

List of Test Methods – Location MD(MX)

Created or updated by	Review and release Division / department or process owner	Conformity with the integrated management system (IMS)	
Solis, German Test Lab	Soto, Lesly Test Lab	Quality & EHS Systems	
The electronically generated document is authentic and valid without signature.			
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Range of application and languages	☐ MD Group ☐ MD(D) ☐ MD(CZ) ☐ MD(CN) ☒ MD(MX) ☐ MD(BG) ☐ MD(JP) ☐ MD(US) ☒ EN English ☐ DE German ☐ CS Czech ☐ ZH Chinese ☐ ES Spanish ☐ BG Bulgarian ☐ JA Japanese		
Original language version (In case of doubt, this language prevails.)	EN		
Involved divisions / departments	Test Laboratory		

The list of test methods is intended to provide an overview of the accredited/non-accredited methods at the respective location in the test laboratory. The revision statuses specified in this document comply with those in the DAkkS certificate appendix or with a subsequent version that is within the framework of the flexible accreditation.

In addition to this document, the certificate of the German national accreditation body (Deutsche Akkreditierungsstelle GmbH) also applies with the tests regarding the fields specified on the certificate.

The following list contains all test methods including the publication date.

Table of contents

List of Test Methods – Location MD(MX).....	1
1 List of test methods	3
1.1 Test range: Electrical engineering / EMC	3
1.2 Test range: Mechanical tests	8
2 Used abbreviations	9
3 Modification history	10

1 List of test methods

1.1 Test range: Electrical engineering / EMC

Special field	Standard or test method / publication date	Title of the standard or test method	Limitations regarding the test method	Test method	
				Accr.	Non-accr.
Electrical engineering	DIN EN 13018: 2016-06	Non-destructive testing - Visual testing - General principles			X
	DIN EN 50289-1-2: 2024-01	Communication cables - Specifications for test methods - Part 1-2: Electrical test methods; DC resistance			X
	DIN EN 50289-1-3: 2002-02	Communication cables - Specifications for test methods - Part 1-3: Electrical test methods; Dielectric strength			X
	DIN EN 50289-1-4: 2002-02	Communication cables - Specification1s for test methods - Part 1-4: Electrical test methods; Insulation resistance			X
	DIN EN 50289-1-5: 2002-02	Communication cables - Specifications for test methods - Part 1-5: Electrical test methods; Capacitance			X
	DIN EN 50289-1-6: 2002-12	Communication cables - Specifications for test methods - Part 1-6: Electrical test methods; Electromagnetic performance	<u>Limitation:</u> 6.: surface transfer impedance, triaxial method; 8.: screening attenuation,		X
	DIN EN 50289-1-8, VDE 0819-289-1-8: 2018-02	Communication cables - Specifications for test methods - Part 1-8: Electrical test methods - Attenuation			X
	DIN EN 50289-1-9, VDE 0819-289-1-9: 2018-01	Communication cables - Specifications for test methods - Part 1-9: Electrical test methods - Unbalance attenuation (transverse conversion loss TCL transverse conversion transfer loss TCTL)			X
	DIN EN 50289-1-10: 2002-07	Communication cables - Specifications for test methods - Part 1-10: Electrical test methods; Crosstalk	<u>Limitation:</u> performed without balun measuring technique		X
	DIN EN 50289-1-11, VDE 0819-289-1-11: 2018-08	Communication cables - Specifications for test methods - Part 1-11: Electrical test methods - Characteristic impedance, input impedance, return loss			X
	DIN EN 60512-1-1: 2003-01	Connectors for electronic equipment - Tests and measurements - Part 1-1: General examination; Test 1a: Visual examination			X
	DIN EN 60512-2-1: 2003-01	Connectors for electronic equipment - Tests and measurements - Part 2-1: Electrical continuity and contact resistance tests; Test 2a: Contact resistance; Millivolt level method			X

