Deutsche Akkreditierungsstelle

Annex to the Partial Accreditation Certificate D-PL-18568-01-01 according to DIN EN ISO/IEC 17025:2018

Valid from: **31.01.2024**

Date of issue: 31.01.2024

This annex is a part of the accreditation certificate D-PL-18568-01-00.

Holder of partial accreditation certificate:

ZAMM Zentrum für angewandte Meßtechnik Memmingen GmbH
In der Neuen Welt 10, 87700 Memmingen

with the location

ZAMM Zentrum für angewandte Meßtechnik Memmingen GmbH
In der Neuen Welt 10, 87700 Memmingen

The testing laboratory meets the requirements of DIN EN ISO/IEC 17025:2018 to carry out the conformity assessment activities listed in this annex. The testing 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 testing laboratories and they conform to the principles of DIN EN ISO 9001.

Tests in the fields:

Electromagnetic Compatibility (EMC)

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.

Content

Technical Field	Standard / Version	Title of Standard or Test Procedure	Test Area / Reductions
1	**Basic Standard**		
EMC	DIN EN 61000-4-2 2009-12	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	
EMC	DIN EN IEC 61000-4-3 2021-11	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test (IEC 61000-4-3:2020); German version EN IEC 61000-4-3:2020	80 MHz – 90 MHz: field strength: ≤ 20 V/m
EMC	DIN EN 61000-4-4 2013-04	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	
EMC	DIN EN 61000-4-5 2019-03	Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test (IEC 61000-4-5:2014 + A1:2017); German version EN 61000-4-5:2014 + A1:2017	
EMC	DIN EN 61000-4-6: 2014-08	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	
EMC	DIN EN 61000-4-8 2010-11	Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test (IEC 61000-4-8:2009); German version EN 61000-4-8:2010	Only floor standing devices or small devices max (30x30x30) cm^3; Constant field: ≤30 A/m, no short time field

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EMC	DIN EN IEC 61000-4-11 2021-10	Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests for equipment with input current up to 16 A per phase (IEC 61000-4-11:2020 + COR1:2020); German version EN IEC 61000-4-11:2020 + AC:2020	Only single phase
EMC	DIN EN 61000-4-13 2016-10	Electromagnetic compatibility (EMC) - Part 4-13: Testing and measurement techniques - Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests (IEC 61000-4-13:2002 + A1:2009 + A2:2015); German version EN 61000-4-13:2002 + A1:2009 + A2:2016	Only single phase
EMC	DIN EN 61000-4-16 2016-10	Electromagnetic compatibility (EMC) - Part 4-16: Testing and measurement techniques - Test for immunity to conducted, common mode disturbances in the frequency range 0 Hz to 150 kHz (IEC 61000-4-16:2015); German version EN 61000-4-16:2016	
EMC	DIN EN 61000-4-28 2009-12	Electromagnetic compatibility (EMC) - Part 4-28: Testing and measurement techniques - Variation of power frequency, immunity test for equipment with input current not exceeding 16 A per phase (IEC 61000-4-28:1999 + A1:2001 + A2:2009); German version EN 61000-4-28:2000 + A1:2004 + A2:2009	Only single phase
EMC	DIN EN 61000-4-29 2001-10	Electromagnetic compatibility (EMC) - Part 4-29: Testing and measurement techniques; Voltage dips, short interruptions and voltage variations on d.c. input power port immunity tests (IEC 61000-4-29:2000); German version EN 61000-4-29:2000	

