
Connectors for frequencies below 3 MHz for use with printed boards - Part 2: Detail specification for two-part connectors with assessed quality, for printed boards, for basic grid of 2,54 mm (0,1 in) with common mounting features (IEC 60603-2:1995)

Connectors for frequencies below 3 MHz for use with printed boards -- Part 2: Detail specification for two-part connectors with assessed quality, for printed boards, for basic grid of 2,54 mm (0,1 in) with common mounting features

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Steckverbinder für gedruckte Schaltungen für Frequenzen unter 3 MHz -- Teil 2: Bauartspezifikation für qualitätsbewertete indirekte Steckverbinder für gedruckte Schaltungen, Rastermaß 2,54 mm (0,1 in), mit gemeinsamen Einbaumerkmale

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Connecteurs pour fréquences inférieures à 3 MHz pour utilisation avec cartes imprimées -- Partie 2: Spécification particulière pour connecteurs en deux parties pour cartes imprimées, avec assurance de la qualité, pour grilles de base de 2,54 mm (0,1 in) avec caractéristiques de montage communes

Ta slovenski standard je istoveten z: EN 60603-2:1998

ICS:

31.220.10 Xcā } Ącā } &^É [} ^ ğ !lā Plug-and-socket devices.
Connectors

SIST EN 60603-2:2002

en

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EUROPEAN STANDARD
NORME EUROPÉENNE
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EN 60603-2

August 1998

ICS 31.220.10

English version

**Connectors for frequencies below 3 MHz for use with printed boards
Part 2: Detail specification for two-part connectors with assessed quality,
for printed boards, for basic grid of 2,54 mm (0,1 in)
with common mounting features
(IEC 60603-2:1995)**

Connecteurs pour fréquences inférieures
à 3 MHz pour utilisation avec cartes
imprimées

Partie 2: Spécification particulière pour
connecteurs en deux parties pour cartes
imprimées, avec assurance de la qualité,
pour grilles de base de 2,54 mm (0,1 in)
avec caractéristiques de montage
communes
(CEI 60603-2:1995)

Steckverbinder für gedruckte
Schaltungen für Frequenzen unter
3 MHz

Teil 2: Bauartspezifikation für
gütebestätigte indirekte Steckverbinder
für gedruckte Schaltungen, Rastermaß
2,54 mm (0,1 in), mit gemeinsamen
Einbaumerkmale
(IEC 60603-2:1995)

This European Standard was approved by CENELEC on 1998-08-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of the International Standard IEC 60603-2:1995, prepared by SC 48B, Connectors, of IEC TC 48, Electromechanical components and mechanical structures for electronic equipment, was submitted to the formal vote and was approved by CENELEC as EN 60603-2 on 1998-08-01 without any modification.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 1999-08-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 1999-08-01

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annexes A and ZA are normative and annex B is informative.

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 60603-2:1995 was approved by CENELEC as a European Standard without any modification.

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Annex ZA (normative)

Normative references to international publications
with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE: When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-1	1988	Environmental testing Part 1: General and guidance	EN 60068-1 ¹⁾	1994
IEC 60068-2-60	1990	Part 2: Tests - Test Ke: Corrosion tests in artificial atmosphere at very low concentration of polluting gas(es)	-	-
IEC 60097	1991	Grid systems for printed circuits	EN 60097	1993
IEC 60194	1988	Terms and definitions for printed circuits	HD 142 S3	1991
IEC 60326-3	1991	Printed boards Part 3: Design and use of printed boards	-	-
IEC 60352-1	1983	Solderless connections Part 1: Solderless wrapped connections General requirements, test methods and practical guidance	EN 60352-1 ²⁾	1994
IEC 60352-4	1994	Part 4: Solderless non-accessible insulation displacement connections - General requirements, test methods and practical guidance	EN 60352-4	1994
IEC 60410	1973	Sampling plans and procedures for inspection by attributes	-	-
IEC 60512-1	1994	Electromechanical components for electronic equipment - Basic testing procedures and measuring methods Part 1: General	EN 60512-1	1994

1) EN 60068-1 includes the corrigendum October 1988 and A1:1992 to IEC 60068-1.

