



SEA-BIRD
SCIENTIFIC

SBE Sea-Bird
Electronics

Sea-Bird Electronics
13431 NE 20th Street
Bellevue, Washington
98005 USA

Tel: +1 425-643-9866
seabird@seabird.com
www.seabird.com

SBE37-SIP MicroCAT

Instrument Configuration

Instrument Serial Number: 37-14998
Instrument Firmware Version: 4.1
Zero Conductivity Frequency: 2740.92
Communications Format: RS232
Communications Settings: 9600 baud, 8 Data Bits, No Parity

Installed Devices/Sensors

<i>Data Format</i>	<i>Measurement</i>	<i>Sensor Type</i>	<i>Serial Number</i>	<i>Rating</i>
Count	Temperature	Internal	N/A	N/A
Frequency	Conductivity	Internal	N/A	N/A
Count	Pressure Sensor	Kistler	4959180	7000m(7000 dBar)

Maximum Depth: **7000m**

CAUTION - The maximum deployment depth will be limited by the measurement range of the pressure sensor, if installed, an attached sensor, if installed, or the housing.

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SENSOR SERIAL NUMBER: 14998
CALIBRATION DATE: 01-Sep-16

SBE 37 V2 TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

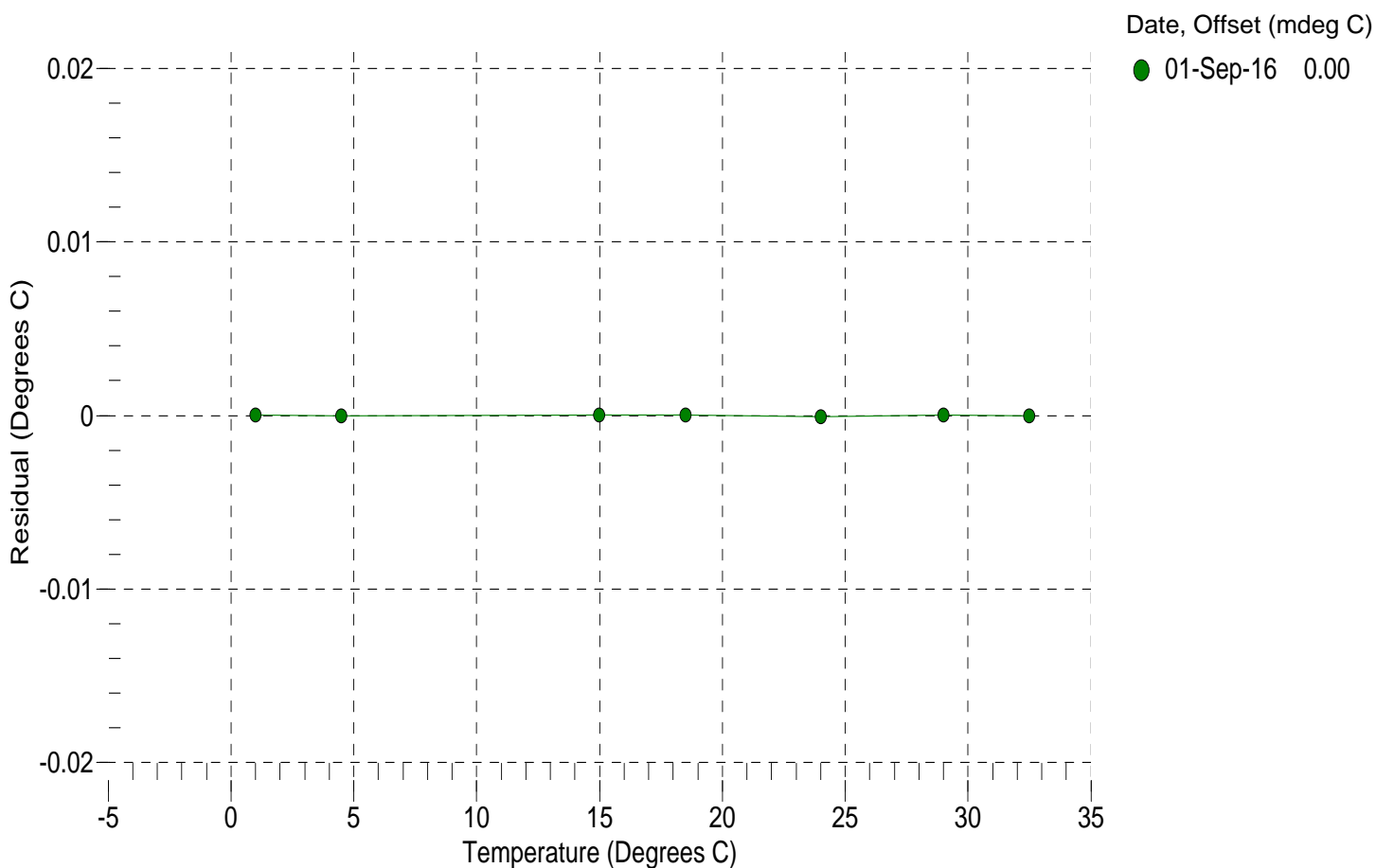
a0 = -1.779892e-004
a1 = 3.152173e-004
a2 = -4.814581e-006
a3 = 2.105989e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	576428.2	1.0000	0.0000
4.5000	494036.9	4.5000	-0.0000
14.9999	317137.8	14.9999	0.0000
18.5000	275271.5	18.5000	0.0000
24.0000	221674.8	23.9999	-0.0001
29.0001	183166.4	29.0001	0.0000
32.4999	160797.0	32.4999	-0.0000

