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: 9547
CALIBRATION DATE: 28-Sep-23

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

COEFFICIENTS:

```
g = -1.002984e+000
h =  1.372626e-001
i = -2.224702e-004
j =  3.422543e-005

CPcor = -9.5700e-008
CTcor =  3.2500e-006
WBOTC =  2.7708e-007
```

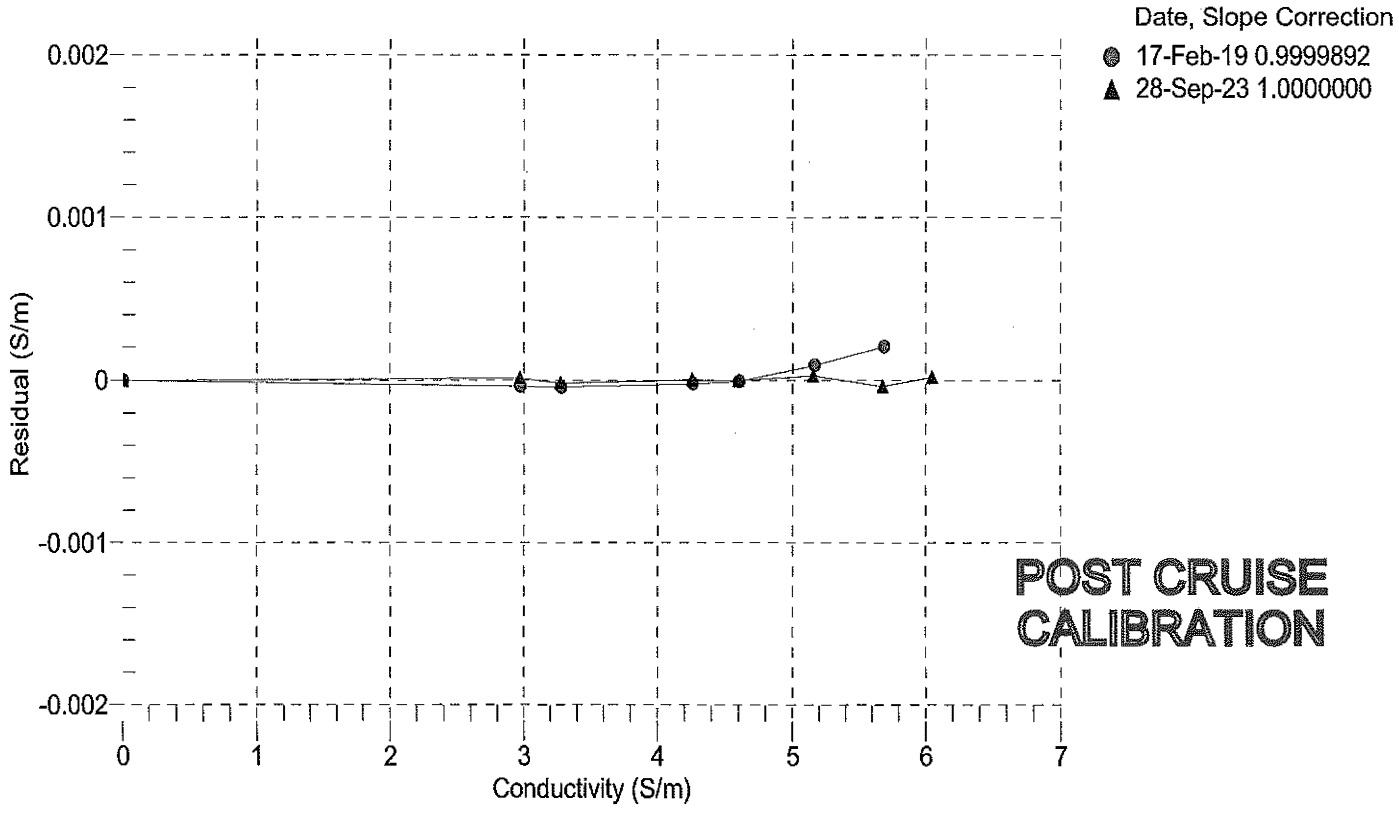
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2706.61	0.00000	0.00000
1.0000	34.7343	2.96962	5383.79	2.96964	0.00001
4.5000	34.7147	3.27608	5586.97	3.27606	-0.00002
15.0000	34.6716	4.25574	6191.20	4.25574	0.00000
18.5000	34.6621	4.60012	6389.78	4.60011	-0.00000
23.9999	34.6514	5.15679	6698.05	5.15682	0.00003
29.0000	34.6438	5.67724	6973.57	5.67720	-0.00004
32.5000	34.6309	6.04731	7162.90	6.04732	0.00002

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: 9547
CALIBRATION DATE: 13-Sep-23

Slocum Payload CTD PRESSURE CALIBRATION DATA
1450 psia S/N 11151149

COEFFICIENTS:

