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PRE-STANDARD

Symmetrical pair/quad cables for digital communications with transmission characteristics up to 600 MHz –

Work area wiring –
Sectional specification

PUBLICLY AVAILABLE SPECIFICATION

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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SYMMETRICAL PAIR/QUAD CABLES FOR DIGITAL COMMUNICATIONS WITH TRANSMISSION CHARACTERISTICS UP TO 600 MHZ –

WORK AREA WIRING – SECTIONAL SPECIFICATION

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IEC-PAS 61156-6 has been processed by subcommittee 46C, Wires and symmetric cables, of IEC technical committee 46: Cables, wires, waveguides, r.f. connectors and accessories for communication and signalling.

The text of this PAS is based on the following document:

This PAS was approved for publication by the P-members of the committee concerned as indicated in the following document:

Draft PAS	Report on voting
46C/466/PAS	46C/475/RVD

Full information on the voting for the approval of this PAS Pre-Standard can be found in the report on voting indicated in the above table.

SYMMETRICAL PAIR/QUAD CABLES FOR DIGITAL COMMUNICATIONS WITH TRANSMISSION CHARACTERISTICS UP TO 600 MHz –

WORK AREA WIRING – SECTIONAL SPECIFICATION

1 Scope

This sectional specification relates to IEC 61156-1: Multicore and symmetrical pair/quad cables for digital communications - Part 1: Generic specification. The cables described herein are specifically intended to construct patch, equipment, and work area cords for class D, E and F channels, as defined in ISO/IEC 11801 (2001): Information technologies - Generic cabling for customer premises cabling (see Table 1).

This sectional specification covers individually screened (STP), common screened (FTP) and unscreened (UTP) pairs or quads having a pair count of four pairs or less. The transmission characteristics of the cables are specified at 20 °C. See Annex A of IEC 61156-5 for a discussion of cable performance at temperatures higher than 20 °C.

The designation "Category 5e" is used herein to describe an enhanced Category 5 cable and is used in the same context as "Category 5" in ISO/IEC 11801 (2001). This enhanced cable is designated Category 5e to differentiate it from the Category 5 cables described in IEC 61156-2, -3, and -4. Although both Category 5 and 5e cables are characterized to 100 MHz and can in used for Class D channels, Category 5e has additional requirements, as compared to Category 5, which make it preferred for use in systems utilizing four pairs transmitting simultaneously in both directions.

Table 1

Cable Designation	Maximum Reference Frequency [MHz]	Channel Designation
Category 5e	100[1.)]	D
Category 6	250	E
Category 7	600	F
NOTE 1 Some characteristics are measured up to 125 MHz, in order to comply with IEEE's request to specify the electrical performances up to a frequency 25 % higher than the referenced frequency.		

These cables are intended for various new communication systems that are under development and which use as many as 4 pairs simultaneously. In this sense, this specification provides the cable characteristics required by system developers to evaluate new systems.

Under static conditions, the cables shall operate in the temperature range from -40 °C to +60 °C. The temperature dependence of the cables is specified for screened and unscreened cables, and should be taken into account for the design of an actual cabling system. Patch cables are susceptible to moisture pick-up. This in turn impacts also on the attenuation. Therefore the maximum increase in attenuation due to long term exposure to humidity is specified.

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

1.2 Reference documents

IEC 60189-1:1986, *Low-frequency cables and wires with PVC insulation and PVC sheath. Part 1: General test and measuring methods*

IEC 60304:1982, *Standard colours for insulation for low-frequency cables and wires*

IEC 61156-1:2000, *Multicore and symmetrical pair/quad cables for digital communications - Part 1: Generic specification*

IEC 61158-5:2000, *Digital data communications for measurement and control - Fieldbus for use in industrial control systems - Part 5: Application Layer Service definition*

ISO/IEC 11801:2001, *Information technology - Generic cabling for customer premises*