



SEA-BIRD
SCIENTIFIC

SBE41-CP ALACE

Instrument Configuration

Instrument Serial Number: 41-10594
Instrument Firmware Version: V 7.2.5
Zero Conductivity Frequency: 2601.12
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	10817709	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 10594
 CALIBRATION DATE: 11-Feb-18

SBE 41 TEMPERATURE CALIBRATION DATA
 ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

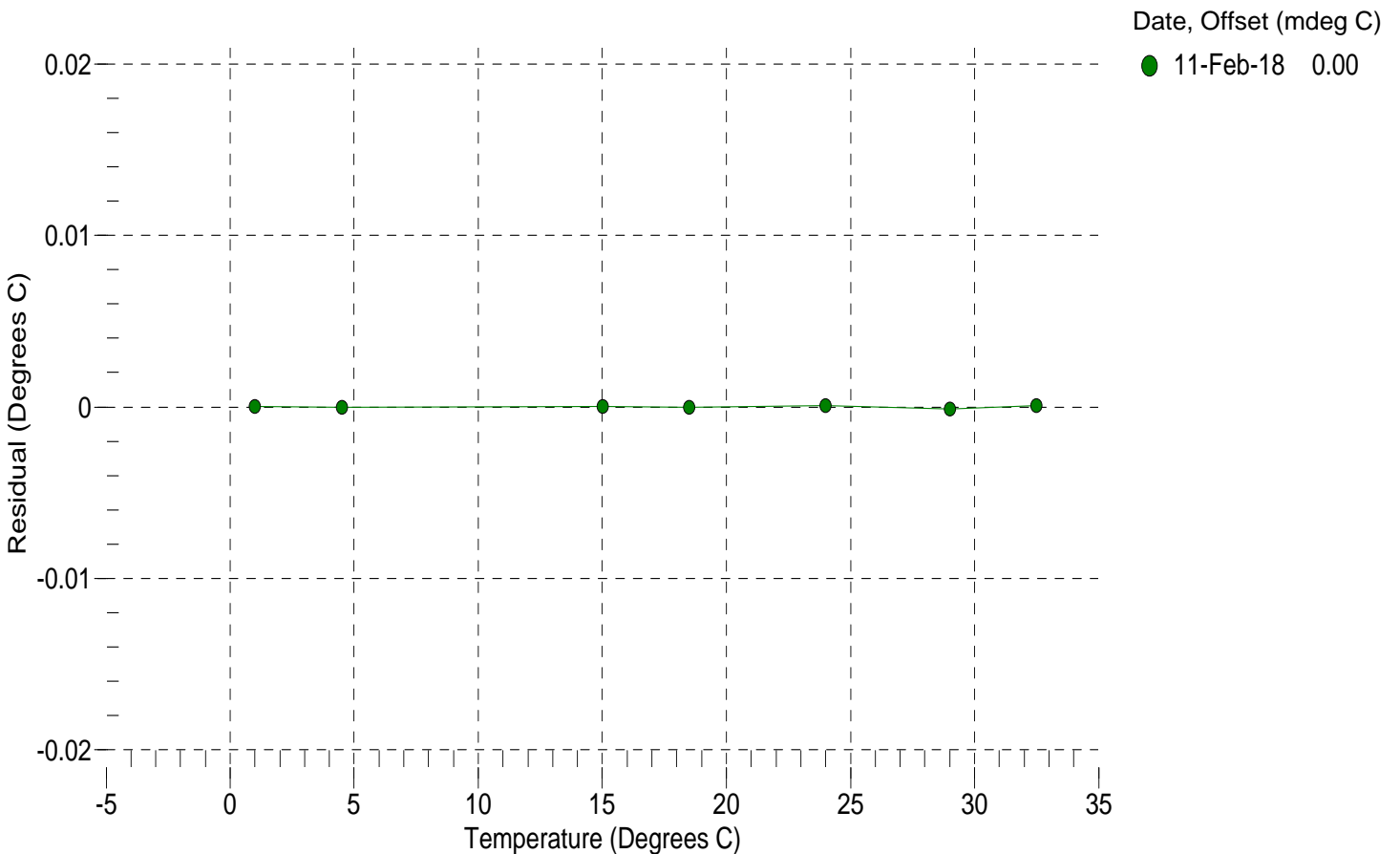
a0 = -7.398772e-004
 a1 = 2.799564e-004
 a2 = -3.012528e-006
 a3 = 1.340790e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	13964538.6	1.0000	0.0000
4.5000	11911370.6	4.5000	-0.0000
15.0000	7539565.0	15.0000	0.0000
18.5000	6514294.5	18.5000	-0.0000
23.9940	5209801.0	23.9941	0.0001
29.0000	4276273.3	28.9999	-0.0001
32.5001	3737255.5	32.5002	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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SBE 41 CONDUCTIVITY CALIBRATION DATA
 PSS 1978: C(35,15,0) = 4.2914 Siemens/meter

COEFFICIENTS:

g = -1.002887e+000 CPcor = -9.5700e-008
 h = 1.488018e-001 CTcor = 3.2500e-006
 i = -3.445400e-004 WBOTC = -1.6017e-007
 j = 4.778315e-005

