

## Deutsche Akkreditierungsstelle

### Annex to the Accreditation Certificate D-K-15220-01-00 according to DIN EN ISO/IEC 17025:2018

**Valid from:** 08.12.2023

**Date of issue:** 08.12.2023

Holder of accreditation certificate:

**Günther GmbH Temperaturmesstechnik  
Bauhofstraße 12, 90571 Schwaig b. Nürnberg**

with the location

**Günther GmbH Temperaturmesstechnik  
Bauhofstraße 12, 90571 Schwaig b. Nürnberg**

The calibration laboratory meets the requirements of DIN EN ISO/IEC 17025:2018 to carry out the conformity assessment activities listed in this annex. The calibration laboratory meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of calibration laboratories and they conform to the general with the principles of DIN EN ISO 9001.

Calibration in the fields:

**Thermodynamic quantities**

**Temperature quantities**

- **Temperature indicators and simulators <sup>a)</sup>**
- **Thermocouples**
- **Resistance thermometers**

<sup>a)</sup> **also on-site calibration**

*This certificate annex is only valid together with the written accreditation certificate and reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at <https://www.dakks.de>.*

Abbreviations used: see last page

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**This document is a translation. The definitive version is the original German annex to the accreditation certificate.**

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The calibration laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, to use calibration standards or equivalent calibration procedures listed here with different issue dates.

The calibration laboratory maintains a current list of all calibration standards / equivalent calibration procedures within the flexible scope of accreditation.

**Permanent Laboratory**

**Calibration and Measurement Capabilities (CMC)**

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
<b>Temperature</b> Resistance thermometers	-20 °C to 100 °C	DKD-R 5-1:2018 in liquid bath	0.2 K	Comparison with standard resistance thermometer interpolation of the characteristic curve according to DKD-R 5-6:2018
	-100 °C to 150 °C	DKD-R 5-1:2018 in dry block calibrator	0.15 K	
	> 150 °C to 400 °C		0.50 K	
Noble metal thermocouples	-20 °C to 100 °C	DKD-R 5-3:2018 in liquid bath	0.6 K	Comparison with standard resistance thermometer interpolation of the characteristic curve according to DKD-R 5-6:2018
	-40 °C to 150 °C	DKD-R 5-3:2018 in dry block calibrator	0.5 K	
	50 °C to 600 °C		1.2 K	Comparison with standard thermocouple interpolation of the characteristic curve according to DKD-R 5-6:2018
	> 600 °C to 1200 °C		3.9 K	
	> 1200 °C to 1300 °C	6.7 K		
	> 600 °C to 900 °C	DKD-R 5-3:2018 in tube furnace	1.2 K	
	> 900 °C to 1300 °C		1.4 K	
	> 1300 °C to 1500 °C		2.5 K	

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**Permanent Laboratory**

**Calibration and Measurement Capabilities (CMC)**

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Base metal thermocouples	-20 °C to 100 °C	DKD-R 5-3:2018 in liquid bath	0.5 K	Comparison with standard resistance thermometer
	-100 °C to -40 °C	DKD-R 5-3:2018 in dry block calibrator	0.8 K	
	> -40 °C to 150 °C		0.5 K	
	50 °C to 600 °C		1.2 K	Comparison with standard thermocouple interpolation of the characteristic curve according to DKD-R 5-6:2018
	> 600 °C to 1200 °C	3.9 K		
	> 1200 °C to 1300 °C	6.7 K		
	> 600 °C to 900 °C	DKD-R 5-3:2018 in tube furnace	1.2 K	
	> 900 °C to 1300 °C		1.5 K	
Temperature indicators and simulators for resistance thermometers	-200°C to 850 °C	DKD-R 5-5:2018	0.25 K	Characteristic curve according to DIN EN IEC 60751:2023-06
Temperature indicators and simulators for noble metal thermocouples	-50 °C to 1820 °C	DKD-R 5-5:2018 with or without reference junction compensation	1.0 K	Characteristic curve according to DIN EN 60584-1:2014-07
Temperature indicators and simulators for base metal thermocouples	-270 °C to 1370 °C		0.5 K	

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**On-site Calibration**

Calibration and Measurement Capabilities (CMC)				
Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
<b>Temperature</b> Temperature indicators and simulators for resistance thermometers	-200 °C to 850 °C	DKD-R 5-5:2018	0.25 K	Characteristic curve according to DIN EN IEC 60751:2023-06
Temperature indicators and simulators for noble metal thermocouples	-50 °C to 1820 °C	DKD-R 5-5:2018 with or without reference junction compensation	1.0 K	Characteristic curve according to DIN EN 60584-1:2014-07
Temperature indicators and simulators for base metal thermocouples	-270 °C to 1370 °C		0.5 K	

**Abbreviations used:**

- CMC Calibration and measurement capabilities
- DIN Deutsches Institut für Normung e.V. – German institute for standardization
- DKD-R Calibration Guide of Deutscher Kalibrierdienst (DKD), published by the Physikalisch-Technischen Bundesanstalt
- EN Europäische Norm – European Standard
- IEC International Electrotechnical Commission
- ISO International Organization for Standardisation

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