**DEWETRON GmbH**

Parkring 4
8074 Grambach
Austria

| AAT2650419 |
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| Akkreditierung Austria 0632 |
| 19.10.2026 |

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*

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| Gegenstand<br>*Object* | Multi channel RTD module |
| Hersteller<br>*Manufacturer* | DEWETRON |
| Typ<br>*Type* | XR-RTD |
| Herstellernummer<br>*Serial number* | 00571020 |
| Auftraggeber<br>*Customer* | |
| Kalibriernummer<br>*Order number* | AAT2650419 |
| Anzahl der Seiten des Kalibrierscheines<br>*Number of pages of the certificate* | 5 |
| Datum der Kalibrierung<br>*Date of calibration* | 19.10.2026 |

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.*

Dieser Kalibrierschein darf nur vollständig und unverändert weiterverbreitet werden. Auszüge oder Änderungen sind unzulässig. Kalibrierscheine ohne Unterschrift und Stempel haben keine Gültigkeit.

*This calibration certificate may not be reproduced other than in full. Calibration certificates without signature and seal are not valid.*

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| Stempel<br>*Seal* | Datum<br>*Date* | Zeichnungsberechtigter<br>*Authorised person* | Bearbeiter<br>*Person responsible* |
| --- | --- | --- | --- |
| | 19.10.2026 | Stefan Strohmaier | Tobias Roth |

**1. Kalibriergegenstand / *Calibration object***

Multi channel RTD module DEWETRON XR-RTD, S/N: 00571020

**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*: XR-RTD8_Akkred, Rev. 2.10

**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:* | 22,6 °C +/- 1 °C |
| Rel. Luftfeuchte / *Rel. humidity:* | 42 % +/- 10 % |
| 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***

Akkred. 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 01 | 5522A CALIBRATOR | 3904901 | D2072026 | 28-Jul-2026 | 28-Jul-2027 |
| Keysight 3458A 07 | 3458A Multimeter | MY59352994 | C1072026 | 27-Jul-2026 | 27-Jul-2027 |

