

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Connectors for electronic equipment – Product requirements –
Part 3-116: Rectangular connectors – Detail specification for protective housings
for use with 8-way shielded and unshielded connectors for frequencies up to
600 MHz for industrial environments incorporating the IEC 60603-7 series
interface – Variant 13 related to IEC 61076-3-106 – Locking lever**

**Connecteurs pour équipements électroniques – Exigences de produit –
Partie 3-116: Connecteurs rectangulaires – Spécification particulière pour
boîtiers de protection utilisés avec des connecteurs blindés et non blindés à
8 voies pour des fréquences inférieures ou égales à 600 MHz dans des
environnements industriels incorporant l'interface série CEI 60603-7 –
Variante 13 liée à la CEI 61076-3-106 – Levier de verrouillage**



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International Standard IEC 61076-3-116 has been prepared by subcommittee 48B: Connectors, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

This International Standard cancels and replaces IEC/PAS 61076-3-116 published in 2005.

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

FDIS	Report on voting
48B/1916/FDIS	48B/1931/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.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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- withdrawn,
- replaced by a revised edition, or [IEC 61076-3-116:2008](http://standards.iteh.ai/catalog/standards/sist/b6e4391f-4ed9-4b49-8d81-0882c8d84ef9/iec-61076-3-116-2008)
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1 General data

1.1 Scope and object

This part of IEC 61076 covers protective housings for upgrading existing 8-way shielded and unshielded connectors utilizing the interface described in IEC 60603-7-2, IEC 60603-7-3, IEC 60603-7-4, IEC 60603-7-5, and IEC 60603-7-7 to IP65 and IP67 ratings, according to IEC 60529, for use in industrial environments.

The housings cover a variety of different locking mechanisms according to this International Standard and a variety of different mounting configurations and termination types which are detailed in IEC 60603-7.

Common mating configuration for all variants are defined in IEC 60603-7. The mating dimensions for the housings under Clause 3 allow the mating conditions under IEC 60603-7 to be fulfilled.

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The fully assembled variants (connectors) described in this standard incorporate fixed and free connectors which are fully compliant with IEC 60603-7.

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 60050-581:1978, *International Electrotechnical Vocabulary (IEV) – Chapter 581: Electro-mechanical components for electronic equipment*

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

IEC 60068-2-14, *Environmental testing – Part 2: Tests – Test N: Change of temperature*

IEC 60068-2-30, *Environmental testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12 h + 12 h) cycle*

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

IEC 60512-1-100, *Connectors for electronic equipment – Tests and measurements – Part 1-100: General – Applicable publications²*

² The various parts of IEC 60512 are listed in IEC 60512-1-100.

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

IEC 60603-7, *Connectors for frequencies below 3 MHz for use with printed boards – Part 7: Detail specification for connectors, 8-way, including fixed and free connectors with common mating features, with assessed quality*

IEC 60603-7-1, *Connectors for electronic equipment – Part 7-1: Detail specification for 8-way, shielded free and fixed connectors with common mating features, with assessed quality*

IEC 60603-7-2, *Connectors for electronic equipment – Part 7-2: Detail specification for 8-way, unshielded, free and fixed connectors for data transmission with frequencies up to 100 MHz*

IEC 60603-7-3, *Connectors for electronic equipment – Part 7-3: Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 100 MHz*

IEC 60603-7-4, *Connectors for electronic equipment – Part 7-4: Detail specification for 8-way, unshielded, free and fixed connectors for data transmission with frequencies up to 250 MHz*

IEC 60603-7-5, *Connectors for electronic equipment – Part 7-5: Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 250 MHz*

IEC 60603-7-7, *Connectors for electronic equipment – Part 7-7: Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 600 MHz*

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

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

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IEC 61156-2, *Multicore and symmetrical pair/quad cables for digital communications – Part 2: Horizontal floor wiring – Sectional specification*

IEC 61156-3, *Multicore and symmetrical pair/quad cables for digital communications – Part 3: Work area wiring – Sectional specification*

IEC 61156-4, *Multicore and symmetrical pair/quad cables for digital communications – Part 4: Riser cables – Sectional specification*

2 Terms and definitions

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

3 Dimensional information

3.1 Common features

The connector housing for industrial environments referenced in this standard is composed of IEC 60603-7 fixed and free connectors. The mating information and contact requirements of the IEC 60603-7 interface portion of these connector housings for industrial environments shall be compliant with the relevant part of IEC 60603-7.

The following requirements apply to the complete connector comprised of both the free and fixed connectors in one of the described variant shell/outer housing.

