SLOVENSKI STANDARD

SIST EN 61935-1:2004

april 2004

Generic cabling systems - Specification for the testing of balanced communication cabling in accordance with ISO/IEC 11801 - Part 1: Installed cabling (IEC 61935-1:2000)

ICS 33.120.10

Referenčna številka
SIST EN 61935-1:2004(en)

EUROPEAN STANDARD **EN 61935-1**

NORME EUROPÉENNE

EUROPÄISCHE NORM December 2000

ICS 33.120.10

English version

Generic cabling systems - Specification for the testing of balanced communication cabling in accordance with ISO/IEC 11801 Part 1: Installed cabling

(IEC 61935-1:2000)

Systèmes de câblage générique - Spécification pour les essais de câblage de télécommunications équilibrées selon l'ISO/CEI 11801 Partie 1: Câblages installés (CEI 61935-1:2000)

Anwendungsneutrale Kommunikationskabelanlagen - Spezifikation für die Prüfung der symmetrischen Kommunikations-verkabelung nach ISO/IEC 11801 Teil 1: Installierte Verkabelung (IEC 61935-1:2000)

This European Standard was approved by CENELEC on 2000-11-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Ref. No. EN 61935-1:2000 E

Foreword

The text of document 46A/370/FDIS, future edition 1 of IEC 61935-1, prepared by SC 46A, Coaxial cables, of IEC TC 46, Cables, wires, waveguides, r.f. connectors, and accessories for communication and signalling, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61935-1 on 2000-11-01.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2001-08-01

– latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2003-11-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annex ZA is normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61935-1:2000 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60169-16	1982	Radio-frequency connectors Part 16: R.F. coaxial connectors with inner diameter of outer conductor 7 mm (0,276 in) with screw coupling - Characteristic impedance 50 ohms (75 ohms) (Type N)	-	-
IEC 60169-22	1985	Part 22: R.F. two-pole bayonet coupled connectors for use with shielded balanced cables having twin inner conductors (Type BNO)	-	-
IEC 60603-7	1996	Connectors for frequencies below 3 MHz for use with printed boards Part 7: Detail specification for connectors, 8-way, including fixed and free connectors with common mating features, with assessed quality	EN 60603-7	1997
IEC 60807-8	1992	Rectangular connectors for frequencies below 3 MHz Part 8: Detail specification for connectors, four-signal contacts and earthing contacts for cable screen	-	-
IEC 61156-1	1994	Generic specification for multicore and symmetrical pair/quad cables for digital communications	-	-
IEC 61156-2	1995	Part 2: Horizontal floor wiring - Sectional specification	-	-
IEC 61156-3	1995	Part 3: Work area wiring - Sectional specification	-	-
IEC 61156-4	1995	Part 4: Riser cables - Sectional specification	-	-
ISO/IEC 11801	1995	Information technology - Generic cabling for customer premises	-	-

Publication	Year	Title	EN/HD	Year
ITU-T Recommendation G.117	1996	Series G - Transmission systems and media, digital systems and networks - International telephone connections and circuits - General Recommendations on the transmission quality for an entire international telephone connection - G.117: Transmission aspects of unbalance about earth	-	-
ITU-T Recommendation O.9	1988	Series O - Specifications of measuring equipment - General - O.9: Measuring arrangements to assess the degree of unbalance about earth	-	-

NORME INTERNATIONALE
INTERNATIONAL STANDARD

CEI
IEC
61935-1

Première édition
First edition
2000-07

Systèmes de câblage générique – Spécification pour les essais de câblage de télécommunications équilibrées selon l'ISO/CEI 11801 –

Partie 1: Câblages installés

Generic cabling systems – Specification for the testing of balanced communication cabling in accordance with ISO/IEC 11801 –

Part 1: Installed cabling

International Electrotechnical Commission 3, rue de Varembé Geneva, Switzerland
Telefax: +41 22 919 0300 e-mail: inmail@iec.ch IEC web site http://www.iec.ch

IEC

Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE XB

Pour prix, voir catalogue en vigueur
For price, see current catalogue

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

GENERIC CABLING SYSTEMS – SPECIFICATION FOR THE TESTING OF BALANCED COMMUNICATION CABLING IN ACCORDANCE WITH ISO/IEC 11801 –

Part 1: Installed cabling

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.

