

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-12087-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 27.04.2021

Date of issue: 21.06.2021

Holder of certificate:

**DEUTA-WERKE GmbH
Paffrather Straße 140, 51465 Bergisch Gladbach**

Tests in the fields:

Electromagnetic compatibility (EMC), Device Safety and Environmental Testing

The testing laboratory is permitted, without being required to inform and obtain prior approval from DAkks, to use standards or equivalent testing methods listed here with different issue dates.

The testing laboratory maintains a current list of all testing methods within the flexible scope of accreditation.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories. Laboratories that conform to the requirements of this standard, operate generally in accordance with the principles of DIN EN ISO 9001.

*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 may be found respectively in the database of accredited bodies of Deutsche Akkreditierungsstelle GmbH <https://www.dakks.de/en/content/accredited-bodies-dakks>.*

Department	Standard or test procedure / revision level	Title of the norm or test procedure	restriction for the test procedure
Basic standards EMC			
EMC	DIN EN 61000-4-2:2009 (EN 61000-4-2:2009)	Electromagnetic compatibility (EMC) – part 4-2: testing and measurement techniques - electrostatic discharge immunity test (IEC 61000-4-2:2008); German version EN 61000-4-2:2009	Desktop device
	DIN EN 61000-4-3:2011 (EN 61000-4-3:2006 + A1:2008 + A2:2010)	Electromagnetic compatibility (EMC) – part 4-3: testing and measurement techniques - radiated, radio-frequency, electromagnetic field immunity test (IEC 61000-4-3:2006 + A1:2007 + A2:2010); German version EN 61000-4-3:2006 + A1:2008 + A2:2010	Desktop device, Field strength ≤ 20 V/m
	DIN EN 61000-4-4:2013 (EN 61000-4-4:2012)	Electromagnetic compatibility (EMC) – part 4-4: testing and measurement techniques - electrical fast transient/burst immunity test (IEC 61000-4-4:2012); German version EN 61000-4-4:2012	Desktop device, Single-phase
	DIN EN 61000-4-5:2019 (EN 61000-4-5:2014+A1:2017)	Electromagnetic compatibility (EMC) – part 4-5: testing and measurement techniques - surge immunity test (IEC 61000-4-5:2014); German version EN 61000-4-5:2014	Couplings capacitive and over capacities, Impulse form 1,2/50 μs
	DIN EN 61000-4-6:2014 (EN 61000-4-6:2014)	Electromagnetic compatibility (EMC) – part 4-6: testing and measurement techniques - immunity to conducted disturbances, induced by radio-frequency fields (IEC 61000-4-6:2013); German version EN 61000-4-6:2014	Single-phase
	DIN EN 61000-4-11:2005 (EN 61000-4-11:2004)	Electromagnetic compatibility (EMC) – part 4-11: testing and measurement techniques - voltage dips, short interruptions and voltage variations immunity tests (IEC 61000-4-11:2004); German version EN 61000-4-11:2004	Single-phase

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EMC	DIN EN 61000-4-11:2019 (EN 61000-4-11:2004+A1:2017)	Electromagnetic compatibility (EMC) – part 4-11: testing and measurement techniques - voltage dips, short interruptions and voltage variations immunity tests (IEC 61000-4-11:2004+A1:2017); German version EN 61000-4-11:2004+A1:2017	Single-phase
	DIN EN 55011:2018 (EN 55011:2016 + A1:2017)	Industrial, scientific and medical equipment - radio-frequency disturbance characteristics - limits and methods of measurement (IEC/CISPR 11:2015, modified + A1:2017); German version EN 55011:2016 + A1:2017	Voltage measurement at power supply connection: ≤ 16 A, single-phase; Interference radiation: Partial conforming to standards, Measurement distance: 3 m, f ≤ 6 GHz, Measurement in a fully anechoic chamber, one antenna height, measured side attenuation < ±6 dB
	DIN EN 55016-2-1:2014 (EN 55016-2-1:2009 + A1:2011 + A2:2013)	Specification for radio disturbance and immunity measuring apparatus and methods - part 2-1: methods of measurement of disturbances and immunity - conducted disturbance measurements (CISPR 16-2-1:2008 + A1:2010 + A2:2013); German version EN 55016-2-1:2009 + A1:2011 + A2:2013	Power supply connection: ≤ 16 A, single-phase

