SBE41-CP ALACE

Instrument Configuration

Instrument Serial Number:	41-11572
Instrument Firmware Version:	V 7.2.5
Zero Conductivity Frequency:	2571.73
Communications Format:	RS232
Communications Settings:	9600 baud, 8 Data Bits, No Parity

Installed Devices/Sensors

Data Format	*Measurement*	*Sensor Type*	*Serial Number*	*Rating*
Count	Temperature	Internal	N/A	N/A
Frequency	Conductivity	Internal	N/A	N/A
Count	Pressure	Druck	10997288	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: 11572
CALIBRATION DATE: 01-Apr-19

SBE 41 TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

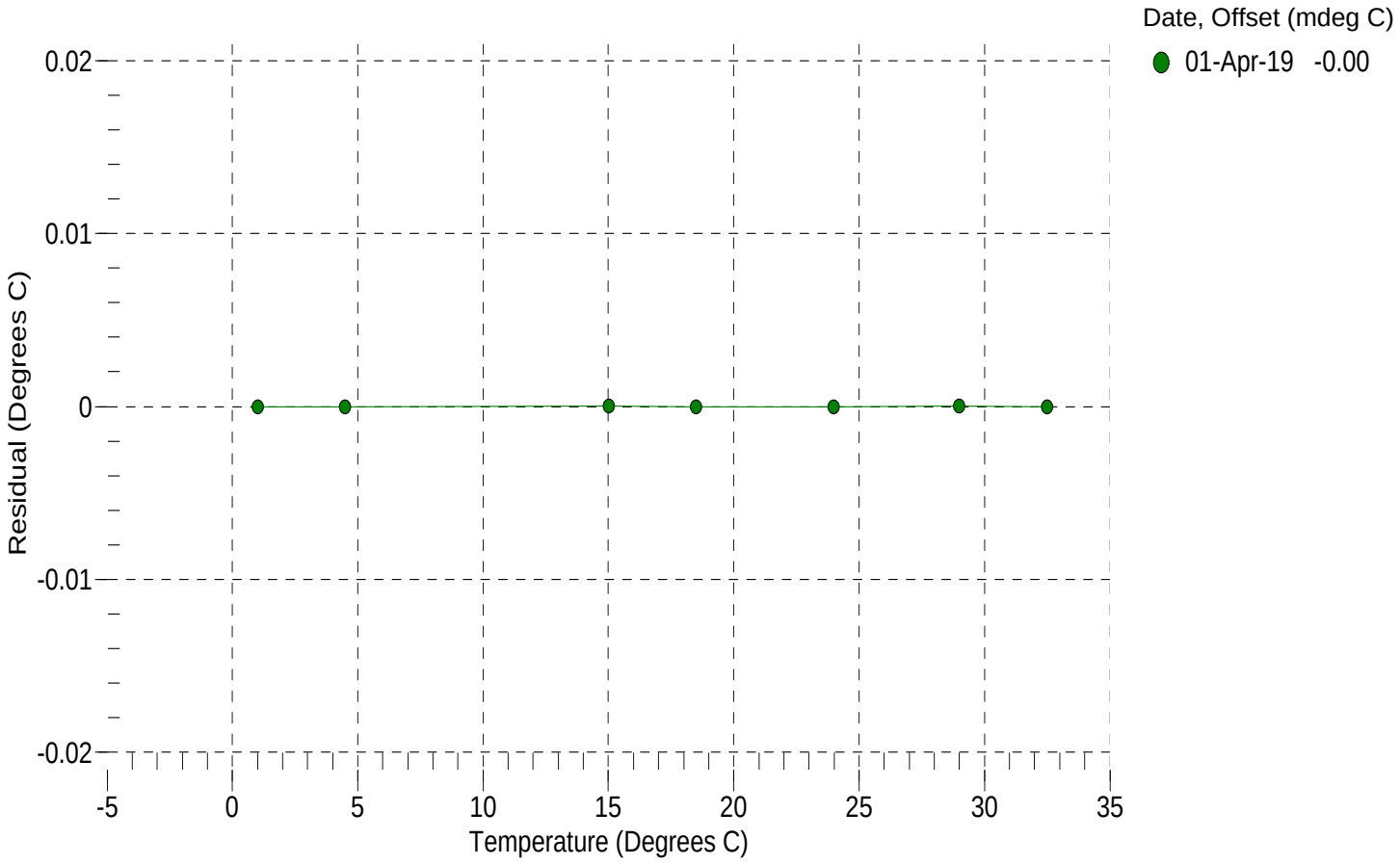
```
a0 = -8.764162e-004
a1 =  2.981127e-004
a2 = -4.012510e-006
a3 =  1.574562e-007
```

