DEWETRON GmbH

Parkring 4
8074 Grambach
Austria

AAT2560031
Akkreditierung Austria 0632
20.01.2025

Kalibrierstelle für elektrische Messgrößen
Calibration body for electrical measurands

akkreditiert durch / *accredited by*
AKKREDITIERUNG AUSTRIA

Kalibrierzeichen
Calibration Mark

Kalibrierschein nach ISO/IEC 17025
Calibration certificate according to ISO/IEC 17025

Gegenstand *Object*	isolated voltage amplifier
Hersteller *Manufacturer*	DEWETRON
Typ *Type*	DAQP-V-B
Herstellernummer *Serial number*	276293
Auftraggeber *Customer*	
Kalibriernummer *Order number*	AAT2560031
Anzahl der Seiten des Kalibrierscheines *Number of pages of the certificate*	8
Datum der Kalibrierung *Date of calibration*	20.01.2025

Dieser Kalibrierschein dokumentiert die Rückführbarkeit auf nationale Normale zur Darstellung der physikalischen Einheiten in Übereinstimmung mit dem Internationalen Einheitensystem (SI).

Akkreditierung Austria ist Unterzeichner der multilateralen Übereinkommen der European Co-operation for Accreditation (EA) und der International Laboratory Accreditation Cooperation (ILAC) zur gegenseitigen Anerkennung der Kalibrierscheine.

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements according to the International system of Units (SI).

Akkreditierung Austria is a signatory to the multilateral agreements of the European Co-operation for Accreditation (EA) and of the International Laboratory Accreditation Cooperation (ILAC) for the mutual recognition of calibration certificates.

Stempel *Seal*	Datum *Date*	Zeichnungsberechtigter *Authorised person*	Bearbeiter *Person responsible*
	20.01.2025	Stefan Strohmaier	Nandor Nagy

DEWETRON GmbH
Parkring 4
8074 Grambach
AUSTRIA

Kalibrierschein nach ISO/IEC 17025
Calibration Certificate according to ISO/IEC 17025

AAT2560031
Akkreditierung Austria 0632
20.01.2025

1. Kalibriergegenstand / *Calibration object*

isolated voltage amplifier DEWETRON DAQP-V-B, S/N: 276293

2. Kalibrierverfahren / *Calibration procedure*

Die Kalibrierung erfolgt durch Vergleich der durch die Kalibrierstelle / Normale dargestellten Werte mit den Ausgangsgrößen am Kalibriergegenstand beziehungsweise den am Kalibriergegenstand angezeigten Werten.
The calibration is made by comparing the readings from the laboratory / standards to the output of the calibration object respectively the values displayed on the calibration object.

Prüfroutine / *Calibration procedure*: DAQP-V-B_Akkred, Rev. 2.00

3. Messergebnisse / *Measurement results*

Die Kalibrierung im Rahmen der Akkreditierung umfasst die Messgrößen Gleichspannung, Wechselspannung, Gleichstrom, Wechselstrom und Gleichstromwiderstand.
Die Messergebnisse beziehen sich ausschließlich auf diesen Kalibriergegenstand zum Zeitpunkt der Kalibrierung.
The calibration scope of the accreditation contains the quantities direct voltage, alternating voltage, direct current, alternating current and direct current resistance.
The measurement results are exclusively linked to this calibration object at the time of calibration.

4. Messunsicherheit / *Measurement uncertainty*

Angegeben ist die erweiterte Messunsicherheit, die sich aus der Standardmessunsicherheit durch Multiplikation mit dem Erweiterungsfaktor k=2 ergibt. Sie wurde gemäß EA-4/02 ermittelt. Der Wert der Messgröße liegt im Regelfall mit einer Wahrscheinlichkeit von annähernd 95% im zugeordneten Werteintervall.
Ein Anteil für die Langzeitstabilität des Kalibriergegenstandes ist nicht enthalten.
The stated extended measurement uncertainty is derived from the standard uncertainty of measurement multiplied by the coverage factor k=2. It has been determined according to EA-4/02. The measured quantity is inside the corresponding value interval with a probability of approximately 95%.
A factor for the long time stability of the calibration object is not taken into account.

