

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Connectors for electronic equipment – Tests and measurements –  
Part 1-100: General – Applicable publications**

**Connecteurs pour équipements électroniques – Essais et mesures –  
Partie 1-100: Généralités – Publications applicables**

IEC 60512-1-100:2012  
<https://standards.iteh.ai/catalog/standards/siv/26c75cda-61a0-4284-be79-6c70aa20054a/iec-60512-1-100-2012>



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# INTERNATIONAL ELECTROTECHNICAL COMMISSION

## CONNECTORS FOR ELECTRONIC EQUIPMENT – TESTS AND MEASUREMENTS –

### Part 1-100: General – Applicable publications

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International Standard IEC 60512-1-100 has been prepared by subcommittee 48B: Connectors, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

This third edition cancels and replaces the second edition published in 2006. This edition constitutes a technical revision.

This new edition reflects the status of publications in the IEC 60512 series as of September 1<sup>st</sup> 2011.

The text of this standard is based on the following documents:

FDIS	Report on voting
48B/2270/FDIS	48B/2281/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

A list of all parts of IEC series 60512, under the general title *Connectors for electronic equipment – Tests and measurements*, can be found on the IEC website.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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- withdrawn,
- replaced by a revised edition, or
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## **CONNECTORS FOR ELECTRONIC EQUIPMENT – TESTS AND MEASUREMENTS –**

### **Part 1-100: General – Applicable publications**

#### **1 Scope and object**

This part of IEC 60512 provides a listing of the 60512 series of standards for specific tests that are created for connectors. Further it gives cross-references with the former (60)512 standards, where different test numbers were used. The connector tests as such are mainly identical with the previously published standards; minor changes may be introduced due to technical developments (e.g. other soldering temperatures in soldering tests, resulting from the introduction of lead-free soldering). The former issues were in booklets, with several related tests in one document, while the present issues are leaflets, each featuring one single test.

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Test No.	Test name	Applicable part of IEC 60512	Former IEC (60)512 part, test number
–	General	-1	512-1
	Applicable publications	-1-100	none
	<i>Part 1: General examination</i>		
1a	Visual examination	-1-1	-2 test 1a
1b	Examination of dimension and mass	-1-2	-2 test 1b
1c	Electrical engagement length	-1-3	-2 test 1c
1d	(With corrigendum) Contact protection effectiveness (scoop-proof)	-1-4	none
	<i>Part 2: Electrical continuity and contact resistance tests</i>		
2a	Contact resistance – Millivolt level method	-2-1	-2 test 2a
2b	Contact resistance – Specified test current method	-2-2	-2 test 2b
2c	Contact resistance variation	-2-3	-2 test 2c
2d	(Vacant)		
2e	Contact disturbance	-2-5	-2 test 2e
2f	Housing (shell) electrical continuity	-2-6	-2 test 2f
2g	(Vacant)		
	<i>Part 3: Insulation tests</i>		
3a	Insulation resistance	-3-1	-2 test 3a
	<i>Part 4: Voltage stress tests</i>		
4a	Voltage proof	-4-1	-2 test 4a
4b	Partial discharge	-4-2	-2 test 4b
4c	Voltage proof of pre-insulated crimp barrels	-4-3	-2 test 4c

Test No.	Test name	Applicable part of IEC 60512	Former IEC (60)512 part, test number
	<i>Part 5: Current-carrying capacity tests</i>		
5a	Temperature rise	-5-1	-3 test 5a
5b	Current-temperature derating	-5-2	-3 test 5b
	<i>Part 6: Dynamic stress tests</i>		
6a	Acceleration, steady state	-6-1	-4 test 6a
6b	Bump	-6-2	-4 test 6b
6c	Shock	-6-3	-4 test 6c
6d	Vibration (sinusoidal)	-6-4	-4 test 6d
6e	Random vibration	-6-5	none
	<i>Part 7: Impact tests (free components)</i>		
7a	Free fall (repeated)	-7-1	-5 test 7a
7b	Mechanical strength impact	-7-2*	-5 test 7b
	<i>Part 8: Static load tests (fixed components)</i>		
8a	Static load, transverse	-8-1	-5 test 8a
8b	Static load, axial	-8-2	-5 test 8b
8c	Robustness of actuating lever	-8-3	-5 test 8c
	<i>Part 9: Endurance tests</i>		
9a	Mechanical operation	-9-1	-5 test 9a
9b	Electrical load and temperature	-9-2*	-5 test 9b
9c	Mechanical operation (engaging and separating) with electrical load	-9-3	-5 test 9c
9d	Durability of contact retention system and seals (maintenance, ageing)	-9-4	-5 test 9d
9e	Current loading, cyclic	-9-5	-5 test 9e
	<i>Part 10: Overload tests</i>		
10a	withdrawn		
10b	withdrawn		
10c	(Vacant)		
10d	Electrical overload (connectors)	-10-4 Ed.2.	-5 test 10d

\* In preparation.



