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

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

SENSOR SERIAL NUMBER: 9057
CALIBRATION DATE: 12-Jan-18

Slocum Payload CTD TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

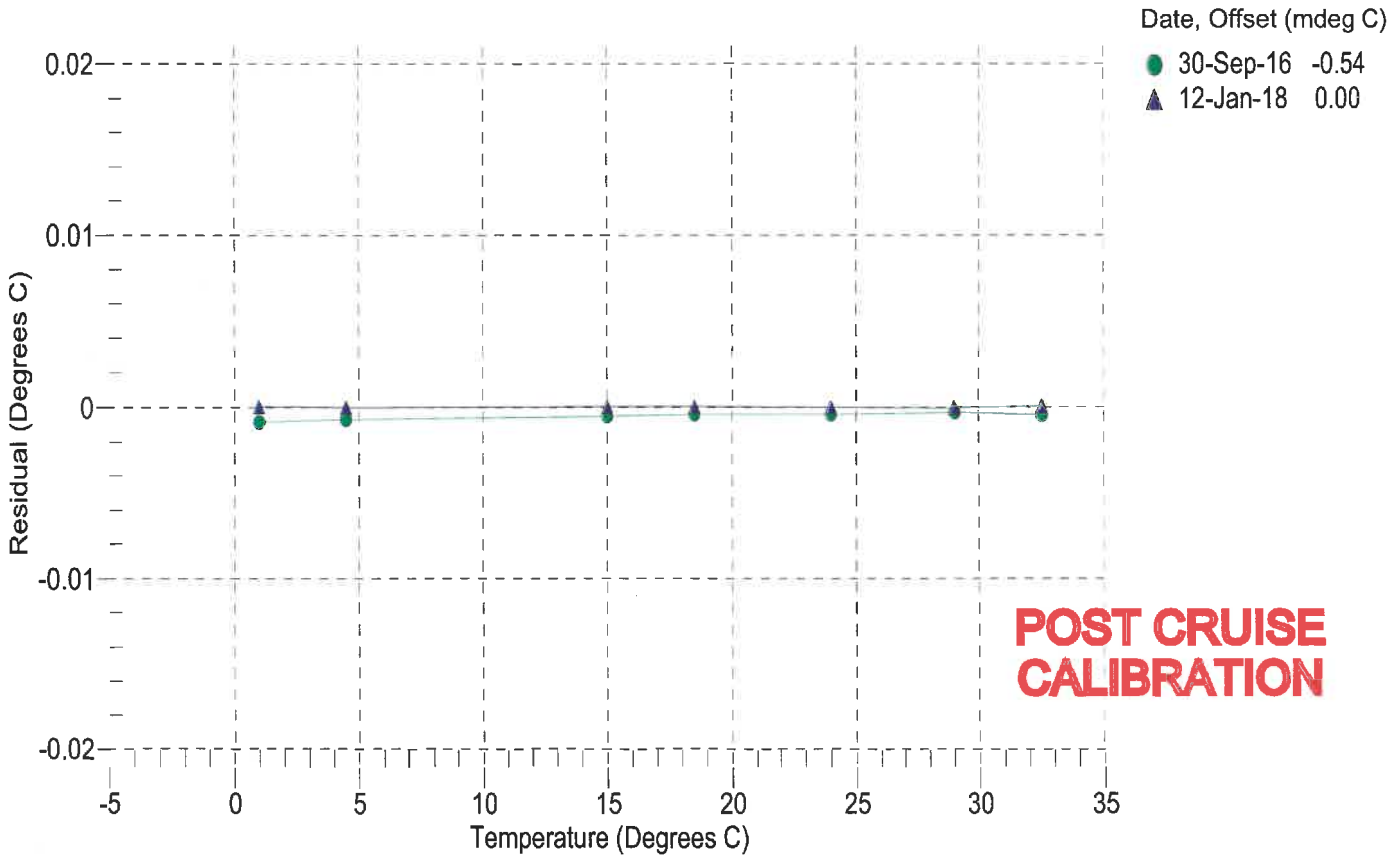
a0 = -1.063559e-004
a1 = 3.086859e-004
a2 = -4.685448e-006
a3 = 2.048573e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	587734.1	1.0000	0.0000
4.5000	502134.1	4.5000	-0.0000
15.0000	319398.2	15.0000	0.0000
18.5000	276421.6	18.5000	0.0000
24.0000	221600.7	24.0000	-0.0000
29.0000	182380.0	28.9999	-0.0001
32.5000	159669.7	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: 9057
CALIBRATION DATE: 12-Jan-18

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

COEFFICIENTS:

```
g = -9.829348e-001
h =  1.326842e-001
i = -2.946968e-004
j =  3.846522e-005

CPcor = -9.5700e-008
CTcor =  3.2500e-006
WBOTC =  1.4056e-006
```

