Sea-Bird Scientific
13431 NE 20th Street
Bellevue, WA 98005
USA

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

SENSOR SERIAL NUMBER: 9810
CALIBRATION DATE: 06-May-22

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

COEFFICIENTS:

```
g = -1.006156e+000
h =  1.427922e-001
i = -3.532969e-004
j =  4.563269e-005

CPcor = -9.5700e-008
CTcor =  3.2500e-006
WBOTC =  2.1926e-007
```

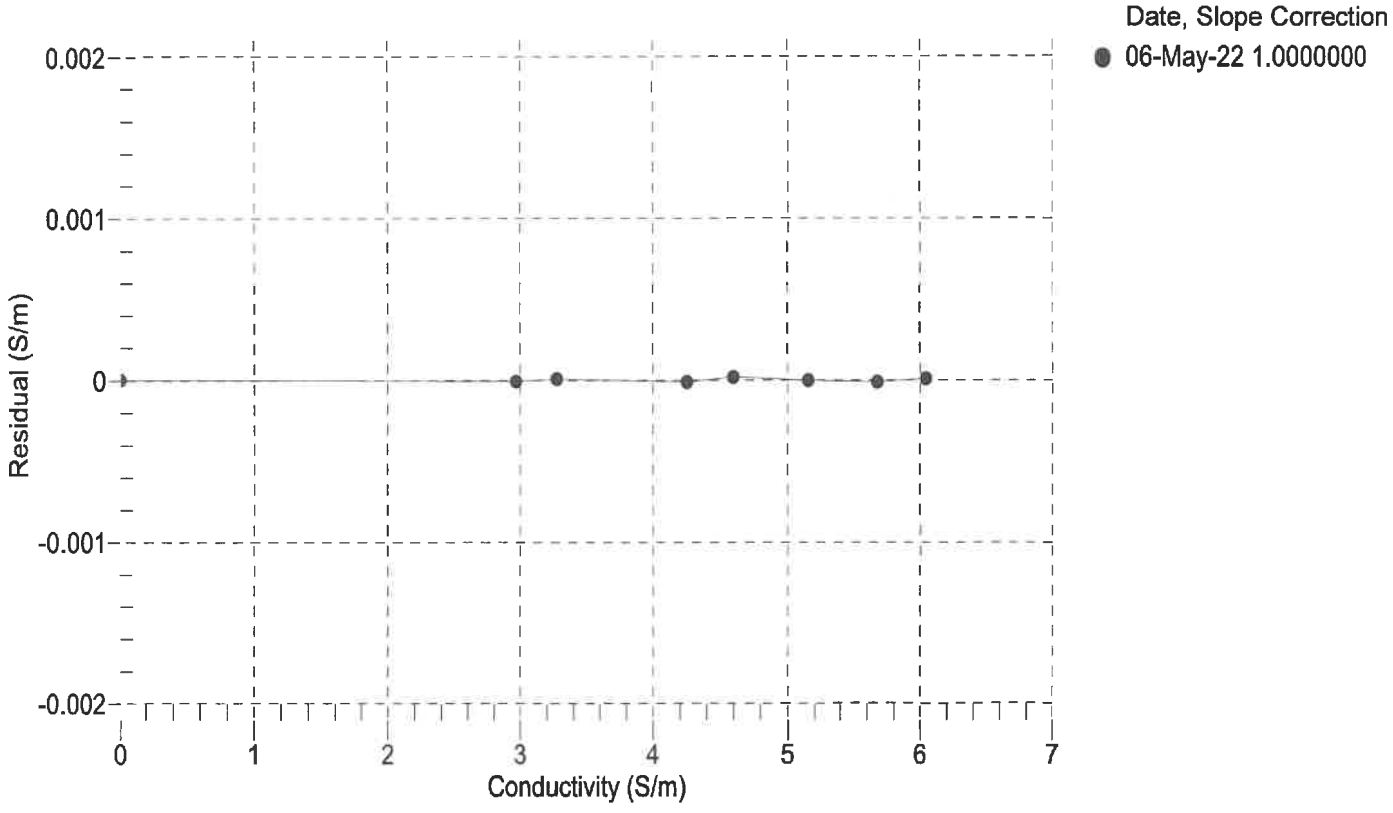
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2660.23	0.00000	0.00000
1.0000	34.7243	2.96885	5287.12	2.96884	-0.00001
4.4947	34.7039	3.27469	5486.25	3.27470	0.00001
14.9924	34.6602	4.25374	6079.20	4.25373	-0.00001
18.5000	34.6497	4.59865	6274.49	4.59866	0.00002
24.0000	34.6380	5.15503	6576.96	5.15503	-0.00000
29.0000	34.6286	5.67503	6847.24	5.67501	-0.00001
32.5000	34.6158	6.04497	7033.02	6.04498	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: 9810
CALIBRATION DATE: 06-May-22

