



SEA-BIRD
SCIENTIFIC

SBE41-CP ALACE

Instrument Configuration

Instrument Serial Number: 41-10112
Instrument Firmware Version: V 7.2.5
Zero Conductivity Frequency: 2651.26
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	Druck	10733398	2000m(2000 dBar)



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

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

SENSOR SERIAL NUMBER: 10112
 CALIBRATION DATE: 22-Sep-17

SBE 41 TEMPERATURE CALIBRATION DATA
 ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

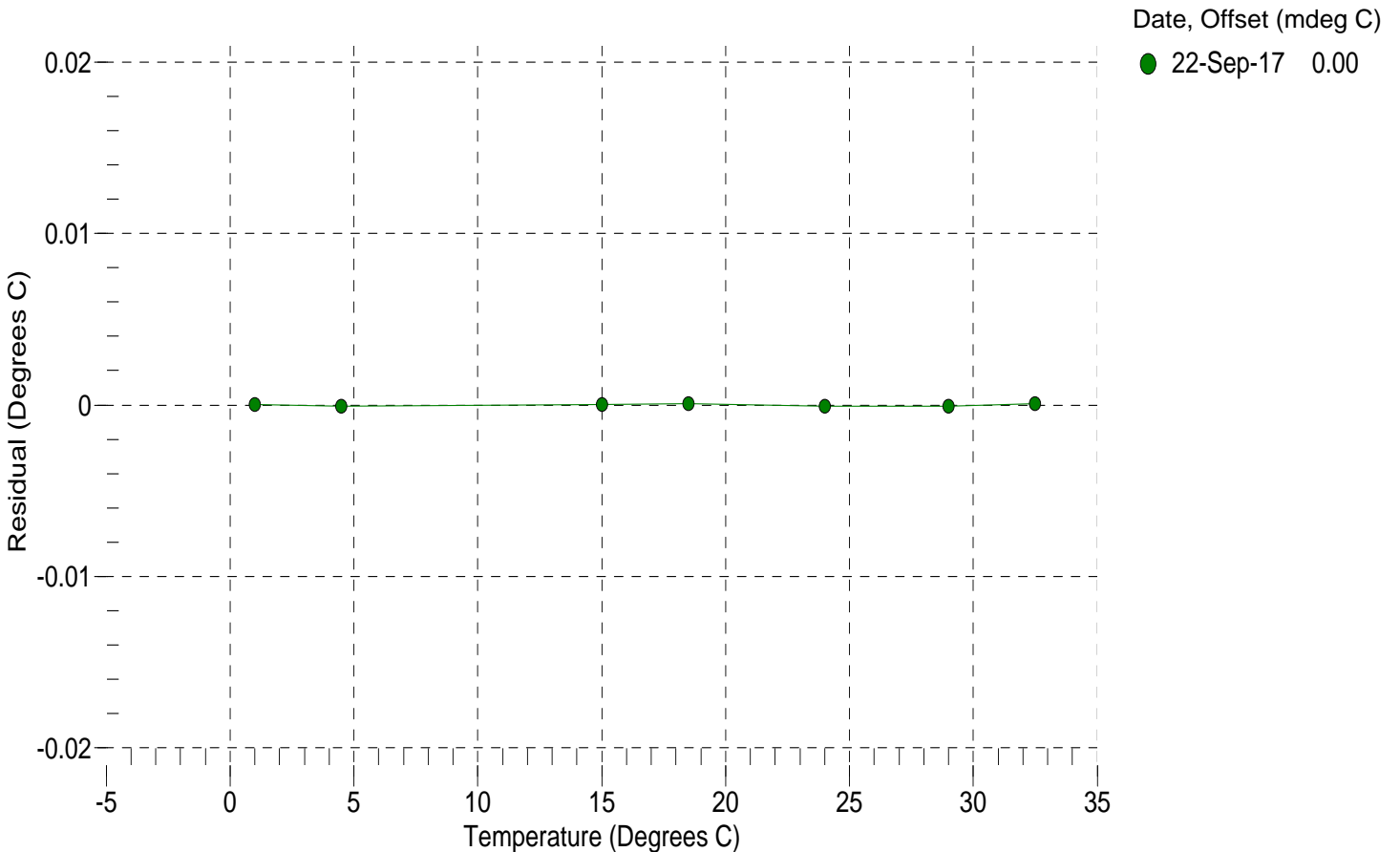
a0 = -8.928496e-004
 a1 = 2.924208e-004
 a2 = -3.684094e-006
 a3 = 1.483991e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
0.9999	17493731.0	0.9999	0.0000
4.5000	14951216.2	4.4999	-0.0001
15.0000	9517381.4	15.0000	0.0000
18.5000	8237917.5	18.5001	0.0001
23.9940	6606441.9	23.9939	-0.0001
29.0000	5435736.2	28.9999	-0.0001
32.5000	4758444.7	32.5001	0.0001

n = Instrument Output (counts)

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

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 = -1.004987e+000 CPcor = -9.5700e-008
 h = 1.436097e-001 CTcor = 3.2500e-006
 i = -3.628805e-004 WBOTC = -9.4284e-008
 j = 4.637480e-005