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	14174946.6	1.0000	-0.0000
4.5000	12119220.1	4.5000	-0.0000
15.0000	7722820.3	15.0000	0.0000
18.5000	6686900.1	18.5000	-0.0000
23.9940	5365355.7	23.9940	-0.0000
29.0000	4416624.1	29.0000	0.0000
32.5000	3867576.5	32.5000	-0.0000

n = Instrument Output (counts)

Temperature ITS-90 (°C) = $1/\{a0 + a1[ln(n)] + a2[ln^2(n)] + a3[ln^3(n)]\} - 273.15$

Residual (°C) = instrument temperature - bath temperature



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SENSOR SERIAL NUMBER: 11572
CALIBRATION DATE: 01-Apr-19

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

COEFFICIENTS:

```
g = -1.001414e+000
h =  1.518972e-001
i = -3.114094e-004
j =  4.804153e-005

CPcor = -9.5700e-008
CTcor =  3.2500e-006
WBOTC = -4.5360e-007
```

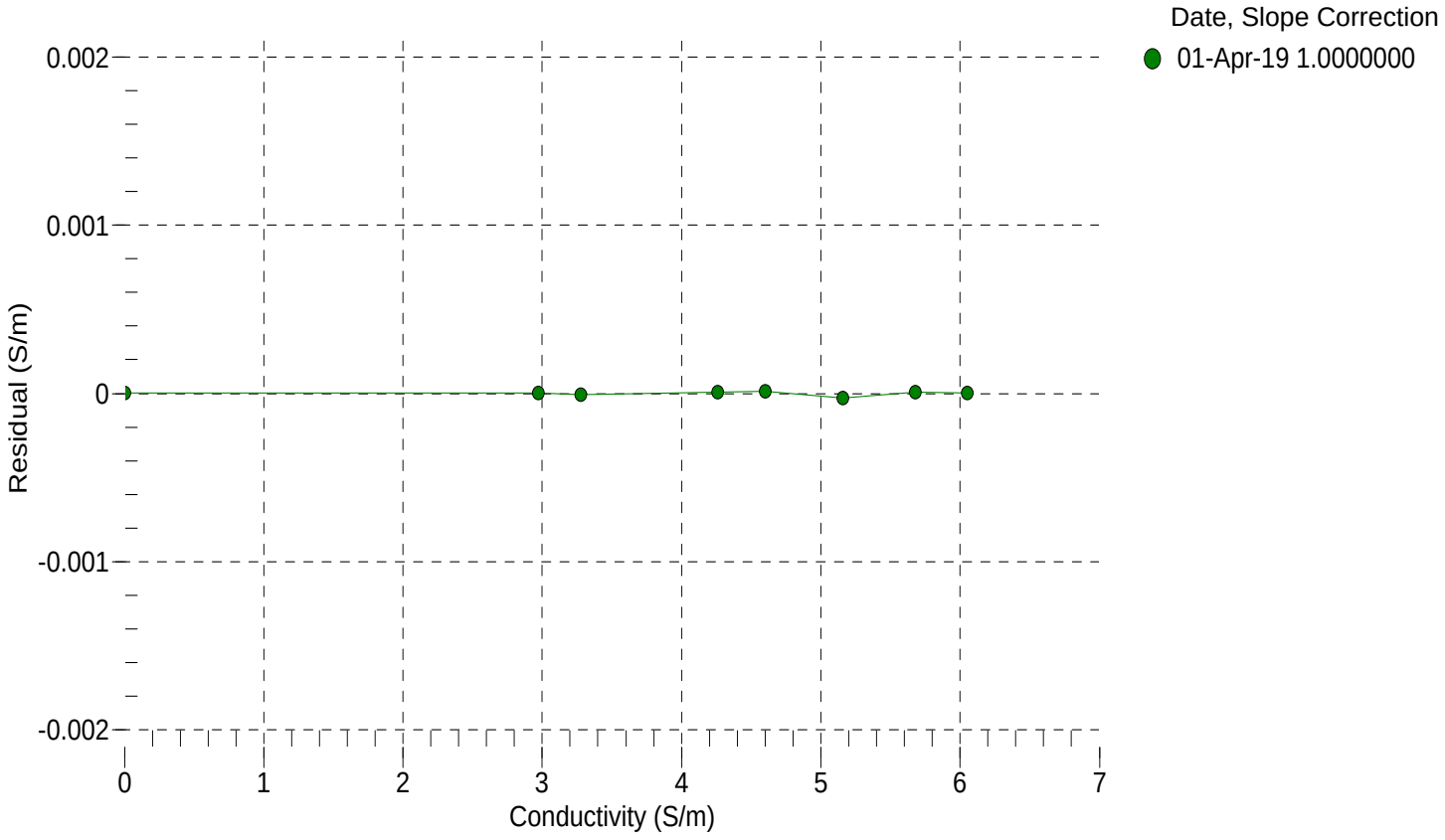
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2571.73	0.00000	0.00000
1.0000	34.7502	2.97085	5119.47	2.97085	0.00000
4.5000	34.7309	3.27746	5312.75	3.27745	-0.00001
15.0000	34.6897	4.25772	5887.53	4.25773	0.00001
18.5000	34.6814	4.60240	6076.44	4.60241	0.00001
23.9940	34.6725	5.15898	6369.34	5.15895	-0.00003
29.0000	34.6684	5.68081	6631.90	5.68082	0.00001
32.5000	34.6662	6.05277	6812.66	6.05277	0.00000