5. Umgebungsbedingungen / *environmental conditions*

Temperatur / *Temperature:*	22,5 °C
Rel. Luftfeuchte / *Rel. humidity:*	35,4 % r.H.
Kalibrierort / *Place of calibration:*	DEWETRON GmbH, Parkring 4, 8074 Grambach, Austria

6. Auftragnummer / *Reference Number*

7. Status / *Status*

PASS ()

AS-FOUND:	Eingangskalibration / *Incoming calibration*
AS-LEFT:	Ausgangskalibration / *Outgoing calibration*
FOUND/LEFT:	Eingangskalibration erfüllt Herstellerspezifikation / *Incoming calibration according to manufacturer specifications*
PASS:	Messergebnis liegt innerhalb der Herstellerspezifikationen (ohne Berücksichtigung der Messunsicherheiten) / *Measurement result is within manufacturer's specifications (without taking into account the measurement uncertainties)*
FAIL:	Das Messergebnis liegt nicht innerhalb der Herstellerspezifikationen (ohne Berücksichtigung der Messunsicherheiten) / *Measurement result is out of manufacturer's specifications (without taking into account the measurement uncertainties)*

8. Verwendete Fußnoten / *Used foot notes:*

(1) Zusätzliche Messwerte außerhalb des akkreditierten Bereiches, es kann keine Konformitätsaussage getroffen werden.
(1) Additional measured values outside the accreditited scope, a conformity statement cannot be made.

9. Kommentare / *Comments*

test

Für die Festlegung und Einhaltung einer angemessenen Frist zur Wiederholung der Kalibrierung ist der Benutzer verantwortlich.
The user is responsible for the definition and the compliance to a resonable period for repeating the calibration.

10. Verwendete Normale / Standards used

Asset	Description	Serial Number	Certificate No.	Cal Date	Due Date
5522A 02	5522A CALIBRATOR	6032901	SA01246868	9-Feb-2024	8-Feb-2025
Keysight 3458A 08	3458A Multimeter	MY59353022	E5042024	23-Apr-2024	23-Apr-2025

