SLOVENSKI STANDARD
oSIST prEN IEC 61076-8-103:2022

01-julij-2022

Konektorji za električno in elektronsko opremo - Zahteve za izdelek - 8-103. del: Močnostni konektorji - Podrobna specifikacija za okrogle konektorje 2P+PE z naznačenim tokom 20 A in z zaskočnim zaklepanjem IP65/IP67 s kovinskim ohišjem

Connectors for electrical and electronic equipment - Product requirements - Part 8-103: Power connectors - Detail specification for 2P+PE circular connectors with 20 A rated current and push-pull locking IP65/IP67 with metal housing

Connecteurs pour équipements électriques et électroniques - Exigences de produit - Partie 8-103: Connecteurs d'alimentation - Spécification particulière relative aux connecteurs circulaires 2P+PE avec un courant assigné de 20 A et un mécanisme de verrouillage de type pousser-tirer IP65/IP67, logés dans un boîtier métallique

Ta slovenski standard je istoveten z: **prEN IEC 61076-8-103:2022**

ICS:

31.220.10	Vtiči in vtičnice, konektorji	Plug-and-socket devices. Connectors

oSIST prEN IEC 61076-8-103:2022 **en**

48B/2952/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

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DATE OF CIRCULATION:	CLOSING DATE FOR VOTING:
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IEC SC 48B : ELECTRICAL CONNECTORS	
SECRETARIAT:	SECRETARY:
United States of America	Mr Jeffrey Toran
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: ☐
	Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: ☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☐ SAFETY	
☒ SUBMITTED FOR CENELEC PARALLEL VOTING	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING
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TITLE:

Connectors for electrical and electronic equipment – Product requirements – Part 8–103: Power connectors – Detail specification for 2P+PE circular connectors with 20 A rated current and push-pull locking IP65/IP67 with metal housing

PROPOSED STABILITY DATE: 2025

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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CONNECTORS FOR ELECTRONIC EQUIPMENT – PRODUCT REQUIREMENTS – Part 8–103: Power connectors – Detail specification for 2P+PE circular connectors with 20 A rated current and push-pull locking IP65/IP67 with metal housing

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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MAIN TITLE IN CAPITAL LETTERS –

Part X: Second part of the title in normal letters

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International Standard IEC 61076-8-103 has been prepared by subcommittee 48B: Connectors, of IEC technical committee 48: Electrical connectors and mechanical structures for electrical and electronic equipment.

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

Draft	Report on voting
XX/XX/FDIS	XX/XX/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/standardsdev/publications.

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,
- replaced by a revised edition, or
- amended.

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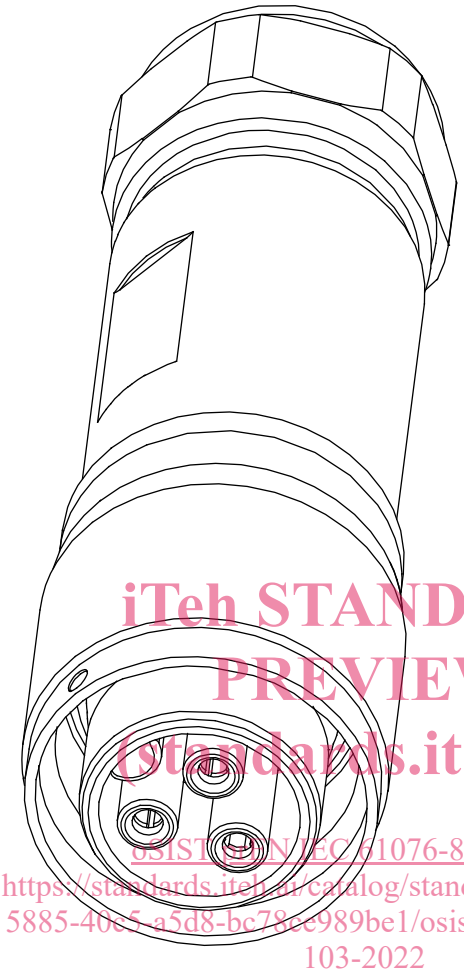
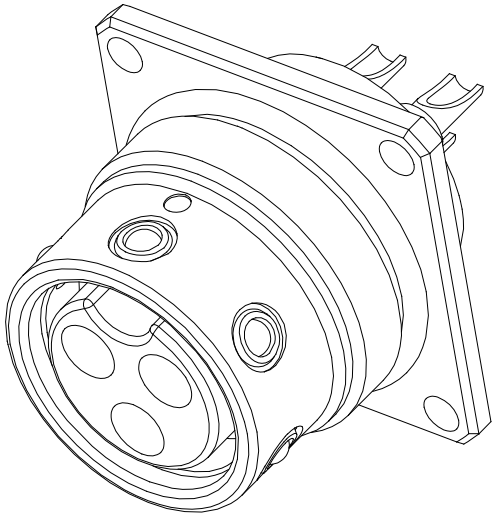
The International Electrotechnical Commission **IEC SC 48B—Electrical connectors**		**IEC 61076-8-103**
Detail specification in accordance with IEC 61076-8		
Free connector		For rated current of 20 A ; 2P+PE; Female contacts; Push-pull locking; 360° shielding.
Fixed connector		For rated current of 20 A ; 2P+PE; Male contacts; Push-pull locking; 360° shielding.