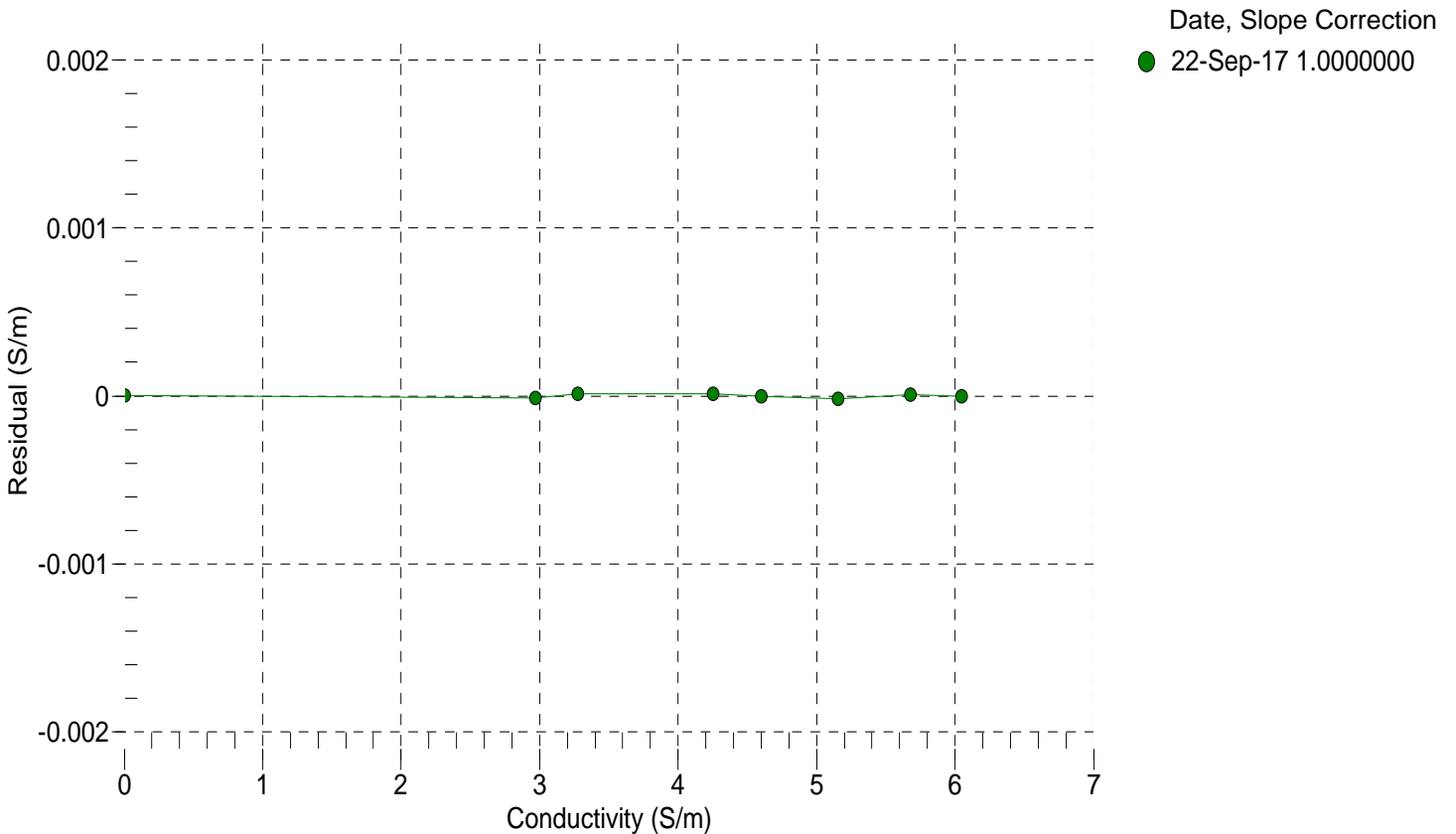
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2651.26	0.00000	0.00000
0.9999	34.7243	2.96884	5271.80	2.96883	-0.00001
4.5000	34.7044	3.27521	5470.76	3.27522	0.00001
15.0000	34.6618	4.25466	6062.43	4.25467	0.00001
18.5000	34.6529	4.59903	6256.88	4.59902	-0.00000
23.9940	34.6429	5.15506	6558.39	5.15504	-0.00002
29.0000	34.6369	5.67623	6828.60	5.67624	0.00001
32.5000	34.6339	6.04777	7014.67	6.04777	-0.00000

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

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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SENSOR SERIAL NUMBER: 10112
 CALIBRATION DATE: 18-Sep-17

SBE 41 PRESSURE CALIBRATION DATA
 2900 psia S/N 10733398

COEFFICIENTS:

PA0 =	3.557414e-001	PTCA0 =	5.168631e+003
PA1 =	3.946833e-004	PTCA1 =	3.861791e+001
PA2 =	-2.870252e-013	PTCA2 =	1.697485e-001
PTHA0 =	2.806149e+002	PTCB0 =	3.044238e+005
PTHA1 =	-6.043303e-005	PTCB1 =	4.599722e+001
PTHA2 =	-8.685703e-013	PTCB2 =	-5.672546e-001

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)
14.49	42065.1	4053361.8	14.53	0.00	32.50	3888333.00	44213.00
591.33	1508698.5	4049550.2	591.35	0.00	29.00	3940352.20	44121.92
1168.23	2978690.1	4047889.2	1168.25	0.00	23.99	4014711.60	43920.10
1745.14	4451913.6	4046664.6	1745.18	0.00	18.50	4096143.00	43602.19
2322.13	5928722.0	4045628.0	2322.26	0.00	15.00	4147948.40	43373.88
2899.18	7408100.7	4044674.8	2899.10	-0.00	4.50	4302763.00	43006.58
2322.15	5928493.8	4044720.0	2322.16	0.00	1.00	4354401.00	42880.31
1745.25	4452026.0	4044718.4	1745.21	-0.00			
1168.16	2978225.5	4044708.2	1168.05	-0.00			
591.15	1508159.3	4044529.0	591.12	-0.00			
14.49	41988.9	4044326.8	14.49	-0.00			

TEMPERATURE (°C)	SPAN
4.61	304623.91
25.07	305220.33
33.61	305329.00

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)

● 18-Sep-17 0.00

