

Accreditation



The Deutsche Akkreditierungsstelle attests with this **Accreditation Certificate** that the calibration laboratory

Humanetics Europe GmbH
Im Breitspiel 6A, 69126 Heidelberg

meets the minimum requirements according to DIN EN ISO/IEC 17025:2018 for the conformity assessment activities specified in more detail in the partial accreditation certificates listed below. This includes additional existing legal and normative requirements, including those in relevant sectoral schemes.

D-K-15087-02-01

D-K-15087-02-02

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 accreditation was issued in accordance with Art. 5 Para. 1 Sentence 2 of Regulation (EC) 765/2008, after an accreditation procedure was carried out in compliance with the minimum requirements of DIN EN ISO/IEC 17011 and on the basis of a review and decision of the appointed accreditation committees.

This accreditation certificate consists of this cover sheet, the reverse side of the cover sheet and the following annex. It only applies in connection with the partial accreditation certificates listed above and the notices referred to there.

Registration number of the certificate: **D-K-15087-02-00**

Berlin, 02.08.2022

Dipl.-Ing. Gabriel Zrenner
Head of Department

Translation issued:

05.09.2022

Dipl.-Ing. Gabriel Zrenner
Head of Department

The certificate together with the annex 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 (www.dakks.de).

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 Deutsche Akkreditierungsstelle GmbH (DAkkS) is the entrusted national accreditation body of the Federal Republic of Germany according to § 8 section 1 AkkStelleG in conjunction with § 1 section 1 AkkStelleGBV. DAkkS is designated as the national accreditation authority by Germany according to Art. 4 Para. 4 of Regulation (EC) 765/2008 and clause 4.7 of DIN EN ISO/IEC 17000.

Pursuant to Art. 11 section 2 of Regulation (EC) 765/2008, the accreditation certificate shall be recognised as equivalent by the national authorities within the scope of this Regulation as well as by the WTO member states that have committed themselves in bilateral or multilateral mutual agreements to recognise the certificates of accreditation bodies that are members of ILAC or IAF as equivalent.

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 Co-operation (ILAC).

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

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-K-15087-02-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 02.08.2022

Date of issue: 05.09.2022

Holder of accreditation certificate:

**Humanetics Europe GmbH
Im Breitspiel 6A, 69126 Heidelberg**

The calibration laboratory meets the minimal requirements of DIN EN ISO/IEC 17025:2018 and, where applicable, additional legal and normative requirements, including those in relevant sectoral schemes, in order to carry out the conformity assessment activities specified in the partial accreditation certificates listed below:

D-K-15087-01-01

D-K-15087-01-02

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>.

Accreditation



The Deutsche Akkreditierungsstelle attests with this **Partial Accreditation Certificate** that the calibration laboratory

Humanetics Europe GmbH Im Breitspiel 6A, 69126 Heidelberg

meets the minimum requirements according to DIN EN ISO/IEC 17025:2018 for the conformity assessment listed in the annex to this certificate. This includes additional existing legal and normative requirements, including those in relevant sectoral schemes.

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 accreditation was issued in accordance with Art. 5 Para. 1 Sentence 2 of Regulation (EC) 765/2008, after an accreditation procedure was carried out in compliance with the minimum requirements of DIN EN ISO/IEC 17011 and on the basis of a review and decision of the appointed accreditation committees.

This partial accreditation certificate only applies in connection with the notices of 02.08.2022 with accreditation number D-K-15087-02-01.

It consists of this cover sheet, the reverse side of the cover sheet and the following annex with a total of 3 pages.

Registration number of the partial accreditation certificate: **D-K-15087-02-01**

It is a part of the accreditation certificate: D-K-15087-02-00.

Berlin, 02.08.2022

Dipl.-Ing. Gabriel Zrenner
Head of Department

Translation issued:
05.09.2022

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Valid from: 02.08.2022

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This annex is a part of the accreditation certificate D-K-15087-02-00.

Holder of partial accreditation certificate:

Humanetics Europe GmbH
Im Breitspiel 6A, 69126 Heidelberg

The calibration laboratory meets the minimal requirements of DIN EN ISO/IEC 17025:2018 and, if applicable, additional legal and normative requirements, including those in relevant sectoral schemes, in order to carry out the conformity assessment activities listed 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.

Calibration in the fields:

Mechanical quantities

- **Acceleration**
- **Force**

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Abbreviations used: see last page

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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-15087-02-01

Within the measurands / calibration items marked 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.

