



SEA-BIRD
SCIENTIFIC

SBE41-CP ALACE

Instrument Configuration

Instrument Serial Number: 41-11692
Instrument Firmware Version: V 7.2.5
Zero Conductivity Frequency: 2620.10
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	11076170	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 11692
 CALIBRATION DATE: 31-Mar-19

SBE 41 TEMPERATURE CALIBRATION DATA
 ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

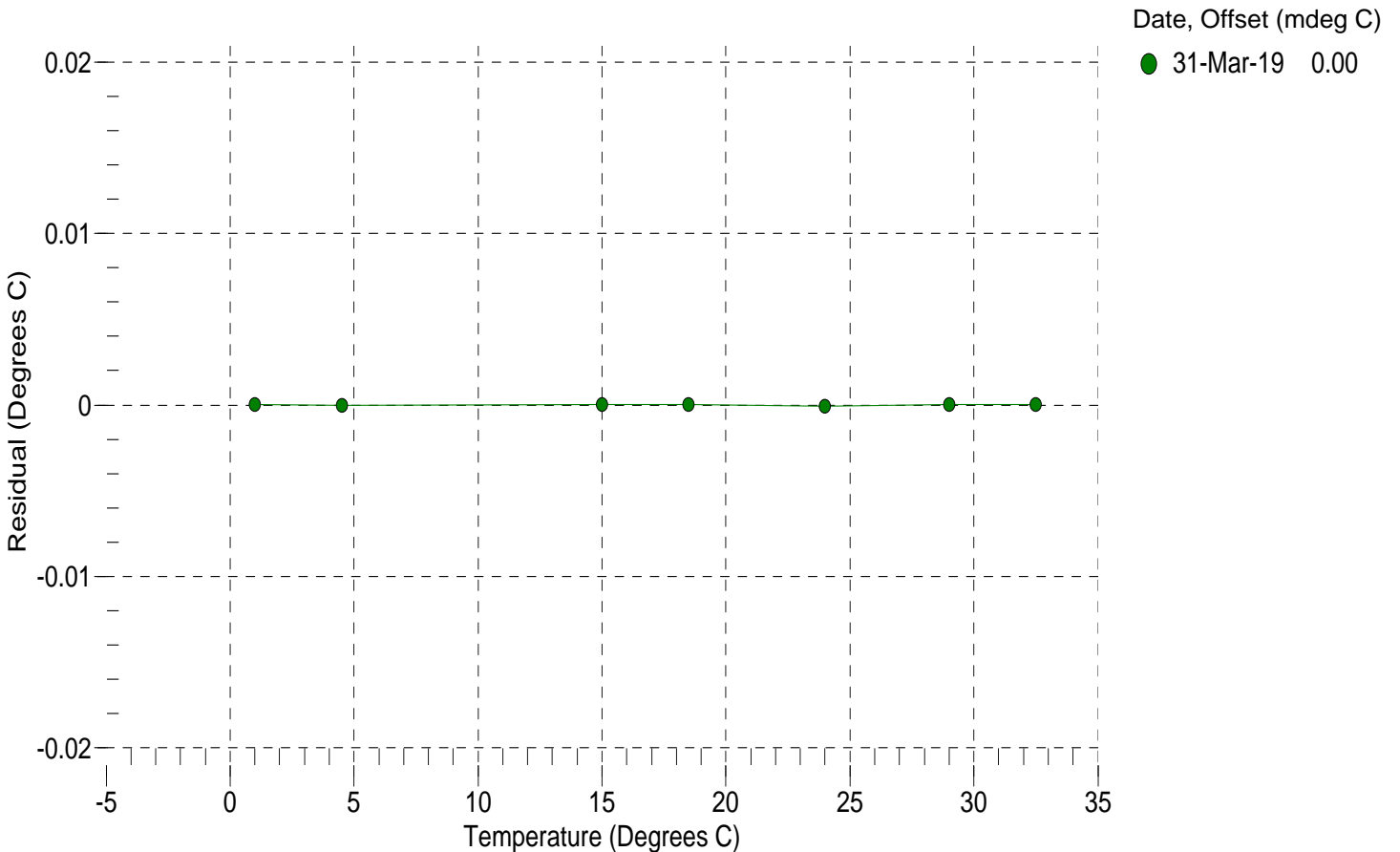
a0 = -9.564094e-004
 a1 = 3.040541e-004
 a2 = -4.331125e-006
 a3 = 1.636683e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
0.9998	16277802.1	0.9998	0.0000
4.5000	13928428.3	4.5000	-0.0000
15.0000	8896551.0	15.0000	0.0000
18.5000	7708918.5	18.5000	0.0000
24.0000	6191010.2	23.9999	-0.0001
29.0000	5102599.2	29.0000	0.0000
32.5001	4471314.7	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 = -1.014254e+000 CPcor = -9.5700e-008
 h = 1.484101e-001 CTcor = 3.2500e-006
 i = -3.886466e-004 WBOTC = -3.1802e-007
 j = 5.144938e-005

