# IEC 61156-8

Edition 2.0 2023-02

# INTERNATIONAL STANDARD

## Multicore and symmetrical pair/quad cables for digital communications – Part 8: Symmetrical pair cables with transmission characteristics up to 1 200 MHz – Work area wiring – Sectional specification



IEC 61156-8:2023-02(en)



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## Multicore and symmetrical pair/quad cables for digital communications – Part 8: Symmetrical pair cables with transmission characteristics up to 1 200 MHz – Work area wiring – Sectional specification

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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# MULTICORE AND SYMMETRICAL PAIR/QUAD CABLES FOR DIGITAL COMMUNICATIONS –

## Part 8: Symmetrical pair cables with transmission characteristics up to 1 200 MHz – Work area wiring – Sectional specification

## FOREWORD

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IEC 61156-8 has been prepared by subcommittee 46C: Wires and symmetrical cables, of IEC technical committee 46: Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories. It is an International Standard.

This part of IEC 61156 is to be read in conjunction with IEC 61156-1:2023 and IEC 61156-7:2023.

This second edition cancels and replaces the first edition published in 2009, and Amendment 1:2013. This edition constitutes a technical revision.

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

a) align clauses with IEC 61156-1:2023;

b) additional reference to IEC 62153-4-9 test method (triaxial) for coupling attenuation measurement to be consistent with all other parts of the IEC 61156 series;

c) incorporation of blank detail specification.

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

| Draft | Report on voting |
|---|---|
| 46C/1229/CDV | 46C/1234/RVC |

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.

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.

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 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.

# MULTICORE AND SYMMETRICAL PAIR/QUAD CABLES FOR DIGITAL COMMUNICATIONS –

# Part 8: Symmetrical pair cables with transmission characteristics up to 1 200 MHz – Work area wiring – Sectional specification

## 1 Scope

This part of IEC 61156 relates to IEC 61156-1 and IEC 61156-7. The cables described herein are specified up to 1 200 MHz and are specifically designed to build work area cords.

It covers a cable having four individually screened (S/FTP) pairs. The cable can be provided with a common screen over the cable core.

The transmission characteristics are specified up to a frequency of 1 200 MHz and at a temperature of 20 °C.

The cables covered by this sectional specification are intended to operate with voltages and currents normally encountered in communication systems and support the delivery of DC low voltage remote powering applications. These cables are not intended to be used in conjunction with low impedance sources, for example the electric power supply of public utility mains.

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

IEC 61156-1:2023, *Multicore and symmetrical pair/quad cables for digital communications – Part 1: Generic specification*

IEC 62153-4-3, *Metallic communication cable test methods – Part 4-3: Electromagnetic compatibility (EMC) – Surface transfer impedance – Triaxial method*

IEC 62153-4-5, *Metallic communication cable test methods – Part 4-5: Electromagnetic compatibility (EMC) –Screening or coupling 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*

IEC 61156-7, *Multicore and symmetrical pair/quad cables for digital communications – Part 7: Symmetrical pair cables with transmission characteristics up to 1 200 MHz – Sectional specification for digital and analogue communication cables*

## 3 Terms and definitions

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

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

## 4 Installation consideration

### 4.1 General remarks

Installation considerations are defined in IEC 61156-1.

### 4.2 Bending radius of installed cable

The bending radius of the installed cable shall not be less than 4 times the outside diameter of the cable.

### 4.3 Climatic conditions

Under static conditions, the cables shall operate in the temperature range from –20 °C to +60 °C. The temperature dependence of the cables is specified for screened cables and should be taken into account for the design of actual cabling systems.

The recommended temperature range during installation should be indicated in the relevant detail specification.

When applications demand remote powering, the maximum temperature of the conductor shall not exceed the maximum operating temperature of the cable. Dielectric performance can be changed permanently due to over exposure of high temperatures.

## 5 Material and cable construction

### 5.1 General remarks

The choice of materials and cable construction shall be suitable for the intended application and installation of the cable. Particular care should be taken to meet any special requirements for fire performance (such as burning properties, smoke generation, evolution of halogen gas, etc.) and remote powering.

### 5.2 Cable construction

#### 5.2.1 General

The cable construction shall be in accordance with the materials, dimensions and assembly details given in the relevant detail specification.

#### 5.2.2 Conductor

The conductor shall be a solid or stranded annealed copper conductor, in accordance with IEC 61156-1, and should have a nominal diameter between 0,4 mm and 0,65 mm. The stranded conductor should have preferably seven strands. Higher conductor diameters may be used if compatible with the connecting hardware.