2) EN 60352-1 is superseded by EN 60352-1:1997, which is based on IEC 60352-1:1997.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60512-2	1985	Part 2: General examination, electrical continuity and contact resistance tests, insulation tests and voltage stress tests	-	-
A1	1994			
IEC 60512-3	1976	Part 3: Current-carrying capacity tests	-	-
IEC 60512-4	1976	Part 4: Dynamic stress tests	-	-
IEC 60512-5	1992	Part 5: Impact tests (free components), static load tests (fixed components), endurance tests and overload tests	-	-
IEC 60512-6	1984	Part 6: Climatic tests and soldering tests	-	-
IEC 60512-7	1993	Part 7: Mechanical operating tests and sealing tests	-	-
IEC 60512-8	1993	Part 8: Connector tests (mechanical) and mechanical tests on contacts and terminations	-	-
IEC 60512-9	1992	Part 9: Miscellaneous tests	-	-
IEC 60603-1	1991	Connectors for frequencies below 3 MHz for use with printed boards Part 1: Generic specification. General requirements and guide for the preparation of detail specifications, with assessed quality		
+ A1	1992		EN 60603-1	1998
IEC 60760	1989	Flat, quick-connect terminations	-	-
A1	1993			
IEC 60999-1 (mod)	1990	Connecting devices - Safety requirements for screw-type and screwless-type clamping units for electrical copper conductors Part 1: General requirements and particular requirements for conductors from 0,5 mm ² up to 35 mm ² (included)	EN 60999-1 + corr. March	1993 1997
ISO 272	1982	Fasteners - Hexagon Products - Width across flats	-	-
ISO 468	1982	Surface roughness - Parameters, their values and general rules for specifying requirements	-	-
IEC QC 001002	1986	Rules of Procedure of the IEC Quality Assessment System for Electronic Components (IECQ)	-	-
A2	1994			

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**Connecteurs pour fréquences inférieures à 3 MHz
pour utilisation avec cartes imprimées –**

Partie 2:

Spécification particulière pour connecteurs en deux parties pour cartes imprimées, avec assurance de la qualité, pour grilles de base de 2,54 mm (0,1 in) avec caractéristiques de montage communes

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**Connectors for frequencies below 3 MHz
for use with printed boards –**

Part 2:

Detail specification for two-part connectors with assessed quality, for printed boards, for basic grid of 2,54 mm (0,1 in) with common mounting features

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

CONNECTORS FOR FREQUENCIES BELOW 3 MHz
FOR USE WITH PRINTED BOARDS –Part 2: Detail specification for two-part connectors
with assessed quality, for printed boards, for basic grid
of 2,54 mm (0,1 in) with common mounting features

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 3) They have the form of recommendations for international use published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.

International Standard IEC 603-2 has been prepared by sub-committee 48B: Connectors, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

This third edition cancels and replaces the second edition published in 1988.

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

DIS	Report on voting
48B/361/DIS	48B/442/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.

Annex A forms an integral part of this standard.

Annex B is for information only.

The QC number that appears on the front cover of this publication is the specification number in the IEC Quality Assessment System for Electronic Components (IECQ).

CONNECTORS FOR FREQUENCIES BELOW 3 MHz FOR USE WITH PRINTED BOARDS –

Part 2: Detail specification for two-part connectors with assessed quality, for printed boards, for basic grid of 2,54 mm (0,1 in) with common mounting features

1 Scope

This International Standard applies to groups of related connectors for use with printed boards. They range from connectors with high contact density for low-voltage applications (Styles B and C) to connectors for heavy currents and high voltages having fewer contacts (Styles D, E, F, G and H).

It also applies to Style M two-part connectors supplied in alternative versions having 2, 4 or 6 holes for fitting special contacts, for example coaxial, for high voltages or heavy currents (see annex B), as well as 78, 60 or 42 normal contacts identical with those of style C.

It applies further to two-part connectors of Styles Q, R, S, T, U and V whose male contacts are fitted to the fixed board connectors and the female contacts to the free board connectors.

All these connectors have the same fitting characteristics irrespective of their various utilization characteristics. The part of the connector fitted to the board is provided with terminations suitable for printed boards in accordance with IEC 326-3 using a grid of 2,54 mm (0,1 in), as defined in IEC 97.

