

Layout No:
Circuit Diagram No:
Program Version: 5.2.1

Product: Conductivity Sensor 4319A
Serial No: 1298

1. Visual and Mechanical Checks:

- 1.1. Soldering quality
- 1.2. Visual surface
- 1.3. Galvanic isolation between housing and electronics

2. Current Drain and Voltages:

- | | |
|-----------------------------------------------------------------|----------|
| 2.1. RS232 average current drain at 0.5Hz sampling (max: 25mA) | 16.0 mA |
| 2.2. RS232 peak current drain at 0.5Hz sampling | 63.0 mA |
| 2.3. RS232 current drain in sleep (max: 180µA) | 119 µA |
| 2.4. CANBus average current drain at 0.5Hz sampling (max: 25mA) | 16.0 mA |
| 2.5. CANBus peak current drain at 0.5Hz sampling | 63 mA |
| 2.6. CANBus current drain in sleep (max: 180µA) | 101.0 µA |
| 2.7. DSP voltage, (3.3 ±0.15V) | 3.30 V |
| 2.8. Excitation driver voltage, (3.3 ±0.15V) | 3.31 V |
| 2.9. Flash/RS232 driver voltage, (1.8 ±0.05V) | 1.81 V |

3. Electronic performance test:

- | | |
|-----------------------------------------------------------------|-----------|
| 3.1. Average of Receiver readings (0 ±400mV) | 164 mV |
| 3.2. Standard Deviation of Receiver readings (max: 60mV) | 7 mV |
| 3.3. Cross-talk voltage with open loop (max: 550mV) | -89 mV |
| 3.4. Amplification (Zamp) with 0.2mS loop/5000 Ω (1200-2000) | 1334 mV |
| 3.5. Reading (CompValue) with open loop/0mS (1000 – 2000) | 1570 lsb |
| 3.6. Reading (CompValue) with 14.286mS loop/70Ω (50000 – 60000) | 51921 lsb |
| 3.7. CANBus Output test with 1 mS loop/1000 | |

4. Temperature cycling test:

- 4.1. Temperature cycling test in chamber (0-50°C)

5. Temperature test (2 – 35°C):

- | | |
|----------------------------------------------------------------------------------------|-------|
| 5.1. Raw data temperature drift with 14.286mS loop/70Ω loop
in High Range (max 500) | 3 lsb |
|----------------------------------------------------------------------------------------|-------|

6. Pressure test (0 – 60MPa):

- 6.1. Raw data drift with 14.286mS 70Ω loop in High Range (max 8)

Date: 20 May 2015

Sign:



Ingemar Nerhus, Production Engineer

Calibration Date: 04 Sep 2015
Product: Conductivity Sensor 4319A

Serial No: 1298

This is to certify that this product has been calibrated using the following instruments:

ASL Digital Thermometer model F250 Serial No.06792/06
Platinum Resistance Thermometer Serial No.2H1072/1
Calibration Bath model FNT 321-1-40 1
Aanderaa Active Loop 23

Parameter: Temperature

Calibration points and readings:

Temperature (°C)	1.157	12.117	24.126	36.094
Reading (mV)	2.38509E+03	2.06516E+03	1.69179E+03	1.33608E+03

