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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 18015.31-2025

Replacing GB/T 18015.31-2007

**Multicore and symmetrical pair/quad cables for digital
communications - Part 31: Work area wiring - Blank detail
specification**

数字通信用对绞或星绞多芯对称电缆 第31部分：工作区布线电缆 空白详细规范
(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 31 of GB/T 18015 "Twisted or Star-Twisted Multi-Core Symmetrical Cables for Digital Communication". GB/T 18015 has been issued.

The following parts were laid out.

- Part 1: General Specifications;
- Part 11: General Specifications for Competency Accreditation;
- Part 2: Horizontal Cabling Cables with Twisted Pair or Star-Shaped Symmetrical Cables and Transmission Characteristics of 100MHz and Below specification;
- Part 21: Detailed Specifications for Blanking Cables in Horizontal Cabling Layers;
- Part 22: Horizontal Cabling Cable Capability Approval Specification;
- Part 3: Work Area Cabling Cable Specifications;
- Part 31: Detailed Specifications for Blank Cabling in Work Areas;
- Part 32: Work Area Cabling Capability Approval Specification;
- Part 4: Specifications for Vertical Cabling Cables;
- Part 41: Detailed Specifications for Vertical Cabling Cable Blanks;
- Part 42: Vertical Cabling Cable Capability Accreditation Specification;
- Part 5: Horizontal Cabling Cables with Twisted Pair or Star-Shaped Symmetrical Cables

and Transmission Characteristics of 1000MHz and Below specification;

---Part 6: Work Area Cabling Cables for Twisted Pair or Star-Twisted Symmetrical Cables with Transmission Characteristics of 1000MHz and Below specification;

---Part 7: Twisted-pair or star-twisted symmetrical cables for digital and analog communication with transmission characteristics of 1200MHz and below specification;

---Part 8: Work Area Cabling Cables for Twisted Pair or Star-Shaped Symmetrical Cables with Transmission Characteristics of 1200MHz and Below specification.

This document replaces GB/T 18015.31-2007 "Digital Communication - Twisted Pair or Star-Twisted Multi-Core Symmetrical Cables - Part 31: Working Area Layout" the "Detailed Specification for Blank Cables and Wires" differs from GB/T 18015.31-2007 in that, aside from structural adjustments and editorial changes, the main technical changes are as follows.

as follows.

- a) Added terms and definitions (see Chapter 3);
- b) The requirements for Category 4 cables have been removed (see Chapter 3 of the 2007 edition);
- c) The detailed specification development guidelines have been revised (see Chapter 4, Chapter 3 of the 2007 edition);
- d) The requirement for unbalanced resistance between wire pairs has been increased (see Table 1);
- e) The dielectric strength requirements have been changed (see Table 1, Chapter 4, 2007 edition);
- f) The requirements for capacitor imbalance have been changed (see Table 1, Chapter 4, 2007 edition);
- g) The transfer impedance requirements have been changed (see Table 1, Chapter 3, 2007 edition);
- h) The attenuation requirements have been changed (see Table 1, Chapter 4, 2007 edition);
- i) The requirements for unbalanced decay have been changed (see Table 1, Chapter 4, 2007 edition);
- j) The requirements for near-end crosstalk have been changed (see Table 1, Chapter 4, 2007 edition);
- k) Remote crosstalk has been removed (see Chapter 4 of the 2007 edition);
- l) The characteristic impedance requirements have been changed (see Table 1, Chapter 4,

2007 edition);

m) Increased return loss (see Table 1);

n) Increased size requirements (see Table 1);

o) An insulation thermal aging winding test was added (see Table 1);

p) A high-temperature pressure test for the sheath has been added (see Table 1);

q) Thermal shock testing has been added (see Table 1);

r) Increased flame spread resistance of bundled cables (see Table 1);

s) A combined combustion and smoke test of the cable under ventilated space conditions was added (see Table 1).

This document is modified to adopt IEC 61156-3-1:2009 "Twisted or star-twisted multi-core symmetrical cables for digital communication - Part 3-1.Working area".

Detailed specifications for blank cabling and cable.

This document has undergone significant structural adjustments compared to IEC 61156-3-1:2009.A comparison of the structural numbering changes between the two documents is provided below.

See Appendix A for the table of contents.

The technical differences between this document and IEC 61156-3-1:2009, and the reasons therefor, are as follows.

---The normative reference GB/T 18015.3-2025 has replaced IEC 61156-3, GB/T 18015.3-202X and...

The conformity level of IEC 61156-3:2008 has been modified to adapt to my country's technical conditions;

--- Replace the normative reference IEC 61156-1:2002 with IEC 61156-1:2023 to conform to the latest IEC standard (see Table 1).

---Added terms and definitions (see Chapter 3) to conform to the requirements of the existing standards system;

---The requirement for "shielding/shielding" in dielectric strength has been removed (see Chapter 4 of IEC 61156-3-1:2009), consistent with GB/T 18015.3.

The requirements remain consistent;

---The requirements for capacitor imbalance have been revised (see Table 1) to align with those of GB/T 18015.3;

---The requirements for transfer impedance have been changed (see Table 1) to be

consistent with the requirements of GB/T 18015.3;

---Structural return loss (see Chapter 4 of IEC 61156-3-1:2009) has been removed to align with the requirements of GB/T 18015.3;

---The requirements for return loss have been increased (see Table 1), consistent with the requirements of GB/T 18015.3.

The following editorial changes have been made to this document.

---The term "component chromatography" in Table 1 has been changed to "insulation chromatography," correcting an error in the original text of IEC 61156-3-1:2009;

---Added Appendix A (information) "Structure Number Comparison Table".

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Electrical Equipment Industry Association.

This document is under the jurisdiction of the National Technical Committee on Standardization of Wires and Cables (SAC/TC213).

Introduction

Digital communication multi-core symmetrical cables, whether twisted-pair or star-struck, are widely used in information technology, building cabling, security monitoring, industrial control, and machinery.

Applications include people, vehicle-mounted internet, aircraft, ships, data centers, and rail transportation. In addition to transmitting digital information, these cables can also provide low-voltage power supply.

Electrical function. GB/T 18015 "Twisted-pair or star-struck multi-core symmetrical cables for digital communication" aims to establish the production of symmetrical cables with twisted-pair or star-struck structures.

The basic standard documents for this type of cable product provide a basis for its design, production, acceptance, testing, and certification, and are proposed to consist of twenty-four parts.

constitute.

---Part 1: General Specification. This section aims to specify the general requirements for this type of cable.

---Part 11: General Specifications for Capability Accreditation. The purpose is to establish a general framework and format for accreditation of this type of cable capability.

---Part 12: Electrical transmission characteristics and test methods for