Sporton (Auden)

Client

Calibrated by:





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Certificate No: AM1DV3-3130\_Nov17

Accreditation No.: SCS 0108

Multilateral Agreement for the recognition of calibration certificates

<b>CALIBRATION</b>	CERTIFICATE
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Object AM1DV3 - SN: 3130

Calibration procedure(s) QA CAL-24.v4

Calibration procedure for AM1D magnetic field probes and TMFS in the

audio range

Calibration date: November 21, 2017

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID#	Cal Date (Certificate No.)	Scheduled Calibration
Keithley Multimeter Type 2001	SN: 0810278	31-Aug-17 (No. 21092)	Aug-18
Reference Probe AM1DV2	SN: 1008	30-Dec-16 (No. AM1D-1008_Dec16)	Dec-17
DAE4	SN: 781	13-Jul-17 (No. DAE4-781_Jul17)	Jul-18
DAE4	314. 761	13-341-17 (NO. DAE4-761_34117)	Jul-16

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Secondary Standards	ID#	Check Date (in house)	Scheduled Check
AMCC	SN: 1050	01-Oct-13 (in house check Oct-17)	Oct-19
AMMI Audio Measuring Instrument	SN: 1062	26-Sep-12 (in house check Oct-17)	Oct-19

Name Function Signature

Leif Klysner Laboratory Technician

Approved by: Katja Pokovic Technical Manager

Issued: November 21, 2017

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Certificate No: AM1DV3-3130\_Nov17 Page 1 of 3

#### [References

- [1] ANSI-C63.19-2007
  American National Standard for Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.
- [2] ANSI-C63.19-2011
  American National Standard, Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.
- [3] DASY5 manual, Chapter: Hearing Aid Compatibility (HAC) T-Coil Extension

#### Description of the AM1D probe

The AM1D Audio Magnetic Field Probe is a fully shielded magnetic field probe for the frequency range from 100 Hz to 20 kHz. The pickup coil is compliant with the dimensional requirements of [1+2]. The probe includes a symmetric low noise amplifier for the signal available at the shielded 3 pin connector at the side. Power is supplied via the same connector (phantom power supply) and monitored via the LED near the connector. The 7 pin connector at the end of the probe does not carry any signals, but determines the angle of the sensor when mounted on the DAE. The probe supports mechanical detection of the surface.

The single sensor in the probe is arranged in a tilt angle allowing measurement of 3 orthogonal field components when rotating the probe by 120° around its axis. It is aligned with the perpendicular component of the field, if the probe axis is tilted nominally 35.3° above the measurement plane, using the connector rotation and sensor angle stated below. The probe is fully RF shielded when operated with the matching signal cable (shielded) and allows measurement of audio magnetic fields in the close vicinity of RF emitting wireless devices according to [1+2] without additional shielding.

#### Handling of the item

The probe is manufactured from stainless steel. In order to maintain the performance and calibration of the probe, it must not be opened. The probe is designed for operation in air and shall not be exposed to humidity or liquids. For proper operation of the surface detection and emergency stop functions in a DASY system, the probe must be operated with the special probe cup provided (larger diameter).

### Methods Applied and Interpretation of Parameters

- Coordinate System: The AM1D probe is mounted in the DASY system for operation with a HAC
  Test Arch phantom with AMCC Helmholtz calibration coil according to [3], with the tip pointing to
  "southwest" orientation.
- Functional Test: The functional test preceding calibration includes test of Noise level
   RF immunity (1kHz AM modulated signal). The shield of the probe cable must be well connected.
   Frequency response verification from 100 Hz to 10 kHz.
- Connector Rotation: The connector at the end of the probe does not carry any signals and is used for fixation to the DAE only. The probe is operated in the center of the AMCC Helmholtz coil using a 1 kHz magnetic field signal. Its angle is determined from the two minima at nominally +120° and 120° rotation, so the sensor in the tip of the probe is aligned to the vertical plane in z-direction, corresponding to the field maximum in the AMCC Helmholtz calibration coil.
- Sensor Angle: The sensor tilting in the vertical plane from the ideal vertical direction is determined from the two minima at nominally +120° and -120°. DASY system uses this angle to align the sensor for radial measurements to the x and y axis in the horizontal plane.

