

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Connectors for electronic equipment – Product requirements –
Part 3-118: Rectangular connectors – Detail specification for a 4 pole plus PE
power connector with push-pull coupling

Connecteurs pour équipements électroniques – Exigences de produit –
Partie 3-118: Connecteurs rectangulaires – Spécification particulière relative à
un connecteur de puissance à 4 pôles plus PE avec mécanisme de couplage
pousser-tirer



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pousser-tirer**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**CONNECTORS FOR ELECTRONIC EQUIPMENT –
PRODUCT REQUIREMENTS –**
**Part 3-118: Rectangular connectors – Detail specification for
a 4 pole plus PE power connector with push-pull coupling**

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International Standard IEC 61076-3-118 has been prepared by subcommittee 48B: Connectors, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

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

FDIS	Report on voting
48B/2134/FDIS	48B/2175/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.

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

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

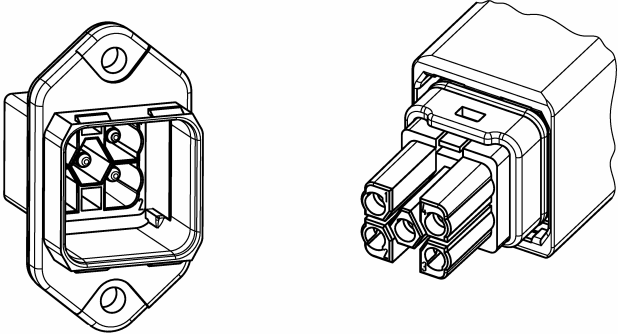
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<p>IEC SC 48B – Connector Specifications available from: IEC General secretariat or from the addresses shown on the inside cover.</p>	<p>IEC 61076-3-118 Ed. 1.0</p>
<p>ELECTRONIC COMPONENTS DETAIL SPECIFICATION in accordance with IEC 61076-1 and IEC 61076-3</p>	
<p>Outline drawing</p>  <p>Rectangular power connector with push-pull coupling</p> <p>iTeh STANDARD PREVIEW (standards.iteh.ai)</p>	
<p>IEC 61076-3-118:2010 https://standards.iteh.ai/catalog/standards/sist/3bc8e8bc-26bb-4477-b071-55478240f39/iec-61076-3-118-2010</p>	
<p>Fixed and free connectors, for industrial environments</p>	<p>Performance level: 1</p>

CONNECTORS FOR ELECTRONIC EQUIPMENT – PRODUCT REQUIREMENTS –

Part 3-118: Rectangular connectors – Detail specification for a 4 pole plus PE power connector with push-pull coupling

1 Scope

1.1 General considerations

This part of IEC 61076 establishes specifications and test requirements for a connector with four contacts plus PE contact, for use in industrial environments.

NOTE For a definition of PE, see IEC, for example IEC 195-02-09.

This International Standard specifies free and fixed connectors, with round contacts, suitable for screw or crimp terminations. Other terminations techniques, as solder or printed board connections are upon agreement between manufacturer and user. The free and fixed connectors have a push-pull locking mechanism for IP65 and IP67 protection according to IEC 60529.

The PE contact is first-make last-break.

Connectors according this International Standard are 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, if not otherwise specified by the manufacturer.

1.2 Normative references

The following referenced documents are indispensable for the application 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 – Part 581: Electro-mechanical components for electronic equipment*

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

IEC 60352 (all parts): *Solderless connections*

IEC 60512-1-2:2002, *Connectors for electronic equipment – Tests and measurements – Part 1-2: General examination*

IEC 60512-1-100: *Connectors for electronic equipment – Tests and measurements – Part 1-100: General: Applicable publications*

IEC 60529:1989, *Degree of protection provided by enclosures (IP Code)*

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 conductors from 0,2 mm² up to 35 mm² (included)*

IEC 60999-2:2003, *Connecting devices – Electrical copper conductors – Safety requirements for screw-type and screwless-type clamping units – Part 2: Particular requirements for clamping units for conductors above 35 mm² up to 300 mm² (included)*

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

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

IEC 62197-1:2006, *Connectors for electronic equipment – Quality assessment requirements – Part 1: Generic specification*

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

IEC Guide 114: *Environmentally conscious design – Integrating environmental aspects into design and development of electrotechnical products*

ISO 1302:2002, *Geometrical Product Specifications (GPS) – Indication of surface texture in technical product documentation*

ISO 11469:2000, *Plastics – Generic identification and marking of plastic products*

2 Technical information

2.1 Terms and definitions

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

2.2 Systems of levels

2.2.1 Performance levels

Performance level for this connector is 1.

