



SEA-BIRD
SCIENTIFIC

SBE41-CP ALACE

Instrument Configuration

Instrument Serial Number: 41-19602
Instrument Firmware Version: 7.2.5
Zero Conductivity Frequency: 2916.16
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 | 12400306 | 2000m(2000 dBar) |



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SENSOR SERIAL NUMBER: 19602
CALIBRATION DATE: 29-Sep-23

SBE 41 TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

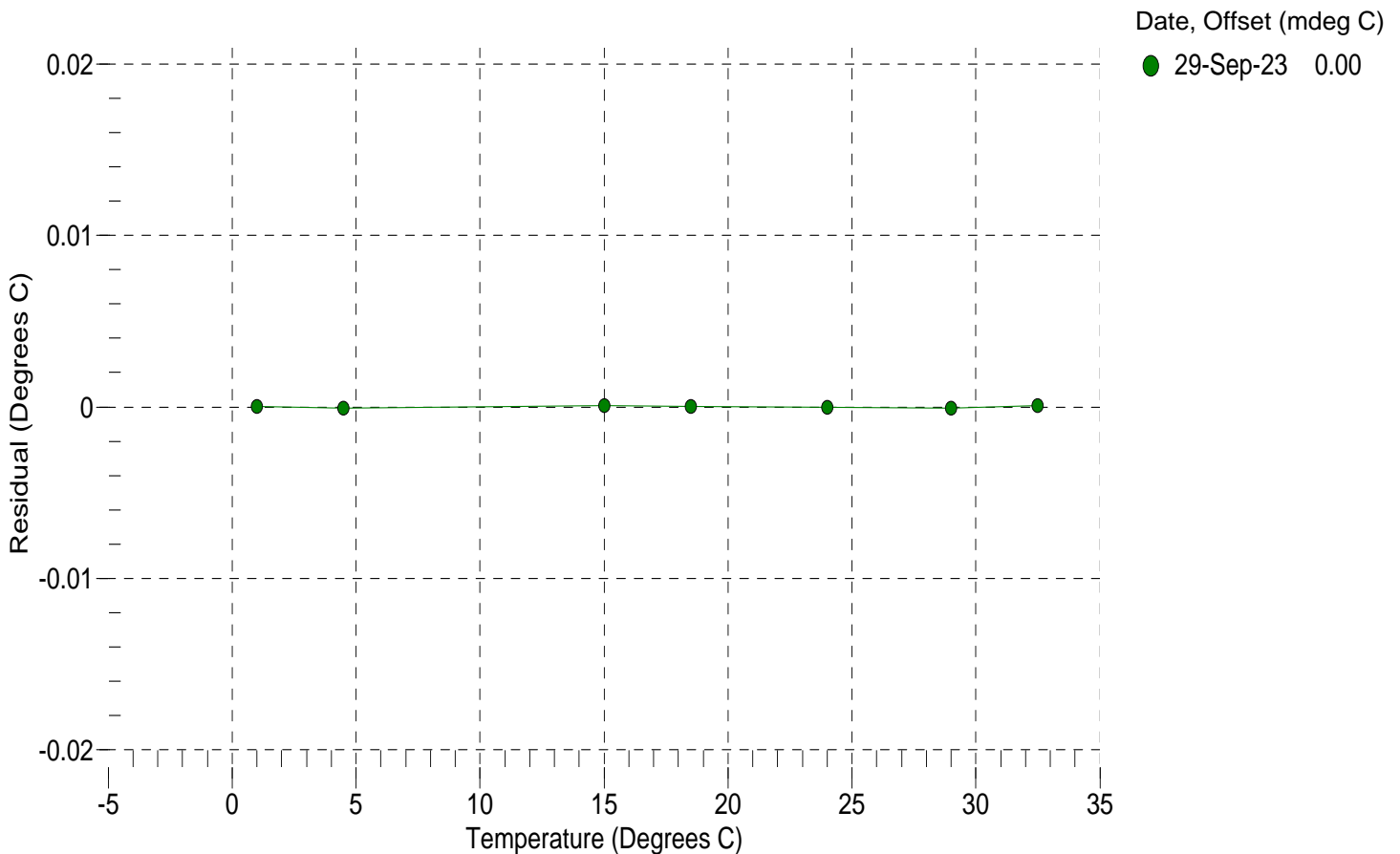
a0 = -7.973964e-004
a1 = 2.865810e-004
a2 = -3.390795e-006
a3 = 1.416565e-007