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Special field	Standard or test method / publication date	Title of the standard or test method	Limitations regarding the test method	Test method	
				Accr.	Non-accr.
	DIN EN 60512-2-5 2e: 2004-01	Connectors for electronic equipment - Tests and measurements - Part 2-5: Electrical continuity and contact resistance tests - Test 2e: Contact disturbance			X
	DIN EN 60512-3-1: 2003-01	Connectors for electronic equipment - Tests and measurements - Part 3-1: Insulation tests; Test 3a: Insulation resistance			
	DIN EN 60512-4-1: 2004-01	Connectors for electronic equipment - Tests and measurements - Part 4-1: Voltage stress tests - Test 4a: Voltage proof			X
	DIN EN 60512-13-5: 2006-11 With correction: 2008-11	Connectors for electronic equipment - Tests and measurements - Part 13-5: Mechanical operation tests - Test 13e: Polarizing and keying method			
	DIN EN 60512-25-1: 2002-08	Connectors for electronic equipment - Tests and measurements - Part 25-1: Test 25a: Crosstalk			X
	DIN EN 60512-25-2: 2002-12	Connectors for electronic equipment - Tests and measurements - Part 25-2: Test 25b: Attenuation (insertion loss)			X
	DIN EN 60512-25-3: 2002-08	Connectors for electronic equipment - Tests and measurements - Part 25-3: Test 25c: Change in Rise Time			X
	DIN EN 60512-25-4: 2002-08	Connectors for electronic equipment - Tests and measurements - Part 25-4: Test 25d: Propagation delay			X
	DIN EN 60512-25-5: 2005-05	Connectors for electronic equipment - Tests and measurements - Part 25-5: Test 25e - Return loss			X
	DIN EN 60512-25-7: 2005-12	Connectors for electronic equipment - Tests and measurements - Part 25-7: Test 25g - Impedance, reflection coefficient and standing voltage wave ratio (VSWR)			X
	DIN EN IEC 62153-4-7, VDE 0819-153-4-7: 2023-06	Metallic cables and other passive components test methods - Part 4-7: Electromagnetic compatibility (EMC) - Test method for measuring of transfer impedance ZT and screening attenuation aS or coupling attenuation aC of connectors and assemblies - Triaxial tube in tube method			X
	IEC 62153-4-9, CEI 62153-4-9: 2018-05	Metallic Communication Cable test methods - Part 4-9: Electromagnetic compatibility (EMC) - Coupling attenuation of screened balanced cables, triaxial method			X

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				Accr.	Non-accr.
	DIN 72594-2: 2009-05	Road vehicles - 50 ohm radio frequency interface (50 Ω RFI) - Part 2: Test procedures	<u>Limitations:</u> test group 4 mechan. shock/vibration is impossible		X
	ISO 20860-1: 2008-10	Road vehicles - 50 ohms impedance radio frequency connection system interface - Part 1: Dimensions and electrical requirements			X
	ISO 20860-2: 2009-03	Road vehicles - 50 ohms impedance radio frequency connection system interface - Part 2: Test procedures	<u>Limitations:</u> test group 4 mechan. shock/vibration is impossible		X
	BMW GS 95006-7-1: 2021-11	Wiring harnesses in motor vehicles – Plug connector – Tests	<u>Limitations:</u> PG2; PG3; PG12; PG13; PG14; PG15; PG16; PG17; PG18A; PG18C PG19; PG22; B23.4; PG24; PG27; PG28; PG29; EP1; EP2; EP3; EP4		X
	BMW GS 95007-5-1: 2018-09	Radio-frequency cables for motor vehicles – Coaxial cables – Requirements, tests	<u>Limitations:</u> Bending test; flame retardance; physical and chemical properties of insulation; mechanical and electrical properties after mechanical, thermal or chemical stress; fungal test, compatibility test		X
	LAH V03 825 V06.01R: 2020-02	Component Performance Specification for Cables – Manufactured Coaxial Cables	<u>Limitations:</u> 6.4 Mechanical requirements 6.5.1.5 Shielding effectiveness 6.5.5 Low-frequency tests 6.6 Other physical requirements		X
	LAH V03 825 D V04.02R: 2020-03	Component Performance Specification for Cables – Manufactured HSD and HSDe cables	<u>Limitations:</u> 6.5.4.1 Contact disturbance test and 6.5.4.2 Volume resistance 6.5.5.2 Near-end crosstalk – NEXT 6.5.5.3 Shielding effectiveness – aS 6.6 Other physical requirements		X
	MBN 10384: 2010-11 (LV 214)	Motor Vehicle Connectors – Test Specification	<u>Limitations:</u> PG 18C Rock salt Stress		X