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EMC	DIN EN 61000-4-39 2019-04	Electromagnetic Compatibility (EMC) Part 4-39: Testing and measurement techniques – Radiated fields in close proximity – Immunity test (IEC 61000-4-39:2017); German version EN 61000-4-39:2017	Only frequency range 9kHz to 26 MHz
2	**Generic Standard**		
EMC	DIN EN IEC 61000-6-1 2019-11	Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity standard for residential, commercial and light-industrial environments (IEC 61000-6-1:2016); German version EN IEC 61000-6-1:2019	
EMC	DIN EN IEC 61000-6-2 2019-11-03	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments (IEC 61000-6-2:2016); German version EN IEC 61000-6-2:2019	
EMC	DIN EN 61000-6-3 2011-09	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	No fully anechoic chamber, no TEM cell
EMC	DIN EN IEC 61000-6-3 2022-06	Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for equipment in residential environments (IEC 61000-6-3:2020); German version EN IEC 61000-6-3:2021	No fully anechoic chamber, no TEM cell
EMC	DIN EN IEC 61000-6-4 2020-09	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments (IEC 61000-6-4:2018); German version EN IEC 61000-6-4:2019	No fully anechoic chamber, no TEM cell

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EMC	DIN EN 61000-6-7 2015-12	Electromagnetic compatibility (EMC) - Part 6-7: Generic standards - Immunity requirements for equipment intended to perform functions in a safety-related system (functional safety) in industrial locations (IEC 61000-6-7:2014); German version EN 61000-6-7:2015	Without 61000-3-34
EMC	DIN EN IEC 61000-6-8 2022-02	Electromagnetic compatibility (EMC) – Part 6-8: Generic standards – Emission standard for professional equipment in commercial and light-industrial locations (IEC 61000-6-8:2020); German version EN IEC 61000-6-8:2020	No fully anechoic chamber, no TEM cell
3	**Product Standard**		
EMC	DIN EN 13309 2010-12	Construction machinery - Electromagnetic compatibility of machines with internal power supply; German version EN 13309:2010	Only ESA
EMC	DIN EN ISO 13766-1 2019-04	Earth-moving and building construction machinery - Electromagnetic compatibility (EMC) of machines with internal electrical power supply - Part 1: General EMC requirements under typical electromagnetic environmental conditions (ISO 13766-1:2018); German version EN ISO 13766-1:2018	Only ESA
EMC	DIN EN 50065-1 2012-01	Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148,5 kHz - Part 1: General requirements, frequency bands and electromagnetic disturbances; German version EN 50065-1:2011	Frequency range ≥ 9kHz

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EMC	DIN EN 50065-2-1 2006-05	Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148,5 kHz - Part 2-1: Immunity requirements for mains communications equipment and systems operating in the range of frequencies 95 kHz to 148,5 kHz and intended for use in residential, commercial and light industrial environments; German version EN 50065-2-1:2003 + Corrigendum 2003 + A1:2005	Only EMC-test according to table 1, 2, 3, 4 and 5
EMC	DIN EN 50121-3-2 2017-11	Railway applications - Electromagnetic compatibility - Part 3-2: Rolling stock - Apparatus; German version EN 50121-3-2:2016	Supply voltage for DUT ≤ 400V
EMC	DIN EN 50121-3-2/A1 2020-11	Railway applications - Electromagnetic compatibility - Part 3-2: Rolling stock - Apparatus; German version EN 50121-3-2:2016/A1:2019	Supply voltage for DUT ≤ 400V
EMC	DIN EN 50130-4 2015-04	Alarm systems - Part 4: Electromagnetic compatibility - Product family standard: Immunity requirements for components of fire, intruder, hold up, CCTV, access control and social alarm systems; German version EN 50130-4:2011 + A1:2014	
EMC	DIN EN 50293 2013-02	Road traffic signal systems - Electromagnetic compatibility; German version EN 50293:2012	
EMC	DIN EN 50370-1 2006-02	Electromagnetic compatibility (EMC) - Product family standard for machine tools - Part 1: Emission; German version EN 50370-1:2005	