11. Testergebnisse / Test results

Test Description	True Value	Test Result	Lower limit	Upper limit	Exp Uncert	Error	% of Tol	Status
Kalibrierverfahren / calibration method: CAL-KV-01 Gleichspannung v1.0 2024-07-04.xlsx-01 CAL-KV-02 Wechselspannung v1.0 2024-07-04.xlsx-01								
Current Temperature of DMM and Calibrator DMM: 40.4°C Calibrator: 25.08°C								
Firmware Revision: 1.10 SERIAL Number .: 276293 Module Revision .: 100								
All DC-tests done with appropriate Range and Filter set to 100 Hz								
Bipolar Ranges								
±10mV Range (0.02% ±40µV) Real Val. ±5V ±21mV / Scaled Val. ±10mV ±42µV								
Input: 0mV	0.0000 V	0.0048 V	-0.0200 V	0.0200 V	620.00 e-06 V	0,0048 V	24.2%	Pass
Input: 1mV	0.5000 V	0.5048 V	0.4799 V	0.5201 V	630.00 e-06 V	0,0048 V	24.1%	Pass
Input: 5mV	2.5000 V	2.5053 V	2.4795 V	2.5205 V	680.00 e-06 V	0,0053 V	25.7%	Pass
Input: 9mV	4.5000 V	4.5060 V	4.4791 V	4.5209 V	730.00 e-06 V	0,0060 V	28.7%	Pass
Input -9mV	-4.5000 V	-4.4955 V	-4.5209 V	-4.4791 V	730.00 e-06 V	0,0045 V	21.5%	Pass
±20mV Range (0.02% ±40µV) Real Val. ±5V ±11mV / Scaled Val. ±20mV ±44µV								
Input: 2mV	0.5000 V	0.5029 V	0.4899 V	0.5101 V	320.00 e-06 V	0,0029 V	29.2%	Pass
Input 10mV	2.5000 V	2.5033 V	2.4895 V	2.5105 V	370.00 e-06 V	0,0033 V	31.8%	Pass
Input 18mV	4.5000 V	4.5040 V	4.4891 V	4.5109 V	420.00 e-06 V	0,0040 V	36.4%	Pass
Input -18mV	-4.5000 V	-4.4972 V	-4.5109 V	-4.4891 V	420.00 e-06 V	0,0028 V	26%	Pass
±50mV Range (0.02% ±40µV) Real Val. ±5V ±5mV / Scaled Val. ±50mV ±50µV								
Input: 5mV	0.5000 V	0.5017 V	0.4959 V	0.5041 V	140.00 e-06 V	0,0017 V	42.1%	Pass
Input 25mV	2.5000 V	2.5022 V	2.4955 V	2.5045 V	190.00 e-06 V	0,0022 V	49.5%	Pass
Input 45mV	4.5000 V	4.5030 V	4.4951 V	4.5049 V	240.00 e-06 V	0,0030 V	62.2%	Pass
Input -45mV	-4.5000 V	-4.4988 V	-4.5049 V	-4.4951 V	240.00 e-06 V	0,0012 V	24.1%	Pass
±100mV Range (0.02% ±50µV) Real Val. ±5V ±3.5mV / Scaled Val. ±100mV ±70µV								
Input: 10mV	0.5000 V	0.5014 V	0.4974 V	0.5026 V	75.00 e-06 V	0,0014 V	55.4%	Pass
Input 50mV	2.5000 V	2.5018 V	2.4970 V	2.5030 V	130.00 e-06 V	0,0018 V	59.2%	Pass
Input 90mV	4.5000 V	4.5025 V	4.4966 V	4.5034 V	180.00 e-06 V	0,0025 V	72.3%	Pass
Input -90mV	-4.5000 V	-4.4986 V	-4.5034 V	-4.4966 V	180.00 e-06 V	0,0014 V	42.1%	Pass
±200mV Range (0.02% ±100µV) Real Val. ±5V ±3.5mV / Scaled Val. ±200mV ±140µV								
Input: 20mV	0.5000 V	0.5012 V	0.4974 V	0.5026 V	44.00 e-06 V	0,0012 V	46.1%	Pass
Input 100mV	2.5000 V	2.5016 V	2.4970 V	2.5030 V	96.00 e-06 V	0,0016 V	52.4%	Pass
Input 180mV	4.5000 V	4.5023 V	4.4966 V	4.5034 V	150.00 e-06 V	0,0023 V	66.5%	Pass
Input -180mV	-4.5000 V	-4.4989 V	-4.5034 V	-4.4966 V	150.00 e-06 V	0,0011 V	33.2%	Pass
±500mV Range (0.02% ±250µV) Real Val. ±5V ±3.5mV / Scaled Val. ±500mV ±350µV								
Input: 50mV	0.5000 V	0.5013 V	0.4974 V	0.5026 V	26.00 e-06 V	0,0013 V	48.2%	Pass
Input 250mV	2.5000 V	2.5014 V	2.4970 V	2.5030 V	78.00 e-06 V	0,0014 V	47.6%	Pass
Input 450mV	4.5000 V	4.5022 V	4.4966 V	4.5034 V	98.00 e-06 V	0,0022 V	65.3%	Pass
Input -450mV	-4.5000 V	-4.4986 V	-4.5034 V	-4.4966 V	98.00 e-06 V	0,0014 V	40.7%	Pass
±1V Range (0.02% ±500µV) Real Val. ±5V ±3.5mV / Scaled Val. ±1V ±700µV								
Input: 100mV	0.5000 V	0.5012 V	0.4974 V	0.5026 V	20.00 e-06 V	0,0012 V	44.7%	Pass
Input: -100mV	-0.5000 V	-0.4989 V	-0.5026 V	-0.4974 V	20.00 e-06 V	0,0011 V	41.5%	Pass
Input: 300mV	1.5000 V	1.5013 V	1.4972 V	1.5028 V	47.00 e-06 V	0,0013 V	47.6%	Pass
Input 500mV	2.5000 V	2.5017 V	2.4970 V	2.5030 V	54.00 e-06 V	0,0017 V	57.1%	Pass
Input -500mV	-2.5000 V	-2.4991 V	-2.5030 V	-2.4970 V	54.00 e-06 V	0,0009 V	28.9%	Pass
Input 700mV	3.5000 V	3.5021 V	3.4968 V	3.5032 V	71.00 e-06 V	0,0021 V	65.4%	Pass
Input 900mV	4.5000 V	4.5025 V	4.4966 V	4.5034 V	87.00 e-06 V	0,0025 V	74.8%	Pass
Input -900mV	-4.5000 V	-4.4992 V	-4.5034 V	-4.4966 V	87.00 e-06 V	0,0008 V	23.9%	Pass
±2.5V Range (0.02% ±1.25mV) Real Val. ±5V ±3.5mV / Scaled Val. ±2.5V ±1.75mV								
Input: 0.25V	0.5000 V	0.5013 V	0.4974 V	0.5026 V	17.00 e-06 V	0,0013 V	51.9%	Pass
Input 1.25V	2.5000 V	2.5019 V	2.4970 V	2.5030 V	48.00 e-06 V	0,0019 V	62.9%	Pass
Input 2.25V	4.5000 V	4.5026 V	4.4966 V	4.5034 V	80.00 e-06 V	0,0026 V	77.1%	Pass
Input -2.25V	-4.5000 V	-4.4991 V	-4.5034 V	-4.4966 V	80.00 e-06 V	0,0009 V	25.6%	Pass

