

# Sea-Bird Electronics, Inc.

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

Phone: (+1) 425-643-9866 Fax (+1) 425-643-9954 Email: seabird@seabird.com

SENSOR SERIAL NUMBER: 9055

CALIBRATION DATE: 15-Mar-13

SLOCUM PAYLOAD CTD

TEMPERATURE CALIBRATION DATA

ITS-90 TEMPERATURE SCALE

## ITS-90 COEFFICIENTS

a0 = -1.219613e-004

a1 = 3.099859e-004

a2 = -4.706135e-006

a3 = 2.081271e-007

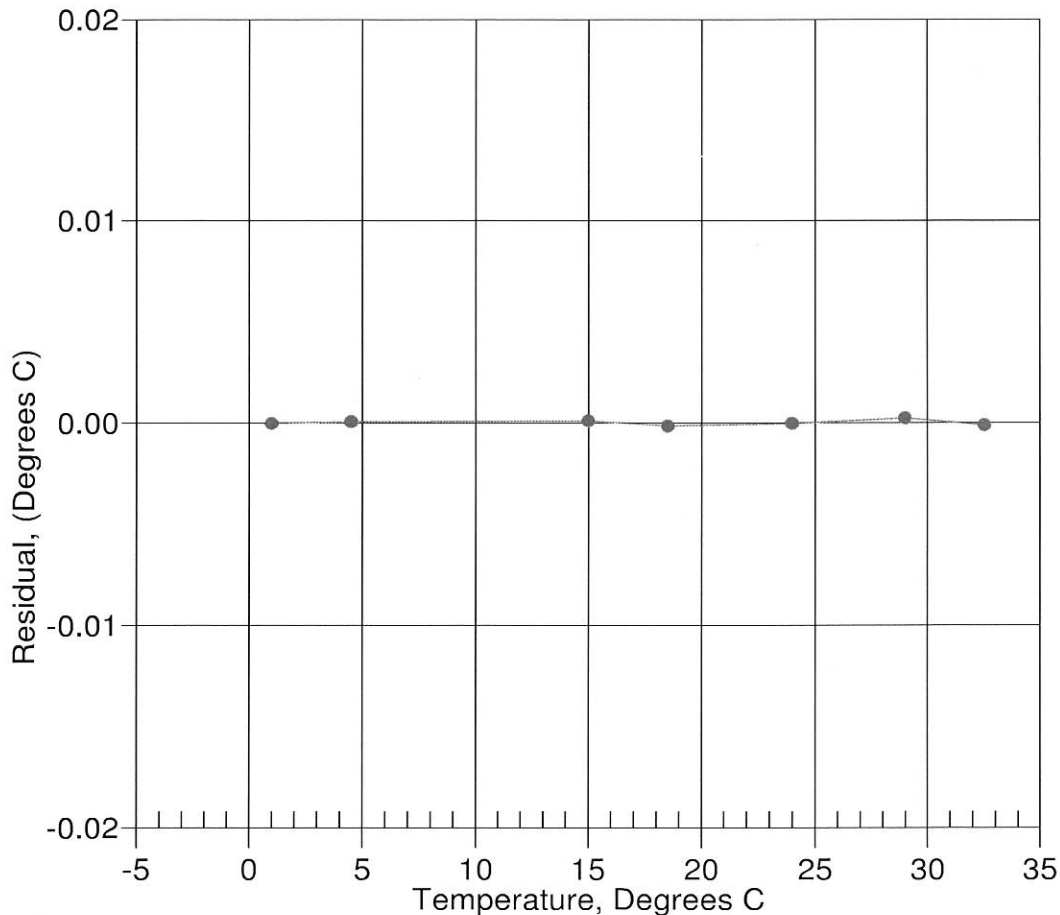
BATH TEMP (ITS-90)	INSTRUMENT OUTPUT	INST TEMP (ITS-90)	RESIDUAL (ITS-90)
1.0000	576534.0	1.0000	-0.0000
4.4999	493178.6	4.4999	0.0000
15.0000	314814.6	15.0001	0.0001
18.5000	272762.6	18.4998	-0.0002
24.0000	219037.6	24.0000	-0.0000
29.0000	180536.0	29.0002	0.0002
32.5000	158217.0	32.4999	-0.0001