2.2.2 Compatibility levels, according to IEC 61076-1 Ed. 2.0

Connectors according to this standard are supposed to be intermateable.

2.3 Classification into climatic categories

Conditions: according to IEC 60068-1 and Table 1.

Table 1 – Climatic categories - selected values for environmental performance level 1

Climatic category	Lower temperature °C	Upper temperature °C	Damp heat steady state (days)
40/125/21	–40	125	21

2.4 Clearance and creepage distances

Clearance and creepage distances shall be measured according to IEC 60512-1-2 with the following additional requirements.

For this connector clearance and creepage distances shall be measured only in mated position (connector without breaking capacity as defined in IEC 61984).

The connector has protection against electric shock by finger safety (IP2X or IPXXB), both in the mated or unmated condition, after mounting (see also 6.4.2.2 of IEC 61984). The minimum values for clearance and creepage distances can be found in Table 2.

Table 2 – Clearance and creepage distances

Dimensions in mm

Minimum distance between contacts and earth contact		Minimum distance between adjacent contacts	
Creepage	Clearance	Creepage	Clearance
4	3	6,3	3

2.5 Current-carrying capacity

The current-carrying capacity shall be measured according to IEC 60512, Test 5b and stated by the manufacturer.

2.6 Marking

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

The position of the contacts shall be identified by suitable marking. The contact marking shall be on the termination side of the connector (or the connector insert) as long as the size of the component allows the placement there.

3 Dimensional information [IEC 61076-3-118:2010](https://standards.iteh.ai/catalog/standards/sist/3bc8e8be-26bb-4470-a2d2-55478240f39/iec-61076-3-118-2010)

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3.1 General

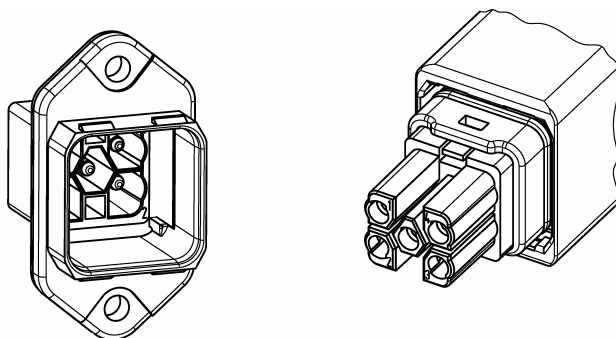
Dimensions are given in millimetres, drawings are shown in first angle projection. The shape of the connectors may deviate from those given in the following drawings as long as the specified dimensions are not influenced.

The following requirements apply to the complete connector consisting of both the free and fixed connectors.

For safety aspects IEC 61984 shall be considered unless otherwise specified.

Missing dimensions shall be chosen according to the common characteristics and intended use. The interface dimensions of the female style shall be chosen according to the common characteristics of the male styles.

3.2 Isometric view and common features



IEC 673/10

NOTE Male connectors according to this IS are those connectors having a male electric part.

Figure 1 – Fixed (male) and free (female) connector

3.2.1 Common features

Not applicable.

3.2.2 Reference system

No special reference system is applied.

3.3 Engagement (mating) information

3.3.1 Engaging (mating) direction

Not applicable.

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3.3.1.1 Contact levels and sequencing

The PE contact is first-make last-break. All other contacts have the same contact level.

