SBE41-CP ALACE

Instrument Configuration

Instrument Serial Number:	41-14430
Instrument Firmware Version:	7.2.5
Zero Conductivity Frequency:	2650.06
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	11890054	2000m(2000 dBar)

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Bellevue, WA 98005
USA

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seabird@seabird.com
www.seabird.com

SENSOR SERIAL NUMBER: 14430
CALIBRATION DATE: 09-Jun-21

SBE 41 TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

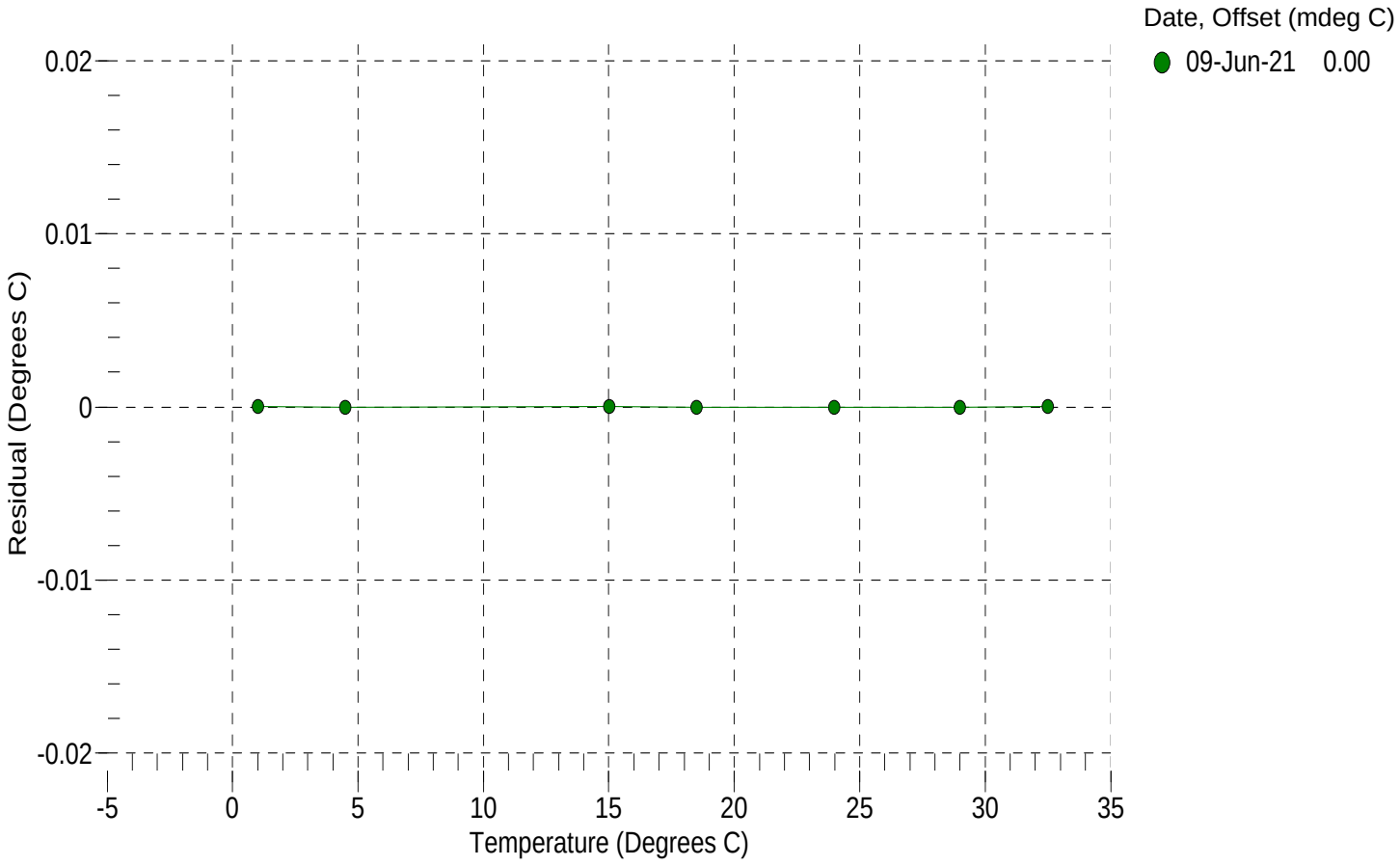
```
a0 = -9.459740e-004
a1 =  2.964769e-004
a2 = -3.905833e-006
a3 =  1.519231e-007
```