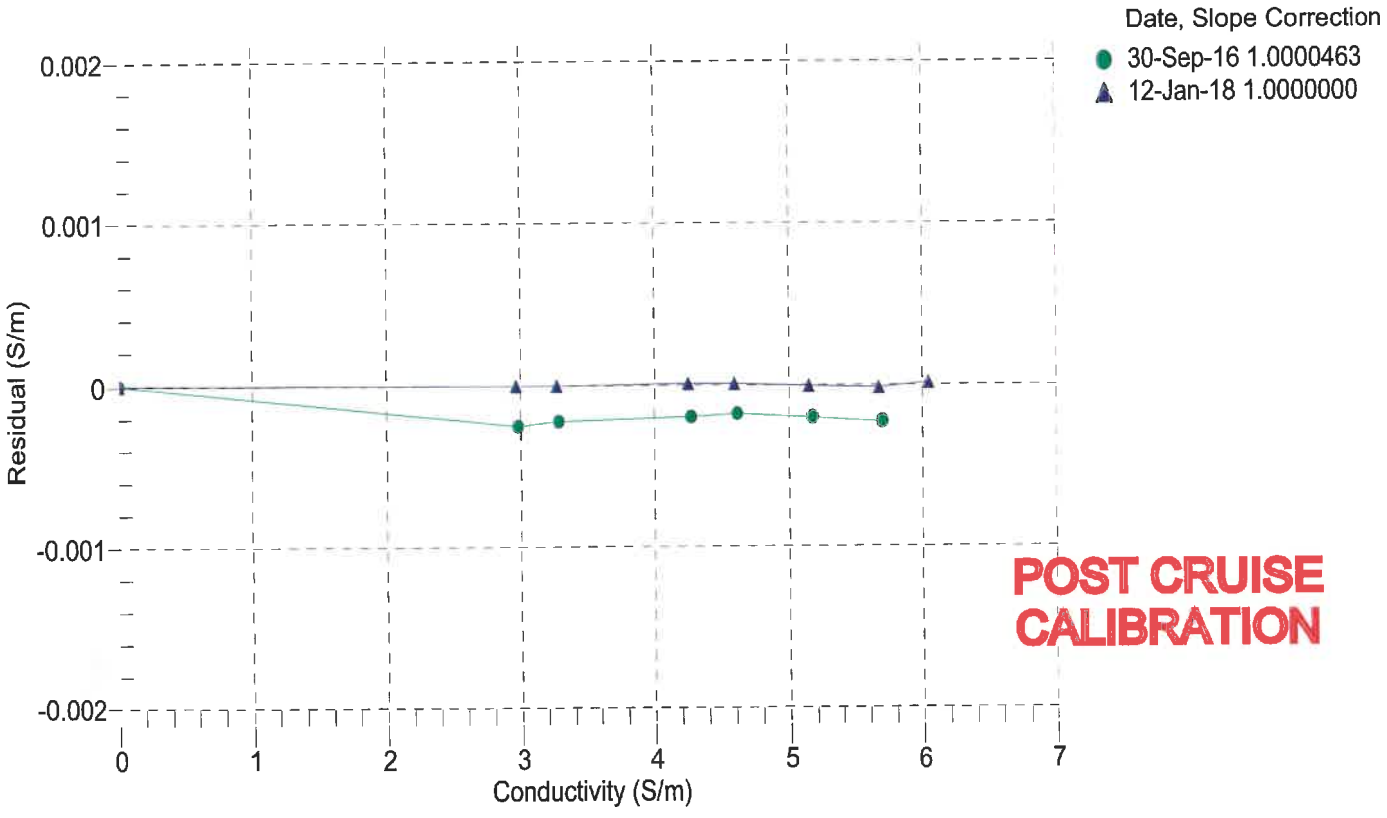
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2727.06	0.00000	0.00000
1.0000	34.6897	2.96617	5465.08	2.96617	-0.00000
4.5000	34.6683	3.27213	5672.26	3.27213	-0.00000
15.0000	34.6262	4.25075	6288.44	4.25076	0.00001
18.5000	34.6175	4.59483	6490.90	4.59484	0.00001
24.0000	34.6081	5.15107	6805.12	5.15106	-0.00001
29.0000	34.6031	5.67132	7086.06	5.67130	-0.00002
32.5000	34.6001	6.04254	7279.70	6.04255	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: 9057
CALIBRATION DATE: 08-Jan-18

Slocum Payload CTD PRESSURE CALIBRATION DATA
1450 psia S/N 3791765

COEFFICIENTS:

PA0 =	1.253453e-001	PTCA0 =	5.250186e+005
PA1 =	4.560399e-003	PTCA1 =	1.424170e+000
PA2 =	-1.228350e-011	PTCA2 =	-8.210813e-003
PTEMPA0 =	-6.868934e+001	PTCB0 =	2.533450e+001
PTEMPA1 =	5.179394e-002	PTCB1 =	-1.000000e-004
PTEMPA2 =	-3.989164e-007	PTCB2 =	0.000000e+000

PRESSURE SPAN CALIBRATION

PRESSURE (PSIA)	INSTRUMENT OUTPUT (counts)	THERMISTOR OUTPUT (volts)	COMPUTED PRESSURE (PSIA)	RESIDUAL (%FSR)
14.53	528206.5	1773.1	14.54	0.00
301.44	591115.6	1774.4	301.40	-0.00
588.66	654128.6	1775.0	588.64	-0.00
875.88	717159.2	1775.7	875.86	-0.00
1163.12	780217.3	1776.3	1163.11	-0.00
1450.28	843274.0	1776.7	1450.25	-0.00
1163.19	780248.4	1776.3	1163.25	0.00
875.96	717185.1	1776.1	875.98	0.00
588.68	654140.3	1776.0	588.69	0.00
301.33	591098.2	1777.1	301.32	-0.00
14.52	528206.1	1777.5	14.54	0.00

THERMAL CORRECTION

TEMP (°C)	THERMISTOR OUTPUT (volts)	INSTRUMENT OUTPUT (counts)
32.50	1984	528265.90
29.00	1914	528267.10
24.00	1815	528260.90
18.50	1706	528252.90
15.00	1636	528249.50
4.50	1429	528235.40
1.00	1360	528232.90

TEMPERATURE (°C)	SPAN
-5.00	25.34
35.00	25.33

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