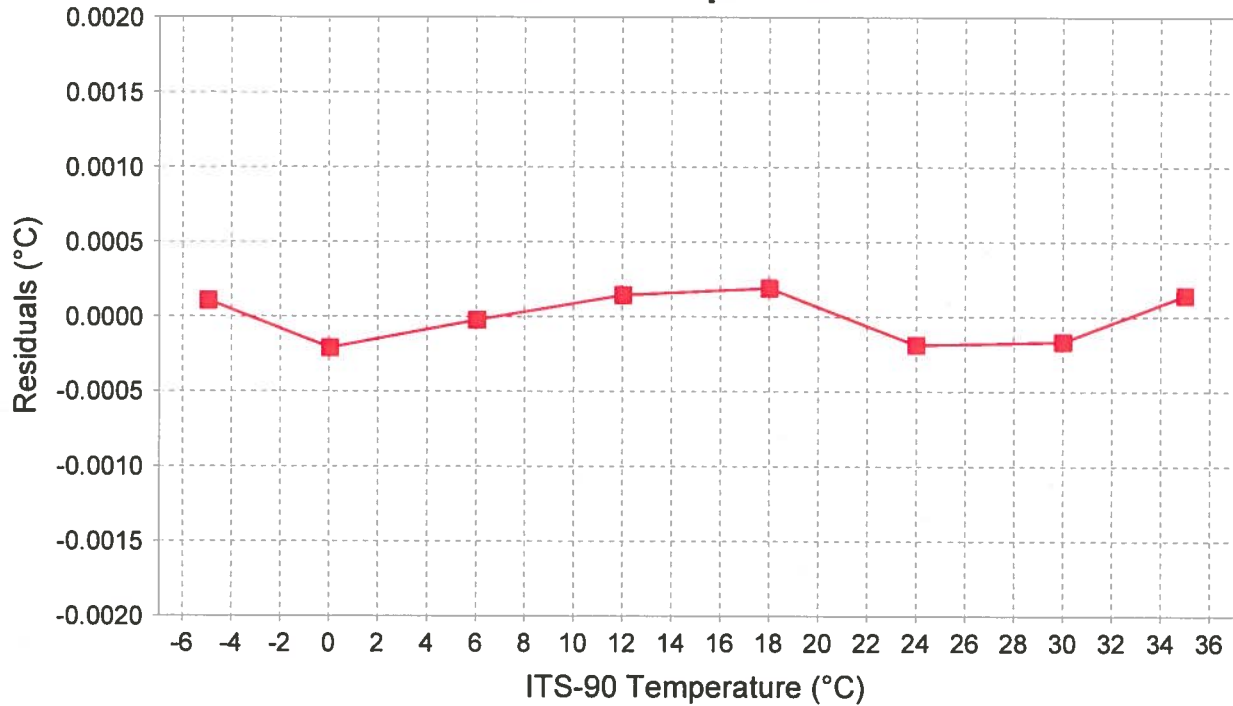


# RBR Temperature Calibration Certificate

Logger ID: RBRmaestro Serial No: 80330 Channel No: 2

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
-4.94951	0.809968	-4.94940	0.00011	C0: 0.003355030355078
0.04850	0.766407	0.04829	-0.00021	C1: -0.000254067050335
6.04570	0.707810	6.04568	-0.00002	C2: 0.000002358714058
12.04247	0.643933	12.04262	0.00014	C3: -0.000000071575466
18.03268	0.577122	18.03287	0.00019	
24.02925	0.509780	24.02906	-0.00019	
30.02960	0.444370	30.02943	-0.00017	
35.02592	0.392883	35.02606	0.00014	

