



SEA-BIRD
SCIENTIFIC

Product Documentation

SBE Sea-Bird
Electronics

Sea-Bird Electronics
13431 NE 20th Street
Bellevue, Washington
98005 USA

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

Product Information Documentation

Contains (as applicable) for each device on this order:

- Configuration
- Calibration Certificates
- Pressure Test Certification

Please see applicable manual for statement of liability
and declaration of conformity

Manuals are located on the CD/DVD provided with your order
and also on our website at www.seabird.com

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SBE41-CP ALACE

Instrument Configuration

Instrument Serial Number: 41-9686
Instrument Firmware Version: V 7.2.5
Zero Conductivity Frequency: 2678.52
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	10590232	2000m(2000 dBar)

Sea-Bird Electronics, Inc.

13431 NE 20th Street, Bellevue, WA 98005-2010 USA

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SENSOR SERIAL NUMBER: 9686

CALIBRATION DATE: 16-Apr-17

SBE 41 TEMPERATURE CALIBRATION DATA

ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

a0 = -7.829710e-004

a1 = 2.815017e-004

a2 = -3.129120e-006

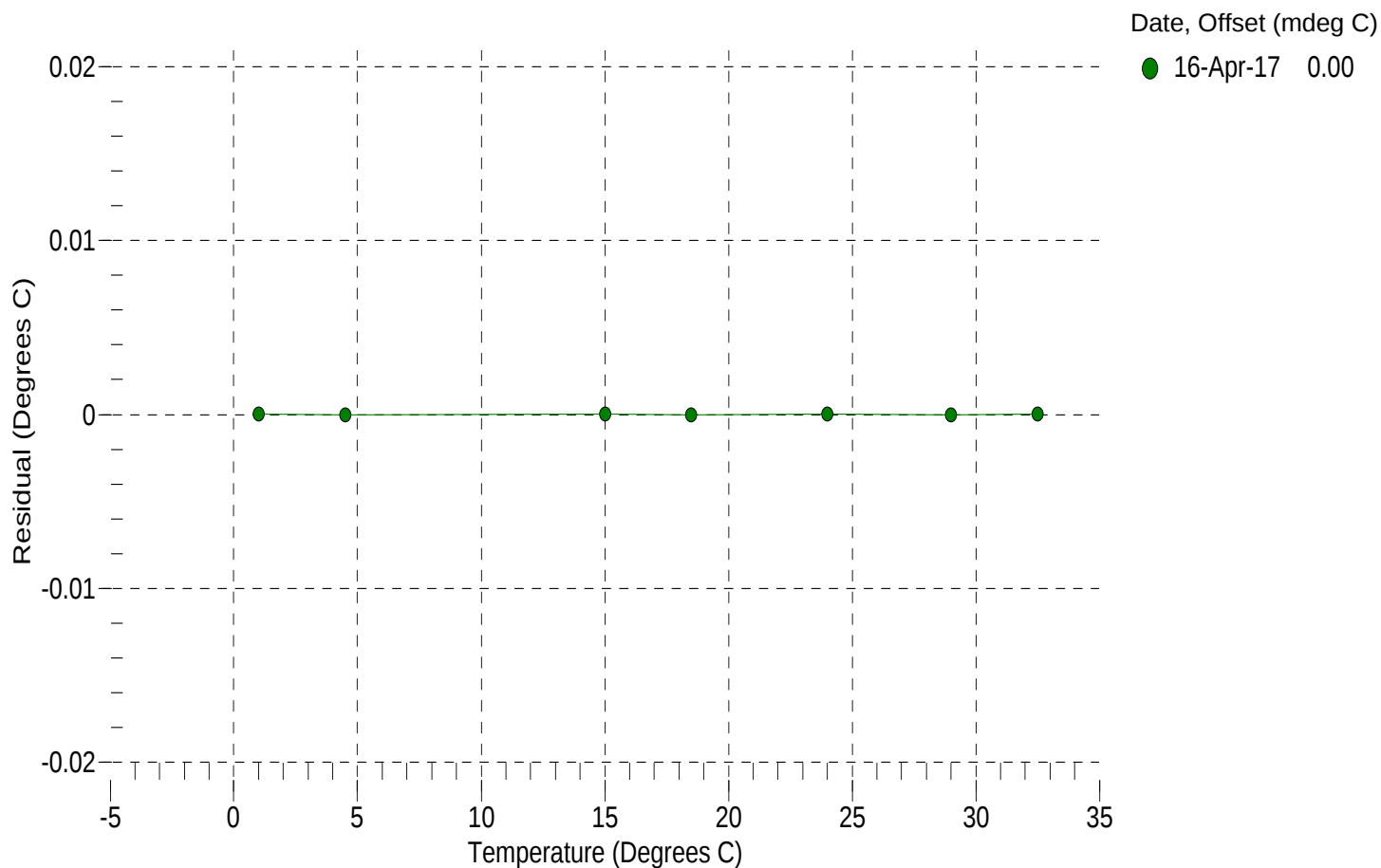
a3 = 1.345287e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	16449528.3	1.0000	0.0000
4.5000	14025088.8	4.5000	-0.0000
15.0000	8866871.8	15.0000	0.0000
18.5000	7658184.0	18.5000	-0.0000
23.9940	6121129.9	23.9940	0.0000
29.0000	5021731.0	29.0000	-0.0000
32.5000	4387291.6	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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SENSOR SERIAL NUMBER: 9686

