

SBE 41CP CERTIFICATES

CTD Serial Number 41CP-7274

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SBE 41CP Instrument Configuration

Model Number: SBE 41CP

Serial Number: 41CP-7274

Part Number: 41CP.FA202

Description : METOCEAN 41CP with SBE63 Configuration

Firmware Version: 3.0C

Pressure Type: Kistler

Pressure Range: 2000 dBar

Pressure Serial Number: 4669461

Oxygen Sensor Type: SBE 63

Oxygen Serial Number: 1064

SBE 41 ALACE-CP V 3.0C SERIAL NO. 7274
TEMPERATURE: 24-MAY-15
TA0 = 7.609240E-05
TA1 = 2.686682E-04
TA2 = -2.018777E-06
TA3 = 1.405053E-07
CONDUCTIVITY: 24-MAY-15
G = -9.792900E-01
H = 1.330733E-01
I = -3.218256E-04
J = 4.060208E-05
CPCOR = -9.570001E-08
CTCOR = 3.250000E-06
WBOTC = 9.194659E-08
PRESSURE S/N = 4669461, RANGE = 2900 PSIA: 19-MAY-15
PA0 = -1.027760E+00
PA1 = 1.403958E-01
PA2 = 1.063507E-08
PTCA0 = -7.587728E+01
PTCA1 = -8.490917E-01
PTCA2 = 2.340526E-02
PTCB0 = 1.030905E+02
PTCB1 = -4.218422E-03
PTCB2 = 0.000000E+00
PTHA0 = -9.726339E+01
PTHA1 = 4.070950E-02
PTHA2 = 1.068062E-06
POFFSET = 0.000000E+00

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SENSOR SERIAL NUMBER: 7274
CALIBRATION DATE: 24-May-15

SBE 41 TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

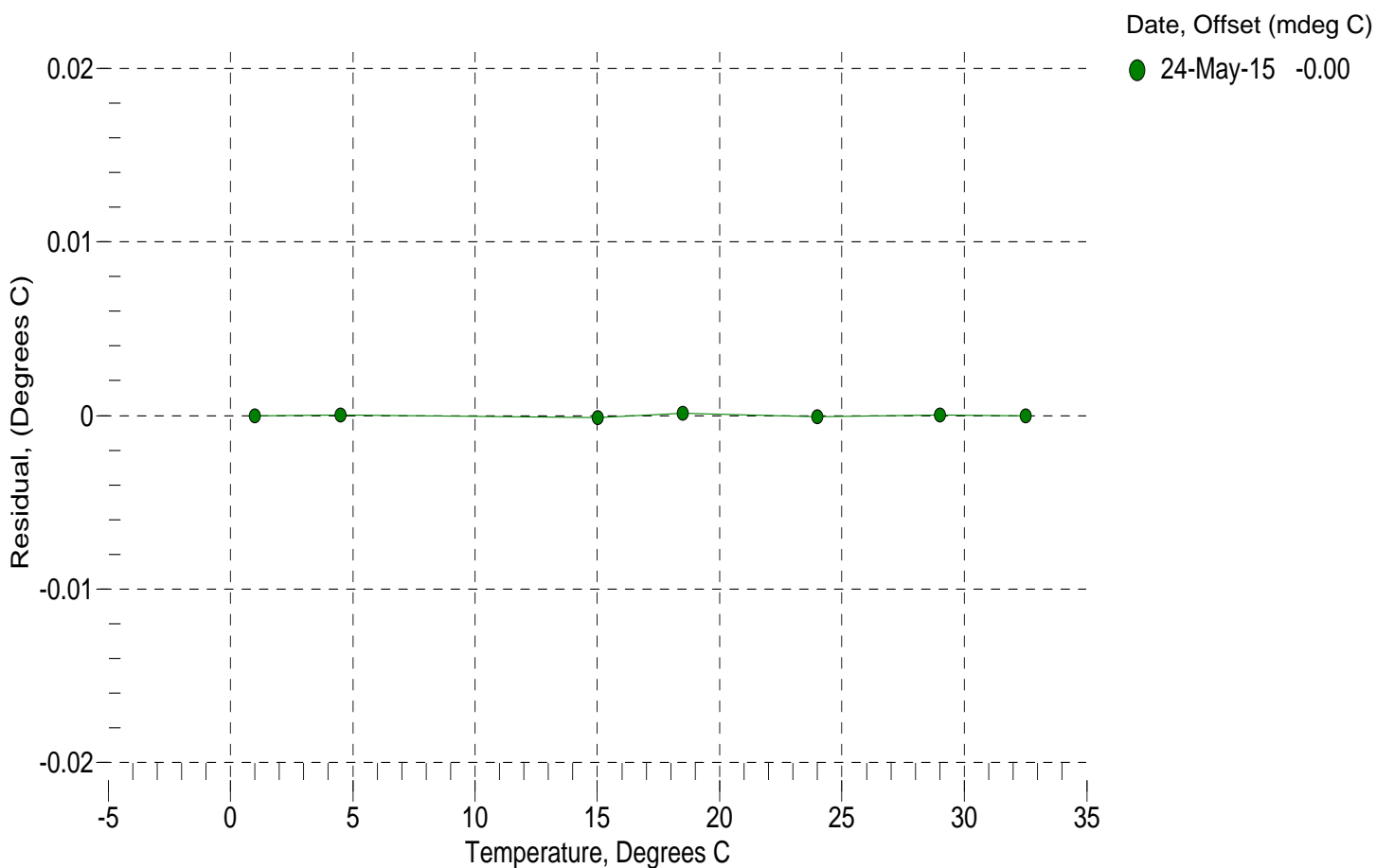
a0 = 7.609240e-005
a1 = 2.686682e-004
a2 = -2.018777e-006
a3 = 1.405053e-007

