SLOVENSKI STANDARD
SIST EN 61310-1:1999

01-julij-1999

Safety of machinery - Indication, marking and actuation -- Part 1: Requirements for visual, auditory and tactile signals (IEC 61310-1:1995 (corrigendum Jul. 1995))

Safety of machinery - Indication, marking and actuation -- Part 1: Requirements for visual, auditory and tactile signals

Sicherheit von Maschinen - Anzeigen, Kennzeichen und Bedienen -- Teil 1: Anforderungen an sichtbare, hörbare und tastbare Signale

Sécurité des machines - Indication, marquage et manoeuvre -- Partie 1: Spécifications pour les signaux visuels, auditifs et tactiles

Ta slovenski standard je istoveten z: **EN 61310-1:1995**

ICS:

01.080.20	Grafični simboli za posebno opremo	Graphical symbols for use on specific equipment
13.110	Varnost strojev	Safety of machinery

SIST EN 61310-1:1999 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61310-1

March 1995

ICS 21.180

Descriptors: Electrical equipment, machines, information related to safety, visual signal, auditory signal, tactile signal, graphic symbol, safety signs

English version

Safety of machinery
Indication, marking and actuation
Part 1: Requirements for visual, auditory and tactile signals
(IEC 1310-1:1995)

Sécurité des machines
Indication, marquage et manoeuvre
Partie 1: Spécifications pour les signaux visuels, auditifs et tactiles
(CEI 1310-1:1995)

Sicherheit von Maschinen
Anzeigen, Kennzeichen und Bedienen
Teil 1: Anforderungen an sichtbare, hörbare und tastbare Signale
(IEC 1310-1:1995)

This European Standard was approved by CENELEC on 1994-10-04. 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, 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 61310-1:1995 E

Foreword

The text of this European Standard was prepared (as prEN 50099-1) by the Technical Committee CENELEC TC 44X, Safety of machinery: electrotechnical aspects, with the collaboration of the Technical Committee CEN TC 114, Safety of machinery, and adopted under a "fast-track procedure" by IEC Technical Committee 44. It was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61310-1 on 1994-10-04.

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) 1996-01-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1996-01-01

This standard has the status of a horizontal standard (type B standard in CEN as defined in subclause 3.2 of EN 414:1992) and may be used, e.g. as a reference standard, by technical committees in CEN and CENELEC preparing product family or dedicated product standards (type C standards in CEN as defined in subclause 3.1 of EN 414:1992) for machines. The requirements of this standard can also be applied by suppliers for machines for which no product family or dedicated product standard exists. Where a product family or dedicated product standard exists, its requirements take precedence.

Machinery designed and constructed in accordance with the safety requirements of this European Standard will be presumed to conform to the corresponding essential safety requirements (ESRs) of the Machinery Directive 89/392/EEC and associated EFTA Regulations. The extent to which the ESRs are covered is indicated in the Scope of this standard.

This European Standard also fulfils the requirements of the Low Voltage Directive 73/23/EEC.

For products which have complied with the relevant national standard before 1996-01-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2001-01-01.

EN 61310 consists of the following parts, under the general title "Safety of machinery - Indication, marking and actuation":

Part 1: Requirements for visual, auditory and tactile signals
Part 2: Requirements for marking
Part 3: Requirements for the location and operation of actuators

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

Endorsement notice

The text of the International Standard IEC 1310-1:1995 was approved by CENELEC as a European Standard without any modification.

ANNEX ZA (normative)

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

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

IEC Publication	Date	Title	EN/HD	Date
50(441)	1984	International Electrotechnical Vocabulary (IEV) - Chapter 441: Switchgear, controlgear and fuses	-	-
50(845)	1987	Chapter 845: Lighting		
73	1991	Coding of indicating devices and actuators by colours and supplementary means	EN 60073	1993
204-1 (mod)	1992	Electrical equipment of industrial machines - Part 1: General requirements	EN 60204-1* + corr. December	1992 1993
416	1988	General principles for the creation of graphical symbols for use on equipment	HD 571 S1	1990
417	1973	Graphical symbols for use on equipment Index, survey and compilation of the single sheets	HD 243 S12*	1995

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* EN 60204-1: Although the title of IEC 204-1 indicates that its use is restricted to industrial machines the scope of EN 60204-1 has been broadened to include those machines covered by the EC Directives relating to the safety of machinery. This change is reflected in the title of EN 60204-1.

HD 243 S12 includes supplements A:1974 to M:1994 to IEC 417.

Other publications:

ISO 3461-1:1988 - Principles for the creation of graphical symbols
Part 1: Graphical symbols for use on equipment
(The text of this publication is identical to that of
IEC 416 (HD 571 S1:1990))

ISO 3864:1984 - Safety colours and safety signs

ISO 7000:1989 - Graphical symbols for use on equipment - Index and synopsis

ISO 12100-1:1992 - Safety of machinery - Basic concepts, general principles
for design - Part 1: Basic terminology, methodology

ISO 12100-2:1992 - Safety of machinery - Basic concepts, general principles
for design - Part 2: Technical principles and specifications

ISO/IEC 13850:199x - Safety of machinery - Emergency stop equipment: Functional
aspects - Principles for design (under consideration)

EN 457:1992 - Safety of machinery - Auditory danger signal
General requirements, design and testing

NORME INTERNATIONALE

INTERNATIONAL STANDARD

CEI
IEC
1310-1

Première édition
First edition
1995-01

Sécurité des machines – Indication, marquage et manoeuvre –

Partie 1: Spécifications pour les signaux visuels, auditifs et tactiles

Safety of machinery – Indication, marking and actuation –

Part 1: Requirements for visual, auditory and tactile signals

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IEC

Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE
V

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

CONTENTS

Tables

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SAFETY OF MACHINERY – INDICATION, MARKING AND ACTUATION –

Part 1: Requirements for visual, auditory and tactile signals

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 cooperation 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, 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.

