

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-19102-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 07.12.2021

Date of issue: 26.08.2022

Holder of certificate:

AUCOTEAM GmbH
Storkower Straße 115 a, 10407 Berlin

at the location:

AUCOTEAM GmbH
Prüflabor für klimatische, mechanische und korrosive Umweltbeanspruchungen
Storkower Straße 115 a, 10407 Berlin

Tests in the fields:

environmental simulation test in the fields temperature, humidity, corrosion, vibration and mechanical shock, solar simulation as well as whose combinations at technical products; protection tests; glow wire test

Within the given testing field marked with *, the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, the free choice of standard or equivalent testing methods.

Within the scope of accreditation marked with *, 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 procedures 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 can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at <https://www.dakks.de/en/content/accredited-bodies-dakks>.*

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.

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1 Test area climatic tests *

Type of test: Testing of environmental resistance with regard to temperature, relative humidity, temperature changes, pressure changes with and without temperature and artificial weathering	
Matrix / Sample / test item / Test object: Electrotechnical, mechanical and mechatronic products and devices, housings, components, packaging, materials and coatings	
Measurements: Temperature, relative humidity, pressure, UV irradiance	
Typical standard procedures:	
DIN 75220 1992-11	Ageing of automotive components in solar simulation units
DIN EN 50155 2018-05	Railway applications - Rolling stock - Electronic equipment (Restriction: <i>no EMC tests</i>)
DIN EN 60068-2-1 2008-01	Environmental testing - Part 2-1: Tests - Test A: Cold
DIN EN 60068-2-2 2008-05	Environmental testing - Part 2-2: Tests - Test B: Dry heat
DIN EN 60068-2-13 2000-02	Environmental testing - Part 2: Test - Test M: Low air pressure
DIN EN 60068-2-14 2010-04	Environmental testing - Part 2-14: Tests - Test N: Change of temperature
DIN EN 60068-2-30 2006-06	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)
DIN EN 60068-2-38 2010-06	Environmental testing - Part 2-38: Tests - Test Z/AD: Composite temperature/humidity cyclic test
DIN EN 60068-2-40 2000-08	Environmental testing - Part 2: Tests - Test Z/AM: Combined cold/low air pressure tests
DIN EN 60068-2-41 2000-08	Environmental testing - Part 2: Tests - Test Z/BM: Combined dry heat/low air pressure tests
DIN EN 60068-2-61 1993-12	Environmental testing - Part 2: Test methods - Test Z/ABDM: Climatic sequence
DIN EN 60068-2-66 1995-06	Environmental testing - Part 2: Test methods - Test Cx: Damp heat, steady state (unsaturated pressurized vapour)
DIN EN 60068-2-67 2020-08	Environmental testing - Part 2-67: Tests - Test Cy: Damp heat, steady state, accelerated test primarily intended for components
DIN EN 60068-2-78 2014-02	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state

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Type of test: Testing of environmental resistance with regard to temperature, relative humidity, temperature changes, pressure changes with and without temperature and artificial weathering	
Matrix / Sample / Test item / Test object: Electrotechnical, mechanical and mechatronic products and devices, housings, components, packaging, materials and coatings	
Measurements: Temperature, relative humidity, Pressure, UV irradiance	
Typical standard procedures:	
DIN EN ISO 4892-3 2016-10	Plastics - Methods of exposure to laboratory light sources - Part 3: Fluorescent UV lamps (Restriction: <i>only cycle numbers 3 and 5</i>)
DIN EN ISO 6270-2 2018-04	Paints and varnishes - Determination of resistance to humidity - Part 2: Condensation (in-cabinet exposure with heated water reservoir)
ISO 16750-4 2010-04	Road vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 4: Climatic loads

2 Test area mechanic-dynamical tests *

Type of test: Testing of resistance to environmental influences such as vibrations, shock loads, impacts and free fall with and without climatic loads	
Matrix / Sample / Test item / Test object: Electrotechnical, mechanical and mechatronic products and devices, housings, components, packaging, materials and coatings	
Measurements: Frequency, acceleration, impact energy, drop height, temperature, relative humidity	
Typical standard procedures:	
ASTM D 999-08 2008 (2015 reapproved)	Standard Test Methods for Vibration Testing of Shipping Containers (Restriction: <i>only method A1 (Vertical Motion)</i>)
ASTM D 4169-16 2016	Standard Practice for Performance Testing of Shipping Containers and Systems
ASTM D 4728 2017	Standard Test Methods for Random Vibration Testing of Shipping Containers
DIN EN 50102 1997-09	Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)

