

Deutsche Akkreditierungsstelle

Annex to the Partial Accreditation Certificate D-K-17447-01-02 according to DIN EN ISO/IEC 17025:2018

Valid from: 05.10.2023

Date of issue: 05.10.2023

This annex is a part of the accreditation certificate D-K-17447-01-00.

Holder of partial accreditation certificate:

Atlas Copco Tools Central Europe GmbH

with its calibration laboratory

**Atlas Copco Tools Central Europe GmbH
Langemarckstraße 35, 45141 Essen**

and with further locations

Bayernwerkstraße 112, 84130 Dingolfing

and

**Atlas Copco Polska Sp. Z o.o.
Rozyniec 83C, 59-709 Gromadka, Polska**

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 confirm generally with 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

Page 1 of 7

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Annex to the Partial Accreditation Certificate D-K-17447-01-02

Calibration in the fields:

Dimensional quantities

Angle

- **Angle of rotation** ^{a)}

Electrical quantities

DC and low frequency

- **Voltage ratio** ^{a)}

^{a)} also on-site-calibrations

Within the measurands/calibration items marked with with *), the calibration laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, to use calibration standards or equivalent calibration procedures listed here with different issue dates. The calibration laboratory maintains a current list of all calibration standards / equivalent calibration procedures within the flexible scope of accreditation.

Valid from: 05.10.2023

Date of issue: 05.10.2023

Page 2 of 7

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Annex to the Partial Accreditation Certificate D-K-17447-01-02

Permanent Laboratory location Essen

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
angle of rotation directly angle of rotation transmitter *	0° to 360°	VDI/VDE 2648 Bl.1:2009	10''	
	0° to 360°	VDI/VDE 2648 Bl.2:2007	0.2°	
spindel-fall-simulator for test of continuously rotating tools *	0° to 360°	VDI/VDE 2648 Bl.1:2009	0,05° (3')	
spindel-fall-simulator for test of continuously rotating tools	0° to 360°	AC MMFU Winkel R1 2023	0,05° (3')	
Voltage ratio DMS- measuring amplifier and display units	± 0 mV/V to ± 2.5 mV/V	AC voltage: 5 V carrier frequency: 225 Hz	3·10 ⁻⁵ ; but not < 0.03 μV/V	
	± 0 mV/V to ± 5 mV/V	AC voltage: 5 V carrier frequency: 225 Hz	5·10 ⁻⁵ ; but not < 0.05 μV/V	
	± 0 mV/V to ± 2 mV/V	AC voltage: 5 V carrier frequency: 600 Hz	1·10 ⁻³ ; but not < 1 μV/V	
	± 0 mV/V to ± 2 mV/V	DC voltage: 5 V	1·10 ⁻³ ; but not < 1 μV/V	

On-site Calibration location Essen

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
angle of rotation directly angle of rotation transmitter *	0° to 360°	VDI/VDE 2648 Bl.1:2009	10''	
	0° to 360°	VDI/VDE 2648 Bl.2:2007	0.2°	
spindel-fall-simulator for test of continuously rotating tools *	0° to 360°	VDI/VDE 2648 Bl.1:2009	0,05° (3')	
spindel-fall-simulator for test of continuously rotating tools	0° to 360°	AC MMFU Winkel R1 2023	0,05° (3')	

Valid from: 05.10.2023

Date of issue: 05.10.2023

Annex to the Partial Accreditation Certificate D-K-17447-01-02

On-site Calibration location Essen

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Voltage ratio DMS- measuring amplifier and display units	± 0 mV/V to ± 2.5 mV/V	AC voltage: 5 V carrier frequency: 225 Hz	3·10 ⁻⁵ ; but not < 0.03 μV/V	
	± 0 mV/V to ± 5 mV/V	AC voltage: 5 V carrier frequency: 225 Hz	5·10 ⁻⁵ ; but not < 0.05 μV/V	
	± 0 mV/V to ± 2 mV/V	AC voltage: 5 V carrier frequency: 600 Hz	1·10 ⁻³ ; but not < 1 μV/V	
	± 0 mV/V to ± 2 mV/V	DC voltage: 5 V	1·10 ⁻³ ; but not < 1 μV/V	

Valid from: 05.10.2023

Date of issue: 05.10.2023

Page 4 of 7

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Annex to the Partial Accreditation Certificate D-K-17447-01-02

