



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: 41-8707  
Instrument Firmware Version: V 7.2.5  
Zero Conductivity Frequency: 2626.52  
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	10387029	2000m(2000 dBar)

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SENSOR SERIAL NUMBER: 8707  
CALIBRATION DATE: 01-Aug-16

SBE 41 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

## COEFFICIENTS:

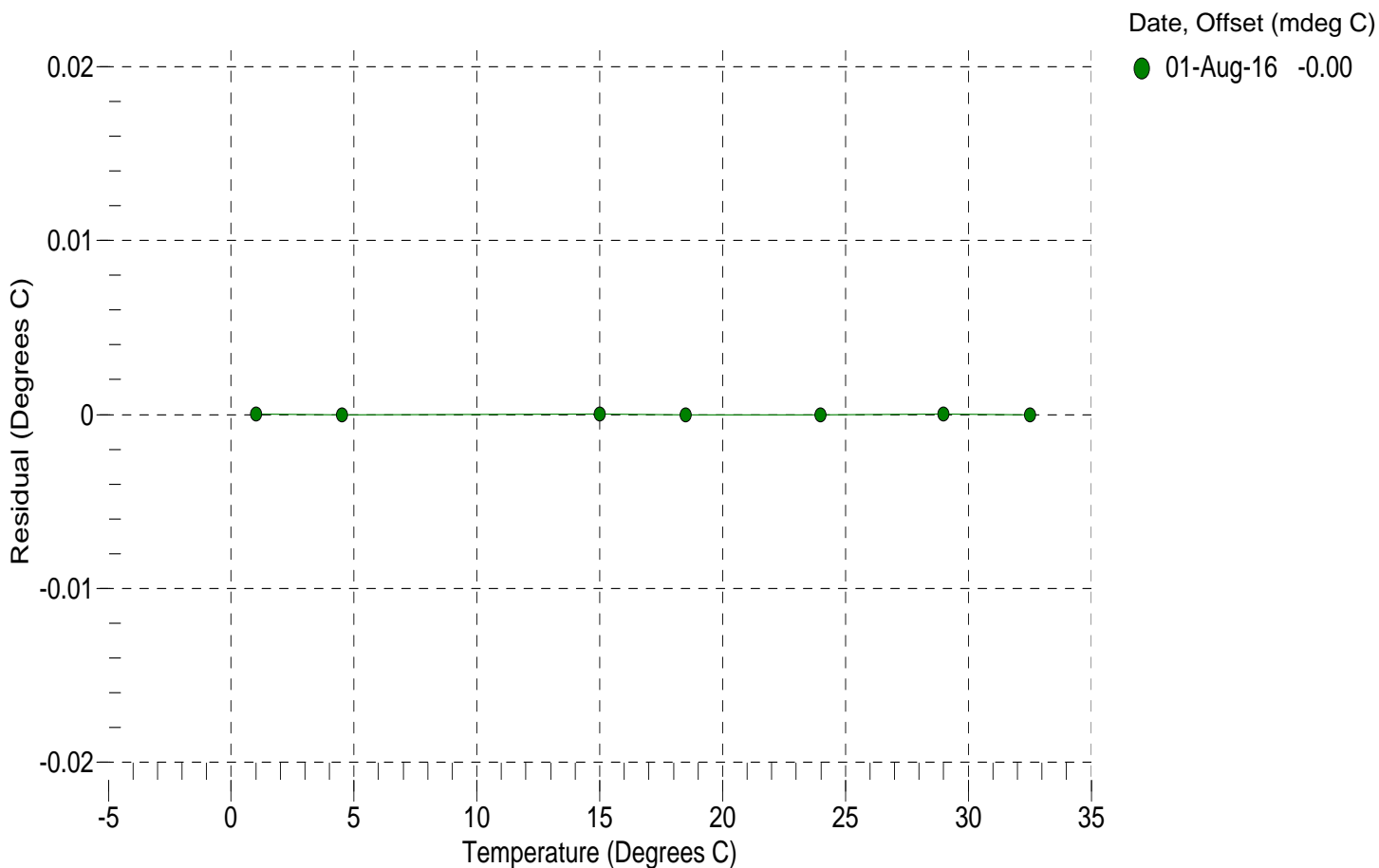
a0 = -7.616429e-004  
a1 = 2.813343e-004  
a2 = -3.106333e-006  
a3 = 1.352494e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	14927083.4	1.0000	0.0000
4.5000	12730402.2	4.5000	-0.0000
15.0000	8054465.5	15.0000	0.0000
18.5000	6958189.8	18.5000	-0.0000
23.9940	5563666.3	23.9940	-0.0000
29.0000	4565834.2	29.0000	0.0000
32.5000	3989875.6	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: 8707  
 CALIBRATION DATE: 01-Aug-16

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

**COEFFICIENTS:**

g = -9.729267e-001  
 h = 1.416170e-001  
 i = -3.398179e-004  
 j = 4.471229e-005

