



SEA-BIRD
SCIENTIFIC

SBE41-CP ALACE

Instrument Configuration

Instrument Serial Number: 41-10981
Instrument Firmware Version: V 7.2.5
Zero Conductivity Frequency: 2614.14
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	Kistler	5276542	4000m(7000 dBar)



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 www.seabird.com

SENSOR SERIAL NUMBER: 10981
 CALIBRATION DATE: 26-May-18

SBE 41 TEMPERATURE CALIBRATION DATA
 ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

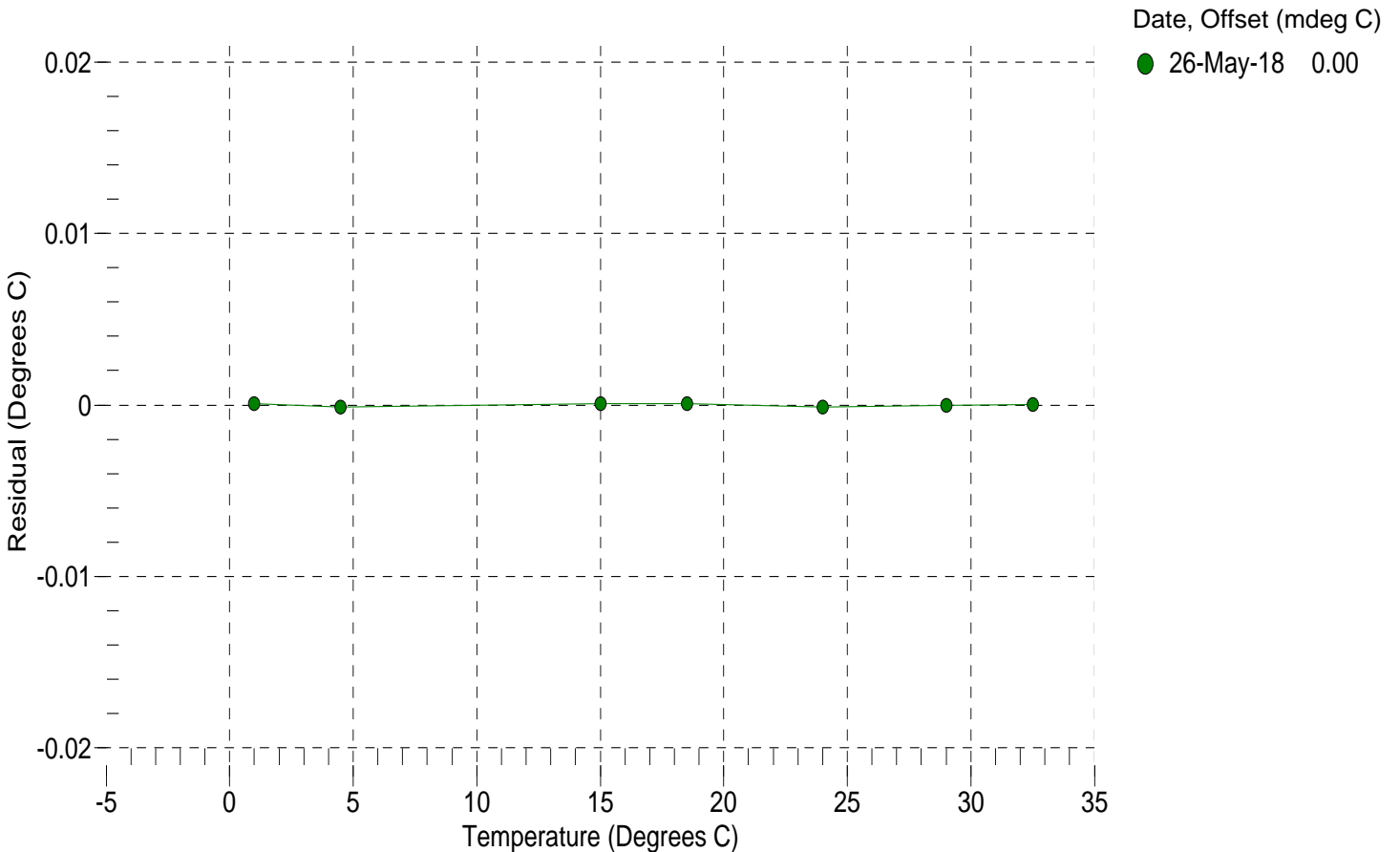
a0 = -8.106408e-004
 a1 = 2.807557e-004
 a2 = -2.925284e-006
 a3 = 1.340306e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
0.9995	15689824.8	0.9996	0.0001
4.5000	13415301.4	4.4999	-0.0001
15.0000	8550778.9	15.0001	0.0001
18.5000	7404374.3	18.5001	0.0001
23.9940	5941758.3	23.9939	-0.0001
29.0000	4891531.7	29.0000	-0.0000
32.5000	4283665.3	32.5000	0.0000

