

INTERNATIONAL STANDARD

**Connectors for electrical and electronic equipment –
Part 1: Detail specification for 2-way, shielded or unshielded, free and fixed
connectors – Mechanical mating information, pin assignment and additional
requirements for Type 1 (copper LC style)**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

CONNECTORS FOR ELECTRICAL AND ELECTRONIC EQUIPMENT –**Part 1: Detail specification for 2-way, shielded or unshielded, free and fixed connectors – Mechanical mating information, pin assignment and additional requirements for Type 1 (copper LC style)**

FOREWORD

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IEC 63171-1 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 second edition cancels and replaces the first edition published in 2020. This edition constitutes a technical revision.

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

- a) Information on obtaining a license agreement was updated.
- b) Connector characteristics and test requirements were aligned with IEC 63171:2021 where applicable.

- c) Added requirements for Polarizing method (5.6.4) and Dynamic stress (5.6.5) to align with IEC 63171:2021.
- d) Added test group BP – Moisture (6.7.3.4) to align with IEC 63171:2021.

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

Draft	Report on voting
48B/3062/FDIS	48B/3083/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.

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

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 shall 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, or
- revised.

INTRODUCTION

The IEC 63171 series is a set of International Standards covering shielded or unshielded free and fixed connectors for balanced single-pair data transmission with current carrying capacity.

IEC 63171 is the general requirements and tests part (general specifications) of the whole series.

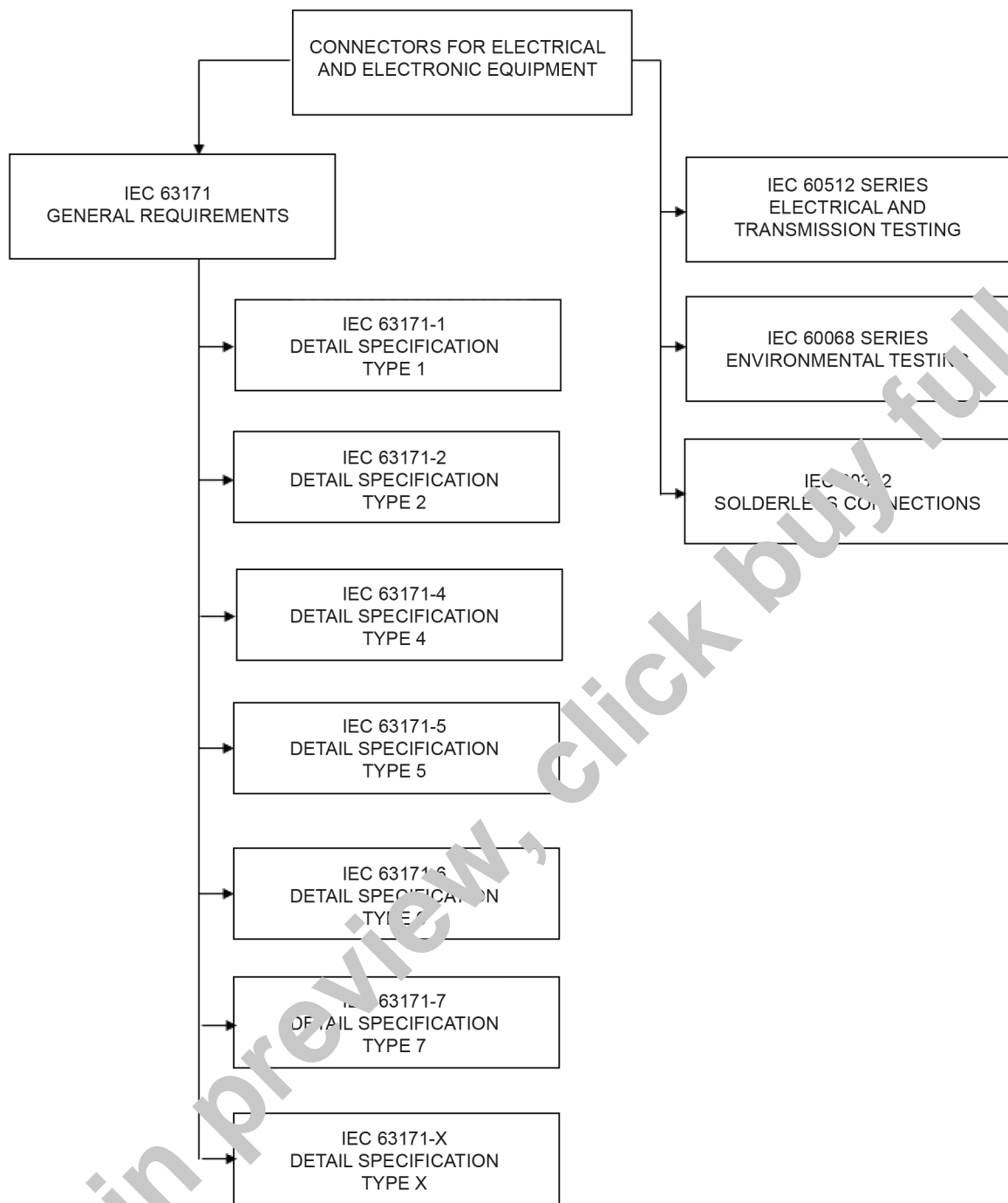
Subsequent parts, such as this Part 1, identified as IEC 63171 followed by a dash and a progressive number starting with 1, are the product detail specifications of this series and do not duplicate information given in this document, but list only additional requirements.

