



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-12995  
Instrument Firmware Version: 7.2.5  
Zero Conductivity Frequency: 2659.10  
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	11493662	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 12995  
CALIBRATION DATE: 01-Jul-20

SBE 41 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

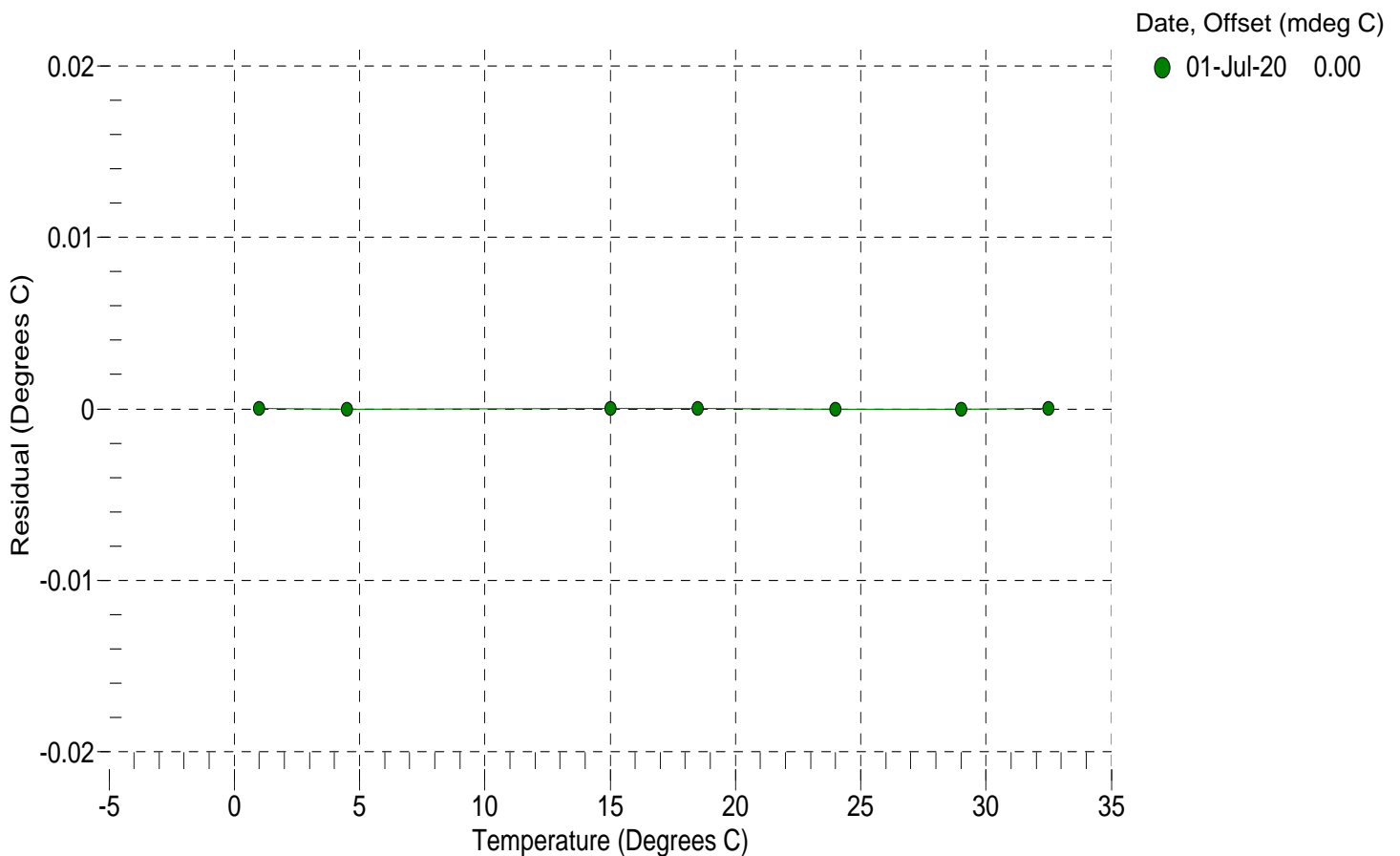
a0 = -8.460440e-004  
a1 = 2.941081e-004  
a2 = -3.844708e-006  
a3 = 1.519377e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	14909259.6	1.0000	0.0000
4.5000	12729305.7	4.5000	-0.0000
15.0000	8079228.0	15.0000	0.0000
18.5000	6986582.9	18.5000	0.0000
24.0000	5593611.4	24.0000	-0.0000
29.0000	4597740.3	29.0000	-0.0000
32.5000	4021467.6	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: 01-Jul-20

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

COEFFICIENTS:

g = -1.028249e+000  
h = 1.456521e-001  
i = -1.813114e-004  
j = 3.530967e-005

CPcor = -9.5700e-008  
CTcor = 3.2500e-006  
WBOTC = 5.3270e-007

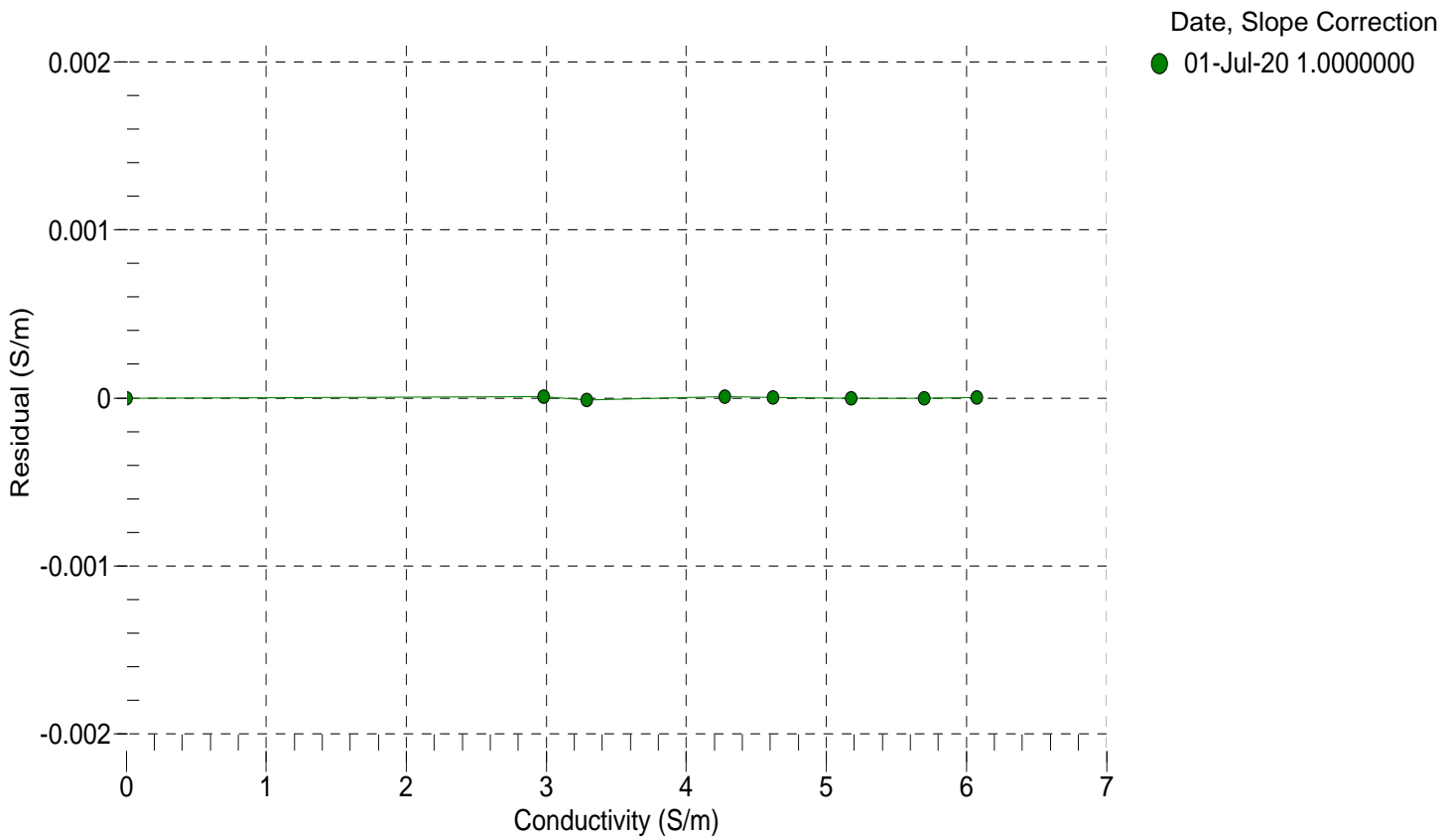
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2659.10	0.00000	0.00000
1.0000	34.8826	2.98109	5246.24	2.98110	0.00001
4.5000	34.8594	3.28839	5442.86	3.28838	-0.00001
15.0000	34.8207	4.27210	6028.61	4.27210	0.00001
18.5000	34.8132	4.61800	6221.21	4.61800	0.00000
24.0000	34.8056	5.17721	6520.26	5.17721	-0.00000
29.0000	34.8019	5.70023	6787.72	5.70022	-0.00000
32.5000	34.7998	6.07344	6972.12	6.07344	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: 12995  
CALIBRATION DATE: 24-Jun-20

SBE 41 PRESSURE CALIBRATION DATA  
2900 psia S/N 11493662

COEFFICIENTS:

PA0 =	2.165191e-001	PTCA0 =	-2.897209e+003
PA1 =	3.889237e-004	PTCA1 =	4.493404e+001
PA2 =	-2.865424e-013	PTCA2 =	-9.019640e-001
PTHA0 =	2.950696e+002	PTCB0 =	3.126245e+005
PTHA1 =	-6.343131e-005	PTCB1 =	1.002147e+001
PTHA2 =	-6.588073e-013	PTCB2 =	5.020503e-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)
14.49	34396.4	4109905.8	14.49	-0.00	32.50	3975413.60	35773.40
591.09	1520123.8	4102151.4	591.17	0.00	29.00	4026108.00	35897.14
1167.41	3008345.0	4101334.8	1167.55	0.00	24.00	4098863.60	35944.24
1743.58	4499326.4	4100512.6	1743.72	0.00	18.50	4178798.40	35834.45
2319.82	5993454.4	4099787.8	2319.84	0.00	15.00	4229649.00	35719.09
2895.77	7490484.3	4099132.8	2895.79	0.00	4.50	4381379.00	35508.56
2319.70	5992789.2	4099493.4	2319.58	-0.00	1.00	4432053.00	35370.39
1743.88	4499803.8	4099819.2	1743.90	0.00			
1167.46	3007557.3	4100098.4	1167.24	-0.01	TEMPERATURE (°C) SPAN		
590.97	1519347.7	4100393.8	590.87	-0.00	1.18	312636.39	
14.48	34450.4	4099628.6	14.51	0.00	20.55	312851.59	
					34.13	313024.97	

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)

● 24-Jun-20 0.00