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Special field	Standard or test method / publication date	Title of the standard or test method	Limitations regarding the test method	Test method	
				Accr.	Non-accr.
	QV 61101: 2018-05	Release and validation guideline for prefabricated coaxial cables (FAKRA / Mini Coax)	<u>Limitations:</u> 4.3 Mechanical requirements: 4.4.4.8 Screening attenuation		X
	QV 61111: 2018-06	Release and validation guideline for prefabricated HSD cables	<u>Limitations:</u> 4.3.1 HSD Connector Specification, 4.3.2 Durability of yard goods 4.3.3 Crimp connections (cross-section image) 4.3.5 Alternating bending load and 4.3.6 Torsion test 4.4.3.1 Contact Disturbance Test, 4.4.3.2 Contact resistance, 4.4.3.3 Insulation resistance, 4.4.3.5 Rated current limits and 4.4.3.6 Permissible voltage drop – application-specific.; 4.4.4.3 Near-End Crosstalk – NEXT 4.4.4.4 Shielding effectiveness		X
	SAE/USCAR-2-9: 2024-12	Performance Specification for Automotive Electrical Connector Systems	<u>Limitations:</u> 5.1.7 Connector and/or Terminal Cycling 5.1.10 Mat Seal Sample Preparation 5.2 Terminal Mechanical Tests 5.3 Terminal - Electrical Tests 5.4 Connector - Mechanical Tests 5.6 Connector Environmental Tests 5.7 Tests for Headers		X
	SAE/USCAR-17-7: 2025-04	Performance Specification for Automotive RF Connector Systems	<u>Limitations:</u> 4.2 Connector Mechanical Tests 4.3 Terminal Electrical Tests 4.4.3 RF Leakage 4.4.4 Capacitance 4.5 Environmental Tests		X

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Special field	Standard or test method / publication date	Title of the standard or test method	Limitations regarding the test method	Test method	
				Accr.	Non-accr.
	SAE/USCAR-21-4: 2020-01	Performance Specification for Cable-to-Terminal Electrical Crimps	<u>Limitations:</u> 4.5 Electrical Performance Tests; 4.6 Applied cable seal retention		X
	VW 75174: 2018-10	Motor Vehicle Connectors – Test	<u>Limitations:</u> PG2; PG3; PG12; PG13; PG14; PG15; PG16; PG17; PG18A; PG18B; PG19; PG22A; PG22B; PG24; PG28; PG29; PG31		X
	VW 75206-1: 2020-11	Radio-Frequency Cables in Motor Vehicles - Requirements for Coaxial Cables	<u>Limitations:</u> 6.3 Mean characteristic impedance 6.5 Coupling resistance and 6.6 Shielding effectiveness 7.1 Insulation strippability, 7.2 Abrasion resistance of the sheath, 7.3 Bending force of the lines and 7.4 Flame resistance 7.5 Bending test: 7.6 Physical and chemical properties of the insulation 7.7.1 Volume resistivity and 7.7.3 1-minute withstand voltage 7.8 Properties after mechanical, thermal, or chemical stress 7.9 Mycological testing 7.10 Compatibility tests		X

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1.2 Test range: Mechanical tests

Special field	Standard or test method / publication date	Title of the standard or test method	Limitations regarding the test method	Test method	
				Accr.	Non-accr.
Mechanical tests	DIN EN 50289-3-17: 2002-09	Communication cables - Specifications for test methods - Part 3-17: Mechanical test methods; Adhesion of dielectric and sheath			X
	DIN EN 60512-1-2: 2003-01	Connectors for electronic equipment - Tests and measurements - Part 1-2: General examination; Test 1b: Examination of dimension and mass			X
	DIN EN 60512-13-1: 2006-11 With corrigendum: 2008-11	Connectors for electronic equipment - Tests and measurements - Part 13-1: Mechanical operation tests - Test 13a: Engaging and separating forces			X
	DIN EN 60512-13-2: 2006-11 With corrigendum: 2008-11	Connectors for electronic equipment - Tests and measurements - Part 13-2: Mechanical operation tests - Test 13b: Insertion and withdrawal forces			X
	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			X
	DIN EN 60512-16-4: 2009-03	Connectors for electronic equipment - Tests and measurements - Part 16-4: Mechanical tests on contacts and terminations - Test 16d: Tensile strength (crimped connections)			X
	VW 60330: 2025-02	Crimp Connections Solderless electrical connections	Limitations: 4.2 Cable 4.3.6 Insulation crimp 4.3.7 Single-wire seal crimp (SWS crimp) 5 Producing the crimped connection		X

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2 Used abbreviations

- Accr. Accredited test methods
- Non-accr. Non-accredited test methods
- BMW Bayerische Motoren Werke Aktiengesellschaft
- DIN German Institute for Standardization
- EMC Electromagnetic compatibility
- EN European standard
- GS Group standard
- IEC International Electrotechnical Commission
- ISO International Organization for Standardization
- LAH Specification sheet
- LV Delivery specifications
- MBN Mercedes Benz standard
- VDE Association for Electrical, Electronic & Information Technologies
- VW Volkswagen Aktiengesellschaft
- LAA Laboratory work instruction

3 Modification history

Revision status	Originator	Type of modification	Modification date
70034610	Guerrero, Rubí	New creation This document replaces document C11439	13.02.2025
70128765	Solis, German	Document update; identification of scope of accreditable norms	23.09.2026

Modifications are carried out exclusively by the technically responsible organizational unit.
The last modifications are always highlighted with blue font color.