



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-12933  
Instrument Firmware Version: 7.2.5  
Zero Conductivity Frequency: 2647.78  
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	11518370	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 12933  
CALIBRATION DATE: 05-Jun-20

SBE 41 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

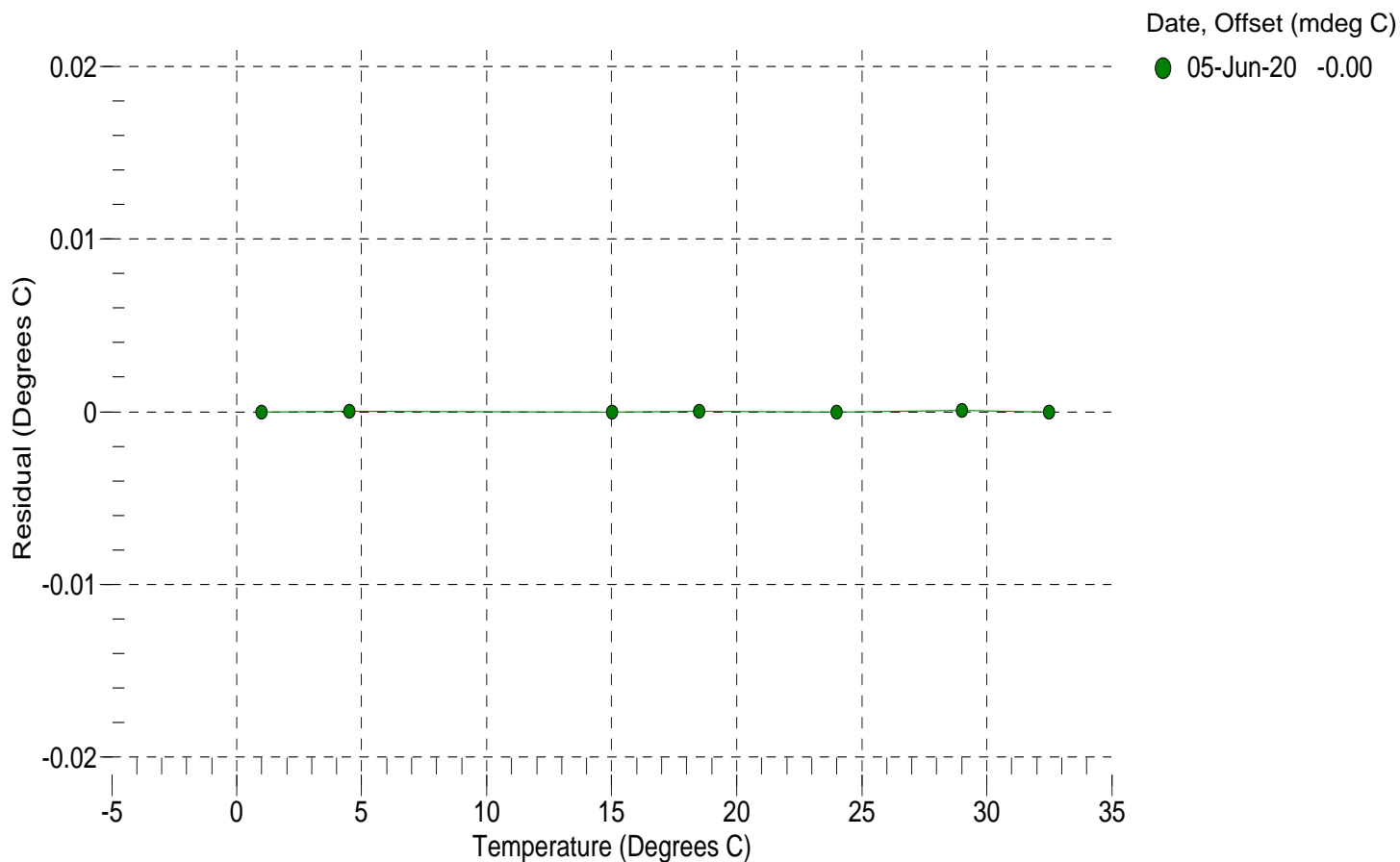
a0 = -8.519927e-004  
a1 = 2.875120e-004  
a2 = -3.354624e-006  
a3 = 1.422431e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	16228569.8	1.0000	-0.0000
4.5000	13872745.6	4.5000	0.0000
15.0000	8836275.1	15.0000	-0.0000
18.5000	7649886.8	18.5000	0.0000
23.9940	6136695.9	23.9940	-0.0000
29.0000	5050565.4	29.0001	0.0001
32.5000	4422105.2	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 = -1.030453e+000  
h = 1.474129e-001  
i = -2.714592e-004  
j = 4.081098e-005