Permanent Laboratory location Dingolfing

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
angle of rotation directly angle of rotation transmitter *	0° to 360°	VDI/VDE 2648 Bl.1:2009	2''	
indirectly angle of rotation transmitter *	0° to 360°	VDI/VDE 2648 Bl.2:2007	0.2°	
spindel-fall-simulator for test of continuously rotating tools *	0° to 360°	VDI/VDE 2648 Bl.1:2009	0,05° (3')	
spindel-fall-simulator for test of continuously rotating tools	0° to 360°	AC MMFU Winkel R1 2023	0,05° (3')	
Voltage ratio DMS- measuring amplifier and display units	± 0 mV/V to ± 2.5 mV/V	AC voltage: 5 V carrier frequency: 225 Hz	3·10 ⁻⁵ ; but not < 0.03 μV/V	
	± 0 mV/V to ± 5 mV/V	AC voltage: 5 V carrier frequency: 225 Hz	5·10 ⁻⁵ ; but not < 0.05 μV/V	
	± 0 mV/V to ± 2 mV/V	AC voltage: 5 V carrier frequency: 600 Hz	1·10 ⁻³ ; but not < 1 μV/V	
	± 0 mV/V to ± 2 mV/V	DC voltage: 5 V	1·10 ⁻³ ; but not < 1 μV/V	

On-site Calibration location Dingolfing

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
angle of rotation directly angle of rotation transmitter *	0° to 360°	VDI/VDE 2648 Bl.1:2009	3'	
indirectly angle of rotation transmitter *	0° to 360°	VDI/VDE 2648 Bl.2:2007	0.5°	
spindel-fall-simulator for test of continuously rotating tools *	0° to 360°	VDI/VDE 2648 Bl.1:2009	0,05° (3')	
spindel-fall-simulator for test of continuously rotating tools	0° to 360°	AC MMFU Winkel R1 2023	0,05° (3')	

Valid from: 05.10.2023

Date of issue: 05.10.2023

Page 5 of 7

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Annex to the Partial Accreditation Certificate D-K-17447-01-02

On-site Calibration location Dingolfing

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Voltage ratio DMS- measuring amplifier and display units	± 0 mV/V to ± 2.5 mV/V	AC voltage: 5 V carrier frequency: 225 Hz	3·10 ⁻⁵ ; but not < 0.03 μV/V	
	± 0 mV/V to ± 5 mV/V	AC voltage: 5 V carrier frequency: 225 Hz	5·10 ⁻⁵ ; but not < 0.05 μV/V	
	± 0 mV/V to ± 2 mV/V	AC voltage: 5 V carrier frequency: 600 Hz	1·10 ⁻³ ; but not < 1 μV/V	
	± 0 mV/V to ± 2 mV/V	DC voltage: 5 V	1·10 ⁻³ ; but not < 1 μV/V	

Valid from: 05.10.2023

Date of issue: 05.10.2023

Annex to the Partial Accreditation Certificate D-K-17447-01-02

Permanent Laboratory location Gromadka (Polska)

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
angle of rotation direct angle of rotation transducer *	0° to 360°	VDI/VDE 2648 Bl.1:2009	0,1°	
indirect angle of rotation transducer (wrench) *	0° to 360°	VDI/VDE 2648 Bl.2:2007	0.5°	
Voltage ratio DMS- measuring amplifier and display units	± 0 mV/V to ± 2 mV/V	DC voltage: 5 V carrier frequency: 0 Hz	1·10 ⁻³ ; but not < 1 μV/V	

On-site Calibration location Gromadka (Polska)

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
angle of rotation direct angle of rotation transducer *	0° to 360°	VDI/VDE 2648 Bl.1:2009	0.1°	
indirect angle of rotation transducer (wrench) *	0° to 360°	VDI/VDE 2648 Bl.2:2007	0.5°	

Abbreviations used:

CMC	Calibration and measurement capabilities (Kalibrier- und Messmöglichkeiten)
DKD-R	Richtlinie des Deutschen Kalibrierdienstes (DKD), herausgegeben von der Physikalisch-Technischen Bundesanstalt
EURAMET	European Association of National Metrology Institutes
VDE	Verband der Elektrotechnik, Elektronik und Informationstechnik
VDI	Verein Deutscher Ingenieure

Valid from: 05.10.2023

Date of issue: 05.10.2023

Page 7 of 7

This document is a translation. The definitive version is the original German annex to the accreditation certificate.