3.3.2 Perpendicular to the engaging (mating) direction

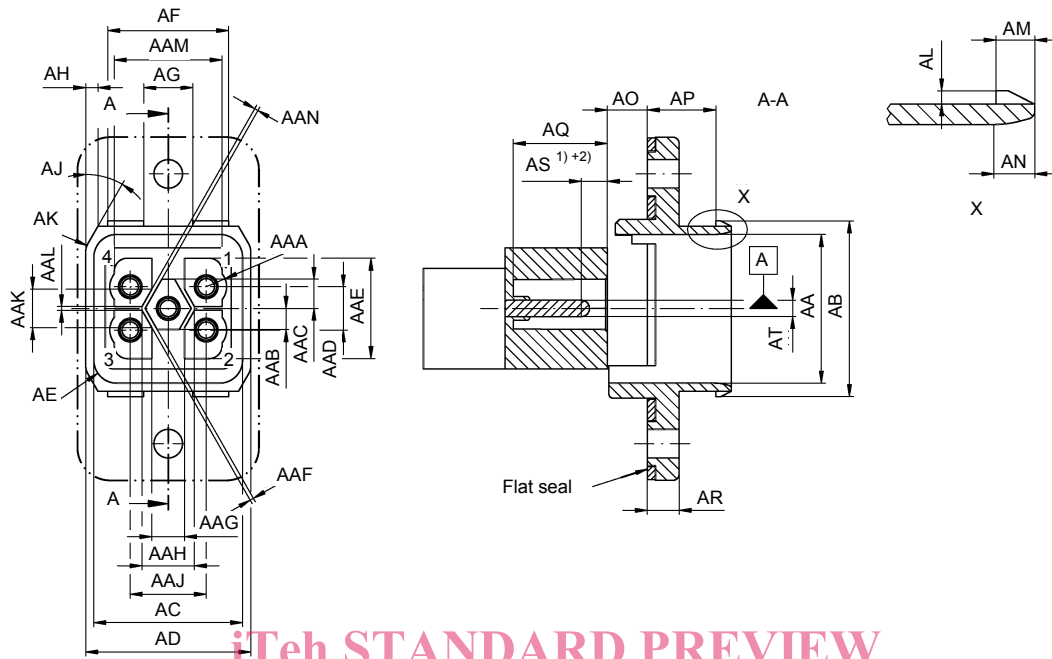
Not applicable

3.3.3 Inclination

Not applicable.

3.4 Fixed connectors

3.4.1 Dimensions



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NOTE 1 AS1 for PE contact.

NOTE 2 AS2 for power contacts 1-4.

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Figure 2 – Fixed male connector
<https://standards.iteh.ai/catalog/standards/sist/61076-3-118-2010/61076-3-118-2010>

Table 3 – Dimensions of the fixed connector*Dimensions in mm*

Letter	Maximum	Minimum	Nominal
AA	18,23	18,17	18,2
AB	21,55	21,45	21,5
AC	18,23	18,17	18,2
AD	20,3	20,1	20,2
AE	2,83	2,77	2,8
AF	14,85	14,75	14,8
AG	6,05	5,95	6
AH	1,7	1,3	1,5
AJ	31	29	30
AK	2,1	1,9	2
AL	0,7	0,6	0,65
AM	1,95	1,85	1,9
AN	2,1	1,9	2
AO	5,1	4,9	5
AP	8,35	8,25	8,3
AQ	11,55	11,45	11,5
AR	3,9	3,7	3,8
AS1	3,35	2,95	3,15
AS2	4,55	4,15	4,35
AT	2,5478240#39/iee-61076-3-118-2010	1,96	2
AAA	2,55	2,45	2,5
AAB	2,7	2,6	2,6
AAC	3,7	3,6	3,6
AAD	5,35	5,25	5,3
AAE	12,4	12,3	12,3
AAF	0,5	0,4	0,45
AAG	4	3,9	4
AAH	6,4	6,3	6,4
AAJ	9,35	9,25	9,3
AAK	4,7	4,6	4,7
AAL	0,5	0,4	0,45
AAM	13,3	13,2	13,2
AAN	0,5	0,4	0,45
NOTE 1 AS1 for PE contact.			
NOTE 2 AS2 for power contacts 1-4.			

3.4.2 Terminations

Terminations according to IEC 61984, 6.6.

NOTE Other technologies such as printed-board terminations could be applied upon agreement between manufacturer and customer.