Sensitivity: With the probe sensor aligned to the z-field in the AMCC, the output of the probe is compared to the magnetic field in the AMCC at 1 kHz. The field in the AMCC Helmholtz coil is given by the geometry and the current through the coil, which is monitored on the precision shunt resistor of the coil.

Certificate No: AM1DV3-3130\_Nov17 Page 2 of 3

#### AM1D probe identification and configuration data

Item	AM1DV3 Audio Magnetic 1D Field Probe
Type No	SP AM1 001 BA
Serial No	3130

	000	
Overall length	296 mm	
Tip diameter	6.0 mm (at the tip)	~
Sensor offset	3.0 mm (centre of sensor from tip)	
Internal Amplifier	20 dB	

Manufacturer / Origin	Schmid & Partner Engineering AG, Zürich, Switzerland
Manufacturing date	July 09, 2012
Last calibration date	November 16, 2016

#### Calibration data

Certificate No: AM1DV3-3130\_Nov17

Connector rotation angle	(in DASY system)	81.2 °	+/- 3.6 ° (k=2)
Sensor angle	(in DASY system)	1.03 °	+/- 0.5 ° (k=2)

Sensitivity at 1 kHz (in DASY system) **0.00743 V / (A/m)** +/- 2.2 % (k=2)

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Page 3 of 3





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Client

Auden

Accreditation No.: SCS 0108

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Certificate No: DAE4-917 Dec17

## **CALIBRATION CERTIFICATE**

Object DAE4 - SD 000 D04 BK - SN: 917

Calibration procedure(s) QA CAL-06.v29

Calibration procedure for the data acquisition electronics (DAE)

Calibration date: December 14, 2017

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID#	Cal Date (Certificate No.)	Scheduled Calibration
Keithley Multimeter Type 2001	SN: 0810278	31-Aug-17 (No:21092)	Aug-18
Secondary Standards	ID#	Check Date (in house)	Scheduled Check
	OF LINE OFO AA 4004	OF lon 17 (in house sheets)	In house check: Jan-18
Auto DAE Calibration Unit	SE UWS 053 AA 1001	05-Jan-17 (in house check)	III House Check. Jan-10

Calibrated by:

Name

Function

Function

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Adrian Gehring

Laboratory Technician

Approved by:

Sven Kühn

Deputy Manager

Issued: December 14, 2017

1. Genne

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Accreditation No.: SCS 0108

#### Glossary

DAE data acquisition electronics

Connector angle information used in DASY system to align probe sensor X to the robot

coordinate system.

### Methods Applied and Interpretation of Parameters

- DC Voltage Measurement: Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.
- Connector angle: The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The following parameters as documented in the Appendix contain technical information as a result from the performance test and require no uncertainty.
  - DC Voltage Measurement Linearity: Verification of the Linearity at +10% and -10% of the nominal calibration voltage. Influence of offset voltage is included in this measurement.
  - Common mode sensitivity: Influence of a positive or negative common mode voltage on the differential measurement.
  - Channel separation: Influence of a voltage on the neighbor channels not subject to an input voltage.
  - AD Converter Values with inputs shorted: Values on the internal AD converter corresponding to zero input voltage
  - Input Offset Measurement. Output voltage and statistical results over a large number of zero voltage measurements.
  - Input Offset Current: Typical value for information; Maximum channel input offset current, not considering the input resistance.
  - Input resistance: Typical value for information: DAE input resistance at the connector, during internal auto-zeroing and during measurement.
  - Low Battery Alarm Voltage: Typical value for information. Below this voltage, a battery alarm signal is generated.
  - Power consumption: Typical value for information. Supply currents in various operating modes.