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EMC	DIN EN 55016-2-1:2019 (EN 55016-2-1: 2014 + A1:2017)	Specification for radio disturbance and immunity measuring apparatus and methods - part 2-1: methods of measurement of disturbances and immunity - conducted disturbance measurements (CISPR 16-2-1:2014 + A1:2017); German version EN 55016-2-1:2014 + A1:2017	
	DIN EN 55016-2-3:2014 (EN 55016-2-3:2010 + A1:2010 + AC:2013 + A2:2014)	Specification for radio disturbance and immunity measuring apparatus and methods - part 2-3: methods of measurement of disturbances and immunity - radiated disturbance measurements (IEC/CISPR 16-2-3:2010 + A1:2010 + A2:2014); German version EN 55016-2-3:2010 + A1:2010 + AC:2013 + A2:2014	Partial conforming to standards, Measurement distance: 3 m, $f \leq 6$ GHz, Measurement in a fully anechoic chamber, one antenna height, measured side attenuation < ± 6 dB
	DIN EN 55016-2-3:2019 (EN 55016-2-3:2017)	Specification for radio disturbance and immunity measuring apparatus and methods - part 2-3: methods of measurement of disturbances and immunity - radiated disturbance measurements (CISPR 16-2-3:2016); German version EN 55016-2-3:2017	Partial conforming to standards, Measurement distance: 3 m, $f \leq 6$ GHz, Measurement in a fully anechoic chamber, one antenna height, measured side attenuation < ± 6 dB
Product family standards EMC			
EMC	DIN EN 50121-3-2:2017 (EN 50121-3-2:2016)	Railway applications - electromagnetic compatibility - part 3-2: rolling stock - apparatus; German version EN 50121-3-2:2016	

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EMC	DIN EN 61000-6-1:2007 (EN 61000-6-1:2007)	Electromagnetic compatibility (EMC) – part 6-1: generic standards - immunity for residential, commercial and light-industrial environments (IEC 61000-6-1:2005); German version EN 61000-6-1:2007	Without DIN EN 61000-4-8
	DIN EN 61000-6-1:2019 (EN 61000-6-1:2019)	Electromagnetic compatibility (EMC) – part 6-1: generic standards - immunity for residential, commercial and light-industrial environments (IEC 61000-6-1:2016); German version EN 61000-6-1:2019	Without DIN EN 61000-4-8
	DIN EN 61000-6-2:2006 (EN 61000-6-2:2005)	Electromagnetic compatibility (EMC) – part 6-2: generic standards - immunity for industrial environments (IEC 61000-6-2:2005); German version EN 61000-6-2:2005	Without DIN EN 61000-4-8
	DIN EN 61000-6-2:2019 (EN 61000-6-2:2019)	Electromagnetic compatibility (EMC) – part 6-2: generic standards - immunity for industrial environments (IEC 61000-6-2:2016); German version EN 61000-6-2:2019	Without DIN EN 61000-4-8
	DIN EN 61000-6-3:2011 (EN 61000-6-3:2007 + A1:2011)	Electromagnetic compatibility (EMC) - part 6-3: generic standards - emission standard for residential, commercial and light-industrial environments (IEC 61000-6-3:2006 + A1:2010); German version EN 61000-6-3:2007 + A1:2011	Partial conforming to standards, Measurement distance: 3 m, $f \leq 6$ GHz, Measurement in a fully anechoic chamber, one antenna height, measured side attenuation < ± 6 dB

