



SEA-BIRD
SCIENTIFIC

SBE41-CP ALACE

Instrument Configuration

Instrument Serial Number: 41-10498
Instrument Firmware Version: V 7.2.5
Zero Conductivity Frequency: 2709.14
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	10818336	2000m(2000 dBar)



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SENSOR SERIAL NUMBER: 10498
 CALIBRATION DATE: 13-Jan-18

SBE 41 TEMPERATURE CALIBRATION DATA
 ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

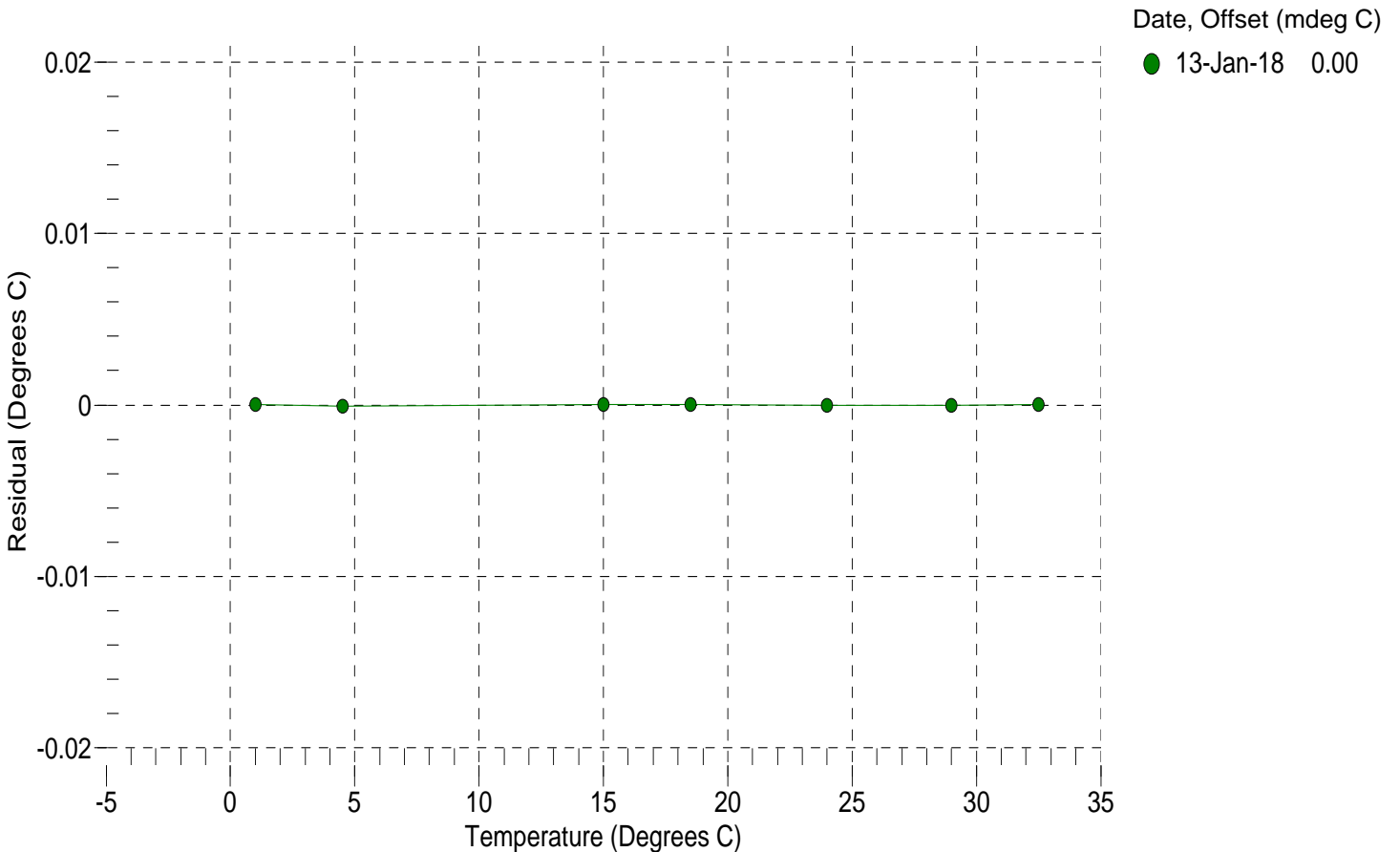
a0 = -9.067600e-004
 a1 = 3.017296e-004
 a2 = -4.221562e-006
 a3 = 1.612529e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0002	14691057.6	1.0002	0.0000
4.5000	12561244.4	4.4999	-0.0001
15.0000	8005648.2	15.0000	0.0000
18.5000	6932129.3	18.5000	0.0000
23.9940	5562592.5	23.9940	-0.0000
29.0000	4579340.5	29.0000	-0.0000
32.5000	4010273.6	32.5000	0.0000

