SBE41-CP ALACE

Instrument Configuration

Instrument Serial Number:	41-12964
Instrument Firmware Version:	7.2.5
Zero Conductivity Frequency:	2695.17
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	11499790	2000m(2000 dBar)

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13431 NE 20th Street
Bellevue, WA 98005
USA

+1 425-643-9866
seabird@seabird.com
www.seabird.com

SENSOR SERIAL NUMBER: 12964
CALIBRATION DATE: 20-Jun-20

SBE 41 TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

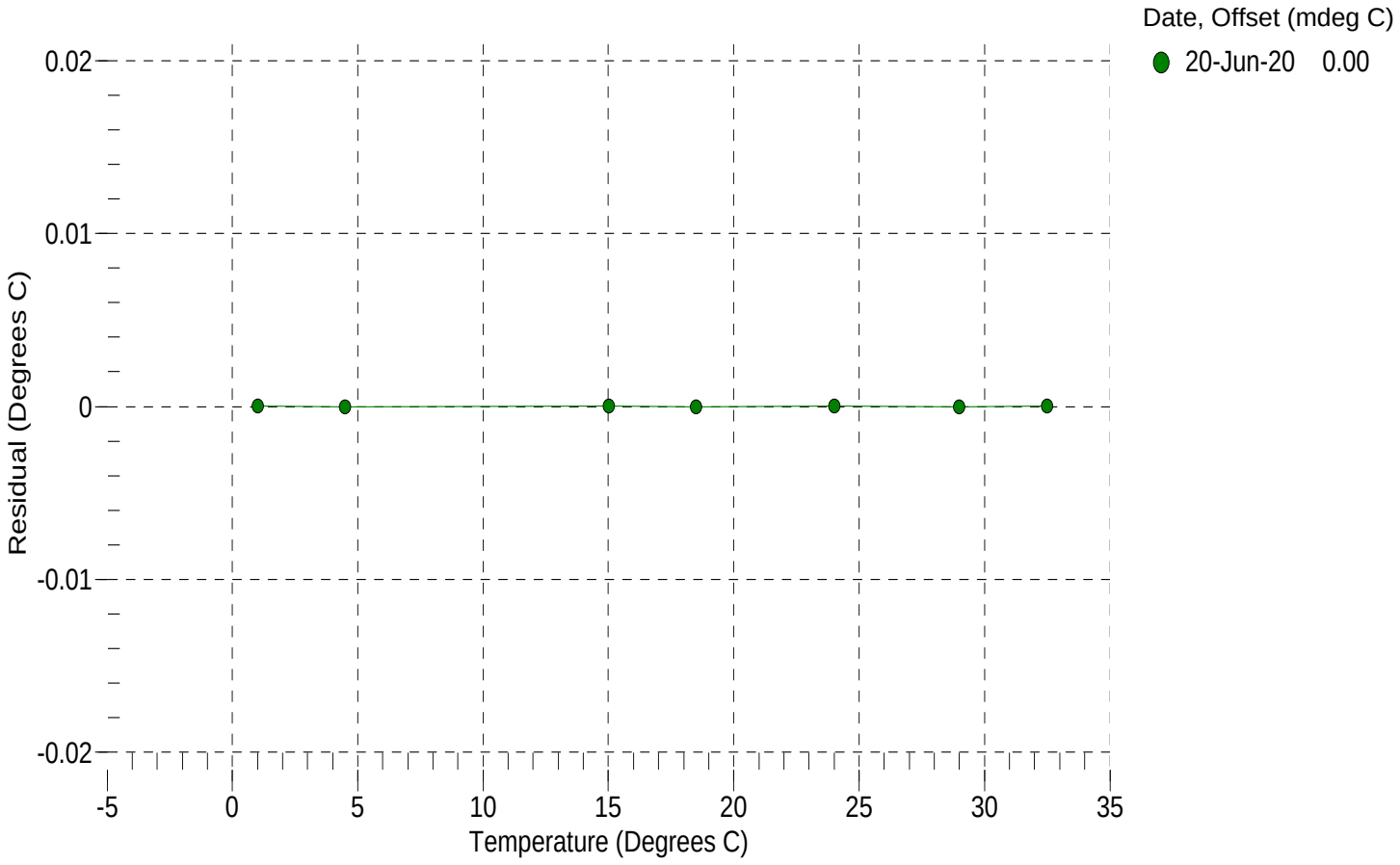
```
a0 = -8.536876e-004
a1 =  2.965449e-004
a2 = -3.912384e-006
a3 =  1.556523e-007
```

