



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-10501  
Instrument Firmware Version: V 7.2.5  
Zero Conductivity Frequency: 2689.33  
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	10818339	2000m(2000 dBar)



Sea-Bird Scientific  
 13431 NE 20<sup>th</sup> Street  
 Bellevue, WA 98005  
 USA

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

SENSOR SERIAL NUMBER: 10501  
 CALIBRATION DATE: 13-Jan-18

SBE 41 TEMPERATURE CALIBRATION DATA  
 ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

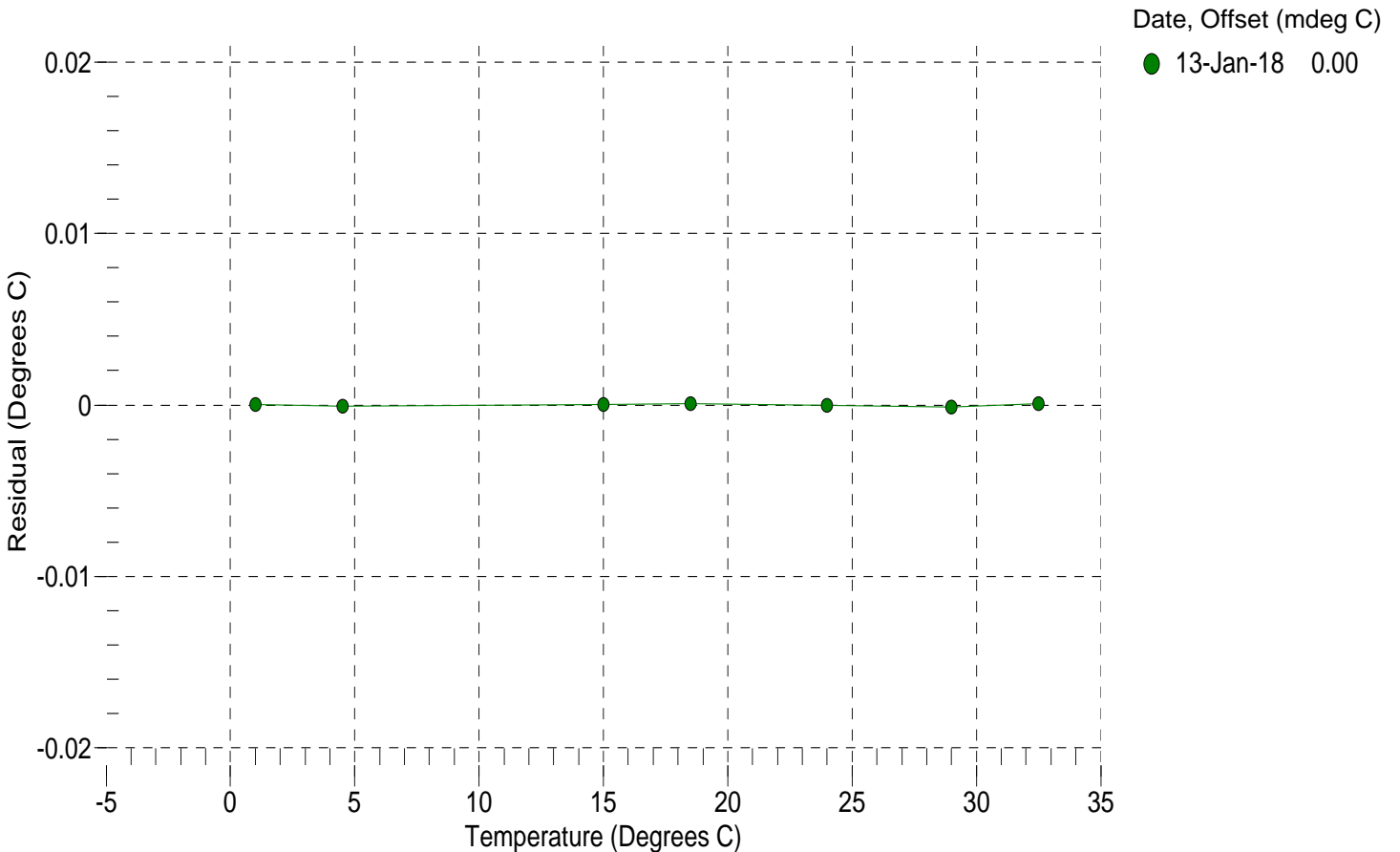
a0 = -9.075201e-004  
 a1 = 2.993059e-004  
 a2 = -4.094835e-006  
 a3 = 1.578981e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0002	15798349.3	1.0002	0.0000
4.5000	13504857.0	4.4999	-0.0001
15.0000	8601174.7	15.0000	0.0000
18.5000	7446135.5	18.5001	0.0001
23.9940	5973010.8	23.9940	-0.0000
29.0000	4915730.8	28.9999	-0.0001
32.5000	4303932.0	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 = -9.915935e-001                      CPcor = -9.5700e-008  
 h = 1.376159e-001                      CTcor = 3.2500e-006  
 i = -2.998356e-004                      WBOTC = -6.1966e-007  
 j = 4.083552e-005

