

STN	Konektory pre elektrické a elektronické zariadenia Časť 5: Podrobné špecifikácie pre dvojpólové kruhové konektory M8 a M12, tienené alebo netienené, voľné alebo pevné Informácie o mechanickom spájaní, priradení pinov a dodatočné požiadavky pre typ 5	STN EN IEC 63171-5 35 4621
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Connectors for electrical and electronic equipment - Part 5: Detail specification for 2-way M8 and M12 circular connectors, shielded or unshielded, free and fixed - Mechanical mating information, pin assignment and additional requirements for Type 5

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/23

Obsahuje: EN IEC 63171-5:2022, IEC 63171-5:2022

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EUROPEAN STANDARD

EN IEC 63171-5

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2022

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English Version

**Connectors for electrical and electronic equipment - Part 5:
Detail specification for 2-way M8 and M12 circular connectors,
shielded or unshielded, free and fixed - Mechanical mating
information, pin assignment and additional requirements for
Type 5
(IEC 63171-5:2022)**

Connecteurs pour équipements électriques et électroniques
- Partie 5: Spécification particulière pour les connecteurs
circulaires M8 et M12 à 2 pôles, à fiches et embases
écranées ou non écranées - Informations d'accouplement
mécanique, affectation des broches et exigences
supplémentaires pour le type 5
(IEC 63171-5:2022)

Steckverbinder für elektrische und elektronische
Einrichtungen - Produktanforderungen - Teil 5:
Bauartspezifikation für geschirmte oder ungeschirmte, freie
und feste Rundsteckverbinder mit bis zu 8 Polen -
Informationen zur mechanischen Passung,
Kontaktstiftbelegung und zusätzliche Anforderungen für
Typ 5
(IEC 63171-5:2022)

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN IEC 63171-5:2022 (E)

European foreword

The text of document 48B/2973/FDIS, future edition 1 of IEC 63171-5, prepared by SC 48B "Electrical connectors" of IEC/TC 48 "Electrical connectors and mechanical structures for electrical and electronic equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 63171-5:2022.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2023-07-20
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2025-10-20

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In the official version, for Bibliography, the following notes have to be added for the standard indicated:

IEC 60068 (series)	NOTE Harmonized as EN 60068 (series)
IEC 60512-5-2:2002	NOTE Harmonized as EN 60512-5-2:2002 (not modified)
IEC 60512-6-3:2002	NOTE Harmonized as EN 60512-6-3:2002 (not modified)
IEC 60512-6-4:2002	NOTE Harmonized as EN 60512-6-4:2002 (not modified)
IEC 60512-8-2:2011	NOTE Harmonized as EN 60512-8-2:2011 (not modified)
IEC 60512-13-2:2006	NOTE Harmonized as EN 60512-13-2:2006 (not modified)
IEC 60512-13-5:2006	NOTE Harmonized as EN 60512-13-5:2006 (not modified)
IEC 61076-2-010	NOTE Harmonized as EN IEC 61076-2-010
IEC 61984	NOTE Harmonized as EN 61984
IEC 62430	NOTE Harmonized as EN IEC 62430

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-581	-	International Electrotechnical Vocabulary - Part 581: Electromechanical components for electronic equipment	-	-
IEC 60352	series	Solderless connections	EN IEC 60352	series
IEC 60512-1	-	Connectors for electrical and electronic equipment - Tests and measurements - Part 1: Generic specification	EN IEC 60512-1	-
IEC 60512-28-100	2019	Connectors for electrical and electronic equipment - Tests and measurements - Part 28-100: Signal integrity tests up to 2 000 MHz - Tests 28a to 28g	EN IEC 60512-28-100	2019
IEC 60664-1	-	Insulation coordination for equipment within low-voltage supply systems - Part 1: Principles, requirements and tests	EN IEC 60664-1	-
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)	EN 60999-1	-
IEC 61076-1	2006	Connectors for electronic equipment - Product requirements - Part 1: Generic specification	EN 61076-1	2006
+ A1	2019		+ A1	2019
IEC 61076-2-101	-	Connectors for electronic equipment - Product requirements - Part 2-101: Circular connectors - Detail specification for M12 connectors with screw-locking	EN 61076-2-101	-

EN IEC 63171-5:2022 (E)