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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 CALIBRATION DATE: 01-Sep-16

SBE 37 V2 CONDUCTIVITY CALIBRATION DATA
 PSS 1978: C(35,15,0) = 4.2914 Siemens/meter

COEFFICIENTS:

g = -9.920426e-001
 h = 1.320870e-001
 i = -7.369071e-005
 j = 2.212825e-005

CPcor = -9.5700e-008
 CTcor = 3.2500e-006
 WBOTC = -4.2561e-007

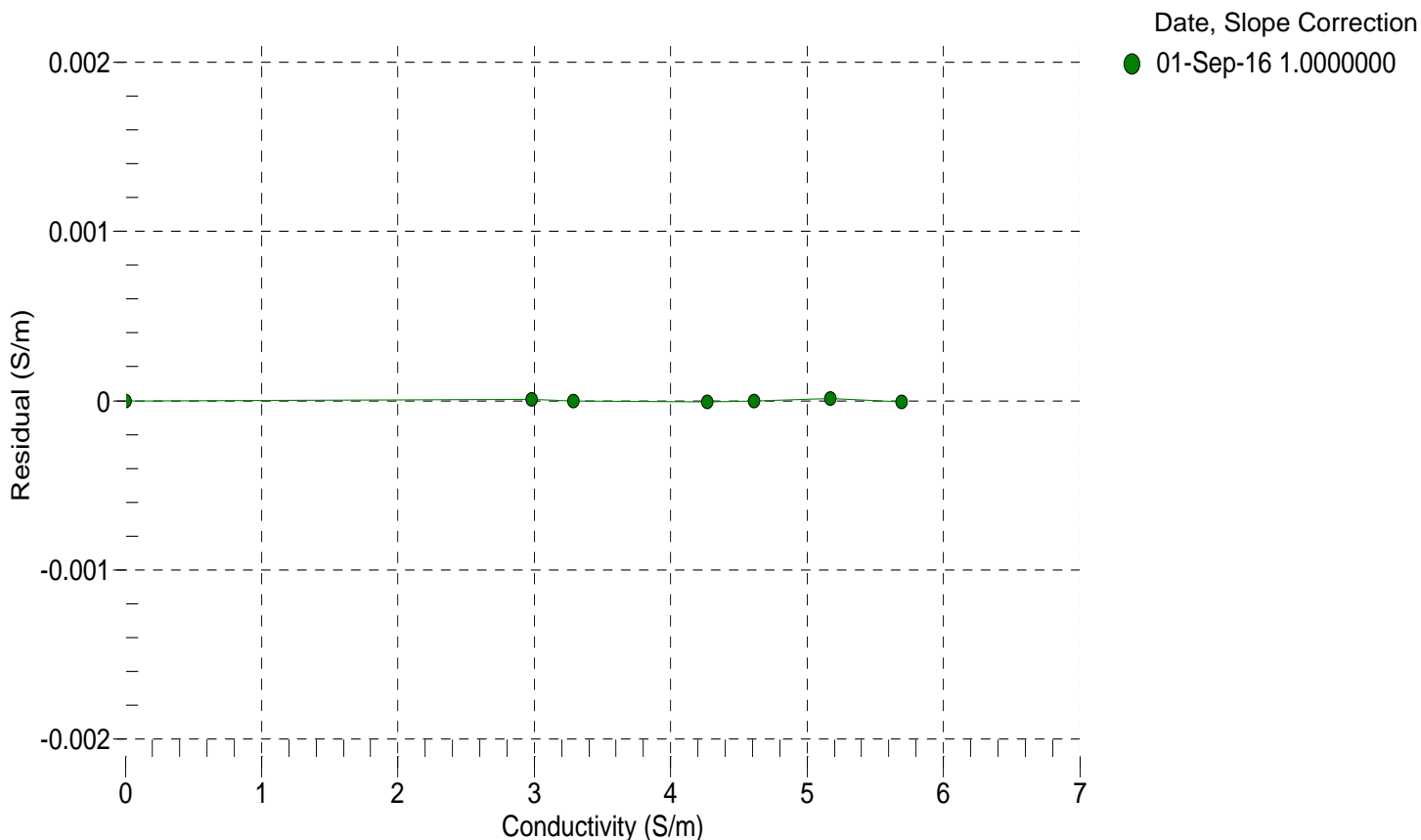
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2740.92	0.00000	0.00000
1.0000	34.8371	2.97757	5476.69	2.97758	0.00001
4.5000	34.8177	3.28484	5683.95	3.28484	-0.00000
14.9999	34.7759	4.26717	6300.29	4.26716	-0.00001
18.5000	34.7674	4.61258	6502.89	4.61258	-0.00000
24.0000	34.7582	5.17094	6817.41	5.17095	0.00001
29.0001	34.7537	5.69323	7098.69	5.69322	-0.00001
32.4999	34.7517	6.06599	7292.62	6.06591	-0.00008

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

t = temperature (°C); p = pressure (decibars); δ = CTcor; ϵ = CPcor;

$$\text{Conductivity (S/m)} = (g + h * f^2 + i * f^3 + j * f^4) / 10 (1 + \delta * t + \epsilon * p)$$

$$\text{Residual (Siemens/meter)} = \text{instrument conductivity} - \text{bath conductivity}$$



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SENSOR SERIAL NUMBER: 14998
CALIBRATION DATE: 29-AUG-16

SBE 37 V2 PRESSURE CALIBRATION DATA
10000 psia S/N 4959180

COEFFICIENTS:

PA0 =	2.237208e+000	PTCA0 =	5.253620e+005
PA1 =	3.034215e-002	PTCA1 =	-1.972596e+000
PA2 =	2.215379e-009	PTCA2 =	2.129826e-001
PTEMPA0 =	-9.901572e+001	PTCB0 =	1.039090e+002
PTEMPA1 =	3.955899e-002	PTCB1 =	-7.899565e-003
PTEMPA2 =	1.529887e-006	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)
14.61	525834.0	2799.0	14.37	-0.00	32.50	2981	525932.82
2014.88	591250.0	2803.0	2012.43	-0.02	29.00	2909	525893.99
4014.89	656129.0	2804.0	4012.92	-0.02	24.00	2805	525847.70
6015.07	720458.0	2804.0	6014.95	-0.00	18.50	2691	525808.47
8014.96	784168.0	2803.0	8015.83	0.01	15.00	2617	525790.44
10014.75	847202.0	2804.0	10013.28	-0.01	4.50	2395	525767.01
8014.97	784190.0	2802.0	8016.51	0.02	1.00	2320	525770.72
6015.22	720492.0	2802.0	6015.99	0.01			
4014.90	656195.0	2800.0	4014.96	0.00			
2014.88	591314.0	2800.0	2014.40	-0.00			
14.61	525876.0	2800.0	15.63	0.01			

TEMPERATURE (°C)	SPAN (mV)
-4.39	103.94
35.40	103.63

y = thermistor output (counts)

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

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

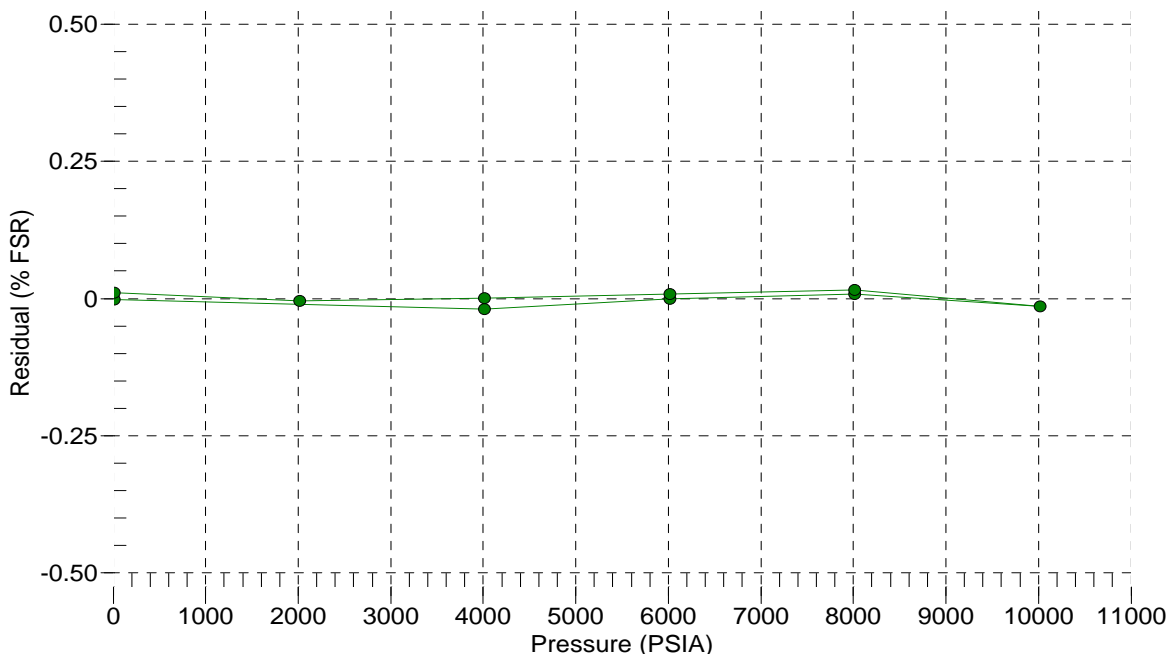
$$n = x * PTCB0 / (PTCB0 + PTCB1 * t + PTCB2 * t^2)$$

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

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

Date, Offset (%FSR)

● 29-AUG-16 -0.00





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Pressure Test Certificate

Test Date: 2016-08-26

Description: SBE-37 Microcat

Sensor Information:

Model Number: SBE-37

Serial Number: 14998

Pressure Test Protocol:

Low Pressure Test: 40 PSI Held For: 15 Minutes

High Pressure Test: 10000 PSI Held For: 15 Minutes

Passed Test: True

Tested By: pch

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