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	13424048.4	1.0000	0.0000
4.5000	11476333.0	4.5000	-0.0000
15.0000	7311579.1	15.0000	0.0000
18.5000	6330404.3	18.5000	-0.0000
24.0000	5077601.8	24.0000	0.0000
28.9999	4180414.1	28.9999	-0.0000
32.5000	3660495.6	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: 12964
CALIBRATION DATE: 20-Jun-20

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

COEFFICIENTS:

```
g = -1.011468e+000
h =  1.396080e-001
i = -2.354497e-004
j =  3.682894e-005

CPcor = -9.5700e-008
CTcor =  3.2500e-006
WBOTC =  1.5149e-006
```

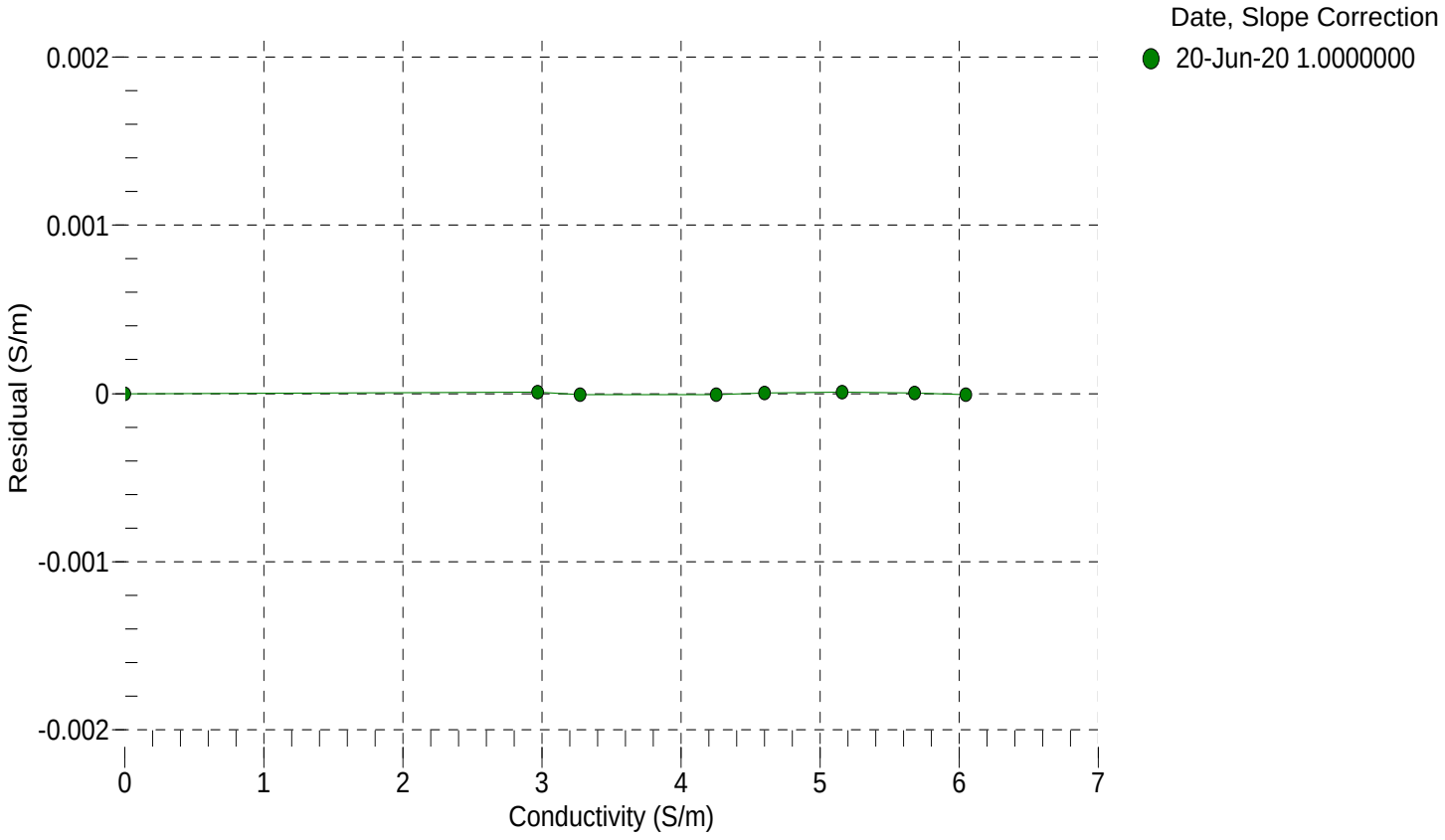
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2695.17	0.00000	0.00000
1.0000	34.7401	2.97007	5344.32	2.97008	0.00001
4.5000	34.7218	3.27669	5545.62	3.27668	-0.00001
15.0000	34.6829	4.25698	6144.36	4.25697	-0.00001
18.5000	34.6750	4.60164	6341.18	4.60164	0.00000
24.0000	34.6673	5.15891	6646.77	5.15891	0.00001
28.9999	34.6644	5.68022	6920.09	5.68023	0.00000
32.5000	34.6633	6.05232	7108.55	6.05232	-0.00001