11. Testergebnisse / Test results

Test Description	True Value	Test Result	Lower limit	Upper limit	Exp Uncert	Error	% of Tol	Status
±5V Range (0.02% ±2.5mV)								
Real and Scaled Values ±5V ±3.5mV								
Input: 0.5V	0.5000 V	0.5012 V	0.4974 V	0.5026 V	12.00 e-06 V	0,0012 V	48%	Pass
Input 2.5V	2.5000 V	2.5016 V	2.4970 V	2.5030 V	45.00 e-06 V	0,0016 V	52.6%	Pass
Input 4.5V	4.5000 V	4.5023 V	4.4966 V	4.5034 V	110.00 e-06 V	0,0023 V	66.8%	Pass
Input -4.5V	-4.5000 V	-4.4988 V	-4.5034 V	-4.4966 V	110.00 e-06 V	0,0012 V	36.4%	Pass
±10V Range (0.02% ±5mV)								
Real Val. ±5V ±3.5mV / Scaled Val. ±10V ±7mV								
Input: 1V	0.5000 V	0.5011 V	0.4974 V	0.5026 V	11.00 e-06 V	0,0011 V	42.3%	Pass
Input 5V	2.5000 V	2.5014 V	2.4970 V	2.5030 V	59.00 e-06 V	0,0014 V	47.4%	Pass
Input 9V	4.5000 V	4.5021 V	4.4966 V	4.5034 V	95.00 e-06 V	0,0021 V	60.6%	Pass
Input -9V	-4.5000 V	-4.4989 V	-4.5034 V	-4.4966 V	95.00 e-06 V	0,0011 V	33.8%	Pass
±25V Range (0.02% ±12.5mV)								
Real Val. ±5V ±3.5mV / Scaled Val. ±25V ±17.5mV								
Input: 2.5V	0.5000 V	0.5012 V	0.4974 V	0.5026 V	11.00 e-06 V	0,0012 V	47.5%	Pass
Input: -2.5V	-0.5000 V	-0.4988 V	-0.5026 V	-0.4974 V	11.00 e-06 V	0,0012 V	45.1%	Pass
Input 12.5V	2.5000 V	2.5015 V	2.4970 V	2.5030 V	52.00 e-06 V	0,0015 V	50.7%	Pass
Input -12.5V	-2.5000 V	-2.4988 V	-2.5030 V	-2.4970 V	52.00 e-06 V	0,0012 V	40.4%	Pass
Input 22.5V	4.5000 V	4.5021 V	4.4966 V	4.5034 V	88.00 e-06 V	0,0021 V	62.8%	Pass
Input -22.5V	-4.5000 V	-4.4986 V	-4.5034 V	-4.4966 V	88.00 e-06 V	0,0014 V	41.8%	Pass
±50V Range (0.02% ±25mV)								
Real Val. ±5V ±3.5mV /Scaled Val. ±50V ±35mV								
Input: 5V	0.5000 V	0.5009 V	0.4974 V	0.5026 V	13.00 e-06 V	0,0009 V	32.8%	Pass
Input 25V	2.5000 V	2.5012 V	2.4970 V	2.5030 V	50.00 e-06 V	0,0012 V	41.5%	Pass
Input 45V	4.5000 V	4.5020 V	4.4966 V	4.5034 V	140.00 e-06 V	0,0020 V	58%	Pass
Input -45V	-4.5000 V	-4.4992 V	-4.5034 V	-4.4966 V	140.00 e-06 V	0,0008 V	23.7%	Pass
Unipolar Ranges								
10mV Range (0.04% ±40µV)								
Real Val. ±5V ±22mV / Scaled Val. 0..10mV ±44µV								
Input: 1mV	-4.0000 V	-3.9909 V	-4.0404 V	-3.9596 V	1.30 e-03 V	0,0091 V	22.6%	Pass
Input: 5mV	0.0000 V	0.0095 V	-0.0420 V	0.0420 V	1.40 e-03 V	0,0095 V	22.6%	Pass
Input: 9mV	4.0000 V	4.0106 V	3.9564 V	4.0436 V	1.50 e-03 V	0,0106 V	24.2%	Pass
20mV Range (0.04% ±40µV)								