#### **DC Voltage Measurement**

A/D - Converter Resolution nominal

High Range: 1LSB =

 $\begin{array}{ll} 6.1 \mu V \; , & \qquad \text{full range} = & -100...+300 \; \text{mV} \\ 61 \text{nV} \; , & \qquad \text{full range} = & -1......+3 \text{mV} \end{array}$ 

Low Range:

1LSB =

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Calibration Factors	X	Υ	Z
High Range	404.220 ± 0.02% (k=2)	404.223 ± 0.02% (k=2)	404.232 ± 0.02% (k=2)
Low Range	3.96911 ± 1.50% (k=2)	4.00612 ± 1.50% (k=2)	3.99363 ± 1.50% (k=2)

## **Connector Angle**

Connector Angle to be used in DASY system	35.5 ° ± 1 °

Page 3 of 5 Certificate No: DAE4-917\_Dec17

## Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

High Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	199996.93	0.44	0.00
Channel X	+ Input	20002.26	0.60	0.00
Channel X	- Input	-19999.28	1.82	-0.01
Channel Y	+ Input	199997.59	0.94	0.00
Channel Y	+ Input	19999.22	-2.33	-0.01
Channel Y	- Input	-20002.32	-1.16	0.01
Channel Z	+ Input	199996.21	-0.14	-0.00
Channel Z	+ Input	20000.04	-1.59	-0.01
Channel Z	- Input	-20003.10	-1.79	0.01

Low Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	2001.32	0.31	0.02
Channel X	+ Input	202.19	0.72	0.36
Channel X	- Input	-197.56	0.79	-0.40
Channel Y	+ Input	2001.46	0.37	0.02
Channel Y	+ Input	200.19	-1.28	-0.63
Channel Y	- Input	-199.02	-0.74	0.38
Channel Z	+ Input	2001.75	0.71	0.04
Channel Z	+ Input	200.73	-0.73	-0.36
Channel Z	- Input	-199.37	-1.03	0.52

2. Common mode sensitivity

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Common mode Input Voltage (mV)	High Range Average Reading (μV)	Low Range Average Reading (μV)
Channel X	200	-4.75	-6.26
	- 200	7.99	6.37
Channel Y	200	4.39	4.17
	- 200	-6.26	-6.75
Channel Z	200	-14.39	-14.25
	- 200	12.04	12.44

### 3. Channel separation

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200	-	-2.71	-3.12
Channel Y	200	6.26	-	0.59
Channel Z	200	10.34	2.73	

#### 4. AD-Converter Values with inputs shorted

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	High Range (LSB)	Low Range (LSB)
Channel X	16029	15653
Channel Y	16106	14634
Channel Z	15947	15886

#### 5. Input Offset Measurement

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Input  $10M\Omega$ 

	Average (μV)	min. Offset (μV)	max. Offset (μV)	Std. Deviation (µV)
Channel X	1.05	-0.17	4.03	0.48
Channel Y	-0.88	-3.38	0.10	0.51
Channel Z	-0.06	-0.91	1.01	0.37

#### 6. Input Offset Current

Nominal Input circuitry offset current on all channels: <25fA

7. Input Resistance (Typical values for information)

	Zeroing (kOhm)	Measuring (MOhm)
Channel X	200	200
Channel Y	200	200
Channel Z	200	200

8. Low Battery Alarm Voltage (Typical values for information)

Typical values	Alarm Level (VDC)
Supply (+ Vcc)	+7.9
Supply (- Vcc)	-7.6

**9. Power Consumption** (Typical values for information)

Typical values	Switched off (mA)	Stand by (mA)	Transmitting (mA)
Supply (+ Vcc)	+0.01	+6	+14
Supply (- Vcc)	-0.01	-8	-9

Certificate No: DAE4-917\_Dec17





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Client

Sporton

Certificate No: DAE4-853\_Jul18

Accreditation No.: SCS 0108

## **CALIBRATION CERTIFICATE**

Object DAE4 - SD 000 D04 BM - SN: 853

Calibration procedure(s) QA CAL-06.v29

Calibration procedure for the data acquisition electronics (DAE)

