



**SEA-BIRD**  
SCIENTIFIC

## SBE41-CP ALACE

### Instrument Configuration

Instrument Serial Number: 41-10663  
Instrument Firmware Version: V 7.2.5  
Zero Conductivity Frequency: 2601.53  
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	10391761	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 10663  
CALIBRATION DATE: 02-Mar-18

SBE 41 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

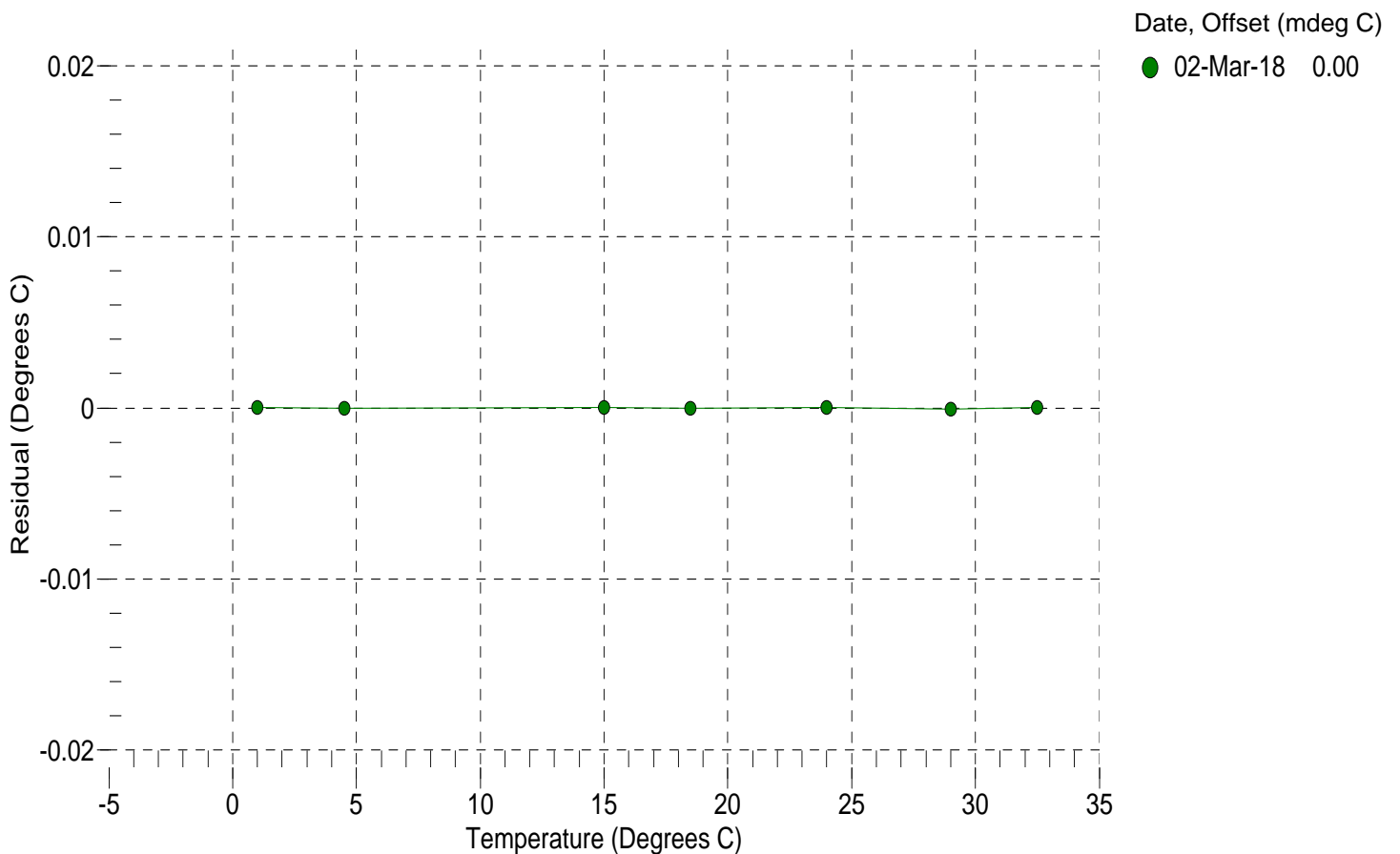
a0 = -7.672569e-004  
a1 = 2.857069e-004  
a2 = -3.385902e-006  
a3 = 1.406324e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	14191443.3	1.0000	0.0000
4.5000	12097595.2	4.5000	-0.0000
15.0000	7644324.3	15.0000	0.0000
18.5000	6601245.5	18.5000	-0.0000
23.9940	5275060.3	23.9940	0.0000
29.0000	4326756.0	28.9999	-0.0001
32.5000	3779611.5	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 = -1.012545e+000  
h = 1.501991e-001  
i = -3.539411e-004  
j = 4.889087e-005

