



**SEA-BIRD**  
SCIENTIFIC

**SBE** Sea-Bird  
Electronics

Sea-Bird Electronics  
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98005 USA

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## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-8524  
Instrument Firmware Version: V 7.2.5  
Zero Conductivity Frequency: 2593.88  
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	4964345	2000m(2000 dBar)

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SENSOR SERIAL NUMBER: 8524  
CALIBRATION DATE: 01-Jun-16

SBE 41 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

## COEFFICIENTS:

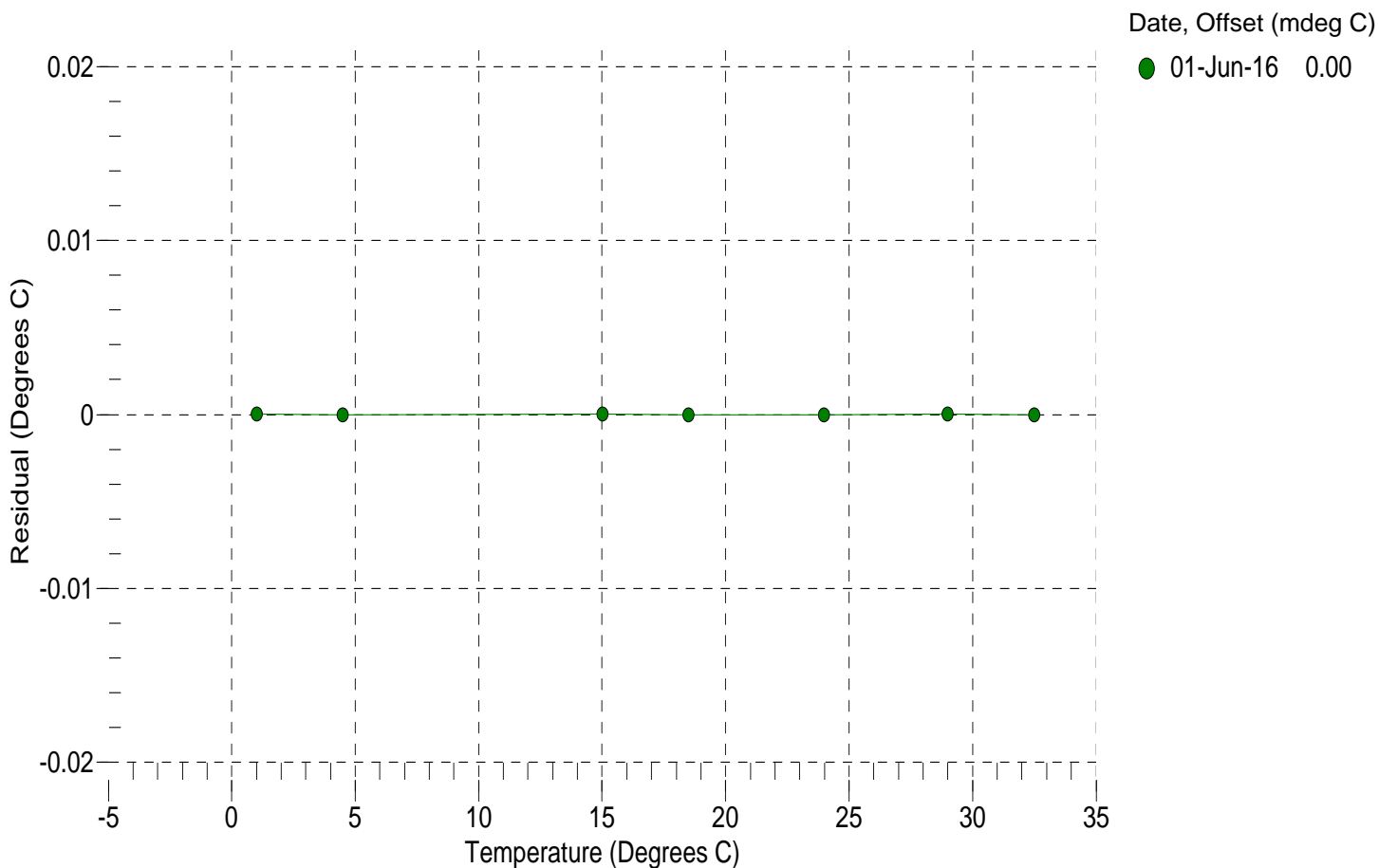
a0 = -7.824509e-004  
a1 = 2.864526e-004  
a2 = -3.401466e-006  
a3 = 1.426892e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	14091605.5	1.0000	0.0000
4.5000	12024689.3	4.5000	-0.0000
15.0000	7620216.0	15.0000	0.0000
18.5000	6586415.2	18.5000	-0.0000
23.9940	5270494.3	23.9940	-0.0000
29.0000	4328203.5	29.0000	0.0000
32.5000	3783989.6	32.5000	-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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SENSOR SERIAL NUMBER: 8524  
 CALIBRATION DATE: 01-Jun-16