Giving these coefficients

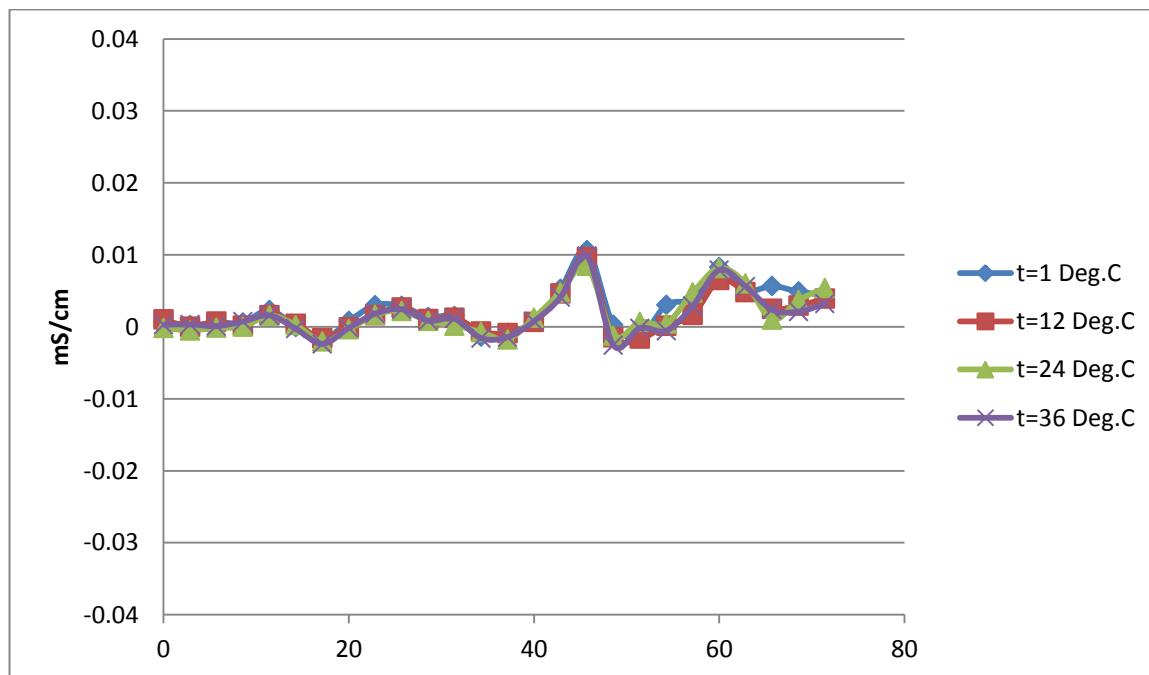
Index	0	1	2	3
TempCoef	1.08113E02	-8.07850E-02	2.65533E-05	-4.81493E-09

Parameter: Conductance linearization and temperature compensation

Giving these coefficients

Index	0	1	2	3
R1Coef0	9.00391E00	1.58108E-04	3.45331E-07	-3.88546E-08
R1Coef1	9.00391E00	1.58108E-04	3.45331E-07	-3.88546E-08
R1Coef2	4.24235E-03	-1.04841E-03	6.11684E-05	-9.98273E-07
R1Coef3	-1.05811E-01	-8.05341E-04	1.21942E-04	-2.63862E-06
R1Coef4	-2.18632E-01	5.69357E-03	-3.76260E-04	6.21834E-06
R1Coef5	3.76490E-01	8.13556E-03	-1.01082E-03	2.14076E-05
R1Coef6	4.92405E-01	-1.14931E-02	7.67907E-04	-1.26350E-05
R1Coef7	-5.88883E-01	-1.93104E-02	2.37135E-03	-5.03135E-05
R1Coef8	-3.34306E-01	7.67244E-03	-4.98934E-04	8.01715E-06
R1Coef9	3.51973E-01	1.40748E-02	-1.71696E-03	3.65116E-05

Error graph:



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Parameter: Conductivity

Reference reading (mS/cm)	4.97850E+01
Conductance reading (mS)	1.08488E+01

Giving following cell coefficient

CellCoef	4.630
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Date: 04 Sep 2015

Sign:

Tor-Ove Kvalvaag

Tor-Ove Kvalvaag, Calibration Engineer

Product: Conductivity Sensor 4319A
Serial No: 1298
Date: 20.05.2015

Certificate No: 1077881311298

This is to certify that this product has been pressure tested with the following instrument, and we confirm that no irregularities were found during the test:

Autoklav 800 bar – sn: 0210005

Pressure readings:

Pressure (Bar)	Pressure time (hour)
600	14

Date: 20 May 2015

Sign:



Ingemar Nerhus, Production Engineer