



SEA-BIRD
SCIENTIFIC

SBE41-CP ALACE

Instrument Configuration

Instrument Serial Number: 41-11783
Instrument Firmware Version: V 7.2.5
Zero Conductivity Frequency: 2592.50
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 | 10997817 | 2000m(2000 dBar) |



Sea-Bird Scientific
13431 NE 20th Street
Bellevue, WA 98005
USA

+1 425-643-9866
seabird@seabird.com
www.seabird.com

SENSOR SERIAL NUMBER: 11783
CALIBRATION DATE: 18-Apr-19

SBE 41 TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

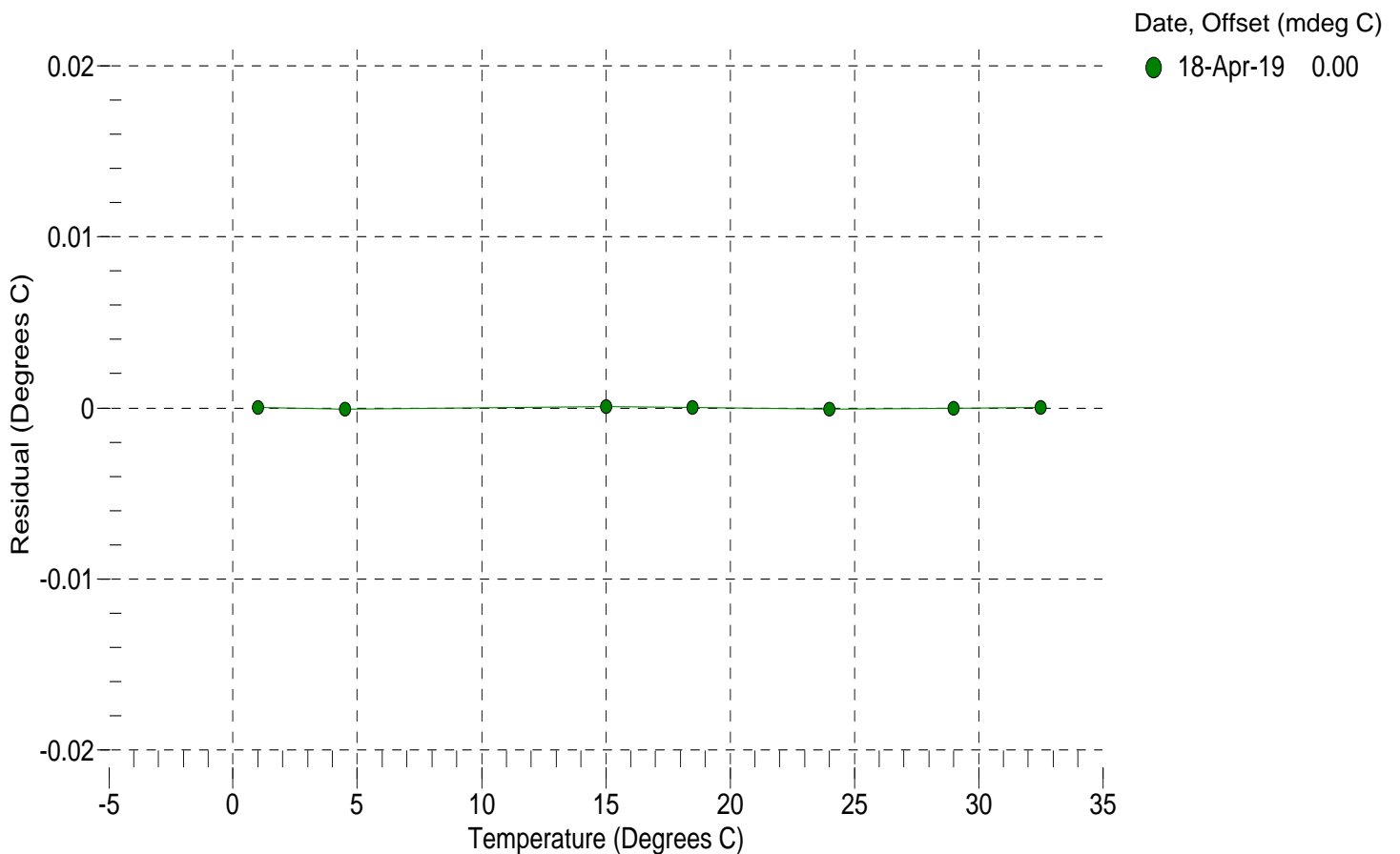
a0 = -9.004393e-004
a1 = 3.030883e-004
a2 = -4.313955e-006
a3 = 1.645417e-007

