

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-K-21368-01-01 according to DIN EN ISO/IEC 17025:2018

Valid from: 25.11.2025

Date of issue: 25.11.2025

This annex is part of the Accreditation Certificate D-K-21368-01-00.

Holder of the Accreditation Certificate:

ZELTWANGER Leaktesting and Automation GmbH
Maltschachstraße 32, 72144 Dusslingen

with the location

ZELTWANGER Leaktesting and Automation GmbH
Maltschachstraße 32, 72144 Dusslingen

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.

Calibration in the fields:

Mechanical quantities

- **Pressure** ^{a)}

Fluid quantities

- **Gas flow rate** ^{a)}

^{a)} also on-site calibration

*This annex to the certificate was issued by the Deutsche Akkreditierungsstelle GmbH (DAkkS) and is digitally sealed.
This annex to the certificate 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 valid and surveyed accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH (www.dakks.de).*

Abbreviations used: see last page

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Annex to the Accreditation Certificate D-K-21368-01-01
Permanent Laboratory
Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Pressure Positive and negative gauge pressure p_e	-1 bar to -0,025 bar	DKD-R 6-1:2014	0,2 mbar	Pressure medium: Gas
	> -0,025 bar to 0,025 bar		0,03 mbar	
	> 0,025 bar to 2,5 bar		0,2 mbar	
	> 2,5 bar to 20 bar		3,5 mbar	
	> 20 bar to 100 bar		30 mbar	
Absolute pressure p_{abs}	0,015 bar to 3,5 bar		0,2 mbar	
	> 3,5 bar to 10 bar		2,5 mbar	
	> 10 bar to 21 bar		3,5 mbar	
Fluid quantities Volume flow Q_v of flowing gases at standard conditions (air)	0,5 mL/min to 50 mL/min	Laminar flow elements AA 8.6.3-03 N1	0,015 mL/min + 0,0021 · Q_v mL/min	Calibration medium: dry air Measuring devices with display in standard condition 273.15 K; 1013.25 hPa,
	> 50 mL/min to 500 mL/min		0,15 mL/min + 0,0021 · Q_v mL/min	
	> 0,5 L/min to 5 L/min	Thermal mass flow controllers AA 8.6.3-03 N1	0,01 L/min + 0,005 · Q_v L/min	
	> 5 L/min to 50 L/min		0,1 L/min + 0,005 · Q_v L/min	
	> 50 L/min to 500 L/min		1 L/min + 0,005 · Q_v L/min	

On-site Calibration
Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Pressure Positive and negative gauge pressure p_e	-1 bar to -0,025 bar	DKD-R 6-1:2014	0,2 mbar	Pressure medium: Gas
	> -0,025 bar to 0,025 bar		0,03 mbar	
	> 0,025 bar to 1 bar		0,2 mbar	
	> 1 bar to 20 bar		5 mbar	
	> 20 bar to 100 bar		30 mbar	
Absolute pressure p_{abs}	0,015 bar to 10 bar		2,5 mbar	
Fluid quantities Volume flow Q_v of flowing gases at standard conditions (air)	0,5 mL/min to 5 mL/min	Thermal mass flow controllers AA 8.6.3-03 N1	0,015 mL/min + 0,01 · Q_v mL/min	Calibration medium: dry air Measuring devices with display in standard condition 273.15 K; 1013.25 hPa,
	> 5 mL/min to 50 mL/min		0,1 mL/min + 0,005 · Q_v mL/min	
	> 50 mL/min to 500 mL/min		1 mL/min + 0,005 · Q_v mL/min	
	> 0,5 L/min to 5 L/min		0,01 L/min + 0,005 · Q_v L/min	
	> 5 L/min to 50 L/min		0,1 L/min + 0,005 · Q_v L/min	
	> 50 L/min to 500 L/min		1 L/min + 0,005 · Q_v L/min	

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Annex to the Accreditation Certificate D-K-21368-01-01

Abbreviations used:

DIN	Deutsches Institut für Normung e.V. – German institute for standardization
EN	Europäische Norm – European Standard
IEC	International Electrotechnical Commission
ISO	International Organization for Standardisation
AA	In house calibration procedure of ZELTWANGER Leaktesting and Automation GmbH
CMC	Calibration and measurement capabilities
DKD-R	Guideline of Deutscher Kalibrierdienst

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