



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

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 seabird@seabird.com
 www.seabird.com

SENSOR SERIAL NUMBER: 9295
 CALIBRATION DATE: 14-Feb-20

Slocum Payload CTD PRESSURE CALIBRATION DATA
 1450 psia S/N 4376404

COEFFICIENTS:

PA0 =	1.230204e-002	PTCA0 =	5.260888e+005
PA1 =	4.637258e-003	PTCA1 =	3.806257e+000
PA2 =	-3.905386e-011	PTCA2 =	-1.586092e-001
PTEMPA0 =	1.301594e+002	PTCB0 =	2.532925e+001
PTEMPA1 =	-6.176897e-002	PTCB1 =	1.650000e-003
PTEMPA2 =	-3.896924e-007	PTCB2 =	0.000000e+000

PRESSURE SPAN CALIBRATION

THERMAL CORRECTION

PRESSURE (PSIA)	INSTRUMENT OUTPUT (counts)	THERMISTOR OUTPUT (volts)	COMPUTED PRESSURE (PSIA)	RESIDUAL (%FSR)	TEMP (°C)	THERMISTOR OUTPUT (volts)	INSTRUMENT OUTPUT (counts)
14.56	529260.1	1725.5	14.67	0.01	32.50	1565	529283.60
301.49	591238.6	1722.8	301.50	0.00	29.00	1621	529298.40
588.56	653394.5	1722.4	588.84	0.02	24.00	1700	529315.60
875.84	715554.0	1720.8	875.89	0.00	18.50	1787	529316.20
1163.08	777806.4	1719.4	1163.07	-0.00	15.00	1843	529374.20
1450.34	840131.2	1718.1	1450.28	-0.00	4.50	2009	529329.60
1163.18	777833.3	1719.7	1163.20	0.00	1.00	2064	529326.60
875.90	715578.5	1721.2	876.01	0.01			
588.70	653354.2	1722.1	588.65	-0.00	TEMPERATURE (°C)	SPAN	
301.47	591188.9	1722.4	301.27	-0.01	-5.00	25.32	
14.57	529238.0	1723.1	14.57	0.00	35.00	25.39	

y = thermistor output (counts)

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

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

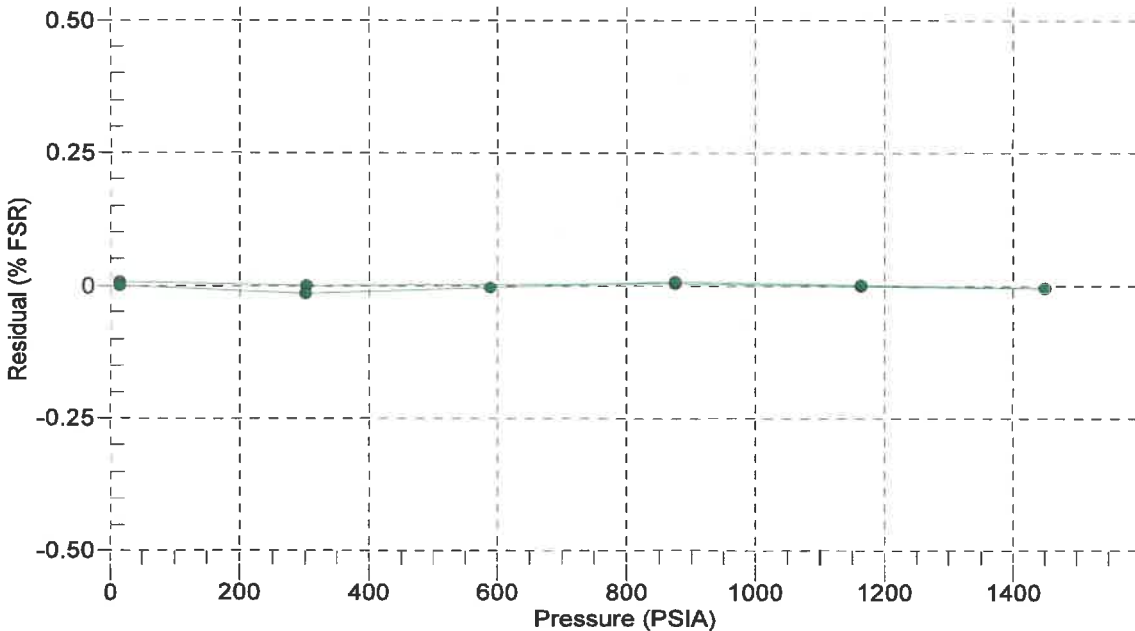
$$n = x * PTCB0 / (PTCB0 + PTCB1 * t + PTCB2 * t^2)$$