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EMC	DIN EN 61000-6-4:2011 (EN 61000-6-4:2007 + A1:2011)	Electromagnetic compatibility (EMC) - part 6-4: generic standards - emission standard for industrial environments (IEC 61000-6-4:2006 + A1:2010); German version EN 61000-6-4:2007 + A1:2011	Partial conforming to standards, Measurement distance: 3 m, $f \leq 6$ GHz, Measurement in a fully anechoic chamber, one antenna height, measured side attenuation < ± 6 dB
	DIN EN 61326-1:2013 (EN 61326-1:2013)	Electrical equipment for measurement, control and laboratory use - EMC requirements - part 1: general requirements (IEC 61326-1:2012); German version EN 61326-1:2013	Without DIN EN 61000-4-8 Interference radiation: Partial conforming to standards, Measurement distance: 3 m, $f \leq 6$ GHz, Measurement in a fully anechoic chamber, one antenna height, measured side attenuation < ± 6 dB
Basic standards electrical equipment			
Environmental testing	DIN EN 60068-2-1:2008 (EN 60068-2-1:2007)	Environmental testing - part 2-1: tests - test a: cold (IEC 60068-2-1:2007); German version EN 60068-2-1:2007	
	DIN EN 60068-2-2:2008 (EN 60068-2-2:2007)	Environmental testing - part 2-2: tests - test b: dry heat (IEC 60068-2-2:2007); German version EN 60068-2-2:2007	

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Environmental testing	DIN EN 60068-2-6:2008 (EN 60068-2-6:2008)	Environmental testing - part 2-6: tests - test fc: vibration (sinusoidal) (IEC 60068-2-6:2007); German version EN 60068-2-6:2008	5 Hz to 2.5 kHz
	DIN EN 60068-2-14:2010 (EN 60068-2-14:2009)	Environmental testing - part 2-14: tests - test n: change of temperature (IEC 60068-2-14:2009); German version EN 60068-2-14:2009	
	DIN EN 60068-2-27:2010 (EN 60068-2-27:2009)	Environmental testing - part 2-27: tests - test ea and guidance: shock (IEC 60068-2-27:2008); German version EN 60068-2-27:2009	
	DIN EN 60068-2-30:2006 (EN 60068-2-30:2005)	Environmental testing - part 2-30: tests - test db: damp heat, cyclic (12 h + 12 h cycle) (IEC 60068-2-30:2005); German version EN 60068-2-30:2005	
	DIN EN 60068-2-64:2009 (EN 60068-2-64:2008)	Environmental testing - part 2-64: tests - test fh: vibration, broadband random and guidance (IEC 60068-2-64:2008); German version EN 60068-2-64:2008	5 Hz to 2.5 kHz
	DIN EN 60068-2-78:2014 (EN 60068-2-78:2013)	Environmental testing - part 2-78: tests - test cab: damp heat, steady state (IEC 60068-2-78:2012); German version EN 60068-2-78:2013	
	DIN EN 61373:2011 (EN 61373:2010)	Railway applications - rolling stock equipment - shock and vibration tests (IEC 61373:2010); German version EN 61373:2010	5 Hz to 2,5 kHz

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Device safety	DIN EN ISO 4589-2:2017 (EN ISO 4589-2:2017)	Plastics - determination of burning behaviour by oxygen index - part 2: ambient-temperature test (ISO 4589-2:2017 German version EN ISO 4589-2:2017	
	DIN EN 50124-1:2017 (EN 50124-1:2017)	Railway applications - insulation coordination - part 1: basic requirements - clearances and creepage distances for all electrical and electronic equipment German version EN 50124-1:2017	
	DIN EN 50153 :2018 (EN 50153 :2014 + A1:2017)	Railway applications - rolling stock - protective provisions relating to electrical hazards German version EN 50153:2014 + 1:2017	Equipment, Voltage area I and II
	DIN EN 60529:2014 (EN 60529:1991 + A1:2000 + A2:2013)	Degrees of protection provided by enclosures (ip code) (IEC 60529:1998 + A1:1999 + A2:2013); German version EN 60529:1991 + A1:2000 + A2:2013	IP1X to IP4X, IPX7 Additional letter A, B, C, D
Product family standards electrical equipment			
Environmental testing	DIN EN 50155:2018 (EN 50155:2017)	Railway applications - electronic equipment used on rolling stock; German version EN 50155:2017	Type tests without salt mist test