n = Instrument Output (counts)

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

Residual (°C) = instrument temperature - bath temperature





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SBE 41 CONDUCTIVITY CALIBRATION DATA
 PSS 1978: C(35,15,0) = 4.2914 Siemens/meter

COEFFICIENTS:

g = -9.856311e-001 CPcor = -9.5700e-008
 h = 1.449356e-001 CTcor = 3.2500e-006
 i = -4.051585e-004 WBOTC = -5.7373e-007
 j = 5.199984e-005

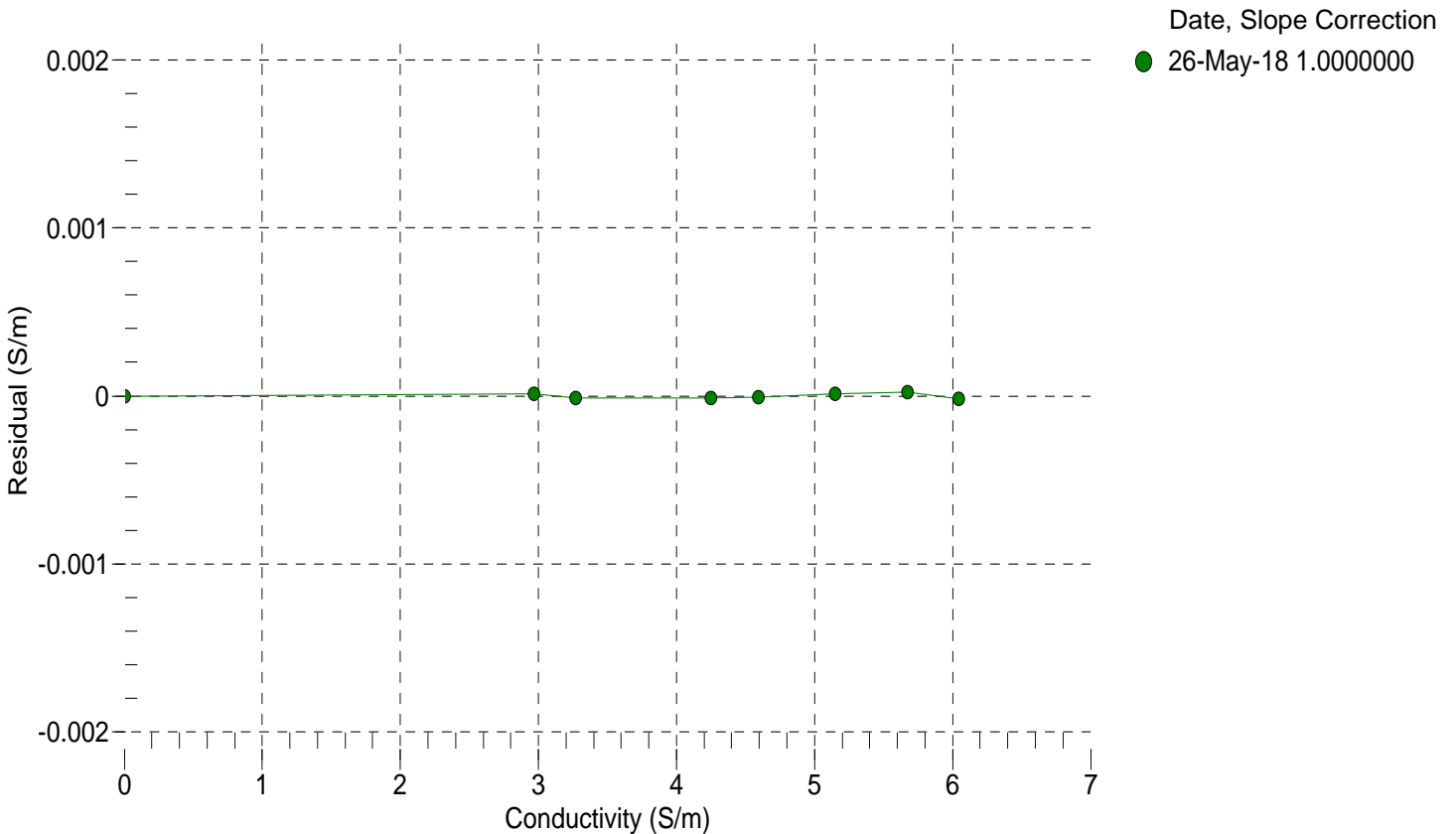
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2614.14	0.00000	0.00000
0.9995	34.6814	2.96549	5233.83	2.96550	0.00001
4.5000	34.6623	3.27162	5432.26	3.27161	-0.00001
15.0000	34.6216	4.25025	6022.11	4.25023	-0.00001
18.5000	34.6133	4.59434	6215.92	4.59433	-0.00001
23.9940	34.6046	5.14999	6516.40	5.15000	0.00001
29.0000	34.6009	5.67100	6785.69	5.67102	0.00002
32.5000	34.5991	6.04238	6971.05	6.04237	-0.00002

