



SEA-BIRD
SCIENTIFIC

SBE41-CP ALACE

Instrument Configuration

Instrument Serial Number: 41-10985
Instrument Firmware Version: V 7.2.5
Zero Conductivity Frequency: 2630.41
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	Kistler	5276539	4000m(7000 dBar)



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 www.seabird.com

SENSOR SERIAL NUMBER: 10985
 CALIBRATION DATE: 04-Jun-18

SBE 41 TEMPERATURE CALIBRATION DATA
 ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

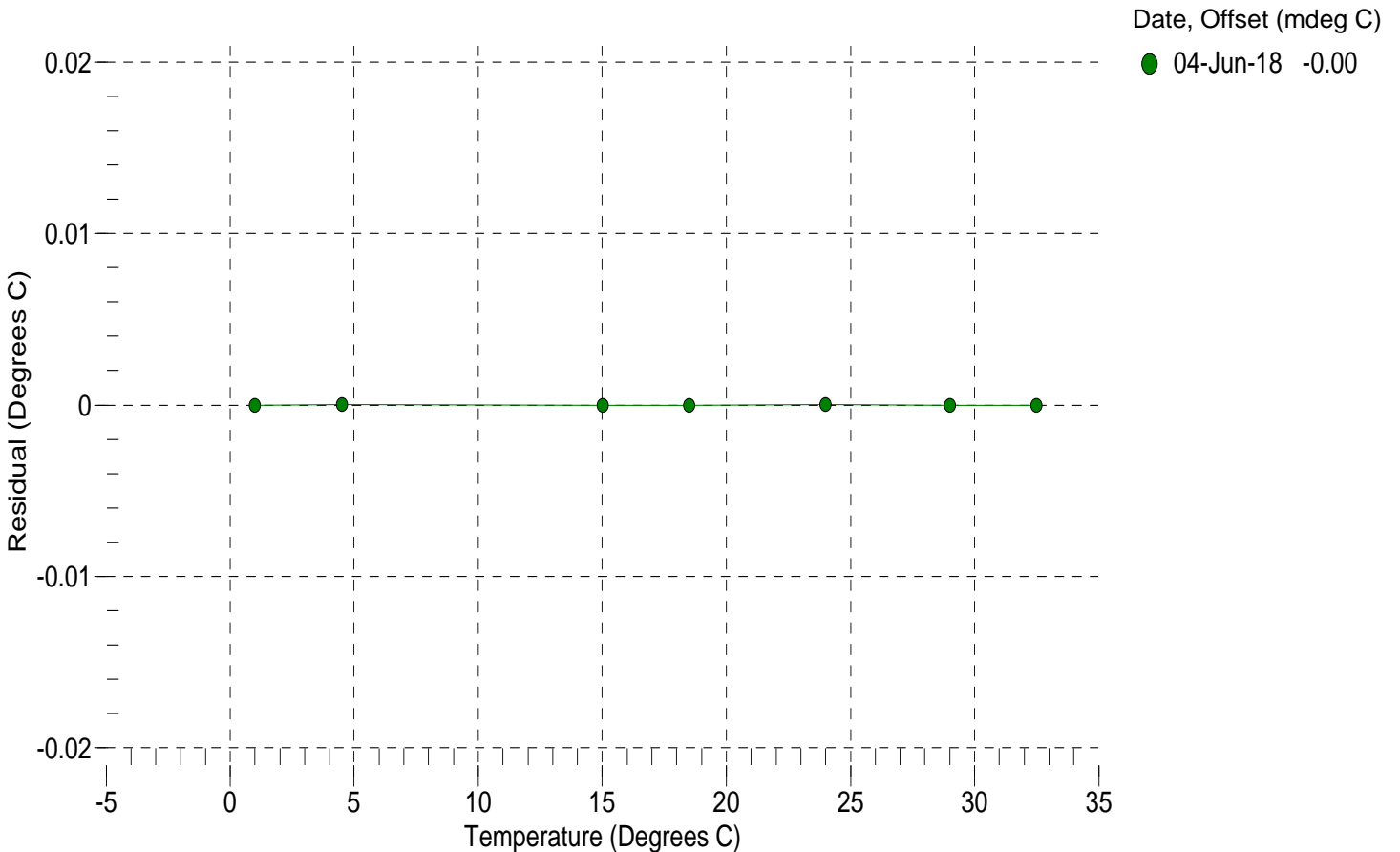
a0 = -9.132048e-004
 a1 = 3.002567e-004
 a2 = -4.137501e-006
 a3 = 1.604058e-007

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	15284020.3	1.0000	-0.0000
4.5000	13074337.7	4.5000	0.0000
15.0000	8343919.7	15.0000	-0.0000
18.5000	7228050.0	18.5000	-0.0000
23.9940	5803656.7	23.9940	0.0000
29.0000	4780387.9	29.0000	-0.0000
32.5000	4187855.3	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 = -9.954821e-001 CPcor = -9.5700e-008
 h = 1.445113e-001 CTcor = 3.2500e-006
 i = -3.722942e-004 WBOTC = 2.2174e-007
 j = 4.952074e-005