n = Instrument Output (counts)

$$\text{Temperature ITS-90 (°C)} = 1 / \{ a_0 + a_1[\ln(n)] + a_2[\ln^2(n)] + a_3[\ln^3(n)] \} - 273.15$$

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 = -9.915706e-001 CPcor = -9.5700e-008
 h = 1.356565e-001 CTcor = 3.2500e-006
 i = -3.188892e-004 WBOTC = -3.0756e-007
 j = 4.226043e-005

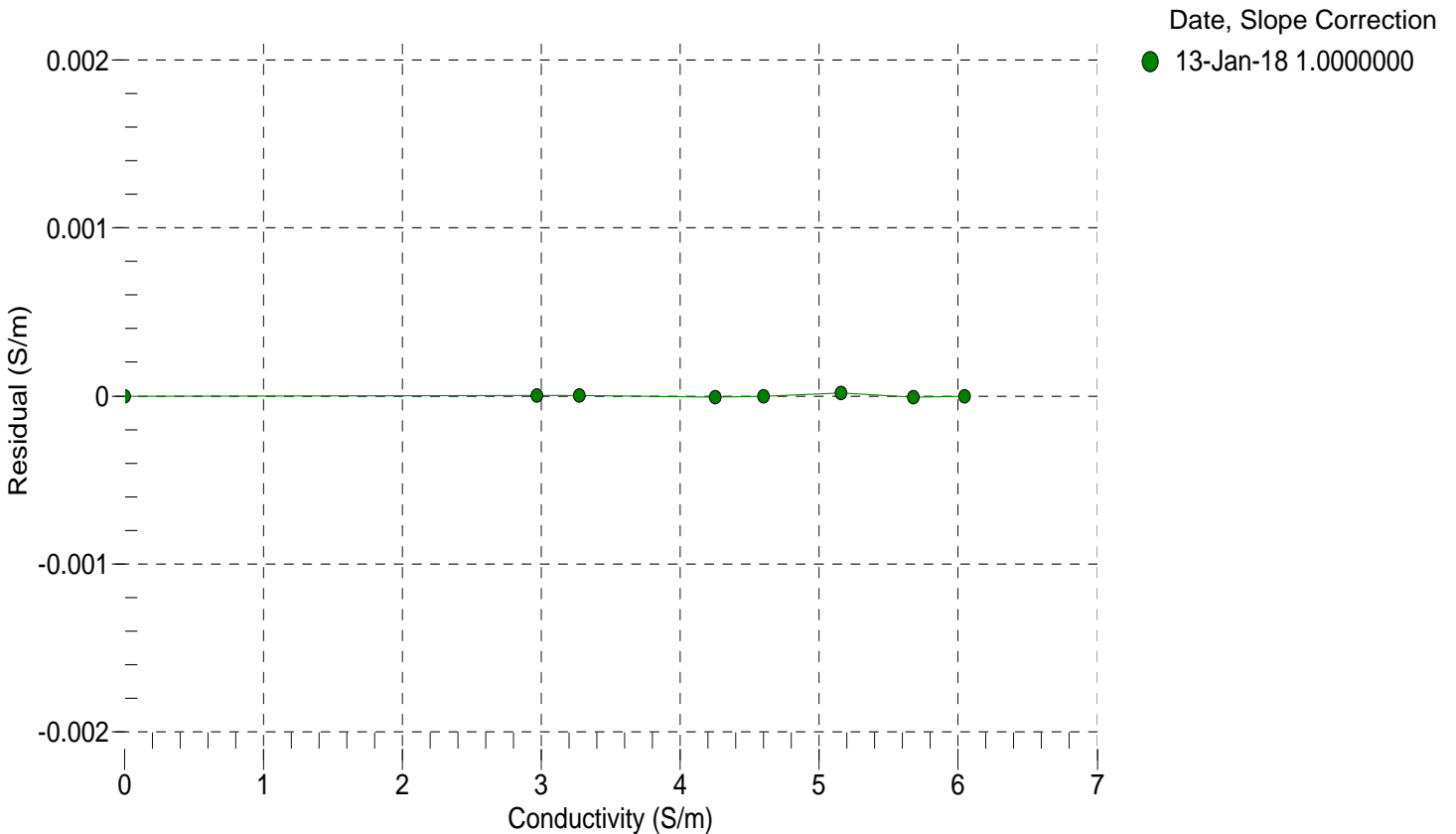
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2709.14	0.00000	0.00000
1.0002	34.7177	2.96836	5412.60	2.96836	0.00000
4.5000	34.6982	3.27468	5617.46	3.27468	0.00000
15.0000	34.6566	4.25409	6226.52	4.25408	-0.00001
18.5000	34.6478	4.59842	6426.64	4.59842	-0.00000
23.9940	34.6380	5.15441	6736.91	5.15443	0.00002
29.0000	34.6327	5.67562	7014.92	5.67562	-0.00001
32.5000	34.6295	6.04709	7206.30	6.04709	-0.00000