f = Instrument Output(Hz) * sqrt(1.0 + WBOTC * t) / 1000.0

t = temperature (°C); p = pressure (decibars); δ = CTcor; ε = CPcor;

Conductivity (S/m) = $(g + h * f^2 + i * f^3 + j * f^4) / (1 + \delta * t + \varepsilon * p)$

Residual (Siemens/meter) = instrument conductivity - bath conductivity



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SENSOR SERIAL NUMBER: 11572
CALIBRATION DATE: 18-Mar-19

SBE 41 PRESSURE CALIBRATION DATA
2900 psia S/N 10997288

COEFFICIENTS:

PA0 =	9.650893e-001	PTCA0 =	1.376927e+003
PA1 =	3.927441e-004	PTCA1 =	8.308822e+001
PA2 =	-2.833381e-013	PTCA2 =	1.393920e+000
PTHA0 =	3.512253e+002	PTCB0 =	3.132592e+005
PTHA1 =	-6.562070e-005	PTCB1 =	-1.007684e+001
PTHA2 =	-1.360759e-012	PTCB2 =	3.624837e-001

PRESSURE SPAN CALIBRATION

PRESSURE (PSIA)	INSTRUMENT OUTPUT (counts)	THERMISTOR OUTPUT (counts)	COMPUTED PRESSURE (PSIA)	RESIDUAL (%FSR)
14.70	38633.0	4585837.4	14.63	-0.00
591.90	1510236.2	4582031.0	592.02	0.00
1169.45	2985307.1	4580960.0	1169.55	0.00
1746.86	4463149.4	4578742.8	1746.92	0.00
2324.33	5944357.8	4577803.4	2324.36	0.00
2901.80	7428821.0	4576944.2	2901.83	0.00
2324.28	5943987.5	4577056.8	2324.21	-0.00
1746.96	4463074.7	4577129.4	1746.88	-0.00
1169.46	2984877.7	4577045.2	1169.36	-0.00
591.79	1509555.9	4577072.8	591.73	-0.00
14.70	38979.5	4576293.6	14.73	0.00

THERMAL CORRECTION

TEMP (°C)	THERMISTOR OUTPUT (counts)	INSTRUMENT OUTPUT (counts)
32.50	4446990.00	41832.70
29.00	4492024.00	41379.42
23.99	4556248.60	40657.21
18.50	4626415.80	39772.27
15.00	4671378.40	39201.12
4.50	4805046.60	38093.79
1.00	4849411.40	37893.04

TEMPERATURE (°C)	SPAN
0.94	313250.05
20.05	313202.93
32.54	313315.20

y = thermistor output (counts)

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

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

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

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

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