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

**COEFFICIENTS:**

g = -1.006373e+000  
 h = 1.502063e-001  
 i = -3.706780e-004  
 j = 4.926355e-005

CPcor = -9.5700e-008  
 CTcor = 3.2500e-006  
 WBOTC = -4.4973e-007

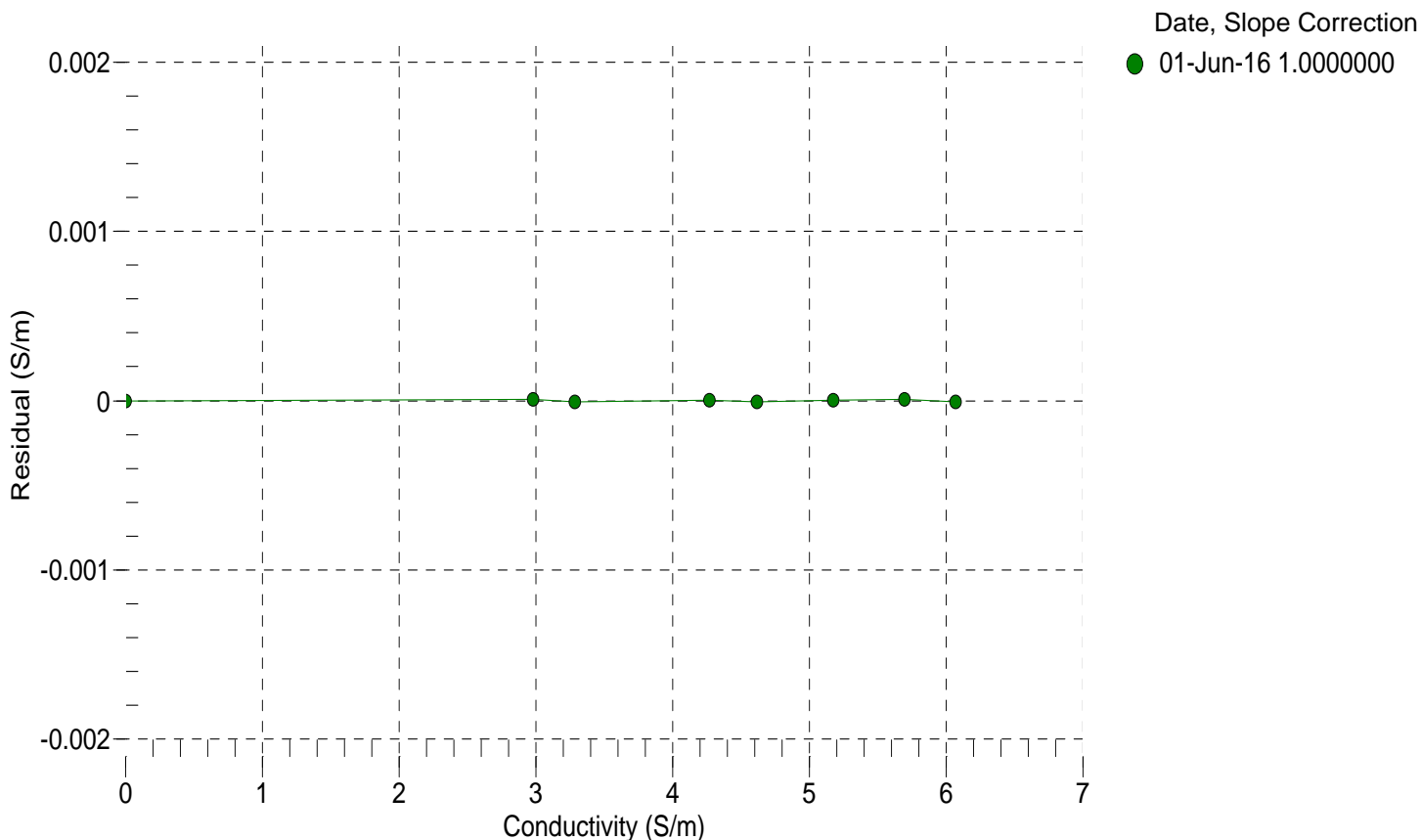
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2593.88	0.00000	0.00000
1.0000	34.8776	2.98070	5162.43	2.98071	0.00001
4.5000	34.8577	3.28824	5357.34	3.28824	-0.00001
15.0000	34.8148	4.27145	5936.98	4.27145	0.00000
18.5000	34.8058	4.61713	6127.48	4.61712	-0.00001
23.9940	34.7959	5.17531	6422.89	5.17531	0.00000
29.0000	34.7907	5.69860	6687.65	5.69861	0.00001
32.5000	34.7883	6.07166	6869.98	6.07165	-0.00001

