

**Kuvaritega kontoritöö
ergonoomianõuded. Osa 4: Nõuded
klaviatuurile**

Ergonomic requirements for office work with visual display terminals (VDTs) - Part 4: Keyboard requirements

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 9241-4:2000 sisaldab Euroopa standardi EN ISO 9241-4:1998 + AC:2000 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 11.01.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 9241-4:2000 consists of the English text of the European standard EN ISO 9241-4:1998 + AC:2000.</p> <p>This document is endorsed on 11.01.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
--	---

<p>Käsitlusala: Standard kehtib eemaldatavate lineaarklaviatuuride kohta, mis on ette nähtud statsionaarseks kasutamiseks. Standard annab suuniseid selliste klaviatuuride konstrueerimiseks, mida kasutatakse tüüpiliste kontoriülesannete täitmiseks, mistõttu on arvesse võetud kasutajaid puudutavaid piiranguid ja kasutajate võimeid. Standard annab suuniseid, mis põhinevad klaviatuuri osade paigutuse ergonoomilisust mõjutaval teguritel, iga klahvi füüsilistel omadustel ning klahve ümbritseva korpuse üldisel konstruktsioonil. Standard määrab meetodid vastavuse katsetamiseks klaviatuuri füüsilisi omadusi mõõtes. Samas sisaldab standard ka väljapakutud alternatiivset, kasutaja tööjõudluse proovimisel ja subjektiivsetel hindamisskaaladel põhinevat katsetusmeetodit, mida saab kasutada nende klaviatuuride korral, mis ei vasta füüsilise konstruktsiooni nõuetele ega soovitudele.</p>	<p>Scope:</p>
--	----------------------

ICS 13.180, 35.180

Võtmesõnad: andmeterminal, arvuti välisseadmed, ergonoomia, katsetused, klaviatuurid, konstruktsioon, kontoriseadmed, kuvamisseadmed, paigutus, tehnilised andmed, tekstitöötlus

This document is a preview generated by EVS

ICS 13.180; 35.180

Descriptors: Visual display terminals, VDU, keyboards.

English version

**Ergonomic requirements for office work with visual
display terminals (VDTs)**

**Part 4: Keyboard requirements
(ISO 9241-4 : 1998)**

Exigences ergonomiques pour travail
de bureau avec terminaux à écrans de
visualisation (TEV) – Partie 4: Exigen-
ces relatives aux claviers
(ISO 9241-4 : 1998)

Ergonomische Anforderungen für Bü-
rotätigkeiten mit Bildschirmgeräten –
Teil 4: Anforderungen an die Tastatur
(ISO 9241-4 : 1998)

This European Standard was approved by CEN on 1998-07-01.

CEN 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 CEN member.

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

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

CEN

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

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

Foreword

International Standard

ISO 9241-4 : 1998 Ergonomic requirements for office work with visual display terminals (VDTs) – Part 4: Keyboard requirements,

which was prepared by ISO/TC 159 'Ergonomics' of the International Organization for Standardization, has been adopted by CEN/CS as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by February 1999 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 9241-4 : 1998 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to international publications are listed in Annex ZA (normative).

Contents

	Page
1 Scope	3
2 Normative references	3
3 Definitions	4
4 Guiding principles	9
5 Performance criterion	10
6 Design requirements and recommendations	10
7 Measurement	15
8 Conformance	21
Annex	
A Usability test (proposed alternative test)	22
B Bibliography	29

Introduction

The keyboard is currently the principal input device used by operators to enter information into interactive office computer systems. Keyboard design can have a significant impact on efficiency, effectiveness and satisfaction. The requirements and recommendations are based on ergonomic principles.

1 Scope

This part of ISO 9241 applies to linear detachable keyboards designed for stationary use. It provides guidance on the design of keyboards used for typical office tasks so that the limitations and capabilities of users are considered. It provides guidance based on ergonomic factors for keyboard layout arrangements, the physical characteristics of the individual keys and the overall design of the housing containing the keys. This part of ISO 9241 specifies methods for testing conformance by measuring the physical attributes of a keyboard. It also includes a proposed alternative test method for keyboards that do not conform to the physical design requirements and recommendations, based on a user performance test and subjective rating scales.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 9241. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 9241 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 2469:1994, *Paper, board and pulps — Measurement of diffuse reflectance factor.*

ISO 7000:1989, *Graphical symbols for use on equipment — Index and synopsis.*

ISO 9241-3:1992, *Ergonomic requirements for office work with visual display terminals (VDTs) — Part 3: Visual display requirements.*

ISO 9241-5:—¹⁾, *Ergonomic requirements for office work with visual display terminals — Part 5: Workstation layout and postural requirements.*

1) To be published.

ISO/IEC 9995-1:1994, *Information technology — Keyboard layouts for text and office systems — Part 1: General principles governing keyboard layouts.*

ISO/IEC 9995-2:1994, *Information technology — Keyboard layouts for text and office systems — Part 2: Alphanumeric section.*

ISO/IEC 9995-4: 1994, *Information technology — Keyboard layouts for text and office systems — Part 4: Numeric section.*

ISO/IEC 9995-5: 1994, *Information technology — Keyboard layouts for text and office systems — Part 5: Editing section.*

ISO/IEC 9995-6: 1994, *Information technology — Keyboard layouts for text and office systems — Part 6: Function section.*

ISO/IEC 9995-7: 1994, *Information technology — Keyboard layouts for text and office systems — Part 7: Symbols used to represent functions.*

ISO/IEC 9995-8: 1994, *Information technology — Keyboard layouts for text and office systems — Part 8: Allocation of letters to the keys of a numeric keypad.*

IEC 417:1973, *Graphical symbols for use on equipment. Index, survey and compilation of single sheets.*

3 Definitions

For the purposes of this part of ISO 9241, the following definitions apply.

3.1 Technical definitions

3.1.1

cursor

visual indication of the focus for alphanumeric input
[ISO 9241-12:—¹⁾]

3.1.2

cursor keys

array of keys which control the movement of the cursor on the display screen and are labelled with arrows indicating the direction of cursor movement caused by the individual keys

3.1.3

dished profile keyboard

keyboard in which the side profile of the keys resembles a continuous concave curve
(see figure 1)

1) To be published.