SLOVENSKI STANDARD
SIST HD 546.3 S1:1997

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Telecontrol equipment and systems - Part 3: Interfaces (electrical characteristics) (IEC 870-3:1989)

Telecontrol equipment and systems -- Part 3: Interfaces (electrical characteristics)

Fernwirkeinrichtungen und Fernwirksysteme -- Teil 3: Schnittstellen (elektrische Merkmale)

Matériels et systèmes de téléconduite -- Partie 3: Interfaces (caractéristiques électriques)

Ta slovenski standard je istoveten z: HD 546.3 S1:1991

ICS:

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SIST HD 546.3 S1:1997 **en**

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ENGLISH VERSION

TELECONTROL EQUIPMENT AND SYSTEMS PART 3: INTERFACES (ELECTRICAL CHARACTERISTICS) (IEC 870-3:1989)

Matériels et systèmes de téléconduite
Troisième partie: Interfaces (caractéristiques électriques)
(IEC 870-3:1989)

Fernwirkeinrichtungen und Fernwirksysteme
Teil 3: Schnittstellen (elektrische Merkmale)
(IEC 870-3:1989)

This Harmonization Document was approved by CENELEC on 1991-02-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document on a national level.

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

This Harmonization Document exists in three official versions (English, French, German).

CENELEC members are the national electrotechnical committees of Austria, Belgium, 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

FOREWORD

The CENELEC questionnaire procedure, performed for finding out whether or not the International Standard IEC 870-3:1989 could be accepted without textual changes, has shown that no CENELEC common modifications were necessary for the acceptance as Harmonization Document.
The reference document was submitted to the CENELEC members for formal vote and was approved by CENELEC as HD 546.3 S1 on 1 February 1991.

The following dates were fixed:

- latest date of announcement of the HD at national level	(doa)	1991-09-01
- latest date of publication of a harmonized national standard	(dop)	1992-03-01
- latest date of withdrawal of conflicting national standards	(dow)	1992-03-01

For products which have complied with the relevant national standard before 1992-03-02, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1997-03-01.

Annexes designated "normative" are part of the body of the standard.
In this standard, annex ZA is normative.

ENDORSEMENT NOTICE

The text of the International Standard IEC 870-3:1989 was approved by CENELEC as a Harmonization Document without any modification.

ANNEX ZA (normative)

OTHER INTERNATIONAL PUBLICATIONS QUOTED IN THIS STANDARD WITH THE REFERENCES OF THE RELEVANT EUROPEAN PUBLICATIONS

IEC Publication	Date	Title	EN/HD	Date
50(371)	1984	International Electrotechnical Vocabulary (IEV) - Chapter 371: Telecontrol	-	-
255-4	1976	Electrical relays - Part 4: Single input energizing quantity measuring relays with dependent specified time	-	-
495	1974	Recommended values for characteristic input and output quantities of single sideband power line carrier terminals	-	-
625	-	An interface system for programmable measuring instruments (byte serial, bit parallel)	HD 414	-
870-4	1990	Telecontrol equipment and systems Part 4: Performance requirements	-	-

NORME INTERNATIONALE INTERNATIONAL STANDARD

CEI IEC 870-3

Première édition
First edition
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Matériels et systèmes de téléconduite

Troisième partie:
Interfaces (caractéristiques électriques)

Telecontrol equipment and systems

Part 3:
Interfaces (electrical characteristics)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TELECONTROL EQUIPMENT AND SYSTEMS

Part 3: Interfaces (electrical characteristics)

FOREWORD

1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.

2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.

3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

PREFACE

This standard has been prepared by IEC Technical Committee No. 57: Telecontrol, teleprotection and associated telecommunications for electric power systems.

The text of this publication is based upon the following documents:

Six Months' Rule	Report on Voting	Two Months' Procedure	Report on Voting
57(CO)33	57(CO)39	57(CO)42	57(CO)47

Full information on the voting for the approval of this standard can be found in the Voting Reports indicated in the above table.

The following IEC publications are quoted in this standard:

Publications Nos. 50(371) (1984): International Electrotechnical Vocabulary (IEV), Chapter 371: Telecontrol.

255-4 (1976): Electrical relays, Part 4: Single input energizing quantity measuring relays with dependent specified time.

495 (1974): Recommended values for characteristic input and output quantities of single sideband power line carrier terminals.

625: An interface system for programmable measuring instruments (byte serial, bit parallel).

870-4: Telecontrol equipment and systems, Part 4: Performance requirements. (In preparation.)

TELECONTROL EQUIPMENT AND SYSTEMS

Part 3: Interfaces (electrical characteristics)

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1 Scope

This series of standards applies to telecontrol equipment and systems with coded bit serial data transmission for monitoring and controlling geographically widespread processes.

2 Object

This part defines electrical interface characteristics (e.g. signals, impedances, etc.) which have to be met at the shared boundaries (see figure 1) between:

- telecontrol equipment and external equipment connected to:
  - process equipment (e.g. sensors, actuators);
  - operator's equipment;
- telecontrol equipment and transmission line (channel) where "data circuit terminating equipment" (i.e. DCE-MODEM) is packaged as an integral part of the telecontrol equipment, or telecontrol equipment and "data circuit terminating equipment" where the latter is not packaged as an integral part of the telecontrol equipment;
- different parts of the equipment within the telecontrol system and other data processing equipment.

The interfaces shall be defined independently from the functional layout of the system or its subsystems.

Information in this part refers only to operating conditions.

The following subjects are outside the object of this part:

- interface between external power source and the telecontrol equipment;
- logical interfaces and interface protocols;
- interface testing conditions and procedures.

3 Types of information

Two basic types of information are presented to the interfaces: digital and analog. Both types are conveyed over the interfaces by means of signals which are in parallel, serial or stand alone form.

Examples of the relationship between these signals and types of information are given in table 1.

Each of these signals can be used as either an input or an output. An input is a signal representing information generated outside the specific equipment involving the interface being considered. Otherwise, it is an output.

3.1 *Digital information*

Digital information is used for characterizing states which vary in discrete modes. The information may pass the interface in parallel or serial form.

3.1.1 *Types of digital information* (examples)

3.1.1.1 *Single-point information*

A single-point information (see IEV 371-02-07*) emanates from a one bit binary information source, for example from an alarm contact with two determined states. This information is presented to the interface by a stand alone binary signal.

3.1.1.2 *Double-point information*

Two bit information sources such as circuit breakers or isolator contacts represent double-point information (see IEV 371-02-08). They are presented to the interface by a pair of binary signals.

Two states, represented by the bit pairs 01 and 10 characterize two determined states (OFF/ON and ON/OFF), while the bit pairs 00 and 11 characterize two indeterminate states (OFF/OFF and ON/ON) which indicate either an intermediate state (see IEV 371-02-09), a faulty state (see IEV 371-02-10) or a failure in the circuitry.

3.1.1.3 *Multipoint information - coded information*

Digital information sources which require coded information (e.g. transformer tap positions, meter readings and set point commands).

The information can be transferred by associated signals in parallel or serial form.

3.1.2 *Representation of digital information*

Digital information is represented by individual binary signals with two distinct exclusive levels.

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* International Electrotechnical Vocabulary (IEV)[IEC 50(371)].