3.2 General

Dimensions are given in millimetres, drawings are shown in first-/third-angle projection. The shape of connectors may deviate from those shapes given in Figures 1 to 3 as long as the specified dimensions are not influenced.

3.3 Contact arrangement of all connector types

Contact arrangements shall be in accordance with the relevant IEC 60603-7 specifications.

3.4 IP65 and IP67 sealing

Connectors meant to comply with IP ratings according to IEC 60529 require sealing of the components in order to meet the requirements detailed in the test schedules in 6.8.3 through 6.8.7.

3.5 Industrial IEC 60603-7 variant 13 – Locking lever

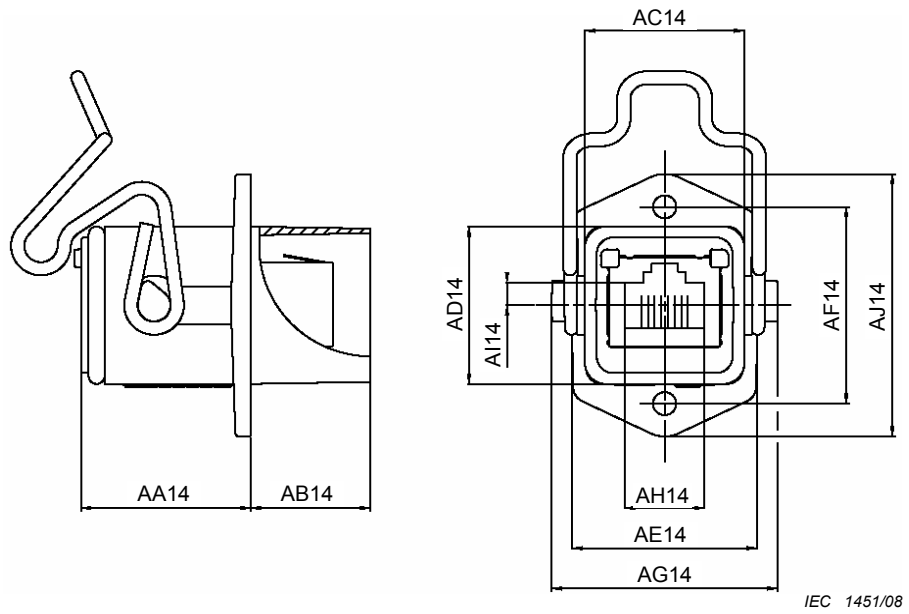
3.5.1 Industrial IEC 60603-7 variant 13, fixed connectors

Third-angle projection.

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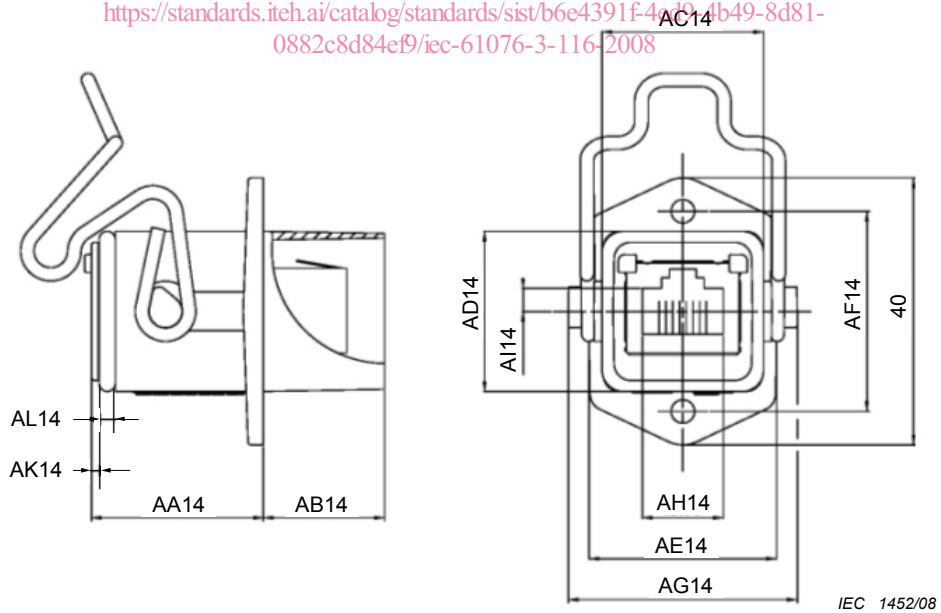
NOTE Also available with an IEC 60603-7 series plug cord set at the rear instead of the IEC 60603-7 series receptacle.

