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Connectors for electrical and electronic equipment - Product requirements - Part 2-104: Circular connectors - Detail specification for circular connectors with M8 screw-locking or snap-locking

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Connectors for electrical and electronic equipment - Product requirements - Part 2-104: Circular connectors - Detail specification for circular connectors with M8 screw-locking or snap-locking

FOREWORD

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IEC 61076-2-104 has been prepared by subcommittee 48B: Electrical connectors, of IEC technical committee 48: Electrical connectors and mechanical structures for electrical and electronic equipment. It is an International Standard.

This third edition cancels and replaces the second edition published in 2014. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) The structure of this document has been adapted to the new IEC template for standards. New subclauses have been added. Clause 5 and Clause 6 have been updated.
b) The mating face for a M8 12-pole connector has been added.

c) Annex B Orientation of cable outlet in relation to coding has been added.

d) The styles for connector inserts have been moved to the normative Annex C.

The text of this International Standard is based on the following documents:

Draft	Report on voting
48B/3188/FDIS	48B/3194/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts of the IEC 61076 series, published under the general title *Connectors for electrical and electronic equipment - Product requirements,* can be found on the IEC website.

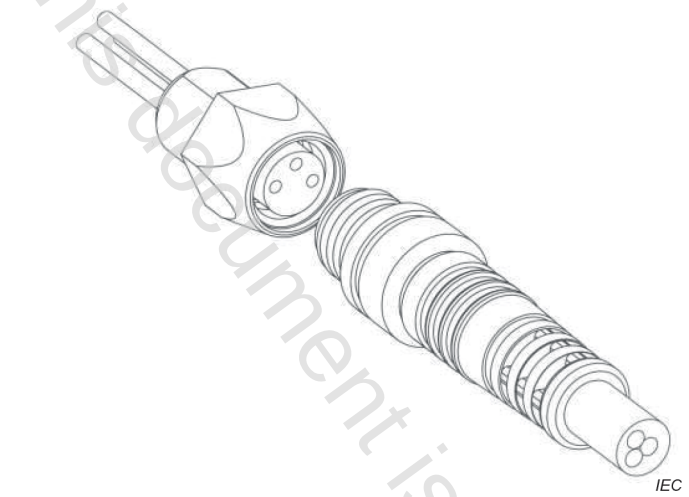
The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

– reconfirmed,

– withdrawn, or

– revised.

<table>
<tr><td>IEC SC 48B – Electrical connectors

Specification available from:
IEC General secretariat or from the addresses shown on the inside cover.</td><td>IEC 61076-2-104 Ed 3</td></tr>
<tr><td>Electronic components of assessed quality in accordance with:
IEC 61076-1</td><td></td></tr>
<tr><td rowspan="2"> 
IEC</td><td>Circular connectors M8 (screw-locking) – diameter 8 mm (snap-locking)

3 to 12 way

Male and female contacts

Male and female connectors

Rewirable – Non-rewirable</td></tr>
<tr><td>Free cable connectors straight and right angled

Fixed connectors -flange mounting and single hole mounting

Connector insert</td></tr>
</table>

1 Scope

This part of IEC 61076 describes 3-way to 12-way circular connectors with M8 screw-locking or with nominal ∅ 8 mm snap-locking, for connection of automation devices, for signal and power transmission up to 50 V AC / 60 V DC rated voltage and up to 4 A rated current.

These connectors are available as fixed or free connectors, either rewirable or non-rewirable. Male connectors have round contacts ∅ 0,48 mm, ∅ 0,6 mm, ∅ 0,7 mm and ∅ 1,0 mm, depending on the number of ways and coding, with all contacts being of the same size.

The different codings prevent the mating of differently coded male and female connectors.

NOTE M8 is the dimension of the thread of the screw locking mechanism of these circular connectors.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050-581, *International Electrotechnical Vocabulary (IEV) - Part 581: Electromechanical components for electronic equipment*

IEC 60068-1, *Environmental testing - Part 1: General and guidance*

IEC 60352-2, *Solderless connections - Part 2: Crimped connections - General requirements, test methods and practical guidance*

IEC 60352-3, *Solderless connections - Part 3: Accessible insulation displacement (ID) connections - General requirements, test methods and practical guidance*

IEC 60352-4, *Solderless connections - Part 4: Non-accessible insulation displacement (ID) connections - General requirements, test methods and practical guidance*

IEC 60352-5, *Solderless connections - Part 5: Press-in connections - General requirements, test methods and practical guidance*

IEC 60352-6, *Solderless connections - Part 6: Insulation piercing connections - General requirements, test methods and practical guidance*

IEC 60352-7, *Solderless connections - Part 7: Spring clamp connections - General requirements, test methods and practical guidance*

IEC 60352-9, *Solderless connections - Part 9: Ultrasonically welded connections - General requirements, test methods and practical guidance*

IEC 60512 (all parts), *Connectors for electrical and electronic equipment – Tests and measurements*

IEC 60512-1, *Connectors for electrical and electronic equipment - Tests and measurements - Part 1: General specification*

IEC 60512-1-2, *Connectors for electronic equipment - Tests and measurements - Part 1-2: General examination - Test 1b: Examination of dimension and mass*

IEC 60512-2-1, *Connectors for electronic equipment - Tests and measurements - Part 2-1: Electrical continuity and contact resistance tests - Test 2a: Contact resistance - Millivolt level method*

IEC 60512-3-1, *Connectors for electronic equipment - Tests and measurements - Part 3-1: Insulation tests - Test 3a: Insulation resistance*

IEC 60512-4-1, *Connectors for electronic equipment - Tests and measurements - Part 4-1: Voltage stress tests - Test 4a: Voltage proof*

IEC 60512-6-3, *Connectors for electronic equipment - Tests and measurements - Part 6-3: Dynamic stress tests - Test 6c: Shock*

IEC 60512-6-4, *Connectors for electronic equipment - Tests and measurements - Part 6-4: Dynamic stress tests - Test 6d: Vibration (sinusoidal)*

IEC 60512-9-1, *Connectors for electronic equipment - Tests and measurements - Part 9-1: Endurance tests - Test 9a: Mechanical operation*

IEC 60512-13-2, *Connectors for electronic equipment - Tests and measurements - Part 13-2: Mechanical operation tests - Test 13b: Insertion and withdrawal forces*

IEC 60512-13-5, *Connectors for electronic equipment - Tests and measurements - Part 13-5: Mechanical operation tests - Test 13e: Polarizing and keying method*

IEC 60529:1989 + AMD1:1999 + AMD2:2013, *Degrees of protection provided by enclosures (IP code)*

IEC 60664-1:2020, *Insulation coordination for equipment within low-voltage supply systems - Part 1: Principles, requirements and tests*

IEC 60999-1, *Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units - Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm^2 up to 35 mm^2 (included)*

IEC 61076-1, *Connectors for electronic equipment - Product requirements - Part 1: Generic specification*

IEC 61984:2008, *Connectors - Safety requirements and tests*

IEC 62197-1, *Connectors for electronic equipment - Quality assessment requirements - Part 1: Generic specification*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-581, IEC 61076-1, IEC 60512-1 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

– IEC Electropedia: available at https://www.electropedia.org/

– ISO Online browsing platform: available at https://www.iso.org/obp