SENSOR SERIAL NUMBER: 9715
CALIBRATION DATE: 30-Jul-21

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

COEFFICIENTS:

g = -1.015054e+000
h = 1.569264e-001
i = -4.517694e-004
j = 6.030407e-005

CPcor = -9.5700e-008
CTcor = 3.2500e-006
WBOTC = 1.9610e-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	2549.47	0.00000	0.00000
1.0000	34.6513	2.96320	5046.97	2.96319	-0.00001
4.5000	34.6316	3.26901	5236.85	3.26902	0.00001
14.9999	34.5905	4.24682	5801.63	4.24682	0.00000
18.5000	34.5820	4.59063	5987.27	4.59063	0.00000
24.0000	34.5732	5.14645	6275.46	5.14644	-0.00001
29.0000	34.5687	5.66631	6533.17	5.66631	0.00000
32.5001	34.5662	6.03730	6710.71	6.03708	-0.00022

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

t = temperature (°C); p = pressure (decibars); $\delta = CTcor$; $\varepsilon = CPcor$;

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
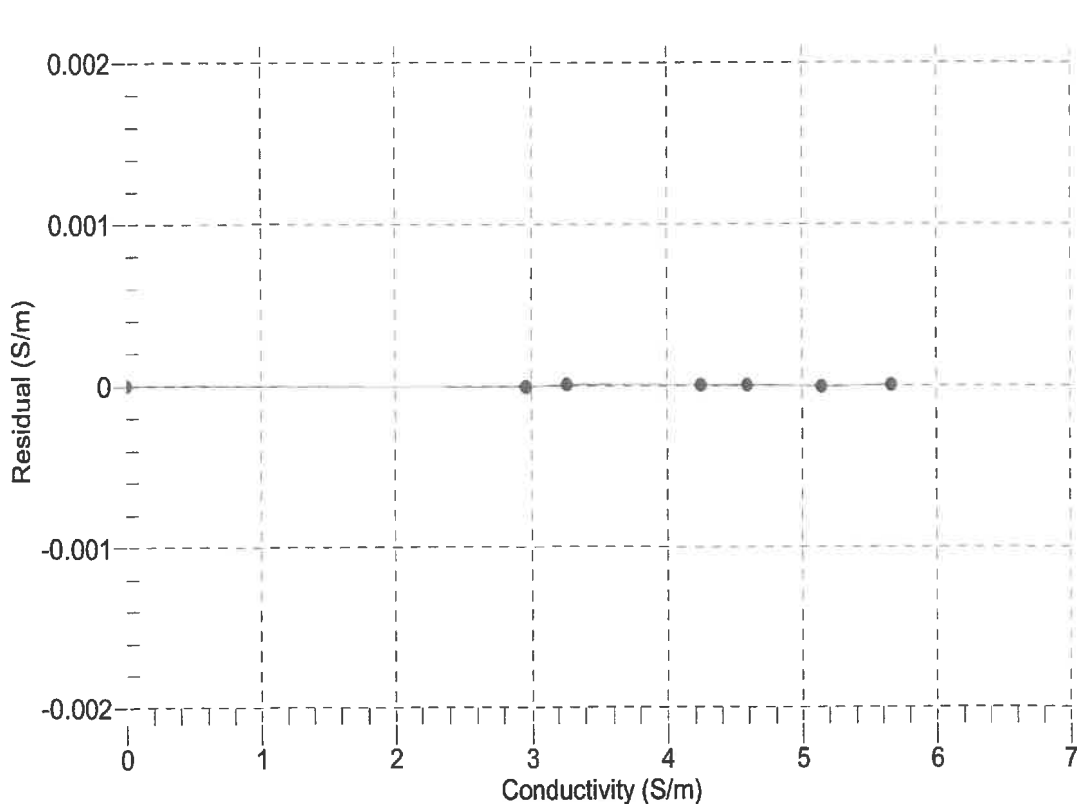
Date, Slope Correction
● 30-Jul-21 1.0000000

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SENSOR SERIAL NUMBER: 9715
CALIBRATION DATE: 30-Jul-21

