SBE41-CP ALACE

Instrument Configuration

Instrument Serial Number:	41-11714
Instrument Firmware Version:	V 7.2.5
Zero Conductivity Frequency:	2507.06
Communications Format:	RS232
Communications Settings:	9600 baud, 8 Data Bits, No Parity

Installed Devices/Sensors

Data Format	*Measurement*	*Sensor Type*	*Serial Number*	*Rating*
Count	Temperature	Internal	N/A	N/A
Frequency	Conductivity	Internal	N/A	N/A
Count	Pressure	Druck	11162139	2000m(2000 dBar)

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13431 NE 20th Street
Bellevue, WA 98005
USA

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seabird@seabird.com
www.seabird.com

SENSOR SERIAL NUMBER: 11714
CALIBRATION DATE: 29-Mar-19

SBE 41 TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

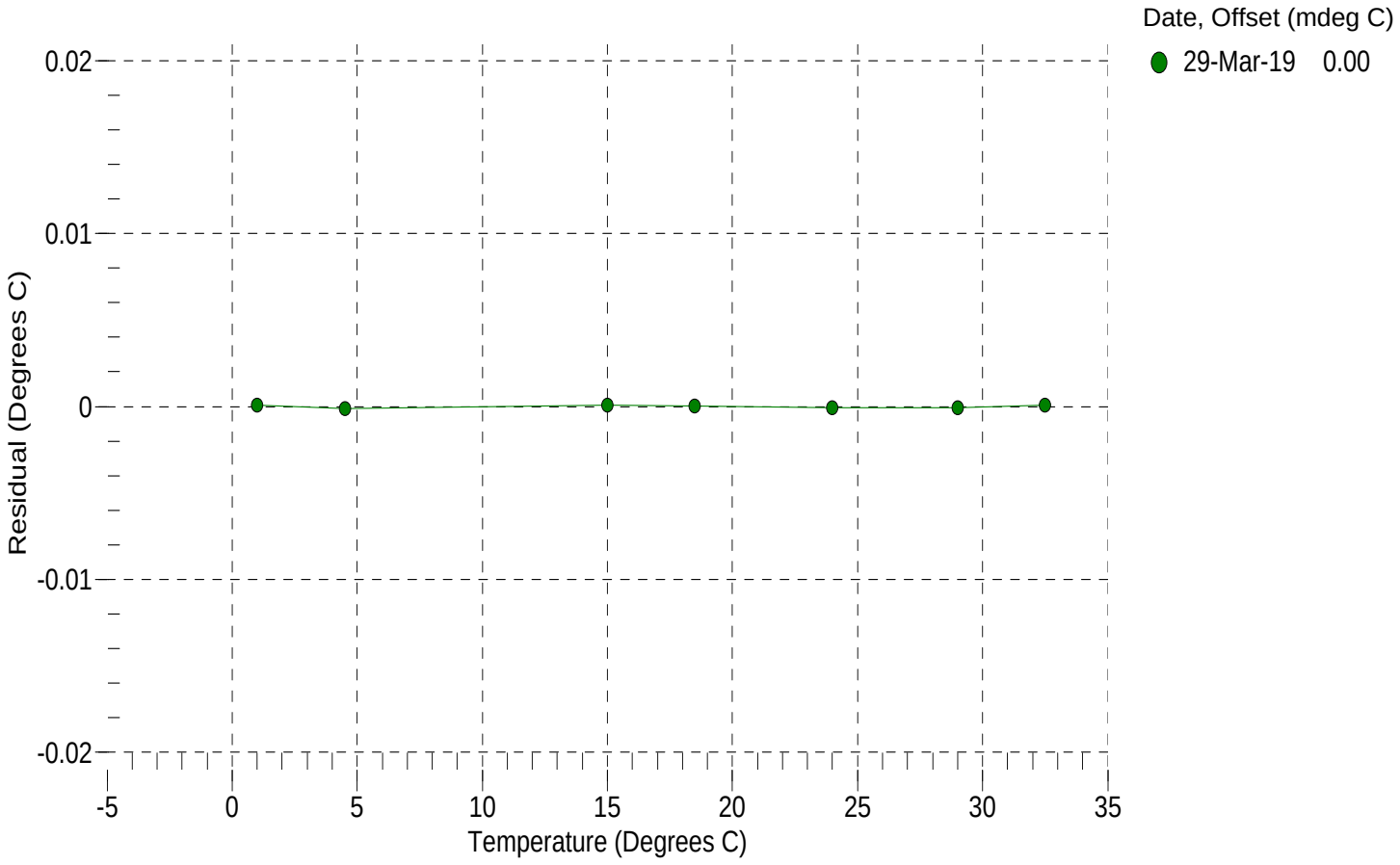
```
a0 = -8.154169e-004
a1 =  2.882167e-004
a2 = -3.382606e-006
a3 =  1.449994e-007
```

