CALIBRATION CERTIFICATE

AANDERAA DATA INSTRUMENTS

Electronic board: **3623**
Electronic board serial: **1091**
Reference reading: **158**

Product: **RCM 9 MkII**
Serial No: **859**
Calibration Date: **February 17, 2011**

For details; see the individual Calibration Sheets.

The calibration coefficients listed below are valid for sensors with the following serial numbers:

Sensor	Type	Serial No.	Range	
Doppler Current Sensor	3920	426		
Temperature Sensor	3621	1125		
			Arctic:	-3.06 to 5.90
			High:	9.75 to 36.67
			Low:	-2.76 to 21.76
			Wide:	-0.67 to 32.86
Conductivity Sensor	3619	743	0 - 74 mS/cm	
Pressure Sensor	3815B	583	0 - 3500 kPa	
Turbidity Sensor				
Oxygen Sensor				

Calibration Coefficients:

Ch. No.	Parameter	A	B	C	D	Unit
1	Reference	0.000E+00	1.00E+00	0.000E+00	0.000E+00	-
2	Current Speed	0.000E+00	2.93E-01	0.000E+00	0.000E+00	cm/s
3	Current Direction	0.000E+00	3.52E-01	0.000E+00	0.000E+00	Deg. M
4	Temperature Range					
	Arctic	-3.059E+00	8.990E-03	-3.476E-07	1.134E-10	Deg. C
	High	9.751E+00	2.397E-02	-5.941E-07	2.820E-09	Deg. C
	Low	-2.759E+00	2.411E-02	-2.238E-06	2.056E-09	Deg. C
	Wide	-6.707E-01	3.419E-02	-6.292E-06	4.800E-09	Deg. C
	Other					
5	Conductivity	6.444E-01	7.160E-02	0.000E+00	0.000E+00	mS/cm
6	Pressure	-5.832E+01	3.488E+00	6.4384E-05	0.000E+00	kPa
7	Turbidity					NTU
8	Oxygen					uM

Date:
February 17, 2011

Sign: Shawn A. Sneddon

Service and Calibration Engineer

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an ITT Analytics Company

1. Visual and Mechanical Checks:

1.1 Sensors fixed in correct position
1.2 Wire harness, screws and sensor plugs
1.3 Epoxy coating intact
1.4 Zinc anode installed
1.5 Clean and inspect O-ring groove

2. Performance Tests of complete instrument:

2.1 Current consumption at continuous operation, maximum 120 mA
2.2 Current consumption between measurements at 120 min. interval, maximum 1.0 mA average
2.3 Check operation with Test Unit 3751,-5C to +35C, (all channels tested, 16 hour run, data stored in DSU 2990)
2.4 Check remote start, PDC-4 output and external powering
2.5 Electrical isolation between system ground and Top end-plate
2.6 Compass verification every 15° (max error ±5°)

3. Final Check prior to Shipment:

3.1 Doppler Current Sensor is tested with Test Unit 3731
3.2 Temperature readings correspond to room temperature
3.3 Conductivity Sensor reads correct with seawater loop
3.4 Check that the pressure sensor is oil filled
3.5 Pressure Sensor gives correct reading at air pressure
3.6 Turbidity reading increases when a reflector is placed 20cm in front of it
3.7 The oxygen sensor reads maximum in air
3.8 Erased DSU installed
3.9 Set temperature range switch to default setting and conductivity range to 0-74 mS/cm
3.10 Set to customer settings
3.11 Inspect O-ring groove and clean
3.12 Replace Top-End Plate and Receptacle O-ring

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CALIBRATION CERTIFICATE

		Product:	Conductivity Sensor 3619
Layout No:		**Serial No:**	743
Program Version:		**Calibration Date:**	February 9, 2011

Calibration

The calibration of each sensor is carried out at the factory and the calibration is valid for all following data handling. The form below is filled in only where necessary, depending upon which type of sensor it concerns.

Range		Loop-Reading			Reading in seawater		
0 -74 mS/cm		N(open)=	**0**		Reference conductivity:	**35.30**	mS/cm
		N(2000)=	**10**		Instrument reading:	**484**	Raw data
		N(50)=	**788**				
		N(o)=	-9				
A=	6.444E-01	**COND**	0.64	35.30	Cell form factor K=		2.857
B=	7.160E-02	**N**	0	484	Not in use.		

Date:
February 9, 2011

Sign: Shawn Sneddon

Service and Calibration Engineer

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AANDERAA DATA INSTRUMENTS

Layout No:
Range: 0 - 3500 kPa

Product: Pressure Sensor 3815B
Serial No: 583
Calibration Date: February 15, 2011

Calibration

The calibration of each sensor is carried out at the factory and the calibration is valid for all following data handling. The form below is filled in only where necessary, depending upon which type of sensor it concerns.

Pressure		Coefficients (kPa)	
Bar	Reading N		
Air	46	A	-5.832E+01
7	245	B	3.488E+00
16	500	C	6.438E-05
24	724	D	0.000E+00
33	974		

Date:
February 15, 2011

Sign: Shawn Sneddon

Service and Calibration Engineer

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