Real Val. ±5V ±12mV / Scaled Val. 0..20mV ±48µV								
Input: 2mV	-4.0000 V	-3.9949 V	-4.0204 V	-3.9796 V	650.00 e-06 V	0,0051 V	24.9%	Pass
Input: 10mV	0.0000 V	0.0058 V	-0.0220 V	0.0220 V	740.00 e-06 V	0,0058 V	26.3%	Pass
Input: 18mV	4.0000 V	4.0071 V	3.9764 V	4.0236 V	840.00 e-06 V	0,0071 V	30.3%	Pass
50mV Range (0.04% ±40µV)								
Real Val. ±5V ±6mV / Scaled Val. 0..50mV ±60µV								
Input: 5mV	-4.0000 V	-3.9975 V	-4.0084 V	-3.9916 V	280.00 e-06 V	0,0025 V	29.3%	Pass
Input: 25mV	0.0000 V	0.0034 V	-0.0100 V	0.0100 V	370.00 e-06 V	0,0034 V	34%	Pass
Input: 45mV	4.0000 V	4.0050 V	3.9884 V	4.0116 V	470.00 e-06 V	0,0050 V	42.8%	Pass
100mV Range (0.04% ±50µV)								
Real Val. ±5V ±4.5mV / Scaled Val. 0..100mV ±90µV								
Input: 10mV	-4.0000 V	-3.9979 V	-4.0054 V	-3.9946 V	150.00 e-06 V	0,0021 V	38.8%	Pass
Input: 50mV	0.0000 V	0.0027 V	-0.0070 V	0.0070 V	250.00 e-06 V	0,0027 V	38.9%	Pass
Input: 90mV	4.0000 V	4.0041 V	3.9914 V	4.0086 V	350.00 e-06 V	0,0041 V	47.3%	Pass
200mV Range (0.04% ±100µV)								
Real Val. ±5V ±4.5mV / Scaled Val. 0..200mV ±180µV								
Input: 20mV	-4.0000 V	-3.9983 V	-4.0054 V	-3.9946 V	94.00 e-06 V	0,0017 V	30.8%	Pass
Input: 100mV	0.0000 V	0.0025 V	-0.0070 V	0.0070 V	190.00 e-06 V	0,0025 V	35.4%	Pass
Input: 180mV	4.0000 V	4.0039 V	3.9914 V	4.0086 V	290.00 e-06 V	0,0039 V	45.6%	Pass
500mV Range (0.04% ±250µV)								
Real Val. ±5V ±4.5mV / Scaled Val. 0..00mV ±450µV								
Input: 50mV	-4.0000 V	-3.9988 V	-4.0054 V	-3.9946 V	62.00 e-06 V	0,0012 V	22.4%	Pass
Input: 250mV	0.0000 V	0.0018 V	-0.0070 V	0.0070 V	150.00 e-06 V	0,0018 V	25.5%	Pass
Input: 450mV	4.0000 V	4.0036 V	3.9914 V	4.0086 V	180.00 e-06 V	0,0036 V	41.8%	Pass
1V Range (0.04% ±500µV)								
Real Val. ±5V ±4.5mV / Scaled Val. 0..1V ±900µV								
Input: 100mV	-4.0000 V	-3.9988 V	-4.0054 V	-3.9946 V	53.00 e-06 V	0,0012 V	22.7%	Pass
Input: 500mV	0.0000 V	0.0021 V	-0.0070 V	0.0070 V	97.00 e-06 V	0,0021 V	29.8%	Pass
Input: 900mV	4.0000 V	4.0035 V	3.9914 V	4.0086 V	160.00 e-06 V	0,0035 V	41.2%	Pass
2.5V Range (0.04% ±1.25mV)								
Real Val. ±5V ±4.5mV / Scaled Val. 0..2.5V ±2.25mV								
Input: 0.25V	-4.0000 V	-3.9981 V	-4.0054 V	-3.9946 V	48.00 e-06 V	0,0019 V	36%	Pass
Input: 1.25V	0.0000 V	0.0031 V	-0.0070 V	0.0070 V	81.00 e-06 V	0,0031 V	44.4%	Pass
Input: 2.25V	4.0000 V	4.0047 V	3.9914 V	4.0086 V	140.00 e-06 V	0,0047 V	55.2%	Pass