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0005	13552274.0	1.0006	0.0001
4.5000	11589542.9	4.4999	-0.0001
15.0000	7389551.8	15.0001	0.0001
18.5000	6399529.9	18.5000	0.0000
23.9940	5136232.3	23.9939	-0.0001
29.0000	4229038.4	28.9999	-0.0001
32.5000	3703877.1	32.5001	0.0001

n = Instrument Output (counts)

Temperature ITS-90 (°C) = $1/\{a0 + a1[ln(n)] + a2[ln^2(n)] + a3[ln^3(n)]\} - 273.15$

Residual (°C) = instrument temperature - bath temperature



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CALIBRATION DATE: 29-Mar-19

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

COEFFICIENTS:

```
g = -1.011250e+000
h =  1.615161e-001
i = -3.899231e-004
j =  5.633798e-005

CPcor = -9.5700e-008
CTcor =  3.2500e-006
WBOTC = -6.3148e-007
```

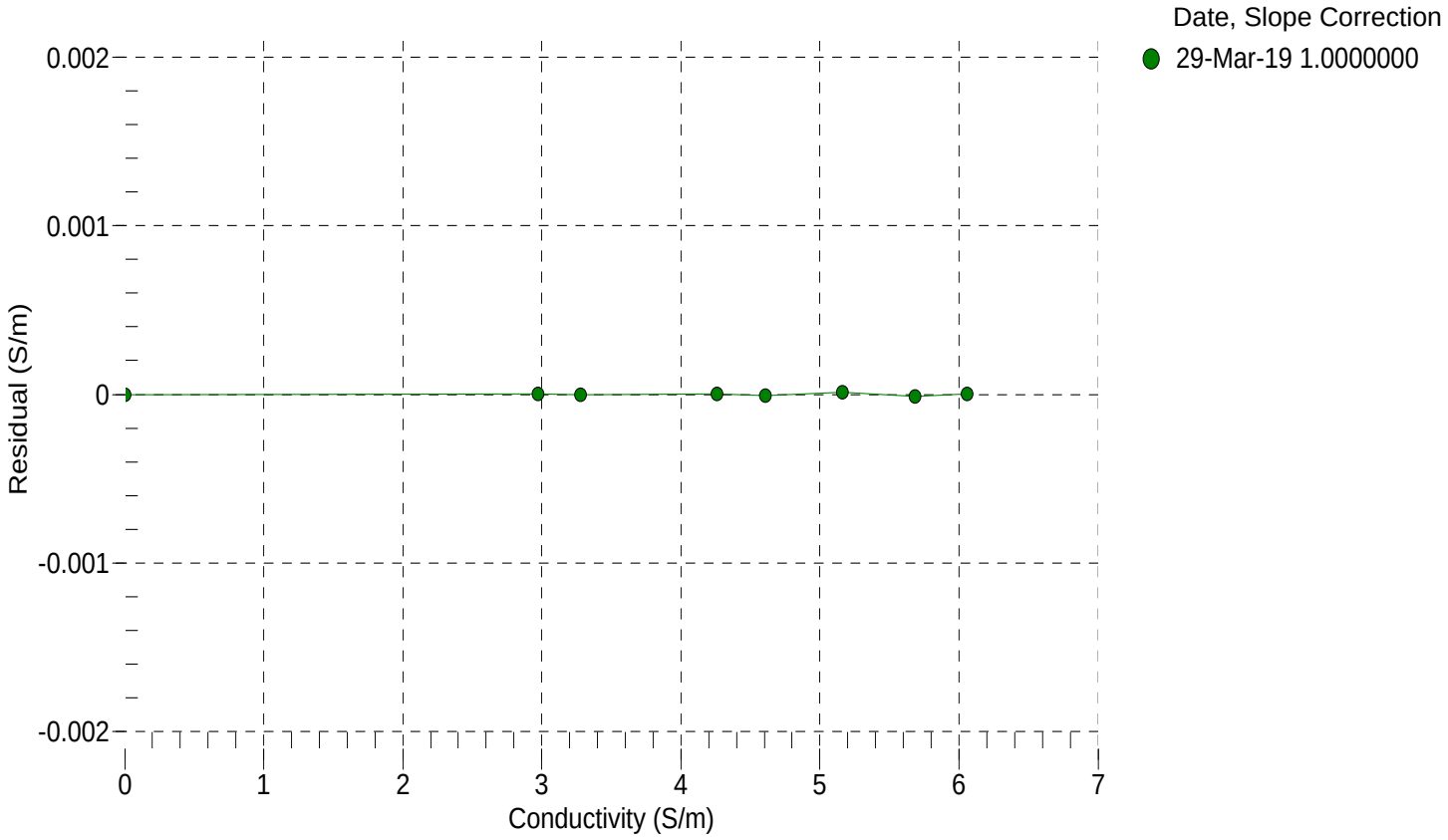
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2507.06	0.00000	0.00000
1.0005	34.7798	2.97319	4975.20	2.97319	0.00000
4.5000	34.7602	3.27995	5162.66	3.27995	-0.00000
15.0000	34.7179	4.26082	5720.24	4.26082	0.00000
18.5000	34.7089	4.60566	5903.49	4.60565	-0.00001
23.9940	34.6988	5.16246	6187.67	5.16247	0.00001
29.0000	34.6933	5.68444	6442.35	5.68442	-0.00001
32.5000	34.6898	6.05642	6617.69	6.05643	0.00000