Calibration date: July 24, 2018

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Approved by:

Certificate No: DAE4-853\_Jul18

Primary Standards	ID#	Cal Date (Certificate No.)	Scheduled Calibration
Keithley Multimeter Type 2001	SN: 0810278	31-Aug-17 (No:21092)	Aug-18
Secondary Standards	ID#	Check Date (in house)	Scheduled Check
Auto DAE Calibration Unit	SE UWS 053 AA 1001	04-Jan-18 (in house check)	In house check: Jan-19
Calibrator Box V2.1	SELIMS ONE AA 1002	04-Jan-18 (in house check)	In house check: Jan-19

Name Function Signature

Calibrated by: Dominique Steffen Laboratory Technician

Sven Kühn Deputy Manager

Issued: July 24, 2018

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## **Calibration Laboratory of**

Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland





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#### Glossary

DAE data acquisition electronics

Connector angle information used in DASY system to align probe sensor X to the robot

coordinate system.

#### Methods Applied and Interpretation of Parameters

- DC Voltage Measurement: Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.
- Connector angle: The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The following parameters as documented in the Appendix contain technical information as a result from the performance test and require no uncertainty.
  - DC Voltage Measurement Linearity: Verification of the Linearity at +10% and -10% of the nominal calibration voltage. Influence of offset voltage is included in this measurement.
  - Common mode sensitivity: Influence of a positive or negative common mode voltage on the differential measurement.
  - Channel separation: Influence of a voltage on the neighbor channels not subject to an input voltage.
  - AD Converter Values with inputs shorted: Values on the internal AD converter corresponding to zero input voltage
  - Input Offset Measurement. Output voltage and statistical results over a large number of zero voltage measurements.
  - Input Offset Current: Typical value for information; Maximum channel input offset current, not considering the input resistance.
  - Input resistance: Typical value for information: DAE input resistance at the connector, during internal auto-zeroing and during measurement.
  - Low Battery Alarm Voltage: Typical value for information. Below this voltage, a battery alarm signal is generated.
  - Power consumption: Typical value for information. Supply currents in various operating modes.

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Certificate No: DAE4-853_Jul18	Page 2 o
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## **DC Voltage Measurement**

A/D - Converter Resolution nominal

High Range:  $1LSB = 6.1 \mu V$ , full range = -100...+300 mVLow Range: 1LSB = 61 nV, full range = -1.....+3 mV

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Calibration Factors	X	Υ	Z
High Range	402.653 ± 0.02% (k=2)	403.319 ± 0.02% (k=2)	403.479 ± 0.02% (k=2)
Low Range	3.95632 ± 1.50% (k=2)	3.96571 ± 1.50% (k=2)	3.96767 ± 1.50% (k=2)

## **Connector Angle**

Connector Angle to be used in DASY system	133.5 ° ± 1 °

Certificate No: DAE4-853\_Jul18 Page 3 of 5

# Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

High Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	199996.99	1.42	0.00
Channel X	+ Input	20003.62	1.84	0.01
Channel X	- Input	-20000.02	1.12	-0.01
Channel Y	+ Input	199996.86	1.15	0.00
Channel Y	+ Input	20003.13	1.35	0.01
Channel Y	- Input	-20002.42	-1.42	0.01
Channel Z	+ Input	199995.34	-0.26	-0.00
Channel Z	+ Input	20000.34	-1.41	-0.01
Channel Z	- Input	-20002.42	-1.26	0.01

Low Range	Reading (μV)	Difference (μV)	Error (%)
Channel X + Input	2002.06	0.81	0.04
Channel X + Input	201.69	0.01	0.00
Channel X - Input	-197.81	0.40	-0.20
Channel Y + Input	2001.19	-0.07	-0.00
Channel Y + Input	201.32	-0.28	-0.14
Channel Y - Input	-198.71	-0.48	0.24
Channel Z + Input	2001.01	-0.10	-0.01
Channel Z + Input	200.73	-0.78	-0.39 <sup>-</sup>
Channel Z - Input	-198.74	-0.39	0.19