11. Testergebnisse / Test results

Test Description	True Value	Test Result	Lower limit	Upper limit	Exp Uncert	Error	% of Tol	Status
5V Range (0.04% ±2.5mV)								
Real Values ±5V ±4.5mV / Scaled Values 0..5V ±4.5mV								
Input: 0.5V	-4.0000 V	-3.9987 V	-4.0054 V	-3.9946 V	42.00 e-06 V	0,0013 V	24.2%	Pass
Input: 2.5V	0.0000 V	0.0022 V	-0.0070 V	0.0070 V	76.00 e-06 V	0,0022 V	31.8%	Pass
Input: 4.5V	4.0000 V	4.0039 V	3.9914 V	4.0086 V	200.00 e-06 V	0,0039 V	44.8%	Pass
10V Range (0.04% ±5mV)								
Real Val. ±5V ±4.5mV / Scaled Val. 0..10V ±9mV								
Input: 1V	-4.0000 V	-3.9983 V	-4.0054 V	-3.9946 V	41.00 e-06 V	0,0017 V	31.5%	Pass
Input: 5V	0.0000 V	0.0024 V	-0.0070 V	0.0070 V	110.00 e-06 V	0,0024 V	34.7%	Pass
Input: 9V	4.0000 V	4.0038 V	3.9914 V	4.0086 V	180.00 e-06 V	0,0038 V	44.7%	Pass
25V Range (0.04% ±12.5mV)								
Real Val. ±5V ±4.5mV / Scaled Val. 0..25V ±22.5mV								
Input: 2.5V	-4.0000 V	-3.9988 V	-4.0054 V	-3.9946 V	40.00 e-06 V	0,0012 V	21.8%	Pass
Input: 12.5V	0.0000 V	0.0019 V	-0.0070 V	0.0070 V	91.00 e-06 V	0,0019 V	27%	Pass
Input: 22.5V	4.0000 V	4.0033 V	3.9914 V	4.0086 V	160.00 e-06 V	0,0033 V	38.5%	Pass
50V Range (0.04% ±25mV)								
Real Val. ±5V ±4.5mV /Scaled Val. 0..50V ±45mV								
Input: 5V	-4.0000 V	-3.9984 V	-4.0054 V	-3.9946 V	43.00 e-06 V	0,0016 V	30.5%	Pass
Input: 25V	0.0000 V	0.0026 V	-0.0070 V	0.0070 V	86.00 e-06 V	0,0026 V	37%	Pass
Input: 45V	4.0000 V	4.0042 V	3.9914 V	4.0086 V	270.00 e-06 V	0,0042 V	48.8%	Pass
AC-Calibration								
All AC-tests done with appropriate Range and Filter set to max .								
Additional Tolerances due to AC (not specified by manufacturer) 1 .. 50 Hz 0.1% of reading & 2% of range; 50Hz .. 1kHz 0.3% of reading & 2% of range; 1kHz .. 10kHz 0.5% of reading & 2% of range								
All following AC-tests done in 10mV Range and Filter set to off (max Bandwidth 180kHz)								
Input: 1mV @ 20Hz	0.5000 V	0.4997 V	0.3794 V	0.6206 V	4.50 e-03 V	-0,0003 V	0.257%	Pass
Input: 6mV @ 20Hz	3.0000 V	2.9974 V	2.8764 V	3.1236 V	7.20 e-03 V	-0,0026 V	2.14%	Pass
Input: 6mV @ 50Hz	3.0000 V	2.9991 V	2.8764 V	3.1236 V	4.60 e-03 V	-0,0009 V	0.713%	Pass
Input: 6mV @ 1kHz	3.0000 V	2.9965 V	2.8704 V	3.1296 V	4.60 e-03 V	-0,0035 V	2.71%	Pass
All following AC-tests done in 20mV Range and Filter set to off (max Bandwidth 180kHz)								
Input: 12mV @ 20Hz	3.0000 V	2.9974 V	2.8864 V	3.1136 V	5.20 e-03 V	-0,0026 V	2.26%	Pass
Input: 12mV @ 50Hz	3.0000 V	2.9991 V	2.8864 V	3.1136 V	2.60 e-03 V	-0,0009 V	0.802%	Pass
Input: 12mV @ 1kHz	3.0000 V	2.9982 V	2.8804 V	3.1196 V	2.60 e-03 V	-0,0018 V	1.49%	Pass
All following AC-tests done in 50mV Range and Filter set to off (max Bandwidth 180kHz)								
Input: 30mV @ 20Hz	3.0000 V	2.9978 V	2.8924 V	3.1076 V	4.00 e-03 V	-0,0022 V	2.04%	Pass
Input: 30mV @ 50Hz	3.0000 V	2.9994 V	2.8924 V	3.1076 V	1.50 e-03 V	-0,0006 V	0.531%	Pass
Input: 30mV @ 1kHz	3.0000 V	2.9996 V	2.8864 V	3.1136 V	1.50 e-03 V	-0,0004 V	0.352%	Pass
All following AC-tests done in 100mV Range and Filter set to off (max Bandwidth 180kHz)								
Input: 60mV @ 20Hz	3.0000 V	2.9976 V	2.8939 V	3.1061 V	1.80 e-03 V	-0,0024 V	2.28%	Pass
Input: 60mV @ 50Hz	3.0000 V	2.9992 V	2.8939 V	3.1061 V	1.20 e-03 V	-0,0008 V	0.782%	Pass
Input: 60mV @ 1kHz	3.0000 V	2.9966 V	2.8879 V	3.1121 V	1.20 e-03 V	-0,0034 V	3.07%	Pass
All following AC-tests done in 200mV Range and Filter set to off (max Bandwidth 180kHz)								
Input: 120mV @ 20Hz	3.0000 V	2.9976 V	2.8939 V	3.1061 V	1.60 e-03 V	-0,0024 V	2.23%	Pass
Input: 120mV @ 50Hz	3.0000 V	2.9992 V	2.8939 V	3.1061 V	970.00 e-06 V	-0,0008 V	0.72%	Pass
Input: 120mV @ 1kHz	3.0000 V	2.9984 V	2.8879 V	3.1121 V	970.00 e-06 V	-0,0016 V	1.43%	Pass
All following AC-tests done in 500mV Range and Filter set to off (max Bandwidth 180kHz)								
Input: 300mV @ 20Hz	3.0000 V	2.9974 V	2.8939 V	3.1061 V	1.50 e-03 V	-0,0026 V	2.46%	Pass
Input: 300mV @ 50Hz	3.0000 V	2.9990 V	2.8939 V	3.1061 V	850.00 e-06 V	-0,0010 V	0.901%	Pass
Input: 300mV @ 1kHz	3.0000 V	2.9992 V	2.8879 V	3.1121 V	850.00 e-06 V	-0,0008 V	0.749%	Pass
All following AC-tests done in 1V Range and Filter set to off (max Bandwidth 180kHz)								

