

INTERNATIONAL STANDARD



**Connectors for electrical and electronic equipment –
Part 4: Detail specification for shielded or unshielded, free and fixed connectors
with up to 8 ways for balanced single-pair data transmission with current
carrying capacity – Mechanical mating information, pin assignment and
additional requirements for Type 4**



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CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	10
2 Normative references	10
3 Terms and definitions	11
4 Common features and typical connector pairs.....	11
4.1 Mating information	11
4.1.1 General	11
4.1.2 Overview of connector styles	11
4.1.3 Fixed connectors	12
4.1.4 Free connectors.....	15
5 Characteristics	21
5.1 General.....	21
5.2 Pin assignment	21
5.3 Classification into climatic category	22
5.4 Electrical characteristics	22
5.4.1 Creepage and clearance distances	22
5.4.2 Voltage proof.....	23
5.4.3 Current-temperature derating.....	23
5.4.4 Initial contact resistance – interface only (separable fixed and free contact)	23
5.4.5 Input to output DC resistance	23
5.4.6 Input to output DC resistance unbalanced.....	23
5.4.7 Initial insulation resistance	23
5.5 Transmission characteristics	23
5.5.1 General	23
5.5.2 Insertion loss	23
5.5.3 Return loss	23
5.5.4 Propagation delay.....	23
5.5.5 Transverse conversion loss	24
5.5.6 Transverse conversion transfer loss	24
5.5.7 Transfer impedance (shielded only).....	24
5.5.8 Coupling attenuation.....	24
5.5.9 Power sum alien (exogenous) NEXT.....	24
5.5.10 Power sum alien (exogenous) FEXT	24
5.6 Mechanical characteristics	24
5.6.1 Mechanical operation.....	24
5.6.2 Effectiveness of connector coupling devices	24
5.6.3 Insertion and withdrawal forces	24
6 Tests and test schedule.....	24
6.1 General.....	24
6.2 Arrangement for contact resistance measurement.....	25
6.3 Arrangement for vibration test.....	25
6.4 Test procedures and measuring methods.....	26
6.5 Preconditioning.....	26
6.6 Test schedules.....	26

6.6.1	General	26
6.6.2	Basic (minimum) test schedule	26
6.6.3	Full test schedule	26
	Bibliography.....	27
Figure 1	– Relationship between the IEC 63171 series documents and their related references	7
Figure 2	– Type 4 connector overview.....	9
Figure 3	– Shielded and unshielded fixed connector details – MMC 1P	12
Figure 4	– Shielded and unshielded fixed connector details – MMC 2P	13
Figure 5	– Shielded and unshielded fixed connector details – MMC 4P	14
Figure 6	– Shielded and unshielded free connector with snap-in device – MMC 1PS.....	15
Figure 7	– Shielded and unshielded free connector with locking device – MMC 1PL	17
Figure 8	– Shielded and unshielded free connector with snap-in device – MMC 2PS.....	18
Figure 9	– Shielded and unshielded free connector with locking device- MMC 2PL	19
Figure 10	– Shielded and unshielded free connector with snap-in device – MMC 4PS.....	19
Figure 11	– Shielded and unshielded free connector with locking device- MMC 4PL	20
Figure 12	– Free connector female contact	21
Figure 13	– Fixed connector pin assignment (front view of connector).....	22
Figure 14	– Arrangement for contact resistance test	25
Figure 15	– Arrangement for vibration test	26
Table 1	– Styles of connectors	12
Table 2	– Dimensions for Figure 3 – MMC 1P	13
Table 3	– Dimensions for Figure 4 – MMC 2P	14
Table 4	– Dimensions for Figure 5 – MMC 4P	15
Table 5	– Dimensions for Figure 6 – MMC 1PS	16
Table 6	– Dimensions for Figure 7 – MMC 1PL	17
Table 7	– Dimensions for Figure 8 – MMC 2PS	18
Table 8	– Dimensions for Figure 9 – MMC 2PL	19
Table 9	– Dimensions for Figure 10 – MMC 4PS	20
Table 10	– Dimensions for Figure 11 – MMC 4PL	20
Table 11	– Dimensions for Figure 12.....	21
Table 12	– 2-way connector signal pin assignment	22
Table 13	– Creepage and clearance distances	23

INTERNATIONAL ELECTROTECHNICAL COMMISSION

CONNECTORS FOR ELECTRICAL AND ELECTRONIC EQUIPMENT –**Part 4: Detail specification for shielded or unshielded, free and fixed connectors with up to 8 ways for balanced single-pair data transmission with current carrying capacity – Mechanical mating information, pin assignment and additional requirements for Type 4**

FOREWORD

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IEC 63171-4 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/2964/FDIS	48B/2984/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 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.

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INTRODUCTION

The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning contact mating surface dimensions given in 4.1.

The IEC takes no position concerning the evidence, validity, and scope of this patent right.