CPcor = -9.5700e-008  
CTcor = 3.2500e-006  
WBOTC = 7.5527e-007

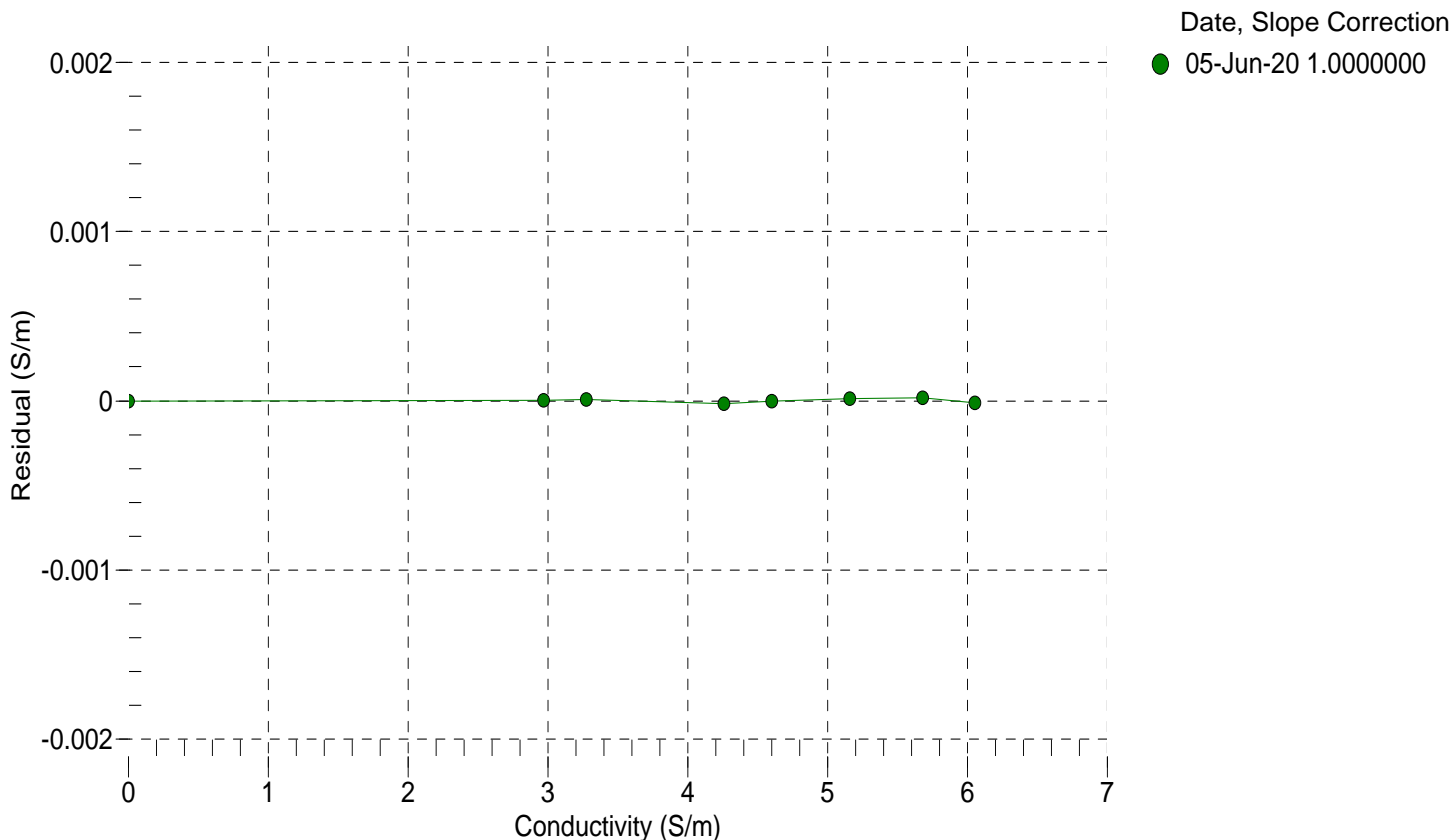
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2647.78	0.00000	0.00000
1.0000	34.7594	2.97156	5215.82	2.97157	0.00000
4.5000	34.7396	3.27820	5411.39	3.27821	0.00001
15.0000	34.6972	4.25855	5993.24	4.25853	-0.00002
18.5000	34.6885	4.60324	6184.58	4.60324	-0.00000
23.9940	34.6792	5.15986	6481.35	5.15987	0.00001
29.0000	34.6746	5.68172	6747.42	5.68173	0.00002
32.5000	34.6717	6.05362	6930.61	6.05361	-0.00001

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

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

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

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





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SENSOR SERIAL NUMBER: 12933  
CALIBRATION DATE: 29-May-20

SBE 41 PRESSURE CALIBRATION DATA  
2900 psia S/N 11518370

COEFFICIENTS:

PA0 =	2.727322e-001	PTCA0 =	3.554402e+002
PA1 =	3.878317e-004	PTCA1 =	4.578575e+001
PA2 =	-2.910197e-013	PTCA2 =	-6.063437e-001
PTHA0 =	3.254809e+002	PTCB0 =	3.157036e+005
PTHA1 =	-6.014513e-005	PTCB1 =	1.966496e+001
PTHA2 =	-1.705935e-012	PTCB2 =	-4.286236e-001

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)
14.47	37736.8	4484130.8	14.49	0.00	32.50	4337584.80	39461.30
589.98	1524458.3	4475693.4	589.99	0.00	29.00	4384223.00	39529.70
1165.53	3014847.3	4472625.6	1165.64	0.00	23.99	4450802.60	39481.53
1740.97	4508145.7	4469651.2	1741.10	0.00	18.50	4523572.20	39302.78
2203.00	5780434.8	4466490.8	2230.38	0.94	15.00	4569890.40	39148.71
2891.94	7504600.7	4464664.8	2891.93	-0.00	4.50	4708040.20	38874.22
2316.53	6004674.9	4463506.6	2316.52	-0.00	1.00	4753964.00	38720.06
1741.11	4507920.3	4461533.2	1741.01	-0.00	TEMPERATURE (°C)      SPAN		
1165.19	3013486.1	4460397.4	1165.10	-0.00			
589.51	1522995.7	4459311.4	589.42	-0.00			
14.46	37762.8	4454644.8	14.48	0.00			
					1.51	315732.39	
					20.50	315926.58	
					33.98	315876.94	

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)

● 29-May-20 0.00

