

# Deutsche Akkreditierungsstelle

## Annex to the Accreditation Certificate D-K-11030-01-00 according to DIN EN ISO/IEC 17025:2018

**Valid from:** 16.04.2024

**Date of issue:** 16.04.2024

Holder of accreditation certificate:

**SCHÜCO International KG**  
**Technologiezentrum**  
**Karolinenstrasse 1-15, 33609 Bielefeld**

with the location

**SCHÜCO International KG**  
**Technologiezentrum**  
**Karolinenstrasse 1-15, 33609 Bielefeld**

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 principles of DIN EN ISO 9001.

*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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**Annex to the Accreditation Certificate D-K-11030-01-00**

Calibrations in the fields:

**Mechanical quantities**

- Pressure <sup>a)</sup>
- Fluid quantities**
- Volume of flowing gases <sup>a)</sup>
- Volume of flowing liquids <sup>a)</sup>

**Thermodynamic quantities**

- Temperature quantities**
- Direct reading thermometers <sup>a)</sup>
- Resistance thermometers <sup>a)</sup>
- Humidity quantities**
- Devices for relative humidity <sup>a)</sup>

<sup>a)</sup> also on site calibrations

**Permanent Laboratory**

Calibration and Measurement Capabilities (CMC)					
Measurement quantity / Calibration item	Range		Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Direct reading thermometers with resistance sensors	0 °C		DKD-R 5-1:2018 Ice point	10 mK	
	-25 °C	to 140 °C	DKD-R 5-1:2018 within silicone oil bath	90 mK	Comparison with resistance thermometers
	-40 °C	to 140 °C		DKD-R 5-1:2018 within block calibrator	
	> 140 °C	to 420 °C	0.3 K		
Direct reading thermometers with non-precious metal thermocouple sensors	-40 °C	to 140 °C	DKD-R 5-1:2018 within block calibrator	0.65 K	
	> 140 °C	to 420 °C		0.75 K	
Relative humidity electric hygrometers and humidity sensors, no psychrometers	33 %	to 70 %	DKD-R 5-8:2019 within climate chamber air temperature 23 °C	1.8 %	Comparison with reference sensor Uncertainty of measurement expressed in relative humidity
	15 %	to 60 %		DKD-R 5-8:2019 within humidity generator, air temp.: 15 °C to 35 °C	
	> 60 %	to 90 %	1.6 %		
Pressure Excess pressure	-10 kPa	to 10 kPa	DKD-R 6-1:2014	1.2 Pa	Pressure medium: Air precision pressure regulator
Absolut pressure	800 hPa	to 1 100 hPa	DKD-R 6-1:2014	0.7 hPa	Pressure medium: Air Precision absolute pressure transmitter
Volume flow rate $dV/dt$ of flowing gases	0.029 m <sup>3</sup> /h	to 20 m <sup>3</sup> /h	KR-0013-02:2023-12 Comparison with reference standard	1 %	Measure medium: Air Conversion via density Comparison meter: nozzle calibration system
	> 0.05 m <sup>3</sup> /h	to 1 600 m <sup>3</sup> /h		1 %	

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**Permanent Laboratory**

Calibration and Measurement Capabilities (CMC)				
Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Volume flow rate $dV/dt$ of flowing liquids	240 L/h to 2 500 L/h	KR-0005-04:2023-12 Comparison with reference standard	1 %	Measure medium: Water Comparison meters: Coriolis mass flow meters
	30 L/h to 18 900 L/h		1 %	Measure medium: Water Comparison meters: Electromagnetic flowmeters

**On-site Calibration**

Calibration and Measurement Capabilities (CMC)				
Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Direct reading thermometers with resistance sensors	0 °C	DKD-R 5-1:2018 Ice point	12 mK	
	-25 °C to 140 °C	DKD-R 5-1:2018 within silicone oil bath	0,11 K	Comparison with resistance thermometers
	-40 °C to 140 °C		0.14 K	
	> 140 °C to 420 °C		0.45 K	
Direct reading thermometers with non-precious metal thermocouple sensors	-40 °C to 140 °C	DKD-R 5-1:2018 within block calibrator	0.65 K	Comparison with resistance thermometers
	> 140 °C to 420 °C		0.90 K	
Relative humidity electric hygrometers and humidity sensors, no psychrometers	15 % to 60 %	DKD-R 5-8:2019 within humidity generator, air temp.: 15 °C to 35 °C	1.7 %	Uncertainty of measurement expressed in relative humidity
	> 60 % to 90 %		2.0 %	
Pressure	-10 kPa to 10 kPa	DKD-R 6-1:2014	1.4 Pa	Pressure medium: Air precision pressure regulator
Excess pressure			0.8 hPa	Pressure medium: Air Precision absolute pressure transmitter
Volume flow rate $dV/dt$ of flowing gases	> 0.05 m <sup>3</sup> /h to 1 600 m <sup>3</sup> /h	KR-0013-02:2023-12 Comparison with reference standard	1 %	Measure medium: Air Conversion via density Comparison meter: Volumetric gas meter
	> 0.05 m <sup>3</sup> /h to 1 600 m <sup>3</sup> /h		1 %	Measure medium: Air Conversion via density Comparison meter: Laminar flow

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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
Volume flow rate dV/dt of flowing liquids	240 L/h to 2 500 L/h	KR-0005-04:2023-12 Comparison with reference standard	1 %	Measure medium: Water Comparison meters: Coriolis mass flow meters
	30 L/h to 18 900 L/h		1 %	Measure medium: Water Comparison meters: Electromagnetic flowmeters

**Abbreviations used:**

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