SLOVENSKI STANDARD
oSIST prEN IEC 63171:2024

01-marec-2024

Konektorji za električno in elektronsko opremo - Zaslonjeni ali nezaslonjeni prosti in pritrjeni konektorji za podatkovne prenose po eni simetrični parici s tokovno zmogljivostjo - Splošne zahteve in preskusi

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

Steckverbinder für elektrische und elektronische Geräte - Geschirmte oder ungeschirmte freie und feste Steckverbinder für symmetrische einpaarige Datenübertragung mit Stromtragfähigkeit - Allgemeine Anforderungen und Prüfungen

Connecteurs pour équipements électriques et électroniques - Fiches et embases écrantées ou non écrantées pour transmission de données sur une seule paire symétrique avec courant admissible - Exigences générales et essais

Ta slovenski standard je istoveten z: **prEN IEC 63171:2024**

ICS:

31.220.10	Vtiči in vtičnice, konektorji	Plug-and-socket devices. Connectors

oSIST prEN IEC 63171:2024 **en**

48B/3079/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER:	
IEC 63171 ED2	
DATE OF CIRCULATION:	CLOSING DATE FOR VOTING:
2024-01-05	**2024-03-29**
SUPERSEDES DOCUMENTS:	
48B/3056/CD, 48B/3075/CC	

IEC SC 48B : ELECTRICAL CONNECTORS	
SECRETARIAT: United States of America	SECRETARY: Mr Jeffrey Toran
OF INTEREST TO THE FOLLOWING COMMITTEES: SC 46C,SC 65C,ISO/IEC JTC 1/SC 25	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: ☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☐ SAFETY	
☒ SUBMITTED FOR CENELEC PARALLEL VOTING **Attention IEC-CENELEC parallel voting** The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

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TITLE:

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

PROPOSED STABILITY DATE: 2026

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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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

FOREWORD

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IEC 63171 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.

This 2nd edition cancels and replaces the 1st edition published in 2021. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) adding content related to multipole and combined connectors;
b) alignment of transmission requirements with ISO/IEC 11801-1 AMD1;
c) updating and reorganising of the test groups.

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

Draft	Report on voting
XX/XX/FDIS	XX/XX/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/publications.

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

This document, identified as IEC 63171, is the general requirements and general tests part (general specification) of the whole IEC 63171 series, a set of International Standards covering shielded or unshielded free and fixed connectors for balanced single-pair data transmission with current carrying capacity.

It provides the signal integrity requirements, common to the whole series.

Subsequent parts, identified as IEC 63171 followed by a dash and a progressive number starting with 1, are the product detail specifications of this series and do not duplicate information given in this document, but list only additional requirements.

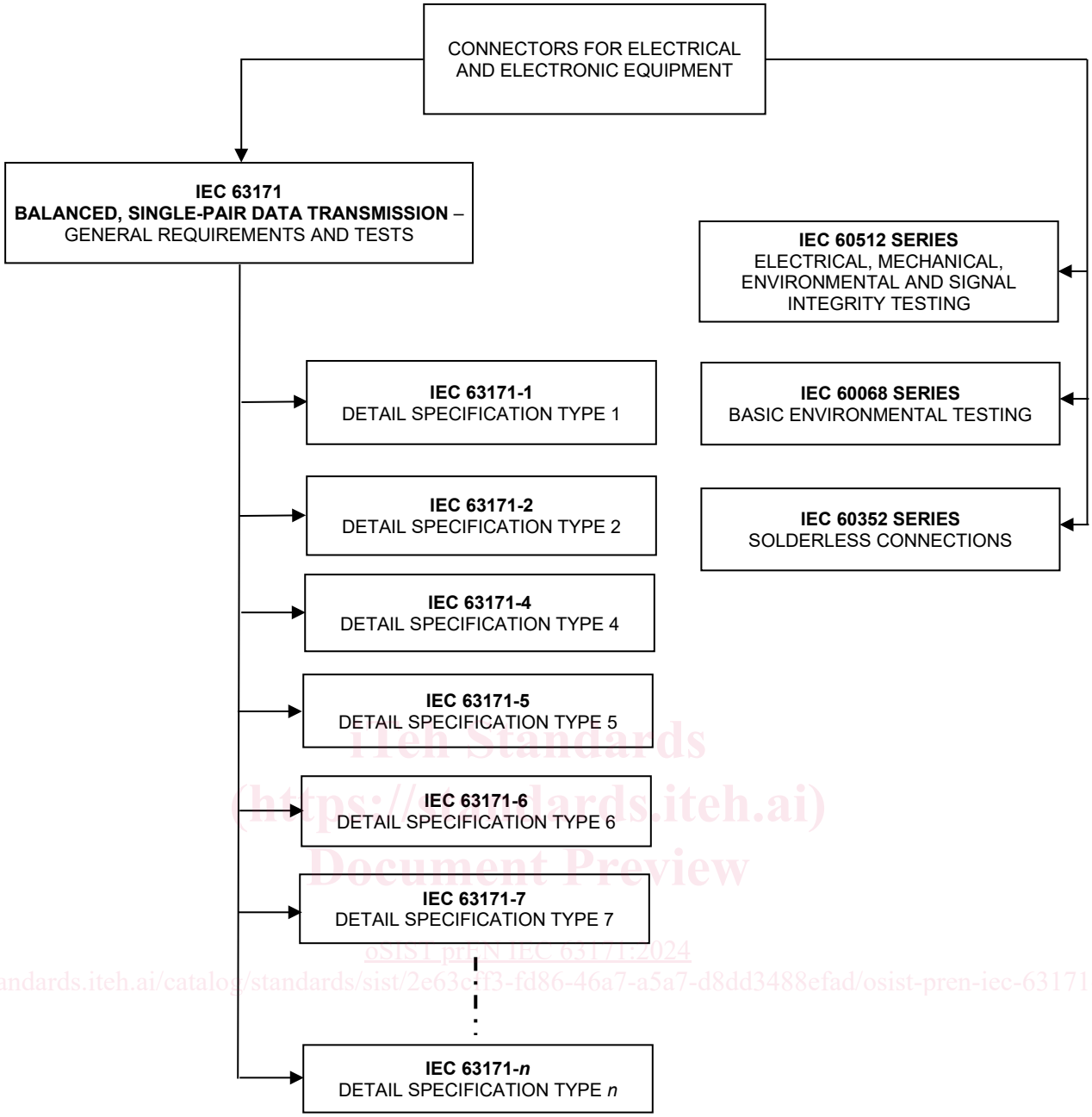
Each subsequent part is identified by a type of connector – or a set of connectors – covered with the same number identifying the part. Some parts can describe more connector geometries (rectangular, circular), sharing the core element and the relevant features.