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

t = temperature (°C); p = pressure (decibars);  $\delta = \text{CTcor}$ ;  $\epsilon = \text{CPcor}$ ;

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

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



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SENSOR SERIAL NUMBER: 8524  
CALIBRATION DATE: 25-May-16

SBE 41 PRESSURE CALIBRATION DATA  
2900 psia S/N 4964345

## COEFFICIENTS:

PA0 =	3.803451e-001	PTCA0 =	3.094767e+004
PA1 =	3.912310e-004	PTCA1 =	-1.459286e+002
PA2 =	1.137430e-013	PTCA2 =	8.664350e+000
PTHA0 =	3.094773e+002	PTCB0 =	1.044023e+002
PTHA1 =	-8.494988e-005	PTCB1 =	-5.874944e-003
PTHA2 =	2.031547e-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)
14.68	68481.2	3714726.6	14.70	0.00	32.50	3564386.80	73782.70
591.16	1539516.6	3710219.8	591.17	0.00	29.00	3614049.00	72457.20
1167.55	3009239.8	3708830.2	1167.64	0.00	23.99	3685277.60	70886.02
1743.87	4477484.1	3707340.2	1744.03	0.01	18.50	3764030.00	69655.33
2320.30	5944666.1	3706413.4	2320.50	0.01	15.00	3814434.00	69142.98
2896.61	7409219.1	3705602.2	2896.43	-0.01	4.50	3966829.00	68886.70
2319.97	5943652.3	3704337.8	2320.11	0.00	1.00	4016832.60	69268.84
1743.82	4476537.1	3704368.2	1743.66	-0.01			
1167.25	3007735.0	3704431.6	1167.04	-0.01	TEMPERATURE (°C)	SPAN (mV)	
590.76	1538109.7	3704364.2	590.59	-0.01	-4.32	104.43	
14.68	68856.5	3703915.2	14.78	0.00	37.76	104.18	

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)

● 25-May-16 0.00

