

Sea-Bird Electronics, Inc.

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

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SENSOR SERIAL NUMBER: 1375
CALIBRATION DATE: 29-Apr-16

SBE 63 OXYGEN TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

TA0 = 7.054259e-004 TA2 = 7.453735e-007

TA1 = 2.505325e-004 TA3 = 9.934610e-008

BATH TEMP (° C)	INSTRUMENT OUTPUT(V)	INST TEMP (° C)	RESIDUAL (° C)
1.9999	1.11257	1.9999	-0.00001
2.0000	1.11256	2.0002	0.00020
2.0001	1.11256	2.0002	0.00010
2.0001	1.11257	1.9999	-0.00021
6.0000	0.98877	6.0000	-0.00000
6.0000	0.98877	6.0000	-0.00000
6.0001	0.98877	6.0000	-0.00010
6.0001	0.98877	6.0000	-0.00010
11.9999	0.82360	11.9998	-0.00011
12.0000	0.82359	12.0002	0.00018
12.0000	0.82359	12.0002	0.00018
12.0001	0.82359	12.0002	0.00008
19.9999	0.64085	19.9999	-0.00002
20.0000	0.64085	19.9999	-0.00012
20.0000	0.64085	19.9999	-0.00012
20.0000	0.64085	19.9999	-0.00012
26.0000	0.52950	25.9998	-0.00019
26.0000	0.52950	25.9998	-0.00019
26.0000	0.52949	26.0004	0.00040
26.0001	0.52949	26.0004	0.00030
30.0000	0.46608	29.9998	-0.00020
30.0000	0.46608	29.9998	-0.00020
30.0000	0.46608	29.9998	-0.00020
30.0000	0.46607	30.0005	0.00047

V = Instrument Output (Volts)

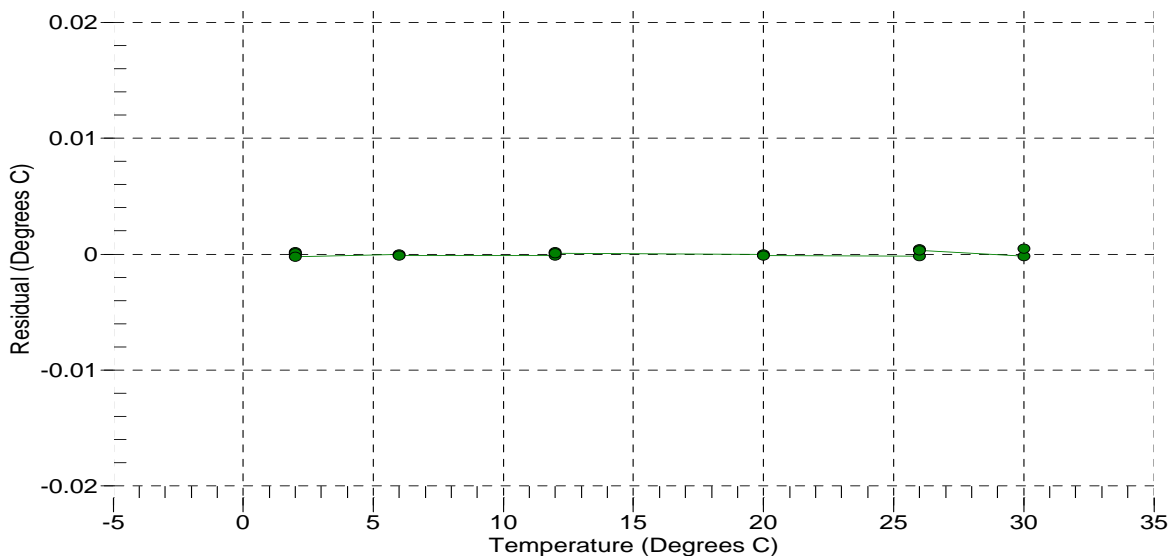
$L = \ln(100000 * V / (3.3 - V))$

Temperature ITS-90 (°C) = $1 / (TA0 + (TA1 * L) + (TA2 * L^2) + (TA3 * L^3)) - 273.15$

Residual (°C) = instrument temperature - bath temperature

Date, Offset (mdeg C)

● 29-Apr-16 -0.00



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SBE 63 OXYGEN CALIBRATION DATA

COEFFICIENTS:

A0 = 1.0513e+000 B0 = -2.1868e-001 C0 = 1.0015e-001 E = 1.1000e-002
 A1 = -1.5000e-003 B1 = 1.6216e+000 C1 = 4.2093e-003
 A2 = 4.0844e-001 C2 = 5.5210e-005

BATH OXYGEN (ml/l)	BATH TEMPERATURE (° C)	BATH SALINITY (PSU)	INSTRUMENT OUTPUT (µsec)	INSTRUMENT OXYGEN (ml/l)	RESIDUAL (ml/l)
0.733	30.00	0.00	30.67	0.735	0.001
0.765	26.00	0.00	31.28	0.767	0.002
0.812	20.00	0.00	32.32	0.811	-0.001
0.891	12.00	0.00	33.71	0.890	-0.001
1.000	6.00	0.00	34.59	1.001	0.001
1.093	2.00	0.00	35.16	1.097	0.004
2.219	30.00	0.00	22.49	2.224	0.006
2.344	26.00	0.00	23.04	2.353	0.009
2.497	20.00	0.00	24.18	2.497	0.000
3.009	12.00	0.00	25.06	3.007	-0.002
3.424	6.00	0.00	26.00	3.417	-0.007
3.681	30.00	0.00	18.55	3.682	0.001
3.776	2.00	0.00	26.62	3.769	-0.007
3.908	26.00	0.00	19.01	3.918	0.010
4.342	20.00	0.00	19.74	4.340	-0.002
5.090	12.00	0.00	20.75	5.089	-0.002
5.217	30.00	0.00	16.04	5.204	-0.013
5.609	26.00	0.00	16.36	5.614	0.004
5.842	6.00	0.00	21.56	5.841	-0.001
6.229	20.00	0.00	17.00	6.226	-0.003
6.455	2.00	0.00	22.15	6.453	-0.002
7.356	12.00	0.00	17.87	7.354	-0.003
8.418	6.00	0.00	18.62	8.426	0.008
8.829	2.00	0.00	19.58	8.831	0.002

T = temperature (°C), P = pressure (dbar), U = Instrument output (µsec)

S_{corr} (salinity correction function) = 1.0 for calibration in DI water

See the user manual for more information on S_{corr} calculation

$$V = U / 39.457071$$

$$\text{Oxygen (ml/l)} = \{((A0 + A1 * T + A2 * V^2) / (B0 + B1 * V) - 1.0) / (C0 + C1 * T + C2 * T^2)\} * S_{\text{corr}} * \exp(E * P / T + 273.15)$$

Residual (ml/l) = instrument oxygen - bath oxygen

Date, Slope Correction

● 29-Apr-16 1.0000