11. Testergebnisse / Test results

Test Description	True Value	Test Result	Lower limit	Upper limit	Exp Uncert	Error	% of Tol	Status
Input: 100mV @ 20Hz	0.5000 V	0.4999 V	0.3969 V	0.6031 V	260.00 e-06 V	-0,0001 V	0.0718%	Pass
Input: 100mV @ 50Hz	0.5000 V	0.5002 V	0.3969 V	0.6031 V	160.00 e-06 V	0,0002 V	0.183%	Pass
Input: 100mV @ 1kHz	0.5000 V	0.5003 V	0.3959 V	0.6041 V	160.00 e-06 V	0,0003 V	0.28%	Pass
Input: 300mV @ 20Hz	1.5000 V	1.4989 V	1.3957 V	1.6043 V	910.00 e-06 V	-0,0011 V	1.05%	Pass
Input: 300mV @ 50Hz	1.5000 V	1.4997 V	1.3957 V	1.6043 V	520.00 e-06 V	-0,0003 V	0.3%	Pass
Input: 300mV @ 1kHz	1.5000 V	1.5000 V	1.3927 V	1.6073 V	520.00 e-06 V	0,0000 V	0.0305%	Pass
Input: 600mV @ 20Hz	3.0000 V	2.9979 V	2.8939 V	3.1061 V	1.60 e-03 V	-0,0021 V	1.96%	Pass
Input: 600mV @ 50Hz	3.0000 V	2.9995 V	2.8939 V	3.1061 V	1.10 e-03 V	-0,0005 V	0.482%	Pass
Input: 600mV @ 1kHz	3.0000 V	3.0000 V	2.8879 V	3.1121 V	1.10 e-03 V	0,0000 V	0.00396%	Pass
All following AC-tests done in 2.5V Range and Filter set to off (max Bandwidth 180kHz)								
Input: 1.5V @ 20Hz	3.0000 V	2.9978 V	2.8939 V	3.1061 V	1.50 e-03 V	-0,0022 V	2.04%	Pass
Input: 1.5V @ 50Hz	3.0000 V	2.9995 V	2.8939 V	3.1061 V	890.00 e-06 V	-0,0005 V	0.504%	Pass
Input: 1.5V @ 1kHz	3.0000 V	2.9996 V	2.8879 V	3.1121 V	890.00 e-06 V	-0,0004 V	0.363%	Pass
All following AC-tests done in 5V Range and Filter set to off (max Bandwidth 180kHz)								
Input: 3V @ 20Hz	3.0000 V	2.9975 V	2.8939 V	3.1061 V	1.40 e-03 V	-0,0025 V	2.32%	Pass
Input: 3V @ 50Hz	3.0000 V	2.9992 V	2.8939 V	3.1061 V	840.00 e-06 V	-0,0008 V	0.784%	Pass
Input: 3V @ 1kHz	3.0000 V	2.9958 V	2.8879 V	3.1121 V	840.00 e-06 V	-0,0042 V	3.73%	Pass
All following AC-tests done in 10V Range and Filter set to off (max Bandwidth 180kHz)								
Input: 6V @ 20Hz	3.0000 V	2.9977 V	2.8939 V	3.1061 V	2.00 e-03 V	-0,0023 V	2.2%	Pass
Input: 6V @ 50Hz	3.0000 V	2.9992 V	2.8939 V	3.1061 V	1.10 e-03 V	-0,0008 V	0.731%	Pass
Input: 6V @ 1kHz	3.0000 V	2.9979 V	2.8879 V	3.1121 V	1.10 e-03 V	-0,0021 V	1.86%	Pass
Input: 6V @ 10kHz	3.0000 V	2.9894 V	2.8819 V	3.1181 V	1.20 e-03 V	-0,0106 V	8.96%	Pass
All following AC-tests done in 25V Range and Filter set to off (max Bandwidth 180kHz)								
Input: 15V @ 20Hz	3.0000 V	2.9976 V	2.8939 V	3.1061 V	1.70 e-03 V	-0,0024 V	2.27%	Pass
Input: 15V @ 50Hz	3.0000 V	2.9993 V	2.8939 V	3.1061 V	900.00 e-06 V	-0,0007 V	0.704%	Pass
Input: 15V @ 1kHz	3.0000 V	2.9991 V	2.8879 V	3.1121 V	900.00 e-06 V	-0,0009 V	0.759%	Pass
All following AC-tests done in 50V Range and Filter set to off (max Bandwidth 180kHz)								
±50V Range 30V @ 20Hz								
Input: 30V @ 20Hz	3.0000 V	2.9977 V	2.8939 V	3.1061 V	1.60 e-03 V	-0,0023 V	2.14%	Pass
Input: 30V @ 50Hz	3.0000 V	2.9994 V	2.8939 V	3.1061 V	840.00 e-06 V	-0,0006 V	0.584%	Pass
Input: 30V @ 1kHz	3.0000 V	2.9997 V	2.8879 V	3.1121 V	840.00 e-06 V	-0,0003 V	0.265%	Pass

