IEC 61076-8-103

Edition 1.0 2023-05

INTERNATIONAL STANDARD

NORME INTERNATIONALE

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



IEC 61076-8-103:2023-05(en-fr)



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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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

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

Draft	Report on voting
48B/2952/CDV	48B/2990/RVC

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.

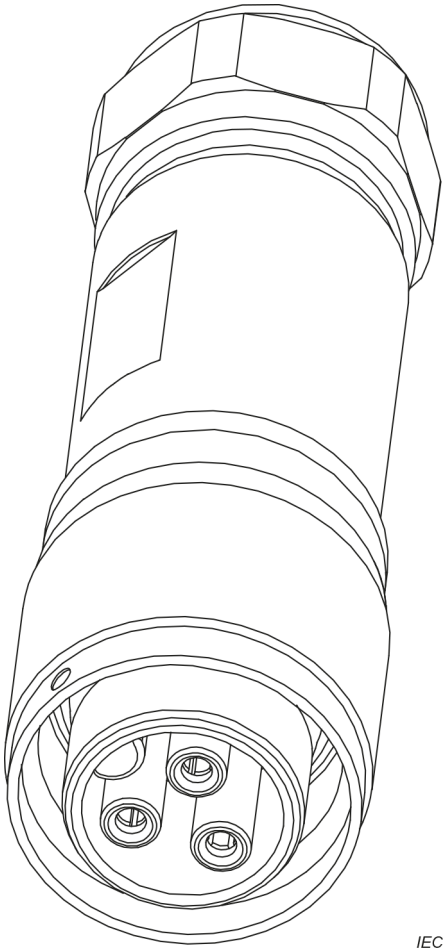
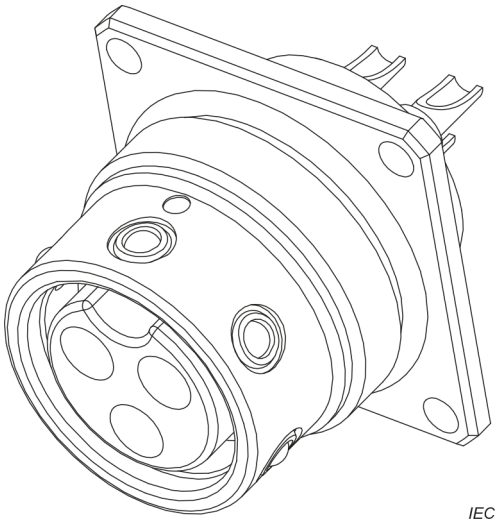
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Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

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- withdrawn,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

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2P+PE;
Female contacts;
Push-pull locking;
360° shielding.</td></tr>
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</table>

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

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 (IEV) – 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: 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 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 60512-2-5, *Connectors for electronic equipment – Tests and measurements – Part 2-5: Electrical continuity and contact resistance tests – Test 2e: Contact disturbance*

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 60512-5-2, *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 60512-11-1, *Connectors for electrical and electronic equipment – Tests and measurements – Part 11-1: Climatic tests – Test 11a - Climatic sequence*

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 60512-11-7, *Connectors for electronic equipment – Tests and measurements – Part 11-7: Climatic tests – Test 11g: Flowing mixed gas corrosion test*

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 60512-11-12, *Connectors for electronic equipment – Tests and measurements – Part 11-12: Climatic tests – Test 11m: Damp heat, cyclic*

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: Fire hazard tests – Test 20c: Flammability, glow-wire*

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

IEC 60695-2-11:2021, *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 mm^2 up to 35 mm^2 (included)*

IEC 61076-1:2006, *Connectors for electronic equipment – Product requirements – Part 1: Generic specification*
IEC 61076-1:2006/AMD1:2019

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

IEC 62430:2019, *Environmentally conscious design (ECD) – Principles, requirements and guidance*

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

ISO 6508-1, *Metallic materials – Rockwell hardness test – Part 1: Test method*

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

ISO 21920-1: 2021, *Geometrical product specifications (GPS) – Surface texture: Profile – Part 1: Indication of surface texture*

3 Terms and definitions

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

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.