SEA-BIRD SCIENTIFIC
Sea-Bird Scientific
13431 NE 20th Street
Bellevue, WA 98005
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seabird@seabird.com
www.seabird.com

SENSOR SERIAL NUMBER: 9836
CALIBRATION DATE: 17-Jul-22

Slocum Payload CTD CONDUCTIVITY CALIBRATION DATA
PSS 1978: C(35,15,0) = 4.2914 Siemens/meter

COEFFICIENTS:

```
g = -1.002575e+000
h =  1.356871e-001
i = -4.777192e-004
j =  5.201905e-005

CPcor = -9.5700e-008
CTcor =  3.2500e-006
WBOTC =  1.4665e-006
```

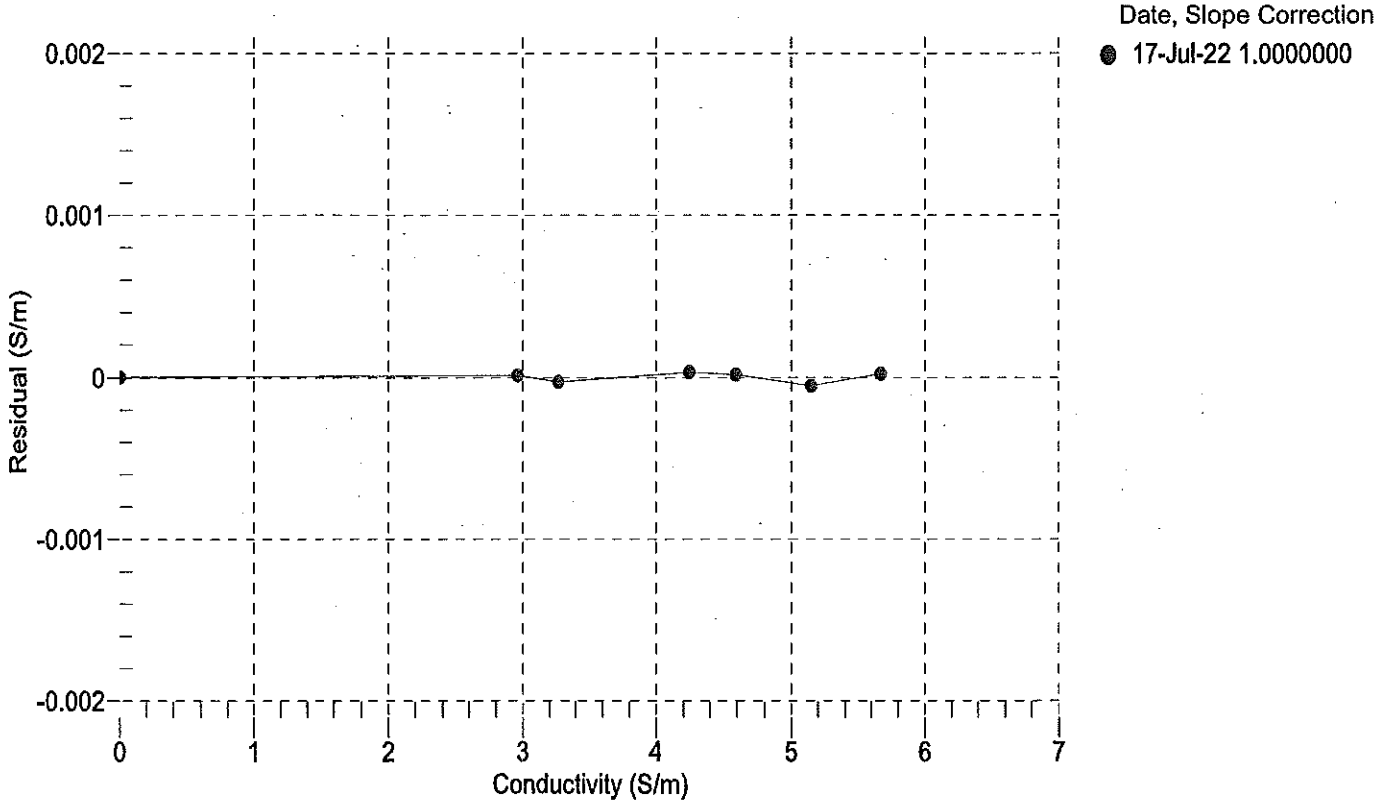
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2727.43	0.00000	0.00000
1.0000	34.6932	2.96644	5429.71	2.96645	0.00001
4.5000	34.6737	3.27259	5634.80	3.27257	-0.00003
15.0000	34.6294	4.25110	6244.55	4.25114	0.00003
18.5000	34.6200	4.59513	6444.89	4.59515	0.00002
24.0000	34.6097	5.15128	6755.83	5.15123	-0.00005
29.0000	34.6018	5.67113	7033.73	5.67115	0.00002
32.5000	34.5938	6.04156	7225.04	6.04173	0.00016

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: 9836
CALIBRATION DATE: 13-Jul-22

Slocum Payload CTD PRESSURE CALIBRATION DATA
1450 psia S/N 12151930

COEFFICIENTS:

