

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

Diehl Metering GmbH
Industriestraße 13, 91522 Ansbach

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

Fluid quantities

- Volume of flowing liquids

Thermodynamic quantities

- Thermal energy
- Heat meters

The accreditation certificate shall only apply in connection with the notice of accreditation of 08.06.2020 with the accreditation number D-K-19516-01. 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 -1951-01-00**

Berlin,
08.06.2020

Dr. Heike Manke
Head of Division

Translation issued:
08.06.2020



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>

Deutsche Akkreditierungsstelle GmbH

Office Berlin
Spittelmarkt 10
10117 Berlin

Office Frankfurt am Main
Europa-Allee 52
60327 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

Annex to the Accreditation Certificate D-K-19516-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 08.06.2020

Date of issue: 08.06.2020

Holder of certificate:

Diehl Metering GmbH
Industriestraße 13, 91522 Ansbach

Calibration in the fields:

Fluid quantities

- Volume of flowing liquids

Thermodynamic quantities

- Thermal energy**
- Heat meters

Abbreviations used: see last page

*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-19516-01-00

Permanent Laboratory

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	Remarks
Volume of flowing liquids Water meters DN 15 – 40 mm	0,006 m ³ /h to 20 m ³ /h	VA V01-1 Ver. 14.4 Static or dynamic weighing method Conversion via density in function of temperature	20 °C: 0,25 % 50 °C: 0,30 %	Temperature range: (20 °C resp. 50 °C) ± 5 °C Weighing range: 0,001 m ³ to 0,35 m ³ (0,8 kg to 350 kg)
Water meters DN 40 – 100 mm	0,04 m ³ /h to 180 m ³ /h		20 °C: 0,25 % 50 °C: 0,30 %	Temperature range: (20 °C resp. 50 °C) ± 5 °C Weighing range: 0,001 m ³ to 6,0 m ³ (0,8 kg to 6000 kg)
Water meters DN 50 – 200 mm	0,04 m ³ /h to 180 m ³ /h		20 °C: 0,35 % 50 °C: 0,40 %	Temperature range: (20 °C resp. 50 °C) ± 5 °C Weighing range: 0,001 m ³ to 10,0 m ³ (0,8 kg to 10.000 kg)
Heat meters Flow meters DN 15 – 40 mm	0,006 m ³ /h to 20 m ³ /h	VA V01-1 Ver. 14.4 Static or dynamic weighing method Conversion via density in function of temperature	20 °C: 0,25 % 50 °C: 0,30 % 90 °C: 1,00 %	Temperature range: (20 °C, 50 °C resp. 90 °C) ± 5 °C Weighing range: 0,001 m ³ to 0,35 m ³ (0,8 kg to 350 kg)
Flow meters DN 40 – 100 mm	0,04 m ³ /h to 180 m ³ /h		20 °C: 0,25 % 50 °C: 0,30 % 90 °C: 1,00 %	Temperature range: (20 °C, 50 °C resp. 90 °C) ± 5 °C Weighing range: 0,01 m ³ to 6,0 m ³ (0,8 kg to 6.000 kg)
Flow meters DN 50 – 200 mm	0,04 m ³ /h to 180 m ³ /h		20 °C: 0,35 % 50 °C: 0,40 %	Temperature range: (20 °C to 50 °C) ± 5 °C Weighing range: 0,01 m ³ to 10,0 m ³ (0,8 kg to 10.000 kg)
Energy meter	3 K 10 K 50 K > 100 K to 195 K	VA-E01-1 Ver. 14.2 Simulation of temperature difference and volume	0,30 % 0,16 % 0,11 % 0,10 %	Simulation of temperature - difference by resistance Uncertainty of measurement affected by resistances of temperature simulation without EUT. Temperature range for determining the thermal energy: 1 °C to 200 °

¹⁾ The expanded uncertainties according to EA-4/02 M:2013 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-19516-01-00

Permanent Laboratory

Calibration and Measurement Capabilities (CMC)				
Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	Remarks
Heat meters Temperature sensor, absolute measurement	10 °C	VA T01-1 Ver. 14.3 Measurement in thermostatic baths	14 mK	Calibration of the single sensors in thermostatic baths Combination of sensors in the flow and return Uncertainty of measurement affected by measuring system without EUT
	40 °C		16 mK	
	80 °C		31 mK	
	120 °C		51 mK	
	150 °C		74 mK	
Temperature sensor, differential measurement	3 K	VA T01-1 Ver. 14.3 Temperature difference	23 mK	
	50 K		35 mK	
	80 K		54 mK	

Abbreviations used:

DN Nominal diameter
EUT Equipment under Test
VA Calibration instruction of Diehl Metering GmbH

¹⁾ The expanded uncertainties according to EA-4/02 M:2013 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.