IEC 61076-2-104	-	Connectors for electronic equipment - Product requirements - Part 2-104: Circular connectors - Detail specification for circular connectors with M8 screw-locking or snap-locking	EN 61076-2-104	-
IEC 61760-3	-	Surface mounting technology - Part 3: Standard method for the specification of components for through hole reflow (THR) soldering	EN 61760-3	-
IEC/TR 63040	-	Guidance on clearances and creepage distances in particular for distances equal to or less than 2 mm - Test results of research on influencing parameters	-	-
IEC 63171	2021	Connectors for electrical and electronic equipment - Shielded or unshielded free and fixed connectors for balanced single-pair data transmission with current-carrying capacity - General requirements and tests	EN IEC 63171	2021
IEC 63171-2	-	Connectors for electrical and electronic equipment - Part 2: Detail specification for two-way, shielded or unshielded, free and fixed connectors - Mechanical mating information, pin assignment and additional requirements for Type 2	EN IEC 63171-2	-
ISO/IEC 11801-1	-	Information technology - Generic cabling for customer premises - Part 1: General requirements	-	-
ISO 21920-1	2021	Geometrical product specifications (GPS) - Surface texture: Profile - Part 1: Indication of surface texture	EN ISO 21920-1	2022
IEEE 802.3	-	IEEE Standard for Ethernet	-	-



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INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Connectors for electrical and electronic equipment –
Part 5: Detail specification for 2-way M8 and M12 circular connectors, shielded
or unshielded, free and fixed – Mechanical mating information, pin assignment
and additional requirements for Type 5**

**Connecteurs pour équipements électriques et électroniques –
Partie 5: Spécification particulière pour les connecteurs circulaires M8 et M12 à
2 pôles, à fiches et embases écrantées ou non écrantées – Informations
d'accouplement mécanique, affectation des broches et exigences
supplémentaires pour le type 5**



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IEC 63171-5

Edition 1.0 2022-08

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Connectors for electrical and electronic equipment –
Part 5: Detail specification for 2-way M8 and M12 circular connectors, shielded
or unshielded, free and fixed – Mechanical mating information, pin assignment
and additional requirements for Type 5**

**Connecteurs pour équipements électriques et électroniques –
Partie 5: Spécification particulière pour les connecteurs circulaires M8 et M12 à
2 pôles, à fiches et embases écrantées ou non écrantées – Informations
d'accouplement mécanique, affectation des broches et exigences
supplémentaires pour le type 5**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

CONNECTORS FOR ELECTRICAL AND ELECTRONIC EQUIPMENT –**Part 5: Detail specification for 2-way M8 and M12 circular connectors, shielded or unshielded, free and fixed – Mechanical mating information, pin assignment and additional requirements for Type 5**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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IEC 63171-5 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/2973/FDIS	48B/2983/RVD

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/standardsdev/publications.

A list of all parts of IEC 63171 series, under the general title *Connectors for electrical and electronic equipment*, can be found on the IEC website.

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.

INTRODUCTION

IEC 63171 is the base specification of the whole series. Subsequent specifications do not duplicate information given in the base document, but list only additional requirements. For complete specification regarding a component of a higher number document all lower numbered documents shall be considered as well. Figure 1 shows the interrelation of the documents.

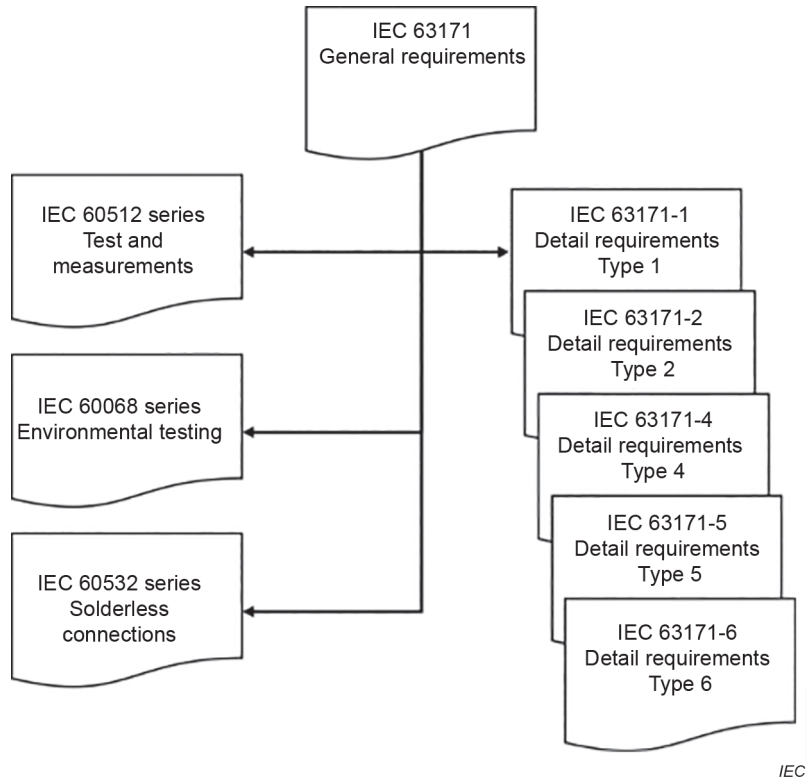


Figure 1 – Relationships between the IEC 63171 series documents and their related references

