



SEA-BIRD
SCIENTIFIC

Sea-Bird Scientific
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SENSOR SERIAL NUMBER: 9432
CALIBRATION DATE: 29-Oct-17

Slocum Payload CTD TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

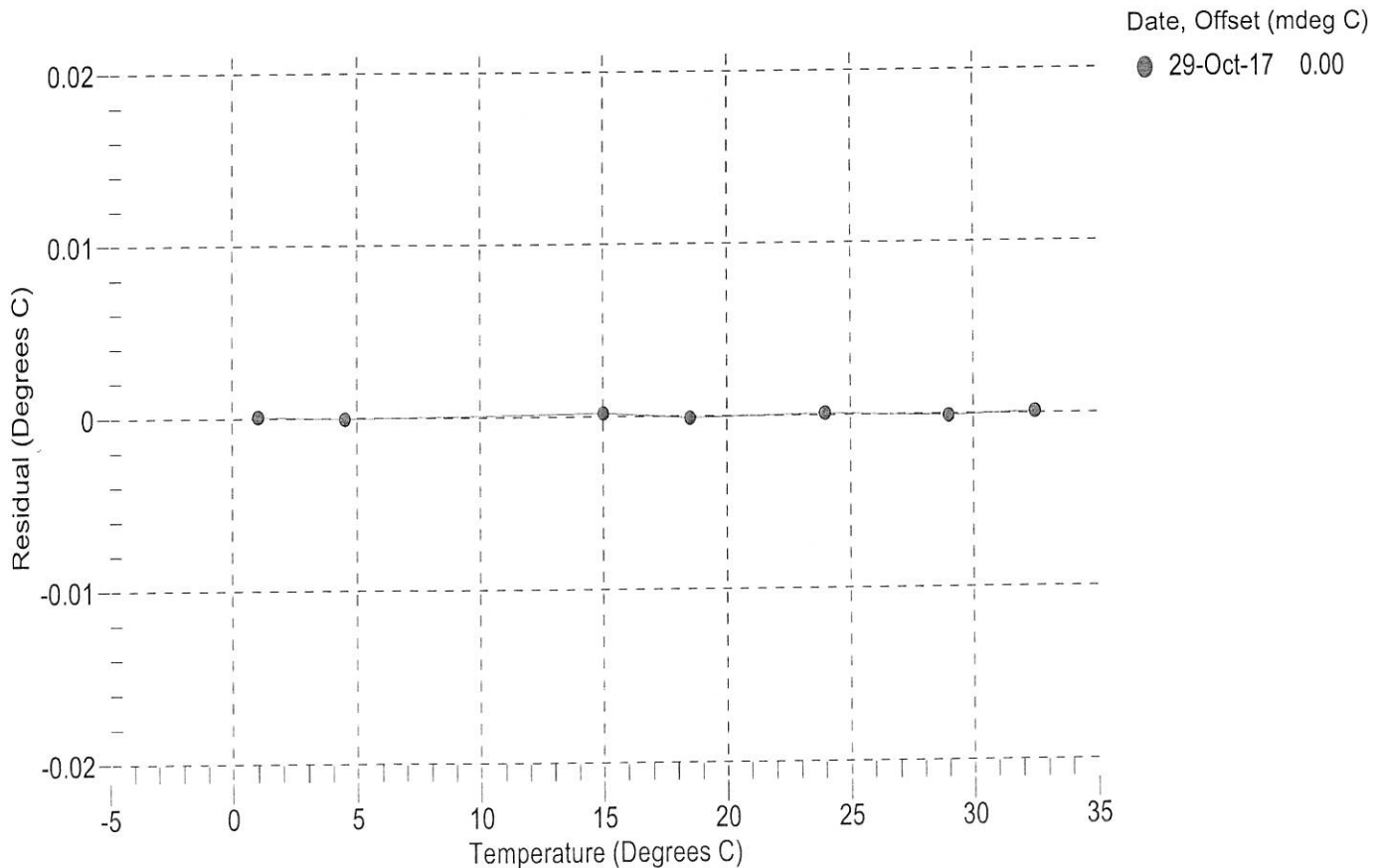
a0 = -1.302852e-004
a1 = 3.067296e-004
a2 = -4.186906e-006
a3 = 1.946295e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	560635.0	1.0001	0.0001
4.5000	480388.4	4.4999	-0.0001
15.0000	308162.0	15.0002	0.0002
18.5000	267425.6	18.4999	-0.0001
23.9940	215330.2	23.9941	0.0001
29.0000	177829.8	28.9999	-0.0001
32.5000	156075.8	32.5001	0.0001

n = Instrument Output (counts)