3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.

4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.

6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61935-1 has been prepared by subcommittee 46A: Coaxial cables, of IEC technical committee 46: Cables, wires, waveguides, r.f. connectors, and accessories for communication and signalling.

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

FDIS	Report on voting
46A/370/FDIS	46A/375/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 3.

The committee has decided that this publication is planned to have additional parts, such as: Part 2: Patch cords and work area cabling.

The committee has decided that the contents of this publication will remain unchanged until 2006. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

INTRODUCTION

Telecommunication cabling, once specified uniquely by each telecommunications application, has evolved into a generic cabling system. Telecommunications applications now use the ISO/IEC 11801 cabling standard to meet their cabling requirements. Formerly, connectivity tests and visual inspection were deemed sufficient to verify a cabling installation. Now, users need more comprehensive testing in order to ensure that the link will support telecommunications applications that are designed to operate on the generic cabling system. This part of IEC 61935 addresses reference laboratory and field test methods, and provides a comparison of these methods.

Transmission performance depends on cable characteristics, connecting hardware, patch cords and cross-connect cabling, on the total number of connections and the care with which they are installed and maintained. This standard provides test methods for installed cabling and pre-fabricated cable assemblies. These test methods, where appropriate, are based on those used for components of the cable assembly.

This part 1 contains the test methods required for installed cabling. Part 2 contains the test methods required for patch cords and work area cables.

This standard is organized as follows:

– reference laboratory measurement procedures are specified in clause 4. In some cases, these procedures may be used in the field;
– descriptions and requirements for measurements in the field are specified in clause 5;
– performance requirements for field testers and procedures to verify performance are specified in clause 6.

NOTE 1 This standard does not include tests that are normally performed on the cables and connectors separately. These tests are described in IEC 61156-1 and IEC 60603-7 respectively.

NOTE 2 Wherever possible, cables and connectors used in cable assemblies, even if they are not described in the series IEC 61156 or in IEC 60603-7 are tested separately according to the tests given in the relevant generic specification. In this case, most of the environmental and mechanical tests described in this standard may be omitted.

NOTE 3 Users of this standard are advised to consult with applications standards, equipment manufacturers and system integrators to determine the suitability of these requirements for specific networking applications.

GENERIC CABLING SYSTEMS – SPECIFICATION FOR THE TESTING OF BALANCED COMMUNICATION CABLING IN ACCORDANCE WITH ISO/IEC 11801 –

Part 1: Installed cabling

1 Scope

This part of IEC 61935 specifies reference measurement procedures for cabling parameters and the requirements for field tester accuracy to measure cabling parameters identified in ISO/IEC 11801. References in this standard to ISO/IEC 11801 mean ISO/IEC 11801 or equivalent cabling standards.

This standard applies when the cable assemblies are constructed of cables complying with IEC 61156-1, IEC 61156-2, IEC 61156-3 or IEC 61156-4, and of connecting hardware as specified in IEC 60603-7 or IEC 60807-8. In the case where cables and/or connectors do not comply with these standards, then additional tests may be required.

This standard relates to performance with respect to 100 Ω, 120 Ω or 150 Ω cabling.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61935. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 61935 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60169-16, *Radio-frequency connectors – Part 16: R.F. coaxial connectors with inner diameter of outer conductor 7 mm (0,276 in) with screw coupling – Characteristic impedance 50 ohms (75 ohms) (type N)*

IEC 60169-22, *Radio-frequency connectors – Part 22: RF two-pole bayonet coupled connectors for use with shielded balanced cables having twin inner conductors (type BNO)*

IEC 60603-7:1996, *Connectors for frequencies below 3 MHz for use with printed boards – Part 7: Detail specification for connectors, 8-way, including fixed and free connectors with common mating features, with assessed quality*

IEC 60807-8:1992, *Rectangular connectors for frequencies below 3 MHz – Part 8: Detail specification for connectors, four-signal contacts and earthing contacts for cable screen*

IEC 61156-1:1994, *Multicore and symmetrical pair/quad cables for digital communications – Part 1: Generic specification*