CALIBRATION DATE: 16-Apr-17

SBE 41 CONDUCTIVITY CALIBRATION DATA

PSS 1978: C(35,15,0) = 4.2914 Siemens/meter

COEFFICIENTS:

g = -9.938839e-001

h = 1.391656e-001

i = -3.565656e-004

j = 4.449399e-005

CPcor = -9.5700e-008

CTcor = 3.2500e-006

WBOTC = 1.8665e-007

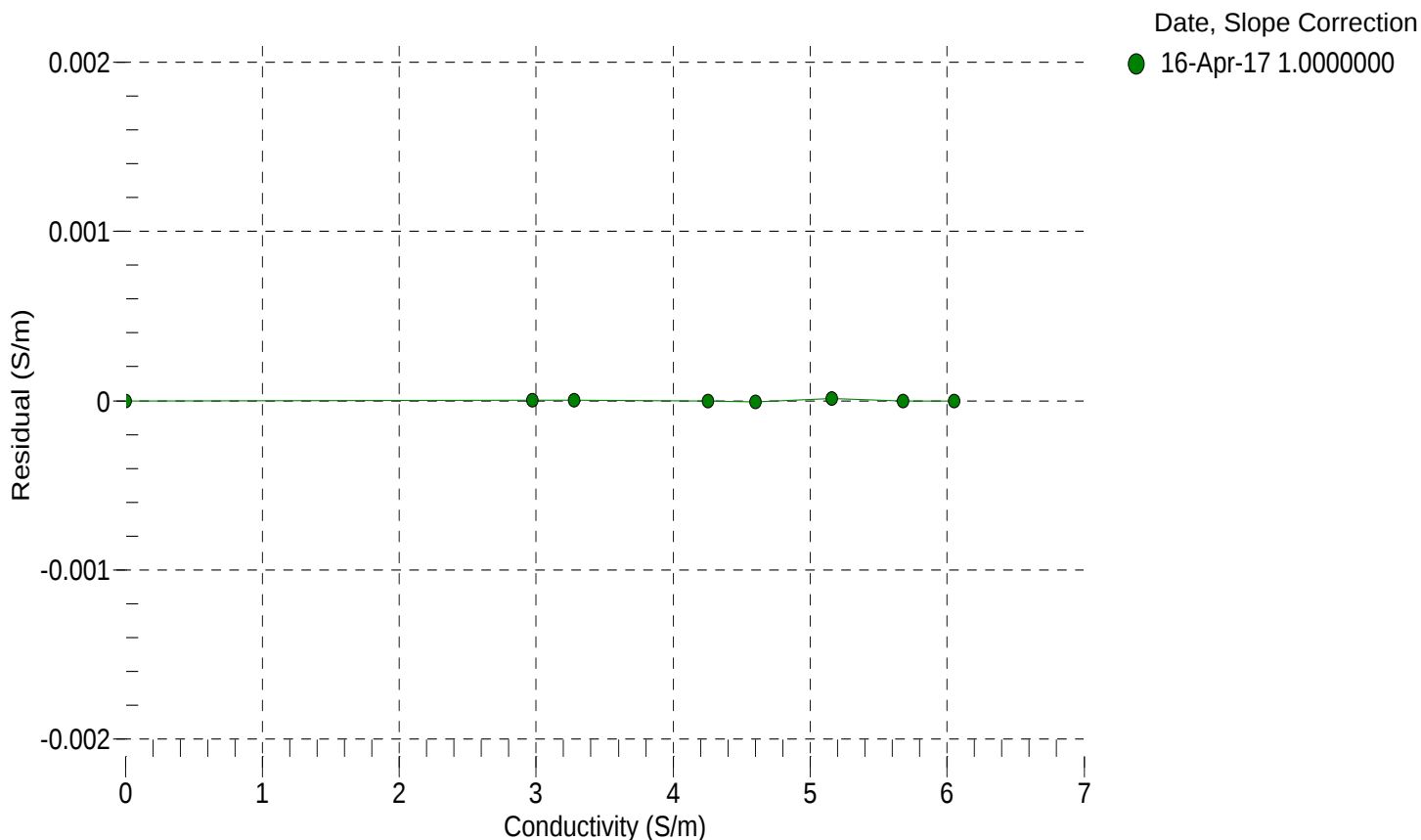
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2678.52	0.00000	0.00000
1.0000	34.7330	2.96952	5348.85	2.96952	0.00000
4.5000	34.7130	3.27594	5551.27	3.27594	0.00000
15.0000	34.6702	4.25558	6153.13	4.25558	-0.00000
18.5000	34.6609	4.59997	6350.88	4.59996	-0.00001
23.9940	34.6509	5.15612	6657.53	5.15613	0.00001
29.0000	34.6456	5.67750	6932.33	5.67750	-0.00000
32.5000	34.6420	6.04902	7121.48	6.04902	-0.00000

