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INTERNATIONAL STANDARD

Multicore and symmetrical pair/quad cables for digital communications – Part 9: Cables for channels with transmission characteristics up to 2 GHz – Sectional specification

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FOREWORD

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International Standard IEC 61156-9 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.

The text of this standard is based on the following documents:

FDIS	Report on voting
46C/1037/FDIS	46C/1041/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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 publication will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

MULTICORE AND SYMMETRICAL PAIR/QUAD CABLES FOR DIGITAL COMMUNICATIONS –

Part 9: Cables for channels with transmission characteristics up to 2 GHz – Sectional specification

1 Scope

This part of IEC 61156 describes cables primarily intended for the fixed part of channels as defined in ISO/IEC 11801 and in ISO/IEC TR 11801-9901 which is planned to be included in the next edition of ISO/IEC 11801-1. It covers overall screened cables with screened (X/FTP) or unscreened (X/UTP) pairs, where X stands for F, S or SF, as well as pair-screened cables without overall screen (U/FTP). The transmission characteristics of these cables are specified up to a frequency of 2 000 MHz and at a temperature of 20 °C. Two categories of cables are recognised:

- Category 8.1 for use in Class I according to ISO/IEC TR 11801-9901;
- Category 8.2 for use in Class II according to ISO/IEC TR 11801-9901.

These cables are intended to be used for communication channels which use at least four pairs simultaneously.

The cables covered by this International Standard 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, e.g. the electric power supplies of public utility mains, they are intended to be used to support the delivery of low voltage remote powering applications such as IEEE 802.3af (Power over Ethernet) or further developments e.g. according to IEEE 802.3at or IEEE 802.3bt. More information on the capacity to support these applications according to the installation practices is given in IEC PAS 61156-1-4, IEC TR 61156-1-6 and ISO/IEC TR 29125.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 61156-1:2007*, Multicore and symmetrical pair/quad cables for digital communications – Part 1: Generic specification*
IEC 61156-1:2007/AMD 1:2009

IEC TR 61156-1-2*, Multicore and symmetrical pair/quad cables for digital communications – Part 1-2: Electrical transmission characteristics and test methods of symmetrical pair/quad cables*

IEC TR 61156-1-5, *Multicore and symmetrical pair/quad cables for digital communications – Part 1-5: Correction procedures for the measurement results of return loss and input impedance*

IEC TR 61156-1-6, *Multicore and symmetrical pair/quad cables for digital communications – Part 1-6: Exploratory DC-resistance values of floor-wiring and work-area cables for digital communications*[1]

IEC 61156-5:2009, *Multicore and symmetrical pair/quad cables for digital communications – Part 5: Symmetrical pair/quad cables with transmission characteristics up to 1 000 MHz – Horizontal floor wiring – Sectional specification*

IEC 62153-4-5, *Metallic communication cables test methods – Part 4-5: Electromagnetic compatibility (EMC) – Coupling or screening attenuation – Absorbing clamp method*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61156-1 apply.

4 Installation considerations

For the purposes of this document, the respective requirements of IEC 61156-5 apply.

5 Materials and cable construction

For the purposes of this document, the respective requirements of IEC 61156-5 apply.

6 Characteristics and requirements

6.1 General remarks

Clause 6 lists the characteristics and minimum requirements of a cable complying with this standard. Test methods shall be in accordance with Clause 6 of IEC 61156-1:2007/AMD1:2009, except that the length of the cable under test shall be as specified below. In addition to all requirements specified in this Clause 6, the two categories shall meet all requirements specified for the respective categories in IEC 61156-5:

- Category 8.1: Category 6_A;
- Category 8.2: Category 7_A.

NOTE By these requirements it is assured that Category 8.1 is backward compatible to Category 6_A and Category 8.2 is backward compatible to Category 7_A.

The computed requirements in dB, rounded to one decimal place, shall be used to determine compliance.

The tests for electrical characteristics according to 6.2 shall be carried out on a cable length of not less than 100 m, unless otherwise specified.

[1] Under consideration.