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

SENSOR SERIAL NUMBER: 9483
CALIBRATION DATE: 10-Nov-18

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

COEFFICIENTS:

```
g = -1.013497e+000
h =  1.338812e-001
i = -1.060636e-004
j =  2.525674e-005

CPcor = -9.5700e-008
CTcor =  3.2500e-006
WBOTC = -1.2109e-007
```

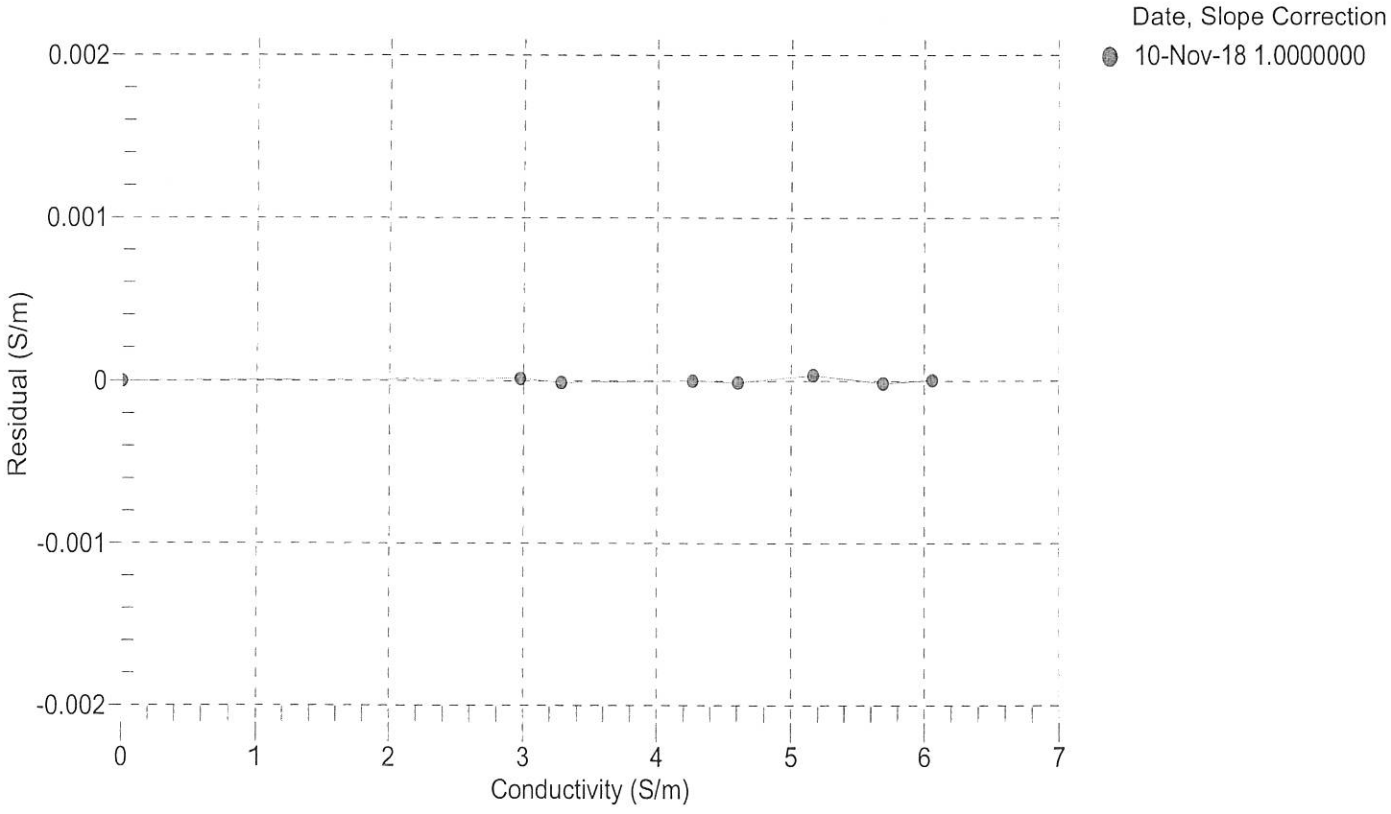
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2752.42	0.00000	0.00000
1.0000	34.7918	2.97407	5454.00	2.97408	0.00001
4.5000	34.7724	3.28099	5659.26	3.28098	-0.00001
14.9999	34.7307	4.26221	6269.86	4.26221	-0.00000
18.5000	34.7221	4.60722	6470.61	4.60721	-0.00001
24.0000	34.7130	5.16496	6782.34	5.16499	0.00003
29.0000	34.7084	5.68663	7061.11	5.68661	-0.00002
32.5000	34.7059	6.05891	7253.35	6.05891	0.00000

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: 9483
CALIBRATION DATE: 10-Nov-18

