

# INTERNATIONAL STANDARD

Multicore and symmetrical pair/quad cables for digital communications –  
Part 3: Work area cable – Sectional specification  
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[IEC 61156-3:2008](#)

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Part 3: Work area cable – Sectional specification**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**MULTICORE AND SYMMETRICAL PAIR/QUAD CABLES  
FOR DIGITAL COMMUNICATIONS –****Part 3: Work area cable –  
Sectional specification**

## FOREWORD

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International Standard IEC 61156-6 has been prepared by subcommittee 46C: Wires and symmetric cables, of IEC technical committee 46: Cables, wires, waveguides, R.F. connectors, R.F. and microwave passive components and accessories.

This third edition cancels and replaces the second edition published in 2003. This edition constitutes a technical revision.

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

- a) new requirements for new cables Cat3, and Cat5 applications;
- b) a better numbering in order to take into account the generic specification.

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

FDIS	Report on voting
46C/864/FDIS	46C/869/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.

This standard shall be read in conjunction with IEC 61156-1:2002.

The list of all the parts of the IEC 61156 series, 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 maintenance result date indicated on the IEC web site 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- withdrawn;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.

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

## Part 3: Work area cable – Sectional specification

### 1 General

#### 1.1 Scope

This sectional specification relates to IEC 61156-1:2002. The cables are specifically intended for work area wiring as defined in ISO/IEC 11801.

This specification defines individually screened, common overall core screen and unscreened pairs or quads in cables for work area wiring. These cables are suitable for the various communication systems for which the reference is given in the relevant detail specification.

The cables covered by this sectional specification are intended to operate with voltages and currents normally adopted for communication systems. These cables should not be connected to low impedance sources, for example, the public mains electricity supply.

The recommended temperature range during installation is 0 °C to +50 °C. The actual temperature range during installation shall be indicated in the relevant detail specification. The normal operating temperature range shall be –40 °C to +60 °C.

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#### 1.2 Normative references [a8e2674b3057/iec-61156-3-2008](https://standards.iteh.ai/catalog/standards/sist/6a65e075-a99f-4383-8d46-a8e2674b3057/iec-61156-3-2008)

The following referenced documents are indispensable for the application 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 61156-1:2002<sup>1</sup>, *Multicore and symmetrical pair/quad cables for digital communications – Part 1: Generic specification*

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

IEC 60344, *Calculation of d.c. resistance of plain and coated copper conductors of low-frequency cables and wires - Application guide*

ISO/IEC 11801, *Information technology – Generic cabling for customer premises*

#### 1.3 Installation considerations

See 1.3 of IEC 61156-1:2002 and ISO/IEC 11801.

### 2 Definitions, materials and cable construction

#### 2.1 Definitions

See 2.1 of IEC 61156-1:2002.

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<sup>1</sup> A more recent version of this standard exists (2007), but as not all of the tests cited herein are addressed by the newer edition, it has been decided that the 2002 edition is to be used.



## 2.2 Materials and cable construction

### 2.2.1 General remarks

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

### 2.2.2 Cable construction

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

### 2.2.3 Conductor

The conductor shall consist of annealed copper.

The conductor may be solid or stranded. The solid conductor nominal diameter shall be between 0,3 mm and 0,6 mm. Preferably, the stranded conductor should consist of seven strands.

The conductor shall be plain or tinned copper. Joints in the complete element shall not be permitted.

### 2.2.4 Insulation

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The conductor shall be insulated with a suitable thermoplastic material. Examples of suitable materials are:

- polyolefin; <https://standards.iteh.ai/catalog/standards/sist/6a65e075-a99f-4383-8d46-a8e2674b3057/iec-61156-3-2008>
- PVC;
- fluoropolymer;
- low-smoke zero halogen thermoplastic material.

The insulation may be solid or cellular with or without a solid dielectric skin. The insulation shall be continuous and shall have a thickness such that the completed cable meets the specified requirements. The nominal thickness of insulation shall be compatible with the method of conductor connection.

### 2.2.5 Colour code of insulation

The colour code is not specified but shall be indicated in the relevant detail specification. The colours shall be readily identifiable and shall correspond reasonably with the standard colours shown in IEC 60304.

NOTE It is acceptable to mark or stripe the "a" wire with the colour of the "b" wire to facilitate pair identification.

### 2.2.6 Cable element

The cable element shall be a pair or quad adequately twisted to aid pair/quad identification.

### 2.2.7 Screening of the cable element

When required, a screen for the cable element may be provided. The screen shall be in accordance with 2.2.7 of IEC 61156-1:2002.