PA0 =	1.739429e-001	PTCA0 =	5.238805e+005
PA1 =	4.513910e-003	PTCA1 =	3.114136e+000
PA2 =	-1.940118e-011	PTCA2 =	-7.241261e-002
PTEMPA0 =	-6.061776e+001	PTCB0 =	2.499253e+001
PTEMPA1 =	5.434151e-002	PTCB1 =	-3.768844e-004
PTEMPA2 =	-6.454366e-007	PTCB2 =	0.000000e+000

PRESSURE SPAN CALIBRATION

PRESSURE (PSIA)	INSTRUMENT OUTPUT (counts)	THERMISTOR OUTPUT (volts)	COMPUTED PRESSURE (PSIA)	RESIDUAL (%FSR)
14.53	527103.9	1592.7	14.58	0.00
301.80	590722.3	1601.3	301.77	-0.00
588.94	654381.8	1603.7	588.99	0.00
876.17	718083.3	1605.9	876.24	0.00
1163.27	781786.2	1607.3	1163.34	0.00
1450.45	845503.4	1608.8	1450.35	-0.01
1163.35	781803.0	1609.3	1163.42	0.00
876.16	718079.9	1610.7	876.23	0.00
589.11	654358.1	1612.0	588.89	-0.02
301.78	590716.4	1615.1	301.75	-0.00
14.53	527097.4	1619.1	14.55	0.00

THERMAL CORRECTION

TEMP (°C)	THERMISTOR OUTPUT (volts)	INSTRUMENT OUTPUT (counts)
32.50	1750	527138.10
29.00	1683	527145.20
24.00	1587	527151.00
18.50	1482	527148.10
15.00	1415	527143.60
4.50	1216	527125.60
1.00	1150	527120.10

TEMPERATURE (°C)	SPAN
-3.90	24.99
35.90	24.98

y = thermistor output (counts)

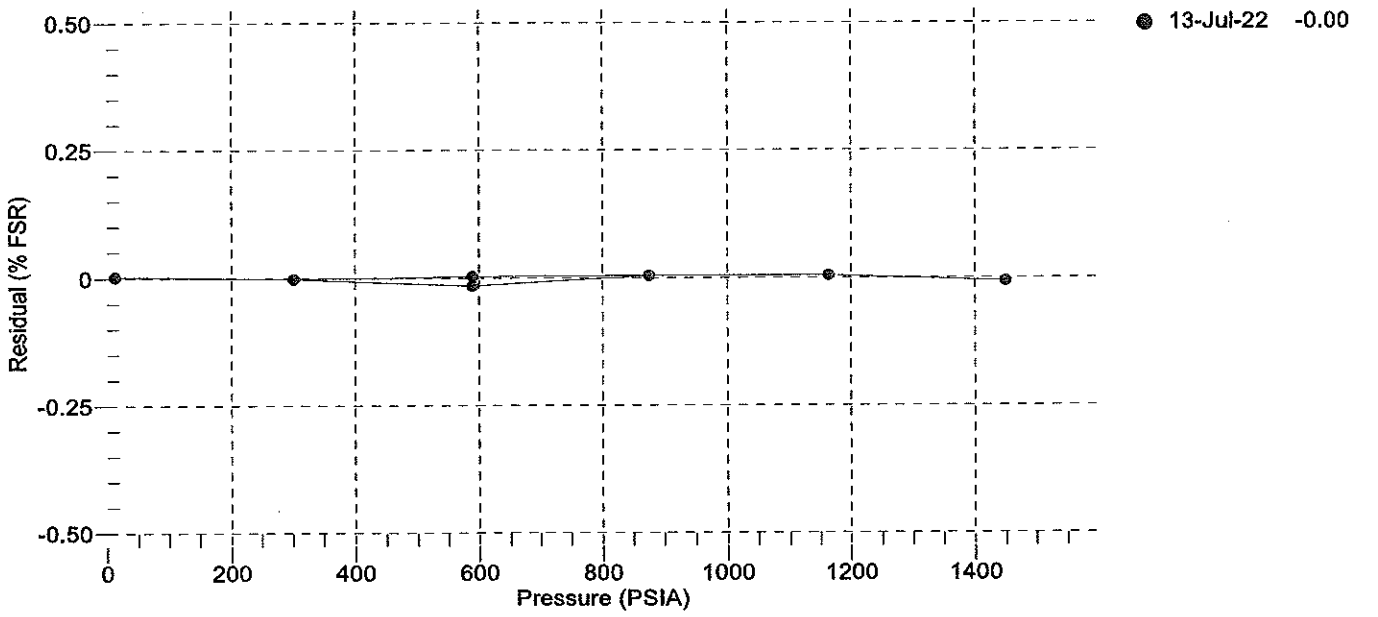
$t = PTEMPA0 + PTEMPA1 * y + PTEMPA2 * y^2$

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

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

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

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



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CALIBRATION DATE: 17-Jul-22

Slocum Payload CTD TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

a0 = -7.049708e-005
a1 = 2.959031e-004
a2 = -3.536282e-006
a3 = 1.767587e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	581851.9	1.0000	0.0000
4.5000	497854.0	4.4999	-0.0001
15.0000	318045.7	15.0000	-0.0000
18.5000	275628.7	18.5001	0.0001
24.0000	221429.2	24.0000	0.0000
29.0000	182573.9	28.9998	-0.0002
32.5000	160036.5	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