### Residuals vs. Temperature



Calibration Date: 2/Jun/2017  
Issue Date: 3/Jun/2017  
Calibration ID: 20791

Operator: *Carsten Mazerolle*  
cmazerolle

Approver: *S. Bucknor*  
sbucknor

## Pressure Calibration Certificate

RBRmaestro C.T.D.DO.FI.FI.PAR.Trans.Tu.V s/n: 80330

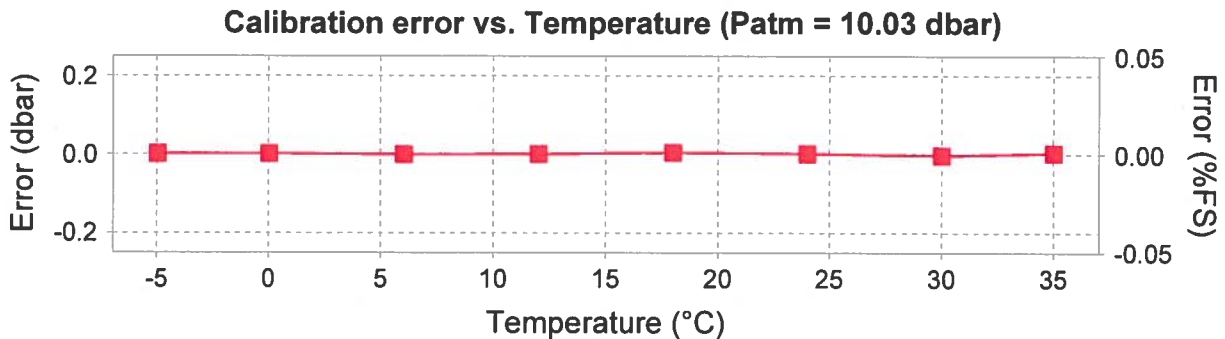
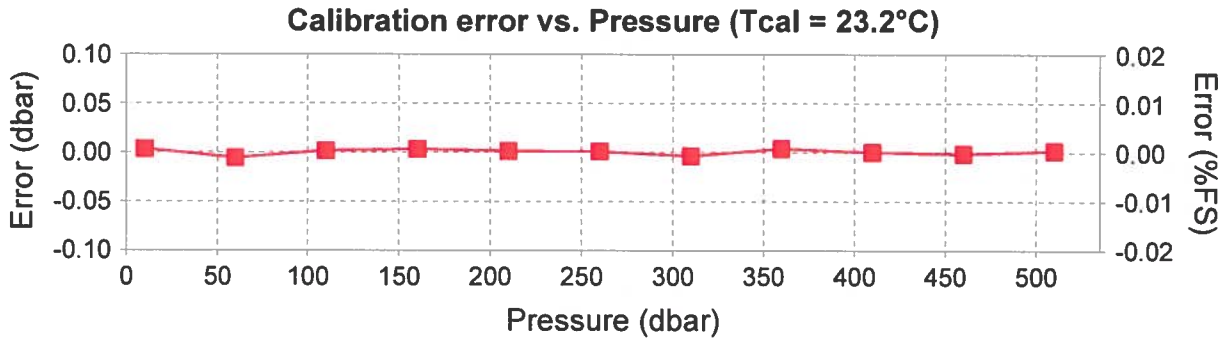
Sensor rating: 500 dbar s/n: I003547

Nominal accuracy: 0.05%FS (0.25 dbar)

Reference instrument: Mensor CPC6000 s/n: 612676

Applied pressure, P <sub>app</sub> (dbar)	Voltage ratio, V	Measured pressure, P <sub>meas</sub> (dbar)	Calibration error (dbar)	Coefficients
10.0524	-0.030675	10.0554	0.0029	C0: 80.50072914
59.9998	-0.008758	59.9935	-0.0063	C1: 2283.71599461
109.9996	0.013134	110.0008	0.0012	C2: 129.35465467
159.9996	0.034970	160.0023	0.0027	C3: -33.06613525
209.9992	0.056752	210.0000	0.0008	X0 (Patm): 10.054
259.9992	0.078484	259.9996	0.0004	X1: -0.16489503
309.9993	0.100164	309.9951	-0.0042	X2: -0.00047352
360.0000	0.121801	360.0034	0.0034	X3: -0.00000202
409.9987	0.143386	409.9985	-0.0002	X4: -0.00011443
459.9992	0.164925	459.9973	-0.0019	X5 (Tcal): 23.2
510.0028	0.186423	510.0039	0.0011	

$$P_{meas} = C_0 + C_1 \cdot V + C_2 \cdot V^2 + C_3 \cdot V^3 \quad P_{cor} = X_0 + \frac{P_{meas} - X_0 - X_1(T - X_5) - X_2(T - X_5)^2 - X_3(T - X_5)^3}{1 + X_4(T - X_5)} \quad \text{Head (mm)} = 516$$



Calibration Date: 3/Jun/2017  
 Issue Date: 5/Jun/2017  
 File Name: 080330\_20170605\_0921P.rsk

