

Deutsche Akkreditierungsstelle GmbH

Entrusted according to Section 8 subsection 1 AkkStelleG in connection with Section 1 subsection 1 AkkStelleGBV

Signatory to the Multilateral Agreements of EA, ILAC and IAF for Mutual Recognition

Accreditation



The Deutsche Akkreditierungsstelle GmbH attests that the calibration laboratory

Günther GmbH Temperaturmesstechnik
Bauhofstraße 12, 90571 Schwaig

is competent under the terms of DIN EN ISO/IEC 17025:2018 to carry out calibrations in the following fields:

Thermodynamic quantities

Temperature quantities

- Resistance thermometers
- Thermocouples
- Temperature indicators and simulators ^{a)}

^{a)} also on-site calibrations


The accreditation certificate shall only apply in connection with the notice of accreditation of 28.03.2022 with the accreditation number D-K-15220-01. It comprises the cover sheet, the reverse side of the cover sheet and the following annex with a total of 3 pages.

Registration number of the certificate: **D-K-15220-01-00**

Berlin,
28.03.2022

Dipl.-Wirtsch.-Ing. (BA)
Head of Division

Translation issued:
28.03.2022

by proxy

Head of Division

The certificate together with its annex reflects the status at the time of the date of issue. The current status of the scope of accreditation can be found in the database of accredited bodies of Deutsche Akkreditierungsstelle GmbH.

<https://www.dakks.de/en/content/accredited-bodies-dakks>

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

See notes overleaf.

Deutsche Akkreditierungsstelle GmbH

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10117 Berlin

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Europa-Allee 52
60327 Frankfurt am Main

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38116 Braunschweig

The publication of extracts of the accreditation certificate is subject to the prior written approval by Deutsche Akkreditierungsstelle GmbH (DAkKS). Exempted is the unchanged form of separate disseminations of the cover sheet by the conformity assessment body mentioned overleaf.

No impression shall be made that the accreditation also extends to fields beyond the scope of accreditation attested by DAkKS.

The accreditation was granted pursuant to the Act on the Accreditation Body (AkkStelleG) of 31 July 2009 (Federal Law Gazette I p. 2625) and the Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products (Official Journal of the European Union L 218 of 9 July 2008, p. 30). DAkKS is a signatory to the Multilateral Agreements for Mutual Recognition of the European co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Cooperation (ILAC). The signatories to these agreements recognise each other's accreditations.

The up-to-date state of membership can be retrieved from the following websites:

EA: www.european-accreditation.org

ILAC: www.ilac.org

IAF: www.iaf.nu

Deutsche Akkreditierungsstelle GmbH

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

Valid from: 28.03.2022

Date of issue 28.03.2022

Holder of certificate:

**Günther GmbH Temperaturmesstechnik
Bauhofstraße 12, 90571 Schwaig**

Calibration in the fields:

Thermodynamic quantities

Temperature quantities

- Resistance thermometers
- Thermocouples
- Temperature indicators and simulators ^{a)}

^{a)} also on-site calibrations

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.

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

*The certificate together with its annex reflects the status at the time of the date of issue. The current status of the scope of accreditation can be found in the database of accredited bodies of Deutsche Akkreditierungsstelle GmbH.
<https://www.dakks.de/en/content/accredited-bodies-dakks>*

Annex to the accreditation certificate D-K-15220-01-00

Permanent Laboratory

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	Remarks
Temperature Resistance thermometers	-20 °C to 100 °C	in temperature controlled liquid bath DKD-R 5-1:2018	0.1 K	Comparison with standard resistance thermometer
	-100 °C to -40 °C	in dry block calibrator DKD-R 5-1:2018	0.15 K	interpolation of the characteristic curve according to DKD-R 5-6:2018
	> -40 °C to 400 °C		0.10 K	
	> 400 °C to 600 °C		0.15 K	
Noble metal thermocouples	-20 °C to 100 °C	in temperature controlled liquid bath DKD-R 5-3:2018	0.6 K	Comparison with standard resistance thermometer
	-40 °C to 100 °C	in dry block calibrator DKD-R 5-3:2018	0.5 K	interpolation of the characteristic curve according to DKD-R 5-6:2018
	> 100 °C to 600 °C		0.4 K	
	50 °C to 600 °C		1.2 K	Comparison with standard thermocouple
	> 600 °C to 1200 °C		3.9 K	interpolation of the characteristic curve according to DKD-R 5-6:2018
	> 1200 °C to 1300 °C		6.7 K	
	> 600 °C to 900 °C	in tube furnace DKD-R 5-3:2018	1.2 K	
	> 900 °C to 1300 °C		1.4 K	
	> 1300 °C to 1500 °C		2.5 K	
Base metal thermocouples	-20 °C to 100 °C	in temperature controlled liquid bath DKD-R 5-3:2018	0.5 K	Comparison with standard resistance thermometer
	-100 °C to -40 °C	in dry block calibrator DKD-R 5-3:2018	0.8 K	interpolation of the characteristic curve according to DKD-R 5-6:2018
	> -40 °C to 600 °C		0.5 K	
	50 °C to 600 °C		1.2 K	Comparison with standard thermocouple
	> 600 °C to 1200 °C		3.9 K	interpolation of the characteristic curve according to DKD-R 5-6:2018
	> 1200 °C to 1300 °C		6.7 K	
	> 600 °C to 900 °C	in tube furnace DKD-R 5-3:2018	1.2 K	
	> 900 °C to 1300 °C		1.5 K	

¹⁾ The expanded uncertainties according to EA-4/02 M:2021 are part of CMC and are the best measurement uncertainties within accreditation. They have a coverage probability of approximately 95 % and have a coverage factor of $k = 2$ unless stated otherwise. Uncertainties without unit are relative uncertainties referring to the measurement value unless stated otherwise.

Annex to the accreditation certificate D-K-15220-01-00
Permanent Laboratory
Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	Remarks
Temperature indicators and simulators for resistance thermometers	-200 °C to 850 °C	DKD-R 5-5:2018	0.25 K	Electrical simulation of the input variable
Temperature indicators and simulators for noble metal thermocouples	-50 °C to 1820 °C	DKD-R 5-5:2018	1.0 K	Electrical simulation of the input variable with or without reference junction compensation
Temperature indicators and simulators for base metal thermocouples	-270 °C to 1370 °C	DKD-R 5-5:2018	0.5 K	Electrical simulation of the input variable with or without reference junction compensation

On-site Calibration
Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	Remarks
Temperature indicators and simulators for resistance thermometers	-200 °C to 850 °C	DKD-R 5-5:2018	0.25 K	Electrical simulation of the input variable
Temperature indicators and simulators for noble metal thermocouples	-50 °C to 1820 °C	DKD-R 5-5:2018	1.0 K	Electrical simulation of the input variable with or without reference junction compensation
Temperature indicators and simulators for base metal thermocouples	-270 °C to 1370 °C	DKD-R 5-5:2018	0.5 K	Electrical simulation of the input variable with or without reference junction compensation

Abbreviations used:

CMC	Calibration and measurement capabilities (Kalibrier- und Messmöglichkeiten)
DKD-R	Calibration Guide of Deutscher Kalibrierdienst (DKD), published by the Physikalisch-Technischen Bundesanstalt

¹⁾ The expanded uncertainties according to EA-4/02 M:2021 are part of CMC and are the best measurement uncertainties within accreditation. They have a coverage probability of approximately 95 % and have a coverage factor of $k = 2$ unless stated otherwise. Uncertainties without unit are relative uncertainties referring to the measurement value unless stated otherwise.

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