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175 **CONNECTORS FOR ELECTRONIC EQUIPMENT –**
176 **PRODUCT REQUIREMENTS –**

Part 8–103: Power connectors – Detail specification for 2P+PE circular connectors with 20 A rated current and push-pull locking IP65/IP67 metal housing

1 Scope

This part of IEC 61076-8 describes free and fixed 2-pole power (1P+N) plus PE circular connectors with 20 A rated current, rated voltage up to and including 300 V AC, IP65/IP67 metal housing with push-pull locking (hereinafter referred to as a connectors) for use in electrical and electronic equipment. It includes overall dimensions, interface dimensions, technical characteristics, performance requirements and test methods.

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 — Part 581: Electromechanical components for electronic equipment*

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

IEC60068-2-60,Environmental testing — Part 2-60: Tests – Test Ke: Flowing mixed gas corrosion test

IEC 60228, *Conductors of insulated cables*

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

IEC 60352-3, *Solderless connections — Part 3: Solderless accessible insulation displacement connections - General requirements, test methods and practical guidance*

IEC 60352-4, *Solderless connections — Part 4: Solderless non-accessible insulation displacement 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 60512-1-1, *Connectors for electronic equipment-Tests and measurements — Part 1-1: General examination-Test 1a: Visual examination*

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 60512-5-1, *Connectors for electronic equipment - Tests and measurements — Part 5-1: Current-carrying capacity tests - Test 5a: Temperature rise*

IEC 60512-5-2, *Connectors for electronic equipment - Tests and measurements — Part 5-2: Current-carrying capacity tests - Test 5b: Current-temperature derating*

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 60512-7-1, *Connectors for electronic equipment - Tests and measurements — Part 7-1: Impact tests (free connectors) - Test 7a: Free fall (repeated)*

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

IEC 60512-9-2, *Connectors for electronic equipment - Tests and measurements — Part 9-2: Endurance tests - Test 9b: Electrical load and temperature*

IEC 60512-11-3, *Connectors for electronic equipment - Tests and measurements — Part 11-3: Climatic tests - Test 11c: Damp heat, steady state*

IEC 60512-11-4, *Connectors for electronic equipment - Tests and measurements — Part 11-4: Climatic tests - Test 11d: Rapid change of temperature*

IEC 60512-11-6, *Connectors for electronic equipment - Tests and measurements — Part 11-6: Climatic tests - Test 11f: Corrosion, salt mist*

IEC 60512-11-9, *Connectors for electronic equipment - Tests and measurements — Part 11-9: Climatic tests - Test 11i: Dry heat*

IEC 60512-11-10, *Connectors for electronic equipment - Tests and measurements — Part 11-10: Climatic tests - Test 11j: Cold*