Operator: *Carlo Mazzerolle*  
 cmazerolle

Approver: *S. Bucknor*  
 sbucknor

# RBR Conductivity Calibration Certificate

RBRmaestro C.T.D.DO.FI.FI.PAR.Trans.Tu.V s/n: 80330

References: Autosal8400B#66289, MS-315#15506, SSW P159, RC#002

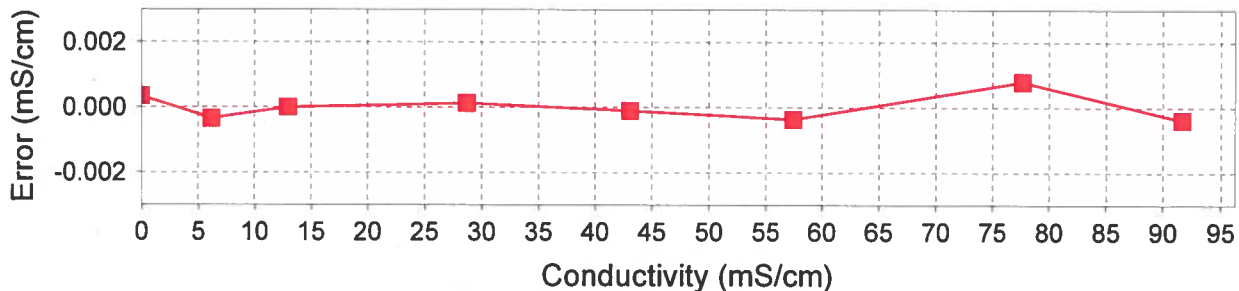
Reference Resistance (ohm)	Reference Conductivity (mS/cm)	Voltage Ratio, V	Measured Conductivity (mS/cm)	Calibration Error (mS/cm)	Coefficients
open	0.0000	-0.000148	0.0003	0.0003	C0: 0.0237
694.020	6.2104	0.039092	6.2101	-0.0003	C1: 158.2515
331.923	12.9854	0.081905	12.9854	-0.0000	X0: 0.000225
150.010	28.7324	0.181413	28.7325	0.0001	X1: -0.000015
100.014	43.0955	0.272172	43.0954	-0.0001	X2: 0.0000006
75.014	57.4580	0.362928	57.4576	-0.0004	X3: 15.0
55.510	77.6464	0.490507	77.6472	0.0008	X4: 10
47.015	91.6761	0.579154	91.6757	-0.0004	

$$C_{cor} = \frac{C_0 + C_1 * V - X_0 * (T - X_3)}{1 + X_1 * (T - X_3) + X_2 * (P - X_4)}$$

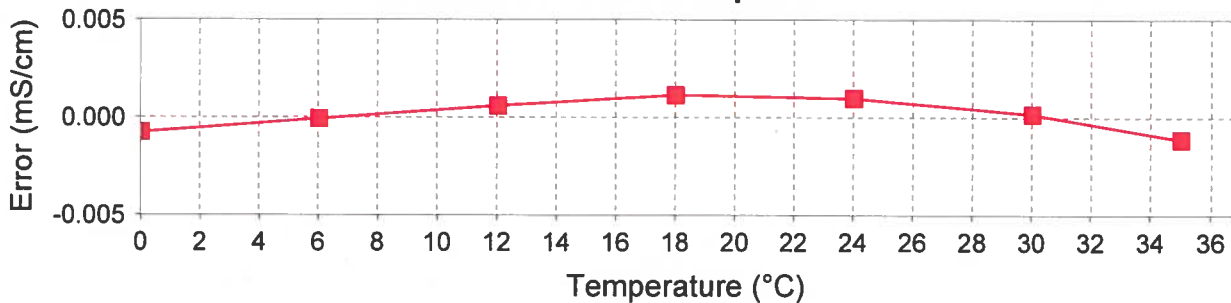
Bath	Voltage Ratio	Temperature (ITS-90)	Salinity (PSS-78)	Conductivity (mS/cm)
T15S35	0.2713244	15.03849	35.0053	42.9612
T25S35	0.3407225	25.82545	35.0110	53.9501

Cell Constant @T15S35 = 4.31015 1/cm

Calibration error vs. Conductivity



Calibration error vs. Temperature



Calibration Date: 8/Jun/2017  
 Issue Date: 8/Jun/2017  
 File Name: 080330\_20170608\_1603C.rsk

Operator: *I. Shkvetsov*  
 ishkvoets

Approver: *S. Bucknor*  
 sbucknor

# RBR

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**DO Calibration Certificate**  
**Rinko-III ARO-CAV# 0281**  
**RBRmaestro C.T.D.DO.FI.FI.PAR.Trans.Tu.V #80330**

N	Reference DO, %	Rinko DO, %	DO Error, %	Old Calibration Coefficients	New Calibration Coefficients
1	0.000	0.083	0.083	G'(C0) = 0.000	G(C0) = -0.090
2	98.199	91.323	-6.876	H'(C1) = 1.00000	H(C1) = 1.07628

**Calibration conditions:**

Temperature: 22.6 °C  
Patm: 99.55 kPa  
Salinity: 0

Calibration Date: 09-Jun-17  
Issue Date: 09-Jun-17

Operator: I. Shkvorets Calibration Manager: S. Bucknor  
I. Shkvorets S. Bucknor