Temperature ITS-90 (°C) = $1/\{a_0 + a_1[\ln(n)] + a_2[\ln^2(n)] + a_3[\ln^3(n)]\} - 273.15$

Residual (°C) = instrument temperature - bath temperature





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Pressure Test Certificate

Test Date: 2017-10-26

Description: Slocum CTD

Sensor Information:

Model Number: Slocum

Serial Number: 9432

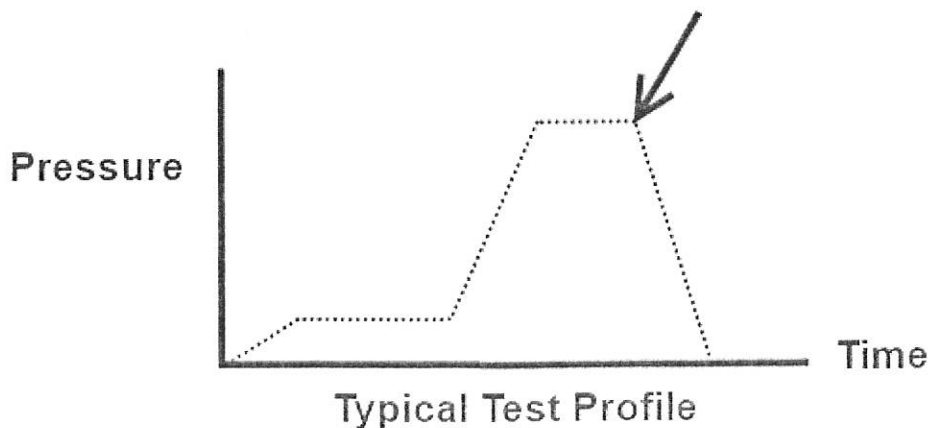
Pressure Test Protocol:

Low Pressure Test: 40	PSI	Held For: 15	Minutes
High Pressure Test: 40	PSI	Held For: 15	Minutes

Passed Test: True

Tested By: wb

High pressure is
generally equal
to the maximum
depth rating of
the instrument





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SENSOR SERIAL NUMBER: 9432
CALIBRATION DATE: 26-Oct-17

Slocum Payload CTD PRESSURE CALIBRATION DATA
1450 psia S/N 10712104

COEFFICIENTS:

PA0 = 5.366493e-001
PA1 = 4.488557e-003
PA2 = -1.126155e-011
PTEMPA0 = -7.162216e+001
PTEMPA1 = 5.029711e-002
PTEMPA2 = -3.746177e-007

PTCA0 = 5.240170e+005
PTCA1 = 9.895664e+000
PTCA2 = -2.087537e-001
PTCB0 = 2.508912e+001
PTCB1 = -5.750000e-004
PTCB2 = 0.000000e+000

PRESSURE SPAN CALIBRATION

PRESSURE (PSIA)	INSTRUMENT OUTPUT (counts)	THERMISTOR OUTPUT (volts)	COMPUTED PRESSURE (PSIA)	RESIDUAL (%FSR)	TEMP (°C)	THERMISTOR OUTPUT (volts)	INSTRUMENT OUTPUT (counts)
14.74	527299.7	1854.0	14.76	0.00	32.50	2103	527305.40
301.70	591191.1	1857.9	301.63	-0.01	29.00	2031	527324.20
588.88	655179.6	1859.0	588.83	-0.00	23.99	1929	527333.80
876.20	719239.2	1860.0	876.27	0.00	18.50	1816	527325.20
1163.24	783207.6	1860.8	1163.21	-0.00	15.00	1745	527303.40
1450.34	847232.9	1861.4	1450.30	-0.00	4.50	1531	527243.80
1163.31	783242.9	1861.2	1163.36	0.00	1.00	1460	527225.60
876.12	719204.7	1861.3	876.12	0.00			
589.13	655256.0	1861.7	589.18	0.00			
301.65	591186.3	1865.5	301.60	-0.00			
14.74	527305.3	1869.1	14.78	0.00			