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Detail of the joint

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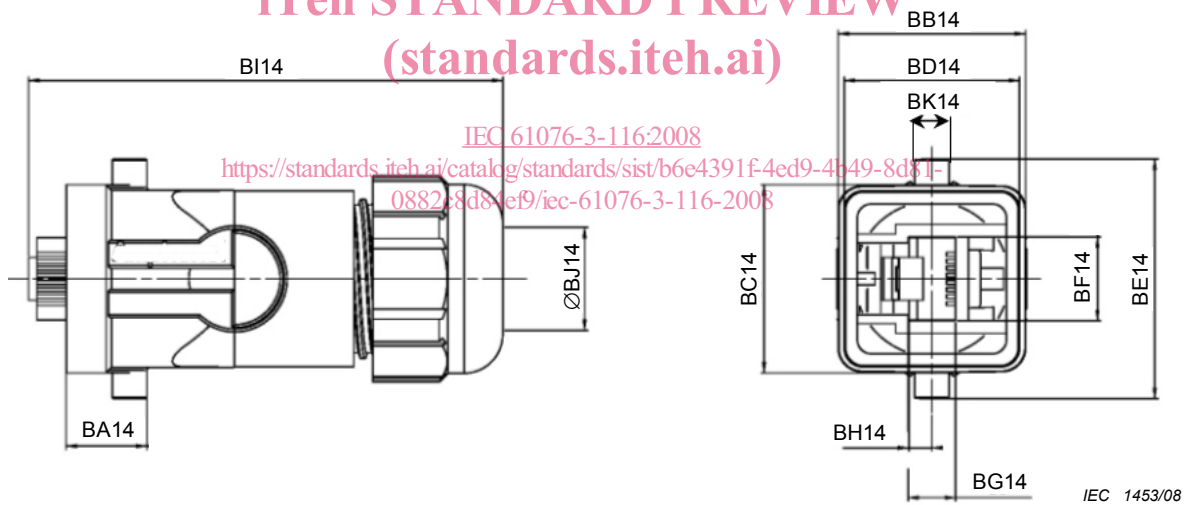
NOTE The hardness of the joint is: 50 shore A

Figure 1 – Variant 13, fixed connector

Table 1 – Dimensions of fixed connector, variant 13

Letter	Maximum	Minimum	Nominal
	mm	mm	mm
AA14	25,72	25,38	25,55
AB14	18,2	17,8	18
AC14	24,1	23,9	24
AD14	24,1	23,9	24
AE14	28,13	27,87	28
AF14	30,13	29,87	30
AG14	34,13	33,87	34
AH14	12,03	11,78	11,91
AI14	3,2	3	3,1
AJ14	40,15	39,85	40
AK14	1,1	0,9	1
AL14	2,5	2,3	2,4

3.5.2 Industrial IEC 60603-7 variant 13, free connectors



NOTE This protective housing can be used with any standard IEC 60603-7 cord set.

Figure 2 – Variant 13, free connector

Table 2 – Dimensions of free connector, variant 13

Letter	Maximum	Minimum	Nominal
	mm	mm	mm
BA14	11,7	11,3	11,5
BB14	26,8	26,6	26,7
BC14	26,8	26,6	26,7
BD14	25,1	24,9	25
BE14	34,13	33,87	34
BF14	11,78	11,58	11,68
BG14	6,8	6,7	6,75
BH14	2,9	2,8	2,85
BI14	67,8	67,2	67,5
BJ14 (cable)	12	5	8,5
BK14	5	4,8	4,9

3.6 Termination and mounting information

3.7 General

Terminations shall be according to IEC 60603-7-2, IEC 60603-7-3, IEC 60603-7-4, IEC 60603-7-5, and IEC 60603-7-7.

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3.8 Mounting information for variant 13, fixed connector

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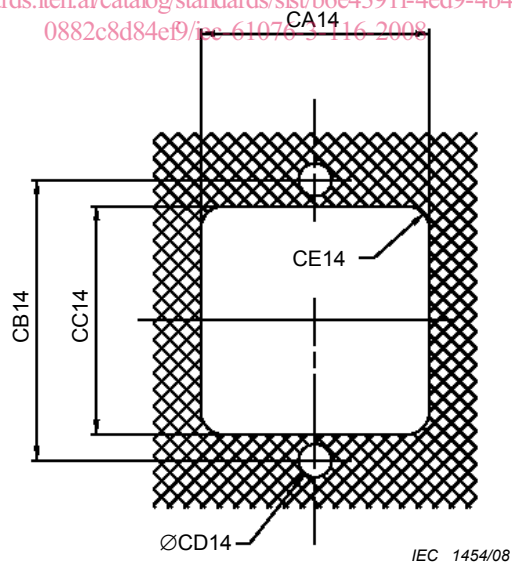


Figure 3 – Variant 13 mounting