BATH TEMP (ITS-90)	INSTRUMENT OUTPUT	INST TEMP (ITS-90)	RESIDUAL (ITS-90)
1.0000	650550.2	1.0000	-0.0000
4.5000	555033.0	4.5000	0.0000
15.0000	351567.2	14.9999	-0.0001
18.5000	303822.8	18.5001	0.0001
23.9940	243068.0	23.9939	-0.0001
29.0000	199571.6	29.0000	0.0000
32.5000	174454.8	32.5000	-0.0000

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

n = instrument output



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SENSOR SERIAL NUMBER: 7274
CALIBRATION DATE: 24-May-15

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

COEFFICIENTS:

g = -9.792900e-001
h = 1.330733e-001
i = -3.218256e-004
j = 4.060208e-005

CPcor = -9.5700e-008
CTcor = 3.2500e-006
WBOTC = 9.1947e-008

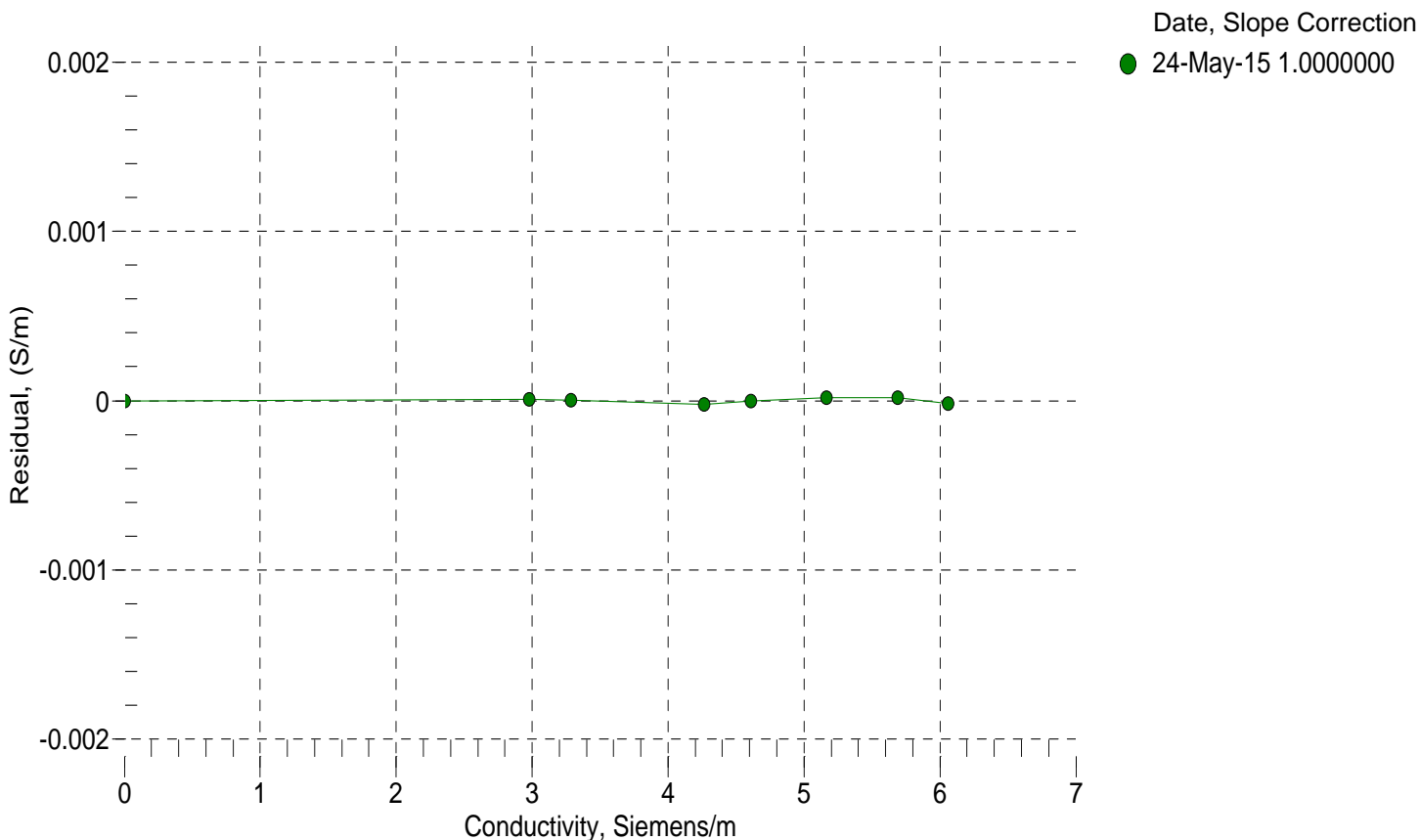
BATH TEMP (ITS-90)	BATH SAL (PSU)	BATH COND (Siemens/m)	INST FREQ (Hz)	INST COND (Siemens/m)	RESIDUAL (Siemens/m)
22.0000	0.0000	0.00000	2718.63	0.00000	0.00000
1.0000	34.8188	2.97616	5463.19	2.97617	0.00001
4.5000	34.7996	3.28330	5670.78	3.28331	0.00000
15.0000	34.7575	4.26516	6287.75	4.26514	-0.00002
18.5000	34.7479	4.61027	6490.41	4.61027	-0.00000
23.9940	34.7376	5.16759	6804.60	5.16761	0.00002
29.0000	34.7317	5.69002	7086.10	5.69004	0.00002
32.5000	34.7274	6.06224	7279.78	6.06222	-0.00002