| BATH TEMP (° C) | INSTRUMENT OUTPUT (counts) | INST TEMP (° C) | RESIDUAL (° C) |
|--------------------|-------------------------------|--------------------|-------------------|
| 1.0000 | 13804357.4 | 1.0000 | 0.0000 |
| 4.5000 | 11806259.5 | 4.4999 | -0.0001 |
| 15.0000 | 7530219.7 | 15.0001 | 0.0001 |
| 18.5000 | 6522027.9 | 18.5000 | 0.0000 |
| 24.0000 | 5234148.8 | 23.9999 | -0.0001 |
| 29.0000 | 4311312.3 | 29.0000 | -0.0000 |
| 32.5001 | 3776325.3 | 32.5001 | 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 = -1.011820e+000
h = 1.511005e-001
i = -3.366735e-004
j = 4.700202e-005

CPcor = -9.5700e-008
CTcor = 3.2500e-006
WBOTC = 3.8569e-007

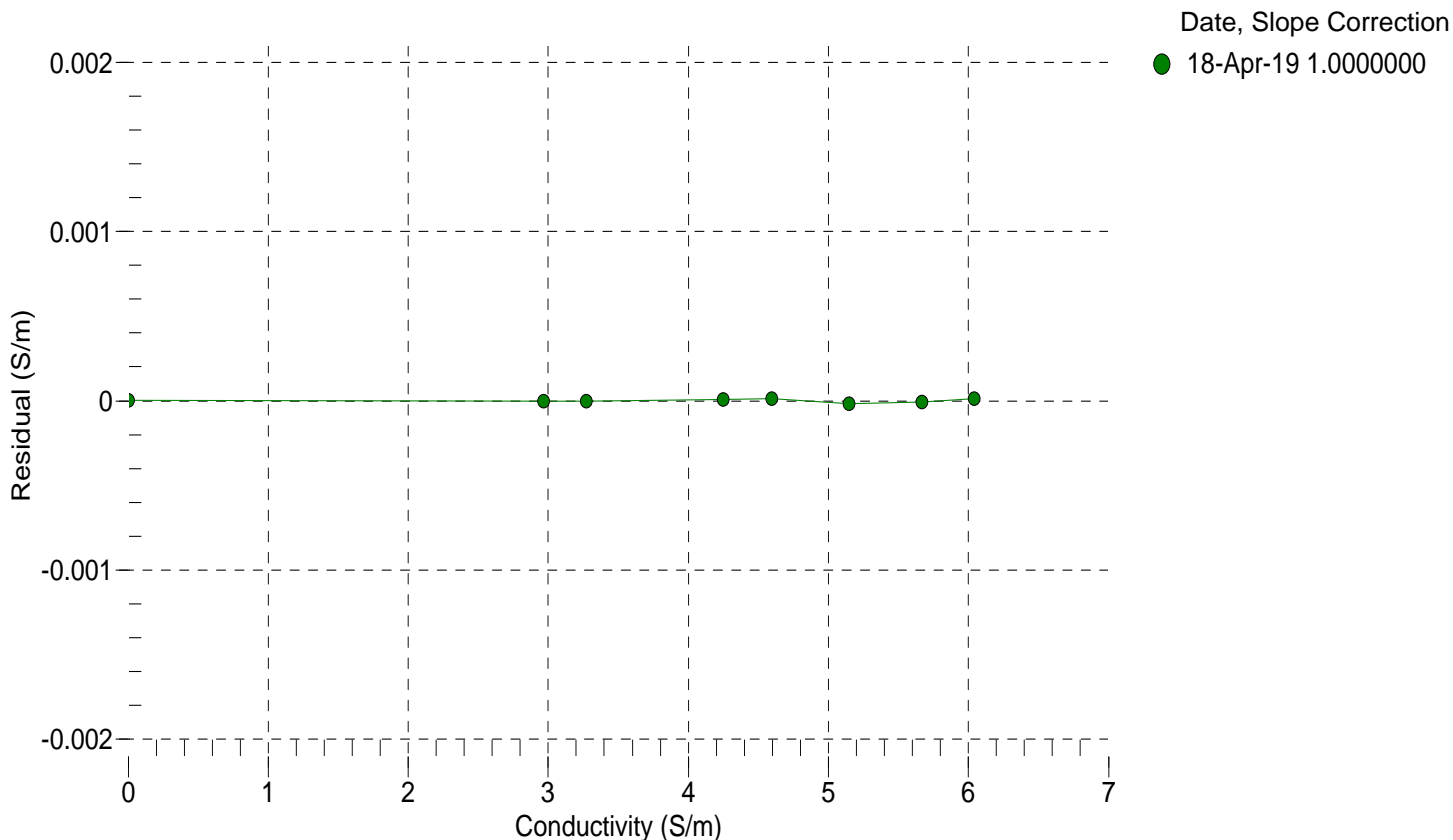
| BATH TEMP (° C) | BATH SAL (PSU) | BATH COND (S/m) | INSTRUMENT OUTPUT (Hz) | INSTRUMENT COND (S/m) | RESIDUAL (S/m) |
|--------------------|-------------------|--------------------|---------------------------|--------------------------|-------------------|
| 22.0000 | 0.0000 | 0.00000 | 2592.50 | 0.00000 | 0.00000 |
| 1.0000 | 34.6762 | 2.96513 | 5138.61 | 2.96512 | -0.00000 |
| 4.5000 | 34.6563 | 3.27111 | 5332.12 | 3.27111 | -0.00000 |
| 15.0000 | 34.6140 | 4.24941 | 5907.72 | 4.24942 | 0.00001 |
| 18.5000 | 34.6049 | 4.59334 | 6096.92 | 4.59335 | 0.00001 |
| 24.0000 | 34.5948 | 5.14931 | 6390.61 | 5.14929 | -0.00002 |
| 29.0000 | 34.5890 | 5.66926 | 6653.26 | 5.66926 | -0.00001 |
| 32.5001 | 34.5849 | 6.04020 | 6834.28 | 6.04021 | 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: 11783
CALIBRATION DATE: 05-Apr-19

