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Information technology - Generic cabling systems - Part 10: Single pair cabling

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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English Version

**Information technology - Generic cabling systems - Part 10:
Single pair cabling**

Technologies de l'information - Systèmes de câblage
générique - Partie 10: Câblage mono-paire

Informationstechnik - Anwendungsneutrale
Kommunikationskabelanlagen - Teil 10: Einpaarige
Verkabelung

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EN 50173-10:2025 (E)**European foreword**

This document (EN 50173-10:2025) has been prepared by CLC/TC 215 "Electrotechnical aspects of telecommunication equipment".

The following dates are fixed:

- latest date by which this document has to be (dop) 2026-06-30
implemented at national level by publication of
an identical national standard or by
endorsement
- latest date by which the national standards (dow) 2028-06-30
conflicting with this document have to be
withdrawn

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Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Introduction

This document contains general requirements for generic 1-pair balanced cabling and supports the generic cabling approach of EN 50173-1.

It contains a compilation of balanced single pair channel requirements for 100 m reach and beyond together with the supporting cable and connecting hardware requirements based on:

- IEC 61156 series (ffs);
- EN IEC 63171 series.

For the mentioned balanced single pair channels remote power supply services are specified.

Balanced single pair channels and links specified in this document are not a replacement for the generic 4-pair channels in EN 50173-1. They are an additional media type intended for use in industrial automation networks (e.g. for sensors, actuators and controllers) and “intelligent buildings”.

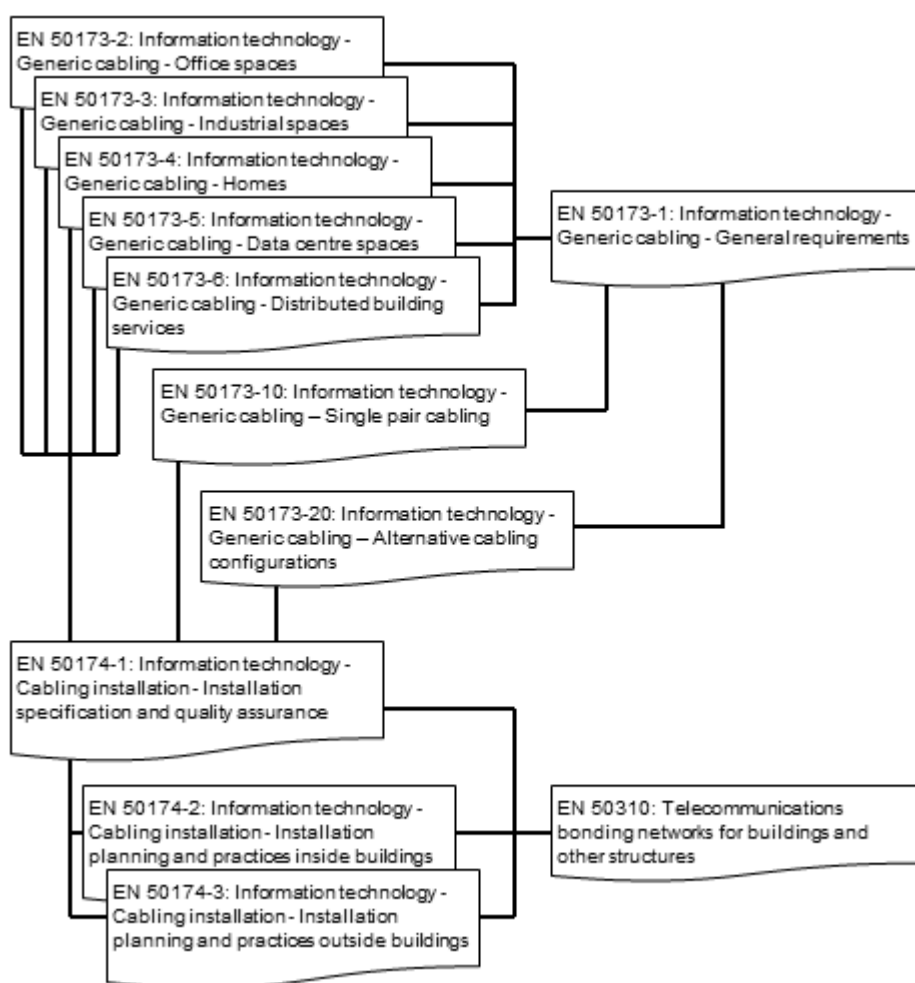


Figure 1 — Schematic relationship between the EN 50173 series and other relevant standards

EN 50173-10:2025 (E)**1 Scope**

This document specifies 1-pair cabling and can be used in conjunction with all the space-specific standards of the EN 50173 series but especially EN 50173-3 and EN 50173-6.

NOTE 1-pair cabling for EN 50173-2, EN 50173-4 and EN 50173-5 is for further study.

It delivers 1-pair cabling specifications to extend generic cabling systems according to the EN 50173 series.

This document specifies the:

- structure and minimum configuration for extension of generic cabling by 1-pair cabling;
- interfaces at the service outlet (SO/TO);
- performance requirements for cabling links and channels;
- implementation requirements and options;
- performance requirements for cabling components;
- conformance requirements and verification procedures.

This document takes into account the requirements specified in application standards listed in Annex C.

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.