IEC 60512-11-11, *Connectors for electronic equipment - Tests and measurements — Part 11-11: Climatic tests - Test 11k: Low air pressure*

IEC 60512-13-1, *Connectors for electronic equipment - Tests and measurements — Part 13-1: Mechanical operation tests - Test 13a: Engaging and separating 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 60512-15-1, *Connectors for electronic equipment - Tests and measurements — Part 15-1: Connector tests (mechanical) - Test 15a: Contact retention in insert*

IEC 60512-15-6, *Connectors for electronic equipment - Tests and measurements — Part 15-6: Connector tests (mechanical) - Test 15f: Effectiveness of connector coupling devices*

IEC 60512-16-5, *Connectors for electronic equipment - Tests and measurements — Part 16-5: Mechanical tests on contacts and terminations - Test 16e: Gauge retention force (resilient contacts)*

IEC 60512-20-3, *Connectors for electronic equipment - Tests and measurements — Part 20-3: Mechanical tests on contacts and terminations - Test 20c: Flammability, glow-wire*

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

IEC 60695-2-11:2014, *Fire hazard testing — Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products (GWEPT)*

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 mm² up to 35 mm² (included)*

IEC 61076-1:2006, *Connectors for electronic equipment — Part 1: Generic specification*

IEC 61984, *Connectors - Safety requirements and tests*

IEC Guide 109, *Environmental aspects — Inclusion in electrotechnical product standards*

IEC 62430:2009, *Environmentally conscious design for electrical and electronic products*

ISO 1302, *Geometrical Product Specifications (GPS) — Indication of surface texture in technical product documentation*

ISO 6508-1, *Metallic materials — Rockwell hardness test – Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T)*

ISO 11469, *Plastics — Generic identification and marking of plastic products*

3 Terms and definitions

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

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

• IEC Electropedia: available at http://www.electropedia.org/

• ISO Online browsing platform: available at http://www.iso.org/obp

4 Technical information

4.1 Recommended method of termination

4.1.1 General

According to IEC 60352 series or IEC 60999-1.

4.1.2 Number of contacts and contact cavities

Number of contacts: power contacts: 2, PE contact: 1

Number of contact cavities (for removable contacts): 3

Suitable wire: cross-sectional area for power contacts: 1,5 mm^2 to 2,5 mm^2. The core of each power wire is deemed to be individually shielded, each shielding requiring a dedicated termination.

4.2 Ratings and characteristics

Connectors according to this specification are connectors without breaking capacity (COC) according to IEC 61984, therefore they are not intended to be engaged or disengaged in normal use when live or under load.

Rated voltage: 300 V AC

Rated impulse voltage U_{imp}: 6 kV

Voltage proof: 4 000 V AC

Pollution degree: 2

Rated current (at 85 °C): 20 A. See derating diagram in 6.2.3.

Insulation resistance: 5 000 MΩ

Climatic category: 55/125/10

4.3 Systems of levels

4.3.1 Performance levels

None specified.

4.3.2 Compatibility levels

The compatibility levels of the products specified by this document shall comply with 2.2.3.3 of IEC 61076-1:2006 (level 2 – intermateable).

4.4 Classification into climatic categories

Classification into climatic category is specified in 6.1.

4.5 Creepage and clearance distances

Creepage and clearance distances shall be as per 6.2.1 of this document (connector without breaking capacity as defined in IEC 61984).

4.6 Current-carrying capacity

Current carrying capacity as specified in 6.2.3.

4.7 Marking

The marking of the connector and the package shall be in accordance with 2.7 of IEC 61076-1:2006.

5 Dimensional information

5.1 General

Dimensions are given in millimetres. Drawings are shown in the first angle projection. The shape of the connectors may deviate from those given in the following drawings as long as the specified dimensions are not influenced.

Missing dimensions shall be chosen according to the common characteristics and intended use.

5.2 Isometric view and common features

Figure 1 shows an isometric view of the free connector and Figure 2 shows an isometric view of the fixed connector.