



Sea-Bird Scientific  
 13431 NE 20<sup>th</sup> Street  
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 USA

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 seabird@seabird.com  
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SENSOR SERIAL NUMBER: 0256  
 CALIBRATION DATE: 31-Dec-17

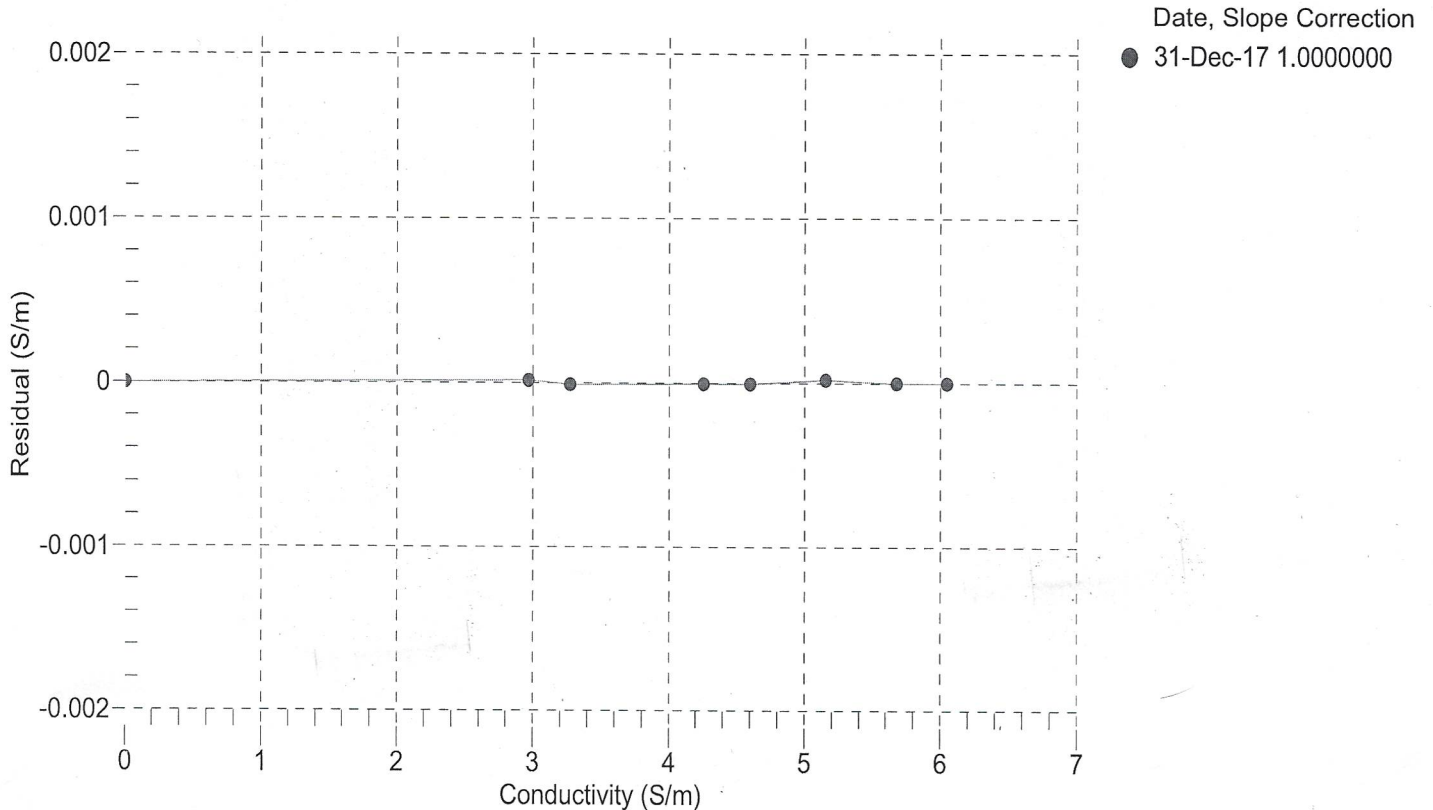
Glider Payload CTD CONDUCTIVITY CALIBRATION DATA  
 PSS 1978: C(35,15,0) = 4.2914 Siemens/meter