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Type of test:	
Testing of resistance to environmental influences such as vibrations, shock loads, impacts and free fall with and without climatic loads	
Matrix / Sample / Test item / Test object:	
Electrotechnical, mechanical and mechatronical products and devices, housings, components, packaging, materials and coatings	
Measurements:	
Frequency, acceleration, impact energy, drop height, temperature, relative humidity	
Typical standard procedures:	
DIN EN 60068-2-6 2008-10	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)
DIN EN 60068-2-27 2010-02	Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock
DIN EN 60068-2-31 2009-04	Environmental testing - Part 2-31: Tests - Test Ec: Rough handling shocks, primarily for equipment-type specimens
DIN EN 60068-2-53 2011-02	Environmental testing - Part 2-53: Tests and guidance: Combined climatic (temperature/humidity) and dynamic (vibration/shock) tests
DIN EN 60068-2-55 2014-10	Environmental testing - Part 2-55: Tests - Test Ee and guidance - Loose cargo testing including bounce
DIN EN 60068-2-64 2020-09	Environmental testing - Part 2-64: Tests - Test Fh: Vibration, broadband random and guidance (IEC 60068-2-64:2008 +A1:2019)
DIN EN 60068-2-80 2006-05	Environmental testing - Part 2-80: Tests - Test Fi: Vibration - Mixed mode
DIN EN 60255-21-1 1996-05	Electrical relays - Part 21: Vibration, shock, bump and seismic tests on measuring relays and protection equipment - Section 1: Vibration tests (sinusoidal)
DIN EN 60255-21-2 1996-05	Electrical relays - Part 21: Vibration, shock, bump and seismic tests on measuring relays and protection equipment - Section 2: Shock and bump tests
DIN EN 60255-21-3 1995-11	Electrical relays - Part 21: Vibration, shock, bump and seismic tests on measuring relays and protection equipment - Section 3: Seismic tests
DIN EN 61373 2011-04	Railway applications - Rolling stock equipment - Shock and vibration tests
ISO 16750-3 2012-12	Road vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 3: Mechanical loads (Restriction: <i>without point 4.5 Gravel Bombardement</i>)

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3 Test area mechanical-static tests *

<p>Type of test: Testing of resistance to environmental influences by static mechanical loads, impacts and free fall with and without climatic loads</p>	
<p>Matrix / Sample / Test item / Test object: Electrotechnical, mechanical and mechatronical products and devices, housings, components, packaging, materials and coatings</p>	
<p>Measurements: Impact energy, drop height, torsion, force, temperature, relative humidity</p>	
<p>Typical standard procedures:</p>	
DIN EN 50102 1997-09	Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)
DIN EN 60068-2-75 2015-08	Environmental testing - Part 2-75: Tests - Test Eh: Hammer tests
DIN EN 60068-2-77 1999-10	Environmental testing - Part 2-77: Tests; test 77: Body strength and impact shock
DIN EN 60512-13-1 2006-11	Connectors for electronic equipment - Tests and measurements - Part 13-1: Mechanical operation tests - Test 13a: Engaging and separating forces
DIN EN 60512-13-2 2006-11	Connectors for electronic equipment - Tests and measurements - Part 13-2: Mechanical operation tests - Test 13b: Insertion and withdrawal forces
DIN EN 60512-13-5 2006-11	Connectors for electronic equipment - Tests and measurements - Part 13-5: Mechanical operation tests - Test 13e: Polarizing and keying method
DIN EN 60512-15-6 2009-03	Connectors for electronic equipment - Tests and measurements - Part 15-6: Connector tests (mechanical) - Test 15f: Effectiveness of connector coupling devices
DIN EN ISO 527-1 2012-06	Plastics - Determination of tensile properties - Part 1: General principles (Restriction: <i>only determination of tensile strength, yield stress and breaking stress</i>)
DIN EN ISO 527-2 2012-06	Plastics - Determination of tensile properties - Part 2: Test conditions for moulding and extrusion plastics (Restriction: <i>only determination of tensile strength, yield stress and breaking stress</i>)
DIN EN ISO 604 2003-12	Plastics - Determination of compressive properties (Restriction: <i>only determination of tensile strength, yield stress and breaking stress</i>)