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

t = temperature (°C); p = pressure (decibars); $\delta = \text{CTcor}$; $\epsilon = \text{CPcor}$;

Conductivity (S/m) = $(g + h * f^2 + i * f^3 + j * f^4) / 10 (1 + \delta * t + \epsilon * p)$

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



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SENSOR SERIAL NUMBER: 9686

CALIBRATION DATE: 10-Apr-17

SBE 41 PRESSURE CALIBRATION DATA

2900 psia S/N 10590232

COEFFICIENTS:

PA0 = 5.710354e-001

PA1 = 3.929324e-004

PA2 = -2.780861e-013

PTHA0 = 3.403627e+002

PTHA1 = -6.365802e-005

PTHA2 = -1.453093e-012

PTCA0 = -7.695170e+003

PTCA1 = 1.133033e+002

PTCA2 = -2.151497e+000

PTCB0 = 2.517137e+001

PTCB1 = -5.250000e-004

PTCB2 = 0.000000e+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)
14.62	29565.6	4531358.8	14.65	0.00	32.50	4395236.20	31383.60
591.64	1499161.0	4530355.4	591.73	0.00	29.00	4440924.00	31567.75
1168.84	2972029.7	4529415.0	1168.90	0.00	23.99	4506397.80	31602.32
1746.05	4448052.0	4528573.6	1746.10	0.00	18.50	4577685.40	31403.01
2323.28	5927396.3	4527841.4	2323.37	0.00	15.00	4623276.00	31177.78
2900.44	7409204.8	4527128.6	2900.39	-0.00	4.50	4758939.40	30488.25
2323.30	5927186.2	4527390.8	2323.29	-0.00	1.00	4804268.80	30185.18
1746.18	4448097.8	4527606.2	1746.12	-0.00			
1168.86	2971712.9	4527808.6	1168.78	-0.00			
591.65	1498605.3	4527933.4	591.52	-0.00			
14.63	29521.2	4527550.0	14.63	-0.00			
					TEMPERATURE (°C) SPAN (mV)		
					-5.00 25.17		
					35.00 25.15		

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)

● 10-Apr-17 -0.00