Temperature ITS-90 =  $1/\{a_0 + a_1[\ln(n)] + a_2[\ln^2(n)] + a_3[\ln^3(n)]\} - 273.15$  (°C)

Residual = instrument temperature - bath temperature

Date, Delta T (mdeg C)

● 15-Mar-13 -0.00



# Sea-Bird Electronics, Inc.

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

Phone: (+1) 425-643-9866 Fax (+1) 425-643-9954 Email: seabird@seabird.com

SENSOR SERIAL NUMBER: 9055  
CALIBRATION DATE: 05-Mar-13

SLOCUM PAYLOAD CTD  
PRESSURE CALIBRATION DATA  
1450 psia S/N 3806523

**COEFFICIENTS:**

PA0 = 1.122615e-001  
PA1 = 4.511566e-003  
PA2 = -1.671561e-011  
PTEMPA0 = -7.135888e+001  
PTEMPA1 = 5.170097e-002  
PTEMPA2 = -4.328674e-007

PTCA0 = 5.245856e+005  
PTCA1 = 2.704860e+000  
PTCA2 = -7.237388e-002  
PTCB0 = 2.525625e+001  
PTCB1 = -3.500000e-004  
PTCB2 = 0.000000e+000

**PRESSURE SPAN CALIBRATION**

PRESSURE PSIA	INST OUTPUT	THERMISTOR OUTPUT	COMPUTED PRESSURE	ERROR %FSR
14.50	527796.0	1839.0	14.49	-0.00
314.78	594349.0	1842.0	314.76	-0.00
614.84	660879.0	1843.0	614.78	-0.00
914.89	727451.0	1843.0	914.84	-0.00
1214.93	794061.0	1843.0	1214.92	-0.00
1464.96	849583.0	1842.0	1464.94	-0.00
1214.91	794067.0	1843.0	1214.95	0.00
914.89	727476.0	1843.0	914.95	0.00
614.87	660902.0	1842.0	614.88	0.00
314.80	594363.0	1842.0	314.82	0.00
14.50	527804.0	1842.0	14.53	0.00

**THERMAL CORRECTION**

TEMP ITS90	THERMISTOR OUTPUT	INST OUTPUT
32.50	2044	527871.20
29.00	1974	527880.20
24.00	1874	527885.00
18.50	1764	527886.00
15.00	1694	527884.40
4.50	1486	527872.00
1.00	1416	527863.80
TEMP (ITS90)		SPAN (mV)
-5.00		25.26
35.00		25.24