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4 Test area corrosive tests *

Type of test: Testing of corrosion resistance by constant and cyclic salt spray tests	
Matrix / Sample / Test item / Test object: Electrotechnical, mechanical and mechatronical products and devices, housings, components, packaging, materials and coatings	
Measurements: Salt concentration, temperature, relative humidity, precipitation amount	
Typical standard procedures:	
ASTM B 117 2019	Standard Practice for Operating Salt Spray (Fog) Apparatus
DIN EN 50155 2018-05	Railway applications - Rolling stock - Electronic equipment
DIN EN 60068-2-11 2000-02	Environmental testing - Part 2: Tests - Test Ka: Salt mist
DIN EN IEC 60068-2-52 2018-08	Environmental testing - Part 2-52: Tests - Test Kb: Salt mist, cyclic (sodium chloride solution)
DIN EN ISO 9227 2017-07	Corrosion tests in artificial atmospheres - Salt spray tests (Restriction: <i>only neutral salt spray test (NSS test)</i>)

5 Degree of protection tests and safety tests*

Type of test: Testing resistance against intrusion of foreign objects and water	
Matrix / Sample / Test item / Test object: Electrotechnical, mechanical and mechatronical products and devices, housings, components, packaging, materials and coatings	
Measurements: Force, flow, pressure, dust concentration, temperature, relative humidity	
Typical standard procedures:	
DIN EN 60068-2-68 1997-02	Environmental testing - Part 2: Tests - Test L: Dust and sand
DIN EN 60529 VDE 0470-1 2014-09	Degrees of protection provided by enclosures (IP Code)
ISO 20653 2013-02	Road vehicles - Degrees of protection (IP code) - Protection of electrical equipment against foreign objects, water and access

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6 Tests according to standard procedures ***

DIN EN 50470-1 2019-08	Electricity metering equipment (a.c.) - Part 1: General requirements, tests and test conditions - Metering equipment (class indexes A, B and C)
DIN EN 60255-27 VDE 0435-327 2014-11	Measuring relays and protection equipment - Part 27: Product safety requirements (Restriction: <i>only the following test methods:</i> - 9 <i>Labels, documentation and packaging</i> - 10.5.1 <i>Climatic environmental assessments</i> - 10.5.2 <i>Mechanical tests</i>)
DIN EN 60601-1-11 VDE 0750-1-11 2016-04	Medical electrical equipment - Part 1-11: General requirements for basic safety and essential performance - Collateral Standard: Requirements for medical electrical equipment and medical electrical systems used in the home healthcare environment (Restriction: <i>only the following test methods:</i> - 4.2 <i>Environmental conditions</i> - 5 <i>General requirements for testing ME devices</i> - 10.1 <i>Additional mechanical strength requirements</i>)
DIN EN 60695-2-11 VDE 0471-2-11 2014-11	Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products (GWEPT)
DIN EN 60695-2-12 VDE 0471-2-12 2015-01	Fire hazard testing - Part 2-12: Glowing/hot-wire based test methods - Glow-wire flammability index (GWFI) test method for materials
DIN EN 60695-2-13 VDE 0471-2-13 2015-01	Fire hazard testing - Part 2-13: Glowing/hot-wire based test methods - Glow-wire ignition temperature (GWIT) test method for materials
DIN EN 60945 2003-07	Maritime navigation and radiocommunication equipment and systems - General requirements - Methods of testing and required test results (Restriction: <i>only the following test methods:</i> - 8.2 <i>Dry warmth</i> - 8.3 <i>Damp heat</i> - 8.4 <i>Cold</i> - 8.5 <i>Thermal shock (portable devices)</i> - 8.6.1 <i>Fall onto a solid surface</i> - 8.7 <i>Vibration (all device classes)</i> - 8.8 <i>Rain and spray (Exposed Devices)</i> - 8.11 <i>Resistance to oil (portable devices)</i> - 8.12 <i>Corrosion (salt spray) (all device classes)</i> - 12.1 <i>Protection against accidental contact with dangerous voltages</i>)

