



**D3: DAE**

**Client** [REDACTED]

**CALIBRATION CERTIFICATE**

Object(s) **DAE3 - SN:579**

Calibration procedure(s) **QA CAL-06.v3  
Calibration procedure for the data acquisition unit (DAE)**

Calibration date: **August 15, 2003**



Condition of the calibrated item **In Tolerance (according to the specific calibration document)**

This calibration statement documents traceability of M&TE used in the calibration procedures and conformity of the procedures with the ISO/IEC 17025 international standard.

All calibrations have been conducted in the closed laboratory facility: environment temperature 22 +/- 2 degrees Celsius and humidity < 75%.

Calibration Equipment used (M&TE critical for calibration)

Model Type	ID #	Cal Date	Scheduled Calibration
Fluke Process Calibrator Type 702	SN: 6295803	3-Sep-01	Sep-03

	Name	Function	Signature
Calibrated by:	Philipp Storchenegger	Technician	
Approved by:	Fin Bomholt	R&D Director	

Date issued: August 15, 2003

This calibration certificate is issued as an intermediate solution until the accreditation process (based on ISO/IEC 17025 International Standard) for Calibration Laboratory of Schmid & Partner Engineering AG is completed.

### 1. Cal Lab. Incoming Inspection & Pre Test

<b>Modification Status</b>	Note Status here → → → →	BC
<b>Visual Inspection</b>	Note anomalies.....	None
	.....	.....
<b>Pre Test</b>	<b>Indication</b>	<b>Yes/No</b>
<b>Probe Touch</b>	Function	Yes
<b>Probe Collision</b>	Function	Yes
<b>Probe Touch&amp;Collision</b>	Function	Yes

### 2. DC Voltage Measurement

A/D - Converter Resolution nominal

High Range: 1LSB = 6.1μV , full range = 400 mV  
 Low Range: 1LSB = 61nV , full range = 4 mV

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

Calibration Factors	X	Y	Z
<b>High Range</b> rounded to 7 digits	404.5370401	404.5593911	404.3923437
<b>Low Range</b> rounded to 6 digits	3.9686	3.9584	3.95
<b>Connector Angle</b> to be used	in DASY System 311 °		

High Range	Input	Reading in μV	% Error
<b>Channel X + Input</b>	200mV	199999.6	0.00
	20mV	19998.2	-0.01
<b>Channel X - Input</b>	20mV	-19995.3	-0.02
	200mV	199999.8	0.00
<b>Channel Y + Input</b>	20mV	19998.3	-0.01
	20mV	-19993.6	-0.03
<b>Channel Y - Input</b>	200mV	200000.6	0.00
	20mV	19997.8	-0.01
<b>Channel Z + Input</b>	20mV	-19994.3	-0.03

Low Range	Input	Reading in μV	% Error
<b>Channel X + Input</b>	2mV	1999.99	0.00
	0.2mV	199.66	-0.17
<b>Channel X - Input</b>	0.2mV	-200.21	0.11
	2mV	1999.89	-0.01
<b>Channel Y + Input</b>	0.2mV	199.20	-0.40
	0.2mV	-201.14	0.57
<b>Channel Y - Input</b>	2mV	1999.99	0.00
	0.2mV	199.18	-0.41
<b>Channel Z + Input</b>	0.2mV	-202.26	1.13

### 3. Common mode sensitivity

DASY measurement parameters:

Auto Zero Time: 3 sec,

Measuring time: 3 sec

High/Low Range

in $\mu\text{V}$	Common mode Input Voltage	High Range Reading	Low Range Reading
Channel X	200mV	5.15	5.17
	- 200mV	-4.35	-4.88
Channel Y	200mV	9.00	8.70
	- 200mV	-10.57	-10.21
Channel Z	200mV	8.93	8.00
	- 200mV	-10.74	-10.51

### 4. Channel separation

DASY measurement parameters:

Auto Zero Time: 3 sec,

Measuring time: 3 sec

High Range

in $\mu\text{V}$	Input Voltage	Channel X	Channel Y	Channel Z
Channel X	200mV	-	0.87	-0.39
Channel Y	200mV	0.80	-	2.29
Channel Z	200mV	-2.73	-0.30	-

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

in LSB	Low Range	High Range
Channel X	16102	16311
Channel Y	16055	16139
Channel Z	15811	15833

### 6. Input Offset Measurement

DASY measurement parameters:

Auto Zero Time: 3 sec,

Measuring time: 3 sec

Number of measurements:

100, Low Range

Input 10M $\Omega$

in $\mu\text{V}$	Average	min. Offset	max. Offset	Std. Deviation
Channel X	0.25	-1.75	1.20	0.43
Channel Y	-1.47	-2.17	0.46	0.35
Channel Z	-1.64	-2.78	0.28	0.45