



SEA-BIRD
SCIENTIFIC

SBE41-CP ALACE

Instrument Configuration

Instrument Serial Number: 41-10597
Instrument Firmware Version: V 7.2.5
Zero Conductivity Frequency: 2712.47
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	10817713	2000m(2000 dBar)



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 www.seabird.com

SENSOR SERIAL NUMBER: 10597
 CALIBRATION DATE: 05-Mar-18

SBE 41 TEMPERATURE CALIBRATION DATA
 ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

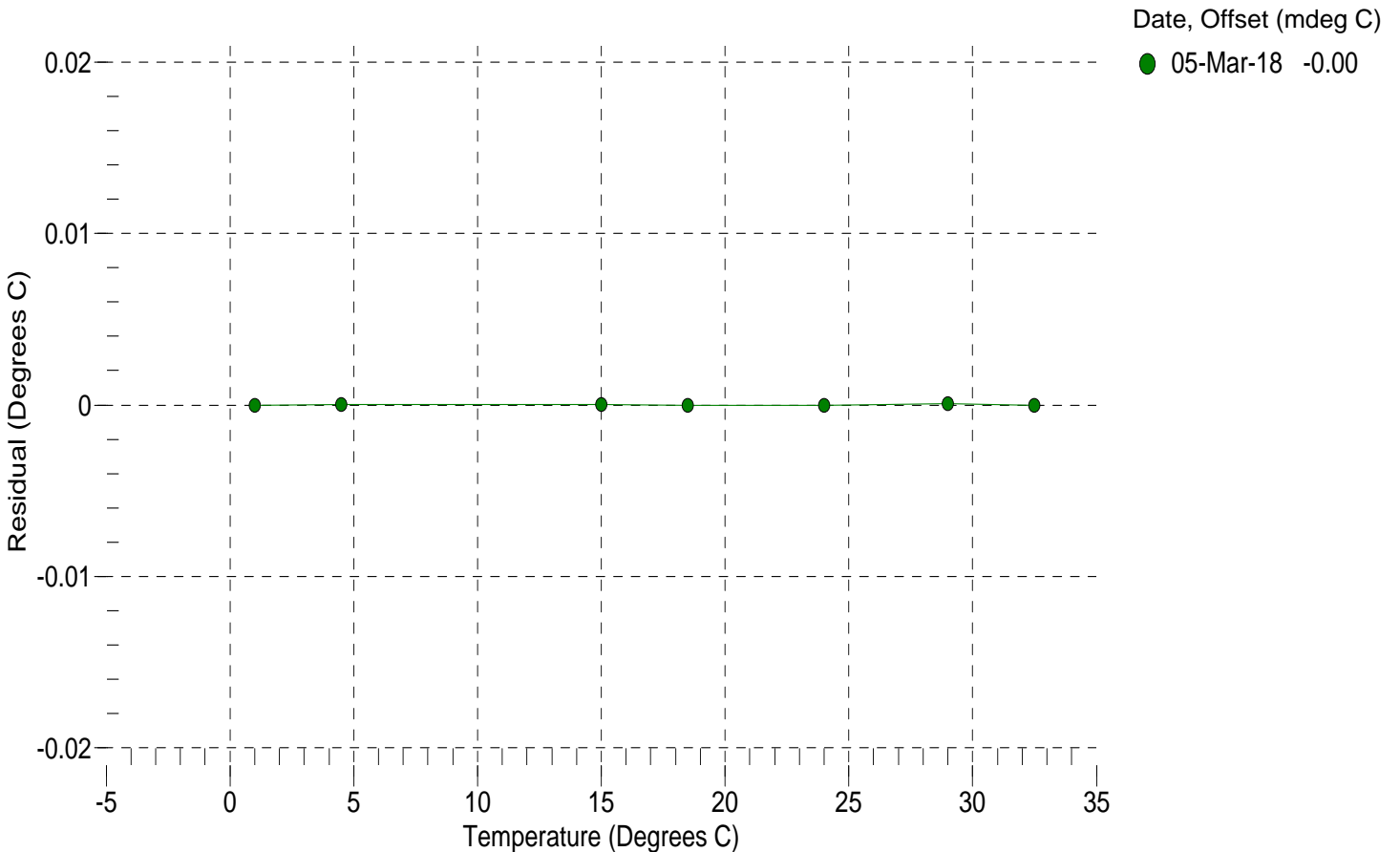
a0 = -7.955540e-004
 a1 = 2.887182e-004
 a2 = -3.562876e-006
 a3 = 1.442093e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	14728443.9	1.0000	-0.0000
4.5000	12557799.2	4.5000	0.0000
15.0000	7939603.5	15.0000	0.0000
18.5000	6857458.5	18.5000	-0.0000
23.9940	5481309.5	23.9940	-0.0000
29.0000	4496982.5	29.0001	0.0001
32.5000	3928994.9	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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SBE 41 CONDUCTIVITY CALIBRATION DATA
 PSS 1978: C(35,15,0) = 4.2914 Siemens/meter

