

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-K-15191-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 30.06.2022

Date of issue: 30.06.2022

Holder of certificate:

DMT Druckmesstechnik GmbH

Londoner Straße 25, 48455 Bad Bentheim-Gildehaus, Germany

Calibration in the fields:

Mechanical quantities

- Pressure ^{a)}

^{a)} also on-site calibration and mobile Laboratory

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-15191-01-00

Permanent Laboratory

Calibration and Measurement Capabilities (CMC)

Measured quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	Remarks
Pressure Absolut pressure p_{abs}	> 0,014 bar to 2 bar	DKD-R 6-1: 2014	$1,9 \cdot 10^{-5} \cdot p_{abs} + 8,0 \mu\text{bar}$	Pressure medium: Gas The uncertainty of the measured residual pressure has to be taken into account. Measuring principle: by absolute pressure > 20 bar: $p_{abs} = p_e + p_{amb}$ The uncertainty of the barometer has to be taken into account.
	> 2 bar to 5 bar > 5 bar to 20 bar		$2,3 \cdot 10^{-5} \cdot p_{abs} + 22 \mu\text{bar}$ $1,7 \cdot 10^{-5} \cdot p_{abs} + 60 \mu\text{bar}$	
	> 20 bar to 101 bar > 101 bar to 401 bar		$2,4 \cdot 10^{-5} \cdot p_{abs} + 60 \mu\text{bar}$ $3,3 \cdot 10^{-5} \cdot p_{abs} + 0,3 \text{ mbar}$	
Absolut pressure p_{abs}	1 bar; 51 bar to 1401 bar		$5,6 \cdot 10^{-5} \cdot p_{abs} + 3,0 \text{ mbar}$	Pressure medium: Oil Measuring principle: $p_{abs} = p_e + p_{amb}$ The uncertainty of the barometer has to be taken into account.
	> 1401 bar to 2401 bar		$7,0 \cdot 10^{-5} \cdot p_{abs}$	
	> 2401 bar to 5001 bar		$9,5 \cdot 10^{-5} \cdot p_{abs}$	
Negative und positive gauge pressure p_e	-0,9 bar to < -0,15 bar		$3,3 \cdot 10^{-5} \cdot p_e + 8,0 \mu\text{bar}$	Pressure medium: Gas
	-0,15 bar to < -0,04 bar		$2,4 \cdot 10^{-5} \cdot p_e + 1,2 \mu\text{bar}$	
	-0,04 bar to 0,04 bar		$4,7 \cdot 10^{-5} \cdot p_e + 0,4 \mu\text{bar}$	
	> 0,04 bar to 0,15 bar		$2,4 \cdot 10^{-5} \cdot p_e + 1,2 \mu\text{bar}$	
	> 0,15 bar to 2 bar		$1,9 \cdot 10^{-5} \cdot p_e + 6,0 \mu\text{bar}$	
	> 2 bar to 5 bar		$2,3 \cdot 10^{-5} \cdot p_e + 23 \mu\text{bar}$	
	> 5 bar to 20 bar		$1,7 \cdot 10^{-5} \cdot p_e + 50 \mu\text{bar}$	
	> 20 bar to 100 bar		$2,4 \cdot 10^{-5} \cdot p_e + 60 \mu\text{bar}$	
	> 100 bar to 400 bar		$3,3 \cdot 10^{-5} \cdot p_e + 0,3 \text{ mbar}$	
Positive gauge pressure p_e	0 bar; 50 bar to 1400 bar		$5,6 \cdot 10^{-5} \cdot p_e + 3,0 \text{ mbar}$	Pressure medium: Oil
	> 1400 bar to 2400 bar		$7,0 \cdot 10^{-5} \cdot p_e$	
	> 2400 bar to 5000 bar		$9,5 \cdot 10^{-5} \cdot p_e$	

On-site Calibration and mobile Laboratory
Calibration and Measurement Capabilities (CMC)

Measured quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement ¹⁾	Remarks
Pressure Absolut pressure p_{abs}	> 0,014 bar to 2 bar	DKD-R 6-1: 2014	$2,0 \cdot 10^{-5} \cdot p_{abs} + 9,0 \mu\text{bar}$	Pressure medium: Gas The uncertainty of the measured residual pressure has to be taken into account. Measuring principle: by absolute pressure > 20 bar: $p_{abs} = p_e + p_{amb}$
	> 2 bar to 5 bar > 5 bar to 20 bar		$2,5 \cdot 10^{-5} \cdot p_{abs} + 24 \mu\text{bar}$ $1,9 \cdot 10^{-5} \cdot p_{abs} + 70 \mu\text{bar}$	
	> 20 bar to 101 bar > 101 bar to 401 bar		$2,6 \cdot 10^{-5} \cdot p_{abs} + 70 \mu\text{bar}$ $3,5 \cdot 10^{-5} \cdot p_{abs} + 0,4 \text{ mbar}$	
Absolute pressure p_{abs}	1 bar; 51 bar to 1401 bar		$6,0 \cdot 10^{-5} \cdot p_{abs} + 3,0 \text{ mbar}$	Pressure medium: Oil Measuring principle: $p_{abs} = p_e + p_{amb}$ The uncertainty of the barometer has to be taken into account.
	> 1401 bar to 2401 bar		$7,5 \cdot 10^{-5} \cdot p_{abs}$	
	> 2401 bar to 5001 bar		$9,8 \cdot 10^{-5} \cdot p_{abs}$	
Negative und positive gauge pressure p_e	-0,9 bar to < 0 bar		$3,5 \cdot 10^{-5} \cdot p_e + 9,0 \mu\text{bar}$	Pressure medium: Gas
	0 bar to 2 bar		$2,0 \cdot 10^{-5} \cdot p_e + 7,0 \mu\text{bar}$	
	> 2 bar to 5 bar		$2,5 \cdot 10^{-5} \cdot p_e + 25 \mu\text{bar}$	
	> 5 bar to 20 bar		$1,9 \cdot 10^{-5} \cdot p_e + 60 \mu\text{bar}$	
	> 20 bar to 100 bar		$2,6 \cdot 10^{-5} \cdot p_e + 70 \mu\text{bar}$	
	> 100 bar to 400 bar		$3,5 \cdot 10^{-5} \cdot p_e + 0,4 \text{ mbar}$	
Positive gauge pressure p_e	0 bar; 50 bar to 1400 bar		$6,0 \cdot 10^{-5} \cdot p_e + 3,0 \text{ mbar}$	Pressure medium: Oil
	> 1400 bar to 2400 bar		$7,5 \cdot 10^{-5} \cdot p_e$	
	> 2400 bar to 5000 bar		$9,8 \cdot 10^{-5} \cdot p_e$	

Abbreviations used:

CMC	Calibration and measurement capabilities
DKD-R	Guideline of Deutscher Kalibrierdienst (DKD), published by the Physikalisch-Technische Bundesanstalt