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

For the complete specifications regarding a connector of this series, both the general specification and the relevant detail specification are therefore required.

For the qualification of a connector of this series, both the general specification and the relevant detail specification shall be met.

Figure 1 shows the interrelation of the standards.



IEC

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

NOTE – The project for Type 3 connectors detail specification was cancelled.

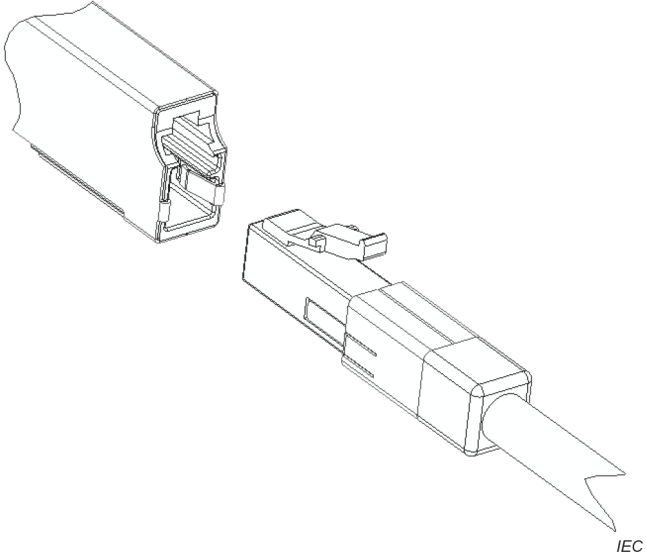
International Electrotechnical Commission	IEC 63171-1 Ed2
Subcommittee 48B: Electrical connectors	
 <p data-bbox="199 898 699 927">View showing typical fixed and free connectors</p>	<p data-bbox="1018 320 1390 465">Two-way, free and fixed connectors for balanced single-pair data transmission with frequencies up to 600 MHz and with current carrying capacity up to 2,0 A at 60 °C.</p> <p data-bbox="1018 483 1390 577">Fixed connectors are mounted on printed circuit board or bulkhead, the free connector is terminated on shielded or unshielded wire.</p>

Figure 2 – Connector overview

CONNECTORS FOR ELECTRICAL AND ELECTRONIC EQUIPMENT –

Part 1: Detail specification for 2-way, shielded or unshielded, free and fixed connectors – Mechanical mating information, pin assignment and additional requirements for Type 1 (copper LC style)

1 Scope

This part of IEC 63171 covers two-way, shielded or unshielded, free and fixed connectors known as Type 1, for balanced single-pair data transmission with frequencies up to 600 MHz and with current carrying capacity up to 2,0 A at 60 °C.

It specifies the common dimensions, and provides the mechanical, electrical, signal integrity, and environmental characteristics, the reliability specifications and corresponding tests for these 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 60050-581:2008, *International Electrotechnical Vocabulary (IEV) – Part 581: Electromechanical components for electronic equipment*

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

IEC 60512-1:2018, *Connectors for electrical and electronic equipment – Tests and measurements – Part 1: Generic specification*

IEC 61754-20:2012, *Fibre optic interconnecting devices and passive components – Fibre optic connector interfaces – Part 20: Type LC connector family*
IEC 61754-20:2012/AMD1:2022

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*

ISO/IEC 11801-1:2017, *Information technology – Generic cabling for customer premises – Part 1: General requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-581, IEC 60512-1 and IEC 63171 apply, as well as the following.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>