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EMC	DIN EN 50370-2 2003-08	Electromagnetic compatibility (EMC) - Product family standard for machine tools - Part 2: Immunity; German version EN 50370-2:2003	
EMC	DIN EN 50498 2011-04	Electromagnetic compatibility (EMC) - Product family standard for aftermarket electronic equipment in vehicles; German version EN 50498:2010	
EMC	DIN EN 55011 2018-05	Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement (CISPR 11:2015, modified + A1:2017); German version EN 55011:2016 + A1:2017	
EMC	CISPR 11 2016	Industrial, scientific and medical equipment – Radio-frequency disturbance characteristics – Limits and methods of measurement	
EMC	DIN EN IEC 55014-1 2022-12	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission (CISPR 14-1:2020); German version EN IEC 55014-1:2021	No fully anechoic chamber, no TEM cell
EMC	DIN EN 55014-2 2016-01	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 2: Immunity - Product family standard (CISPR 14-2:2015); German version EN 55014-2:2015	
EMC	DIN EN 55022 2011-12	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement (CISPR 22:2008, modified); German version EN 55022:2010	

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EMC	DIN EN 55024 2016-05	Information technology equipment - Immunity characteristics - Limits and methods of measurement (CISPR 24:2010 + Cor.:2011 + A1:2015); German version EN 55024:2010 + A1:2015	
EMC	DIN EN 55025 2018-03	Vehicles, boats and internal combustion engines - Radio disturbance characteristics - Limits and methods of measurement for the protection of on-board receivers (CISPR 25:2016 + COR1:2017); German version EN 55025:2017 + AC:2017	No test at vehicles and boats, no TEM-Cell
EMC	DIN EN 55032 2016-02	Electromagnetic compatibility of multimedia equipment - Emission Requirements (CISPR 32:2015); German version EN 55032:2015	No tests according to table A7 and table A13. No fully anechoic chamber Without CISPR 13 Ports according to 3.1.32 unscreened, excluded
EMC	DIN EN 55032 A11 2021-03	Elektromagnetische Verträglichkeit von Multimediageräten und -einrichtungen - Anforderungen an die Störaussendung; Deutsche Fassung EN 55032:2015/A11:2020	
EMC	DIN EN 55035 2018-04	Electromagnetic compatibility of multimedia equipment - Immunity requirements (CISPR 35:2016, modified); German version EN 55035:2017	Annex. F only LAN Without: - xDSL-Ports - Annex A, E, H

Technical Field	Standard / Version	Title of Standard or Test Procedure	Test Area / Reductions
EMC	DIN EN 60335-1 2020-08	Household and similar electrical appliances - Safety - Part 1: General requirements (IEC 60335-1:2010, modified + COR1:2010 + COR2:2011 + A1:2013, modified + A1:2013/COR1:2014 + A2:2016 + A2:2016/COR1:2016); German version EN 60335-1:2012 + AC:2014 + A11:2014 + A13:2017 + A1:2019 + A2:2019 + A14:2019	Only EMC-tests according to section 19.11.4 without DIN EN 61000-4-34
EMC	DIN EN 60974-10 2016-10	Arc welding equipment - Part 10: Electromagnetic compatibility (EMC) requirements (IEC 60974-10:2014 + A1:2015); German version EN 60974-10:2014 + A1:2015	without 61000-4-11 61000-4-12 61000-4-34
EMC	DIN EN IEC 61000-3-2 2019-12	Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase) (IEC 61000-3-2:2018); German version EN IEC 61000-3-2:2019	
EMC	DIN EN 61000-3-3 2020-07	Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection (IEC 61000-3-3:2013 + A1:2017); German version EN 61000-3-3:2013 + A1:2019	
EMC	DIN EN 61204-3 2018-11	Low-voltage switch mode power supplies - Part 3: Electromagnetic compatibility (EMC) (IEC 61204-3:2016); German version EN IEC 61204-3:2018	
EMC	DIN EN IEC 61326-1 2022-11	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements (IEC 61326-1:2020); German version EN IEC 61326-1:2021	

