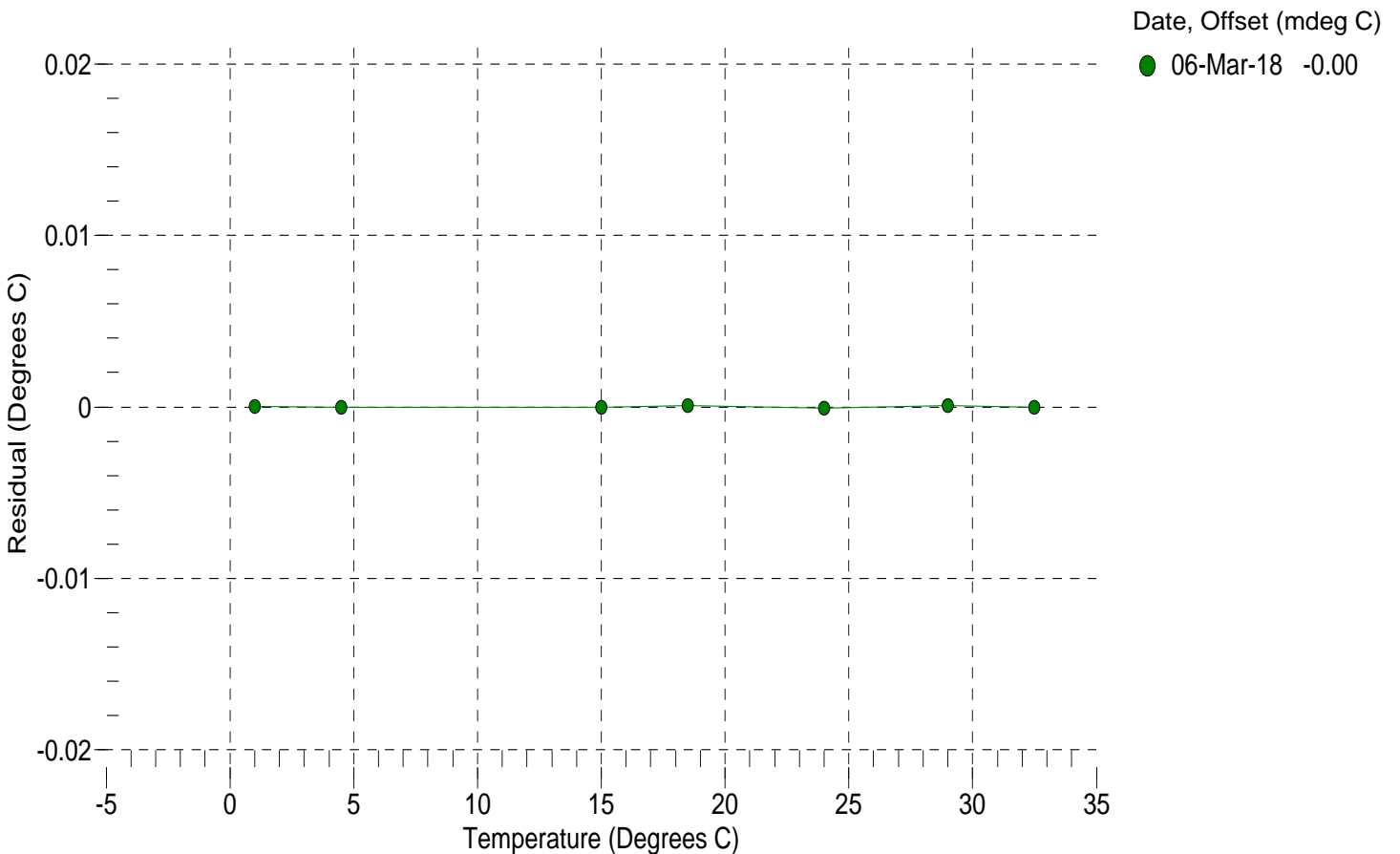
a0 = -8.077302e-004  
 a1 = 2.916551e-004  
 a2 = -3.760926e-006  
 a3 = 1.481249e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	14730931.1	1.0000	0.0000
4.5000	12557156.0	4.5000	-0.0000
15.0000	7934139.7	15.0000	-0.0000
18.5000	6851305.0	18.5001	0.0001
23.9940	5474728.3	23.9939	-0.0001
29.0000	4490354.4	29.0001	0.0001
32.5000	3922480.3	32.5000	-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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 CALIBRATION DATE: 06-Mar-18

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

COEFFICIENTS:

g = -1.016901e+000      CPcor = -9.5700e-008  
 h = 1.470050e-001      CTcor = 3.2500e-006  
 i = -3.171966e-004      WBOTC = -2.5299e-007  
 j = 4.542327e-005