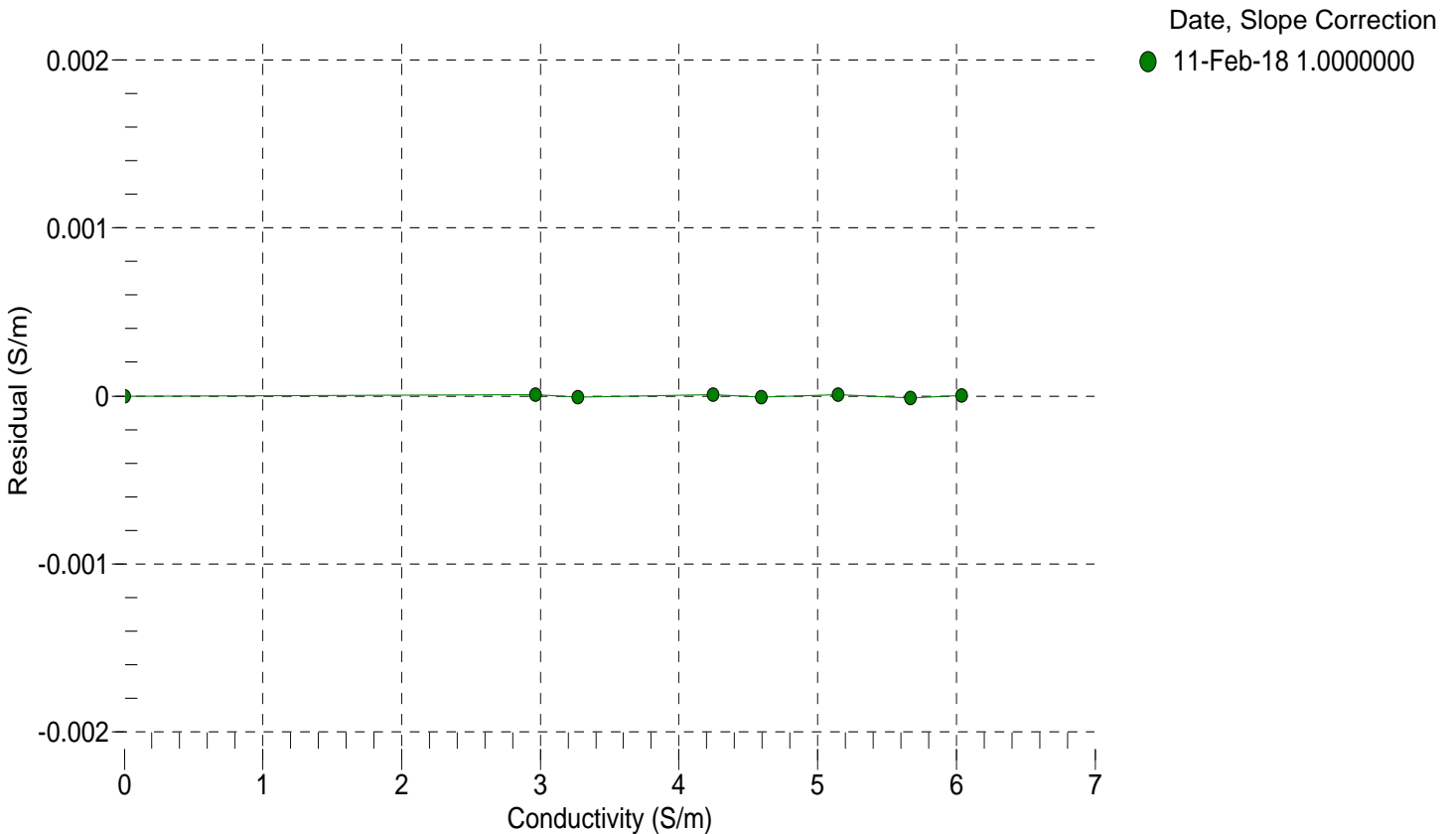
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2601.12	0.00000	0.00000
1.0000	34.6564	2.96360	5171.73	2.96360	0.00001
4.5000	34.6373	3.26950	5366.91	3.26949	-0.00001
15.0000	34.5970	4.24755	5947.40	4.24755	0.00001
18.5000	34.5890	4.59146	6138.20	4.59145	-0.00001
23.9940	34.5808	5.14684	6434.10	5.14685	0.00001
29.0000	34.5767	5.66747	6699.27	5.66746	-0.00001
32.5001	34.5739	6.03849	6881.82	6.03850	0.00000

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

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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 CALIBRATION DATE: 08-Feb-18

SBE 41 PRESSURE CALIBRATION DATA
 2900 psia S/N 10817709

COEFFICIENTS:

PA0 =	5.913736e-001	PTCA0 =	-4.560827e+003
PA1 =	3.910096e-004	PTCA1 =	9.083060e+001
PA2 =	-2.734985e-013	PTCA2 =	-9.502583e-001
PTHA0 =	3.455055e+002	PTCB0 =	3.110139e+005
PTHA1 =	-6.155939e-005	PTCB1 =	5.810120e+000
PTHA2 =	-1.869298e-012	PTCB2 =	1.555292e-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	33130.9	4616294.6	14.73	0.00	32.50	4476206.00	34732.50
592.10	1512425.3	4613251.8	592.14	0.00	29.00	4520832.20	34717.46
1169.64	2995370.7	4611807.2	1169.78	0.00	23.99	4584558.40	34538.12
1747.32	4481266.2	4610702.8	1747.36	0.00	18.50	4654219.80	34203.37
2325.03	5970712.5	4609749.6	2325.11	0.00	15.00	4698553.20	33920.01
2902.60	7462395.1	4608850.4	2902.50	-0.00	4.50	4830836.00	33211.88
2324.99	5970680.1	4608924.8	2325.09	0.00	1.00	4874712.60	32959.42
1747.25	4480946.0	4608941.8	1747.22	-0.00			
1169.81	2994824.1	4608957.6	1169.55	-0.01			
592.24	1512573.0	4608824.6	592.19	-0.00			
14.69	33063.6	4606120.0	14.69	-0.00			

TEMPERATURE (°C)	SPAN
2.18	311027.35
23.04	311230.35
32.58	311368.27

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

