

**Masinate ohutus. Kuvarite ja
juhtseadiste konstruktsiooni
ergonoomianõuded. Osa 1: Inimese ja
kuvari ning juhtseadiste vastastikuse
mõju üldpõhimõtted**

Safety of machinery - Ergonomics requirements for
the design of displays and control actuators - Part 1:
General principles for human interactions with
displays and control actuators

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 894-1:1999 sisaldab Euroopa standardi EN 894-1:1997 ingliskeelset teksti. Käesolev dokument on jõustatud 23.11.1999 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 894-1:1999 consists of the English text of the European standard EN 894-1:1997. This document is endorsed on 23.11.1999 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.
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Käsitlusala: See Euroopa standard kehtib seadmete kuvarite ja juhtseadiste konstruktsiooni kohta. Standard esitab inimese ja kuvari ning juhtseadiste vastastikuse mõju üldpõhimõtted eesmärgiga vähendada seadme kasutaja vigu ja tagada efektiivne side kasutaja ja seadmete vahel. Nende põhimõtete järgimine on oluline selleks, et vähendada kasutaja vigu ja tagada efektiivne side kasutaja ja seadme vahel. Eriti oluline on nende põhimõtete järgimine juhul, kui kasutaja vea tagajärjeks võivad olla kehavigastused või tervisekahjustus.	Scope:
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ICS 13.110, 13.180

Võtmesõnad: ergonoomiline masinaehitus, juhtseadised, konstruktsioon, oht, seadmeohutus, signaalseadised, töökohad, töötajad, vastastikune mõju

ICS 13.110; 13.180

Descriptors: Machinery, control actuators, design, displays principles.

English version

**Safety of machinery – Ergonomics requirements for
the design of displays and control actuators**

**Part 1: General principles for human interactions with displays
and control actuators**

Sécurité des machines – Spécifications
ergonomiques pour la conception des
dispositifs de signalisation et des
organes de service – Partie 1: Principes
généraux des interactions entre l'homme
et les dispositifs de signalisation et
organes de service

Sicherheit von Maschinen – Ergonomische
Anforderungen an die Gestaltung von An-
zeigen und Stellteilen – Teil 1: Allgemeine
Leitsätze für Benutzer-Interaktion mit An-
zeigen und Stellteilen

This European Standard was approved by CEN on 1997-01-03.

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

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CEN

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

Central Secretariat: rue de Stassart 36, B-1050 Brussels

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 122 "Ergonomics", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 1997, and conflicting national standards shall be withdrawn at the latest by August 1997.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this standard.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

0 Introduction

This standard has been prepared to be a harmonized standard in the sense of the Machinery Directive and associated EFTA regulations.

1 Scope

This European Standard applies to the design of displays and control actuators on machinery. It specifies general principles for human interaction with displays and control actuators, to minimize operator errors and to ensure an efficient interaction between the operator and the equipment. It is particularly important to observe these principles when an operator error may lead to injury or damage to health.

2 Normative references

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 reference 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.

EN 292-1	Safety of machinery - Basic concepts, general principles for design - Part 1: Basic terminology, methodology
EN 292-2	Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles and specifications
EN 418	Safety of machinery - Emergency stop equipment, functional aspects - Principles for design
EN 614-1	Safety of machinery - Ergonomics design principles - Part 1: Terminology and general principles
prEN 894-2	Safety of machinery - Ergonomics requirements for the design of displays and control actuators - Part 2: Displays
prEN 894-3	Safety of machinery - Ergonomics requirements for the design of displays and control actuators - Part 3: Control actuators
EN ISO 9241-10	Ergonomic requirements for office work with visual display terminals (VDTs) - Part 10: Dialogue principles

3 Definitions

For the purposes of this European Standard, the following definitions apply:

3.1 Control actuator

The part of the control actuating system that is directly actuated by the operator, e.g. by applying pressure.

3.2 Display

Device for presenting information that can change with the aim of making things visible, audible or discriminable by touch (tactile).

3.3 Operator

The person or persons given the task of installing, operating, adjusting, maintaining, cleaning, repairing or transporting machinery [EN 292-1].

4 Design principles for operator-task relationships

Human-machine systems are considered here as closed loops: the machine displays information to the operator who uses control actuators to affect the machine, which in turn provides feedback to the operator, etc.

Human-machine systems can comprise any number of man-machine units or subsystems, in which a single operator interacts with a machine or process. Several subsystems may act independently or interact with each other. When considering the requirements for a particular human-machine subsystem it is important to assess how it interacts with the system as a whole.

Moreover, human-machine systems are part of more complex systems. For example, the physical environment (noise, lighting, etc.) as well as the social and organisational environment can affect the efficient operation of human-machine systems.