## 11. Testergebnisse / Test results

| Test Description | True Value | Test Result | Lower limit | Upper limit | Exp Uncert | Error | % of Tol | Status | |
|---|---|---|---|---|---|---|---|---|---|
| Current Temperature of DMM and Calibrator | | | | | | | | | |
| DMM: 36.1°C | | | | | | | | | |
| Calibrator: 24.34°C | | | | | | | | | |
| Kalibrierverfahren / calibration method: | | | | | | | | | |
| CAL-KV-05 Gleichstromwiderstand v1.0 2024-07-04.xlsx-04 | | | | | | | | | |
| CAL-KV-07_Temperatursimulation_RTD_v1.0_2024-07-04.xlsx-02C | | | | | | | | | |
| Asset type: XR-RTD8 | | | | | | | | | |
| Serial Number: 00571020 | | | | | | | | | |
| Firmware Revision: 2.54 | | | | | | | | | |
| Accuracy | | | | | | | | | |
| Pt100 (385) | | | | | | | | | |
| -200 to 100 °C: +/- 0.25 °C | | | | | | | | | |
| 100 to 400 °C: +/- 0.4 °C | | | | | | | | | |
| 400 to 800 °C: +/- 0.8 °C | | | | | | | | | |
| Resistance | | | | | | | | | |
| 0.03% of reading ±0.1 Ohm | | | | | | | | | |
| Following tests done with 100S/s Sample Rate, | | | | | | | | | |
| unless otherwise stated. | | | | | | | | | |
| 4 wire measurement. | | | | | | | | | |
| CHANNEL 1 | | | | | | | | | |
| Constant Current | | | | | | | | Pass | (1) |
| Pt100 (385) | -190.00 °C | -189.91 °C | -190.25 °C | -189.75 °C | 140.00 e-03 °C | 0,09 °C | 36% | Pass | |
| Pt100 (385) | 0.00 °C | 0.02 °C | -0.25 °C | 0.25 °C | 140.00 e-03 °C | 0,02 °C | 8% | Pass | |
| Pt100 (385) | 300.00 °C | 300.06 °C | 299.60 °C | 300.40 °C | 140.00 e-03 °C | 0,06 °C | 15.8% | Pass | |
| Pt100 (385) | 790.00 °C | 790.06 °C | 789.20 °C | 790.80 °C | | 0,06 °C | 7.5% | Pass | (1) |
| Pt100 (385) @ 10S/s SR | 790.00 °C | 790.04 °C | 789.20 °C | 790.80 °C | | 0,04 °C | 5% | Pass | (1) |
| Resistance | 1.0000 Ω | 1.0013 Ω | 0.8997 Ω | 1.1003 Ω | 2.80 e-03 Ω | 0,0013 Ω | 1.33% | Pass | |
| Resistance | 2500.00 Ω | 2500.00 Ω | 2499.15 Ω | 2500.85 Ω | 300.00 e-03 Ω | 0,00 Ω | 0.118% | Pass | |
| Resistance | 4900.00 Ω | 4899.97 Ω | 4898.43 Ω | 4901.57 Ω | 490.00 e-03 Ω | -0,03 Ω | 1.72% | Pass | |
| CHANNEL 2 | | | | | | | | | |
| Constant Current | | | | | | | | Pass | (1) |
| Pt100 (385) | -190.00 °C | -189.91 °C | -190.25 °C | -189.75 °C | 140.00 e-03 °C | 0,09 °C | 36% | Pass | |
| Pt100 (385) | 0.00 °C | 0.01 °C | -0.25 °C | 0.25 °C | 140.00 e-03 °C | 0,01 °C | 2.67% | Pass | |
| Pt100 (385) | 300.00 °C | 300.06 °C | 299.60 °C | 300.40 °C | 140.00 e-03 °C | 0,06 °C | 15% | Pass | |
| Pt100 (385) | 790.00 °C | 790.07 °C | 789.20 °C | 790.80 °C | | 0,07 °C | 8.75% | Pass | (1) |
