IEC 61076-8-106

Edition 1.0 2023-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Connectors for electrical and electronic equipment – Product requirements – Part 8-106: Power connectors – Detail specification for 2-poles push-pull coupling rectangular connectors with fuses, for 400 V DC rated voltage and 16 A rated current

Connecteurs pour équipements électriques et électroniques – Exigences de produit – Partie 8-106: Connecteurs d'alimentation – Spécification particulière pour les connecteurs bipolaires rectangulaires à accouplement pousser-tirer équipés de coupe-circuits, pour une tension assignée de 400 V en courant continu et un courant assigné de 16 A

IEC 61076-8-106:2023-07(en-fr)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 31.220.10

ISBN 978-2-8322-7125-4

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CONNECTORS FOR ELECTRICAL AND ELECTRONIC EQUIPMENT – PRODUCT REQUIREMENTS –

Part 8-106: Power connectors – Detail specification for 2-poles push-pull coupling rectangular connectors with fuses, for 400 V DC rated voltage and 16 A rated current

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IEC 61076-8-106 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.

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

Draft	Report on voting
48B/2956/CDV	48B/2993/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.

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 IEC 61076 series, under the general title *Connectors for electrical and electronic equipment – Product requirements*, can be found on the IEC website.

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.

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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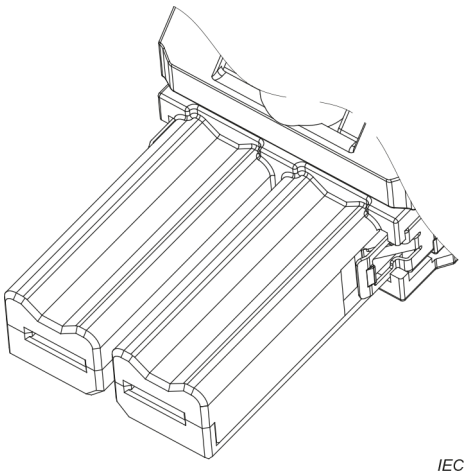
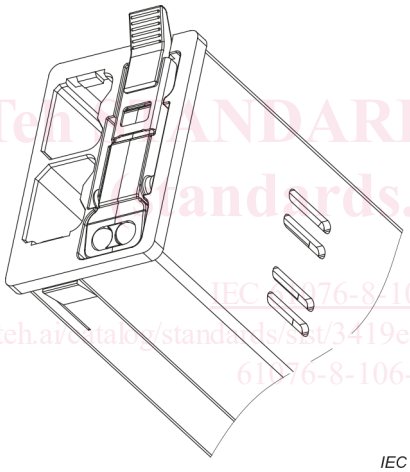
The International Electrotechnical Commission **IEC SC 48B – Electrical connectors**		**IEC 61076-8-106 Ed.1**
Detail specification in accordance with IEC 61076-1		
Free connector	 2-pole 16 A free connector	Free rectangular connector; For rated voltage of 400 V DC and rated current of 16 A; 2-pole; Receptacle contacts for power; Push-pull and snap locking I; Two codings.
Fixed connector	 2-pole 16 A fixed connector	Fixed rectangular connector; For rated voltage of 400 V DC and rated current of 16 A 2-pole; With two fuses; Blade contacts for power; Push-pull and snap locking; Two codings.

CONNECTORS FOR ELECTRICAL AND ELECTRONIC EQUIPMENT – PRODUCT REQUIREMENTS –

Part 8-106: Power connectors – Detail specification for 2-poles push-pull coupling rectangular connectors with fuses, for 400 V DC rated voltage and 16 A rated current

1 Scope

This part of IEC 61076-8 applies to free and fixed, 2-pole push-pull and snap locking power rectangular connectors with fuses, with rated voltage of 400 V DC and rated current of 16 A. It includes overall dimensions, interface dimensions, technical characteristics, performance requirements, and test methods.

Connectors according to this document are connectors with breaking capacity (CBC) according to IEC 61984 which are mainly used in DC power conduction, in the field of electrical and electronic equipment.

