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: 9829
CALIBRATION DATE: 15-Jul-22

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

COEFFICIENTS:

```
g = -1.027317e+000
h =  1.417301e-001
i = -4.671796e-004
j =  5.376663e-005

CPcor = -9.5700e-008
CTcor =  3.2500e-006
WBOTC =  3.0855e-008
```

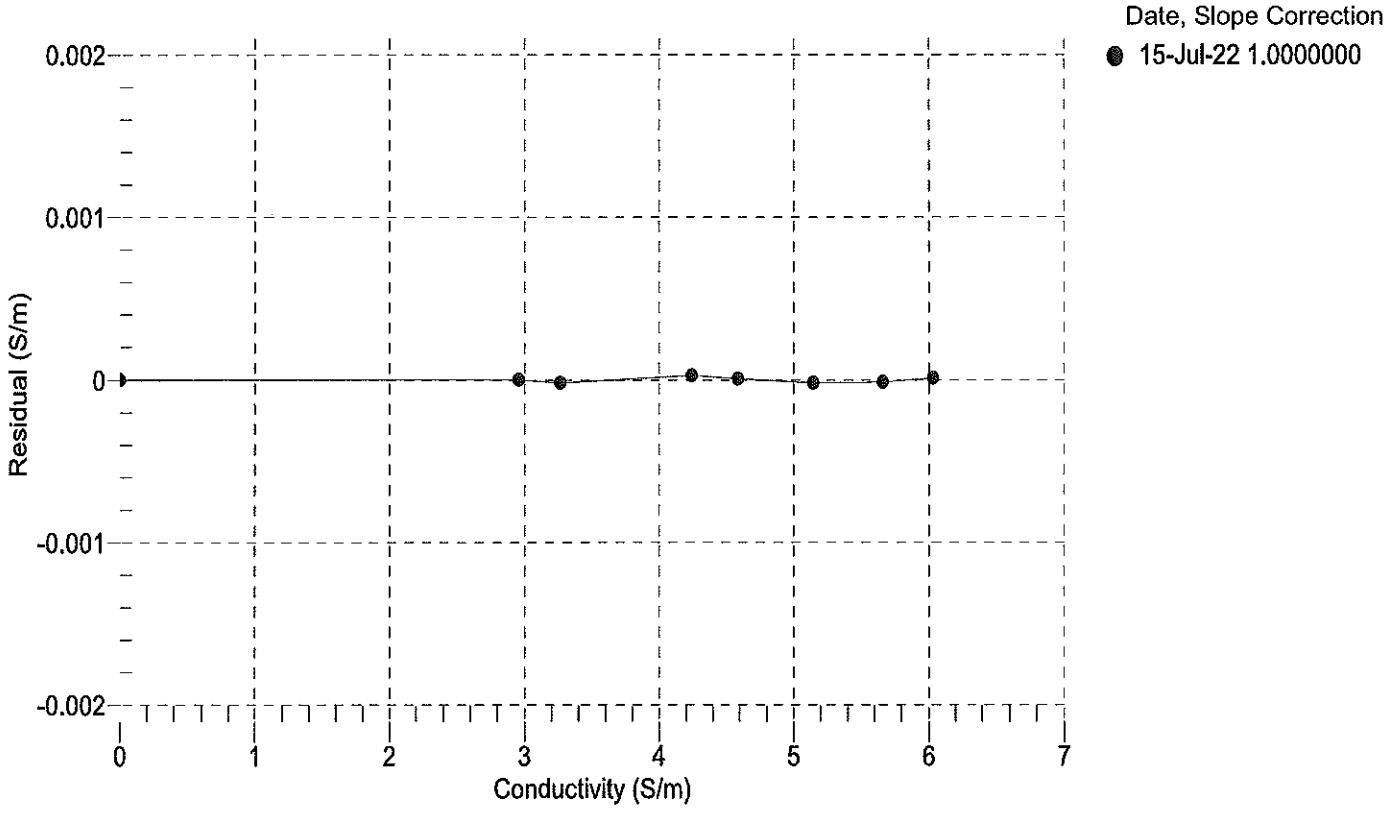
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2700.58	0.00000	0.00000
1.0000	34.6449	2.96271	5324.00	2.96271	0.00000
4.5000	34.6252	3.26847	5523.78	3.26845	-0.00002
15.0001	34.5809	4.24579	6118.03	4.24582	0.00003
18.5000	34.5687	4.58905	6313.16	4.58906	0.00001
24.0000	34.5568	5.14427	6616.27	5.14425	-0.00002
29.0000	34.5492	5.66347	6887.30	5.66346	-0.00001
32.5000	34.5425	6.03362	7073.97	6.03364	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: 9829
CALIBRATION DATE: 13-Jul-22

Slocum Payload CTD PRESSURE CALIBRATION DATA
1450 psia S/N 12154030

COEFFICIENTS:

PA0 =	1.275697e-001	PTCA0 =	5.244996e+005
PA1 =	4.497442e-003	PTCA1 =	2.707910e+000
PA2 =	-2.202047e-011	PTCA2 =	-6.549689e-002
PTEMPA0 =	-7.965331e+001	PTCB0 =	2.526350e+001
PTEMPA1 =	4.959704e-002	PTCB1 =	-1.000000e-004
PTEMPA2 =	-4.384338e-007	PTCB2 =	0.000000e+000

PRESSURE SPAN CALIBRATION

PRESSURE (PSIA)	INSTRUMENT OUTPUT (counts)	THERMISTOR OUTPUT (volts)	COMPUTED PRESSURE (PSIA)	RESIDUAL (%FSR)
14.53	527739.5	2143.1	14.58	0.00
301.80	591606.0	2154.0	301.75	-0.00
588.94	655522.8	2156.0	588.96	0.00
876.17	719488.1	2158.6	876.21	0.00
1163.27	783463.8	2159.8	1163.33	0.00
1450.45	847461.9	2161.3	1450.36	-0.01
1163.35	783481.7	2161.8	1163.41	0.00
876.16	719493.4	2162.9	876.23	0.00
589.11	655525.9	2164.6	588.97	-0.01
301.78	591605.6	2167.5	301.75	-0.00
14.53	527733.9	2170.0	14.56	0.00

THERMAL CORRECTION

TEMP (°C)	THERMISTOR OUTPUT (volts)	INSTRUMENT OUTPUT (counts)
32.50	2308	527763.60
29.00	2235	527767.20
24.00	2130	527772.80
18.50	2015	527773.00
15.00	1942	527769.80
4.50	1723	527754.60
1.00	1650	527748.00

TEMPERATURE (°C)	SPAN
-5.00	25.26
35.00	25.26

y = thermistor output (counts)

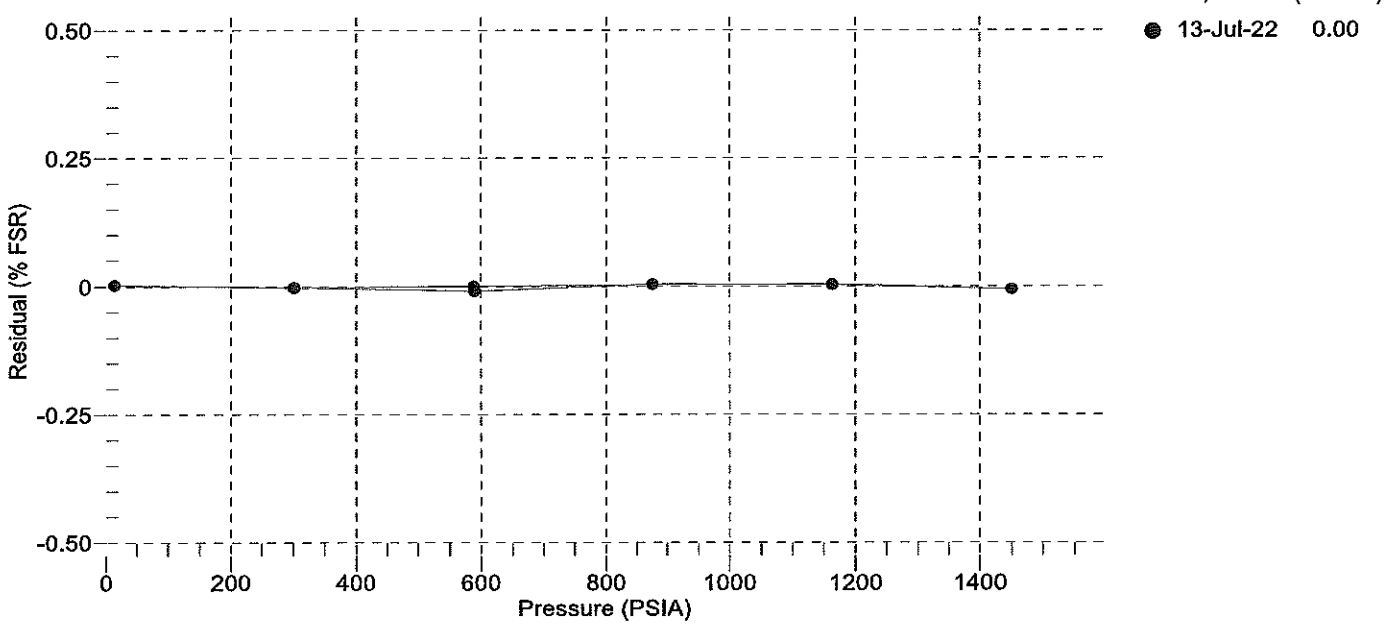
$t = PTEMPA0 + PTEMPA1 * y + PTEMPA2 * y^2$

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

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

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

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



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Slocum Payload CTD TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

a0 = -1.294691e-004
a1 = 3.013541e-004
a2 = -3.650247e-006
a3 = 1.813247e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	574184.4	1.0000	0.0000
4.5000	492506.8	4.4999	-0.0001
15.0001	316881.8	15.0001	0.0000
18.5000	275253.4	18.5000	0.0000
24.0000	221906.4	24.0000	0.0000
29.0000	183537.2	28.9999	-0.0001
32.5000	161225.0	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