COEFFICIENTS:

g = -1.010235e+000 CPcor = -9.5700e-008
 h = 1.378027e-001 CTcor = 3.2500e-006
 i = -2.923232e-004 WBOTC = 1.2288e-007
 j = 4.028934e-005

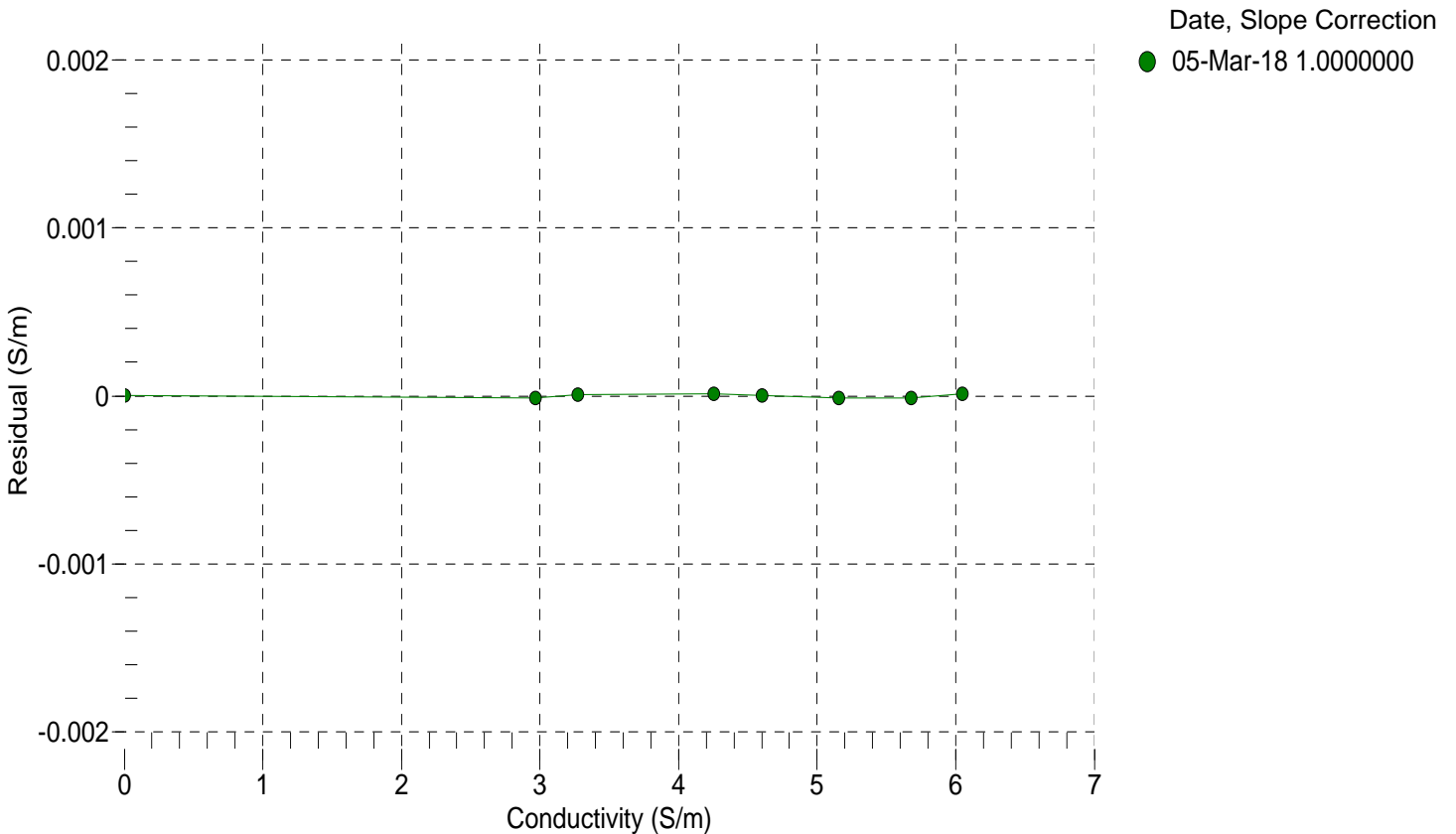
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2712.47	0.00000	0.00000
1.0000	34.7310	2.96937	5381.85	2.96935	-0.00001
4.5000	34.7114	3.27580	5584.64	3.27581	0.00001
15.0000	34.6702	4.25558	6187.75	4.25560	0.00001
18.5000	34.6617	4.60007	6385.98	4.60007	0.00000
23.9940	34.6524	5.15632	6693.36	5.15630	-0.00001
29.0000	34.6473	5.67775	6968.86	5.67773	-0.00001
32.5000	34.6441	6.04935	7158.53	6.04936	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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SENSOR SERIAL NUMBER: 10597
 CALIBRATION DATE: 02-Mar-18