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: 12964
CALIBRATION DATE: 15-Jun-20

SBE 41 PRESSURE CALIBRATION DATA
2900 psia S/N 11499790

COEFFICIENTS:

PA0 =	2.487153e-001	PTCA0 =	-2.651459e+003
PA1 =	3.914315e-004	PTCA1 =	5.374846e+001
PA2 =	-2.872817e-013	PTCA2 =	-1.129533e+000
PTHA0 =	3.211909e+002	PTCB0 =	3.138039e+005
PTHA1 =	-6.170848e-005	PTCB1 =	2.071003e+000
PTHA2 =	-1.390796e-012	PTCB2 =	8.556573e-002

PRESSURE SPAN CALIBRATION

PRESSURE (PSIA)	INSTRUMENT OUTPUT (counts)	THERMISTOR OUTPUT (counts)	COMPUTED PRESSURE (PSIA)	RESIDUAL (%FSR)
14.44	34374.5	4410839.2	14.49	0.00
590.93	1508602.8	4404780.0	590.73	-0.01
1167.65	2988035.0	4403025.0	1167.75	0.00
1744.44	4470135.2	4401743.6	1744.54	0.00
2321.18	5955202.4	4400527.6	2321.22	0.00
2897.86	7443376.8	4399410.6	2897.84	-0.00
2321.07	5954648.3	4399296.4	2321.01	-0.00
1744.60	4470254.5	4399135.4	1744.58	-0.00
1167.34	2986935.3	4399029.2	1167.31	-0.00
593.75	1523946.2	4398995.2	596.71	0.10
14.44	34361.8	4397065.4	14.48	0.00

THERMAL CORRECTION

TEMP (°C)	THERMISTOR OUTPUT (counts)	INSTRUMENT OUTPUT (counts)
32.50	4267811.60	35688.50
29.00	4315292.00	35857.76
24.00	4383049.80	35931.85
18.50	4457392.80	35803.09
15.00	4504583.80	35668.64
4.50	4645616.20	35421.18
1.00	4692496.40	35274.31

TEMPERATURE (°C)	SPAN
1.18	313806.51
20.45	313882.07
33.57	313969.87

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