FILTER TEST		
All tests done in 5V bipolar Range		
Filter test: 10Hz @ 10Hz	Pass	(1)
Filter test: 10Hz @ 100Hz	Pass	(1)
Filter test: 30Hz @ 15Hz	Pass	(1)
Filter test: 30Hz @ 30Hz	Pass	(1)
Filter test: 30Hz @ 300Hz	Pass	(1)
Filter test: 100HZ @ 50Hz	Pass	(1)
Filter test: 100Hz @ 100Hz	Pass	(1)
Filter test: 100Hz @ 1kHz	Pass	(1)
Filter test: 100Hz Butter. @ 1kHz	Pass	(1)
Filter test: 300Hz @ 150Hz	Pass	(1)
Filter test: 300Hz @ 300Hz	Pass	(1)
Filter test: 300Hz @ 3kHz	Pass	(1)
Filter test: 1kHz @ 500Hz	Pass	(1)
Filter test: 1kHz @ 1kHz	Pass	(1)
Filter test: 1kHz @ 10kHz	Pass	(1)
Filter test: 1kHz Butter. @ 10kHz	Pass	(1)
Filter test: 3kHz @ 1500Hz	Pass	(1)
Filter test: 3kHz @ 3kHz	Pass	(1)
Filter test: 3kHz @ 30kHz	Pass	(1)
Filter test: 10kHz @ 5 kHz	Pass	(1)
Filter test: 10kHz @ 10kHz	Pass	(1)
Filter test: 10kHz @ 100kHz	Pass	(1)
Filter test: 30kHz @ 30kHz	Pass	(1)
Filter test: 100kHz @ 100kHz	Pass	(1)
Bandwith test	Pass	(1)
CMRR TEST		
CMRR test: 10mV Range @ 100Hz	Pass	(1)
CMRR test: 500mV Range @ 100Hz	Pass	(1)

11. Testergebnisse / Test results

Test Description	True Value	Test Result	Lower limit	Upper limit	Exp Uncert	Error	% of Tol	Status	
CMRR test: 2.5V Range @ 100Hz								Pass	(1)
CMRR test: 50V Range @ 100Hz								Pass	(1)
CMRR test: 10mV Range @ 10kHz								Pass	(1)
CMRR test: 500mV Range @ 10kHz								Pass	(1)
CMRR test: 2.5V Range @ 10kHz								Pass	(1)
CMRR test: 50V Range @ 10kHz								Pass	(1)

Ende des Kalibrierscheines / *End of Calibration Certificate*