



**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: 41-8275  
Instrument Firmware Version: V 7.2.5  
Zero Conductivity Frequency: 2553.30  
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	4780059	2000m(2000 dBar)

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SENSOR SERIAL NUMBER: 8275  
CALIBRATION DATE: 22-Mar-16

SBE 41 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

## COEFFICIENTS:

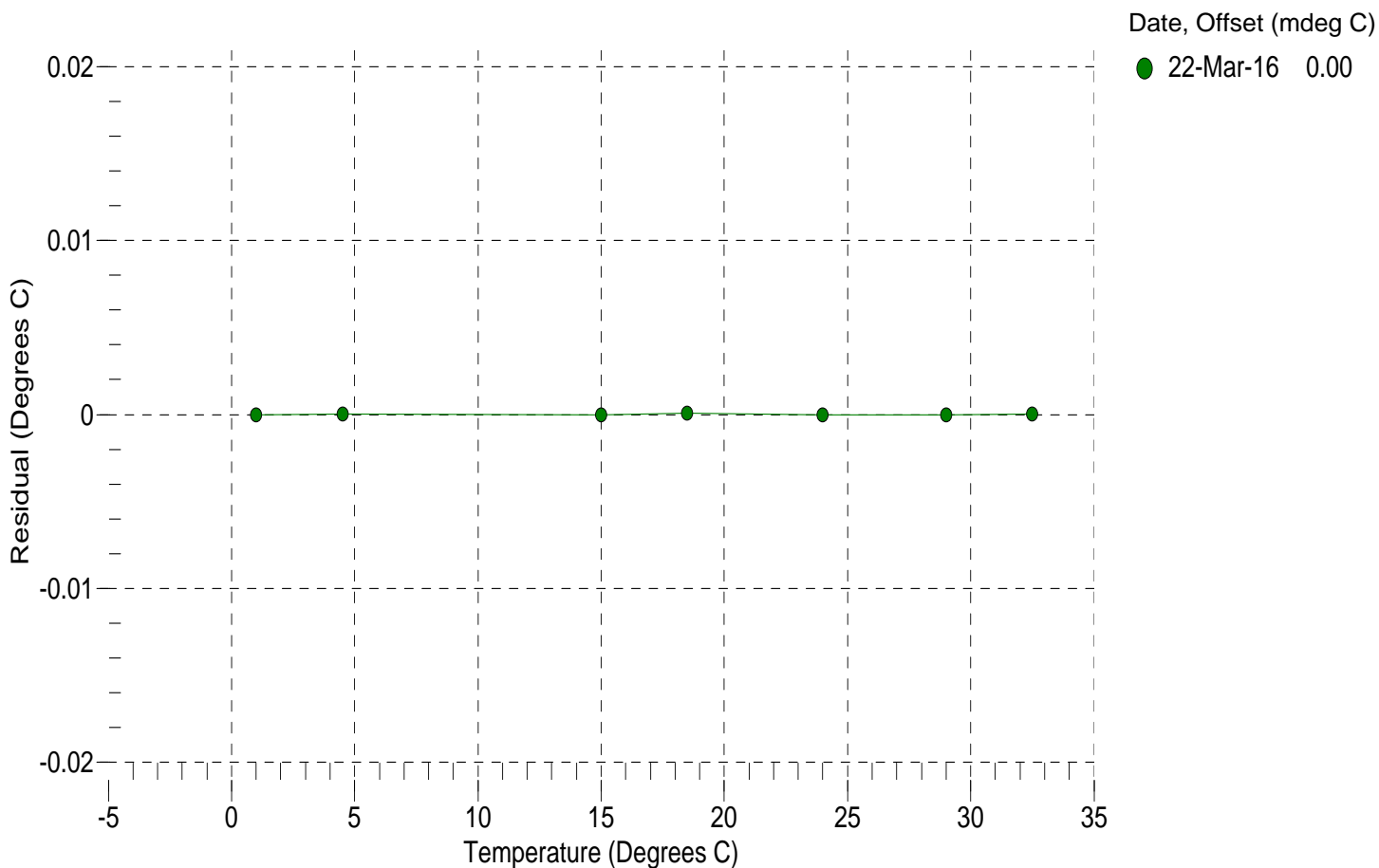
a0 = -8.037008e-004  
a1 = 2.814465e-004  
a2 = -3.085474e-006  
a3 = 1.341248e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	17111652.8	1.0000	-0.0000
4.5000	14600370.7	4.5000	0.0000
15.0000	9250164.3	15.0000	-0.0000
18.5000	7994566.4	18.5001	0.0001
23.9940	6396582.7	23.9940	-0.0000
29.0000	5252434.8	29.0000	-0.0000
32.5000	4591675.2	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: 8275  
CALIBRATION DATE: 22-Mar-16

