DAkkS
Deutsche
Akkreditierungsstelle

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

ABB Automation Products GmbH
Wallstadter Straße 59, 68526 Ladenburg

for their calibration laboratory:

Dransfelder Straße 2, 37079 Göttingen

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

Fluid Quantities

- **Gas flow rate**
- **Liquid flow rate**
- **Volume of flowing liquids**
- **Mass of flowing liquids**

The accreditation certificate shall only apply in connection with the notice of accreditation of 2017-02-22 with the accreditation number D-K-15081-01 and is valid until 2022-02-21. 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-15081-01-00**

Braunschweig, 2017-02-22	Dr. Michael Wolf Head of Division	Translation issued: 2017-02-24	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
Europa-Allee 52
60327 Frankfurt am Main

Office Braunschweig
Bundesallee 100
38116 Braunschweig

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

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Annex to the Accreditation Certificate D-K-15081-01-00 according to ISO/IEC 17025:2005

Period of validity: 2017-02-22 to 2022-02-21 Date of issue: 2017-02-22

Holder of certificate:

ABB Automation Products GmbH
Wallstadter Straße 59, 68526 Ladenburg, Germany

with the calibration laboratory:

Dransfelder Straße 2, 37079 Göttingen

Head: Michael Ohm
Deputy: Bernd Jung

Accredited since: 1998-09-08

Calibrations in the fields:

Fluid Quantities

- **Gas flow rate**
- **Liquid flow rate**
- **Volume of flowing liquids**
- **Mass of flowing liquids**

Abbreviations used: see last page

Permanent Laboratory

Measured quantity / Calibration item	Range	Measurement conditions / procedure	Best measurement capability [1]	Remarks
Mass of flowing liquids Mass *m*	1.5 t to 16.0 t	weighing system with diverter	0.07%	Measured fluid: Water mounting orientation: vertical downstream to the meter under test (MUT) the liquid pressure against atmosphere has to be $p \geq$ 2 bar except for electromagnetic flow meters
	10.0 t to 50.0 t			Measured fluid: Water mounting orientation: horizontal downstream to the meter under test (MUT) the liquid pressure against atmosphere has to be $p \geq$ 2 bar except for electromagnetic flow meters
Liquid flow rate Mass flow rate *dm/dt*	5 t/h to 300 t/h	weighing system with diverter	0.07 %	Measured fluid: Water mounting orientation: vertical downstream to the meter under test (MUT) the liquid pressure against atmosphere has to be $p \geq$ 2 bar except for electromagnetic flow meters
	50 t/h to 3000 t/h			Measured fluid: Water mounting orientation: horizontal downstream to the meter under test (MUT) the liquid pressure against atmosphere has to be $p \geq$ 2 bar except for electromagnetic flow meters
Volume of flowing liquids Volume *V*	1.5 m³ to 16.0 m³	weighing system with diverter	0.10 %	Measured fluid: Water mounting orientation: vertical downstream to the meter under test (MUT) the liquid pressure against atmosphere has to be $p \geq$ 2 bar except for electromagnetic flow meters
	10,0 m³ to 50,0 m³			Measured fluid: Water mounting orientation: horizontal downstream to the meter under test (MUT) the liquid pressure against atmosphere has to be $p \geq$ 2 bar except for electromagnetic flow meters

[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-15081-01-00

Measured quantity / Calibration item	Range	Measurement conditions / procedure	Best measurement capability [1]	Remarks
Liquid flow rate Volume flow rate dV/dt	5 m³/h to 300 m³/h	weighing system with diverter	0.10 %	Measured fluid: Water mounting orientation: vertical downstream to the meter under test (MUT) the liquid pressure against atmosphere has to be $p \geq$ 2 bar except for electromagnetic flow meters
	50 m³/h to 3000 m³/h			Measured fluid: Water mounting orientation: horizontal downstream to the meter under test (MUT) the liquid pressure against atmosphere has to be $p \geq$ 2 bar except for electromagnetic flow meters
Gas flow rate Volume flow rate dV/dt of flowing gases	0.8 m³/h to 100 m³/h	critical Venturi nozzle	0.4 %	Measured fluid: atmospheric air calibration of positive displacement and flow gas meters, flow meters (e.g. laminar or thermal flow meter) and pressure differential devices (e.g. nozzles or orifices)
	> 100 m³/h to 7300 m³/h		0.3 %	
Mass flow rate dm/dt of flowing gases	1 kg/h to 120 kg/h	critical Venturi nozzle	0.4 %	
	>120 kg/h to 8800 kg/h		0.3%	

[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.