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

t = temperature (°C); p = pressure (decibars); δ = CTcor; ϵ = 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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SBE 41 PRESSURE CALIBRATION DATA
 2900 psia S/N 10818336

COEFFICIENTS:

PA0 =	5.875858e-001	PTCA0 =	-6.361727e+003
PA1 =	3.919619e-004	PTCA1 =	1.128597e+002
PA2 =	-2.828726e-013	PTCA2 =	-2.062758e+000
PTHA0 =	3.450298e+002	PTCB0 =	3.105690e+005
PTHA1 =	-6.252809e-005	PTCB1 =	-7.196354e+001
PTHA2 =	-1.714703e-012	PTCB2 =	2.208469e+000

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)
14.61	30896.5	4581388.8	14.63	0.00	32.50	4454179.60	32822.10
592.14	1503639.1	4580312.2	592.16	0.00	29.00	4499098.40	32933.02
1169.75	2979841.3	4579418.2	1169.82	0.00	23.99	4563222.20	32938.02
1747.41	4459297.1	4578643.0	1747.49	0.00	18.50	4633408.20	32752.22
2325.12	5942091.5	4577987.6	2325.23	0.00	15.00	4678016.60	32555.53
2902.76	7427540.7	4577362.4	2902.73	-0.00	4.50	4811203.00	31821.47
2325.13	5941801.0	4577677.6	2325.11	-0.00	1.00	4855508.00	31501.33
1747.40	4458642.4	4577951.0	1747.23	-0.01			
1169.84	2979840.6	4578220.4	1169.81	-0.00			
591.92	1502977.0	4578479.2	591.90	-0.00			
14.61	30813.1	4575183.6	14.59	-0.00			

TEMPERATURE (°C)	SPAN
2.03	310432.13
22.28	310062.00
32.68	310575.61

y = thermistor output (counts)

$$t = PTHA0 + PTHA1 * y + PTHA2 * y^2$$

$$x = \text{instrument output} - PTCA0 - PTCA1 * t - PTCA2 * t^2$$

$$n = x * PTCB0 / (PTCB0 + PTCB1 * t + PTCB2 * t^2)$$

$$\text{pressure (PSIA)} = PA0 + PA1 * n + PA2 * n^2$$

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

Date, Offset (%FSR)

● 10-Jan-18 0.00