3) They have the form of recommendations for international use published in the form of standards, 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.

International Standard IEC 1310-1 was prepared by CENELEC technical committee 44X with the collaboration of CEN technical committee 114 as EN 50099-1 and has been adopted, under a special "fast-track procedure", by IEC technical committee 44: Safety of machinery – Electrotechnical aspects.

This standard has the status of a horizontal standard and may be used, e.g. as a reference standard by technical committees in ISO and IEC preparing product family or dedicated product standards for machines. The requirements for this standard can also be applied by suppliers of machines for which no product family or dedicated product standard exists. Where a product family or dedicated product standard exists, its requirements take precedence.

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

DIS	Report on voting
44(CO)66	44/68/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.

IEC 1310 consists of the following parts, under the general title *Safety of machinery – Indication, marking and actuation:*

- Part 1: Requirements for visual, auditory and tactile signals
- Part 2: Requirements for marking
- Part 3: Requirements for the location and operation of actuators.

INTRODUCTION

At man-machine interfaces, warning and danger signals need to convey safety-related meanings for the safe use and monitoring of machinery for exposed persons and operators.

It is via the man-machine interface that the operator interacts with the machinery or process in an open-loop system (see figure 1). This interface consists of actuators by means of which the operator initiates actions, and indicating devices through which the operator receives information. In many applications the information is represented by a signal which is encoded by a distinct set of rules and the operator has then to interpret the signal according to these rules. Different types of coding such as colour, shape or time are used as appropriate to the demands of the task of the operator.

The reasons for using codes are:

- to permit the spatial separation of the machinery from centralized control stations;

- to increase the perceptible amount of information given by an indicating device, e.g. per display area unit, per unit of time;

- to decrease the mental work-load of an operator and/or exposed persons.

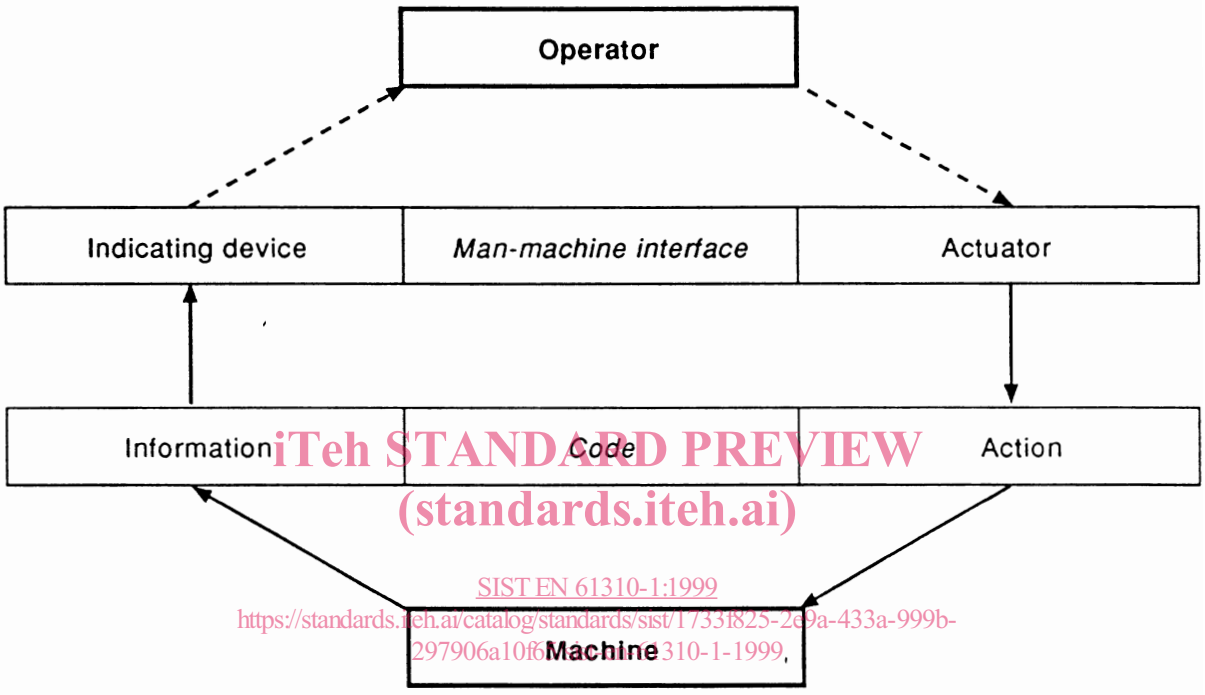

Figure 1 – Open-loop control, action and information systems