$$y = \text{thermistor output}; t = PTEMPA0 + PTEMPA1 * y + PTEMPA2 * y^2$$

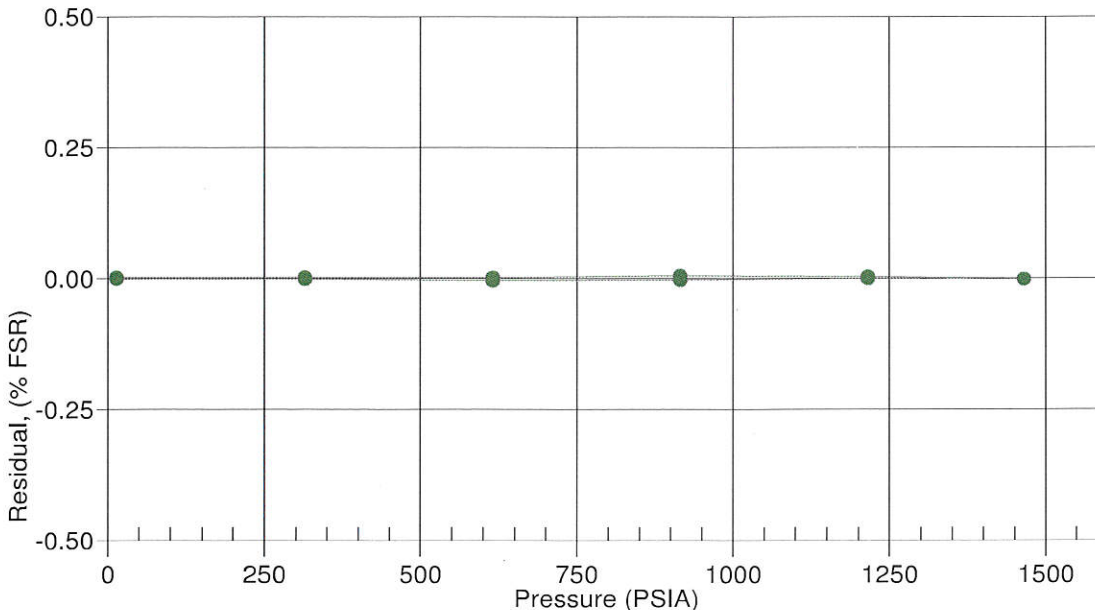
$$x = \text{pressure output} - PTCA0 - PTCA1 * t - PTCA2 * t^2$$

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

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

Date, Avg Delta P %FS

05-Mar-13 -0.00



# Sea-Bird Electronics, Inc.

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

Phone: (+1) 425-643-9866 Fax (+1) 425-643-9954 Email: seabird@seabird.com

SENSOR SERIAL NUMBER: 9055  
CALIBRATION DATE: 05-Mar-13

SLOCUM PAYLOAD CTD  
PRESSURE CALIBRATION DATA  
1450 psia S/N 3806523

**COEFFICIENTS:**

PA0 = 1.122615e-001  
PA1 = 4.511566e-003  
PA2 = -1.671561e-011  
PTEMPA0 = -7.135888e+001  
PTEMPA1 = 5.170097e-002  
PTEMPA2 = -4.328674e-007

PTCA0 = 5.245856e+005  
PTCA1 = 2.704860e+000  
PTCA2 = -7.237388e-002  
PTCB0 = 2.525625e+001  
PTCB1 = -3.500000e-004  
PTCB2 = 0.000000e+000

**PRESSURE SPAN CALIBRATION**

PRESSURE PSIA	INST OUTPUT	THERMISTOR OUTPUT	COMPUTED PRESSURE	ERROR %FSR
14.50	527796.0	1839.0	14.49	-0.00
314.78	594349.0	1842.0	314.76	-0.00
614.84	660879.0	1843.0	614.78	-0.00
914.89	727451.0	1843.0	914.84	-0.00
1214.93	794061.0	1843.0	1214.92	-0.00
1464.96	849583.0	1842.0	1464.94	-0.00
1214.91	794067.0	1843.0	1214.95	0.00
914.89	727476.0	1843.0	914.95	0.00
614.87	660902.0	1842.0	614.88	0.00
314.80	594363.0	1842.0	314.82	0.00
14.50	527804.0	1842.0	14.53	0.00

**THERMAL CORRECTION**

TEMP ITS90	THERMISTOR OUTPUT	INST OUTPUT
32.50	2044	527871.20
29.00	1974	527880.20
24.00	1874	527885.00
18.50	1764	527886.00
15.00	1694	527884.40
4.50	1486	527872.00
1.00	1416	527863.80

TEMP (ITS90)	SPAN (mV)
-5.00	25.26
35.00	25.24

$$y = \text{thermistor output}; t = PTEMPA0 + PTEMPA1 * y + PTEMPA2 * y^2$$

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

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

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

Date, Avg Delta P %FS

● 05-Mar-13 -0.00