PA0 =	1.759158e-001	PTCA0 =	5.240030e+005
PA1 =	4.525471e-003	PTCA1 =	2.730886e+000
PA2 =	-2.248841e-012	PTCA2 =	-4.717634e-002
PTEMPA0 =	-6.687091e+001	PTCB0 =	2.504613e+001
PTEMPA1 =	5.143803e-002	PTCB1 =	-5.750000e-004
PTEMPA2 =	-3.395443e-007	PTCB2 =	0.000000e+000

PRESSURE SPAN CALIBRATION

PRESSURE (PSIA)	INSTRUMENT OUTPUT (counts)	THERMISTOR OUTPUT (volts)	COMPUTED PRESSURE (PSIA)	RESIDUAL (%FSR)
14.60	527218.2	1767.6	14.56	-0.00
301.09	590513.6	1770.0	301.15	0.00
587.70	653796.2	1770.4	587.65	-0.00
874.48	717138.8	1771.0	874.42	-0.00
1161.05	780453.8	1771.2	1161.03	-0.00
1447.85	843818.2	1771.6	1447.86	0.00
1160.84	780420.2	1771.6	1160.88	0.00
874.19	717085.0	1771.2	874.17	-0.00
587.49	653759.6	1770.6	587.49	0.00
300.60	590414.8	1770.6	300.70	0.01
14.60	527218.4	1770.8	14.56	-0.00

THERMAL CORRECTION

TEMP (°C)	THERMISTOR OUTPUT (volts)	INSTRUMENT OUTPUT (counts)
32.50	1957	527210.20
29.00	1887	527245.60
24.00	1788	527217.80
18.50	1678	527238.20
15.00	1609	527193.00
4.50	1400	527199.60
1.00	1331	527189.60

TEMPERATURE (°C)	SPAN
-5.00	25.05
35.00	25.03

y = thermistor output (counts)

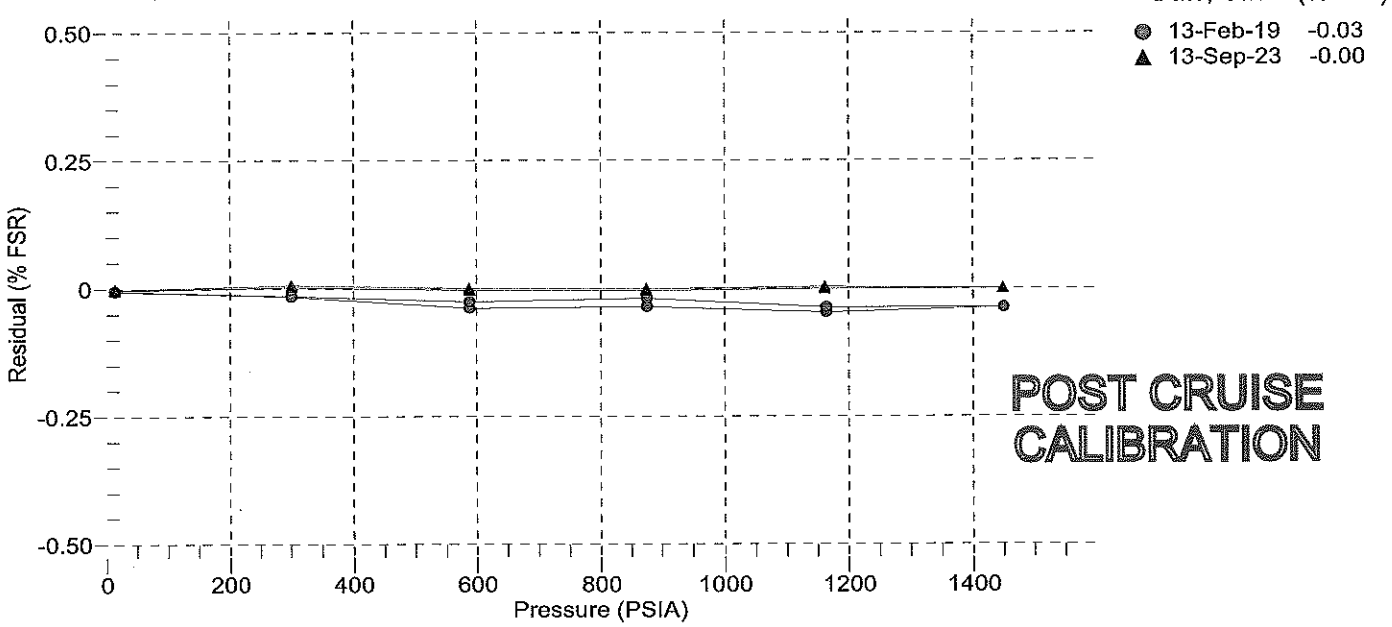
$t = PTEMPA0 + PTEMPA1 * y + PTEMPA2 * y^2$

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

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

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

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 = -2.168655e-004
a1 = 3.272061e-004
a2 = -5.841234e-006
a3 = 2.361084e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	578282.0	1.0000	-0.0000
4.5000	495169.8	4.5000	0.0000
15.0000	317026.4	15.0000	-0.0000
18.5000	274945.0	18.4999	-0.0001
23.9999	221125.4	24.0003	0.0004
29.0000	182515.6	28.9996	-0.0004
32.5000	160100.8	32.5002	0.0002

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