## 2. Common mode sensitivity

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Common mode Input Voltage (mV)	High Range Average Reading (μV)	Low Range Average Reading (μV)
Channel X	200	-6.54	-8.40
	- 200	10.04	8.25
Channel Y	200	4,94	4.77
	- 200	-5.28	-5.77
Channel Z	200	1.16	1.46
	- 200	-3.62	-3.50

## 3. Channel separation

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200	-	8.01	2.30
Channel Y	200	11.72	. 1	8.82
Channel Z	200	14.69	9.44	-

4. AD-Converter Values with inputs shorted

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	High Range (LSB)	Low Range (LSB)
Channel X	16243	16610
Channel Y	16089	16674
Channel Z	16234	15819

5. Input Offset Measurement

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Input 10MΩ

mput rowsz	Average (μV)	min. Offset (μV)	max. Offset (μV)	Std. Deviation (µV)
Channel X	0.29	-0.41	1.44	0.33
Channel Y	-0.17	-1.64	0.77	0.39
Channel Z	0.76	-0.87	2.49	0.52

6. Input Offset Current

Nominal Input circuitry offset current on all channels: <25fA

7. Input Resistance (Typical values for information).

	Zeroing (kOhm)	Measuring (MOhm)
Channel X	200	200
Channel Y	200	200
Channel Z	200	200

8. Low Battery Alarm Voltage (Typical values for information)

Typical values	Alarm Level (VDC)
Supply (+ Vcc)	÷7.9
Supply (- Vcc)	-7.6

9. Power Consumption (Typical values for information)

Typical values	Switched off (mA)	Stand by (mA)	Transmitting (mA)
Supply (+ Vcc)	+0.01	+6	+14
Supply (- Vcc)	-0.01	-8	9.





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Client

Sporton (Auden)

Accreditation No.: SCS 0108

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Certificate No: DAE3-577\_Sep17

## CALIBRATION CERTIFICATE

Object

DAE3 - SD 000 D03 AA - SN: 577

Calibration procedure(s)

QA CAL-06.v29

Calibration procedure for the data acquisition electronics (DAE)

Calibration date:

September 25, 2017

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID#	Cal Date (Certificate No.)	Scheduled Calibration
Keithley Multimeter Type 2001	SN: 0810278	31-Aug-17 (No:21092)	Aug-18
Secondary Standards	ID#	Check Date (in house)	Scheduled Check
Auto DAE Calibration Unit	SE UWS 053 AA 1001	05-Jan-17 (in house check)	In house check: Jan-18
Calibrator Box V2.1	SE UMS 006 AA 1002	05-Jan-17 (in house check)	In house check: Jan-18

Calibrated by:

Name

Function

Laboratory Technician

Signature

Approved by:

Sven Kühn

Eric Hainfeld

Deputy Manager

Issued: September 26, 2017

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Certificate No: DAE3-577\_Sep17

Page 1 of 5





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Glossary

DAE data acquisition electronics

Connector angle information used in DASY system to align probe sensor X to the robot

coordinate system.

#### Methods Applied and Interpretation of Parameters

- DC Voltage Measurement: Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.
- Connector angle: The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The following parameters as documented in the Appendix contain technical information as a result from the performance test and require no uncertainty.
  - DC Voltage Measurement Linearity: Verification of the Linearity at +10% and -10% of the nominal calibration voltage. Influence of offset voltage is included in this measurement.
  - Common mode sensitivity: Influence of a positive or negative common mode voltage on the differential measurement.
  - Channel separation: Influence of a voltage on the neighbor channels not subject to an input voltage.
  - AD Converter Values with inputs shorted: Values on the internal AD converter corresponding to zero input voltage
  - Input Offset Measurement: Output voltage and statistical results over a large number of zero voltage measurements.
  - Input Offset Current: Typical value for information; Maximum channel input offset current, not considering the input resistance.
  - Input resistance: Typical value for information: DAE input resistance at the connector, during internal auto-zeroing and during measurement.
  - Low Battery Alarm Voltage: Typical value for information. Below this voltage, a battery alarm signal is generated.
  - Power consumption: Typical value for information. Supply currents in various operating modes.