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

$$\text{Residual (\%FSR)} = (\text{computed pressure} - \text{true pressure}) * 100 / \text{Full Scale Range}$$

Date, Offset (%FSR)

● 14-Feb-20 0.00



5846



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SENSOR SERIAL NUMBER: 9295
 CALIBRATION DATE: 17-Feb-20

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

COEFFICIENTS:

g = -9.811583e-001 CPcor = -9.5700e-008
 h = 1.544671e-001 CTcor = 3.2500e-006
 i = -2.238506e-004 WBOTC = 2.6424e-007
 j = 4.160670e-005

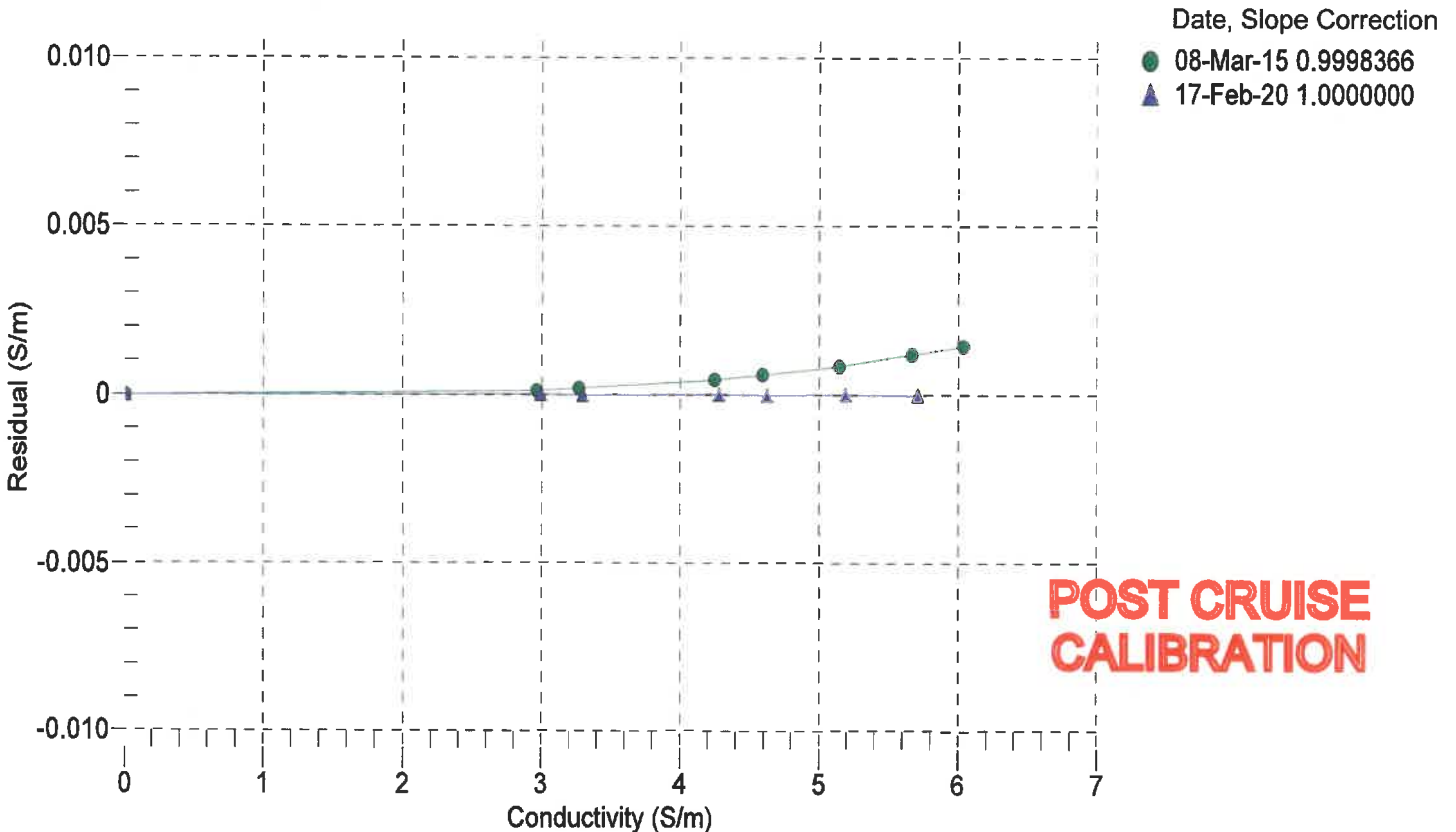
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2522.74	0.00000	0.00000
1.0000	34.9488	2.98621	5069.05	2.98622	0.00001
4.4999	34.9297	3.29436	5261.56	3.29434	-0.00002
15.0000	34.8881	4.27949	5833.85	4.27950	0.00001
18.5000	34.8792	4.62581	6021.85	4.62580	-0.00001
24.0000	34.8692	5.18562	6313.64	5.18563	0.00001
29.0000	34.8615	5.70889	6574.36	5.70888	-0.00000
32.5000	34.8532	6.08170	6753.63	6.08134	-0.00035