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DIN EN 61010-1 2011-07	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements (Restriction: <i>only the following test methods:</i> - 5 <i>Labels and documentation</i> - 8 <i>Resistance to mechanical stress</i> - 10 <i>Device temperature limits and heat resistance,</i> <u>except:</u> <i>10.5.1 Maintenance of clearances and creepage distances</i> <i>10.5.3 Insulating materials</i>)
DIN EN 62052-11 VDE 0418-2-11 2017-09	Electricity metering equipment (AC) - General requirements, tests and test conditions - Part 11: Metering equipment (Restriction: <i>only the following test methods, <u>only:</u></i> - 7.4 <i>Ground fault resistance test</i> - 7.5 <i>Electromagnetic compatibility</i>)
DIN EN 62271-203 VDE 0671-203 2012-11	High-voltage switchgear and controlgear - Part 203: Gas-insulated metal-enclosed switchgear for rated voltages above 52 kV (here: <i>point 6.106.1</i>)
DIN EN ISO 2360 2017-12	Non-conductive coatings on non-magnetic electrically conductive base metals - Measurement of coating thickness - Amplitude-sensitive eddy-current method
DIN EN ISO 2409 2020-12	Paints and varnishes - Cross-cut test
DIN EN ISO 2808 2019-12	Paints and varnishes - Determination of film thickness (Restriction: <i>only determination of the dry film thickness: Method 7B.2, method 7C</i>)
DIN EN ISO 4624 2016-08	Paints and varnishes - Pull-off test for adhesion
DIN EN ISO 4628-2 2016-07	Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 2: Assessment of degree of blistering
DIN EN ISO 4628-3 2016-07	Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 3: Assessment of degree of rusting
DIN EN ISO 4628-4 2016-07	Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 4: Assessment of degree of cracking

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DIN EN ISO 4628-5 2016-07	Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 5: Assessment of degree of flaking
DIN EN ISO 4628-6 2011-12	Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 6: Assessment of degree of chalking by tape method
DIN EN ISO 4628-8 2013-03	Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 8: Assessment of degree of delamination and corrosion around a scribe or other artificial defect
DIN EN ISO 16474-3 2021-04	Paints and varnishes - Methods of exposure to laboratory light sources - Part 3: Fluorescent UV lamps (Restriction: <i>only cycle numbers 2 and 3</i>)
ISO 16750-5 2010-04	Road vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 5: Chemical loads
MIL STD 810G w/Change 1 2014-04	Environmental engineering considerations and laboratory tests (Restriction: <i>only the following test methods::</i> - 500.6 <i>Low Pressure (Altitude)</i> - 501.6 <i>High temperature</i> - 502.6 <i>Low temperature</i> - 503.6 <i>Temperature change, fast</i> - 504.2 <i>Liquid contamination</i> - 505.5 <i>Solar Irradiance (Sun) Procedure II - Steady state</i> - 506.6 <i>Rain</i> - 507.6 <i>Humidity</i> - 509.6 <i>Salt spray</i> - 510.6 <i>Dust</i> - 512.6 <i>Immersion</i> - 514.7 <i>Swing</i> - 516.7 <i>Shock</i> - 520.4 <i>Temperature, humidity, swing and altitude</i> - 523.4 <i>Vibro-Acoustic/Temperature</i> - 528.1 <i>Mechanical vibration of ship equipment</i>)
MIL-STD 883K w/Change 3 2018-05	Test method standard microcircuits (Restriction: <i>only the following test methods:</i> - 1001 <i>Barometric pressure, reduced (altitude operation)</i> - 1003 <i>High voltage resistance, insulation resistance</i> - 1004.7 <i>Damp heat, condensation</i> - 1009.8 <i>Salt spray</i> - 1010.8 <i>Temperature change, slow</i>

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MIL-STD 883K	- 1011.9	Temperature change, schnell
w/Change 3	- 2001.3	Constant acceleration
2018-05	- 2005.2	Swing
	- 2006.1	Swing
	- 2007.3	Swing
	- 2026	Swing)