| BATH TEMP (° C) | INSTRUMENT OUTPUT (counts) | INST TEMP (° C) | RESIDUAL (° C) |
|--------------------|-------------------------------|--------------------|-------------------|
| 1.0000 | 14815717.1 | 1.0000 | 0.0000 |
| 4.5000 | 12642691.1 | 4.4999 | -0.0001 |
| 15.0000 | 8012032.5 | 15.0001 | 0.0001 |
| 18.5000 | 6925172.0 | 18.5000 | 0.0000 |
| 23.9940 | 5541718.8 | 23.9940 | -0.0000 |
| 29.0000 | 4551093.2 | 28.9999 | -0.0001 |
| 32.5000 | 3978908.6 | 32.5001 | 0.0001 |

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: 29-Sep-23

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

COEFFICIENTS:

g = -1.034836e+000
h = 1.218922e-001
i = -1.439091e-004
j = 2.560454e-005

CPcor = -9.5700e-008
CTcor = 3.2500e-006
WBOTC = -6.0003e-007

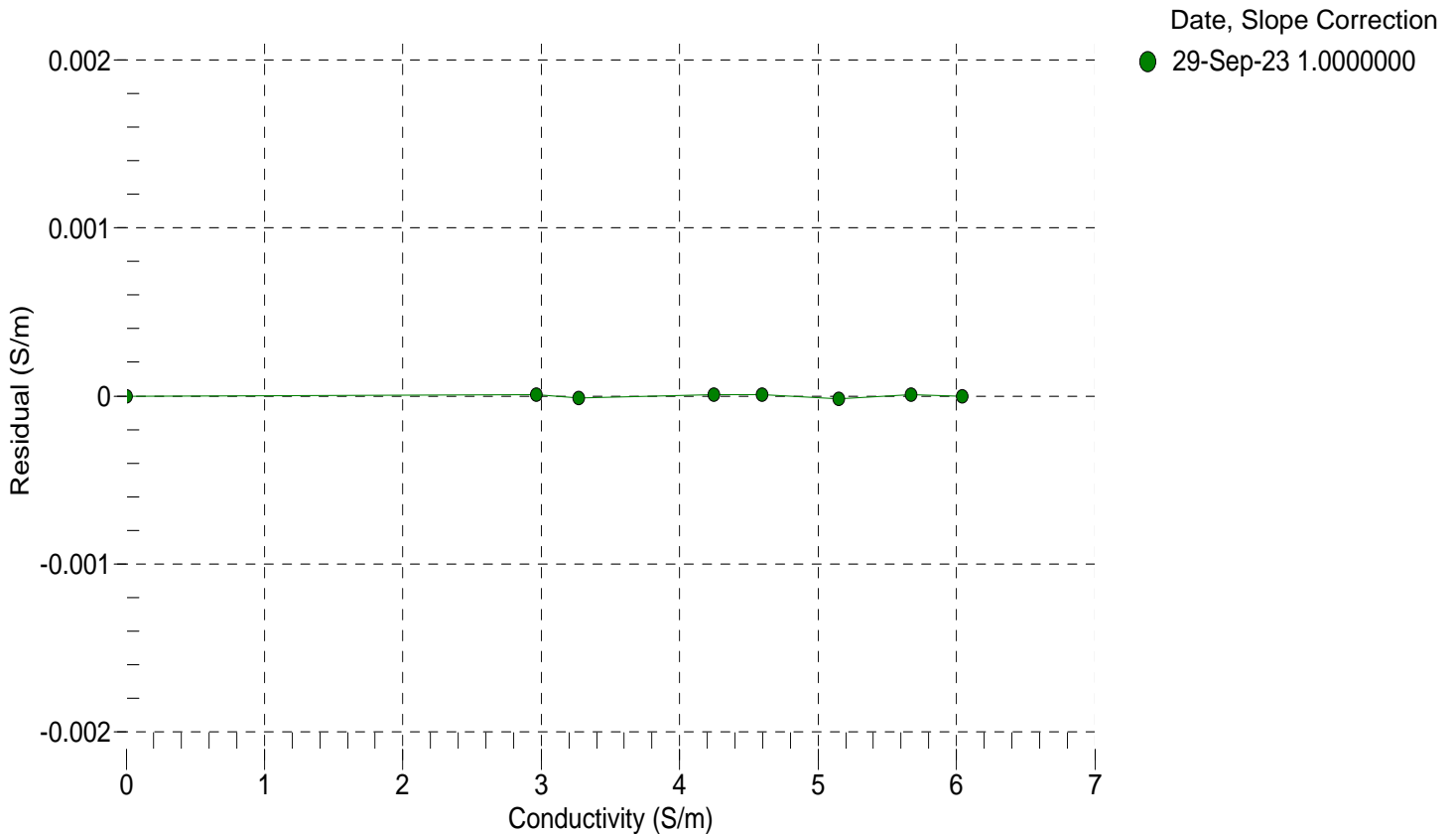
| BATH TEMP (° C) | BATH SAL (PSU) | BATH COND (S/m) | INSTRUMENT OUTPUT (Hz) | INSTRUMENT COND (S/m) | RESIDUAL (S/m) |
|--------------------|-------------------|--------------------|---------------------------|--------------------------|-------------------|
| 22.0000 | 0.0000 | 0.00000 | 2916.16 | 0.00000 | 0.00000 |
| 1.0000 | 34.6724 | 2.96483 | 5727.92 | 2.96484 | 0.00001 |
| 4.5000 | 34.6542 | 3.27093 | 5942.27 | 3.27092 | -0.00001 |
| 15.0000 | 34.6148 | 4.24950 | 6580.07 | 4.24951 | 0.00001 |
| 18.5000 | 34.6069 | 4.59358 | 6789.80 | 4.59359 | 0.00001 |
| 23.9940 | 34.5988 | 5.14922 | 7115.10 | 5.14920 | -0.00002 |
| 29.0000 | 34.5949 | 5.67012 | 7406.77 | 5.67013 | 0.00001 |
| 32.5000 | 34.5936 | 6.04153 | 7607.69 | 6.04153 | -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: 19602
CALIBRATION DATE: 26-Sep-23