f = Instrument Output(Hz) * sqrt(1.0 + WBOTC * t) / 1000.0

t = temperature (°C); p = pressure (decibars); δ = CTcor; ε = CPcor;

Conductivity (S/m) = $(g + h * f^2 + i * f^3 + j * f^4) / (1 + \delta * t + \varepsilon * p)$

Residual (Siemens/meter) = instrument conductivity - bath conductivity



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SENSOR SERIAL NUMBER: 11714
CALIBRATION DATE: 20-Mar-19

SBE 41 PRESSURE CALIBRATION DATA
2900 psia S/N 11162139

COEFFICIENTS:

PA0 =	2.648949e-001	PTCA0 =	-2.290742e+003
PA1 =	3.935898e-004	PTCA1 =	3.845018e+001
PA2 =	-2.899420e-013	PTCA2 =	-4.099843e-001
PTHA0 =	2.967651e+002	PTCB0 =	3.097977e+005
PTHA1 =	-6.237470e-005	PTCB1 =	1.397689e+001
PTHA2 =	-8.532745e-013	PTCB2 =	6.792308e-002

PRESSURE SPAN CALIBRATION

PRESSURE (PSIA)	INSTRUMENT OUTPUT (counts)	THERMISTOR OUTPUT (counts)	COMPUTED PRESSURE (PSIA)	RESIDUAL (%FSR)
14.55	34654.0	4148395.4	14.52	-0.00
591.43	1503908.3	4148297.2	591.47	0.00
1168.40	2976112.0	4147790.6	1168.33	-0.00
1745.32	4451943.4	4147362.4	1745.34	0.00
2322.24	5930990.2	4146959.4	2322.35	0.00
2899.18	7412578.8	4146741.4	2899.08	-0.00
2322.16	5930661.1	4147436.4	2322.23	0.00
1745.41	4452025.6	4147946.4	1745.38	-0.00
1168.27	2975730.5	4148484.2	1168.18	-0.00
591.28	1503413.5	4149023.4	591.28	0.00
14.55	34837.5	4149641.8	14.60	0.00

THERMAL CORRECTION

TEMP (°C)	THERMISTOR OUTPUT (counts)	INSTRUMENT OUTPUT (counts)
32.50	4016114.60	36680.50
29.00	4066569.40	36675.44
23.99	4138774.40	36617.90
18.50	4217849.80	36451.54
15.00	4268173.60	36332.86
4.50	4418354.60	36075.47
1.00	4468710.20	35920.72

TEMPERATURE (°C)	SPAN
2.12	309827.70
20.82	310118.15
32.81	310329.42

y = thermistor output (counts)

$t = PTHA0 + PTHA1 * y + PTHA2 * y^2$

$x = \text{instrument output} - PTCA0 - PTCA1 * t - PTCA2 * t^2$

$n = x * PTCB0 / (PTCB0 + PTCB1 * t + PTCB2 * t^2)$

$\text{pressure (PSIA)} = PA0 + PA1 * n + PA2 * n^2$

Residual (%FSR) = (computed pressure - true pressure) * 100 / Full Scale Range