7 Tests according to other test methods

DNVGL-CG-0339 2019-12	Environmental test specification for electrical, electronic and programmable equipment and systems
GS 95006-7-1 2016-03	Automotive connectors - Tests (Restriction: <i>all test procedures, except:</i> <ul style="list-style-type: none">- PG 2 Material and surface analysis, contacts- PG 3 Material and surface analysis, housing and single wire seal (ELA)- PG 5 Mechanical and thermal relaxation behavior- PG 6 Interaction between contact and housing- PG16 Fretting corrosion- PG 19 B19.4 Industrial climate (multi-component climate)- PG 28 Locking noise- PG 29 Holding force of the blind plugs)
ISTA 2A 2011-01	Partial-Simulation Performance Test Procedure - Packaged-Products 150 lb (68 kg) or less
JDQ 53.3 2014-04	Environmental Design & Testing of Electronic/Electrical Components and Assemblies (Restriction: <i>only the following test methods:</i> <ul style="list-style-type: none">- Point 3 Dust (except: 3.3 Particle Impact)- Point 4 Fluids- Point 6 Mechanical (except: 6.3.2 Transit Shock)- Point 7 Temperature / Humidity)

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JDQ 201 2015-03	Testing of Electronic and Electrical Devices - Environmental and Mechanical Loads (Restriction: <i>all test procedures, except:</i> - <i>Point 7 JDQ 201A3 - Particle Impact</i> - <i>Point 13 JDQ 201C1 - Corrosive Atmosphere</i> - <i>Point 18 JDQ 201D5 - Vibration Calibrated Accelerated Life Test (CALT)</i> - <i>Point 21 JDQ 201E3 - Transit Shock</i>)
Lloyds Register of Shipping 2015-07	Guideline for conducting type examinations, LR Type Approval System - Test Specification Number 1 (here: <i>Point 1-14</i>)
MAN M3499-1 2017-01	General requirements for electrical, electronic and mechatronic systems (Restriction: <i>all test procedures, except:</i> - <i>Point 6.9 Noxious gas test</i> - <i>Point 6.13 Dirt spray chamber test</i> - <i>Point 6.15 Flammability</i> - <i>Point 6.16 Light fastness xenon test</i> - <i>Point 7.6 Rock chip test</i> - <i>Point 8.2 EMC</i>)
MBN 10 305-1 2008-06	E/E Environmental Testing - Part 1: Test Specifications (Restriction: <i>only the following test methods:</i> - <i>Point 5 Environmental Testing</i> - <i>Point 6 Environmental Test Specification (except:</i> <i>6.1.9 Solar Radiation Soak</i> <i>6.4.1 Mixed Flowing Gas)</i>
MBN 10 305-2 2008-06	E/E Environmental Testing - Part 2: Test Selection Process
MBN 10 384 2010-11	Automotive connectors - Tests (Restriction: <i>all test procedures, except:</i> - <i>PG 2 Material and surface analysis, contacts</i> - <i>PG 3 Material and surface analysis, housing and single wire seal (ELA)</i> - <i>PG 5 Mechanical and thermal relaxation behaviour</i> - <i>PG 6 Interaction between contact and housing</i> - <i>PG 16 Fretting corrosion</i> - <i>PG 19 B19.4 Industrial climate (multi-component climate)</i> - <i>PG 28 Locking noise</i> - <i>PG 29 Holding force of the blind plugs</i>)
MBN LV 124-1 2013-03	Electrical and electronic components in passenger cars up to 3,5 t - General requirements, test conditions and tests - Part 1: Electrical requirements