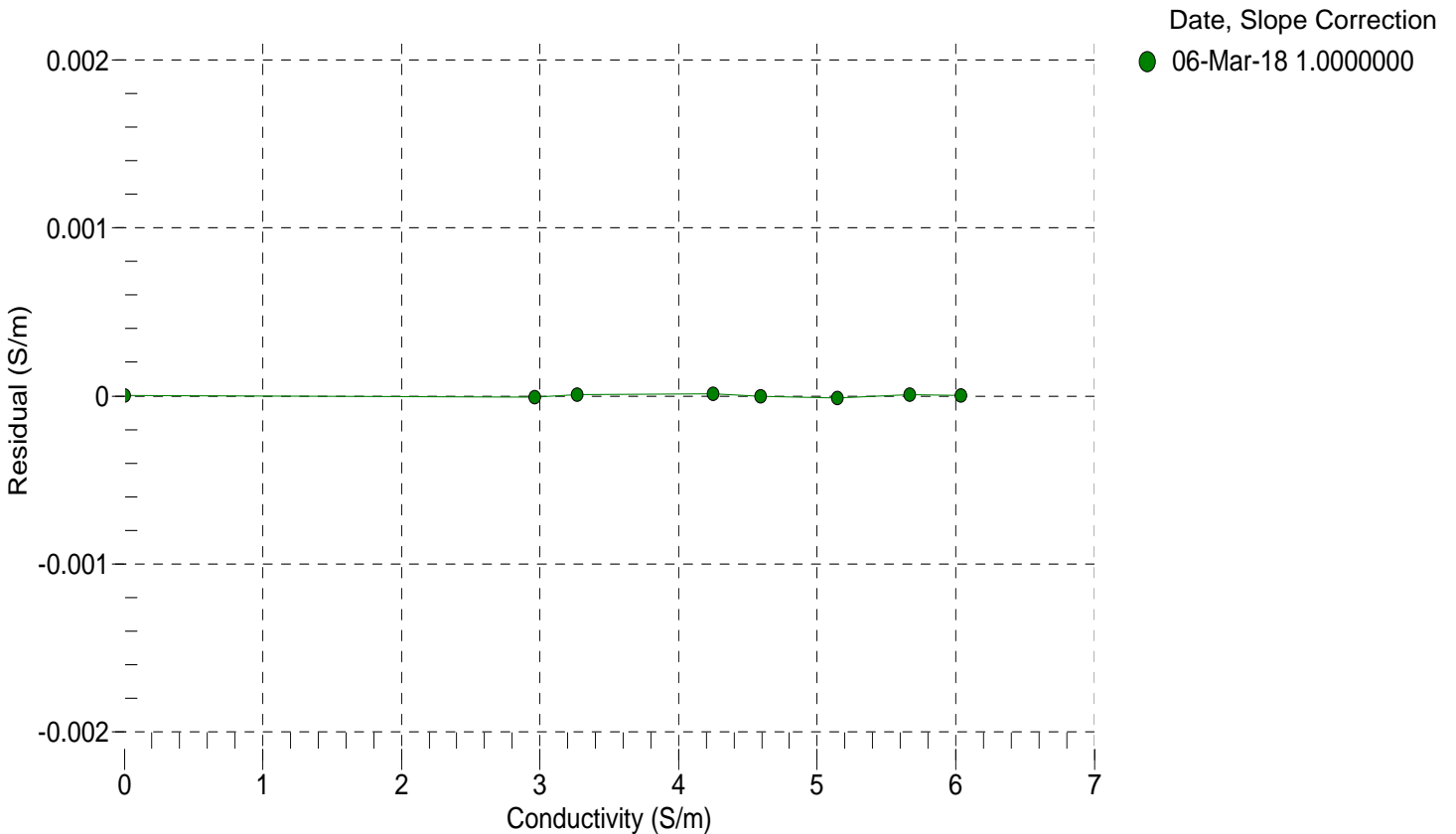
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2634.78	0.00000	0.00000
1.0000	34.6631	2.96411	5211.37	2.96411	-0.00001
4.5000	34.6434	3.27001	5407.32	3.27002	0.00001
15.0000	34.6019	4.24809	5990.21	4.24810	0.00001
18.5000	34.5932	4.59196	6181.81	4.59195	-0.00000
23.9940	34.5838	5.14723	6478.95	5.14722	-0.00001
29.0000	34.5785	5.66774	6745.28	5.66774	0.00001
32.5000	34.5756	6.03875	6928.66	6.03875	0.00000

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

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: 10664  
 CALIBRATION DATE: 27-Feb-18

SBE 41 PRESSURE CALIBRATION DATA  
 2900 psia S/N 10391755

COEFFICIENTS:

PA0 =	2.271432e-001	PTCA0 =	7.817979e+003
PA1 =	3.938851e-004	PTCA1 =	5.284543e+001
PA2 =	-2.851081e-013	PTCA2 =	-1.209192e+000
PTHA0 =	3.056415e+002	PTCB0 =	3.035969e+005
PTHA1 =	-6.095462e-005	PTCB1 =	-2.421333e+001
PTHA2 =	-1.228995e-012	PTCB2 =	1.597277e+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)
14.64	45061.0	4283743.8	14.66	0.00	32.50	4136136.80	46893.20
592.16	1514151.0	4282108.6	592.20	0.00	29.00	4185293.40	47039.09
1169.72	2986626.7	4281118.0	1169.83	0.00	23.99	4255487.80	47115.25
1747.46	4462408.1	4280258.4	1747.50	0.00	18.50	4332330.40	47049.81
2325.17	5941534.2	4279317.4	2325.23	0.00	15.00	4381133.00	46964.28
2902.82	7423588.1	4278436.6	2902.84	0.00	4.50	4527198.80	46713.08
2325.21	5941360.9	4278649.0	2325.14	-0.00	1.00	4575690.80	46551.08
1747.39	4461867.2	4278653.6	1747.26	-0.00			
1169.78	2986588.3	4278713.0	1169.78	0.00			
591.91	1513311.6	4278856.4	591.85	-0.00			
14.64	44932.5	4278355.2	14.61	-0.00			

TEMPERATURE (°C)	SPAN
2.10	303553.08
20.42	303768.49
32.50	304496.89

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)

● 27-Feb-18 0.00