The Patent Holder is prepared to grant a license to an unrestricted number of applicants on a worldwide, non-discriminatory basis and on reasonable terms and conditions to make, use and sell implementations of the above document.

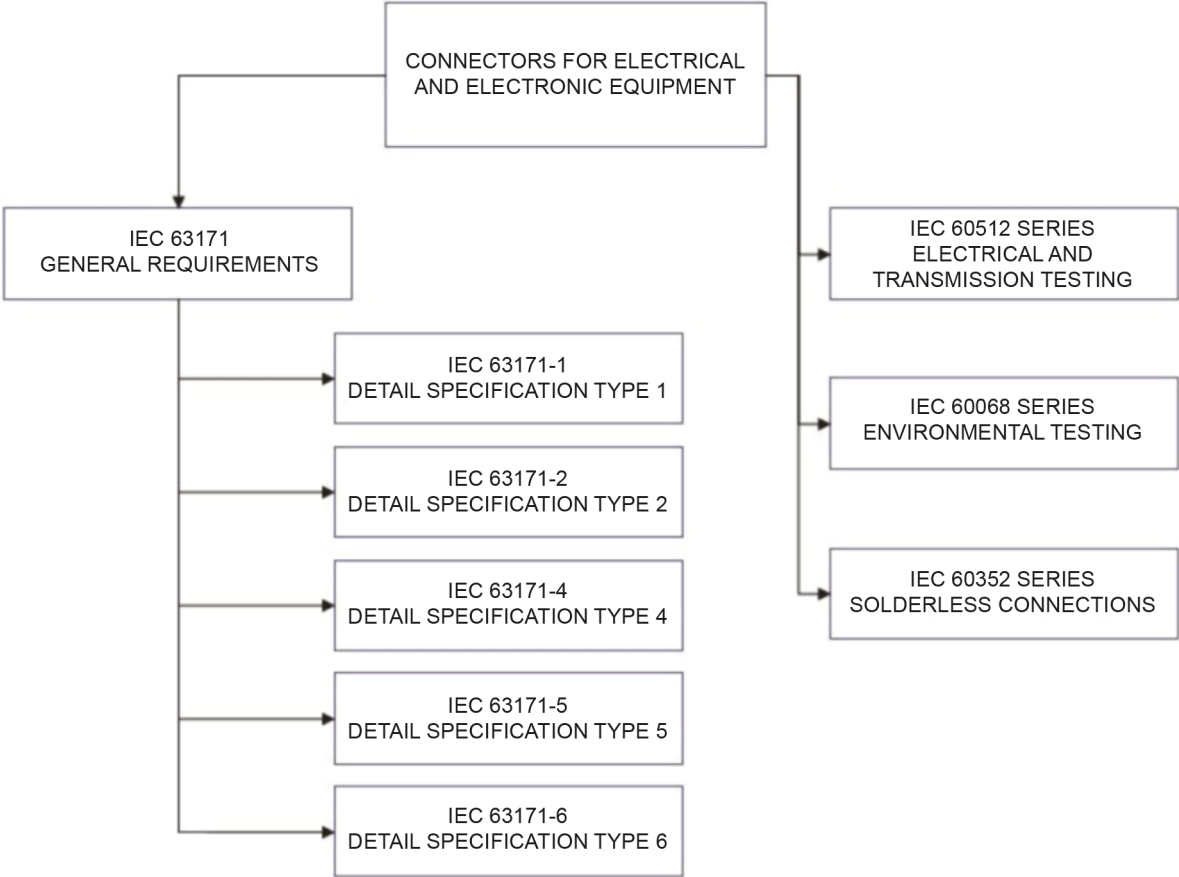
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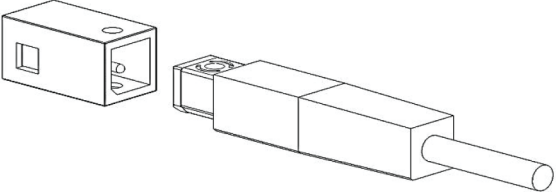
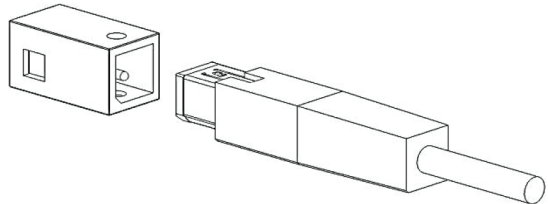
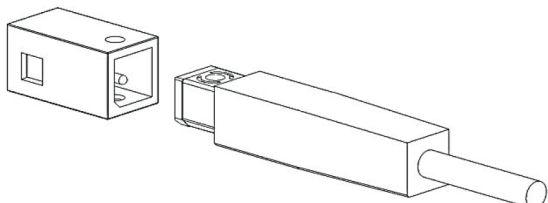
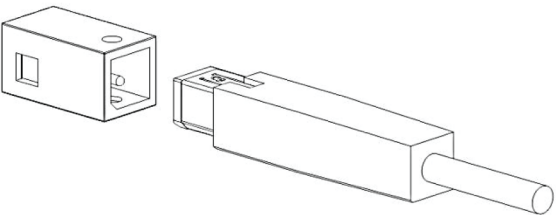
IEC 63171 is the base specification of the whole series. Subsequent specifications do not duplicate information given in the base document, but list only additional requirements. For complete specification regarding a component of a higher number document all lower numbered documents shall be considered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