NOTE IEC 63171-1 and IEC 63171-6 contain duplicate information, which is either equal to or better than the minimum requirements of this document; such duplicate information will be removed in later editions.

This document refers to International Standards for test and measurement, environmental testing as well as solderless connections.

A general overview about the connectors in this document is shown in Figure 2.


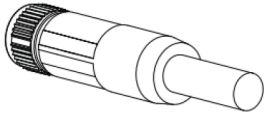

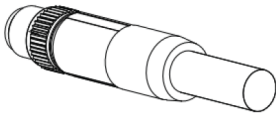

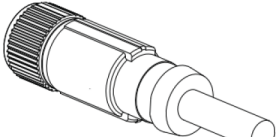

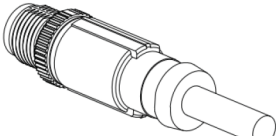
<p>IEC SC 48B – Electrical connectors</p> <p>Specification available from: IEC General secretariat or from the addresses shown on the inside cover.</p>		IEC 63171-5 Ed. 1
  <p>Fixed connector: M8 outer thread and male contacts Free connector: M8 inner thread and female contacts</p>	  <p>Fixed connector: M8 inner thread and female contacts Free connector: M8 outer thread and male contacts</p>	<p>Circular connectors for data and power applications with 2 ways in a M8 and in a M12 style system</p> <p>Male and female connectors Male and female contacts</p> <p>Rewireable – Non-rewireable</p>
  <p>Fixed connector: M12 outer thread and male contacts Free connector: M12 inner thread and female contacts</p>	  <p>Fixed connector: M12 inner thread and female contacts Free connector: M12 outer thread and male contacts</p>	<p>Free cable connectors Straight and angled connectors</p> <p>Fixed connectors Flange mounting Single hole mounting</p>

Figure 2 – Type 5 connector overview

CONNECTORS FOR ELECTRICAL AND ELECTRONIC EQUIPMENT –

Part 5: Detail specification for 2-way M8 and M12 circular connectors, shielded or unshielded, free and fixed – Mechanical mating information, pin assignment and additional requirements for Type 5

1 Scope

This part of IEC 63171 describes 2-way shielded or unshielded circular connectors with IP65/IP67 M8 or M12 locking, typically used for balanced single-pair data transmission with frequencies up to 600 MHz and with current-carrying capacity up to 4 A, for use in areas with harsh environmental conditions.

These connectors consist of fixed and free connectors, either rewirable or non-rewirable. Male connectors have square cross-section contacts.

M12 describes the dimensions of the styles and thread of the screw-locking mechanism according to IEC 61076-2-101 of this size of circular connectors. M8 describes the dimensions of the styles and thread of the screw-locking mechanism according to IEC 61076-2-104.

Use of alternative locking mechanisms according to IEC 61076-2-010 (push-pull locking) or IEC 61076-2-011 (bayonet locking) is possible, within the corresponding size.

The coding provided by this document prevents the mating of accordingly coded male or female connectors to other similarly sized interfaces covered by this or other documents.

This document covers Type 5 connectors. Each part of this series has the associated type number equal to the number of the part in the series. All connectors in the IEC 63171 series are deemed to provide the same functions as defined in IEC 63171:2021, using different mechanical interfaces.

These Type 5 connectors are interoperable with Type 2 connectors according to IEC 63171-2, except the locking and sealing system provided by the outer shell.

The shielded and unshielded connectors are interoperable for their internal transmission performance and can be exchanged. The shielded version has improved EMC and coupling properties.

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 60352 (all parts), *Solderless connections*

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

IEC 60512-28-100:2019, *Connectors for electrical and electronic equipment – Tests and measurements – Part 28-100: Signal integrity tests up to 2 000 MHz – Tests 28a to 28g*

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

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koniec náhľadu – text ďalej pokračuje v platenej verzii STN