| Pt100 (385) @ 10S/s SR | 790.00 °C | 790.02 °C | 789.20 °C | 790.80 °C | | 0,02 °C | 2.5% | Pass | (1) |
| Resistance | 1.0000 Ω | 1.0047 Ω | 0.8997 Ω | 1.1003 Ω | 2.80 e-03 Ω | 0,0047 Ω | 4.65% | Pass | |
| Resistance | 2500.00 Ω | 2500.00 Ω | 2499.15 Ω | 2500.85 Ω | 300.00 e-03 Ω | 0,00 Ω | 0.157% | Pass | |
| Resistance | 4900.00 Ω | 4899.94 Ω | 4898.43 Ω | 4901.57 Ω | 490.00 e-03 Ω | -0,06 Ω | 3.61% | Pass | |
| CHANNEL 3 | | | | | | | | | |
| Constant Current | | | | | | | | Pass | (1) |
| Pt100 (385) | -190.00 °C | -189.92 °C | -190.25 °C | -189.75 °C | 140.00 e-03 °C | 0,08 °C | 32% | Pass | |
| Pt100 (385) | 0.00 °C | 0.03 °C | -0.25 °C | 0.25 °C | 140.00 e-03 °C | 0,03 °C | 12% | Pass | |
| Pt100 (385) | 300.00 °C | 300.06 °C | 299.60 °C | 300.40 °C | 140.00 e-03 °C | 0,06 °C | 15.8% | Pass | |
| Pt100 (385) | 790.00 °C | 790.10 °C | 789.20 °C | 790.80 °C | | 0,10 °C | 12.5% | Pass | (1) |
| Pt100 (385) @ 10S/s SR | 790.00 °C | 790.05 °C | 789.20 °C | 790.80 °C | | 0,05 °C | 6.25% | Pass | (1) |
| Resistance | 1.0000 Ω | 0.9967 Ω | 0.8997 Ω | 1.1003 Ω | 2.80 e-03 Ω | -0,0033 Ω | 3.32% | Pass | |
| Resistance | 2500.00 Ω | 2500.04 Ω | 2499.15 Ω | 2500.85 Ω | 300.00 e-03 Ω | 0,04 Ω | 4.63% | Pass | |
| Resistance | 4900.00 Ω | 4900.02 Ω | 4898.43 Ω | 4901.57 Ω | 490.00 e-03 Ω | 0,02 Ω | 1.49% | Pass | |
| CHANNEL 4 | | | | | | | | | |
| Constant Current | | | | | | | | Pass | (1) |
| Pt100 (385) | -190.00 °C | -189.90 °C | -190.25 °C | -189.75 °C | 140.00 e-03 °C | 0,10 °C | 41.3% | Pass | |
| Pt100 (385) | 0.00 °C | 0.05 °C | -0.25 °C | 0.25 °C | 140.00 e-03 °C | 0,05 °C | 18.7% | Pass | |
| Pt100 (385) | 300.00 °C | 300.08 °C | 299.60 °C | 300.40 °C | 140.00 e-03 °C | 0,08 °C | 20% | Pass | |
| Pt100 (385) | 790.00 °C | 790.12 °C | 789.20 °C | 790.80 °C | | 0,12 °C | 15% | Pass | (1) |
| Pt100 (385) @ 10S/s SR | 790.00 °C | 790.04 °C | 789.20 °C | 790.80 °C | | 0,04 °C | 5% | Pass | (1) |
| Resistance | 1.0000 Ω | 1.0013 Ω | 0.8997 Ω | 1.1003 Ω | 2.80 e-03 Ω | 0,0013 Ω | 1.33% | Pass | |
| Resistance | 2500.00 Ω | 2500.03 Ω | 2499.15 Ω | 2500.85 Ω | 300.00 e-03 Ω | 0,03 Ω | 4% | Pass | |
| Resistance | 4900.00 Ω | 4900.05 Ω | 4898.43 Ω | 4901.57 Ω | 490.00 e-03 Ω | 0,05 Ω | 3.01% | Pass | |
| CHANNEL 5 | | | | | | | | | |
| Constant Current | | | | | | | | Pass | (1) |
| Pt100 (385) | -190.00 °C | -189.87 °C | -190.25 °C | -189.75 °C | 140.00 e-03 °C | 0,13 °C | 53.3% | Pass | |
| Pt100 (385) | 0.00 °C | 0.07 °C | -0.25 °C | 0.25 °C | 140.00 e-03 °C | 0,07 °C | 26.7% | Pass | |
| Pt100 (385) | 300.00 °C | 300.12 °C | 299.60 °C | 300.40 °C | 140.00 e-03 °C | 0,12 °C | 30.8% | Pass | |