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	19430689.4	1.0000	0.0000
4.5000	16610078.7	4.5000	-0.0000
15.0000	10579692.1	15.0000	0.0000
18.5000	9159235.5	18.5000	-0.0000
23.9940	7347468.8	23.9940	-0.0000
29.0000	6047095.0	29.0000	-0.0000
32.5000	5294635.2	32.5000	0.0000

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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SENSOR SERIAL NUMBER: 14430
CALIBRATION DATE: 09-Jun-21

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

COEFFICIENTS:

```
g = -1.016953e+000
h =  1.455575e-001
i = -4.243068e-004
j =  5.317895e-005

CPcor = -9.5700e-008
CTcor =  3.2500e-006
WBOTC =  1.8865e-007
```

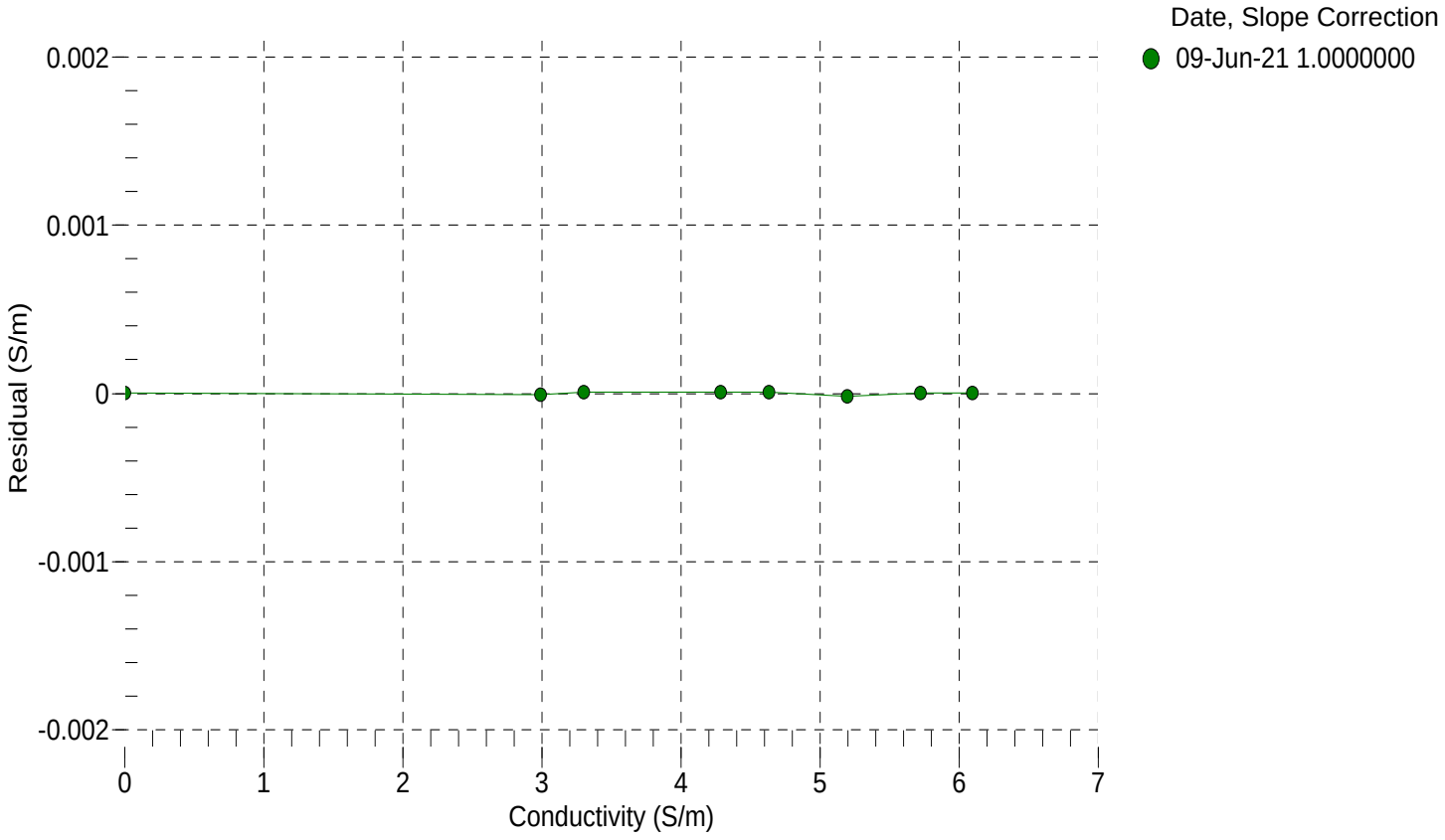
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2650.06	0.00000	0.00000
1.0000	35.0299	2.99247	5262.12	2.99247	-0.00001
4.5000	35.0103	3.30122	5460.45	3.30122	0.00001
15.0000	34.9685	4.28830	6050.23	4.28831	0.00001
18.5000	34.9597	4.63533	6244.05	4.63534	0.00001
23.9940	34.9504	5.19574	6544.57	5.19572	-0.00002
29.0000	34.9458	5.72113	6813.94	5.72114	0.00000
32.5000	34.9440	6.09573	6999.43	6.09573	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: 14430
CALIBRATION DATE: 04-Jun-21