Slocum Payload CTD TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

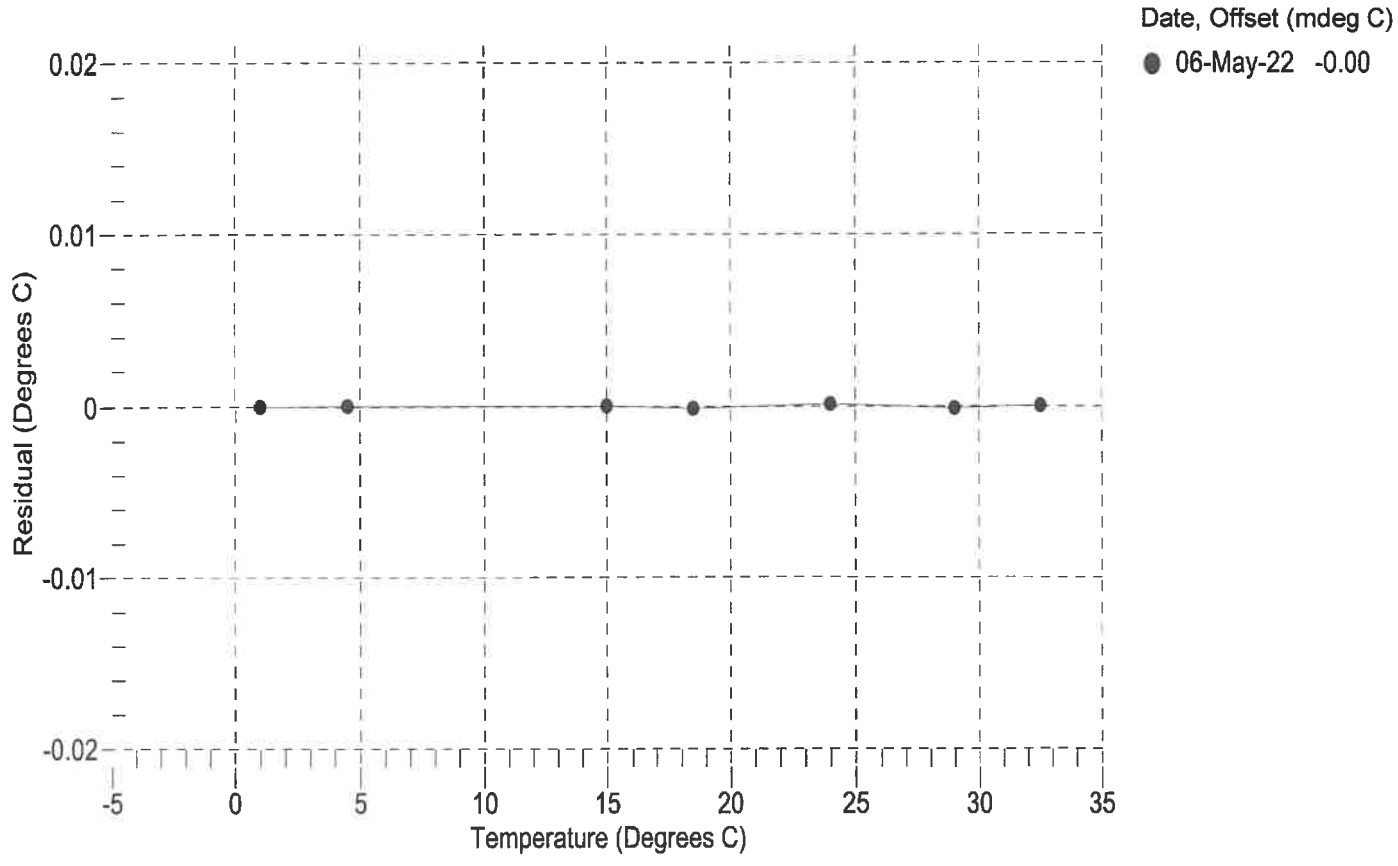
a0 = -2.209756e-004
a1 = 3.262296e-004
a2 = -5.675631e-006
a3 = 2.327063e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	570315.2	1.0000	-0.0000
4.4947	488848.8	4.4947	0.0000
14.9924	313719.8	14.9924	0.0000
18.5000	272193.0	18.4999	-0.0001
24.0000	219158.4	24.0001	0.0001
29.0000	181067.4	28.9999	-0.0001
32.5000	158939.8	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: 9810
CALIBRATION DATE: 29-Apr-22

Slocum Payload CTD PRESSURE CALIBRATION DATA
1450 psia S/N 11963585

COEFFICIENTS:

PA0 =	6.155148e-001	PTCA0 =	5.233239e+005
PA1 =	4.562118e-003	PTCA1 =	6.782765e+000
PA2 =	-2.297909e-011	PTCA2 =	-3.654171e-002
PTEMPA0 =	-5.949121e+001	PTCB0 =	2.497520e+001
PTEMPA1 =	5.496988e-002	PTCB1 =	3.000000e-004
PTEMPA2 =	-6.357627e-007	PTCB2 =	0.000000e+000

PRESSURE SPAN CALIBRATION

PRESSURE (PSIA)	INSTRUMENT OUTPUT (counts)	THERMISTOR OUTPUT (volts)	COMPUTED PRESSURE (PSIA)	RESIDUAL (%FSR)
14.59	526533.1	1525.9	14.63	0.00
301.87	589508.0	1529.2	301.75	-0.01
589.00	652554.5	1530.6	589.01	0.00
876.13	715617.0	1531.2	876.16	0.00
1163.29	778718.4	1532.0	1163.31	0.00
1450.45	841847.3	1532.8	1450.39	-0.00
1163.29	778736.2	1532.6	1163.39	0.01
876.07	715581.4	1532.6	875.99	-0.01
588.94	652556.6	1532.3	589.01	0.01
301.78	589507.7	1533.1	301.74	-0.00
14.57	526528.8	1533.0	14.60	0.00

THERMAL CORRECTION

TEMP (°C)	THERMISTOR OUTPUT (volts)	INSTRUMENT OUTPUT (counts)
32.50	1707	526564.00
29.00	1641	526548.80
24.00	1547	526524.20
18.50	1443	526494.60
14.99	1377	526476.20
4.49	1180	526412.60
1.00	1115	526388.80

TEMPERATURE (°C)	SPAN
-4.00	24.97
36.00	24.99

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