SBE 41 PRESSURE CALIBRATION DATA
2900 psia S/N 10997817

COEFFICIENTS:

| | | | |
|---------|----------------|---------|----------------|
| PA0 = | 6.930823e-001 | PTCA0 = | -1.243503e+004 |
| PA1 = | 3.905811e-004 | PTCA1 = | 6.779844e+001 |
| PA2 = | -2.782431e-013 | PTCA2 = | 8.380027e-001 |
| PTHA0 = | 3.537548e+002 | PTCB0 = | 3.128223e+005 |
| PTHA1 = | -6.537565e-005 | PTCB1 = | 6.986145e+000 |
| PTHA2 = | -1.449851e-012 | PTCB2 = | 1.144914e-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) |
|--------------------|-------------------------------|-------------------------------|-----------------------------|--------------------|--------------|-------------------------------|-------------------------------|
| 14.42 | 24621.6 | 4619330.6 | 14.46 | 0.00 | 32.50 | 4470761.60 | 28139.10 |
| 591.48 | 1504723.9 | 4616999.4 | 591.55 | 0.00 | 29.00 | 4515304.80 | 27834.48 |
| 1168.70 | 2988340.6 | 4615698.4 | 1168.79 | 0.00 | 24.00 | 4578989.40 | 27309.20 |
| 1745.96 | 4475214.2 | 4614437.8 | 1746.07 | 0.00 | 18.50 | 4648842.60 | 26646.22 |
| 2323.05 | 5964626.3 | 4612748.6 | 2323.08 | 0.00 | 15.00 | 4693211.60 | 26244.10 |
| 2900.19 | 7457438.5 | 4611504.4 | 2900.18 | -0.00 | 4.50 | 4825824.00 | 25438.20 |
| 2323.07 | 5964532.1 | 4611275.6 | 2323.03 | -0.00 | 1.00 | 4869844.40 | 25202.13 |
| 1745.98 | 4474859.0 | 4610656.4 | 1745.90 | -0.00 | | | |
| 1168.63 | 2987726.8 | 4610362.0 | 1168.52 | -0.00 | | | |
| 591.46 | 1504360.9 | 4610102.6 | 591.38 | -0.00 | | | |
| 14.41 | 24483.2 | 4609266.8 | 14.38 | -0.00 | | | |

| TEMPERATURE (°C) | SPAN |
|------------------|-----------|
| 2.22 | 312838.39 |
| 21.36 | 313023.75 |
| 33.05 | 313178.28 |

y = thermistor output (counts)

t = PTHA0 + PTHA1 * y + PTHA2 * y²

x = instrument output - PTCA0 - PTCA1 * t - PTCA2 * t²

n = x * PTCB0 / (PTCB0 + PTCB1 * t + PTCB2 * t²)

pressure (PSIA) = PA0 + PA1 * n + PA2 * n²

Residual (%FSR) = (computed pressure - true pressure) * 100 / Full Scale Range

Date, Offset (%FSR)

● 05-Apr-19 -0.00