**DEWETRON GmbH**
Parkring 4
8074 Grambach
AUSTRIA

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

AAT2650419
Akkreditierung Austria
0632
19.10.2026

## 11. Testergebnisse / Test results

| Test Description | True Value | Test Result | Lower limit | Upper limit | Exp Uncert | Error | % of Tol | Status | |
|---|---|---|---|---|---|---|---|---|---|
| Pt100 (385) | 790.00 °C | 790.12 °C | 789.20 °C | 790.80 °C | | 0,12 °C | 15% | Pass | (1) |
| Pt100 (385) @ 10S/s SR | 790.00 °C | 790.06 °C | 789.20 °C | 790.80 °C | | 0,06 °C | 7.5% | Pass | (1) |
| Resistance | 1.0000 Ω | 1.0150 Ω | 0.8997 Ω | 1.1003 Ω | 2.80 e-03 Ω | 0,0150 Ω | 15% | Pass | |
| Resistance | 2500.00 Ω | 2500.01 Ω | 2499.15 Ω | 2500.85 Ω | 300.00 e-03 Ω | 0,01 Ω | 1.41% | Pass | |
| Resistance | 4900.00 Ω | 4899.97 Ω | 4898.43 Ω | 4901.57 Ω | 490.00 e-03 Ω | -0,03 Ω | 1.66% | Pass | |
| CHANNEL 6 | | | | | | | | | |
| Constant Current | | | | | | | | Pass | (1) |
| Pt100 (385) | -190.00 °C | -189.91 °C | -190.25 °C | -189.75 °C | 140.00 e-03 °C | 0,09 °C | 36% | Pass | |
| Pt100 (385) | 0.00 °C | 0.05 °C | -0.25 °C | 0.25 °C | 140.00 e-03 °C | 0,05 °C | 18.7% | Pass | |
| Pt100 (385) | 300.00 °C | 300.07 °C | 299.60 °C | 300.40 °C | 140.00 e-03 °C | 0,07 °C | 16.7% | Pass | |
| Pt100 (385) | 790.00 °C | 790.10 °C | 789.20 °C | 790.80 °C | | 0,10 °C | 12.5% | Pass | (1) |
| Pt100 (385) @ 10S/s SR | 790.00 °C | 790.05 °C | 789.20 °C | 790.80 °C | | 0,05 °C | 6.25% | Pass | (1) |
| Resistance | 1.0000 Ω | 1.0013 Ω | 0.8997 Ω | 1.1003 Ω | 2.80 e-03 Ω | 0,0013 Ω | 1.33% | Pass | |
| Resistance | 2500.00 Ω | 2500.01 Ω | 2499.15 Ω | 2500.85 Ω | 300.00 e-03 Ω | 0,01 Ω | 1.1% | Pass | |
| Resistance | 4900.00 Ω | 4899.99 Ω | 4898.43 Ω | 4901.57 Ω | 490.00 e-03 Ω | -0,01 Ω | 0.913% | Pass | |
| CHANNEL 7 | | | | | | | | | |
| Constant Current | | | | | | | | Pass | (1) |
| Pt100 (385) | -190.00 °C | -189.87 °C | -190.25 °C | -189.75 °C | 140.00 e-03 °C | 0,13 °C | 52% | Pass | |
| Pt100 (385) | 0.00 °C | 0.05 °C | -0.25 °C | 0.25 °C | 140.00 e-03 °C | 0,05 °C | 21.3% | Pass | |
| Pt100 (385) | 300.00 °C | 300.12 °C | 299.60 °C | 300.40 °C | 140.00 e-03 °C | 0,12 °C | 29.2% | Pass | |
| Pt100 (385) | 790.00 °C | 790.14 °C | 789.20 °C | 790.80 °C | | 0,14 °C | 17.5% | Pass | (1) |
| Pt100 (385) @ 10S/s SR | 790.00 °C | 790.04 °C | 789.20 °C | 790.80 °C | | 0,04 °C | 5% | Pass | (1) |
| Resistance | 1.0000 Ω | 1.0087 Ω | 0.8997 Ω | 1.1003 Ω | 2.80 e-03 Ω | 0,0087 Ω | 8.64% | Pass | |
| Resistance | 2500.00 Ω | 2500.03 Ω | 2499.15 Ω | 2500.85 Ω | 300.00 e-03 Ω | 0,03 Ω | 3.22% | Pass | |
| Resistance | 4900.00 Ω | 4900.02 Ω | 4898.43 Ω | 4901.57 Ω | 490.00 e-03 Ω | 0,02 Ω | 1.13% | Pass | |
| CHANNEL 8 | | | | | | | | | |
| Constant Current | | | | | | | | Pass | (1) |
| Pt100 (385) | -190.00 °C | -189.86 °C | -190.25 °C | -189.75 °C | 140.00 e-03 °C | 0,14 °C | 56% | Pass | |
| Pt100 (385) | 0.00 °C | 0.07 °C | -0.25 °C | 0.25 °C | 140.00 e-03 °C | 0,07 °C | 28% | Pass | |
| Pt100 (385) | 300.00 °C | 300.12 °C | 299.60 °C | 300.40 °C | 140.00 e-03 °C | 0,12 °C | 30.8% | Pass | |
| Pt100 (385) | 790.00 °C | 790.19 °C | 789.20 °C | 790.80 °C | | 0,19 °C | 23.8% | Pass | (1) |
| Pt100 (385) @ 10S/s SR | 790.00 °C | 790.11 °C | 789.20 °C | 790.80 °C | | 0,11 °C | 13.8% | Pass | (1) |
| Resistance | 1.0000 Ω | 1.0210 Ω | 0.8997 Ω | 1.1003 Ω | 2.80 e-03 Ω | 0,0210 Ω | 20.9% | Pass | |
| Resistance | 2500.00 Ω | 2500.06 Ω | 2499.15 Ω | 2500.85 Ω | 300.00 e-03 Ω | 0,06 Ω | 7.18% | Pass | |
| Resistance | 4900.00 Ω | 4900.06 Ω | 4898.43 Ω | 4901.57 Ω | 490.00 e-03 Ω | 0,06 Ω | 3.57% | Pass | |

Ende des Kalibrierscheines / *End of Calibration Certificate*