

SERVICE REPORT

No: 190220-01

Instrument: *SD204*

Ser. No *1261 (1000m)* **Date received:** *29.01.2020*

Customer : *AQUAGESTION*
Ruta 5 Sur, km 1008
Puerto Varas
Chile

Ref: *Email January 2020 Laurent Laborde*

Reported : *"Service /Calibration + Verification of RINKO III"*

Remarks : *Short circuit Temperature sensor – to be replaced.*
Cover cap missing – to be replaced.
New PC-cable and Transport case.

Service :

- *Overhaul OSU106, SN0293 + new batteries*
- *New PC-cable and Transport case.*
- *Installed new batteries and o-rings*
- *Checked all functions (OK)*
- *Calibration RINKO III, SN0228 (Verification dated 19.02.2020)*
- *Calibration (Calibration certificate No: 4741)*

Returned : *19.02.2020*

sign.

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Date: 19.02.2020

VERIFICATION – RINKO III, SN0228

RINKO III, Model ARO-CAV-SA, Optical sensor, SN0228 is tested and we hereby confirm that SN0228 perform within the given specification, ref Calibration certificate dated October 6, 2015 and October 30, 2015.

RINKO III , Optical Oxygen sensor calibration (SD200W Software)

Reading before calibration	Reading after calibration	New coefficients
98,46	101,01	+8,3458099141E-02

SAIV A/S



Steinar Iversen
Technical Director

MINI STD/CTD Calibration Certificate

Certificate no: 4741

Instrument model: SD204

Serial number: 1261

Owner: AQUAGESTION

Calibrated date: 2020-02-18 Certificate issued date: 2020-02-18 Env. temp (degr. C): 19

Calibrated by: Sensordata a.s and SAIV A/S Bergen Norway

Calibration procedure:

Conductivity and temperature are calibrated by setting the MINI STD/CTD instrument in raw data mode and keeping it in three 200 l stirred, temperature stabilised calibration baths. Raw conductivity and temperature data are recorded with bath temperature and bath conductivity as measured by reference temperature* and conductivity** instruments. Calibration coefficients A1, B1, C1 for temperature and A3, B3, C3, D3 for conductivity are calculated from least square equations included in the MINISOFT software packet. Output temperature and conductivity from calibrated instrument must correspond with reference readings within +/- 1/100 degr. C and +/- 1/100 mmho/cm. Pressure is calibrated by connecting to a reference DWT*** and successively generate 6 pressures from 1 bar to FS. Pressure coefficients A2, B2, C2, D2 are calculated from least squares equations included in the instruments software. Output CTD data must correspond to data from reference instruments within specified accuracy.

TEMPERATURE degr. C			CONDUCTIVITY mmho/cm			PRESSURE dbar		
Bef. cal.	After cal.	Reference	Bef. cal.	After cal.	Reference	Bef. cal.	After cal.	Reference
	19.61	19.611	50.47	50.48	50.482	10.01		10.01
	12.16	12.161	34.38	34.38	34.382	100.12		100.13
	0.41	0.412	9.47	9.47	9.472	200.24		200.26
						400.52		400.52
						600.80		600.78
						1001.33		1001.30

All calibration coefficients are shown on attached calibration sheet

Working references:

Temperature* Falmouth Scientific Model OTM S-112 S/N 1377-09JUL96 Accuracy +/- 2/1000 deg.C
Conductivity** Falmouth Scientific Model OCM S-112 S/N 1354-09JUL96 Accuracy +/- 2/1000 mmho/cm
Pressure*** Budenberg DWT Model 280L S/N 9050 Accuracy 0.008% FS (600 bar)

Traceable references:

Temperature:

Subreference 1:

General Oceanics ATB 1250 temp. bridge serial no 1235
(Working ref. Is controlled by subref.1 four times per year)
(Subref.1 Is controlled by subref.2 twice per year)

Subreference 2:

Distilled water tripple point cell at +0.010 degr.C
Phenoxybenzene tripple point cell at +26.868 degr.C

Conductivity:

Subreference 1:

Neil Brown Cond./Temp. transfer standard mod. CT-2 serial no.3
(Working reference is controlled by subref.1 four times per year)
(Subref.1 is controlled by subref.2 four times per year)
(Subref.2 is controlled by subref.3 four times per year)

Subreference 2:

Guildline Portasal 8410 Portable Salinometer serial no.59

Subreference 3:

Ocean Scientific International Standard Seawater

Pressure:

Subreference:

Pressure reference at FIMAS Coastal Base Calibration Center

Control frequency Calibration equipment: Once per year

Calibrated by
Signature

STEINAR LERSEN
S. Lersen

Date 20-02-18
Time 13-36-01 GMT
CALIBRATION SHEET SD204 Serial no.1261

Temperature (T) Deg.C:
A1+1.4303073461E-03 B1+2.6661949222E-04
C1+2.0485193788E-07

Pressure (P) decibar:
A2-1.2613826483E-01 B2+1.0474470658E-04
C2+2.7749057661E-11 D2-8.0391931869E-17
E2+1.2485052832E-22 F2-9.8816056554E-29
G2+3.1119214179E-35

Conductivity (C) mmho/cm:
A3-5.9937115773E-02 B3+1.9110597703E-02
C3+0.0000000000E+00 D3+0.0000000000E+00

Other sensor (0-2.5V)
AO+0.0000000000E+00 BO+8.3458099141E-02
CO+0.0000000000E+00 DO+0.0000000000E+00

Turbidity (0-62.5 FTU)
AT-7.1622707765E-12 BT+2.5000000000E-02
CT+6.9388939039E-18 DT-1.6940658945E-21

Oxygen (OX) in per cent:
V +1.0131144422E+02

Pressure sensor mathem.comp.coeff.
K0-8.39959174426E+01 K1+1.62277797112E-01
K2-1.33908746930E-04 K3+3.60083710862E-08
L0+1.20239190639E+01 L1-2.71154568900E-02
L2+2.21833468047E-05 L3-5.96754684413E-09
M0-5.18920162755E-01 M1+1.25703277666E-03
M2-9.92898257089E-07 M3+2.53835764315E-10
N0+7.55512863819E-03 N1-1.61213947156E-05
N2+1.04366598874E-08 N3-1.84369100810E-12
O0-6.37616041756E-06 O1-5.04183092149E-08
O2+1.09378367939E-10 O3-5.29297071917E-14
P0-6.23843187789E-07 P1+2.21261314695E-09
P2-2.48906482190E-12 P3+9.02501575452E-16
Q0+3.35778439297E-09 Q1-1.06580622221E-11
Q2+1.10876342667E-14 Q3-3.79292214447E-18

X1-4.0555819967E-01 X2+1.0124811755E-04
X3-2.6853291161E-12 X4+1.5961848784E-18
S1+6.7707073795E-01 S2+4.0591529517E-03
S3+2.5695661415E-11 S4+0.0000000000E+00
S5+0.0000000000E+00 S6+0.0000000000E+00
S7+0.0000000000E+00 Y4+3.3597234735E-02
Y5+2.3767465495E-03 Y6+1.0772617559E-12
Y7+3.9014076528E-18 PC-4.0000000000E-03

Status:
Model SD204,Ser No 1261
Battery life counter:0
Date 20-02-18 Time 13-36-52 GMT
Interval: 2sec
Mode:CTDOS
Baud rate:9600
Next start from N00001

Start by Mag-Key or press <I>
or
Press <M> for menu or wait 10sec