



**DKD**  
**Kalibrierlabor**  
**DKD-K-36001**

**CETA Testsysteme GmbH**  
**Werkslabor**

**DKD-Calibrations**  
 for  
**Pressure**

**Factory calibrations**  
 for  
**Pressure and Flow**

**DKD-Calibrations**  
**measurand pressure**

The calibration laboratory of CETA has been accredited as DKD calibration lab (DKD-K-36001) for the measurand pressure. By use of the test medium gas we provide DKD-calibrations in measuring range of -1 bar to +17 bar (details regarding measurand, measuring range and measuring uncertainty see next page).

The DKD calibration is carried out in accordance with the norm DIN EN ISO/IEC 17025:2005.

The calibration certificate of a DKD-laboratory automatically documents traceability to national standards. Regular audits by the DKD ensure the high quality of the used measuring equipment and the test procedures.

By multilateral agreements the DKD-calibration certificate is accepted in many countries. More information please find on the homepage of the DKD ([www.dkd.eu](http://www.dkd.eu)).

**Factory-calibrations**  
**measurand pressure**

The pressure range of -1 bar to +20 bar is also covered by factory calibrations (details regarding measurand, measuring range and measuring uncertainty see next page).

Factory calibrations are realized with DKD calibrated instruments. The traceability of the used measuring equipment is documented in detail.

**Factory-calibrations**  
**measurand flow**

By factory calibration the flow range of 0,1 ml/min to 220 l/min is covered (details regarding measurand, measuring range and measuring uncertainty see next page).

The used calibration standards are calibrated regularly with factory- or DKD-calibration certificate at approved institutes.

**Meaning of the traceability of measurement and test equipment**

The certification according DIN ISO 9000 in the industrial environment and the quality management requires traceability of the measuring equipment to national standards.

Advantage of traceable measuring and testing equipment:

- Certainty in production
- Securing a constant product and manufacturing quality
- Assurance of the market position
- Build-up of customer confidence



### DKD-calibrations for measurand pressure

Measurand	Range	Test specifications procedures	Uncertainty	Remark
Negative and positive gauge pressure $p_e$	-1 bar to -0,01 bar	EURAMET/cg-17/v.01 DIN EN 837 DKD-R-6-1	$4 \cdot 10^{-4}$ bar	pressure transfer medium: gas
	-0,01 bar to 0,03 bar		$3 \cdot 10^{-4} \cdot p_e$ , But not smaller than 3 $\mu$ bar	
	> 0,03 bar to 1,0 bar		$3 \cdot 10^{-4}$ bar	
	> 1,0 bar to 17 bar		8 mbar	

### Factory calibrations for measurand pressure

Measurand	Range	Method	Uncertainty	Remark
Negative and positive gauge pressure $p_e$	-0,8 bar to -0,05 bar	CETA calibration instructions	6 mbar	pressure transfer medium: gas
	> -0,05 bar to -0,01 bar		12 Pa	
	> -0,01 bar to 0,01 bar		2,2 Pa	
	> 0,01 bar to 0,05 bar		12 Pa	
	> 0,05 bar to 1 bar		6 mbar	
	> 1 bar to 10 bar		40 mbar	
	> 10 bar to 20 bar		60 mbar	

### Factory calibrations for measurand flow

Measurand	Range	Method	Uncertainty	Remark
Flow	0,1 ml/min to 11 ml/min*	CETA calibration instructions	3 % of the measuring value, however not smaller than 0,05 ml/min	Flow medium: gas
	> 11 ml/min to 220 l/min*		3 % of the measuring value	

In this table the smallest uncertainties are defined according to DKD-3 (EA-4/02). These are extended measuring uncertainties with a probability of 95 % coverage.

\* Specified are the standardized values by conversion to  $p_{abs} = 1000$  mbar and  $T = 20^\circ\text{C}$ .

**CETA Testsysteme GmbH**  
**Marie-Curie-StraÙe 35-37**  
**40721 Hilden**  
**GERMANY**

Tel.: +49 (0) 2103 / 2471 - 0  
 Fax: +49 (0) 2103 / 2471 - 71  
 E-Mail: [dkd@cetatest.com](mailto:dkd@cetatest.com)  
 Internet: [www.cetatest.com](http://www.cetatest.com)