Slocum Payload CTD TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

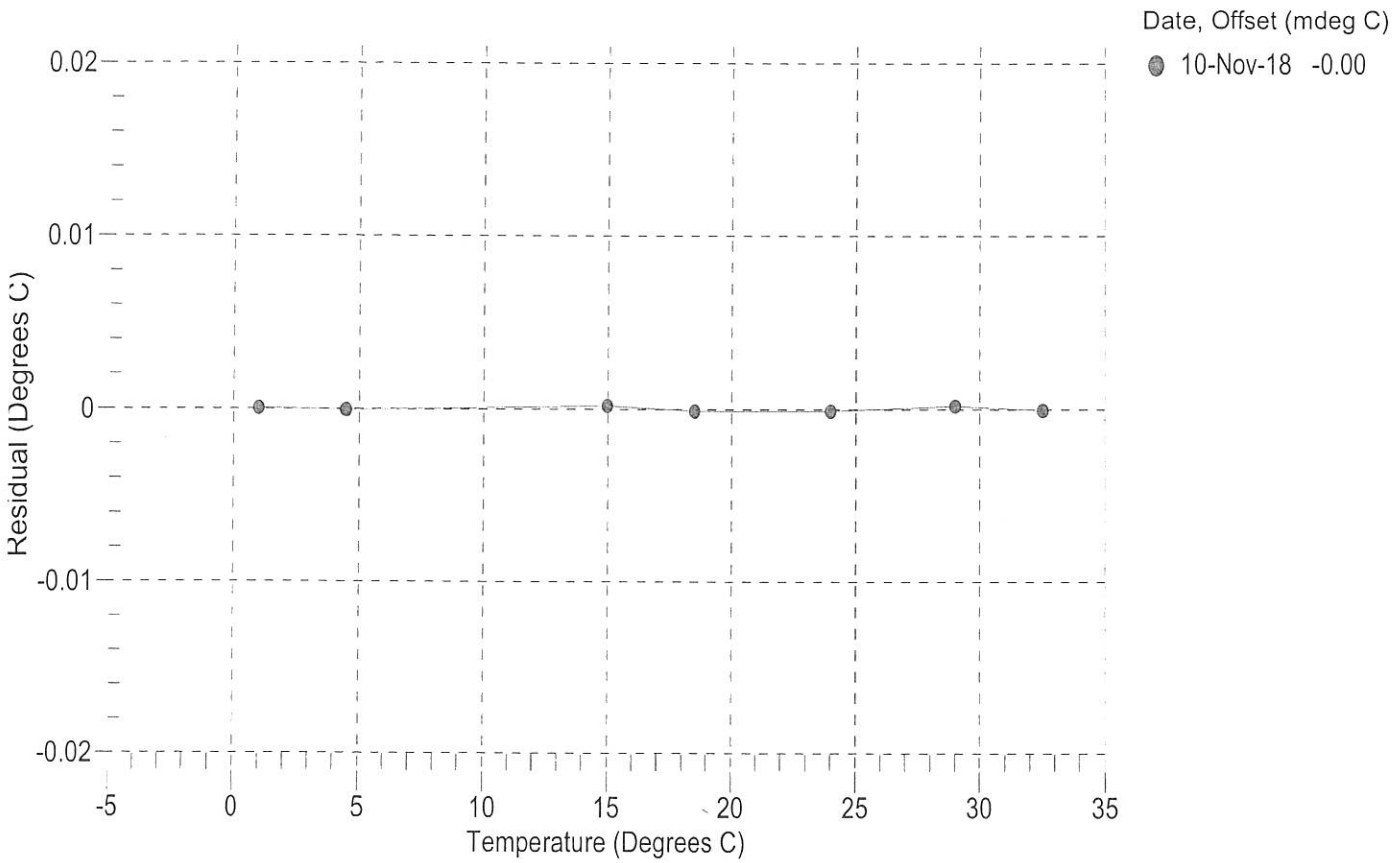
a0 = -1.990531e-004
a1 = 3.186770e-004
a2 = -5.016024e-006
a3 = 2.172682e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	567003.3	1.0000	0.0000
4.5000	486337.8	4.4999	-0.0001
14.9999	312888.5	15.0001	0.0002
18.5000	271777.8	18.4999	-0.0001
24.0000	219097.0	23.9999	-0.0001
29.0000	181207.3	29.0002	0.0002
32.5000	159180.3	32.4999	-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



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SENSOR SERIAL NUMBER: 9483
CALIBRATION DATE: 07-Nov-18

Slocum Payload CTD PRESSURE CALIBRATION DATA
1450 psia S/N 11145975

COEFFICIENTS:

PA0 =	1.631601e-001	PTCA0 =	5.244650e+005
PA1 =	4.534280e-003	PTCA1 =	2.008842e+000
PA2 =	-2.778209e-011	PTCA2 =	-2.210557e-002
PTEMPA0 =	-6.622376e+001	PTCB0 =	2.512738e+001
PTEMPA1 =	5.238114e-002	PTCB1 =	-5.250000e-004
PTEMPA2 =	-5.452579e-007	PTCB2 =	0.000000e+000

PRESSURE SPAN CALIBRATION

PRESSURE (PSIA)	INSTRUMENT OUTPUT (counts)	THERMISTOR OUTPUT (volts)	COMPUTED PRESSURE (PSIA)	RESIDUAL (%FSR)
14.78	527748.1	1724.6	14.90	0.01
302.25	591074.0	1727.1	302.05	-0.01
589.53	654513.5	1727.7	589.49	-0.00
876.93	718021.9	1728.2	877.02	0.01
1164.31	781532.4	1729.2	1164.34	0.00
1451.62	845053.2	1729.4	1451.48	-0.01
1164.36	781552.9	1729.3	1164.43	0.01
877.03	718066.5	1729.0	877.23	0.01
589.83	654574.9	1729.2	589.77	-0.00
302.25	591073.9	1730.9	302.05	-0.01
14.79	527748.6	1731.2	14.90	0.01

THERMAL CORRECTION

TEMP (°C)	THERMISTOR OUTPUT (volts)	INSTRUMENT OUTPUT (counts)
32.50	1923	527809.25
29.00	1854	527792.00
24.00	1755	527826.75
18.50	1646	527798.50
15.00	1576	527771.75
4.50	1370	527782.75
1.00	1301	527766.25

TEMPERATURE (°C)	SPAN
-5.00	25.13
35.00	25.11

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