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EMC	DIN EN IEC 61326-2-1 2022-11	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-1: Particular requirements - Test configurations, operational conditions and performance criteria for sensitive test and measurement equipment for EMC unprotected applications (IEC 61326-2-1:2020); German version EN IEC 61326-2-1:2021	
EMC	DIN EN IEC 61326-2-2 2022-11	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-2: Particular requirements - Test configurations, operational conditions and performance criteria for portable test, measuring and monitoring equipment used in low-voltage distribution systems (IEC 61326-2-2:2020); German version EN IEC 61326-2-2:2021	
EMC	DIN EN IEC 61326-2-3 2022-11	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-3: Particular requirements - Test configuration, operational conditions and performance criteria for transducers with integrated or remote signal conditioning (IEC 61326-2-3:2020); German version EN IEC 61326-2-3:2021	
EMC	DIN EN IEC 61326-2-4 2022-11	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-4: Particular requirements - Test configurations, operational conditions and performance criteria for insulation monitoring devices according to IEC 61557-8 and for equipment for insulation fault location according to IEC 61557-9 (IEC 61326-2-4:2020); German version EN IEC 61326-2-4:2021	

Technical Field	Standard / Version	Title of Standard or Test Procedure	Test Area / Reductions
EMC	DIN EN IEC 61326-2-5 2022-11	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-5: Particular requirements - Test configurations, operational conditions and performance criteria for field devices with field bus interfaces according to IEC 61784-1 (IEC 61326-2-5:2020); German version EN IEC 61326-2-5:2021	
EMC	DIN EN 61326-3-1 2018-04	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 3-1: Immunity requirements for safety-related systems and for equipment intended to perform safety-related functions (functional safety) - General industrial applications (IEC 61326-3-1:2017); German version EN 61326-3-1:2017	
EMC	DIN EN IEC 61800-3 2019-04	Adjustable speed electrical power drive systems - Part 3: EMC requirements and specific test methods (IEC 61800-3:2017); German version EN IEC 61800-3:2018	only EMC Tests according to Table 13, 14, 16, 17 and 18, 19, 20 max. 3 x 32A
4	**Automotive**		
EMC	ISO 7637-2 2011-03	Road vehicles - Electrical disturbances from conduction and coupling - Part 2: Electrical transient conduction along supply lines only	
EMC	ISO 7637-3 2016-07	Road vehicles - Electrical disturbances from conduction and coupling - Part 3: Electrical transient transmission by capacitive and inductive coupling via lines other than supply lines	No DCC
EMC	ISO 10605 2008-07	Road vehicles – Test methods for electrical disturbances from electrostatic discharge	Test level ≤ 15 kV

Technical Field	Standard / Version	Title of Standard or Test Procedure	Test Area / Reductions
EMC	ISO 10605:Amd. 1 2014-04	Road vehicles – Test methods for electrical disturbances from electrostatic discharge Amd. 1	Test level ≤ 15 kV
EMC	ISO 11452-2 2019-01	Road vehicles - Component test methods for electrical disturbances from narrowband radiated electromagnetic energy - Part 2: Absorber-lined shielded enclosure	Only frequencies ≤ 1 GHz: test level ≤ 75 V/m at 1m distance Without HV
EMC	ISO 11452-4 2020-04	Road vehicles – Component test methods for electrical disturbances from narrowband radiated electromagnetic energy – Part 4: Harness excitation methods	Without HV, Without TWC
EMC	ISO 16750-2 2012-11	Road vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 2: Electrical loads	
5	**Radio Equipment**		
EMC	ETSI EN 301 489-1 V2.2.3. 2019-11	Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements	
6	**EMF/EMCU**		
EMC	DIN EN 50413 2020-10	Basic standard on measurement and calculation procedures for human exposure to electric, magnetic and electromagnetic fields (0 Hz - 300 GHz); German version EN 50413:2019	Only measurement in the frequency range 5 Hz – 18 GHz No calculation

Abbreviations used:

DIN	Deutsches Institut für Normung e.V. – German institute for standardization
EN	Europäische Norm – European Standard
IEC	International Electrotechnical Commission
ISO	International Organization for Standardisation