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

## COEFFICIENTS:

g = -9.935769e-001  
h = 1.531177e-001  
i = -4.198053e-004  
j = 5.489359e-005

CPcor = -9.5700e-008  
CTcor = 3.2500e-006  
WBOTC = 2.6107e-007

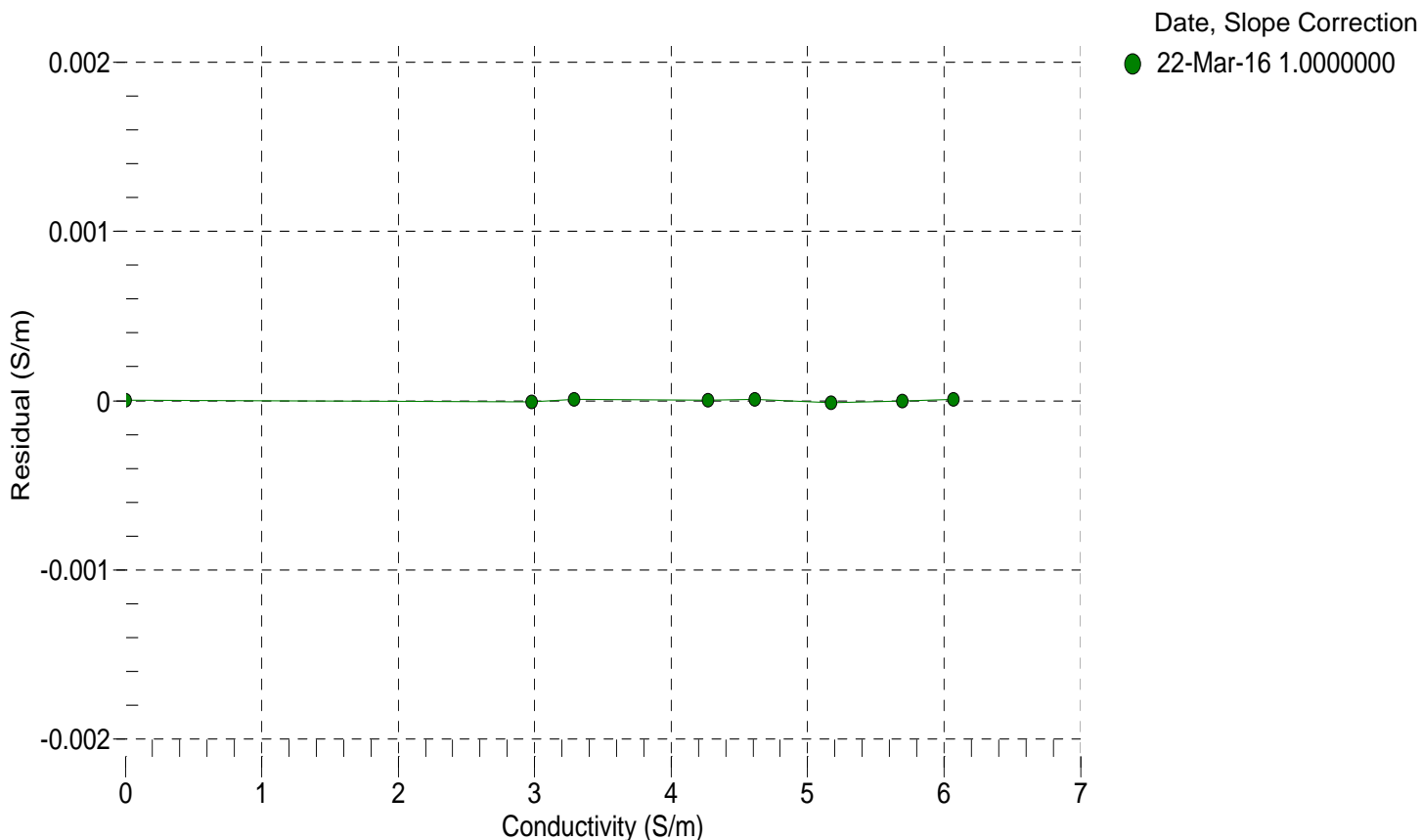
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2553.30	0.00000	0.00000
1.0000	34.8644	2.97968	5105.91	2.97967	-0.00001
4.5000	34.8444	3.28711	5299.29	3.28712	0.00001
15.0000	34.8010	4.26993	5874.15	4.26994	0.00000
18.5000	34.7920	4.61549	6063.06	4.61550	0.00001
23.9940	34.7824	5.17352	6355.95	5.17351	-0.00001
29.0000	34.7773	5.69665	6618.42	5.69665	-0.00000
32.5000	34.7747	6.06956	6799.13	6.06956	0.00001

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

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

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

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



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SENSOR SERIAL NUMBER: 8275  
 CALIBRATION DATE: 14-Mar-16

SBE 41 PRESSURE CALIBRATION DATA  
 2900 psia S/N 4780059

**COEFFICIENTS:**

PA0 =	8.355698e-002	PTCA0 =	-3.236767e+004
PA1 =	3.924139e-004	PTCA1 =	-1.603901e+002
PA2 =	8.975308e-014	PTCA2 =	7.851719e+000
PTHA0 =	3.237399e+002	PTCB0 =	1.029430e+002
PTHA1 =	-9.259985e-005	PTCB1 =	-6.840867e-003
PTHA2 =	3.067582e-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)
14.55	4956.2	3720570.6	14.67	0.00	32.50	3566442.20	9729.80
591.43	1472359.4	3718699.8	591.53	0.00	29.00	3616196.00	8632.83
1168.28	2938677.1	3717866.8	1168.36	0.00	23.99	3687617.40	7342.25
1745.15	4404263.2	3717142.0	1745.29	0.00	18.50	3766076.00	6383.39
2321.96	5868627.7	3716528.2	2322.13	0.01	15.00	3816590.20	6024.57
2898.78	7331193.9	3715981.6	2898.65	-0.00	4.50	3969732.40	6077.88
2321.93	5868109.9	3715995.8	2321.93	0.00	1.00	4020780.80	6530.49
1745.19	4403884.2	3715870.2	1745.14	-0.00			
1168.17	2937847.7	3715771.8	1168.03	-0.00			
591.42	1471283.9	3715537.0	591.10	-0.01			
14.55	4789.7	3714936.8	14.57	0.00			
					<b>TEMPERATURE (°C)</b>	<b>SPAN (mV)</b>	
					-4.58	102.97	
					35.79	102.70	

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)

● 14-Mar-16 0.00

