

INTERNATIONAL STANDARD

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**Multicore and symmetrical pair/quad cables for digital communications –
Part 1: Generic specification**

**Câbles multiconducteurs à paires symétriques et quartes pour transmissions
numériques –
Partie 1: Spécification générique**



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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 33.120.20

ISBN 978-2-8322-6373-0

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**MULTICORE AND SYMMETRICAL PAIR/QUAD
CABLES FOR DIGITAL COMMUNICATIONS –****Part 1: Generic specification****FOREWORD**

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IEC 61156-1 has been prepared by subcommittee 46C: Wires and symmetric cables, of IEC technical committee 46: Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2007 and Amendment 1 published in 2009. This edition constitutes a technical revision.

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

- a) modification of the scope in Clause 1 and updating of normative references documents in Clause 2;
- b) addition of PoE-related definitions in Clause 3;
- c) clarification of differential-mode and common-mode resistors, correction of formulae and addition of IEC 62153-4-9 test method for coupling attenuation in Clause 6;

- d) introduction of balunless measurement method in 6.3.1, modification of equipment requirements of unbalance attenuation in 6.3.5 and updating of balun's performance in Table 1;
- e) deletion of 'three layers of cables on a drum' method in alien (exogenous) near-end crosstalk measurement in 6.3.8 and addition of terminated input impedance in 6.3.11.4.

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

Draft	Report on voting
46C/1242/FDIS	46C/1249/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 and French.

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 in the IEC 61156 series, published under the general title *Multicore and symmetrical pair/quad cables for digital communications*, 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 www.iec.ch in the data related to the specific document. At this date, the document will be

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MULTICORE AND SYMMETRICAL PAIR/QUAD CABLES FOR DIGITAL COMMUNICATIONS –

Part 1: Generic specification

1 Scope

This part of IEC 61156 specifies the definitions, requirements and test methods of multicore, symmetrical pair and quad cables.

This document is applicable to communication systems such as local area networks (LANs) and data communication cables. It is also applicable to cables used for industrial applications, customer premises wiring and generic cabling comprising installation cables and cables for work area wiring which are defined in ISO/IEC 11801 (all parts).

The cables covered by this document are intended to operate with voltages and currents normally encountered in communication systems. While these cables are not intended to be used in conjunction with low impedance sources, for example the electric power supplies of public utility mains, they are intended to be used to support the delivery of low voltage remote powering applications including but not restricted to Power over Ethernet as specified in ISO/IEC/IEEE 8802-3. More information on the capacity to support these applications according to the installation practices are given in IEC 61156-1-4, IEC TR 61156-1-6 and ISO/IEC TS 29125.

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 60028, *International standard of resistance for copper*

IEC 60068-2-1:2007, *Environmental testing – Part 2-1: Tests – Tests A: Cold*

IEC 60189-1:2018, *Low frequency cables and wires with PVC insulation and PVC sheath – Part 1: General test and measuring methods*

IEC 60304, *Standard colours for insulation for low-frequency cables and wires*

IEC 60332-1-2, *Tests on electric and optical fibre cables under fire conditions – Part 1-2: Test for vertical flame propagation for a single insulated wire or cable – Procedure for 1 kW pre-mixed flame*

IEC 60332-2-2, *Tests on electric and optical fibre cables under fire conditions – Part 2-2: Test for vertical flame propagation for a single small insulated wire or cable – Procedure for diffusion flame*

IEC 60332-3-24, *Tests on electric and optical fibre cables under fire conditions – Part 3-24: Test for vertical flame spread of vertically-mounted bunched wires or cables – Category C*

IEC 60332-3-25, *Tests on electric and optical fibre cables under fire conditions – Part 3-25: Test for vertical flame spread of vertically-mounted bunched wires or cables – Category D*