The free board connectors are provided either with solder or flat quick-connect terminations. The fixed board connectors are provided either with solder, insulation displacement, wrapped connections or with screw terminals and flat quick-connect terminations. The terminations of the fixed board connectors are located in such a way as to be suitable for use with mother boards using a grid of 2,54 mm (0,1 in) as defined in IEC 97 as well as for automating wiring techniques.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 603. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 603 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 68-1: 1988, *Environmental testing – Part 1: General and guidance*

IEC 68-2-60 TTD: 1990, *Environmental testing – Part 2: Tests – Test Ke: Corrosion tests in artificial atmosphere at very low concentration of polluting gas(es)*

IEC 97: 1991, *Grid systems for printed circuits*

IEC 194: 1988, *Terms and definitions for printed circuits*

IEC 326-3: 1991, *Printed boards – Part 3: Design and use of printed boards*

IEC 352-1: 1983, *Solderless connections – Part 1: Solderless wrapped connections – General requirements, test methods and practical guidance*

IEC 352-4: 1994, *Solderless connections – Part 4: Solderless non-accessible insulation displacement connections – General requirements, test methods and practical guidance*

IEC 410: 1973, *Sampling plans and procedures for inspection by attributes*

IEC 512-1: 1994, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods – Part 1: General*

IEC 512-2: 1985, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods – Part 2: General examination, electrical continuity and contact resistance tests, insulation tests and voltage stress tests*
Amendment 1 (1994)

IEC 512-3: 1976, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods – Part 3: Current-carrying capacity tests*

IEC 512-4: 1976, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods – Part 4: Dynamic stress tests*

IEC 512-5: 1992, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods – Part 5: Impact tests (free components), static load tests (fixed components), endurance tests and overload tests*

IEC 512-6: 1984, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods – Part 6: Climatic tests and soldering tests*

IEC 512-7: 1993, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods – Part 7: Mechanical operating tests and sealing tests*

IEC 512-8: 1993, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods – Part 8: Connector tests (mechanical) and mechanical tests on contacts and terminations*

IEC 512-9: 1992, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods – Part 9: Miscellaneous tests*

IEC 603-1: 1991, *Connectors for frequencies below 3 MHz for use with printed boards – Part 1: Generic specification – General requirements and guide for the preparation of detail specifications, with assessed quality*
Amendment 1 (1992)

IEC 760: 1989, *Flat, quick-connect terminations*
Amendment 1 (1993)

IEC 999: 1990, *Connecting devices – Safety requirements for screw-type and screwless-type clamping units for electrical copper conductors*

ISO 272: 1982, *Fasteners – Hexagon products – Widths across flats*

ISO 468: 1982, *Surface roughness – Parameters, their values and general rules for specifying requirements*

IEC QC 001002: 1986, *Rules of Procedure of the IEC Quality Assessment System for Electronic Components (IECQ)*
Amendment 2 (1994)

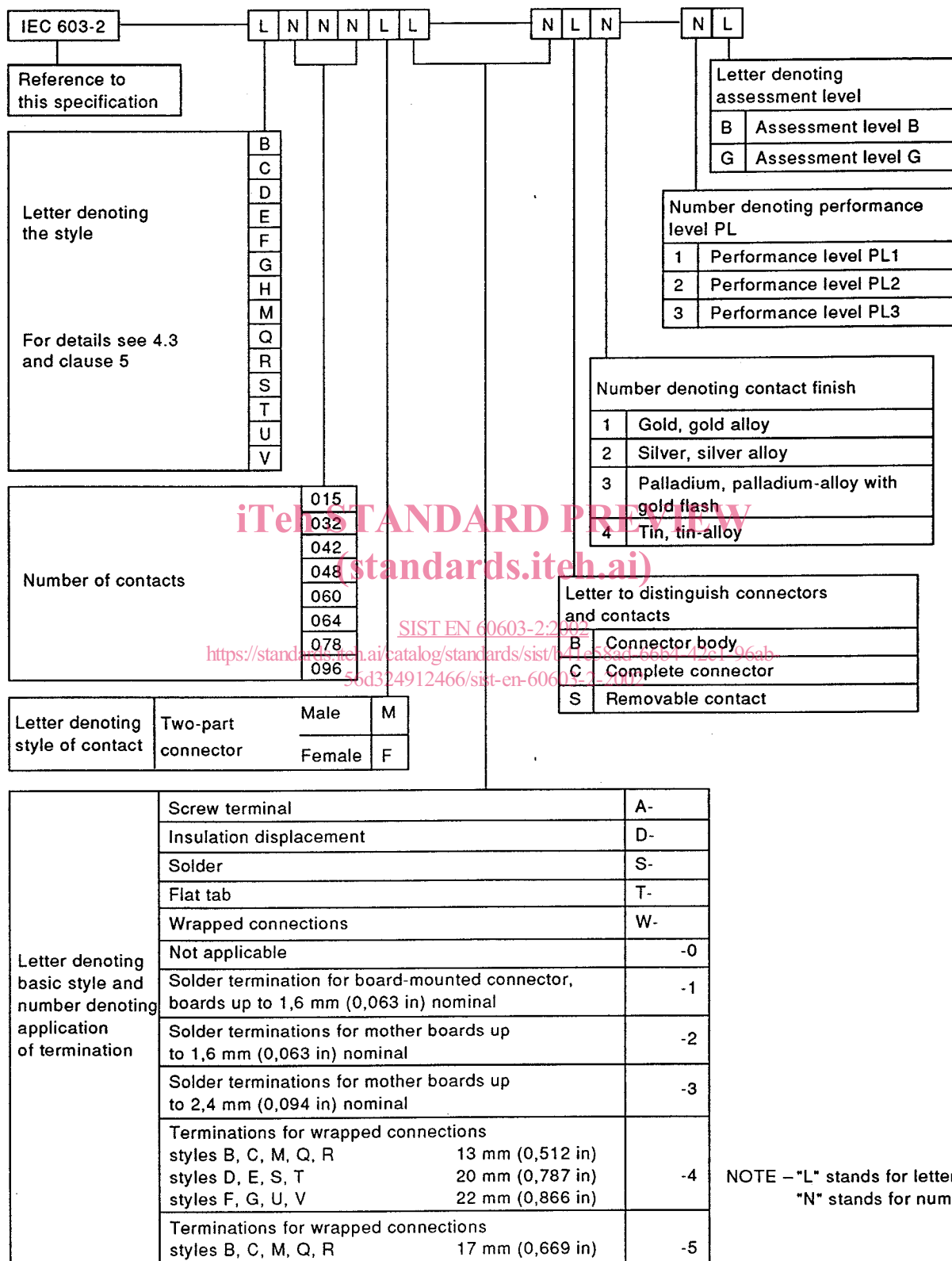
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3 IEC type designation

