



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-12960  
Instrument Firmware Version: 7.2.5  
Zero Conductivity Frequency: 2638.92  
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	11531487	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 12960  
CALIBRATION DATE: 20-Jun-20

SBE 41 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

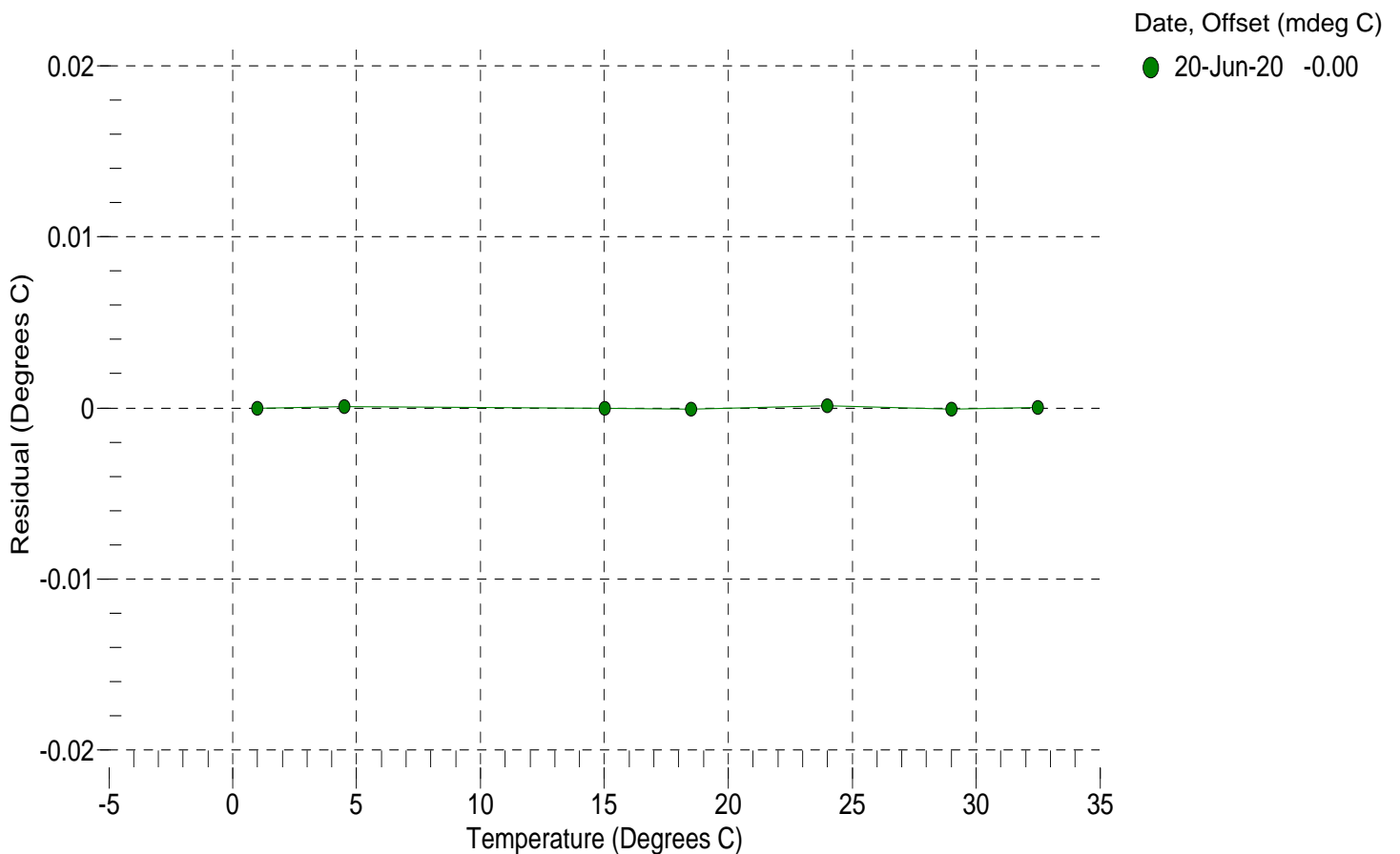
a0 = -9.427368e-004  
a1 = 3.105929e-004  
a2 = -4.887014e-006  
a3 = 1.726187e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	15730145.9	1.0000	-0.0000
4.5000	13425491.5	4.5001	0.0001
15.0000	8512679.1	15.0000	-0.0000
18.5000	7359106.8	18.4999	-0.0001
23.9940	5890408.8	23.9941	0.0001
29.0000	4838605.3	28.9999	-0.0001
32.5000	4230985.2	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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SBE 41 CONDUCTIVITY CALIBRATION DATA  
PSS 1978: C(35,15,0) = 4.2914 Siemens/meter

