



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-14426  
Instrument Firmware Version: 7.2.5  
Zero Conductivity Frequency: 2627.20  
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	11887996	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 14426  
CALIBRATION DATE: 02-Jun-21

SBE 41 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

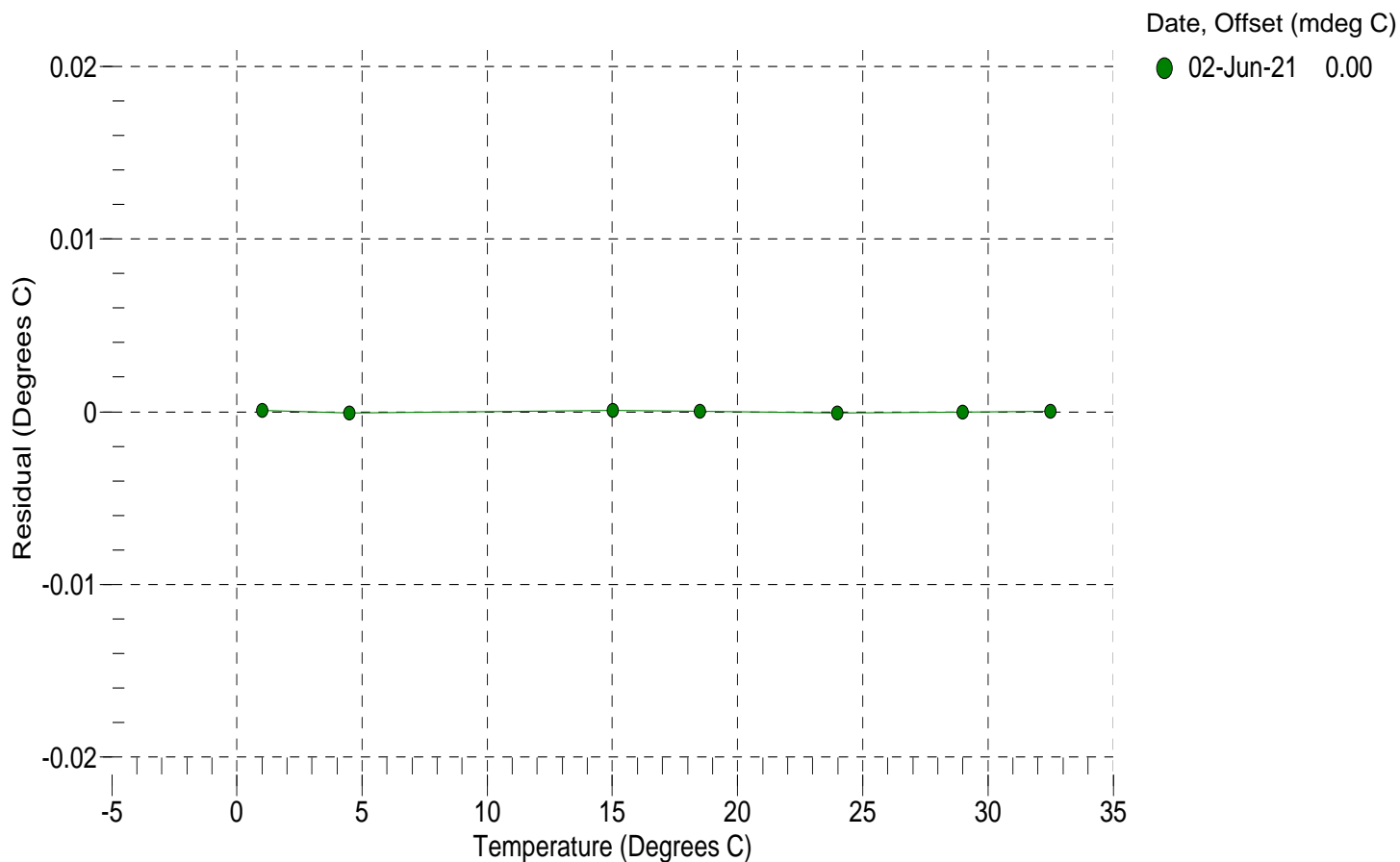
a0 = -7.440221e-004  
a1 = 2.675399e-004  
a2 = -2.110677e-006  
a3 = 1.174055e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	15922564.5	1.0001	0.0001
4.5000	13616016.3	4.4999	-0.0001
15.0000	8681341.9	15.0001	0.0001
18.5000	7518129.7	18.5000	0.0000
23.9940	6033830.0	23.9939	-0.0001
29.0000	4967869.9	29.0000	-0.0000
32.5000	4350803.6	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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CALIBRATION DATE: 02-Jun-21

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

COEFFICIENTS:

g = -9.969433e-001  
h = 1.449179e-001  
i = -3.003251e-004  
j = 4.467625e-005

CPcor = -9.5700e-008  
CTcor = 3.2500e-006  
WBOTC = 4.4402e-007

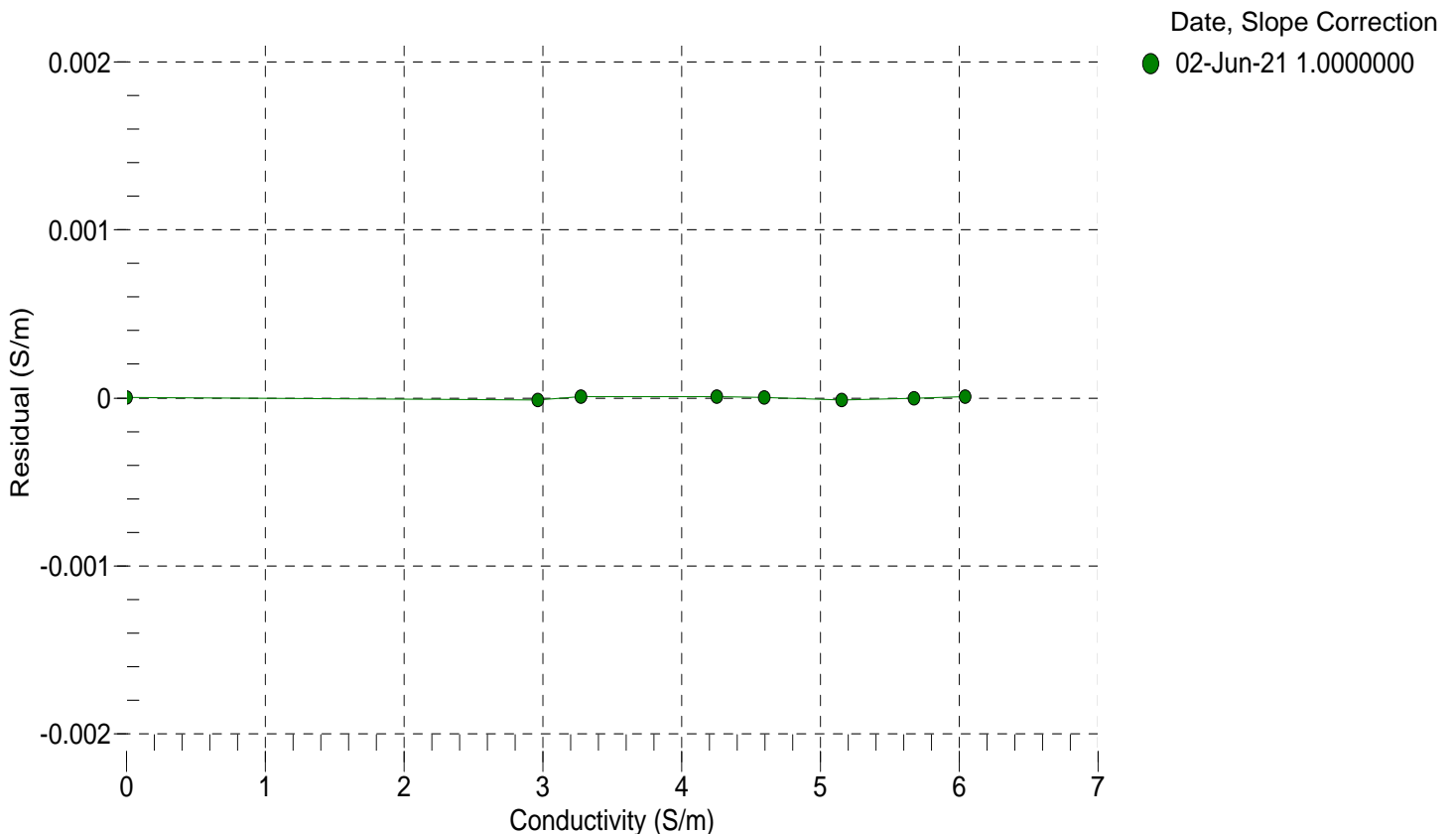
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2627.20	0.00000	0.00000
1.0000	34.7168	2.96827	5237.13	2.96826	-0.00001
4.5000	34.6982	3.27468	5435.09	3.27469	0.00001
15.0000	34.6585	4.25430	6023.65	4.25431	0.00001
18.5000	34.6505	4.59874	6217.06	4.59874	0.00000
23.9940	34.6421	5.15495	6516.95	5.15494	-0.00001
29.0000	34.6375	5.67632	6785.69	5.67632	-0.00000
32.5000	34.6263	6.04659	6970.05	6.04660	0.00001

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

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

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

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





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SENSOR SERIAL NUMBER: 14426  
CALIBRATION DATE: 28-May-21

SBE 41 PRESSURE CALIBRATION DATA  
2900 psia S/N 11887996

COEFFICIENTS:

PA0 =	5.332730e-001	PTCA0 =	-3.646616e+003
PA1 =	3.933952e-004	PTCA1 =	1.210765e+002
PA2 =	-2.850696e-013	PTCA2 =	-2.618314e+000
PTHA0 =	3.269189e+002	PTCB0 =	3.164715e+005
PTHA1 =	-6.301408e-005	PTCB1 =	7.165611e+000
PTHA2 =	-1.306268e-012	PTCB2 =	1.038336e-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)
14.65	33555.6	4471357.4	14.63	-0.00	32.50	4290561.80	34577.70
591.23	1501480.5	4461698.4	591.12	-0.00	29.00	4337824.00	34766.24
1167.90	2973592.3	4459432.4	1168.02	0.00	23.99	4405113.60	34906.43
1744.70	4448544.0	4456551.8	1744.79	0.00	18.50	4478525.20	34796.52
2321.54	5926811.5	4454566.8	2321.61	0.00	15.00	4525535.00	34616.81
2898.35	7408021.0	4452775.4	2898.32	-0.00	4.50	4665223.00	33909.73
2321.55	5926662.4	4452102.0	2321.53	-0.00	1.00	4712051.20	33593.83
1745.11	4449214.3	4451388.0	1745.03	-0.00	TEMPERATURE (°C)      SPAN		
1168.13	2973543.8	4450185.6	1167.97	-0.01			
590.91	1501289.7	4449520.2	591.02	0.00			
14.64	33712.1	4447332.6	14.68	0.00			
					1.96	316485.89	
					20.62	316663.39	
					32.96	316820.46	

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)

● 28-May-21 0.00