$$f = \text{INST FREQ} * \text{sqrt}(1.0 + \text{WBOTC} * t) / 1000.0$$

$$\text{Conductivity} = (g + h * f^2 + i * f^3 + j * f^4) / (1 + \delta * t + \epsilon * p) \text{ Siemens / meter}$$

t = temperatur e[°C]; p = pressure[decibars]; δ = CTcor; ϵ = CPcor;

Residual = instrument conductivity - bath conductivity



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SENSOR SERIAL NUMBER: 7274
CALIBRATION DATE: 19-May-15

SBE 41 PRESSURE CALIBRATION DATA
2900 psia S/N 4669461

COEFFICIENTS:

PA0 = -1.027760e+000	PTCA0 = -7.587728e+001
PA1 = 1.403958e-001	PTCA1 = -8.490917e-001
PA2 = 1.063507e-008	PTCA2 = 2.340526e-002
PTHA0 = -9.726339e+001	PTCB0 = 1.030905e+002
PTHA1 = 4.070950e-002	PTCB1 = -4.218422e-003
PTHA2 = 1.068062e-006	PTCB2 = 0.000000e+000

PRESSURE SPAN CALIBRATION					THERMAL CORRECTION		
PRESSURE PSIA	INST OUTPUT	THERMISTOR OUTPUT	COMPUTED PRESSURE	ERROR %FS	TEMP ITS90	PRESS TEMP	INST OUTPUT
14.65	28.8	2738.1	14.71	0.00	32.50	2958.10	36.91
592.51	4139.2	2745.8	592.51	-0.00	29.00	2883.40	34.79
1169.87	8244.7	2747.1	1169.98	0.00	23.99	2776.10	32.93
1747.31	12347.7	2748.5	1747.47	0.01	18.50	2658.30	32.05
2324.76	16447.4	2749.8	2324.86	0.00	15.00	2582.90	32.27
2902.20	20543.5	2750.7	2902.09	-0.00	4.50	2354.20	36.48
2324.73	16446.7	2750.5	2324.76	0.00	1.00	2277.70	38.91
1747.26	12345.7	2750.9	1747.19	-0.00			
1169.92	8243.1	2751.2	1169.76	-0.01	TEMP(ITS90)	SPAN(mV)	
592.28	4136.1	2751.2	592.07	-0.01	-4.38	103.11	
14.65	29.0	2751.8	14.72	0.00	37.48	102.93	

$y = \text{thermistor output}; t = \text{PTHA0} + \text{PTHA1} * y + \text{PTHA2} * y^2$
 $x = \text{pressure output} - \text{PTCA0} - \text{PTCA1} * t - \text{PTCA2} * t^2$
 $n = x * \text{PTCB0} / (\text{PTCB0} + \text{PTCB1} * t + \text{PTCB2} * t^2)$
 $\text{pressure (psia)} = \text{PA0} + \text{PA1} * n + \text{PA2} * n^2$