Certificate No: DAE3-577\_Sep17 Page 2 of 5

## **DC Voltage Measurement**

A/D - Converter Resolution nominal

High Range:  $1LSB = 6.1 \mu V$ , full range = -100...+300 mVLow Range: 1LSB = 61 nV, full range = -1.....+3 mV

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Calibration Factors	Х	Υ	Z
High Range	403.528 ± 0.02% (k=2)	403.520 ± 0.02% (k=2)	403.823 ± 0.02% (k=2)
Low Range	3.92632 ± 1.50% (k=2)	3.94176 ± 1.50% (k=2)	3.96112 ± 1.50% (k=2)

## **Connector Angle**

Connector Angle to be used in DASY system	190.5 ° ± 1 °

# Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

High Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	200030.00	-3.88	-0.00
Channel X	+ Input	20009.45	5.06	0.03
Channel X	- Input	-20001.99	3.69	-0.02
Channel Y	+ Input	200032.33	-1.67	-0.00
Channel Y	+ Input	20005.12	0.82	0.00
Channel Y	- Input	-20005.94	-0.22	0.00
Channel Z	+ Input	200032.19	-1.81	-0.00
Channel Z	+ Input	20005.51	1.15	0.01
Channel Z	- Input	-20007.62	-1.80	0.01

Low Range	Reading (μV)	Difference (μV)	Error (%)
Channel X + Inpu	2000.12	-0.46	-0.02
Channel X + Inpu	201.21	0.55	0.27
Channel X - Input	-199.01	0.37	-0.19
Channel Y + Input	2000.29	-0.19	-0.01
Channel Y + Input	200.31	-0.21	-0.11
Channel Y - Input	-200.54	-1.05	0.53
Channel Z + Input	2000.57	0,11	0.01
Channel Z + Input	199.15	-1.37	-0.68
Channel Z - Input	-201.16	-1.65	0.83

2. Common mode sensitivity

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Common mode Input Voltage (mV)	High Range Average Reading (μV)	Low Range Average Reading (μV)
Channel X	200	-1.98	-4.35
	- 200	6.48	3.92
Channel Y	200	-13.76	-14.18
	- 200	12.65	12.84
Channel Z	200	2.61	2.67
	- 200	-5.78	-5.78

3. Channel separation

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200		-1.22	-3.39
Channel Y	200	8.35	<b></b>	0.42
Channel Z	200	5.01	5.16	

Certificate No: DAE3-577\_Sep17

#### 4. AD-Converter Values with inputs shorted

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	High Range (LSB)	Low Range (LSB)
Channel X	16132	16019
Channel Y	16099	16232
Channel Z	16112	14967

#### 5. Input Offset Measurement

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Input 10MΩ

	Average (μV)	min. Offset (μV)	max. Offset (μV)	Std. Deviation (μV)
Channel X	0.38	-0.58	1.36	0.35
Channel Y	0.09	-0.95	1.13	0.41
Channel Z	-1.50	-2.57	-0.74	0.40

#### 6. Input Offset Current

Nominal Input circuitry offset current on all channels: <25fA

7. Input Resistance (Typical values for information)

	Zeroing (kOhm)	Measuring (MOhm)
Channel X	200	200
Channel Y	200	200
Channel Z	200	200

8. Low Battery Alarm Voltage (Typical values for information)

Typical values	Alarm Level (VDC)	
Supply (+ Vcc)	+7.9	
Supply (- Vcc)	-7.6	

9. Power Consumption (Typical values for information)

Typical values	Switched off (mA)	Stand by (mA)	Transmitting (mA)
Supply (+ Vcc)	+0.01	+6	+14
Supply (- Vcc)	-0.01	-8	-9