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

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

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

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





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Slocum Payload CTD TEMPERATURE CALIBRATION DATA
 ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

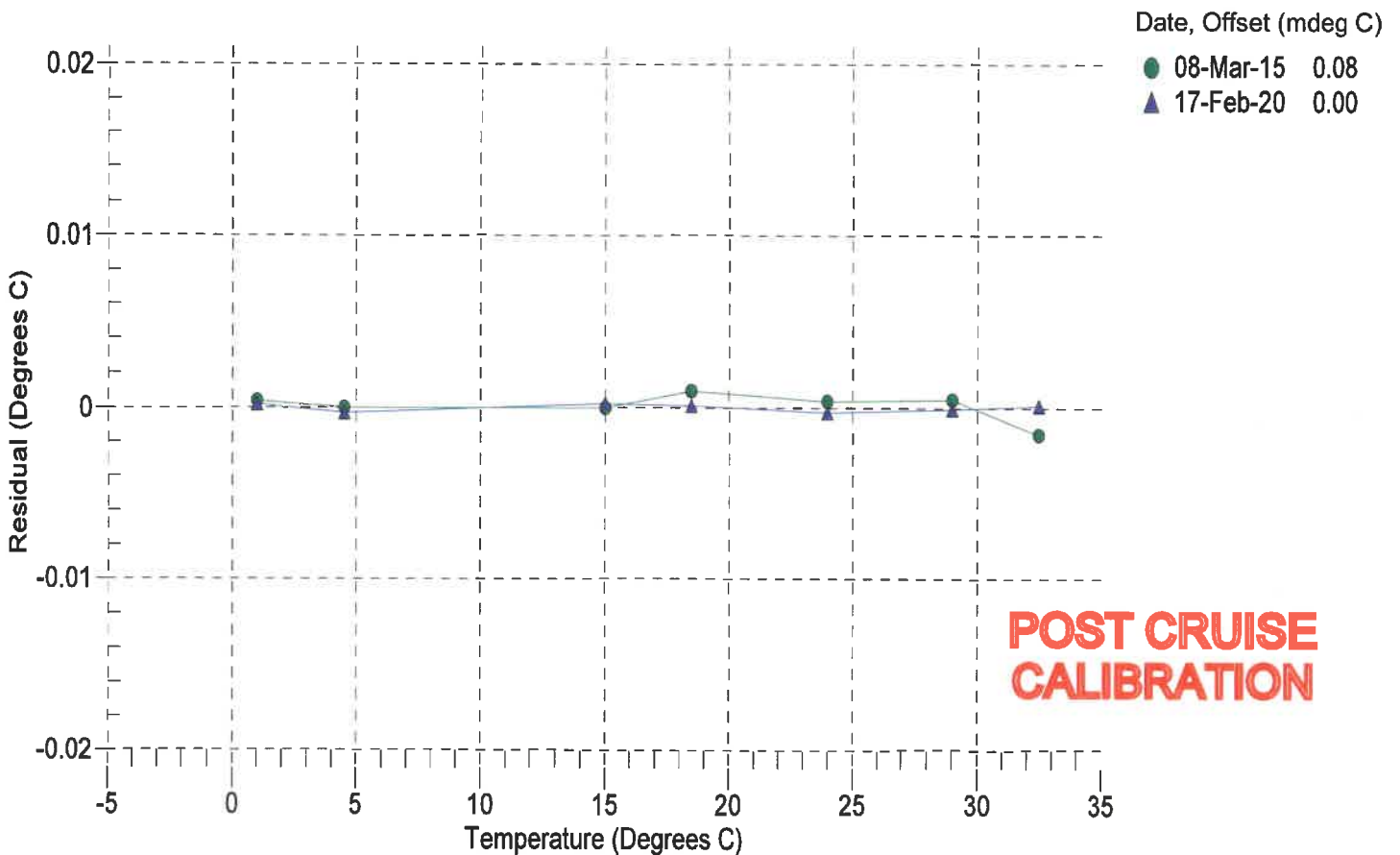
a0 = 6.136529e-005
 a1 = 2.730378e-004
 a2 = -1.999971e-006
 a3 = 1.346889e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	580552.6	1.0002	0.0002
4.4999	495602.6	4.4996	-0.0003
15.0000	314501.2	15.0002	0.0002
18.5000	271980.2	18.5001	0.0001
24.0000	217787.8	23.9997	-0.0003
29.0000	179049.0	28.9999	-0.0001
32.5000	156635.2	32.5001	0.0001

n = Instrument Output (counts)

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

$$\text{Residual (°C)} = \text{instrument temperature} - \text{bath temperature}$$





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SERVICE REPORT

Service Request
Date
Sales Order

1005510128
 27-FEB-2020
 315908185

PRODUCT INFORMATION

Item: SLOCUM.50
Item Description: SLOCUM GLIDER CTD, 1000 dBar, DIRECT GROUND
Serial: 712-9295

Special Notes
 Service request:
 Standard Service.

Services Performed:
 Perform initial diagnostic evaluation.
 Performed pressure calibration.
 Performed "POST" cruise calibration.
 Installed NEW AF24173 Anti-foulant cylinder(s).

Item	Item Description	Qty
CAL_SLOCUM	Calibrate SLOCUM conductivity and temperature sensors	1
CNCRSLOCUM	Confirm & Re-certify Webb SLOCUM Glider CTD	1
REPLACEAF	Extra charge to install one antifoulant device, includes one 801542.1.	1
PCAL_SLOCUM	Calibrate SLOCUM pressure sensor	1

Unbilled Items

Item	Item Description	Qty
801542.1	AF24173 ANTI-FOULANT, SINGLE CYLINDER, V2	1
22096	LITHIUM COIN BATTERY, WITH TABS, BR1632A/HA	1