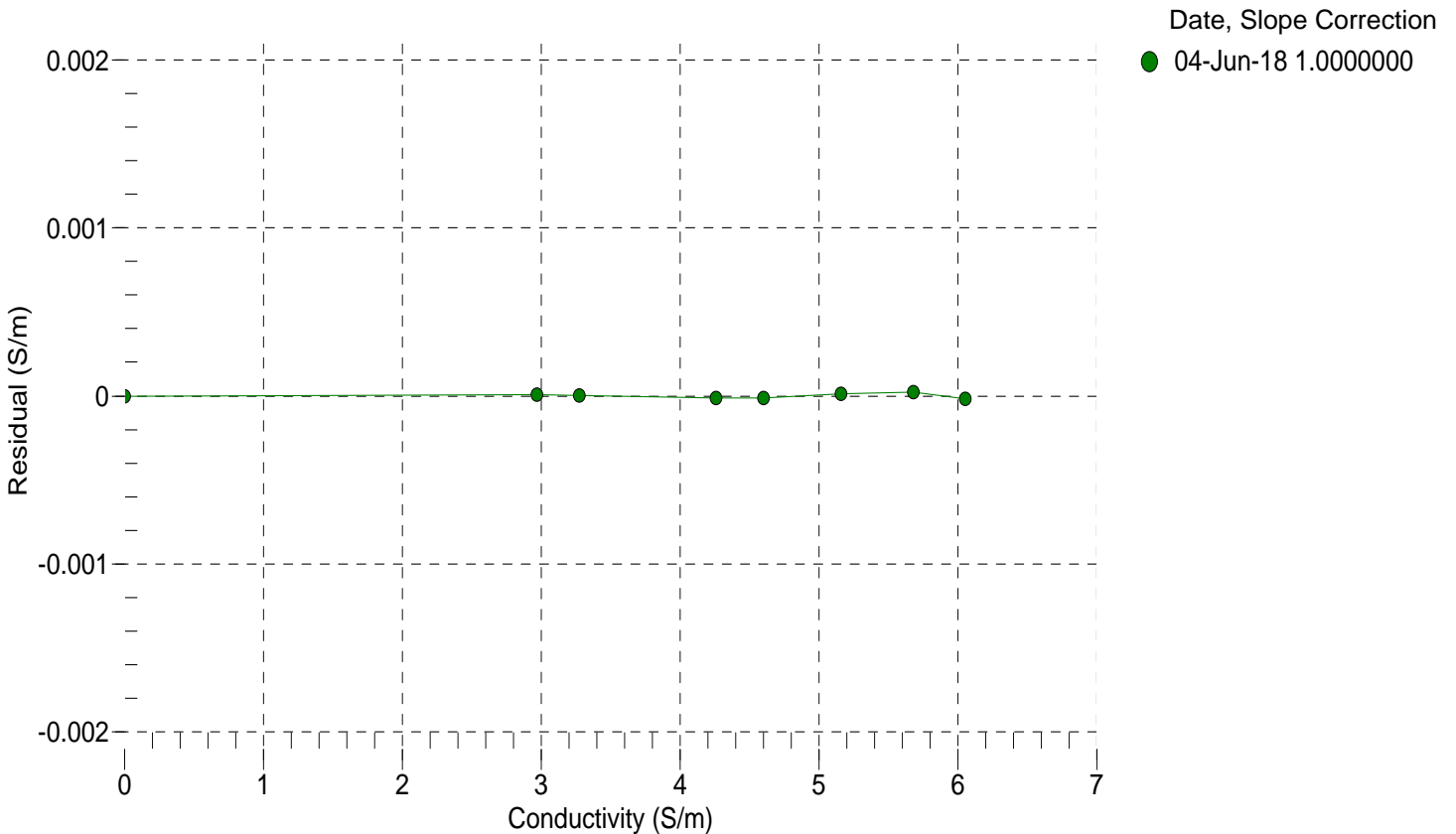
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2630.41	0.00000	0.00000
1.0000	34.7629	2.97184	5250.32	2.97184	0.00001
4.5000	34.7436	3.27854	5448.92	3.27854	0.00000
15.0000	34.7021	4.25908	6039.35	4.25907	-0.00001
18.5000	34.6937	4.60386	6233.38	4.60384	-0.00001
23.9940	34.6847	5.16059	6534.21	5.16061	0.00001
29.0000	34.6801	5.68252	6803.79	5.68254	0.00002
32.5000	34.6768	6.05441	6989.29	6.05439	-0.00002

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

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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 CALIBRATION DATE: 21-Jun-18

SBE 41 PRESSURE CALIBRATION DATA
 10153 psia S/N 5276539

COEFFICIENTS:

PA0 =	-6.279299e+000	PTCA0 =	2.366462e+004
PA1 =	1.333561e-003	PTCA1 =	-2.441571e+002
PA2 =	4.466846e-012	PTCA2 =	1.106601e+000
PTHA0 =	3.048754e+002	PTCB0 =	1.002642e+002
PTHA1 =	-8.414455e-005	PTCB1 =	-7.464556e-004
PTHA2 =	2.255756e-012	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)
14.64	33801.5	3745644.2	13.52	-0.01	32.50	3580559.00	35277.50
2002.26	1514543.7	3743184.4	1998.54	-0.04	29.00	3632407.80	35474.19
3989.42	2983279.1	3741619.6	3986.80	-0.03	23.99	3706487.80	36451.13
5976.56	4438585.4	3740333.2	5975.89	-0.01	18.50	3787850.80	37688.64
7964.14	5879720.8	3738989.8	7964.28	0.00	15.00	3840582.60	38675.71
9951.83	7305634.8	3737799.4	9949.93	-0.02	4.50	3997819.40	40686.51
7963.81	5880976.5	3738051.4	7966.04	0.02	1.00	4051717.60	41588.51
5976.23	4440769.7	3738337.6	5978.94	0.03			
3988.96	2985640.1	3738309.2	3990.08	0.01	TEMPERATURE (°C)	SPAN	
2001.73	1517311.3	3738143.4	2002.36	0.01	-4.87	100.27	
14.65	36930.4	3736779.6	17.85	0.03	35.05	100.24	

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)

● 21-Jun-18 -0.00