THERMAL CORRECTION

TEMPERATURE (°C) SPAN
-5.00 25.09
35.00 25.07

y = thermistor output (counts)

t = PTEMPA0 + PTEMPA1 * y + PTEMPA2 * y²

x = instrument output - PTCA0 - PTCA1 * t - PTCA2 * t²

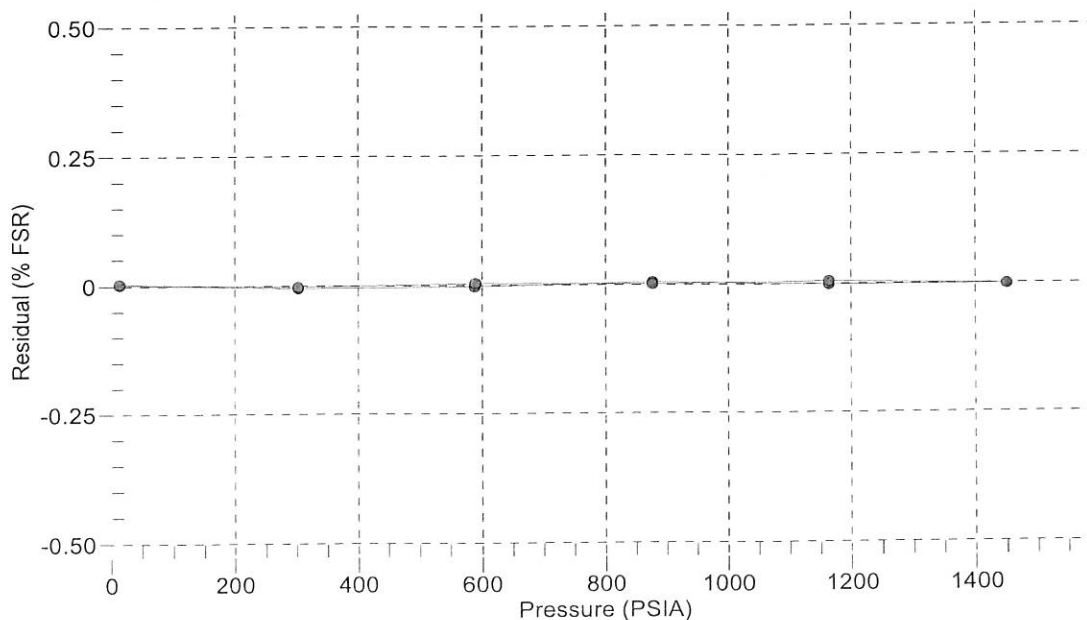
n = x * PTCB0 / (PTCB0 + PTCB1 * t + PTCB2 * t²)

pressure (PSIA) = PA0 + PA1 * n + PA2 * n²

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

Date, Offset (%FSR)

● 26-Oct-17 -0.00





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

COEFFICIENTS:

g = -1.001964e+000
h = 1.298258e-001
i = -1.420559e-005
j = 1.748636e-005

CPcor = -9.5700e-008
CTcor = 3.2500e-006
WBOTC = 1.5002e-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	2777.06	0.00000	0.00000
1.0000	34.6947	2.96656	5519.20	2.96656	0.00000
4.5000	34.6754	3.27274	5727.34	3.27273	-0.00001
15.0000	34.6343	4.25164	6346.47	4.25165	0.00001
18.5000	34.6260	4.59584	6550.01	4.59584	0.00000
23.9940	34.6172	5.15166	6865.72	5.15165	-0.00000
29.0000	34.6129	5.67274	7148.76	5.67273	-0.00001
32.5000	34.6106	6.04416	7343.71	6.04417	0.00001

$f = \text{Instrument Output(Hz)} * \text{sqrt}(1.0 + \text{WBOTC} * t) / 1000.0$

t = temperature (°C); p = pressure (decibars); $\delta = \text{CTcor}$; $\epsilon = \text{CPcor}$;

Conductivity (S/m) = $(g + h * f^2 + i * f^3 + j * f^4) / (1 + \delta * t + \epsilon * p)$

Residual (Siemens/meter) = instrument conductivity - bath conductivity

Date, Slope Correction

● 29-Oct-17 1.0000000

