



**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: 41-8741  
Instrument Firmware Version: V 7.2.5  
Zero Conductivity Frequency: 2698.63  
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	10300976	2000m(2000 dBar)

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SENSOR SERIAL NUMBER: 8741  
CALIBRATION DATE: 09-Aug-16

SBE 41 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

## COEFFICIENTS:

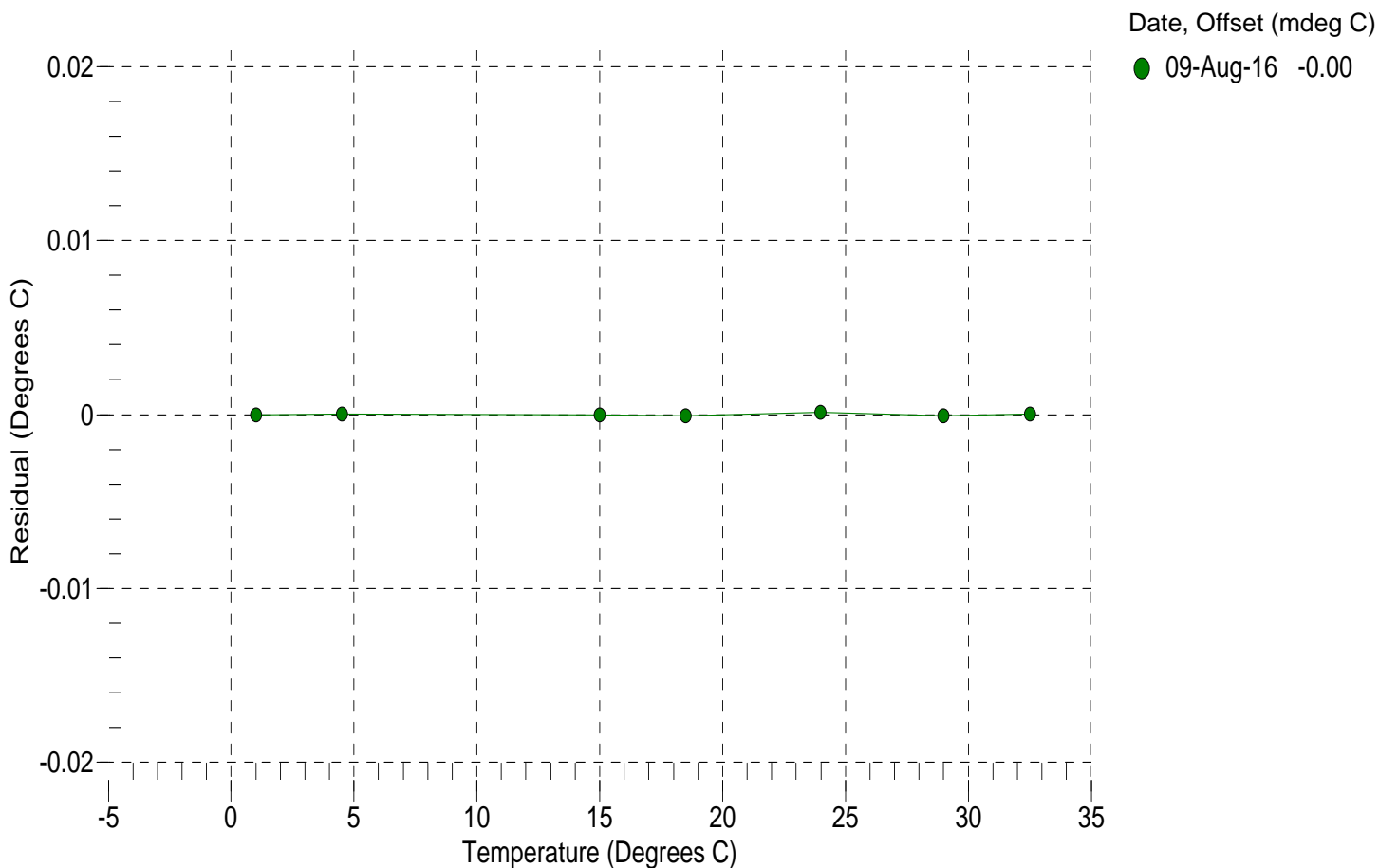
a0 = -9.085623e-004  
a1 = 2.951429e-004  
a2 = -3.959176e-006  
a3 = 1.510415e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0001	19711889.4	1.0001	-0.0000
4.5000	16816176.4	4.5000	0.0000
15.0001	10648422.5	15.0001	-0.0000
18.5001	9201513.3	18.5000	-0.0001
23.9941	7360263.4	23.9942	0.0001
29.0001	6042405.0	29.0000	-0.0001
32.5001	5281432.3	32.5001	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: 8741  
 CALIBRATION DATE: 09-Aug-16

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

**COEFFICIENTS:**

g = -1.004607e+000  
 h = 1.384794e-001  
 i = -3.102004e-004  
 j = 4.203140e-005