Test No.	Test name	Applicable part of IEC 60512	Former IEC (60)512 part, test number
	<i>Part 11: Climatic tests</i>		
11a	Climatic sequence	-11-1	-6 test 11a
11b	Combined/sequential cold, low air pressure and damp heat	-11-2	-6 test 11b
11c	Damp heat, steady state	-11-3	-6 test 11c
11d	Rapid change of temperature	-11-4	-6 test 11d
11e	Mould growth	-11-5	-6 test 11e
11f	Corrosion, salt mist	-11-6	-6 test 11f
11g	Flowing mixed gas corrosion test	-11-7 Ed.2.	none
11h	Sand and dust	-11-8	none
11i	Dry heat	-11-9	-6 test 11i
11j	Cold	-11-10	-6 test 11j
11k	Low air pressure	-11-11	-6 test 11k
11l	(Not to be used)		
11m	Damp heat, cyclic	-11-12	-6 test 11m
11n	Gas tightness, solderless wrapped connections	-11-13	-6 test 11n
11o	(Not to be used)		
11p	Flowing single gas corrosion test	-11-14 Ed.2.	none
	<i>Part 12: Soldering tests</i>		
12a	Solderability, wetting, solder bath method	-12-1	-6 test 12a
12b	Solderability, wetting, soldering iron method	-12-2	-6 test 12b
12c	Solderability, de-wetting	-12-3	-6 test 12c
12d	Resistance to soldering heat, solder bath method	-12-4	-6 test 12d
12e	Resistance to soldering heat, soldering iron method	-12-5	-6 test 12e
12f	Sealing against flux and cleaning solvents in machine soldering	-12-6	none
12g	Solderability, wetting balance method	-12-7	none
	<i>Part 13: Mechanical operating tests</i>		
13a	Engaging and separating forces	-13-1 Ed.2	-7 test 13a
13b	Insertion and withdrawal forces	-13-2	-7 test 13b
13c	withdrawn		-7 test 13c
13d	withdrawn		-7 test 13d
13e	Polarizing and keying method	13-5	-7 test 13e

Test No.	Test name	Applicable part of IEC 60512	Former IEC (60)512 part, test number
	<i>Part 14: Sealing tests</i>		
14a	(Vacant)		
14b	Sealing -Fine air leakage	-14-2	-7 test 14b
14c	(Vacant)		
14d	Immersion- Waterproof	-14-4	-7 test 14d
14e	Immersion at low air pressure	-14-5	-7 test 14e
14f	Interfacial sealing	-14-6	-7 test 14f
14g	Impacting water	-14-7	none
	<i>Part 15: Connector tests (mechanical)</i>		
15a	Contact retention in insert	-15-1	-8 test 15a
15b	Insert retention in housing (axial)	-15-2	-8 test 15b
15c	Insert retention in housing (torsional)	-15-3	-8 test 15c
15d	Contact insertion, release and extraction force	-15-4	-8 test 15d
15e	Contact retention in insert, cable nutation	-15-5	-8 test 15e
15f	Effectiveness of connector coupling devices	-15-6	-8 test 15f
15g	Robustness of protective cover attachment	-15-7	-8 test 15g
15h	Contact retention system resistance to tool application	-15-8	none
	<i>Part 16: Mechanical tests on contacts and terminations</i>		
16a	Probe damage	-16-1	-8 test 16a
16b	Restricted entry	-16-2	-8 test 16b
16c	Contact-bending strength	-16-3	-8 test 16c
16d	Tensile strength (crimped connections)	-16-4	-8 test 16d
16e	Gauge retention force (resilient contacts)	-16-5	-8 test 16e
16f	Robustness of terminations	-16-6	-8 test 16f
16g	Measurement of contact deformation after crimping	-16-7	-8 test 16g
16h	Insulation grip effectiveness (crimped connections)	-16-8	-8 test 16h
16i	Grounding contact spring holding force	-16-9	-8 test 16i
16j	(Vacant)		
16k	Stripping force, solderless wrapped connections	-16-11	-8 test 16k
16m	Un-wrapping, solderless wrapped connections	-16-13	-8 test 16m
16n	Bending strength, fixed male tabs	-16-14	-8 test 16n
16o	(Not to be used)		
16p	Torsional strength, fixed male tabs	-16-16	-8 test 16p

Test No.	Test name	Applicable part of IEC 60512	Former IEC (60)512 part, test number
16q	Tensile and compressive strength, fixed male tabs	-16-17	-8 test 16q
16r	Deflection of contacts, simulation	-16-18	-8 test 16r
16s	(Vacant)		
16t	Mechanical strength (wired terminations of solderless connections)	-16-20	none
16u	Whisker test via the application of external mechanical stresses	-16-21	none
	<i>Part 17: Cable clamping tests</i>		
17a	Cable clamp robustness	-17-1	-9 test 17a
17b	Cable clamp resistance to cable rotation	-17-2	-9 test 17b
17c	Cable clamp resistance to cable pull (tensile)	-17-3	-9 test 17c
17d	Cable clamp resistance to cable torsion	-17-4	-9 test 17d
	<i>Part 18: Explosion hazard tests</i>		
	<i>Part 19: Chemical resistance tests</i>		
19a	Fluid resistance of pre-insulated crimp barrels	-19-1	-9 test 19a
19b	(Vacant)		
19c	Fluid resistance	-19-3	none
	<i>Part 20: Fire hazard tests</i>		
20a	Flammability, needle-flame	-20-1	-9 test 20a
20b	Flammability tests - fireproofness	-20-2	none
20c	Flammability, glow-wire	-20-3	-9 test 20c
	<i>Part 21: R.F. resistance tests</i>		
21a	R.F. shunt resistance	-21-1	-9 test 21a
	<i>Part 22: Capacitance tests</i>		
22a	Capacitance	-22-1	-9 test 22a
	<i>Part 23: Screening and filtering tests</i>		
23a	(Vacant)		
23b	Suppression characteristics of integral filters	-23-2	-9 test 23b
23c	Shielding effectiveness of connectors and accessories	-23-3	none
23c	Corrigendum 1 to IEC 60512-23-3	-23-3	none
23d	Transmission line reflections in the time domain	-23-4	none