SBE 41 PRESSURE CALIBRATION DATA
2900 psia S/N 11890054

COEFFICIENTS:

PA0 =	3.203011e-001	PTCA0 =	6.390606e+003
PA1 =	3.924235e-004	PTCA1 =	8.849331e+001
PA2 =	-2.706433e-013	PTCA2 =	-2.259315e+000
PTHA0 =	3.174458e+002	PTCB0 =	3.165509e+005
PTHA1 =	-6.232548e-005	PTCB1 =	6.258127e+000
PTHA2 =	-1.227506e-012	PTCB2 =	5.135938e-002

PRESSURE SPAN CALIBRATION

PRESSURE (PSIA)	INSTRUMENT OUTPUT (counts)	THERMISTOR OUTPUT (counts)	COMPUTED PRESSURE (PSIA)	RESIDUAL (%FSR)
14.55	43467.7	4333887.6	14.54	-0.00
590.47	1513780.0	4330682.0	590.58	0.00
1166.79	2987676.6	4329453.8	1166.84	0.00
1743.06	4464618.1	4328338.4	1743.12	0.00
2319.30	5944525.9	4327315.2	2319.37	0.00
2895.53	7427186.2	4326166.6	2895.50	-0.00
2319.24	5944332.3	4326085.4	2319.29	0.00
1743.43	4465123.0	4326155.8	1743.31	-0.00
1166.65	2986811.1	4326265.4	1166.50	-0.01
590.25	1512970.8	4326358.6	590.26	0.00
14.55	43391.1	4324698.2	14.52	-0.00

THERMAL CORRECTION

TEMP (°C)	THERMISTOR OUTPUT (counts)	INSTRUMENT OUTPUT (counts)
32.50	4221090.80	44295.30
29.00	4269040.40	44501.07
23.99	4337635.60	44679.13
18.50	4413053.60	44685.33
15.00	4460861.20	44608.43
4.50	4603704.60	44194.15
1.00	4651220.60	43905.09

TEMPERATURE (°C)	SPAN
1.96	316563.32
20.62	316701.77
32.96	316812.95

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