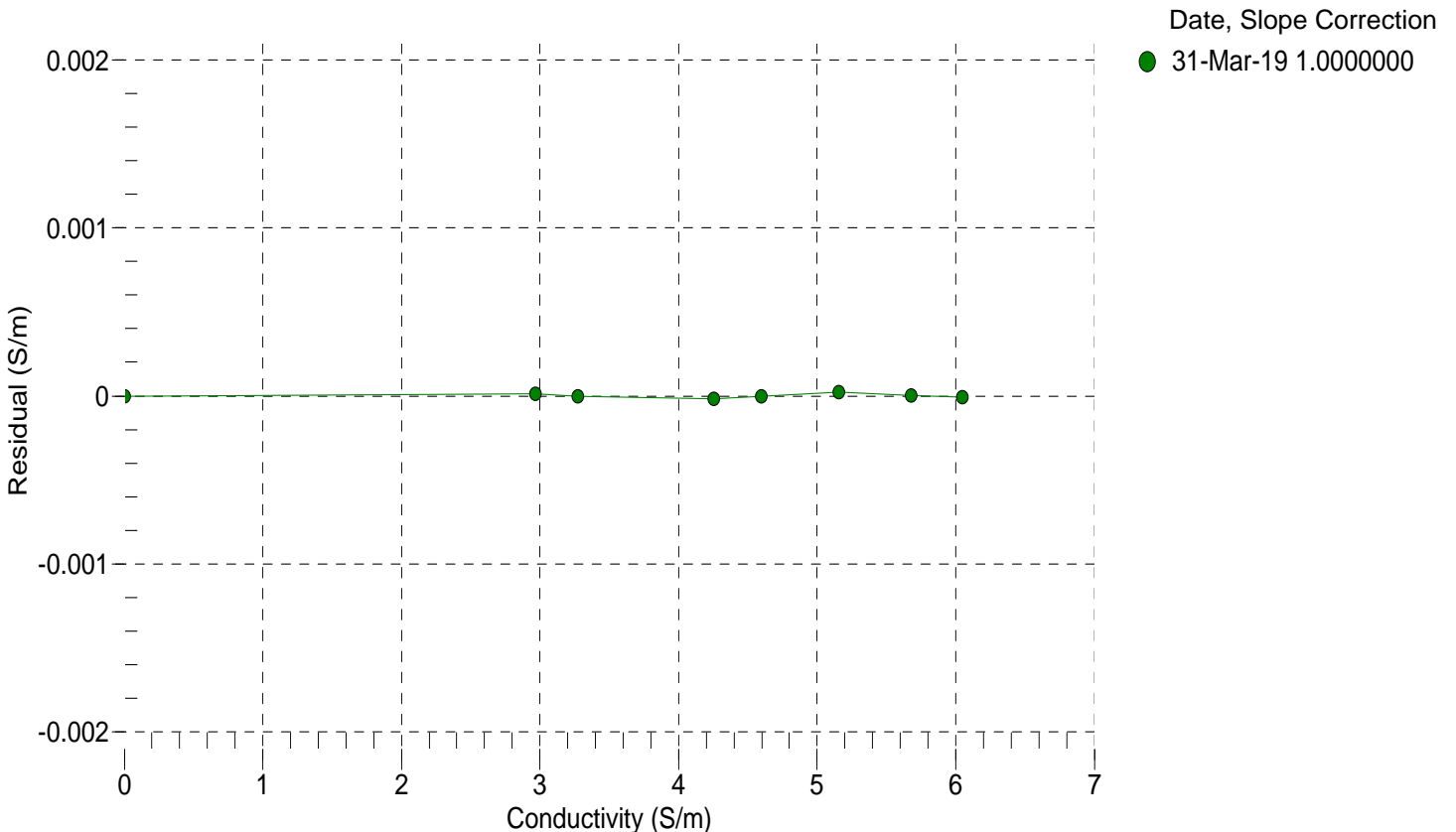
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2620.10	0.00000	0.00000
0.9998	34.7297	2.96925	5191.91	2.96926	0.00001
4.5000	34.7099	3.27567	5387.36	3.27567	-0.00000
15.0000	34.6674	4.25528	5968.66	4.25526	-0.00002
18.5000	34.6582	4.59965	6159.71	4.59965	-0.00000
24.0000	34.6483	5.15639	6456.31	5.15641	0.00002
29.0000	34.6435	5.67719	6721.55	5.67719	0.00000
32.5001	34.6413	6.04893	6904.43	6.04892	-0.00001

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

t = temperature (°C); p = pressure (decibars); δ = CTcor; ϵ = 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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SBE 41 PRESSURE CALIBRATION DATA
 2900 psia S/N 11076170

COEFFICIENTS:

PA0 =	2.569799e-001	PTCA0 =	3.028504e+003
PA1 =	3.915908e-004	PTCA1 =	2.018338e+001
PA2 =	-2.633800e-013	PTCA2 =	3.495982e-001
PTHA0 =	2.922067e+002	PTCB0 =	3.124994e+005
PTHA1 =	-6.107199e-005	PTCB1 =	1.164192e+001
PTHA2 =	-9.660109e-013	PTCB2 =	-1.011794e-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)
14.62	40793.7	4134252.8	14.78	0.01	32.50	3999473.40	42473.20
590.18	1512773.4	4124283.8	590.18	-0.00	29.00	4050290.00	42409.19
1166.16	2989272.5	4123384.8	1166.20	0.00	24.00	4122771.80	42213.63
1742.16	4468797.0	4122464.0	1742.26	0.00	18.50	4202354.00	41972.59
2318.31	5951347.4	4121248.4	2318.34	0.00	15.00	4252910.40	41832.16
2894.17	7435960.6	4120213.4	2894.06	-0.00	4.50	4404242.40	41592.76
2318.32	5951581.1	4120257.6	2318.42	0.00	1.00	4454334.60	41516.56
1742.43	4469387.0	4120113.0	1742.48	0.00			
1166.57	2989834.8	4120156.8	1166.41	-0.01			
590.38	1512845.8	4120306.0	590.20	-0.01			
14.61	40353.1	4119468.0	14.59	-0.00			

TEMPERATURE (°C)	SPAN
1.14	312512.46
20.40	312694.75
33.26	312774.65

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)

● 19-Mar-19 -0.00