CPcor = -9.5700e-008  
 CTcor = 3.2500e-006  
 WBOTC = -1.5862e-007

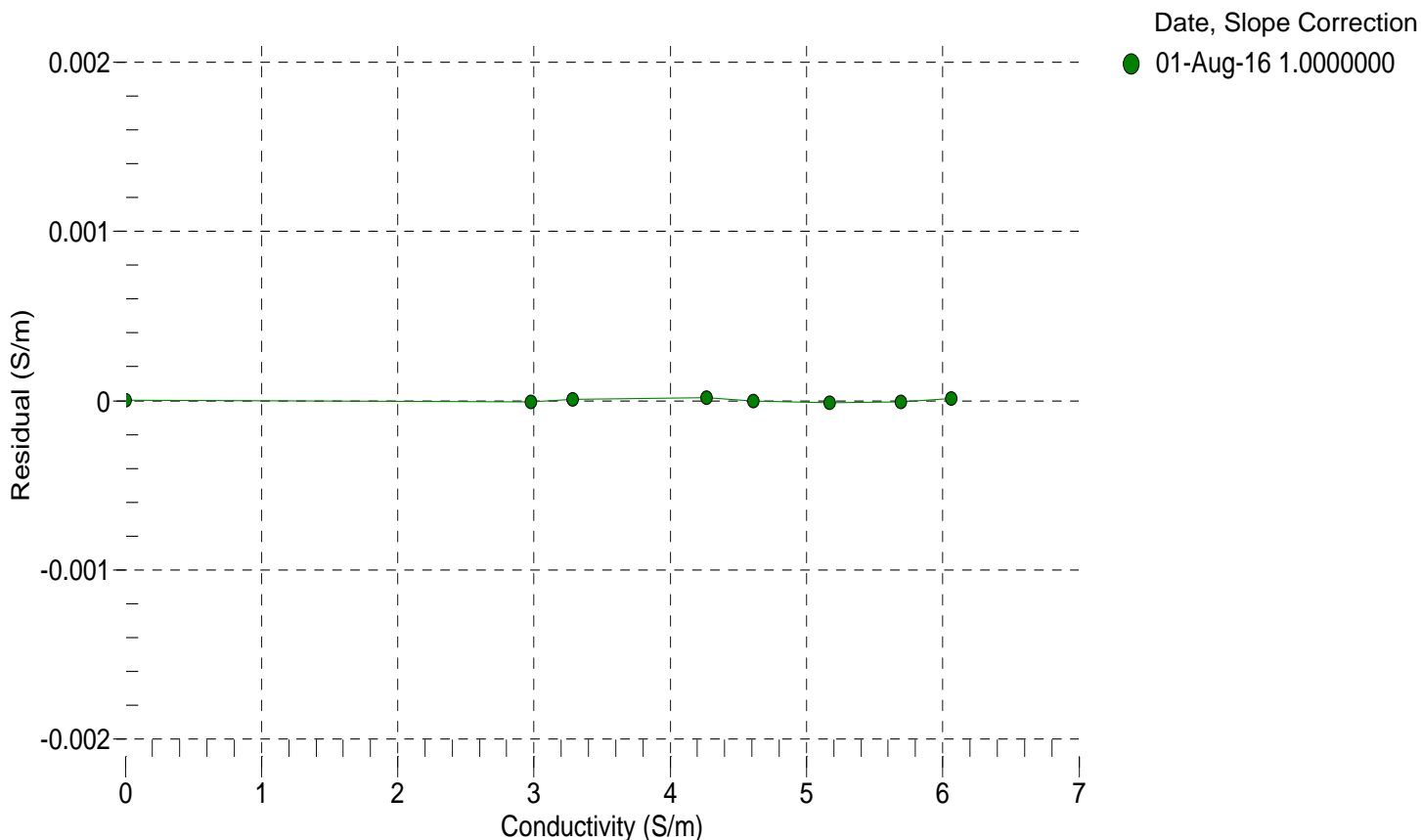
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2626.52	0.00000	0.00000
1.0000	34.8206	2.97630	5291.00	2.97629	-0.00001
4.5000	34.8012	3.28344	5492.37	3.28344	0.00001
15.0000	34.7595	4.26538	6090.86	4.26540	0.00002
18.5000	34.7511	4.61065	6287.48	4.61065	-0.00000
23.9940	34.7421	5.16819	6592.29	5.16817	-0.00001
29.0000	34.7370	5.69079	6865.39	5.69078	-0.00001
32.5000	34.7331	6.06312	7053.30	6.06313	0.00001

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

t = temperature (°C); p = pressure (decibars);  $\delta$  = CTcor;  $\epsilon$  = 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: 8707  
CALIBRATION DATE: 25-Jul-16

SBE 41 PRESSURE CALIBRATION DATA  
2900 psia S/N 10387029

## COEFFICIENTS:

PA0 =	6.539742e-001	PTCA0 =	9.213908e+003
PA1 =	3.946250e-004	PTCA1 =	1.406598e+002
PA2 =	-3.028386e-013	PTCA2 =	-2.969176e+000
PTHA0 =	3.040430e+002	PTCB0 =	2.511902e+001
PTHA1 =	-6.050551e-005	PTCB1 =	-2.010050e-004
PTHA2 =	-1.270324e-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)
14.64	46409.1	4278104.6	14.68	0.00	32.50	4129819.60	47783.40
591.09	1508355.1	4272801.0	591.02	-0.00	29.00	4179079.40	48022.73
1167.28	2973447.0	4271446.4	1167.31	0.00	23.99	4249371.20	48147.70
1743.43	4441663.0	4270298.4	1743.52	0.00	18.50	4326342.80	47987.49
2319.53	5913017.0	4269236.4	2319.65	0.00	15.00	4375211.40	47770.68
2895.66	7387123.4	4268015.4	2895.55	-0.00	4.50	4521454.60	46975.63
2319.54	5912803.5	4267829.8	2319.57	0.00	1.00	4570034.20	46559.44
1743.53	4441596.9	4267793.2	1743.50	-0.00			
1167.20	2972908.9	4267850.2	1167.10	-0.00			
591.01	1508130.5	4267914.0	590.94	-0.00			
14.64	46479.2	4261767.4	14.70	0.00			

					TEMPERATURE (°C)	SPAN (mV)
					-4.90	25.12
					34.90	25.11

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-Jul-16 -0.00