SBE 41 PRESSURE CALIBRATION DATA
 2900 psia S/N 10817713

COEFFICIENTS:

PA0 =	2.689738e-001	PTCA0 =	-1.339571e+004
PA1 =	3.898735e-004	PTCA1 =	6.577502e+001
PA2 =	-2.793728e-013	PTCA2 =	-1.566864e+000
PTHA0 =	3.359513e+002	PTCB0 =	3.124729e+005
PTHA1 =	-6.035984e-005	PTCB1 =	7.080930e+000
PTHA2 =	-1.866329e-012	PTCB2 =	1.472456e-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)
14.45	23736.7	4570527.8	14.47	0.00	32.50	4422612.40	25680.30
592.10	1508371.1	4569543.2	592.24	0.00	29.00	4468065.40	25852.13
1170.08	2996497.7	4568604.0	1170.14	0.00	23.99	4532947.00	25960.49
1748.02	4487886.1	4567552.8	1748.06	0.00	18.50	4603934.00	25928.14
2325.99	5982704.2	4566607.6	2326.06	0.00	15.00	4648974.00	25828.22
2903.89	7480322.6	4565784.4	2903.89	-0.00	4.50	4783799.40	25462.82
2326.06	5982571.8	4565929.0	2326.00	-0.00	1.00	4828315.20	25339.14
1748.33	4488535.7	4566020.8	1748.30	-0.00			
1170.34	2996737.0	4565960.8	1170.22	-0.00			
592.11	1507848.6	4565947.0	592.03	-0.00			
14.45	23599.7	4565951.0	14.41	-0.00			

TEMPERATURE (°C)	SPAN
2.18	312489.05
23.04	312714.20
32.58	312859.84

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-Mar-18 -0.00