IEC

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

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

<p>IEC SC 48B – Electrical connectors</p> <p>Specification available from: IEC General secretariat or from the addresses shown on the inside cover.</p>	<p>IEC 63171-4 Ed. 1</p>
<p>DETAIL SPECIFICATION in accordance with IEC 63171</p>	
 <p style="text-align: right;"><i>IEC</i></p>	<p>Shielded 1-pair connector with snap-in mechanism</p>
 <p style="text-align: right;"><i>IEC</i></p>	<p>Shielded 1-pair connector with locking device</p>
 <p style="text-align: right;"><i>IEC</i></p>	<p>Unshielded 1-pair connector with snap-in mechanism</p>
 <p style="text-align: right;"><i>IEC</i></p>	<p>Unshielded 1-pair connector with locking device</p>

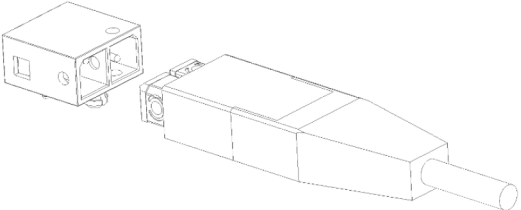
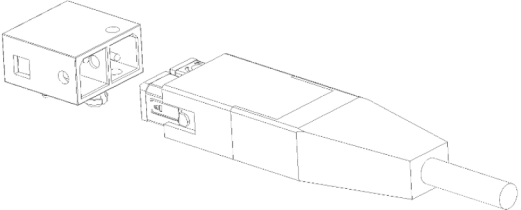
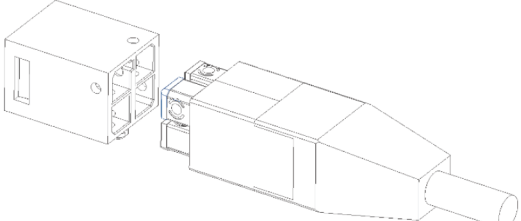
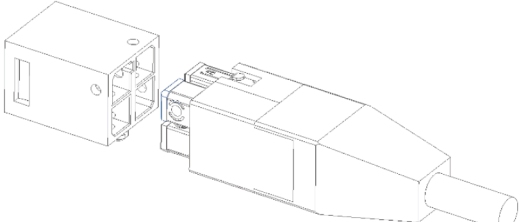
 <p data-bbox="852 577 887 600"><i>IEC</i></p>	<p data-bbox="970 235 1380 286">Shielded 2-pair connector with snap-in mechanism</p>
 <p data-bbox="852 958 887 981"><i>IEC</i></p>	<p data-bbox="970 616 1380 667">Shielded 2-pair connector with locking device</p>
 <p data-bbox="852 1256 887 1279"><i>IEC</i></p>	<p data-bbox="970 996 1380 1048">Shielded 4-pair connector with snap-in mechanism</p>
 <p data-bbox="852 1541 887 1563"><i>IEC</i></p>	<p data-bbox="970 1288 1380 1339">Shielded 4-pair connector with locking device</p>

Figure 2 – Type 4 connector overview

CONNECTORS FOR ELECTRICAL AND ELECTRONIC EQUIPMENT –

Part 4: Detail specification for shielded or unshielded, free and fixed connectors with up to 8 ways for balanced single-pair data transmission with current carrying capacity – Mechanical mating information, pin assignment and additional requirements for Type 4

1 Scope

This part of IEC 63171 covers shielded and unshielded free and fixed multimedia connectors (MMC) for data transmission with frequencies up to and above 3 000 MHz for shielded and up to 600 MHz for unshielded connectors, both with current-carrying capacity with up to 8 ways. It specifies the common dimensions, mechanical, electrical and transmission characteristics and environmental requirements as well as test specifications, respectively.

The form factor of these connectors allows their use for cable sharing with TOs (Telecommunications Outlet) for structured cabling.

NOTE The overall performance of the transmission channel in such case is evaluated.

This document covers type 4 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, using different mechanical interfaces.

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.

The connectors are intended to be used for Single Pair Ethernet (SPE) according, but not restricted to the following IEEE standards: 10Base-T1 (IEEE 802.3cg), 100Base-T1 (IEEE 802.3bw), 1000Base-T1 (IEEE 802.3bp), Multi-Gig Base-T1 (IEEE 802.3ch) and optionally with Power over Data line (PoDL) power supply according to IEEE 802.3bu.

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

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*