



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 Stromtragungsfähigkeit - 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

<https://standards.iteh.ai/catalog/standards/sist/2e63c1f3-1d86-46a7-a5a7-d8dd3488efad/osist-pren-iec-63171-2024>

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

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SECRETARIAT: United States of America	SECRETARY: Mr Jeffrey Toran
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FUNCTIONS CONCERNED: <input type="checkbox"/> EMC <input type="checkbox"/> ENVIRONMENT <input type="checkbox"/> QUALITY ASSURANCE <input type="checkbox"/> SAFETY	
<input checked="" type="checkbox"/> 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.	<input type="checkbox"/> 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

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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**

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FOREWORD

93 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising
94 all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international
95 co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and
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125 IEC 63171 has been prepared by subcommittee 48B: Electrical connectors, of IEC technical
126 committee 48: Electrical connectors and mechanical structures for electrical and electronic
127 equipment. It is an International Standard.

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

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

132 a) adding content related to multipole and combined connectors;

133 b) alignment of transmission requirements with ISO/IEC 11801-1 AMD1;

134 c) updating and reorganising of the test groups.

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

Draft	Report on voting
XX/XX/FDIS	XX/XX/RVD

136
137 Full information on the voting for its approval can be found in the report on voting indicated in
138 the above table.

139 The language used for the development of this International Standard is English.

140 This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in
141 accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available
142 at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are
143 described in greater detail at www.iec.ch/publications.

144 The committee has decided that the contents of this document will remain unchanged until the stability
145 date indicated on the IEC website under webstore.iec.ch in the data related to the specific document.
146 At this date, the document will be

- 147 • reconfirmed,
- 148 • withdrawn,
- 149 • replaced by a revised edition, or
- 150 • amended.

iTeh Standards (<https://standards.iteh.ai>) Document Preview

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151

INTRODUCTION

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

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

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

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

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

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

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

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

[oSIST prEN IEC 63171:2024](https://standards.iteh.ai/catalog/standards/sist/2e63cff3-fd86-46a7-a5a7-d8dd3488efad/osist-pren-iec-63171-2024)

<https://standards.iteh.ai/catalog/standards/sist/2e63cff3-fd86-46a7-a5a7-d8dd3488efad/osist-pren-iec-63171-2024>