Connectors, connector bodies and removable crimp-contacts according to this standard shall be designated by the following system:



Example: Connector style C, having 96 male contacts, gold finished with solder terminations. Complete board-mounted connector for boards up to 1,6 mm (0,063 in), with performance level 2 and assessment level G: IEC 603-2-C096MS-1C1-2G.

4 Common features

4.1 Mounting dimensions

4.1.1 Reference system

A line in the mounting plane of the fixed board connector and passing through the position of the centres of the mounting holes is used as a datum line. The nominal centre of the mounting hole near contact No. 32 is used as datum point.

With reference to this datum system, the dimensions in 4.1.2 and 4.1.3 are defined.

4.1.2 Fixed board connector

4.1.2.1 Position of the terminations.

The centre distances of the terminations shall be 2,54 mm (0,1 in) or multiples thereof. The terminations shall be located so as to permit automatic wiring techniques.

4.1.3 Printed board assembly

4.1.3.1 Position of the grid of the printed board

The termination of the free board connectors shall fit into holes in the printed board according to IEC 326-3, located on a grid of 2,54 mm (0,1 in) according to IEC 97.

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4.1.4 Isometric view and values

Table 1 – Isometric view and values

Reference letter	Dimension		Legend
	mm	in	
C_1	95	3,74	Maximum length of the fixed board connector
M	17,2 15,6	0,677 0,614	Range of electrical engagement (see figure 1) NOTE – For information only
X_1	90	3,543	Distance between the two mounting holes of the fixed board connector
X_2	88,9	3,5	Distance between the two mounting holes of the free board connector NOTE – The mounting holes are also located on the grid of 2,54 mm (0,1 in) according to IEC 97
a	5,63	0,222	Distance between datum point and a line through the centres of the termination No. 32 of the fixed board connector
b	0,3	0,012	Distance between datum line and a line through the centres of the termination row "b" of the fixed board connector
c	$n \times 2,54$	$n \times 0,1$	Pitch of the termination of the fixed board connector NOTE – Where a pitch of $2 \times 2,54 \text{ mm} = 5,08 \text{ mm}$ is used, the terminations shall be located on even-numbered positions 2, 4, 6 ... 30, 32 only
d	3,55	0,14	Distance between datum line and component side of the printed board
e	5,3	0,209	Distance between the edge of the printed board and the first row of component holes for the free board connector
f	2,54	0,1	Distance between the mounting holes and the first row of component holes for the free board connector
g	5,08	0,2	Distance between a mounting hole and the component hole for the termination No. 1 or No. 32 of the free board connector
h	85	3,346	Minimum length of mounting cut-out or minimum distance between mounting bars for the fixed board connector
i	2,5	0,098	Maximum thickness of mounting panel or bars for the fixed board connector
u	14,2 12,4	0,559 0,488	Range in which reliable contact is ensured NOTE – See 4.2 for mating information