COEFFICIENTS:

g = -9.915912e-001      CPcor = -9.5700e-008  
 h = 1.253413e-001      CTcor = 3.2500e-006  
 i = -9.109892e-005      WBOTC = -1.4808e-007  
 j = 2.196904e-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	2813.60	0.00000	0.00000
1.0000	34.7098	2.96773	5616.30	2.96774	0.00001
4.5000	34.6904	3.27401	5828.71	3.27400	-0.00001
15.0000	34.6481	4.25316	6460.35	4.25315	-0.00001
18.5000	34.6395	4.59744	6667.97	4.59743	-0.00001
24.0000	34.6301	5.15398	6990.28	5.15400	0.00002
29.0000	34.6252	5.67453	7278.50	5.67453	-0.00000
32.5000	34.6221	6.04594	7477.18	6.04594	-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<sup>2</sup> + i \* f<sup>3</sup> + j \* f<sup>4</sup>) / (1 + δ \* t + ε \* p)  
 Residual (Siemens/meter) = instrument conductivity - bath conductivity





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Glider Payload CTD PRESSURE CALIBRATION DATA  
 1450 psia S/N 10719843

COEFFICIENTS:

PA0 = 2.674442e-001	PTCA0 = 5.245282e+005
PA1 = 4.511123e-003	PTCA1 = 4.726836e+000
PA2 = -1.792689e-011	PTCA2 = -9.725636e-002
PTEMPA0 = -6.137917e+001	PTCB0 = 2.515668e+001
PTEMPA1 = 5.360526e-002	PTCB1 = -8.478803e-004
PTEMPA2 = -6.931440e-007	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)
14.78	527806.8	1550.0	14.82	0.00	32.50	1793	527977.40
301.67	591354.6	1552.5	301.60	-0.00	29.00	1725	527985.80
588.84	655026.7	1553.9	588.81	-0.00	24.00	1627	527986.90
876.00	718725.0	1554.8	875.98	-0.00	18.50	1520	527981.30
1163.15	782450.2	1555.5	1163.14	-0.00	15.00	1452	527976.30
1450.29	846196.1	1556.3	1450.24	-0.00	4.50	1249	527948.60
1163.21	782483.2	1555.9	1163.29	0.01	1.00	1182	527932.60
876.04	718744.7	1556.1	876.07	0.00			
589.07	655097.1	1556.1	589.13	0.00			
301.64	591351.0	1556.4	301.59	-0.00			
14.78	527805.1	1557.9	14.81	0.00			

	TEMPERATURE (°C)	SPAN
	-5.10	25.16
	35.00	25.13

y = thermistor output (counts)