COEFFICIENTS:

g = -1.031401e+000  
h = 1.481540e-001  
i = -9.739329e-005  
j = 2.994741e-005

CPcor = -9.5700e-008  
CTcor = 3.2500e-006  
WBOTC = 3.7890e-007

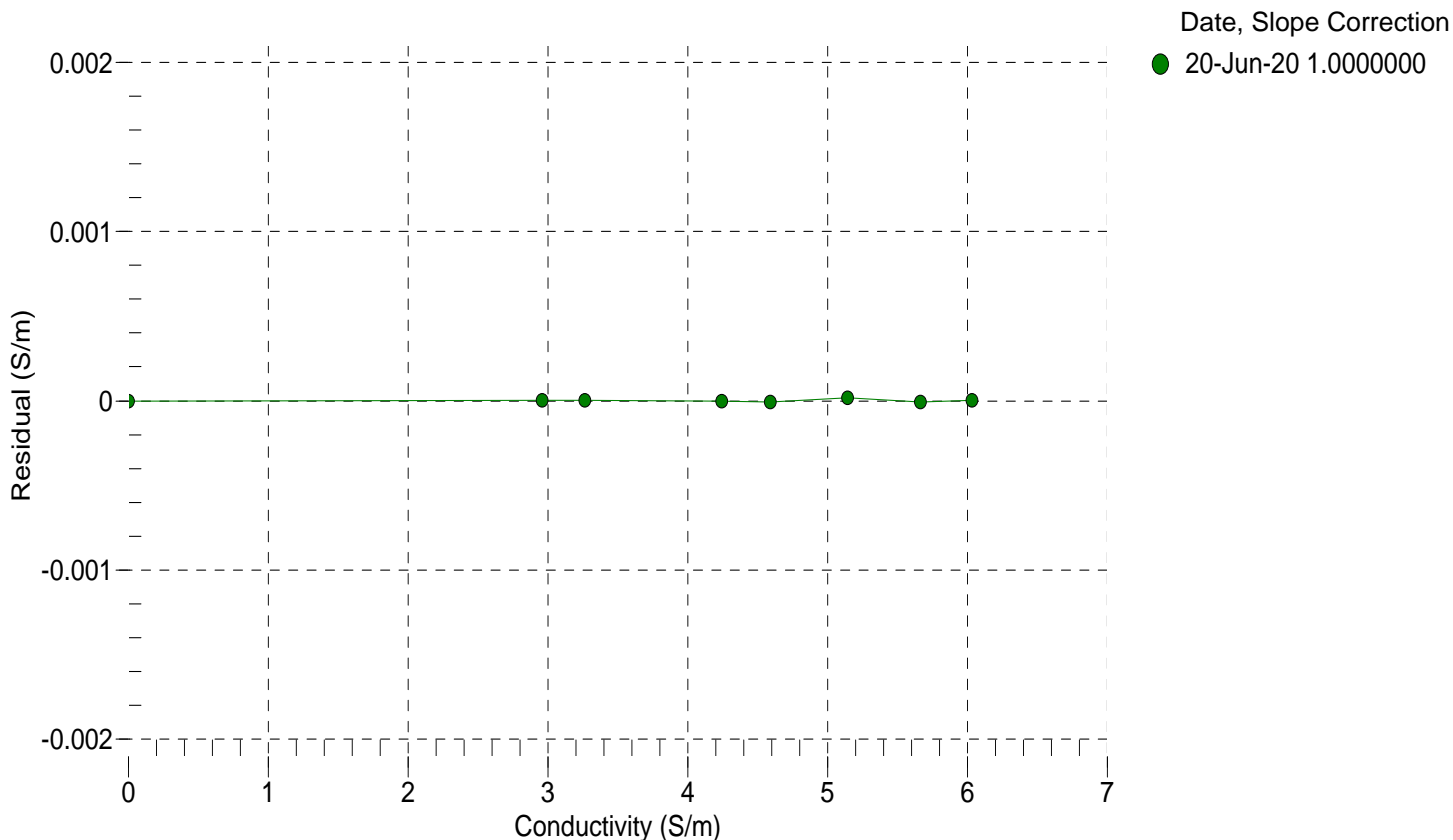
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2638.92	0.00000	0.00000
1.0000	34.6409	2.96240	5186.77	2.96240	0.00000
4.5000	34.6226	3.26824	5380.96	3.26825	0.00000
15.0000	34.5832	4.24603	5958.75	4.24603	-0.00000
18.5000	34.5752	4.58982	6148.76	4.58982	-0.00001
23.9940	34.5664	5.14493	6443.48	5.14495	0.00002
29.0000	34.5612	5.66522	6707.66	5.66521	-0.00001
32.5000	34.5569	6.03585	6889.51	6.03585	0.00000