Other requirements, which are necessary to describe e.g., additional power portion – if any – of that connector, can be covered by referencing requirements provided by other relevant documents, e.g.: IEC 61076-2 or IEC 61076-3, and/or IEC 61984, as applicable.

For the complete specifications regarding a connector of this series, as well as of other series calling up this document for the signal integrity requirements, both this product general specification and the relevant detail specification, as well as any other sectional specification and/or safety requirement document referenced in the relevant subsequent part of this series or in the relevant product detail specification, are therefore required.

For the qualification of a connector of this series, both this general specification and the relevant detail specification – including the references made therein, if any, to other sectional specification and/or other safety-related documents – shall be met.

Figure 1 shows the interrelation of the standards within this series:



175 **Figure 1 – Relationship between the IEC 63171 series and their related references**

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

1 Scope

This document covers shielded and unshielded free and fixed connectors, circular or rectangular, for balanced single-pair data transmission, with current-carrying capacity.

It also covers the portion for balanced single-pair data transmission of combined, shielded or unshielded, free and fixed connectors, circular or rectangular, having additional contacts for power transmission, whose performance requirements are described in a detail specification of the IEC 63171-X series, (type X connectors), or in a separate document, either IEC detail specification or manufacturer's specification.

It specifies the IEC 63171 series' – or of other document referencing it – common mechanical, electrical and transmission characteristics and environmental requirements, as well as required test specifications.

This document does not describe a specific mating interface. Detail specifications of mating interfaces complying with this document can be found in the family of detail specification standards IEC 63171-X (type X connectors) or in a separate document, either IEC detail specification or manufacturer's specification.

Within their own type, the shielded and unshielded connectors are interoperable for their transmission performance and can be exchanged, though the shielded version has improved alien crosstalk and coupling attenuation properties.

Single-pair connectors of this series might be grouped to one body of multipole connectors or combined with other connectors, e.g., power connectors, also known as combined (data or signal, and power) connectors.

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

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

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

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 60512-5-2, *Connectors for electronic equipment – Tests and measurements – Part 5-2: Current-carrying capacity tests – Test 5b: Current-temperature derating*

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 electronic equipment – Tests and measurements – Part 11-1: Climatic tests – Test 11a – Climatic sequence*

IEC 60512-11-4, *Connectors for electronic equipment – Tests and measurements – Part 11-4: Climatic tests – Test 11d: Rapid change of temperature*

IEC 60512-11-7, *Connectors for electronic equipment – Tests and measurements – Part 11-7: Climatic tests – Test 11g: Flowing mixed gas corrosion test*

IEC 60512-11-12, *Connectors for electronic equipment – Tests and measurements – Part 11-12: Climatic tests – Test 11m: Damp heat, cyclic*

IEC 60512-13-2, *Connectors for electronic equipment – Tests and measurements – Part 13-2: Mechanical operation tests – Test 13b: Insertion and withdrawal forces*

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 60512-25-9, *Connectors for electronic equipment – Tests and measurements – Part 25-9: Signal integrity tests – Test 25i: Alien crosstalk*

IEC 60512-26-100, *Connectors for electronic equipment – Tests and measurements – Part 26-100: Measurement setup, test and reference arrangements and measurements for connectors according to IEC 60603-7 – Tests 26a to 26g*

IEC 60512-28-100, *Connectors for 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 systems – Part 1: Principles, requirements and tests*

IEC 61156 (all parts), *Multicore and symmetrical pair/quad cables for digital communications*

IEC 61984, *Connectors - Safety requirements and tests*

IEC 62153-4-9:2018/AMD1:2020, *Metallic communication cable test methods – Part 4-9: Electromagnetic compatibility (EMC) – Coupling attenuation of screened balanced cables, triaxial method*