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

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

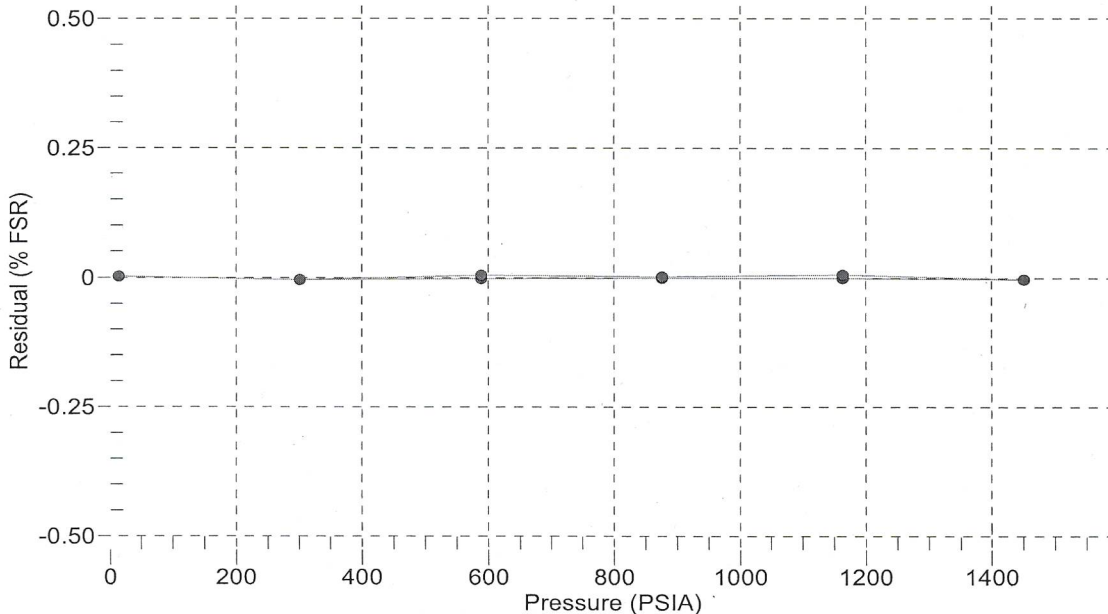
$$n = x * PTCB0 / (PTCB0 + PTCB1 * t + PTCB2 * t^2)$$

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

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

Date, Offset (%FSR)

● 21-Dec-17 0.00





**SEA·BIRD**  
SCIENTIFIC

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## Pressure Test Certificate

Test Date: 2017-12-21

Description: Payload Glider CTD

### Sensor Information:

Model Number: PayLoad

Serial Number: 0256

### Pressure Test Protocol:

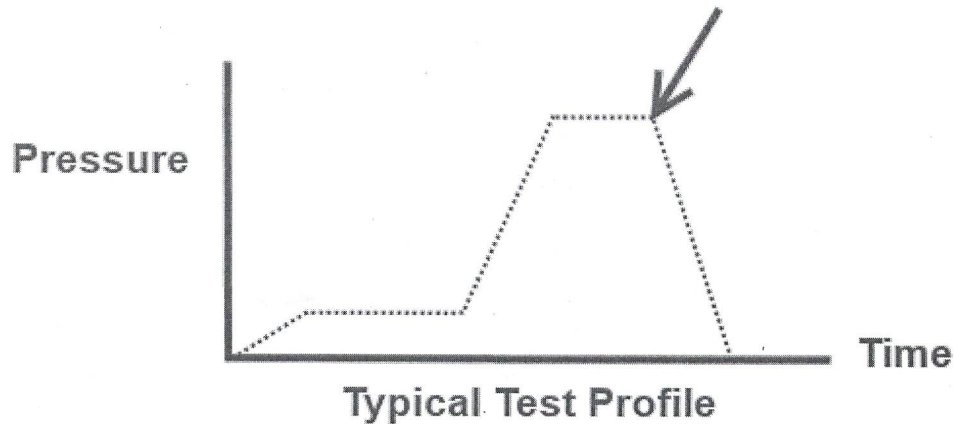
Low Pressure Test: 40      PSI      Held For: 15      Minutes

High Pressure Test: 1450      PSI      Held For: 15      Minutes

Passed Test: True

Tested By: JY

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





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Glider Payload CTD TEMPERATURE CALIBRATION DATA  
 ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

a0 = -1.485639e-004  
 a1 = 3.136585e-004  
 a2 = -4.845847e-006  
 a3 = 2.116936e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	565270.2	1.0000	-0.0000
4.5000	483976.8	4.5001	0.0001
15.0000	309762.5	14.9999	-0.0001
18.5000	268613.1	18.5000	-0.0000
24.0000	215992.2	24.0001	0.0001
29.0000	178239.8	29.0000	-0.0000
32.5000	156330.4	32.5000	-0.0000

n = Instrument Output (counts)

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

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

Date, Offset (mdeg C)

● 31-Dec-17 -0.00