SBE 41 PRESSURE CALIBRATION DATA
2900 psia S/N 12400306

COEFFICIENTS:

| | | | |
|---------|----------------|---------|----------------|
| PA0 = | 3.497864e-001 | PTCA0 = | -1.176610e+004 |
| PA1 = | 3.931491e-004 | PTCA1 = | 5.101307e+001 |
| PA2 = | -2.833699e-013 | PTCA2 = | -5.453483e-001 |
| PTHA0 = | 2.863510e+002 | PTCB0 = | 3.225784e+005 |
| PTHA1 = | -6.079885e-005 | PTCB1 = | -1.325982e+000 |
| PTHA2 = | -9.075498e-013 | PTCB2 = | 3.481324e-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) |
|--------------------|-------------------------------|-------------------------------|-----------------------------|--------------------|-----------------------|-------------------------------|-------------------------------|
| 14.48 | 25143.0 | 4079716.0 | 14.50 | 0.00 | 32.50 | 3943220.40 | 26917.80 |
| 590.84 | 1492943.0 | 4077388.0 | 590.64 | -0.01 | 29.00 | 3994530.40 | 26942.99 |
| 1167.09 | 2963895.6 | 4076680.4 | 1166.79 | -0.01 | 23.99 | 4068168.60 | 26872.43 |
| 1743.40 | 4438958.0 | 4076068.0 | 1743.32 | -0.00 | 18.50 | 4148632.60 | 26643.24 |
| 2319.83 | 5916615.8 | 4075489.2 | 2319.63 | -0.01 | 15.00 | 4199805.60 | 26458.49 |
| 2896.25 | 7398107.4 | 4074948.0 | 2896.18 | -0.00 | 4.50 | 4352933.20 | 26107.88 |
| 2319.38 | 5916488.2 | 4075546.4 | 2319.58 | 0.01 | 1.00 | 4403877.00 | 25953.98 |
| 1742.37 | 4437571.2 | 4076075.6 | 1742.78 | 0.01 | | | |
| 1166.52 | 2963185.4 | 4076535.2 | 1166.51 | -0.00 | TEMPERATURE (°C) SPAN | | |
| 590.28 | 1492441.0 | 4076967.2 | 590.44 | 0.01 | 1.68 | 322577.19 | |
| 14.50 | 25300.6 | 4076139.6 | 14.56 | 0.00 | 20.27 | 322694.57 | |
| | | | | | 32.57 | 322904.55 | |

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)

● 26-Sep-23 0.00