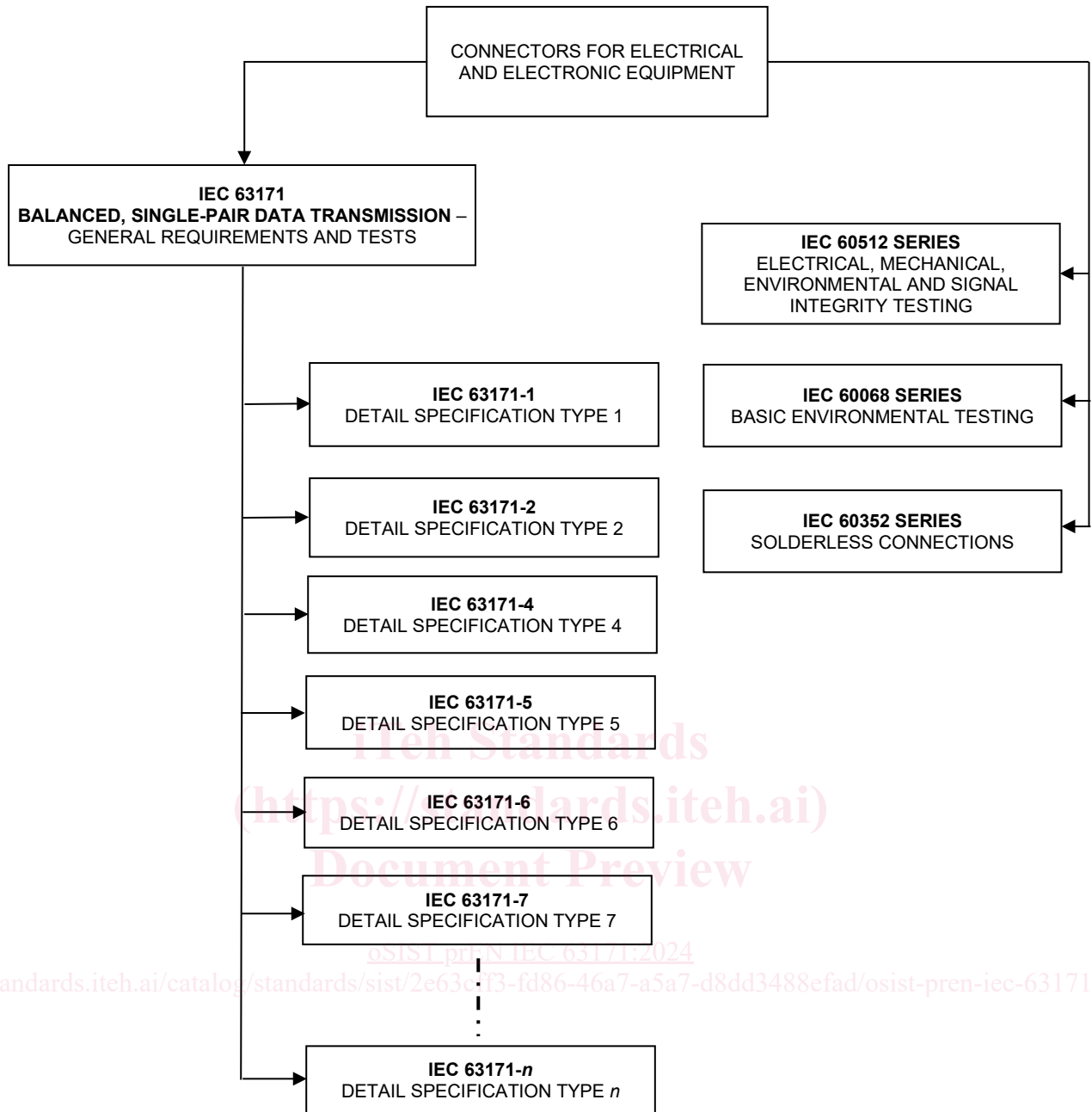


Figure 1 – Relationship between the IEC 63171 series and their related references

176 **CONNECTORS FOR ELECTRICAL AND ELECTRONIC EQUIPMENT –**
177 **Shielded or unshielded free and fixed connectors for balanced**
178 **single-pair data transmission with current carrying capacity –**
179 **General requirements and tests**
180

181 **1 Scope**

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

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

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

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

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

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

202 **2 Normative references**

203 The following documents are referred to in the text in such a way that some or all of their content
204 constitutes requirements of this document. For dated references, only the edition cited applies.
205 For undated references, the latest edition of the referenced document (including any
206 amendments) applies.

207 IEC 60050-581, *International Electrotechnical Vocabulary (IEV) – Part 581: Electromechanical*
208 *components for electronic equipment*

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

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

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

214 IEC 60512-2-1, *Connectors for electronic equipment – Tests and measurements – Part 2-1:*
215 *Electrical continuity and contact resistance tests – Test 2a: Contact resistance – Millivolt level*
216 *method*

217 IEC 60512-2-5, *Connectors for electronic equipment – Tests and measurements – Part 2-5:*
218 *Electrical continuity and contact resistance tests – Test 2e: Contact disturbance*

- 219 IEC 60512-3-1, *Connectors for electronic equipment – Tests and measurements – Part 3-1:*
220 *Insulation tests – Test 3a: Insulation resistance*
- 221 IEC 60512-4-1, *Connectors for electronic equipment – Tests and measurements – Part 4-1:*
222 *Voltage stress tests – Test 4a: Voltage proof*
- 223 IEC 60512-5-2, *Connectors for electronic equipment – Tests and measurements – Part 5-2:*
224 *Current-carrying capacity tests – Test 5b: Current-temperature derating*
- 225 IEC 60512-6-4, *Connectors for electronic equipment – Tests and measurements – Part 6-4:*
226 *Dynamic stress tests – Test 6d: Vibration (sinusoidal)*
- 227 IEC 60512-9-1, *Connectors for electronic equipment – Tests and measurements – Part 9-1:*
228 *Endurance tests – Test 9a: Mechanical operation*
- 229 IEC 60512-9-2, *Connectors for electronic equipment – Tests and measurements – Part 9-2:*
230 *Endurance tests – Test 9b: Electrical load and temperature*
- 231 IEC 60512-11-1, *Connectors for electronic equipment – Tests and measurements – Part 11-1:*
232 *Climatic tests – Test 11a – Climatic sequence*
- 233 IEC 60512-11-4, *Connectors for electronic equipment – Tests and measurements – Part 11-4:*
234 *Climatic tests – Test 11d: Rapid change of temperature*
- 235 IEC 60512-11-7, *Connectors for electronic equipment – Tests and measurements – Part 11-7:*
236 *Climatic tests – Test 11g: Flowing mixed gas corrosion test*
- 237 IEC 60512-11-12, *Connectors for electronic equipment – Tests and measurements –*
238 *Part 11-12: Climatic tests – Test 11m: Damp heat, cyclic*
- 239 IEC 60512-13-2, *Connectors for electronic equipment – Tests and measurements – Part 13-2:*
240 *Mechanical operation tests – Test 13b: Insertion and withdrawal forces*
- 241 IEC 60512-15-6, *Connectors for electronic equipment – Tests and measurements – Part 15-6:*
242 *Connector tests (mechanical) – Test 15f: Effectiveness of connector coupling devices*
- 243 IEC 60512-25-9, *Connectors for electronic equipment – Tests and measurements – Part 25-9:*
244 *Signal integrity tests – Test 25i: Alien crosstalk*
- 245 IEC 60512-26-100, *Connectors for electronic equipment – Tests and measurements – Part 26-*
246 *100: Measurement setup, test and reference arrangements and measurements for connectors*
247 *according to IEC 60603-7 – Tests 26a to 26g*
- 248 IEC 60512-28-100, *Connectors for electronic equipment – Tests and measurements –*
249 *Part 28-100: Signal integrity tests up to 2 000 MHz – Tests 28a to 28g*
- 250 IEC 60664-1, *Insulation coordination for equipment within low-voltage systems – Part 1:*
251 *Principles, requirements and tests*
- 252 IEC 61156 (all parts), *Multicore and symmetrical pair/quad cables for digital communications*
- 253 IEC 61984, *Connectors - Safety requirements and tests*
- 254 IEC 62153-4-9:2018/AMD1:2020, *Metallic communication cable test methods – Part 4-9:*
255 *Electromagnetic compatibility (EMC) – Coupling attenuation of screened balanced cables,*
256 *triaxial method*