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MBN LV 124-2 2013-08	Electrical and electronic components in passenger cars up to 3,5 t - General requirements, test conditions and tests - Part 2: Environmental requirements (Restriction: <i>all test procedures, except:</i> - <i>Point 13.2</i> <i>Rock Chip test</i> - <i>Point 14.18</i> <i>Noxious gas test</i>)
LV 214 2010-03	Automotive Connectors - Tests (Restriction: <i>all test procedures, except:</i> - <i>PG 2</i> <i>Material and surface analysis, contacts</i> - <i>PG 3</i> <i>Material and surface analysis, housing and single wire seal (ELA)</i> - <i>PG 5</i> <i>Mechanical and thermal relaxation behaviour</i> - <i>PG 6</i> <i>Interaction between contact and housing</i> - <i>PG 16</i> <i>Fretting corrosion</i> - <i>PG 19 B19.4</i> <i>Industrial climate (multi-component climate)</i> - <i>PG 28</i> <i>Locking noise</i> - <i>PG 29</i> <i>Holding force of the blind plugs</i>)
LV 215-2 2013-03	Automotive high-voltage contact - Test standard (Restriction: <i>all test procedures, except:</i> - <i>PG 2</i> <i>Material and surface analysis, contacts</i> - <i>PG 3</i> <i>Material and surface analysis, housing and single wire seal (ELA)</i> - <i>PG 5</i> <i>Mechanical and thermal relaxation behaviour</i> - <i>PG 6</i> <i>Interaction between contact and housing</i> - <i>PG 16</i> <i>Fretting corrosion</i> - <i>PG 19 B19.4</i> <i>Industrial climate (multi-component climate)</i> - <i>PG 28</i> <i>Locking noise</i> - <i>PG 29</i> <i>Holding force of the blind plugs</i> - <i>PG 50</i> <i>EMC test</i>)
RTCA / DO-160G 2010-12	Environmental conditions and test procedures for airborne equipment (Restriction: <i>only the following test methods:</i> - <i>Sec. 4</i> <i>Cold, dry heat, temperature changes, negative pressure</i> - <i>Sec. 5</i> <i>Temperature change</i> - <i>Sec. 6</i> <i>Damp heat</i> - <i>Sec. 7</i> <i>Shock, constant acceleration</i> - <i>Sec. 8</i> <i>Swing</i> - <i>Sec. 10</i> <i>Condensed water, splash water</i> - <i>Sec. 12.4</i> <i>Dust</i> - <i>Sec. 14</i> <i>Salt spray</i>)

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VW 75174 2018-10	Automotive connectors - Tests (Restriction: <i>all test procedures, except:</i> <ul style="list-style-type: none">- Point 6.1 PG 2 - Material and surface analysis, contacts- Point 6.2 PG 3 - Material and surface analysis, housing and single wire seal (ELA)- Point 6.6 PG 5 - Mechanical and thermal relaxation behaviour- Point 6.7 PG 6 - Interaction between contact and housing- Point 6.17 PG 16 - Fretting corrosion- Point 6.20 PG 19 B19.4 - Industrial climate (multi-component climate)- Point 6.29 PG 28 - Locking noise- Point 6.30 PG 29 - Holding force of the blind plugs)
VW 80000 2021-01	Electrical and electronic components in motor vehicles up to 3,5 t - General requirements, test conditions and tests (Restriction: <i>all test procedures, except:</i> <ul style="list-style-type: none">- Point 10.2 Rock chip test- Point 11.18 Noxious gas test)
VW 80106 2014-01	Plug connection on and in electrical and electronic components in vehicles
VW 80302 2013-02	Automotive high-voltage contact - Test standard (Restriction: <i>all test procedures, except:</i> <ul style="list-style-type: none">- PG 2 Material and surface analysis, contacts- PG 3 Material and surface analysis, housing and single wire seal (ELA)- PG 5 Mechanical and thermal relaxation behaviour- PG 6 Interaction between contact and housing- PG 16 Fretting corrosion- PG 19 B19.4 Industrial climate (multi-component climate)- PG 28 Locking noise- PG 29 Holding force of the blind plugs- PG 50 EMC test)

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Abbreviations used:

ASTM	American Society for Testing and Materials
DIN	German Institute for Standardization a. r.
DNVGL	Duideline Det Norske Veritas / Germanischer Lloyd
EN	European standard
GS	BMW Group Standard
IEC	International Electrotechnical Commission
ISO	International Organisation for Standardization
ISTA	International Safe Transit Association
JDQ	John Deere Quality test
LV	Delivery specification of Audi AG
MAN	Machine factory Augsburg - Nürnberg (Standard)
MBN	Mercedes Benz Standard
MIL STD	Military standard of the US Army
RTCA	Radio technical commission for aeronautics
VDE	Association of Electrical Engineering, Electronics and Information Technology a. r.
VW	Regulation of Volkswagen AG