CPcor = -9.5700e-008  
CTcor = 3.2500e-006  
WBOTC = -9.6086e-008

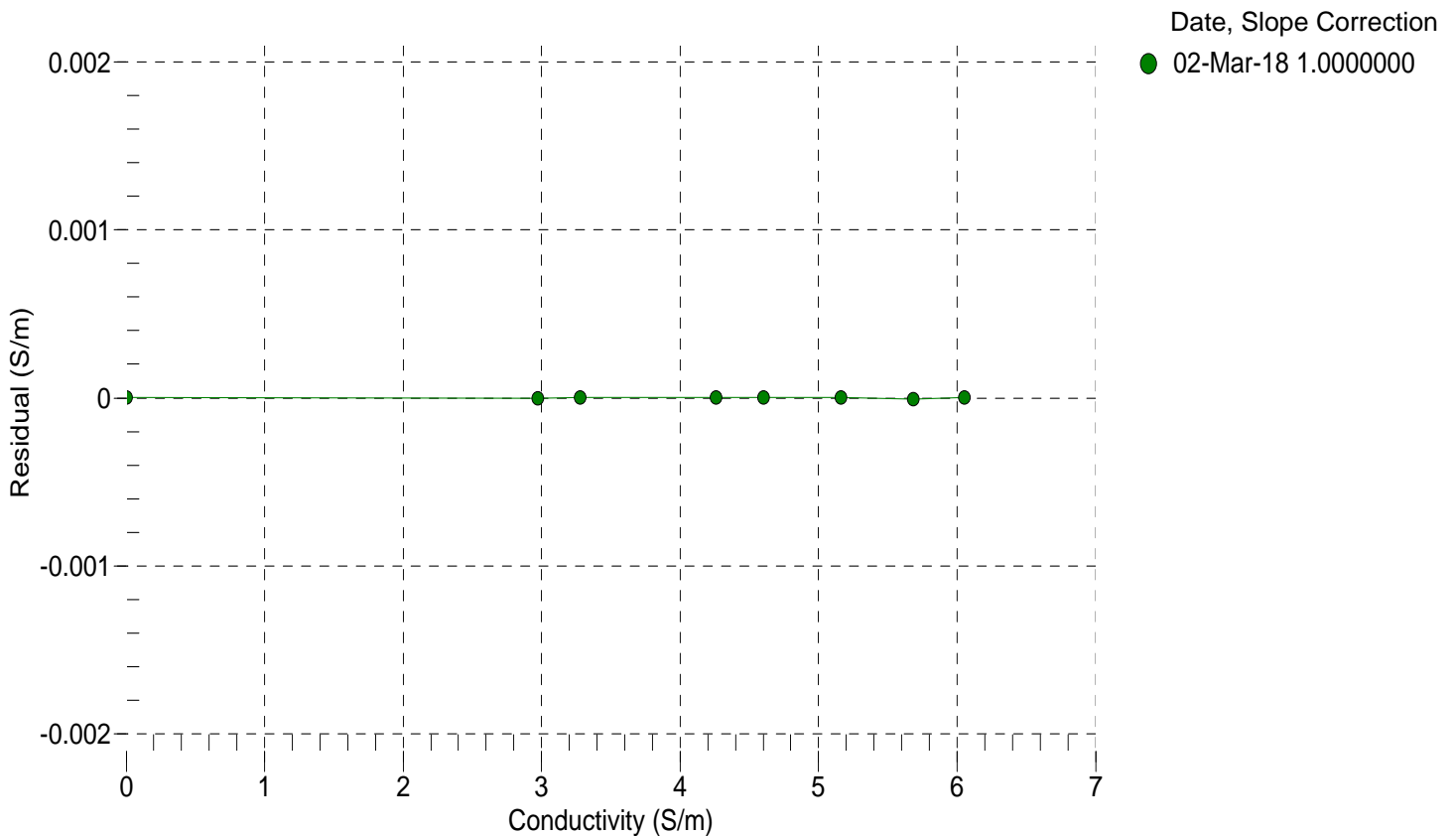
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2601.53	0.00000	0.00000
1.0000	34.7628	2.97183	5159.49	2.97182	-0.00000
4.5000	34.7429	3.27848	5353.83	3.27849	0.00000
15.0000	34.7011	4.25897	5931.88	4.25897	0.00000
18.5000	34.6922	4.60368	6121.86	4.60368	0.00000
23.9940	34.6826	5.16031	6416.49	5.16032	0.00000
29.0000	34.6773	5.68211	6680.55	5.68210	-0.00001
32.5000	34.6741	6.05399	6862.35	6.05400	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: 10663  
CALIBRATION DATE: 27-Feb-18

SBE 41 PRESSURE CALIBRATION DATA  
2900 psia S/N 10391761

COEFFICIENTS:

PA0 =	3.853670e-001	PTCA0 =	3.545757e+003
PA1 =	3.932157e-004	PTCA1 =	4.762206e+001
PA2 =	-2.808336e-013	PTCA2 =	-1.320584e-001
PTHA0 =	3.025180e+002	PTCB0 =	3.040853e+005
PTHA1 =	-5.996485e-005	PTCB1 =	-1.675954e+001
PTHA2 =	-1.325563e-012	PTCB2 =	2.550821e-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)
14.64	40785.6	4275716.8	14.65	0.00	32.50	4126524.40	42092.50
592.16	1509998.9	4274197.0	592.20	0.00	29.00	4175831.80	42042.72
1169.72	2982576.2	4273253.6	1169.85	0.00	23.99	4246230.00	41860.37
1747.46	4458307.2	4272453.2	1747.52	0.00	18.50	4323250.00	41567.93
2325.17	5937246.2	4271621.4	2325.21	0.00	15.00	4372140.60	41353.72
2902.82	7419184.0	4270800.6	2902.84	0.00	4.50	4518655.60	40952.70
2325.21	5937077.3	4271066.2	2325.15	-0.00	1.00	4567075.00	40790.97
1747.39	4457751.7	4271163.0	1747.30	-0.00	TEMPERATURE (°C)      SPAN		
1169.78	2982171.2	4271253.2	1169.69	-0.00			
591.91	1509173.4	4271432.4	591.87	-0.00			
14.64	40674.3	4271050.4	14.61	-0.00			
					2.10	304051.16	
					20.42	303849.41	
					32.50	303810.02	

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)

● 27-Feb-18 0.00