CPcor = -9.5700e-008  
 CTcor = 3.2500e-006  
 WBOTC = -6.4839e-007

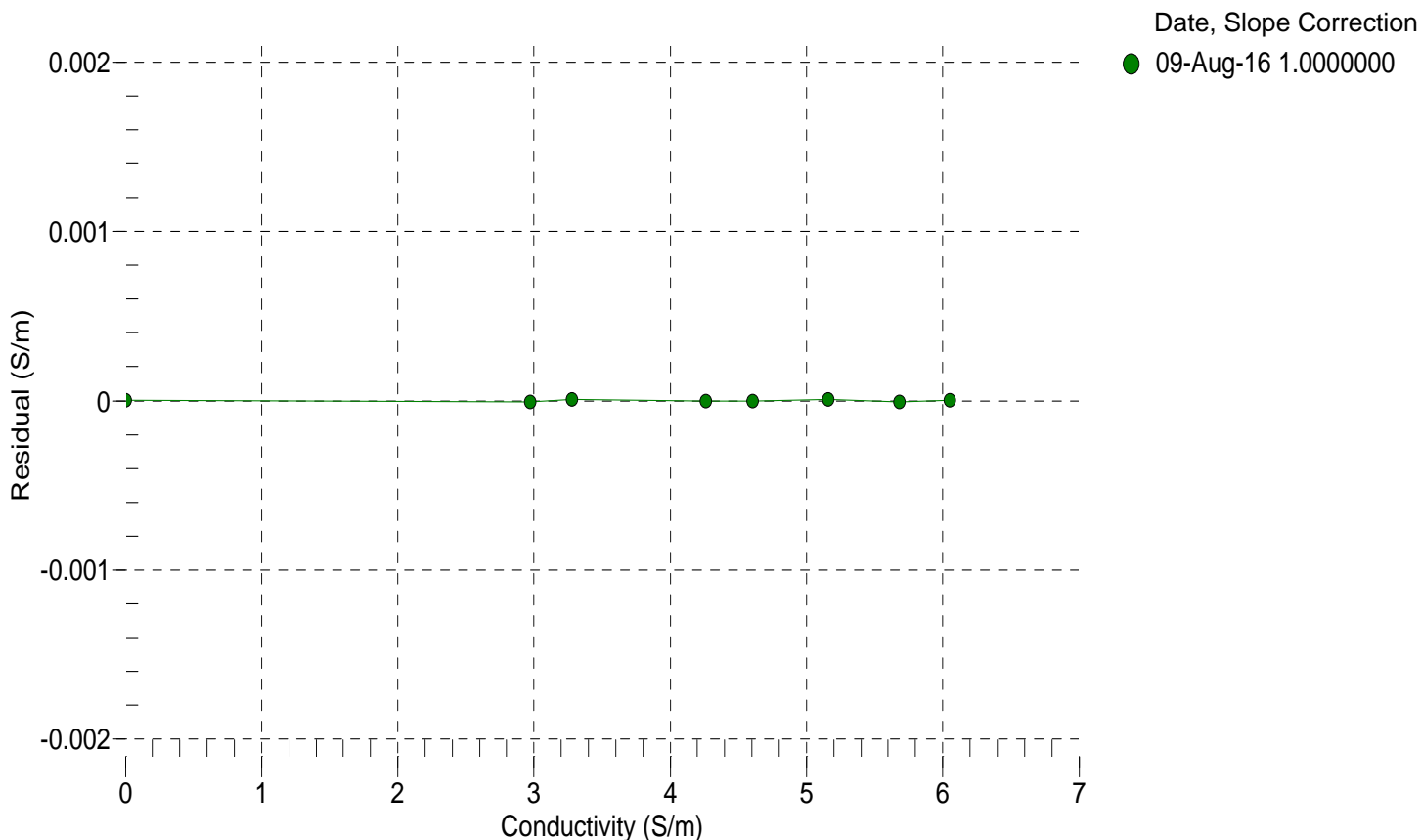
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2698.63	0.00000	0.00000
1.0001	34.7618	2.97176	5367.40	2.97175	-0.00001
4.5000	34.7423	3.27843	5569.96	3.27844	0.00001
15.0001	34.7004	4.25891	6172.31	4.25891	-0.00000
18.5001	34.6913	4.60358	6370.25	4.60358	-0.00000
23.9941	34.6815	5.16018	6677.19	5.16018	0.00001
29.0001	34.6758	5.68190	6952.24	5.68189	-0.00001
32.5001	34.6705	6.05345	7141.45	6.05345	0.00000

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

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: 8741  
 CALIBRATION DATE: 29-Jul-16

SBE 41 PRESSURE CALIBRATION DATA  
 2900 psia S/N 10300976

**COEFFICIENTS:**

PA0 =	-7.621936e-002	PTCA0 =	6.201742e+003
PA1 =	3.930773e-004	PTCA1 =	-3.366291e+001
PA2 =	-3.121999e-013	PTCA2 =	1.125884e+000
PTHA0 =	3.137882e+002	PTCB0 =	2.506038e+001
PTHA1 =	-6.132907e-005	PTCB1 =	8.750000e-004
PTHA2 =	-1.323046e-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)
14.59	43539.5	4348171.6	14.66	0.00	32.50	4205044.20	45435.00
590.72	1511857.4	4345427.2	590.67	-0.00	29.00	4253375.00	45411.10
1166.74	2984020.7	4344167.8	1166.83	0.00	23.99	4322225.60	45319.23
1742.68	4459185.8	4343042.2	1742.81	0.00	18.50	4397601.00	45146.08
2318.65	5937699.0	4341970.2	2318.73	0.00	15.00	4445529.00	45068.03
2894.53	7419400.5	4340718.6	2894.52	-0.00	4.50	4588841.80	45293.85
2318.63	5937166.8	4340423.2	2318.51	-0.00	1.00	4636415.00	45365.66
1742.82	4459083.9	4340269.4	1742.76	-0.00			
1166.74	2983841.6	4340187.4	1166.75	0.00	TEMPERATURE (°C)	SPAN (mV)	
590.69	1511520.6	4340111.2	590.53	-0.01	-5.00	25.06	
14.59	43426.7	4339200.2	14.62	0.00	35.00	25.09	

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)

● 29-Jul-16 -0.00

