

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

Ludwig Schneider Messtechnik GmbH
Am Eichamt 4, 97877 Wertheim

is competent under the terms of DIN EN ISO/IEC 17025:2005 to carry out calibrations in the following fields:

Thermodynamic quantities

Temperature quantities

- Resistance thermometers
- Thermocouples
- Temperature block calibrators

Mechanical quantities

- Density

The accreditation certificate shall only apply in connection with the notice of accreditation of 2011-11-30 with the accreditation number D-K-15223-01 and is valid until 2016-11-29. 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 -15223-01-00**

Braunschweig, 2011-11-30



Dr. Michael Wolf
Head of Division

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

See notes overleaf.

Deutsche Akkreditierungsstelle GmbH

Office Berlin
Spittelmarkt 10
10117 Berlin

Office Frankfurt am Main
Gartenstraße 6
60594 Frankfurt am Main

Office Braunschweig
Bundesallee 100
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
German Accreditation Body

Annex to the Accreditation Certificate D-K-15223-01-00
according to DIN EN ISO/IEC 17025:2005

Period of validity: 2011-11-30 to 2016-11-29

Holder of certificate:

Ludwig Schneider Messtechnik GmbH
Am Eichamt 4, 97877 Wertheim

Head:	N.N.
Deputy:	Lilia Wittenbeck Johannes Bittner

Accredited as calibration laboratory since: 1998-06-02

Calibrations in the fields:

Thermodynamic quantities

Temperature quantities

- Resistance thermometers
- Thermocouples
- Temperature block calibrators

Mechanical quantities

- Density

Annex to the accreditation certificate D-K-15223-01-00

Permanent Laboratory

Measured quantity / Calibration item	Range	Measurement conditions / procedure	Best measurement capability ¹⁾	Remarks
Temperature resistance thermometers, indicating electric thermometers, mechanical thermometers, liquid-in glass thermometers, temperature indicators and simulators for resistance thermometers	-196 °C	in liquid nitrogen	50 mK	Comparison with standard resistance thermometers or standard liquid in glass thermometers
	-90 °C to 0 °C	cryostat	20 mK	
	>0 °C to 250 °C	water bath / oil bath	10 mK	
	> 250 °C to 500 °C > 500 °C to 660 °C	salt bath	50 mK 0.10 K	
rare metal thermocouples, temperature indicators and simulators for thermocouples	0 °C to 100 °C	calibration baths	0.3 K	Comparison with standard resistance thermometers or standard thermocouples
	> 100 °C to 500 °C		0.5 K	
	> 500 °C to 1000 °C	furnace	1.0 K	
	> 1000 °C to 1200 °C > 1200 °C to 1300 °C		1.5 K 2.0 K	
base metal thermocouples	-90 °C to 300 °C	calibration baths	0.5 K	
	> 300 °C to 600 °C		1.0 K	
	> 600 °C to 1000 °C	furnace	1.5 K	
	> 1000 °C to 1200 °C > 1200 °C to 1300 °C		2.0 K 3.0 K	
measuring transducers with resistance thermometer	-196 °C	in liquid nitrogen	$U_{PRT} + 0.10 \text{ K}$	Comparison with standard resistance thermometers or standard thermocouples
	-90 °C to 0 °C	cryostat		
	> 0 °C to 250 °C	water bath / oil bath		
	> 250 °C to 500 °C > 500 °C to 660 °C	salt bath		
measuring transducers with thermocouples	0 °C to 100 °C	calibration baths	$U_{TE} + 0.50 \text{ K}$	U_{PRT}, U_{TE} = expanded measurement uncertainty from the calibration of the resistance thermometer only resp. the thermocouple only
	> 100 °C to 500 °C			
	> 500 °C to 1000 °C	furnace		
	> 1000 °C to 1200 °C > 1200 °C to 1300 °C			
temperature block calibrators	-30 °C to 133 °C		0.20 K	Comparison with standard resistance thermometers ; t = measured value in °C
	> 133 °C to 660 °C		$1.5 \text{ mK} \cdot t / ^\circ\text{C}$	
	0 °C to 660 °C		1.5 K	Comparison with standard thermocouples
	> 660 °C to 1000 °C > 1000 °C to 1300 °C		2.5 K 4.5 K	

¹⁾ The best measurement capabilities are stated according to EA-4/02. These are expanded uncertainties of measurement with a coverage probability of 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-15223-01-00

Measured quantity / Calibration item	Range	Measurement conditions / procedure	Best measurement capability ¹⁾	Remarks
Density hydrometer and derived instruments	450 kg/m ³ to 2000 kg/m ³	hydrostatic method	0.04 kg/m ³	
Content alkoholometer	0 % to 100 %	hydrostatic method	0.016 %	no relative uncertainty of measurement
Content saccharimeter	0 % to 70 %	hydrostatic method	0.012 %	

¹⁾ The best measurement capabilities are stated according to EA-4/02. These are expanded uncertainties of measurement with a coverage probability of 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.