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

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

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

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





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 CALIBRATION DATE: 20-Jun-18

SBE 41 PRESSURE CALIBRATION DATA
 10153 psia S/N 5276542

COEFFICIENTS:

PA0 =	1.620461e-001	PTCA0 =	-7.155035e+003
PA1 =	1.331142e-003	PTCA1 =	-6.621502e+001
PA2 =	4.396545e-012	PTCA2 =	3.203354e+000
PTHA0 =	3.037532e+002	PTCB0 =	1.014091e+002
PTHA1 =	-8.365009e-005	PTCB1 =	-2.532438e-003
PTHA2 =	2.213542e-012	PTCB2 =	0.000000e+000

PRESSURE SPAN CALIBRATION

THERMAL CORRECTION

PRESSURE (PSIA)	INSTRUMENT OUTPUT (counts)	THERMISTOR OUTPUT (counts)	COMPUTED PRESSURE (PSIA)	RESIDUAL (%FSR)	TEMP (°C)	THERMISTOR OUTPUT (counts)	INSTRUMENT OUTPUT (counts)
14.57	4563.4	3732470.6	15.61	0.01	32.50	3582444.40	5244.00
2001.87	1486772.3	3729541.4	1999.55	-0.02	29.00	3633859.80	4714.88
3988.55	2957208.0	3727912.8	3986.87	-0.02	23.99	3708157.00	4132.65
5975.21	4414705.4	3726628.2	5975.49	0.00	18.50	3790202.20	3854.25
7962.39	5857964.4	3725525.0	7963.12	0.01	15.00	3842884.80	3755.19
9949.87	7285992.8	3724524.8	9947.82	-0.02	4.50	4000936.00	3728.50
7962.19	5858655.0	3725035.8	7964.07	0.02	1.00	4054274.80	3888.22
5975.11	4415749.0	3725204.8	5976.92	0.02			
3988.36	2958277.8	3725357.2	3988.32	-0.00	TEMPERATURE (°C)	SPAN	
2001.56	1487739.6	3725283.4	2000.84	-0.01	-4.87	101.42	
14.56	4638.1	3721873.2	15.63	0.01	35.05	101.32	

y = thermistor output (counts)

$$t = PTHA0 + PTHA1 * y + PTHA2 * y^2$$

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

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

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

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

Date, Offset (%FSR)

● 20-Jun-18 -0.00