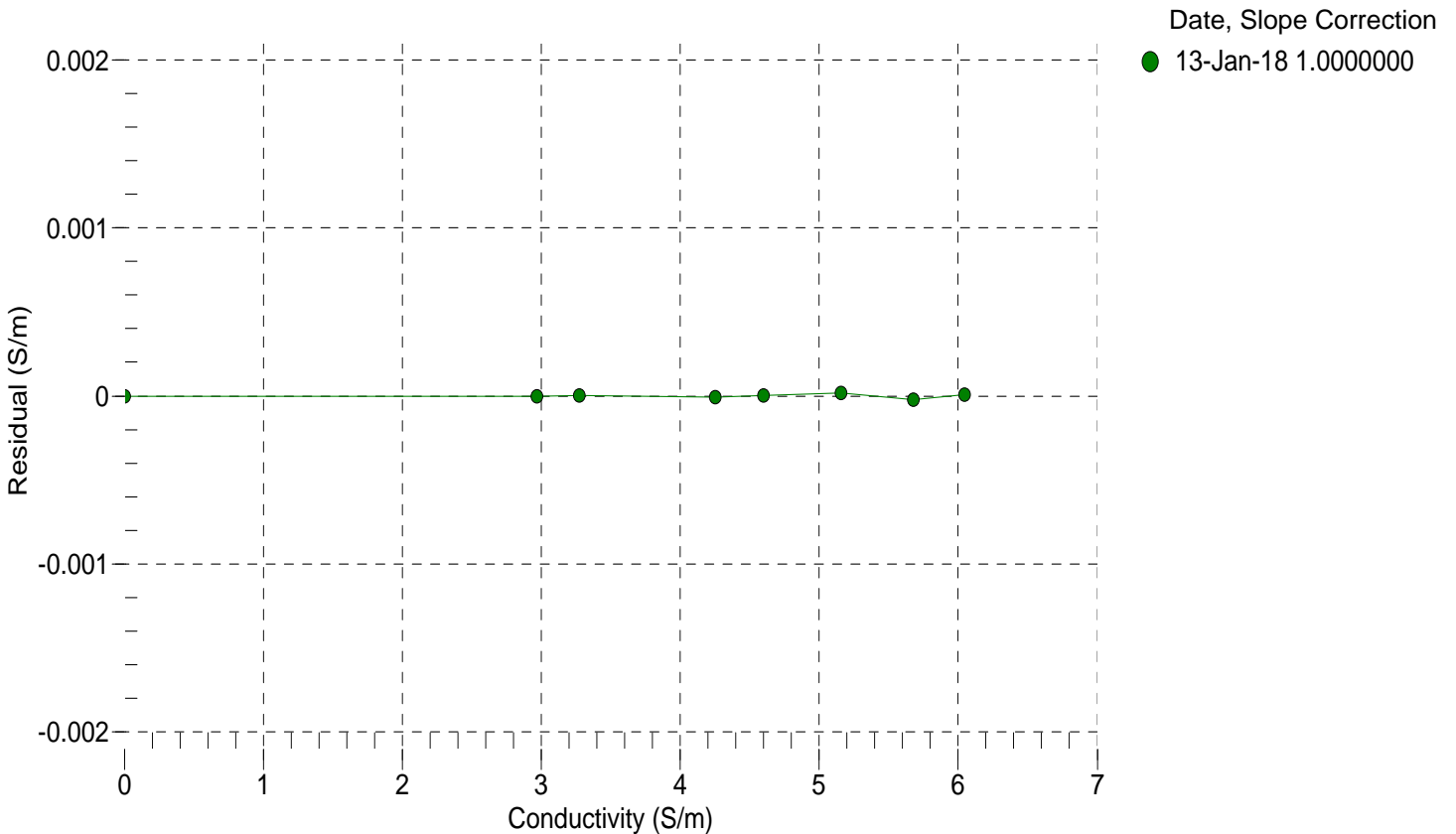
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2689.32	0.00000	0.00000
1.0002	34.7177	2.96836	5372.72	2.96836	-0.00000
4.5000	34.6982	3.27468	5576.08	3.27468	0.00000
15.0000	34.6566	4.25409	6180.73	4.25408	-0.00001
18.5000	34.6478	4.59842	6379.43	4.59842	0.00000
23.9940	34.6380	5.15441	6687.48	5.15443	0.00002
29.0000	34.6327	5.67562	6963.52	5.67560	-0.00002
32.5000	34.6295	6.04709	7153.57	6.04710	0.00001

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

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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SENSOR SERIAL NUMBER: 10501  
 CALIBRATION DATE: 11-Jan-18

SBE 41 PRESSURE CALIBRATION DATA  
 2900 psia S/N 10818339

COEFFICIENTS:

PA0 =	4.845108e-001	PTCA0 =	-1.423702e+004
PA1 =	3.920266e-004	PTCA1 =	1.267581e+002
PA2 =	-2.839581e-013	PTCA2 =	-3.187888e+000
PTHA0 =	3.467795e+002	PTCB0 =	3.117696e+005
PTHA1 =	-6.200034e-005	PTCB1 =	-5.226297e+001
PTHA2 =	-1.828020e-012	PTCB2 =	2.048514e+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)
14.46	22668.9	4603093.6	14.47	0.00	32.50	4477828.20	24498.20
592.01	1497276.1	4603391.0	592.16	0.01	29.00	4522414.20	24795.90
1169.82	2975215.3	4602982.2	1169.90	0.00	23.99	4586061.60	25038.08
1747.64	4456412.5	4602666.8	1747.68	0.00	18.50	4655714.40	25026.71
2325.49	5941060.4	4602346.2	2325.54	0.00	15.00	4700011.60	24920.41
2903.27	7428596.4	4602231.8	2903.27	-0.00	4.50	4832083.60	24285.81
2324.98	5939539.9	4603084.2	2324.96	-0.00	1.00	4876094.20	23913.76
1747.90	4456741.3	4603553.8	1747.82	-0.00			
1169.78	2974601.1	4604092.4	1169.68	-0.00			
592.01	1496661.4	4604624.8	591.93	-0.00			
14.45	22503.4	4605376.6	14.41	-0.00			

TEMPERATURE (°C)	SPAN
2.03	311672.08
22.28	311622.22
32.68	312249.22

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)

● 11-Jan-18 0.00