Slocum Payload CTD TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:
a0 = -5.195647e-005
a1 = 2.947986e-004
a2 = -3.578099e-006
a3 = 1.777602e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	584130.0	1.0000	-0.0000
4.5000	499356.6	4.5001	0.0001
14.9999	318190.2	14.9998	-0.0001
18.5000	275524.6	18.5000	-0.0000
24.0000	221059.8	24.0001	0.0001
29.0000	182062.2	28.9999	-0.0001
32.5001	159464.2	32.5001	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
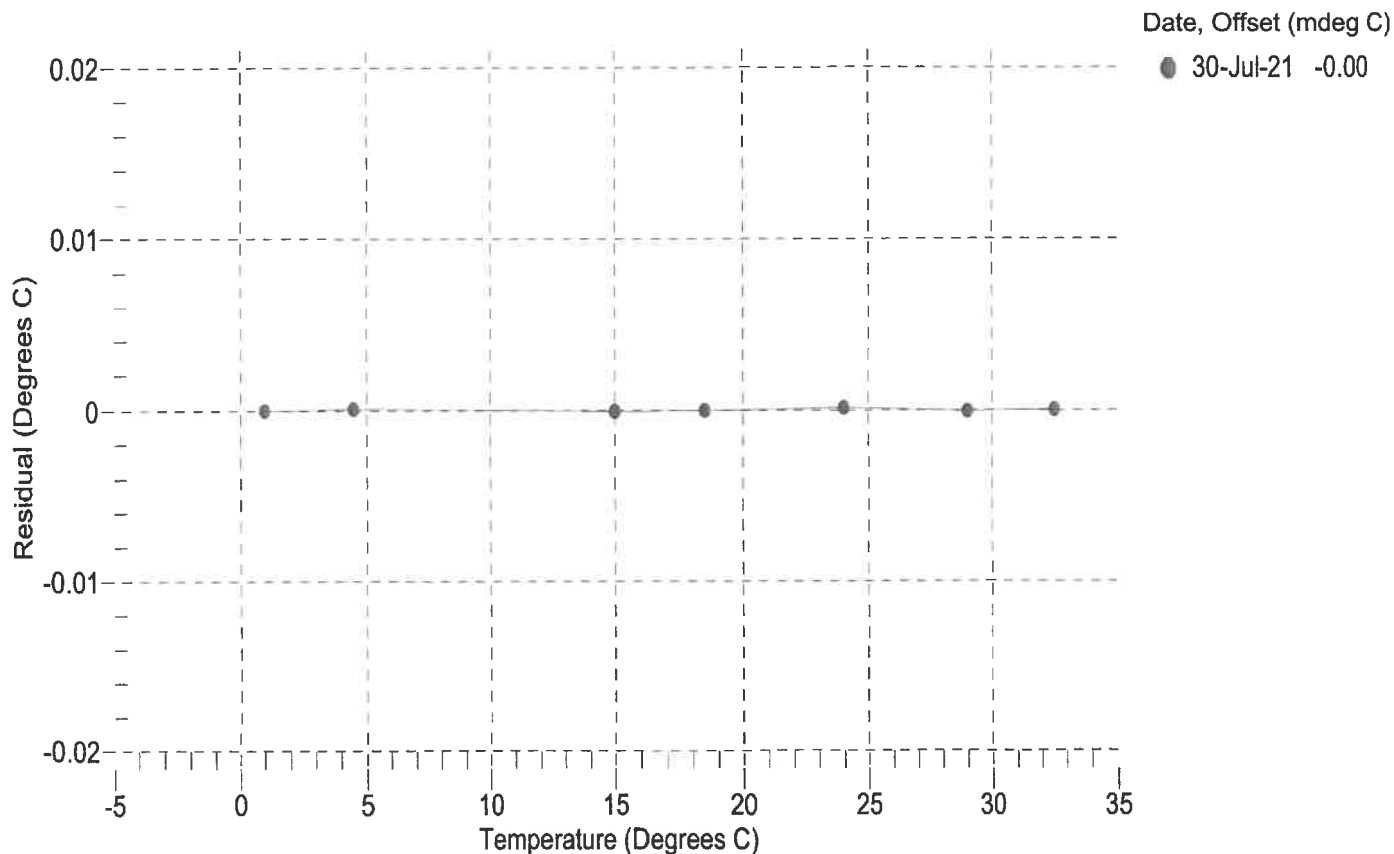
Date, Offset (mdeg C)
● 30-Jul-21 -0.00

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SENSOR SERIAL NUMBER: 9715
CALIBRATION DATE: 23-Jul-21

Slocum Payload CTD PRESSURE CALIBRATION DATA
1450 psia S/N 11705806

COEFFICIENTS:

PA0 =	1.720020e-001	PTCA0 =	5.241953e+005
PA1 =	4.559954e-003	PTCA1 =	1.010320e+000
PA2 =	-2.140446e-011	PTCA2 =	1.779054e-002
PTEMPA0 =	-6.134101e+001	PTCB0 =	2.502856e+001
PTEMPA1 =	5.490379e-002	PTCB1 =	3.007519e-004
PTEMPA2 =	-5.986046e-007	PTCB2 =	0.000000e+000

PRESSURE SPAN CALIBRATION

PRESSURE (PSIA)	INSTRUMENT OUTPUT (counts)	THERMISTOR OUTPUT (volts)	COMPUTED PRESSURE (PSIA)	RESIDUAL (%FSR)
14.51	527388.3	1614.0	14.56	0.00
301.61	590348.5	1614.0	301.47	-0.01
588.75	653429.1	1615.1	588.76	0.00
875.95	716534.6	1615.8	875.99	0.00
1163.18	779667.4	1616.1	1163.18	0.00
1450.31	842814.6	1616.6	1450.27	-0.00
1163.09	779650.6	1616.1	1163.11	0.00
875.94	716533.1	1615.5	875.99	0.00
588.76	653433.9	1615.6	588.78	0.00
301.56	590354.4	1615.6	301.49	-0.00
14.52	527395.3	1614.0	14.59	0.00

THERMAL CORRECTION

TEMP (°C)	THERMISTOR OUTPUT (volts)	INSTRUMENT OUTPUT (counts)
32.50	1742	527433.00
29.00	1676	527424.00
24.00	1582	527418.00
18.50	1478	527405.00
15.00	1412	527397.80
4.50	1215	527390.20
1.00	1150	527379.40

TEMPERATURE (°C)	SPAN
-5.20	25.03
34.70	25.04

y = thermistor output (counts)

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

x = instrument output - $PTCA0$ - $PTCA1 * t$ - $PTCA2 * t^2$

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

pressure (PSIA) = $PA0 + PA1 * n + PA2 * n^2$

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

Date, Offset (%FSR)
● 23-Jul-21   -0.00

Residual (% FSR) vs Pressure (PSIA)

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