EN 50173-1:2018, *Information technology - Generic cabling systems - Part 1: General requirements*

EN 50173-3, *Information technology - Generic cabling systems - Part 3: Industrial spaces*

EN 50173-6, *Information technology - Generic cabling systems - Part 6: Distributed building services*

EN 50174-1, *Information technology - Cabling installation - Part 1: Installation specification and quality assurance*

EN 50174-2, *Information technology - Cabling installation - Part 2: Installation planning and practices inside buildings*

EN 50288 (all parts), *Multi-element metallic cables used in analogue and digital communication and control*

EN 60512-4-1, *Connectors for electronic equipment - Tests and measurements - Part 4-1: Voltage stress tests - Test 4a: Voltage proof (IEC 60512-4-1)*

EN 60512-4-2, *Connectors for electronic equipment - Tests and measurements - Part 4-2: Voltage stress tests - Test 4b: Partial discharge (IEC 60512-4-2)*

EN 60512-6-2, *Connectors for electronic equipment - Tests and measurements - Part 6-2: Dynamic stress tests - Test 6b: Bump (IEC 60512-6-2)*

EN 60512-6-3, *Connectors for electronic equipment - Tests and measurements - Part 6-3: Dynamic stress tests - Test 6c: Shock (IEC 60512-6-3)*

EN 60512-6-4, *Connectors for electronic equipment - Tests and measurements - Part 6-4: Dynamic stress tests - Test 6d: Vibration (sinusoidal) (IEC 60512-6-4)*

EN 60512-11-4, *Connectors for electronic equipment - Tests and measurements - Part 11-4: Climatic tests - Test 11d: Rapid change of temperature (IEC 60512-11-4)*

EN 60512-11-7, *Connectors for electronic equipment - Tests and measurements - Part 11- 7: Climatic tests - Test 11g: Flowing mixed gas corrosion test (IEC 60512-11-7)*

EN 60512-11-9, *Connectors for electronic equipment - Tests and measurements - Part 11-9: Climatic tests - Test 11i: Dry heat (IEC 60512-11-9)*

EN 60512-11-10, *Connectors for electronic equipment - Tests and measurements - Part 11-10: Climatic tests - Test 11j: Cold (IEC 60512-11-10)*

EN 60512-11-12, *Connectors for electronic equipment - Tests and measurements - Part 11-12: Climatic tests - Test 11m: Damp heat, cyclic (IEC 60512-11-12)*

EN 60512-16-4, *Connectors for electronic equipment - Tests and measurements - Part 16-4: Mechanical tests on contacts and terminations - Test 16d: Tensile strength (crimped connections) (IEC 60512-16-4)*

EN 60512-17-2, *Connectors for electronic equipment - Tests and measurements - Part 17-2: Cable clamping tests - Test 17b: Cable clamp resistance to cable rotation (IEC 60512-17-12)*

EN 60512-17-4, *Connectors for electronic equipment - Tests and measurements - Part 17-4: Cable clamping tests - Test 17d: Cable clamp resistance to cable torsion (IEC 60512-17-4)*

EN 60512-19-3, *Electromechanical components for electronic equipment - Basic testing procedures and measuring methods - Part 19: Chemical resistance tests - Section 3: Test 19c - Fluid resistance (IEC 60512-19-3)*

EN IEC 60512-23-3, *Connectors for electrical and electronic equipment - Tests and measurements - Part 23-3: Screening and filtering tests - Test 23c: Shielding effectiveness of connectors and accessories - Line injection method (IEC 60512-23-3)*

EN 60529, *Degrees of protection provided by enclosures (IP Code) (IEC 60529)*

EN 61935-2, *Specification for the testing of balanced and coaxial information technology cabling - Part 2: Cords as specified in ISO/IEC 11801 and related standards (IEC 61935-2)*

EN IEC 61935-4¹, *Specification for the testing of balanced and coaxial information technology cabling - Part 4: Installed balanced single-pair cabling as specified in ISO/IEC 11801-1 and related standards (IEC 61935-4)*

EN 62012-1, *Multicore and symmetrical pair/quad cables for digital communications to be used in harsh environments - Part 1: Generic specification (IEC 62012-1)*

EN IEC 63171:2025, *Connectors for electrical and electronic equipment - Shielded or unshielded free and fixed connectors for balanced single-pair data transmission with current-carrying capacity - General requirements and tests (IEC 63171:2025)*

EN IEC 63171-1, *Connectors for electrical and electronic equipment - Part 1: Detail specification for two-way, shielded or unshielded, free and fixed connectors - Mechanical mating information, pin assignment and additional requirements for Type 1 copper LC style (IEC 63171-1)*

IEC 63171-6, *Connectors for electrical and electronic equipment - Part 6: Detail specification for 2-way and 4-way (data/power), shielded, free and fixed connectors for power and data transmission with frequencies up to 600 MHz*

¹ Under preparation. Stage at the time of publication: prEN IEC 61935-4:2023.

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IEC 61156-11, *Multicore and symmetrical pair/quad cables for digital communications – Part 11: Symmetrical single pair cables with transmission characteristics up to 1,25 GHz – Horizontal floor wiring – Sectional specification*

IEC 61156-12, *Multicore and symmetrical pair/quad cables for digital communications - Part 12: Symmetrical single pair cables with transmission characteristics up to 600 MHz - Work area wiring - Sectional specification*

IEC 61156-13, *Multicore and symmetrical pair/quad cables for digital communications – Part 13: Symmetrical single pair cables with transmission characteristics up to 20 MHz - Horizontal floor wiring - Sectional specification*

IEC 61156-14², *Multicore and symmetrical pair/quad cables for digital communications – Part 14: (work area cables related to Part 13: Cables for 10 Mb/s over one pair – Sectional specification)*

IEC 61935-1, *Specification for the testing of balanced and coaxial information technology cabling - Part 1: Installed balanced cabling as specified in ISO/IEC 11801-1 and related standards*

IEC 61935-2-X (all parts), *Testing of balanced communication cabling in accordance with ISO/IEC 11801*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN

² Under preparation. Stage at the time of publication: IEC/CDV 61156-14:2025.