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 60050-581:2008, *International Electrotechnical Vocabulary (IEV) – Part 581: Electromechanical components for electronic equipment*

IEC 60068-1:2013, *Environmental testing – Part 1: General and guidance*

IEC 60127-1:2006, *Miniature fuses – Part 1: Definitions for miniature fuses andgeneral requirements for miniature fuse-links*

IEC 60228:2004, *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 – Test 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 60512-5-1, *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 60512-9-1, *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 60512-11-9, *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 60512-11-12, *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 60529:1989, *Degrees of protection provided by enclosures (IP Code)*
IEC 60529:1989/AMD1:1999
IEC 60529:1989/AMD2:2013

IEC 60695-2-12, *Fire hazard testing – Part 2-12: Glowing/hot-wire based test methods – Glow-wire flammability index (GWFI) test method for materials*

IEC 60999-1:1999, *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 109:2012, *Environmental aspects – Inclusion in electrotechnical product standards*

ISO 6508-1:2015, *Metallic materials – Rockwell hardness test – Part 1: Test method*

ISO 11469:2000, *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 Number of contacts and contact cavities

Number of contacts: power contacts: 2.

Number of contact cavities: 2 (for removable contacts only).

Conductor cross-sectional area range: 4,0 mm^2.

4.2 Ratings and characteristics

4.2.1 Ratings and characteristics of connectors

Rated voltage: 400 V DC.

Rated impulse voltage: 4 000 V.

Pollution degree: 2.

Rated current: 16 A.

Insulation resistance: 5 000 MΩ min.

Rated breaking capacity: Mated connectors are to be inserted and withdrawn with 50 cycles with rated voltage and rated current.

4.2.2 Rating and characteristics of fuses

Fuseholders incorporated in the connectors according to this specification are deemed to be equipped with replaceable cartridge fuse-links according to IEC 60127-1:2006.

Rated voltage: 200 V DC.

Rated current: 16 A.

4.3 Recommended method of termination

According to IEC 60999-1 or IEC 60352 series.

4.4 Safety aspects

For safety aspects IEC 61984 shall be considered.

4.5 Systems of levels

4.5.1 Performance levels

None specified.

4.5.2 Compatibility levels

The connector according to this document is intermateable according to IEC 61076-1.

4.6 Classification into climatic categories

Classification into climatic categories is specified in 6.1.

4.7 Clearance and creepage distances

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

4.8 Current-carrying capacity

The current carrying capacity of these connectors shall be such that at 85 °C ± 2 °C temperature they will be able to carry their rated current per 4.2.1 fulfilling the requirement of 6.3.2.

4.9 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 third 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

5.2.1 General

Figure 1 and Figure 2 show isometric views of the free and fixed connectors.

5.2.2 Isometric view of free connector

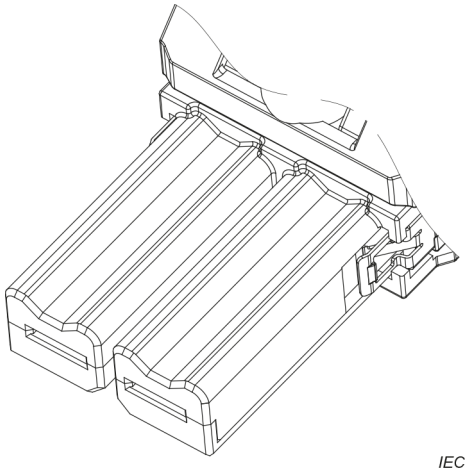
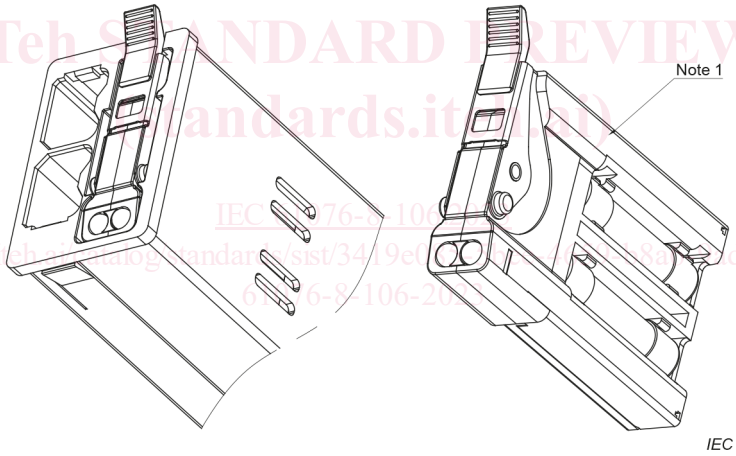


Figure 1 – Isometric view – Free connector

5.2.3 Isometric view of fixed connector



View of fuseholder: Dimensions of the cartridge fuse-links are 6,3 mm × 25,4 mm. Other dimensions of fuse-links that meet the performance requirements should be used.

Figure 2 – Isometric view – Fixed connector

5.3 Engagement (mating) information

Not applicable.

5.4 Fixed connectors

5.4.1 General

Figure 3, Table 1, Figure 4 and Table 2 show the fixed connector drawings and dimensions.