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

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

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

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





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SENSOR SERIAL NUMBER: 12960  
CALIBRATION DATE: 11-Jun-20

SBE 41 PRESSURE CALIBRATION DATA  
2900 psia S/N 11531487

COEFFICIENTS:

PA0 =	1.024545e-001	PTCA0 =	7.336386e+003
PA1 =	3.930384e-004	PTCA1 =	3.816516e+001
PA2 =	-2.941982e-013	PTCA2 =	-1.201832e+000
PTHA0 =	3.274248e+002	PTCB0 =	3.148128e+005
PTHA1 =	-6.185098e-005	PTCB1 =	9.199648e+000
PTHA2 =	-1.479956e-012	PTCB2 =	-3.869884e-002

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)
14.54	44430.9	4464465.4	14.57	0.00	32.50	4321471.20	45306.70
590.92	1513477.3	4458561.0	590.96	0.00	29.00	4368294.40	45503.43
1167.11	2985267.4	4456954.6	1167.15	0.00	23.99	4435160.80	45666.62
1743.46	4460929.9	4455768.2	1743.57	0.00	18.50	4508318.00	45670.69
2319.71	5939337.3	4454660.8	2319.78	0.00	15.00	4554847.20	45630.63
2895.95	7420800.5	4453635.4	2895.89	-0.00	4.50	4693840.00	45511.02
2319.70	5939220.4	4453625.8	2319.73	0.00	1.00	4739994.20	45441.04
1743.72	4461108.9	4453566.4	1743.63	-0.00	TEMPERATURE (°C)      SPAN		
1167.28	2985323.6	4453483.0	1167.16	-0.00			
591.00	1513444.4	4453152.2	590.94	-0.00			
14.54	44355.1	4452543.0	14.55	0.00			
					1.18	314823.63	
					20.45	314984.74	
					33.57	315078.00	

y = thermistor output (counts)

t = PTHA0 + PTHA1 \* y + PTHA2 \* y<sup>2</sup>

x = instrument output - PTCA0 - PTCA1 \* t - PTCA2 \* t<sup>2</sup>

n = x \* PTCB0 / (PTCB0 + PTCB1 \* t + PTCB2 \* t<sup>2</sup>)

pressure (PSIA) = PA0 + PA1 \* n + PA2 \* n<sup>2</sup>

Residual (%FSR) = (computed pressure - true pressure) \* 100 / Full Scale Range

Date, Offset (%FSR)

● 11-Jun-20 0.00