Permanent Laboratory

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded measurement of uncertainty	Remarks
Acceleration Accelerometer sensors*, Acceleration measurement chains*	200 m/s ² to 1000 m/s ²	Shock excitation DIN ISO 16063-22:2015 DKD-R 3-1 Sheet 2:2019 Pulse duration 10 ms to 1 ms, half-sine	0.8 %	Shock pendulum max. sensor mass incl. adapter: 0.4 kg Calibration result: transfer coefficient (magnitude) analog and digital
	10 m/s ² to 100 m/s ²	Sinusoidal excitation DIN ISO 16063-21:2016 DKD-R 3-1 Sheet 3:2020 160 Hz	0.8 %	Calibration result: transfer coefficient (magnitude) displacement amplitude to 12.7 mm pk-pk analog and digital
	10 m/s ² to 100 m/s ²	Sinusoidal excitation DIN ISO 16063-21:2016 DKD-R 3-1 Sheet 3:2020 40 Hz to 1 kHz >1 kHz to 5 kHz	0.9 % 1.2 %	
Angular velocity Angular velocity sensors	240 °/s to 2400 °/s	CL-PR-0005HD:Rev.03 (2022-03-18)	1.0 %	Calibration result: transfer coefficient (magnitude) rotatory via incremental encoder for clockwise rotation digital
Force Force sensors*	2 kN to 50 kN	DKD-R 3-9:2018	0.5 %	Force calibration device with reference sensors analog and digital
Belt force sensors*	5 kN to 25 kN	ISO/TS 17242:2014/ Amd.1:2017	2.5 %	
Multi-component force and moment Multi-component sensors (ATD)	0.5 kN to 25 kN	CL-PR-0003HD:Rev. 02 (2022-02-04)	0.5 %	
	2 N·m to < 50 N·m		1.0 %	
50 N·m to 1200 N·m	0.5 %			

Valid from: 02.08.2022

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Annex to the Partial Accreditation Certificate D-K-15087-02-01

Abbreviations used:

CL-PR	In-house procedure of the Humanetics Europe GmbH
DKD-R	Guideline of German Calibration Service (DKD), published by Physikalisch-Technische Bundesanstalt

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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.

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This partial accreditation certificate only applies in connection with the notices of 02.08.2022 with accreditation number D-K-15087-02-02.

It consists of this cover sheet, the reverse side of the cover sheet and the following annex with a total of 2 pages.

Registration number of the partial accreditation certificate: **D-K-15087-02-02**

It is a part of the accreditation certificate: D-K-15087-02-00.

Berlin, 02.08.2022

Dipl.-Ing. Gabriel Zrenner
Head of Department

Translation issued:
05.09.2022

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Deutsche Akkreditierungsstelle

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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.

Calibration in the fields:

Dimensional quantities

Length

- **Length measuring instruments**

Angle

- **Angle of rotation**
- **Inclination**

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Annex to the Partial Accreditation Certificate D-K-15087-02-02

Within the measurands / calibration items marked 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.

Annex to the Partial Accreditation Certificate D-K-15087-02-02

Permanent Laboratory

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded measurement of uncertainty	Remarks
Length Displacement sensors (ATD)	0 mm to 200 mm	CL-PR-0004HD:Rev.04 (2021-12-13)	$35 \mu\text{m} + 200 \cdot 10^{-6} \cdot l$	l = measured length analog und digital
Displacement sensors (IR-TRACC)*	0 mm to 120 mm	ISO/TS 21476:2018	$35 \mu\text{m} + 200 \cdot 10^{-6} \cdot l$	
Displacement sensors (H3 Chest potentiometers)*	0 mm to 90 mm	SAE J2517:2016	$35 \mu\text{m} + 200 \cdot 10^{-6} \cdot l$	Hybrid III family Chest potentiometers (ATD) l = measured length analog und digital
Angle Angle of rotation, Direct rotary encoder systems	0° to 360°	CL-PR-0049HD:Rev.02 (2022-04-04)	0,2°	Rotary potentiometers analog und digital
Angle of rotation*, Direct rotary encoder systems*	0° to 360°	VDI/VDE 2648 Sheet 1:2009	0,2°	Rotary potentiometers analog und digital
Inclinometers, Electronic inclinometers	-90° to 90°	CL-PR-0001HD:2022	0,2°	TILT-sensors

Abbreviations used:

CL-PR In-house procedure of the Humanetics Europe GmbH